Fire Island Inlet to Montauk Point New York Reformulation Study

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Fire Island Association Comments

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Introduction

A January 10, 2010 letter from the Fire Island Association (FIA) to the Superintendent of the Fire Island National Seashore stated the Association's view that the Seashore has an obligation to propose and support programs to protect the beaches of Fire Island as well as its other natural resources. This view is based on the Fire Island National Seashore Act of 1964 (FINSA):

> "Be it enacted … That (a) for the purpose of conserving and preserving for the use of future generations certain relatively unspoiled and undeveloped beaches, dunes and other natural features … the Secretary of the Interior is authorized to establish …"the Fire Island National Seashore." …
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> "Sec. 7. (a)The Secretary shall administer and protect the … Seashore with the primary aim of conserving the natural resources located there …
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> "Sec. 8 (a) The authority of the Chief of Engineers, Department of the Army to undertake or contribute to shore erosion control on beach protection measures on lands within the … 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 this Act."[1]

The mapped boundaries indicate the intent of the Seashore Act and the 1977 FINS GMP to protect communities as well as natural resources within the Seashore. Further, the Act codified the obligations of the federal agencies, as public trustees charged with protecting the shoreline, beaches, dunes and marine habitats against destruction by erosion, for the benefit of the users of these resources. The authorization to undertake a shore erosion control plan, as amended over the course of decades, became a mandate with the enactment of WRDA 1999[2], in which Sec. 342 directed the Secretaries of the Army and the Interior to submit such a plan by December 31, 1999. They failed to do so and a court held that their obligation was not judicially enforceable. But the act stands, at minimum, as a public policy statement that should guide federal and state agencies.

The New York State Department of Environmental Conservation (DEC) shares responsibility with the federal government for protecting the state's shorelines. The

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[1] Public Law 88-587 (16 USC 459e) September 11, 1964

[2] Water Resources Development Act, 1999, Sec. 342

DEC's Tidal Wetlands regulation[3] classifies "Filling" projects as a "Generally Compatible Use" for beaches, although permits are required. The State's Coastal Erosion Hazard Areas (CEHA) law[4] further sets forth DEC responsibility by defining and regulating permissible projects within the coastal area. When a state agency supports an activity as generally compatible with its management of a vital resource, it is wrong for a federal agency to urge a contrary policy, especially one that runs counter to the accepted science (see p. 5). Finally, the Coastal Resources Division of the New York Department of State is required to find state/federal beach renourishment projects "consistent" with Coastal Management Policies established by the Division.

Why the FIMP Project is Needed

Fire Island lies between the Atlantic Ocean and the Long Island mainland, acts as an effective flood-barrier beach to protect the mainland with its tens of thousands of homes, businesses and associated infrastructure within the 100-year floodplain. As the term implies, a 100-year floodplain faces a 1 percent chance each year that a breakthrough in the barrier or other dangerous, storm-induced condition, will require an aggressive response; i.e., of the magnitude of the repairs and rebuilding required in the aftermath of Hurricane Katrina. Indeed, in seeming recognition of this possibility, proposals already put forward contemplate elevating mainland roads, houses and commercial buildings, all at tremendous cost.[5] Flood insurance, of course, would be made far more expensive and difficult to obtain throughout the region. It bears repeating that the costs here contemplated would vastly exceed the costs of regular beach nourishment, as most other coastal areas have long acknowledged.

The body of water between Fire Island and the mainland is known as the South Shore Estuary, consisting (west to east) of Great South Bay, Narrow Bay and Moriches Bay. Unlike some barrier islands, Fire Island is relatively large and stable.[6] Once a major source of the nation's shellfish, the bay system is a major center of recreational boating and fishing, with an estimated 100,000 pleasure boats registered to its various mari-

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[3] Tidal Wetlands Land Use Regulations, 6 NYCRR Part 661

[4] Article 34 Environmental Conservation Law

[5] A letter from A. L. Raddant *et al* to Col. A. L. Tortora (see Note 21) refers to a Corps of Engineers estimate of a $500,000,000 cost "to elevate mainland structures in the 10 year flood plain."

[6] "Geographic evidence indicates that the central portion of Fire Island between Ocean Beach and Watch Hill has not migrated for the last 750 to 1,300 years." *Long Island's Dynamic South Shore*, Jay Tanski, New York Sea Grant, 2007, p. 12.

nas. Complementary studies[7] by Lee E. Koppelman,, Director of Stony Brook University's Center for Regional Policy Studies and coastal scientist Timothy W. Kana, Ph.D., concluded that the benefits of a Fire Island shore erosion project would substantially outweigh its cost. Further, an economic study prepared for the Suffolk County Legislature[8] demonstrated the enormous importance of Fire Island (a "coastal jewel") to the Long Island economy. Angie M. Carpenter, addressing the Fire Island Association Summer Meeting on July 31, 2010 said that the economic study should be brought up to date and expanded to remind policy makers of the critical importance of Atlantic Ocean beaches to the safety and economic well-being of Eastern Long Island. (Now Suffolk County Treasurer, Ms. Carpenter was the principal sponsor in the County Legislature when the 2003 report was prepared by the Budget Review Office).

As important as economic considerations are to implementation of the FIMP, environmental protection of the estuary and beach and dune system is equally so. As the discussion below (pp. 11-17) shows, however, environmental agencies within the Department of the Interior have allowed natural and environmental elements to overshadow economic as well as public safety concerns. This has occurred at a time of much straitened agency and departmental budgets, and a consequent tendency to defer projects as far as possible into the future. Nevertheless, "conserving and preserving … unspoiled and undeveloped beaches, dunes and other natural resources" is as important to residents of and visitors to Fire Island as it ever was. Engineers and environmental experts must work side by side to protect the island's resources as mandated by Congress almost 50 years ago.

Against this background, it is vitally important to the region that two 2010 initiatives – revision of the Seashore's General Management Plan and the federal-state FIMP project – are undertaken with an eye toward their interaction and mutual support. While the GMP deals with an array of complex issues in addition to beach erosion, to Fire Islanders, protecting the barrier island's beaches and dunes, and by necessary extension, the Fire Island communities, is the critical issue.

This paper sets forth the Fire Island Association's views on a scientifically sound and practical approach to strengthen Fire Island's flood-barrier beach and "preserving and protecting [the island] for the use of future generations," as set forth in the FINSA.

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[7] *Assessment of the Vulnerabilities of Great South Bay Shoreline to Tidal Flooding*, Timothy W. Kana and Rahm Krishnamohan, New York Coastal Partnership, Babylon, 1994.

[8] *Impact of the Atlantic Ocean Beaches to the Economy of Suffolk County*, Budget Review Office of the Suffolk County Legislature, Hauppauge, 2003.

Historical Background of Fire Island's Development

As early as the 1950s, many Fire Island property owners were urging creation of a Fire Island National Seashore. Their objective was to preserve the island as it then was – minimally developed, and accessed and serviced almost exclusively by boat. At the time, these two highly desirable attributes were threatened: by storm-induced beach erosion unchecked by coastal management and by the threat of helter-skelter development that would have come with unlimited vehicular traffic.

As to erosion, beach nourishment had proved its value in New York State with the restoration of the beach at Coney Island in the 1920s, and by construction of Jones Beach State Park, one of the world's premier public bathing beaches. In the wake of severe storms in the mid-1950s, the Fire Island Erosion Control Committee, a forerunner of FIA, lobbied Congress for a Corps of Engineers project that would restore the Long Island shoreline from Fire Island Inlet to Montauk Point. The committee was successful and the project was authorized by Congress in 1960.[9] A limited portion of the project was constructed, but none of it on Fire Island.

To many concerned about Fire Island, the greater threat was the proposed extension of Ocean Parkway. In the mid-1950s, the Town of Islip would have used it to connect what is now Robert Moses Causeway to the Village of Ocean Beach in the center of the island. The dread prospect of Long Island traffic on a narrow island led to the creation of the Fire Island Voters Association, whose vigorous opposition to the road led to the plan being shelved. The more serious parkway-extension proposal, which followed the 1962 Ash Wednesday Storm, would have brought it all the way to the Smith Point Bridge, near Fire Island's eastern end. It was Robert Moses' plan to remove Fire Island communities, some of them more than a century old, and make the extended Ocean Parkway a continuation of the multi-lane divided highway that covers Jones Island (which Mr. Moses built). But the Moses era was waning; he was beginning to lose battles that required the wholesale elimination of neighborhoods. At the same time, if communities were to remain, the rush to develop them that would follow was apparent and alarming; it became a main impetus for creation of the Seashore.

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[9] Rivers and Harbors Act, House Document 425, 1960; article by George Biderman, *Fire Island Recollections*, Fire Island Association 1983, p. 7

[10] *The Fire Island National Seashore, A History,* Lee E. Koppelman and Seth Forman, State University of New York Press, Albany, 2008.

By this time it was apparent that *ad hoc* groups would not meet property owners' need for a permanent civic watchdog, and the Fire Island Voters Association was incorporated in 1961. (Twenty years later 'Voters' was dropped from the name as problems were no longer only political in nature. 10)

Several bills to create a National Seashore were introduced in Congress, three at the request of FIA founders, including two by the Fire Island Voter's Association, and one by the Committee for a Fire Island National Seashore, another FIA predecessor. A similar bill was pushed by the Citizens Committee for a Fire Island National Seashore, a mainland coalition of property owners and environmental organizations. Long Island Congressman Otis Pike's version led to creation of the park in September 1964.

. There is no doubt that creating the National Seashore prevented construction of a destructive road proposed by Robert Moses and saved Fire Island for later generations. Five decades on, 80 percent of Fire Island's upland area, and 100 percent of the ocean-fronting beach of the 32-mile-long island, is preserved as public open space enjoyed by millions of people each year. The 26 miles of National Seashore includes New York's only federal Wilderness Area, the Fire Island Lighthouse (a site visited by more than 125,000 each year), immensely popular ocean bathing beaches at Robert Moses State Park and Smith Point County Park (a combined total of over 5 million annual visitors), and smaller public beaches maintained by the Towns of Islip and Brookhaven. All this is within 50 miles of New York City, the nation's principal population center.

But protecting those beaches has been another story. To the east of Fire Island, at Westhampton Beach, breaches that resulted in actual inlets occurred in the almost mirror-image storms of 1962 and 1992. In both cases, serious damage was the result in the communities along the northerly bay shoreline. *(See,* generally, Spencer, B. and Terchunian, A. V., "The Sand Thieves of Long Island's South Shore"*, Shore & Beach, July, 1997.)* Most important from the perspective of Fire Island was the loss of millions of cubic yards of sand that previously nourished its downdrift beaches. Because that meant the loss of much of Fire Island's flood-barrier potential, the actions now under study are even more essential to the protection of Long Island's south shore.

To date, no action has been taken. Following the Ash Wednesday Storm of March 1962, the U.S. Army Corps of Engineers' "Operation Five High" restored Atlantic Ocean beaches from New England to Virginia. Since that project, built just under a half century ago, *no federal funds* have been spent to combat erosion on the Fire Island barrier, despite the Seashore's $5 million annual budget. By contrast, in 2009, hundreds of Fire Island home owners committed to an increase in their collective property taxes of close to $24 million to raise and widen the public beaches adjacent to a dozen communities.

Meanwhile, pressed by mainland environmental groups and factions within the U.S. Department of the Interior (see below), the National Park Service has followed a policy of letting "nature take its course" with respect to beaches under its management. This has meant that New York State, while nurturing beaches in state parks, has not been able to join with the Corps of Engineers to protect adjoining federal recreational beaches on Fire Island. In the view of the property owners – and many coastal scientists and managers – this is a recipe for disaster. (For a detailed history of government response to erosion on Fire Island, see the recent comprehensive history of the island by Lee E. Koppelman, Director of the Center for Regional Planning Studies at Stony Brook University, and his colleague, Seth Forman.)[10] While DOI notes its "40-year involvement" in discussions about shore protection on Fire Island since the creation of the National Seashore (see *infra*, p. 10), the only projects aimed at doing so have been urged and paid for by the property owners who occupy part of the area amounting to about 20 percent of the 20,000-acre park. Because these projects are required, as a result of DOI restrictions, to be short-lived and therefore of limited effectiveness, they have barely held the line against erosion, despite a cost in higher property taxes that has run into the tens of millions of dollars. Nor do they provide protection for the mainland against a breach in the barrier island.

Now, in 2010, the Seashore is revising its 1978 General Management Plan, just as the Corps of Engineers, in cooperation with the New York DEC, is completing a ten-year, $25-million study and reformulation analysis of how best to preserve and protect the south shore of Long Island, from Fire Island Inlet to Montauk Point. Known as the Fire Island Inlet to Montauk Point Hurricane Protection and Storm Damage Reduction Plan, or FIMP, this is the same project authorized by Congress in 1960 but never even begun on the Fire Island segment. The western 32 miles of the 83-mile-long project comprise Fire Island.

Discussion

In an Era of Rising Sea Levels, Beaches Must be Made Higher and Wider

Predictions of sea-level rise for the New York region range between 12 and 23 inches by the end of the century, depending on the rate of polar ice melt, according to a February 2009 report by the New York City Panel on Climate Change[11]. Fortunately, the

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[11] *Climate Risk Information*, New York City Panel on Climate Change, 2010. This is the "central range" of the projected increase; under a "rapid ice melt" scenario," the rise in sea level could reach 55 inches toward the end of the present century, the panel found.

region is rich in the number and extent of sand deposits, located both offshore and associated with inlets that are potentially available for use in beach building. Recent studies by the US Geologic Survey[12] led to a prediction of "a volume of 3.9 billion cubic meters [of beach-compatible sand] in three representative regions off New York and New Jersey." The almost-clogged Fire Island Inlet is said to contain approximately 40 million cubic yards of sand, about the same amount dredged from Great South Bay and used in the construction of Jones Island 80 years ago. Clearly, the first line of defense against sea-level rise for Long Island beaches is to tap available sand deposits for use in raising and widening beaches.

As noted, officials of the Department of the Interior (DOI) have long been active opponents of beach nourishment projects and what they view as "artificial beach nourishment," urging that "natural processes" be allowed to "prevail" in park environments.[13] This philosophy leads to anomalous results when it comes to protecting natural resources. For example, the National Academy of Sciences has recognized that beach erosion is a major and under-addressed problem in America[14] and that "Beach nourishment is a viable engineering alternative for shore protection and is the principal engineering technique for beach restoration; …".[15]

DOI planners believe sand and sea water should be allowed periodically to "wash over the barrier island" to restore bayside habitat and vegetation, without consideration of the likelihood that this will occur only in a major storm, or of the destructive consequences to property and natural resources that would result. In their view, "artificial" dunes interfere with this process. (Indeed, that is exactly their purpose.) By contrast, FIA believes any claimed benefit from a storm-induced movement of sand and water over the barrier island and into the bay can be far more safely achieved by pumping sand to the desired location as an "environmental enhancement" of the permitted project.

FIA believes that FIMP project beaches and dunes on Fire Island should be built to provide a reasonable level of protection, to natural areas as well to communities. The agency charged with establishing standards of protection for coastal areas is the Corps of Engineers. In a paper entitled "The Great New England Hurricane of 1938," a site in-

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[12] Bliss, *et al*, *Mineral Resource Assessment of Marine Resources* ..., USGS Bulletin 2209, 2009.

[13] See, *e.g.*, the 61-page letter from Andrew L. Raddant, Regional Environmental Officer, US DOI, to Col. William H. Pearce, District Engineer, USACE NAD, February 29, 2000 .

[14] National Research Council, National Academy of Sciences, *Beach Nourishment and Erosion*, pp. 14-15

[15] *Id.* p. 3.

vestigator noted: " … generally, dunes with a crest height of 18 feet or more above mean sea level withstood all attacks of the sea and storm and protected the leeard [*sic*] area. Those areas in which the dune crest was less than 16 to 18 feet above mean sea level were generally damaged by wave overwash or breached."[16]

The following are project specifications that may be expected to achieve this objective:

Dune height: +18 feet NGVD (dune crest 18 feet above sea level)

Dune width: 30 feet at the crest

Dune slope: one foot vertical for each five feet horizontal (1 on 5) for 100 feet from the seaward toe of the dune, and landward to so far as existing development, vegetation or infrastructure permit

Beach berm height: +9.5 feet NGVD

Dry beach width: 100 feet, measured from the seaward toe of the dune to the berm crest

Beach face slope: 1 foot vertical for each 30 feet horizontal, from the berm crest to the existing bottom (-6 feet NGVD typical)

Significant deviations from these dimensions should be fully explained and justified.

Projects Should be as Continuous and Uninterrupted as Possible.

Shore protection projects that are discontinuous are less effective and have a shorter life than continuous ones. Levees and dikes built in pieces are not effective in protecting shorelines, and neither are low beaches or partial dunes. In drafting permits for projects for which it is the lead federal agency, the Seashore prohibits community-sponsored beach nourishment projects from placing sand on ocean beaches fronting "large federal tracts." For example, the Seashore's Environmental Assessment of the communities' self-help restoration project[17] notes, "To maintain consistency with NPS non-impairment [of natural processes] requirement and the DOI position on beach re-

[16] Morang, A., 1999. Coastal Inlets Research Program. Technical Report CHL-98-32, USAE Waterways Experiment Station, Vicksburg, MS.

[17] Fire Island National Seashore, Environmental Assessment of the Short Term Community Storm Surge Protection Plan, Patchogue 2003, p.34.

plenishment, no tapers would be allowed on NPS lands …". "Tapers" are continuations, at a diminishing level, of beach replenishment or scraping projects into adjoining non-participating beaches. Discontinuous projects are not only counterproductive but dangerous, and prohibiting tapers exacerbates the problem.

FIA believes projects should be continuous, with sand placed wherever it makes engineering sense to do so, throughout the length of the barrier. This is the only way to give much needed flood-barrier protection to the Long Island mainland. When project designers are *required* to build discontinuity into a project, tapers allow for a gradual integration of treated and non-treated areas by reducing abrupt changes in the shoreline. This results in fewer beach irregularities for wind-driven waves to work on. But it should be understood that the only reason for requiring these irregularities, and preventing mitigation of their impact, is the notion that reduced protection will increase the likelihood of ocean-to-bay overwash. Whether or not this in fact benefits the back bay environment, as DOI personnel claim, is open to question. In any case, washover fans that deliver sand to the back bays are very rare on Fire Island.[18]

FIA believes a truly cost-effective project – one that protects Fire Island and the northerly mainland floodplain – would cover not only the twelve miles between the Wilderness Area and the west boundary of the community of Kismet, but the entire 32 miles, from inlet to inlet, including the Wilderness Area. In this connection, it is significant that the statute creating the Wilderness Area specified its southern boundary as "the toe of the primary dunes."[19] Significantly, the statute notes: *"Wilderness designation shall not preclude the repair of breaches that occur in the wilderness area, in order to prevent loss of life, flooding, and other severe economic and physical damage to the Great South Bay and surrounding areas"* (emphasis added).[20]

As noted, only six of Fire Island's 32 miles constitute the community development district, and this district is interrupted by tracts of state or federal lands where nourishment has not been permitted. The remaining 26-mile stretch contains federal, state, county and municipal recreational beaches that are enormously popular and important, for economic, recreational and environmental reasons. Managing and maintaining the entire reach, from inlet to inlet, under a continuing NEPA permit, would be more cost-effective and less injurious to the ecosystem than a series of small, unconnected projects, if only because of the longer period between necessary renourishments of smaller, discontinuous projects.

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[18] Tanski, *op cit.,* p. 9.

[19] Public Law 96-585,1980, Sec. (a)

[20] *Ibid.,* Sec. (d)

Finally, the FIMP project should be planned and constructed to last for a reasonable length of time, protect as many existing structures as is feasible, and allow homeowners to purchase and place additional sand on their property at their own expense, using descriptive language from earlier permits. Regulations issued under New York State's Coastal Erosion Hazard Management Areas law[21] require that interim shore protection projects "must provide erosion control for 30 years."[22] As for placing additional sand, project contractors cannot, as a practical matter, arrange with individual property owners for sand placement. The project builders' job is to spread the contracted amount of sand on the public beach, not on individuals' properties. Individuals, however, should not be prohibited from making separate arrangements with local contractors to assure that additional sand is placed under their homes to shore up pilings and assure that septic systems are well-covered. This is not so much coastal engineering as common sense. Such an extra-project contractual arrangement is not intended to convert a property that is not buildable under the CEHA rules into one on which a new structure could be built.

In summary, FIA favors a project policy that calls for:

> An expected useful life of at least 30 years, with 25% replenishment required after eight years.
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> The dune crest placed south of the existing building line, where feasible.
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> Homeowners being permitted to have additional sand placed under their structure at their own expense.

A Summary of Interior Department Arguments Opposing Beach Nourishment

The policy concerns and objectives of the U.S. Department of the Interior, particularly with respect to six miles of central Fire Island, have historically been an obstacle to the adoption of what most would consider a rational coastal management program for New York State's Atlantic Ocean Coastline. Many of these concerns were summarized and discussed in a 2008 letter to the New York District Engineer from rep-

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[21] Environmental Conservation Law, Article 34

[22] Coastal Erosion Management Regulations, 6 NYCRR Part 505.9, amended 1988

resentatives of the Department's Office of Environmental Compliance, the National Park Service and the U.S. Fish and Wildlife Service[23] (collectively, "the Department.")

The letter begins by pointing out that "The Department has been actively engaged in efforts directly or indirectly related to the … (FIMP) for over 40 years."[24] It then criticizes a Corps' Draft Formulation Report (DFR) for describing "traditional construction and maintenance activities [while providing] relatively less information on other alternatives." But the letter also notes, " … [N]egotiations among the interagency FIMP partners (including USACE, New York State, Suffolk County, the Department … and other federal agencies ['the FIMP team'] continues at a high level of involvement."[25]

The letter cites the Seashore's enabling legislation, stressing that the Secretary of the Interior must find a plan of shore protection "acceptable" and "consistent" with the enabling act, and adds, "The primary aim is to conserve natural resources and natural processes, including undeveloped natural dunes and beaches and the physical and biological processes which preserve them."[26] The letter goes on to state that "intensive development has taken place in hazardous, ever dynamic coastal areas … exacerbated by … inlet stabilization and channel dredging; … beach fill; beach scraping; breach closures; and bayside bulkheading."[27]

As to "intensive development," when the Seashore was established, there were approximately 2,500 housing units on Fire Island, according to the U.S. Census.[28] Forty years on, during a time when the population of Nassau and Suffolk Counties tripled to about 3 million[29], the total number of housing units on Fire Island had increased, but by barely half that rate, to about 4,100, with about 300 occupied year round. As this hardly qualifies as "intensive development," it is hard to escape the conclusion that, to the Department, *any* development in a National Park is more than is desired.

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[23] Letter to Col. Aniello L. Tortora, New York District Engineer, U.S. Army Corps of Engineers, from Andrew L. Raddant, Office of Environmental Compliance, Northeast Region, U.S. Department of the Interior; Robert W. McIntosh, Northeast Region, National Park Service; and David Stilwell, New York Field Office, U.S. Fish and Wildlife Service, 12 pp., June 3, 2008 ("Raddant letter").

[24] Raddant letter, p. 1

[25] *Id.*, , p. 2-3

[26] *Id*, p. 3

[27] *Id.,* p. 3-4

[28] Koppelman, *op. cit.*, note 7, p. 18

[29] *Population Survey 2006,* Long Island Power Authority, Uniondale, p. *v*

The letter focuses on "Department-supportable approaches to long-term storm risk reduction" in the area of, first, "Cross-Island Sediment Transport to the Bays: … Stabilizing inlets, filling breaches, attempting to stabilize barrier islands, … bulkheading bay shorelines [that] can impede sediment transfer and redistribution within the bay system. … [E]xisting structures and management practices … [that] impede sediment transfer and redistribution within the bay systems."[30] Thus, the Department asserts that what most see as common sense "risk reduction" has negative consequences for the environment on barrier islands. Society, however, has determined that the lives and safety of those who navigate inlets, for example, take priority over regulations aimed at fostering wildlife and preserving natural processes. Unfortunately, Congress has so far not seen fit to clarify its intentions and expectations in this regard.[31]

The Department letter goes on, "Actions that are intended to prevent natural processes including overwash, formation of intertidal flats, overwash fans, spits, etc. … will need to compensate for cross-island sediment losses …".[32] These processes occur incident to storms, sometimes accompanied by waves that surge across a barrier island, moving sand (and houses and rubble) into the back bay. Fortunately, this rarely happens[33] The Department, however, favors an approach that would result in making it happen more frequently, regardless of the deleterious impact on the island and back bay environments, the communities, populations, recreational facilities and businesses destroyed, and the social and economic losses entailed, so long as doing so "conserves natural resources and processes."

The Department expresses "disappointment" that the possibility of relocating inlets, with its supposed beneficial impact on piping plovers, "was not evaluated in depth" by the Corps of Engineers.[34] It recommends consideration of "shallower configurations" to minimize flooding of the mainland through inlets. The Department wants sand and water to move from ocean to bay but, in apparent contradiction to unimpeded "natural" processes, wants to manipulate inlets to assure this happens the way they want it to. The objective is to move sand through inlets to where it is needed for environmental reasons on the bay side of the barrier island. At Sandy Hook National Recreation Area,

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[30] Raddant, p. 5

[31] Sec. 342 of the Water Resources Development Act of 1999 called on the Secretaries of Army and the Interior to agree on and implement a plan for the protection of Fire Island by the end of 1999, without apparent effect.

[32] Raddant, p. 5

[33] Tansky, *op cit*, p. 9

[34] Raddant, p. 5

the National Park Service has shown it can move large amounts of sand through pipelines permanently installed for the purpose. FIA suggests it might be able to do so across Fire Island as well, placing sand where it is needed and with better control of undesirable side effects.

The Department states that its worries that the Corps of Engineers will take sand from the wrong places have been diminished. This is in part because the Corps "has agreed to monitor off-shore coastal sediment processes" and because of the Corps' promise not to take sand from a borrow site south of the Wilderness Area.[35] FIA applauds this expression of inter-agency cooperation.

In a section of the letter headed "Barrier Island Management," the Department registers support for "the State's stated goal of gradual reduction of reliance on beach nourishment …".[36] FIA believes beach nourishment is and will remain a requirement on Fire Island (as on many ocean beaches) because updrift structures and inadequate inlet bypassing have diminished the amount of natural nourishment the beaches receive. If the Department's desired "gradual reduction" infers smaller, more frequent projects to maintain the barrier, FIA believes that will result in less efficient management at greater cost. If the statement implies that the proposed policy will cause washovers to nourish back bay areas, etc., FIA opposes it as destructive of the resource the Department is supposed to preserve for future generations. As for the "non-structural actions" mentioned, FIA supports their application, but only at the wholly non-coerced option of individual homeowners.

The Department notes that breaches causing mainland flooding are a remote possibility.[37] FIA agrees that a breach in the barrier is as likely to be an *effect* of mainland flooding as it is the cause. Inlets that are not configured to drain the bays efficiently in northeast storms can cause a breach from the bay *to* the ocean. A soundly-engineered coastal management program would account for either eventuality. Whatever the cause, and from whichever direction it occurs, a barrier island breach will be less expensive to prevent than to repair.

The Department letter speculates that the expense of buying up the property nearest the dunes can be done at or below the cost of 50 years' of beach nourishment.[38] In 2003, the Corps employed real estate appraisers to investigate this assertion,

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[35] Raddant, *op cit*, p. 7

[36] *Id.*

[37] *Id.*

[38] Raddant, p. 8

and discussed the results thoroughly with the State. The appraisers found that the *average* price of a home on the dune at the time was $1.14 million. Thus, 380 first-row houses would cost some $430 million to buy, assuming owners would be interested in selling. Putting to one side the quite considerable real estate taxes these homes now generate for the towns of Islip and Brookhaven, and the scores of jobs they provide to service providers, the Department's policy would soon have to be applied to the second and third rows of houses. The fact that a large majority of the owners might be expected vigorously to oppose the policy for as long as they could is another reason to set it aside as impractical.

The Department letter notes that "non-structural institutional" program changes are integral to the success of any FIMP plan."[39] This is so because there are "existing disincentives to effective coastal land use programs" that need to be removed. FIA participated in a number of discussions with Department representatives about non-structural measures that could be employed to induce owners to move away (from what some consider highly desirable locations) in return for something in addition to the very considerable cash value of the property. No one can predict what will prove an inducement to anyone's decision to move, versus to remain for as long as possible. FIA's position is that any individual property owner should act in his or her own best interests, and no doubt some would accept an offer from the Department. Based on conversations over many years, however, it seems unlikely that a program could be fashioned that will induce many voluntarily to move. And any who do want to move are likely to find it far easier to simply sell or rent their home than to accept an offer from the Department.

In the paragraph entitled "Natural Process Restoration Alternatives," the Department letter notes that "overwash, breach formation and barrier island movement northward" are processes that "are essential to the sustainability of the barrier island and marsh ecosystem … ."[40] But, New York Sea Grant notes, "On the south shore barrier island or spits, [while] the overwashes can reach the bay …, studies … indicate this rarely happens… ." In other words, Fire Island is *not* "moving northward." In fact, "Geographic evidence indicates that the central portion of Fire Island between Ocean Beach and Watch Hill has *not migrated* for the last 750 to 1,300 years."[41]

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[39] *Id.*

[40] Raddant, p. 9

[41] Tansky, *op cit,* p. 12, emphasis added.

The letter discussed in the preceding pages is consistent in tone and content with others prepared by DOI representatives over the past decade. Previous letters have set forth the intention, among other things, to withhold Department approval of any Corps plan to provide shore protection to any part of Fire Island until assurance is received that all beachfront homes are demolished or removed – by their owners, by storms, or by department fiat. This attitude has been deeply disturbing to local government, residents and taxpayers who wish only to work *with* government to help protect the island – and to help *it* protect the south shore of the mainland.

Voluntary Beach Preservation Efforts by the Communities Should be Supported by the National Seashore and by New York State.

Since 1994, various Fire Island communities have voluntarily incurred huge increases in their property taxes in order to fund projects that have placed millions of cubic yards of sand on public beaches within the six-mile-long community development district. (The 2009 project alone resulted in tax increases of $24 million.) The communities have undertaken this effort despite FINS requirements with respect to tapers and built-in gaps between project segments (see p. 9). This has been to the direct benefit of millions of visitors to Fire Island as well as to the preservation and stability of the region's ecosystem and the south shore of Long Island itself. The Fire Island National Seashore served as lead agency in the development of the Environmental Assessments required for these projects under the Environmental Protection Act, and it has facilitated obtaining the needed local and state permits.

While communities of Fire Island, and those of the mainland as well, believe that there must be a meaningful and protective nourishment program for all of Fire Island, the Island communities believe that steps should be taken at once to attain a "programmatic EIS" that would remain in force over a period of 20 to 30 years. This would allow new community-sponsored nourishment programs that will add future strength to the flood-barrier when needed. Among other things, an on-going EIS would allow prompt action to repair beach damage from coastal storms similar to that resulting from the series of northeast storms of the winter of 2009-2010. Action to restore "engineered beaches" under Federal Emergency Management Agency (FEMA) rules requires use of pre- and post-storm profiles to permit the accurate estimate of sand loss, should FEMA and/or State Emergency Management Office reimbursement be necessary. (The estimated cost to plan and prepare a Programmatic EIS is $3 million. On behalf of the communities that would have to bear this extra cost burden, FIA urges that Corps, FEMA and other government agencies help absorb this planning funding through a reimbursement mechanism).

Fire Island Communities Want to be Pro-active

The cost of locating and qualifying new sources of compatible sand for use in beach renourishment projects is likely to be high, but Fire Island communities are already in conversation with coastal engineers about it. This would seem to be a task for which government agencies, such as the U.S. Geologic Survey, are funded. Without this support, communities must add the cost of sophisticated ocean-bottom surveys to the already high cost of their own beach nourishment projects, as well as to their traditional tasks of dune grass planting and beach scraping.

Financing community involvement may be possible through an island-wide erosion control taxing district that supplements existing districts at the community and village level. It is notable that more than a dozen Fire Island communities support erosion control taxing districts, some decades old. Community districts would continue to support minor projects that affect community beaches such as scraping, grass planting, dune cross-overs and the like. Further, an inter-municipal agreement between the towns of Brookhaven and Islip, the island's two incorporated villages, and a dozen Fire Island community erosion control taxing districts, would allow joint action on island-wide needs, such as beach re-nourishment projects as described above.

Existing state law applicable to Fire Island could be amended to allow Fire Island communities to approve a small real property transfer tax, applicable to purchases of Fire Island real property. Such a tax could raise significant amounts, as has been shown in similar programs aimed at acquiring and protecting open space. Here, the resulting tax revenue could be earmarked for use in shore protection. In particular, the funds could underwrite the state's share of the cost of Corps of Engineers studies needed as a preliminary to combined federal-state projects. Earmarking the proceeds of a similar tax has made New Jersey the perennial leader of states qualifying for new shore protection studies and projects that involve the Corps. Should such a plan be adopted, FIA would make efforts to extend the idea to all south shore Long Island communities concerned about erosion.

A New Era of Dialogue and Partnership

As described above, it became evident very soon after the creation of the Seashore in 1964 that the relationship between FINS and the island communities had many areas of tension, especially on shoreline management issues. Over the intervening decades, also outlined in this paper, there has been a particularly strong divergence of views between FIA and agencies of the Department of the Interior regarding the causes

of beach erosion and appropriate protective and beach restoration measures, as well as the interpretation of the "science" underlying many DOI findings and resulting policies.

At the local level today, however, a definite change for the better in the relationship between FINS and the communities is causing Islanders to re-think the partnership. Five decades after the creation of the Seashore, dialogue and cooperation have replaced discord and frustration. Both sides have committed to a partnership based on the principles of cooperative stewardship as they jointly determine how best to protect, preserve and manage the island. FIA fully concurs with the Seashore's stated intention to manage Fire Island holistically, preserving the island's natural, historic and scenic aspects, while recognizing the island's unique culture. In particular, Islanders appreciate the recognition of the important roles of the communities and their full-time and seasonal residents.

Despite the potential for disagreement on the issue of shoreline management, many in FIA are optimistic that a more objective review of the science and the range of available management strategies will lead to a joint vision for effective management of Fire Island's ocean and bay shorelines. As this paper attempts to demonstrate, the key issue for all Fire Islanders is whether the island will be protected from erosion and storm events, with the shoreline maintained in more or less its present location, or whether "Nature" will be allowed to "take its course," and the island deteriorate as a result of the withholding of periodic and effective sand nourishment.

Fire Island Association

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