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The Beach Zone: Using Local Land Use Authority to Preserve Barrier Islands

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INTRODUCTION

> We often love to think now of the life of men on beaches,—at least in midsummer, when the weather is serene; their sunny lives on the sand, amid the beach-grass and the bayberries, their companion a cow, their wealth a jag of driftwood or a few beach plums, and their music the surf and the peep of the beech-bird.
>
> – *Henry David Thoreau*[1]

For ages, the American people have treasured the aesthetic and recreational value of beaches. The beachfront is a place of insurmountable beauty, serenity, and grandeur. Many Americans escape to beaches in order to visit a place of remarkable biological diversity. Today, however, we face the bleak prospect of permanently losing our treasured beaches to a wave of development, particularly fostered by a lack of informed land-use decisions. Over the last few decades, the nation's infatuation with beaches

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We (the authors of this article) are grateful to an extraordinary man whose inspiration, mentoring, and labor have guided us for far longer than the months it spent writing this article. It is our good fortune to have Professor John Nolon as our professor. His surrogate wisdom and experience has helped us become better students. We have enjoyed his advice, humor and love for land use. This article would not have been possible without his help. We are so thankful for everything that he has done.

1. HENRY DAVID THOREAU, THE WRITINGS OF HENRY DAVID THOREAU 269 (4th vol. 1906).

has spurred an increased desire to live on the coastline.[2] Dozens of new homes are built every day on this fragile environment. Stable beaches can withstand an increase in development, however barrier islands are too transitional due to their natural processes to accommodate permanent structural development.[3] "The natural processes responsible for the evolution of barrier islands and for much of their recreational and aesthetic appeal also make them hazardous places for humans to live."[4]

Barrier islands are not the place for permanent development and preserving them through structural and other nonstructural solutions is of uncertain value.[5] A regulatory solution is available that is both effective and realistic. This article is an exploration of the barrier island's unique landform and the solution to its protection. Most important, this article is an attempt to offer a paramount solution, "the beach zone."[6]

Part One will discuss the natural processes of the barrier islands, focusing on tidal cycles, sea level rising, and periodic storm surges, which threaten development on them. This section illustrates the dynamic nature of the barrier islands that often make them unsuitable for permanent development. This danger has resulted in an increased awareness by the public of the need for proper coastal management. To date, the primary focus of both the private and public sectors has been on solutions that involve structural engineering, which are discussed in Part Two. Many of these efforts have been futile and, in some cases, have led to more destruction than protection.[7] This use of structural solutions can be detrimental to the natural movement of the barrier island and the unique habitats of endangered species.[8] Part Three discusses

2. "Following World War II, society turned more and more to beaches for recreational opportunities, resulting in community growth along the nation's shores." COMM. ON BEACH NOURISHMENT & PROT. & MARINE BD. COMM'N ON ENG'G & TECHNICAL SYS., NAT'L RESEARCH COUNCIL, BEACH NOURISHMENT AND PROTECTION 59 (1995) [Hereinafter NAT'L RESEARCH COUNCIL, BEACH]. This influx, solely due to a desire to live near the water's edge for its aesthetic and recreational appeal, has accelerated since the 1970s, despite the risk to life and property. *See id.*

3. *See infra* Part One.

4. Robert Dolan et al., *Barrier Islands*, AM. SCIENTIST, Jan.-Feb. 1980, at 16.

5. *See infra* Parts Two & Three.

6. *See infra* Part Four.

7. *See infra* Part Two.

8. Barrier islands are a unique habitat for many endangered and threatened wildlife species. THE NATURE CONSERVANCY, EVALUATION OF: FIRE ISLAND INTERIM PLAN DRAFT DECISION DOCUMENT: MAIN REPORT AND DRAFT ENVIRONMENTAL IMPACT STATEMENT 9 (2000) (unpublished manuscript, on file with The Nature Conservancy, Long Island Chapter). These species include the short-eared owl, the mud turtle, the

the recent focus on nonstructural solutions to alleviate the shortcomings of structural solutions. Nonstructural solutions require the redesign of current building requirements, the restructuring of the federal flood insurance program, and the utilization of land acquisition options. However, these nonstructural solutions have their own inherent problems that limit their scope and effect.[9]

There is a regulatory solution available that is both effective and practical. Part Four will discuss the proposed solution: a zoning ordinance to be adopted by municipal legislatures. This paper uses Fire Island, a critical barrier island off the coast of Long Island, New York, as a case study. The zoning proposed is aimed at limiting land uses to those that are consistent with the natural processes of the barrier islands. The coastline will be rezoned to allow only for "compatible uses" with the environment of the barrier island. This will make existing developments nonconforming uses. As such, they can not be expanded or be rebuilt if substantially destroyed. The proposal requires that nonconforming, incompatible structures be eliminated within a fifty-year amortization period. This solution saves taxpayers the cost of funding the rebuilding of the shoreline homes following their destruction. In addition, it puts future purchasers of such properties on notice of the risks of building on transitional barrier islands.

The zoning proposed will face strong opposition from affluent landowners. Municipalities may address such resistance primarily by fostering an understanding of barrier island dynamics and the need for long term and cost effective solutions.[10] Once the zoning ordinance is adopted, this public resistance will likely shift to legal challenges. Part Five addresses the constitutional claims that landowners will raise and demonstrates that the proposed

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pied-billed grebe, the henslow sparrow and the piping plover. *Id.* The piping plover, a federally protected shore bird that summers on the beaches, is one of many examples of a species that relies on the dynamics of barrier islands. *Id.* at 10. The piping plover nests in the overwash areas and feeds in the nearby ephemeral pools, a natural formation on barrier islands. *Id.* "[T]he piping plover nesting population on Fire Island would increase spectacularly if the incidence of overwashes or new inlets were to increase. Therefore, any activity that would further interrupt the natural formation of ephemeral pools should not occur." *Id.* In addition, the overwash process creates a fringe of marsh substrate behind the barrier islands. *Id.* at 12-13. These new marsh communities are the home of rare plants and animals. *See* THE NATURE CONSERVANCY, EVALUATION OF: FIRE ISLAND INTERIM PLAN DRAFT DECISION DOCUMENT: MAIN REPORT AND DRAFT ENVIRONMENTAL IMPACT STATEMENT 13 (2000). The conservation and protection of the transitional barrier islands is vital to ensure the survival of these endangered and threatened species. *Id.*

9. *See infra* Part Three.

10. *See infra* Part Four.

zoning ordinance contains all the necessary and appropriate provisions to withstand such challenges.

Part One: Transitional Environment of the Barrier Islands

Barrier Islands are inhospitable locations for development due to their transitional nature. The barrier island system is an active strip of sand, which requires special attention. The erosion of the front side of the island and the growth of the backside are the key aspects of barrier island migration—the movement of the barrier islands toward land. Barrier islands are affected by a large number of processes, including periodic tidal cycles, storm surges, and sea level rising.[11] Due to these processes, "[t]he beaches, dunes, and marshes that make up the [barrier] islands are temporary in location and shape. . .."[12]

Beach erosion is a common, expected event, not a natural disaster. Barrier island migration is not a concern to swimmers, surfers, hikers, or fisherman. It is only when man builds a permanent structure in this changing environment that a problem develops. The natural transitional process of the barrier island is fundamental in the creation of the beaches, therefore "[u]nderstanding the natural dynamics of barrier islands is the key to recognizing and estimating both the short-term and long-term hazards of living on them."[13]

A. Tidal Cycles

There are three important processes that occur due to tidal cycles, which can be exacerbated during storms. These include overwash,[14] breach, and inlet formation.[15] These processes cause the gradual landward movement of the barrier islands. During

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11. *See* Dolan et al., *supra* note 4, at 16.

12. *Id.*

> Nature maintains the dynamic equilibrium of the beaches through unceasing trade-offs of four factors:
>
> - Materials: sand, silt, biological debris, flotsam.
> - Energy: the forces of winds, waves, and tides.
> - Shape of the Beach: steepness and width.
> - Sea Level: land rising or falling, seas gaining or losing water.
>
> The simplicity of listing these four elements is deceptive. Great mysteries still surround the processes of shoreline evolution.

WALLACE KAUFMAN & ORRIN H. PILKEY, JR., THE BEACHES ARE MOVING, THE DROWNING OF AMERICA'S SHORELINE 15 (1979).

13. Dolan et al., *supra* note 4, at 16.

14. Overwash is defined as the "[w]ave uprush overtopping the beach and dunes during storms; water and entrained sand that are moved landward of the dunes."

severe storms, inlets form when islands overwash and breach. High water levels and powerful waves drive sand over the beach zone and dunes, redepositing the sand onto an island's interior. A large number of the inlets created fill in and close following the storm, while some remain open. Tidal cycles and storm activity, therefore, result in the drastic reshaping of the island. These natural processes can put entire islands at risk, especially the coastal portions.[16]

In addition, tidal cycles, hurricanes and Northeasters often drive water and beach sand across the barrier islands. Between storms, the barrier islands accumulate this sand. During different periods, the islands are moving either landward or seaward. In recent decades, the barrier islands off the Atlantic coast have been moving mostly landward at a rate of 1.5 m/yr.[17] This constant migration makes for a very unstable environment for human living.[18]

B. Periodic Storm Surges

A surprise awaiting coastal dwellers is the cataclysmic storms that violently attack barrier islands. Hurricanes and Northeasters account for a large portion of the coastal damage. High winds cause damage to many of the homes that are built on barrier islands. Waves can cause rapid shoreline erosion, undermining houses. Storm surges are responsible for major wind and water

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STEPHEN LEATHERMAN, EASTERN LONG ISLAND COASTAL CONSERVATION ALLIANCE, LTD., BEACH BASICS, A REFERENCE GUIDE TO COASTAL TERMINOLOGY 7 (n.d.).

15. "An inlet is the channel that allows exchange of water between the sound and ocean sides of adjacent barrier islands." Jeff Selingo, *Barrier Islands: Always changing*, WILMINGTON MORNING STAR, Aug. 25, 1996, *available at* http//www.beachbrowser.com/Archives/Environment/August-99/Barrier-Islands-Always-Changing.htm.

16. COMM. ON COASTAL EROSION ZONE MGMT., WATER SCIENCE & TECH. BD. & MARINE BD. COMM'N ON ENG'G & TECHNICAL SYS., NAT'L RESEARCH COUNCIL, MANAGING COASTAL EROSION 20-21 (1990) [hereinafter NAT'L RESEARCH COUNCIL, MANAGING].

17. *See* Dolan et al., *supra* note 4, at 20.

> The common-scale data base can be used to predict future positions of the shoreline and the landward limits of surge damage zones, on the assumption that recent history is the key to the future . . . Using this approach . . . Cape May, the southernmost barrier island of the New Jersey coast, has a 1 in 2 probability level that the shoreline will be 90 m landward of its current position by the year 2010.

Id. at 20-21.

18. *See id.* at 19-21. Due to the constant movement of barrier islands, a landowner's property boundaries are ever changing. KAUFMAN & PILKEY, *supra* note 12, at 12.

damage. "Because of the storm surge, waves no longer break on the beach, they break on the inland dunes or the nearest buildings."[19] It must be understood that severe storms are reasonably commonplace, and the coastal zone is the buffer that absorbs much of the storm activity and therefore must be preserved.

C. Rising Sea Level

Another hazard that intensifies coastal erosion is rising sea levels. The recent acceleration in the rise of sea levels creates an unpredictable hazard to beachfront dwellers.[20] Sea level rising is due to what is known as "global warming."[21] Global warming has been linked to the increase in levels of greenhouse gases, mainly carbon dioxide, in the atmosphere.[22] "Scientists generally believe that the combustion of fossil fuels and other human activities are the primary reason for the increase concentration of carbon dioxide."[23] The carbon dioxide causes the Earth to retain more heat, which in turn melts the glaciers and thus, creates a rise in sea levels.[24] In the last century, temperatures have increased 0.8-1.0 degree Fahrenheit and sea levels have risen 6-8 inches worldwide.[25] "Along most of the U.S. coast, sea level has been rising 2.5 – 3.0 [millimeters per year] (10-12 inches per century)."[26] "Rising sea levels will aggravate the stresses that . . . [barrier islands] are facing. . .."[27] Therefore, the lost shoreline is one of the many unpleasant surprises that coastal landowners must confront due to rising sea levels.

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19. KAUFMAN & PILKEY, *supra* note 12, at 9.

20. *See* PEW CTR. ON GLOBAL CLIMATE CHANGE, CLIMATE CHANGE: SCIENCE, STRATEGIES, & SOLUTIONS 51-58 (Eileen Claussen et al. eds., 2001).

21. *See* S. JEFFRESS WILLIAMS ET AL., U.S. GEOLOGICAL SURVEY CIRCULAR 1075, *in* COASTS IN CRISIS 17 (1995).

22. *See* PEW CTR. ON GLOBAL CLIMATE CHANGE, *supra* note 20, at 7.

23. U.S. Envtl. Prot. Agency, *EPA Global Warming Site: Climate, at* http://www.epa.gov/globalwarming/climate/index.html (last updated Apr. 6, 2001).

24. *See* WILLIAMS, *supra* note 21, at 17.

25. *See* U.S. Envtl. Prot. Agency, *EPA Global Warming Site: Trends - Sea Level at* http://www.epa.gov/globalwarming/climate/trends/sealevel.html (last updated July 10, 2001).

26. *Id.*

27. PEW CTR. ON GLOBAL CLIMATE CHANGE, *supra* note 20, at 43.

Part Two: Structural Solutions

In order to sustain homes and structures on the barrier islands several stabilization methods have been instituted.[28] These methods fall within two general categories: structural solutions and non-structural solutions.[29] Structural solutions, which consist of groins, jetties, seawalls, bulkheads and beach nourishment, are financed and developed primarily by the United States Army Corps of Engineers (USACE).[30] Despite the USACE's extensive

28. Despite the well-established, long-term trend of barrier island migration and the effects of periodic storms, as well as repeated warnings by the NOAA [(National Oceanic Atmospheric Association)], the Department of the Interior, and the U.S. Army Corps of Engineers, coastal-zone planning and development have been largely based on the concept that beaches and barriers islands are stable or that they can be engineered to remain stable.

Dolan et al., *supra* note 4, at 19.

29. LARRY R. MCCORMICK ET AL., LIVING WITH LONG ISLAND'S SOUTH SHORE 27-40 (1984).

30. In 1930, the United States Army Corps of Engineers ("USACE") became involved in shore protection for the first time. Its involvement arose from the State of New Jersey's request for federal assistance in controlling its beach erosion problem. NATIONAL RESEARCH COUNCIL, BEACH, *supra* note 2, at 58. In response to New Jersey's request in 1930, Congress enacted Public Law 71-520. *Id.* This law authorized the USACE to undertake comprehensive shore erosion studies in cooperation with State agencies. *Id.* at 58-59. These early efforts to protect the beaches relied mostly on constructing groins, jetties, seawalls, and bulkheads. *Id.* at 59. For explanation of these techniques see *infra* Part 2A-2B. Since there was less coastal development, this approach was relatively successful. As communities began to grow along the Nation's shores however, problems began to arise resulting in an increase demand for federal erosion relief. *Id.* at 59.

In response, the USACE began to employ the use of beach nourishment techniques. *Id.* For explanation of beach nourishment techniques see *infra* Part .2C. In making this change, the USACE relied on research from the USACE's Coastal Engineering Research Board through the Coastal Engineering Research Center (CERC), along with institutional research. This research continues to refine the science and practice of coastal engineering. NATIONAL RESEARCH COUNCIL, BEACH, *supra* note 2, at 59. Today, "[t]he USACE believes that nourishment is usually the most cost-effective way to reduce the threat of coastal storm damage and avoid the high costs of severe coastal storm damage." *Id.* at 60.

A cost-sharing program is used to fund projects such as beach nourishment. The ratio of federal to non-federal (state and local government) funds is dependent upon the specific nourishment needed. *Id.* at 43-44. The following acts have established the funding program for beach nourishment:

> **River and Harbor Act of 1968** – Section 111, as amended by Section 940 of the Water Resources Development Act of 1986. Authorized the USACE to take corrective measures for erosion and attendant damage to adjacent shorelines that result from a USACE navigation project if the corrective measures are determined to be economically justified. Work conducted under this authority is rather limited because it is usually associated with older navigational work that has resulted in increased shoreline erosion.

investment in them, structural solutions have proved to be of dubious value because they alter the natural processes of the dynamic barrier islands, which through time, paradoxically, destroy the structures they were built to protect.[31] Most structural solutions fail to allow the shoreline to migrate naturally and therefore cause accelerated erosion. Most structural solutions on or near the shoreline change the natural balance and reduce the natural flexibility of the beach. The result is change that often threatens man-made structures.

Public Law 84-99 – Authorizes the USACE to investigate and repair federally authorized and constructed hurricane and shore protection projects when these projects are damaged by floods or unusual coastal storms. Work conducted under this authority is 100 percent federal.
Public Law 94-587 – The Water Resources Development Act of 1976, as amended by Section 933 of the Water Resources Development Act of 1986. Authorizes the USACE to place sand dredged form navigation inlets and channels onto adjacent beaches if the additional cost of placing it on the beach compared with other placement or disposal alternatives is shared on a 50/50 basis. It also authorizes the use of dredged material from navigation projects to serve the requirements of shore protection that are being provided by (1) a small beach erosion project that was authorized under Section 103 of the River and Harbor Act of 1962 or (2) an emergency project authorized under Section 14 of the Flood Control Act of 1946 to protect public facilities from shore erosion.
Public Law 99-662 – The Water Resources Development Act of 1986. Established a cost-sharing arrangement of 65/35 (federal/nonfederal) for projects whose purpose is hurricane and storm damage reduction and a 50/50 share for the separable cost of recreation-oriented projects.
Public Law 102-580 – The Water Resources Development Act of 1992. Authorizes the Secretary of the Army to enter into agreements with political subdivision rather than the state to make any required payments.

Id. at 44.

An issue regarding this policy is whether the ratios establish an appropriate distribution of the funding burden between the federal and nonfederal governments. When the federal government funds a large portion of the project, local governments are less likely to seek out less costly alternatives, such as nonstructural solutions. Although several proposals have been introduced to change this ratio, none have been instituted. *Id.* at 43-44. "A related issue is whether the direct beneficiaries [coastal landowners] of a project contribute a fair and appropriate share of the costs." *Id.* at 43. Many skeptics question the federal funding of projects that benefit a wealthy segment of the population while burdening a nation as a whole. With the high cost of living on the coast, the inhabitants are mainly affluent.

In sum, the federal government's delegation of power to the USACE to construct infrastructure to control beach erosion resulted in the USACE becoming a major player in coastal management. The USACE's involvement in coastal projects brings with it federal funds and a multitude of research. However, after seventy years of involvement in coastal management, the USACE has been ineffective in curtailing erosion. *See infra* Part 2A.-2C. This is due to the complicated nature of these engineering projects within the unstable environment, which results in more problems than solutions. *See* NAT'L RESEARCH COUNCIL, BEACH, *supra* note 2, at 43.

31. *Id.* at 27.

"Structural responses all involve doing something physically to the shore . . . to hold the shore in place and keep it from moving."[32] This involves the emplacement of treated wood, rocks, concrete and/or steel in the form of groins, jetties or shore-hardening structures. Also included in this category is beach nourishment.[33] There is evidence that governmental interest in structural solutions is abating. For instance, the New York Coastal Erosion Hazards Area Act has recognized the ineffectiveness of such structural solutions.[34] All structural solutions negatively affect the environment; however, the degree of effect varies by the solution. The following structural solutions are discussed in order of their potential environmental damage, beginning with the most damaging.

A. Groins and Jetties

Groins and jetties, which are shore protection structures, extend from the beach into the surf zone, perpendicular to the shoreline. "Jetties are built at inlets, frequently in pairs, and are intended to keep sand from filling in the channel."[35] A groin is intended to build up an eroded beach by trapping lateral drift. It

32. MCCORMICK ET AL., *supra* note 29, at 27.

33. It is important to note that there are two types of categorical distinctions of coastal management activities: structural versus nonstructural solutions and hard versus soft solutions. The Army Corp of Engineers utilizes the structural versus nonstructural distinction, in that, it defines beach nourishment as a structural solution. URS Corporation, *Soft Solutions for Hard Choices, Summary of Non-structural Measures* (2000) (unpublished manuscript, on file with URS Corporation, Wayne, N.J.). However, the generally accepted classification, hard versus soft solutions, groups beach nourishment with soft solutions. *Id.*

34. MCCORMICK ET AL., *supra* note 29, at 79-80. The act states, "Construction of erosion protection structures is expensive, often only partially effective over time, and may even be harmful to adjacent or nearby property. In some areas of the coastline, major erosion protection structures of great length would be required to effectively reduce future damages due to erosion." *Id.* The act goes on to say that where destruction to manmade property is likely to occur, structures may be allowed. *Id.* It then requires the structure to be effective for a period of at least 30 years, assuring that if construction occurs it will be on a massive scale. *Id.*

It is interesting to note that the Regional Marine Resources Council, a committee of the Nassau-Suffolk Regional Planning Board, recommended the prohibition of structural solutions unless it could be specifically demonstrated that there would be no adverse effects. The Regional Planning Board, seemingly bowing to local pressure, took a middle-of-the-road position, suggesting that structural solutions would be satisfactory along the urban coast structural solutions would be satisfactory along the urban coast and at Westhampton Beach. The state, by comparison, exempts no area from possible structural solutions and sets up a framework that might increase the chances of such solutions being used. *Id.* at 80.

35. *Id.* at 27.

can be built singly or in a series. However, these structures only stop the erosion on one side of the barrier. "No device . . . creates sand in the surf zone. Any accumulation of sand produced by a structure is at the expense of an adjacent section of the shore."[36] Thus, a multitude of these structures must be built running the entire length of the coastline in order to stop erosion.[37] Since groins often have been used improperly in the past, states have prohibited their construction and nonprofit groups have challenged their use.[38]

B. Seawalls and Bulkheads

Another technique in shore stabilization is shore-hardening structures like seawalls and bulkheads. "Shore hardening structures are all built parallel to the shore."[39] Seawalls are placed slightly back from the shoreline in order to provide sturdy barriers against daily wave cycles. Bulkheads are similar to seawalls, but are placed in front of the first dune. Bulkheads protect the shore only during storms. However, these structures cause disintegration of unprotected neighboring beaches, thus narrowing the beach. Furthermore, ocean waves bouncing off a seawall only accelerate the problem of erosion.[40]

C. Beach Nourishment

Beach nourishment refers to the process of placing sand artificially, usually by pumping sea bottom sediments onshore, to replace that being lost along the shore. The sand is pumped from bays and bars at inlets, and from offshore locations.[41] Sand pumping can rebuild dunes to their previous height, but these ar-

36. NATIONAL RESEARCH COUNCIL, BEACH, *supra* note 2, at 11.

37. In the aftermath of the 1962 Ash Wednesday storm, the U.S. Army Corp agreed to install twenty-one groins in order to collect sand flows and to help stabilize the beach. However, not all the groins were built and local government failed to nourish the groins with sand. A three-mile stretch of beach comprising West Hampton Dunes was thus left unprotected. Following a number of storms during the 70s and 80s, dozens of homes were destroyed. Consequently, the homeowners sued the federal, state, and county governments. In 1994, a settlement was reached that required sand to be pumped onto beach for thirty years, thus allowing the homes to be rebuilt. Thomas Maier, *It Took a Village*, NEWSDAY, Aug. 19, 1998, at A8; *see also* MCCORMICK ET AL., *supra* note 29, at 30-31.

38. *See* NATIONAL RESEARCH COUNCIL, MANAGING, *supra* note 16, at 59; *see also* Michael Short, *Sierra Club Challenges North Shores Beach Groin Repair Project*, CAPE GAZETTE, Feb. 22, 2002, at 1.

39. MCCORMICK ET AL., *supra* note 29, at 27.

40. *Id.*

41. This pumping negatively affects marine life living at the bottom of the ocean.

tificial dunes are likely to wash away in a few years or in a major storm.[42] "The erosion rate of a replenished beach is typically at least ten times that of natural beaches."[43] Therefore, beach nourishment is an eternal project. In addition, when the sand is pumped from an offshore location, it heightens the tidal waves, thus increasing wave impact and causing greater erosion.[44] Due to the ongoing nature of beach nourishment, its cost can be dramatic.[45] Sufficient money is never available to replenish the entire barrier island beach. "One must keep in mind that beach replenishment is being advocated by the same factions that gave us . . . Westhampton Beach . . . and a multitude of other unsuccessful structural solutions."[46]

Structural solutions are speeding erosion, narrowing the shoreline's width, and slowly destroying the quality of the beach. Structural solutions have been fraught with difficulties because "shoreline engineering destroys the beach it was intended to save. . .the cost of saving beach property through shoreline engineering is usually greater than the value of the property to be saved,. . .and once you begin shoreline engineering, you can't stop it."[47] By masking or briefly forestalling the erosion, structural solutions only encourage development near beaches to continue. The result is often the construction of costly real estate projects creating an increasingly large political force in the owners of these projects that favors even more stabilization measures to protect their property.

Part Three: Non-structural Solutions

In contrast to structural solutions, non-structural solutions involve remedial methods that do not interfere with the dynamic processes of the barrier islands.[48] Consequently, nonstructural solutions do not cause or exacerbate beach erosion. Among these solutions are the use of construction standards, building retrofit measures, economic incentives, land acquisition measures, and

42. MCCORMICK ET AL., *supra* note 29, at 27.
43. *Id.* at 31.
44. *See id.* at 33.
45. An approximate figure has been set at two million dollars per mile. *Id.*
46. *Id.* at 33.
47. *Id.* at 38.
48. *See, e.g.,* Thomas Maier & Don Riley, *On New Dunes, Building Boom,* NEWSDAY, Aug. 16, 1998, at A5; *see also* Thomas Maier, *Line in the Sand,* NEWSDAY, Aug. 17, 1998, at A7; Thomas Maier, *Putting Soft Solutions to the Test,* NEWSDAY, Aug. 17, 1998, at A21; LEATHERMAN, *supra* note 14.

land use and regulatory measures.[49] Other than zoning measures, nonstructural solutions are limited in their scope and effect.

A. Construction Standards

Local municipalities utilize two methods to ensure that structures built on the coast comply with necessary construction standards. These methods include outreach programs and construction codes. Outreach programs have been instituted to inform contractors and homebuyers of the risks of building on barrier islands and to encourage them to use construction techniques that minimize damage.[50]

Local construction codes regulate the building materials used by contractors. In addition, these codes require contractors to comply with certain specifications. These specifications can include roof anchoring, reinforced footings, piers, foundation, and provisions of adequate draining.[51] Local municipalities develop these codes to ensure that the materials and specifications utilized are durable and able to withstand the harsh environment of barrier islands. These codes are only applicable to new construction and substantial improvements to existing buildings.[52] They are merely a temporary measure and cannot protect the structures completely.[53] Stabilization of coastal structures may allow the structure to withstand more severe storms; however, no building measure can save a structure from the natural process of barrier island migration.[54]

B. Building Retrofit Measures

There are several types of building retrofit measures, including relocation, elevation, freestanding barriers, and dry flood proofing. Relocation reduces the vulnerability of the structure by simply removing buildings from hazardous areas.[55] This can be accomplished by either relocating to new locations or to another area within the same building lot.[56] Some challenges include scarcity of available lots, site constraints (lot width or length) and

49. URS Corporation, *supra* note 33.
50. *Id.* at Construction.
51. *See id.*
52. *Id.*
53. *Id.*
54. *Id.*
55. URS Corporation, *supra* note 33, at Relocation.
56. *Id.*

structural restraints when, for example, the structure itself will not withstand a relocation.[57] When additional lot space is unavailable, elevation of structures may be a better alternative.[58] However, when elevation occurs, structural constraints still exist, such as increased susceptibility to wind damage during storms.

Freestanding barriers[59] and dry flood proofing[60] are two additional types of building retrofit measures.[61] Not only do these measures inadequately protect structures from flooding, but they also offer little to no protection from erosion. There are many engineering difficulties with freestanding barriers in densely developed areas. In addition, freestanding barriers are vulnerable to overturning.[62] Dry flood proofing has its own inherent problems. For instance, dry flood proofing is ineffective in areas where floodwaters are three feet or less in depth and requires a substantial upgrade or replacement of existing foundation.[63]

In addition to the individual challenges discussed, retrofit measures are generally problematic. Since structures are able to remain on the barrier island, they do not allow barrier islands to continue their natural processes. They merely protect the structures from some natural disturbances.

C. Economic Solutions

Economic solutions include tax incentives[64] and insurance program modifications. Insurance program modifications involve a change to federal flood insurance practices in order to reduce development in "at risk" areas.[65] Currently, property owners can obtain flood insurance for homes on these coastlines from the Federal Emergency Management Agency (FEMA)[66] and, in some

57. *Id.*

58. *Id.* at Elevation. "Elevation is the raising of a building above flood level." *Id.*

59. Free standing barriers are "[s]caled down levees or flood walls applied to individual buildings, designed to prevent flood waters or waves from reaching the portion of the house located above grade." *Id.* at Freestanding Barriers.

60. Dry flood proofing is a building technique that uses sealants, shields, or enhanced foundations to prevent floodwaters from entering openings. URS Corporation, *supra* note 33, at Dry Flood Proofing.

61. *Id.* at Freestanding Barriers, Dry Flooding Proofing.

62. *Id.* at Freestanding Barriers.

63. *Id.* at Dry Flood Proofing.

64. *See infra* notes 89-90 and accompanying text.

65. URS Corporation, *supra* note 33, at Economic.

66. FEMA plays an important role in the response, mitigation and insurance aspects of disasters. Following a disaster, FEMA distributes funds to the appropriate groups and coordinates response to all types of disasters, including coastal storms and erosion. NAT'L RESEARCH COUNCIL, BEACH, *supra* note 2, at 62-64. This coordination

cases, from special state programs.[67] If these insurance programs were not available, however, mortgages would not be available for acquisition or construction, and thus the likelihood of development would be reduced.[68] Moreover, the current federal insurance program encourages the purchase of shorefront property because it funds the rebuilding of destroyed coastal homes. In fact, "2% of properties in the National Flood Insurance Program (NFIP) account for 40% of the damage claims."[69] "Thus the taxpayers ultimately bear most of the cost in reducing financial. . .risks of individuals who live on barrier islands."[70] Rather than enabling and encouraging coastal development, the federal government should modify the federal insurance program to limit or discourage it.[71]

D. Land Acquisition

Land acquisition options are generally a good solution if they are economically feasible. These options include purchase of prop-

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involves state and local governments and agencies. In addition, FEMA plays a proactive role in preventing coastal disasters. FEMA encourages several mitigation techniques for avoidance of large-scale damage. For instance, FEMA promotes the use of beach nourishment in coastal areas with the intent to increase protection of homes from storms and erosion. *Id.*

Another role played by FEMA is in the issuance of insurance designed to protect landowners through the National Flood Insurance Program (NFIP). The NFIP utilizes federal funds collected from the taxpayers. For structures to be eligible for the NFIP they must be constructed in a hazardous zone. *Id.* at 64. This insurance program enables private citizens to obtain the insurance necessary for living on the coast that would not otherwise be available or affordable. This alleviates a great degree of the financial risk for a property owner. *Id.* at 64-65. The program has allowed coastal landowners to rebuild, sometimes several times, after their home is destroyed by bad weather. *See* John Riley, *Flood of Claims*, NEWSDAY, Aug. 18, 1998, at A8. FEMA's proactive and reactive involvement in coastal management gives it a powerful role in the prevention of coastal disasters.

67. NAT'L RESEARCH COUNCIL, BEACH, *supra* note 2, at 62-64.

68. *See You Can't Fool Mother Nature*, NEWSDAY, Sept. 6, 1998, at B1; *see generally* Maier, *supra* note 48; *see also* Dolan et al., *supra* note 4, at 25.

69. Coast Alliance, *Environmentalists take FEMA by Storm*, COAST TO COAST: THE COAST ALLIANCE NEWSLETTER ON COASTAL CONSERVATION, July 1998, at 2, *available at* http://www.coastalliance.org/ctoc.doc (last visited Oct. 10, 2002).

70. Dolan et al., *supra* note 4, at 25.

71. Although in 1981 the National Flood Insurance Act of 1968 was amended to "prohibit the issuance of new federal flood insurance . . . 'for any new construction or for substantial improvements of structures located on undeveloped coastal barriers,'" this amendment only addresses undeveloped barrier islands. Coastal Coalition, *ACC Backgrounder: The Coastal Barrier Resources Act of 1982* (July 12, 1999), *at* http://www.coastalcoalition.org/facts/cobra1982.html (July 12, 1999) (quoting Omnibus Budget Reconciliation Act, tit. 13, Pub. L. No. 90-448 (1981)). Therefore, further amendments are needed to address developed barrier islands.

erty, exchange of property, transfer of development rights, and conservation easements. These solutions eliminate potential development in sensitive environmental areas.[72]

The purchase of property is achieved by either public acquisition or the donation of land or development rights to public agencies or non-profit organizations for long-term preservation.[73] The public or non-profit entity will hold the property title and can determine the use of the land, thus eliminating the potential development of these areas.[74] In many cases, land acquisition is used to create national, state, and local parks for the protection of coastal areas.[75] For example, on Fire Island, a twenty-six mile section was acquired by the federal government in 1964 as the Fire Island National Seashore.[76] According to the original legislation, the Fire Island National Shore was created:

> for the purpose of conserving and preserving for the use of future generations certain relatively unspoiled and undeveloped beaches, dune and other natural features within Suffolk County, New York, which posses high value to the Nation as examples of unspoiled areas of great natural beauty in close proximity to large concentrations of urban population.[77]

Fire Island National Seashore is an example of the positive effect of government land ownership. However, for land acquisition strategies to be successful either the government must have sufficient funds for the purchase of the land or landowners must be willing to donate title for preservation.[78]

Exchange of property is a viable solution if comparable valued property is available and beachfront landowners are willing to swap. It involves the "exchange of at-risk and/or environmentally sensitive undeveloped properties for comparable developable sites with reduced risk or sensitivity."[79] These properties become "publicly owned and restricted from any future development."[80] Due to the increased real estate value of coastal properties, comparable

72. URS Corporation, *supra* note 33, at Land Acquisition; JOHN R. NOLON, WELL GROUNDED: SHAPING THE DESTINY OF THE EMPIRE STATE 231 (1998).
73. URS Corporation, *supra* note 33, at Purchase of Property.
74. *Id.*
75. NAT'L RESEARCH COUNCIL, MANAGING, *supra* note 16, at 50.
76. MCCORMICK ET AL., *supra* note 29, at 60.
77. Thomas Maier, *'Toothless Tiger,'* NEWSDAY, Aug. 20, 1998, at A6.
78. URS Corporation, *supra* note 33, at Purchase of Property.
79. *Id.* at Exchange of Property.
80. *Id.*

land may be unavailable, thus making the exchange approach an impractical solution in many areas.[81]

In order to preserve a critical natural environment, such as barrier islands, the development rights of beachfront lands may be purchased by municipalities or non-profit entities, or they can be transferred to less environmentally sensitive areas.[82] Transfer and purchase of development rights restrict the landowner's ability to develop in sensitive areas. Such transfers are authorized by statute in the State of New York.[83] Purchase programs are expensive and funds for them are limited. Few transfer of development rights programs work in practice because of the difficulties of arranging the transfer of development densities to other areas.[84]

Conservation easements are another land acquisition measure that "restrict development in scenic and environmentally sensitive areas."[85] The New York Environmental Conservation Law provides for the use of conservation easements to preserve natural resources.[86] This is achieved by requiring that the use of the property be consistent with its preservation.[87]

Often a land trust is used to save the local government from the costs and burdens of enforcing a conservation easement. "A land trust is a local or regional not-for-profit organization, private in nature, organized to preserve and protect the natural and man-made environment by, among other techniques, holding conservation easements that restrict the use of real property."[88] Conservation easements can be a useful means of protecting barrier islands. They can be imposed as development restrictions, purchasing development rights, or donated by a parcel's owner. The limited potential of their use is obvious in these practicalities.

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81. *Id.*

82. *Id.*

83. N.Y. TOWN LAW § 261 (McKinney 2000).

84. URS Corporation, *supra* note 33, at Purchase of Property.

85. *Id.* at Easements and Deed Restrictions. Easements and deed restrictions "allow owners to retain full ownership of property but can either restrict certain uses or permit the use of land by the public or particular entities for specified purposes. Easements are generally established as part of the deed restrictions." *Id.*

86. N.Y. ENVTL. CONSERV. LAW § 49-301 (McKinney 2001).

87. *Id.* A conservation easement is a voluntary agreement between a private landowner and a municipal agency or qualified not-for-profit corporation to restrict the development, management, or use of the land. The owner of the real property deeds an interest in the land, called a conservation easement, to a qualified public or private agency. That agency holds the interest and enforces its restrictions against the transferring owner and all subsequent owners of the land. NOLON, *supra* note 72, at 273.

88. NOLON, *supra* note 72, at 273.

For instance, insufficient funds make purchasing development rights impossible, while donation by a parcel's owner is unlikely without a benefit to the landowner. One way to encourage the donation of conservation easements is by offering local tax abatements.[89]

Local tax incentives that accompany most land acquisition projects add to their appeal for landowners. Tax incentives include "[p]rovisions of tax benefits to property owners who establish conservation easements, land donation arrangements, or other development restrictions on undeveloped lands susceptible to wave impacts, flooding or erosion."[90] The most attractive tax benefit is one that allows tax reduction or abatement to the coastal property itself. These tax incentives are only beneficial if the property owner takes advantage of them. The property owner will only take advantage of the incentives when the tax benefit outweighs the financial benefit of development. Thus, if deemed not in the property owner's best interest, they will not be willing to participate in the land acquisition project.[91] Due to the increasing values of shorefront properties, getting the tax benefit to outweigh the benefits of the development of the property is a difficult, if not impossible goal.

1. Regulatory Measures

Regulatory measures are key solutions to the barrier island development dilemma. These include landform and habitat regulations[92] and new infrastructure controls.[93] Successful landform and habitat regulations include the Shoreowner's Protection Act[94]

89. *Id.* at 274-76.

90. URS Corporation, *supra* note 33, at Tax Incentives.

91. *See id.*

92. *Id.* at Land Use. Landform and Habitat Regulations are "[r]egulations to limit construction in environmentally sensitive areas, such as dunes and wetlands, with known exposure to flooding, erosion, and wave impacts." *Id.* at Landform and Habitat Regulations.

93. Although, infrastructure controls are not specifically land use regulations, they are related means of limiting development. New Infrastructure Controls are "[r]estrictions on the installation of infrastructure or new connections to existing infrastructures as means of controlling development." *Id.* at New Infrastructure Controls. New infrastructure controls would attempt to limit "the number of water and/or sanitary hookups in a district." *Id.* Infrastructure controls are useful when the municipality is interested in limiting growth in a particular district. Such measures would limit the size and number of structures built in a particular district. URS Corporation, *supra* note 33, at New Infrastructure Controls.

94. *See* N.Y. ENVTL. CONSERV. LAW § 34-0101; *see also infra* Part Four C.

and the Coastal Barrier Resources Act.[95] These types of regulations involve much governmental involvement and many procedures.[96]

2. Land Use

Land use restrictions offer the ultimate solution to sustaining the barrier islands. These include zoning and land use controls. Local zoning and land use controls can "restrict development of structures in at-risk areas includ[ing] controls on permitted uses, size, density, setbacks, and structural siting."[97] A zoning ordinance can limit the uses in a district to those that are most compatible with the barrier island coastline[98] and require "increased set-backs from dune, beach, and other at-risk areas."[99] A well-drafted zoning ordinance, as proposed in part four of this paper, effectively addresses the inherent dangers of developing the barrier island shoreline. Unlike those previously discussed, a zoning ordinance is a sustainable solution because it works in conjunction with the barrier islands natural process, rather than against it.

Part Four: The Beach Zone

Fire Island is a barrier island located off the south shore of Long Island, New York. It encompasses all the relevant characteristics to be an appropriate case study for a zoning solution to the barrier island development dilemma.

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95. *See* 16 U.S.C. 3501 (1994); *see also infra* Part Four C.

96. URS Corporation, *supra* note 33, at Landform and Habitat Regulations.

97. *Id.* at Zoning/Land Use Controls.

98. *See* Dur-Bar Reality Co. v. City of Utica, 394 N.Y.S.2d 913 (App. Div. 1977). In *Dur-Bar Realty Co.*, the court upheld a planned unit development law that created a land conservation district for land lying in a floodplain that did not allow any as-of-right uses, only certain special uses by permit. The court sustained the law because of the "unique use control problems" presented by the environmentally constrained land in the new district. The court distinguished the [Marshall v. Wappinger Falls, 279 N.Y.S.2d 654 (N.Y. App. Div. 1967)] decision by stating "[i]n Wappinger Falls . . . it does not appear that the land in the challenged district was in any way unusual in topography or location so as to justify the subjection of all use proposals to case by case decision." However, the creation of the Land Conservation District in Dur-Bar was "a product of assessment of the character of the land in light of the public health and safety interests in being protected against flooding and other hazards that would result from building in an area unsuitable for intensive development."
NOLON, *supra* note 72, at 22.

99. URS Corporation, *supra* note 33, at Zoning/Land Use Controls.

> Long Island presents two distinct faces to the never-ending energy of the Atlantic Ocean. From Montauk Point to Southampton, the south shore of the island is directly exposed along a stretch of coast called *headland*. . .From Southampton west, however, there is a series of narrow barrier islands paralleling and protecting the south shore. . .The beaches that occur on these two settings are among the most dynamic strips of land anywhere.
>
> They are also among the most valued. Every year thousands of us make use of them as visitors or residents. If we are not careful, however, we can do serious damage to the south shore. If we are not careful, we can put ourselves and our possessions in serious danger.[100]

A. Proposed Zoning Ordinance[101]

The towns that contain segments of Fire Island within their jurisdiction can adopt a zoning ordinance that effectively addresses the shortcomings of structural and nonstructural solutions.[102] The proposed zoning ordinance would prohibit all land uses in the fragile environmental areas of Fire Island, except for those that are environmentally compatible with the natural processes of the barrier island. These fragile environmental areas will make up the Barrier Island Critical Zone (BICZ) designated by the municipality.

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100. MCCORMICK ET AL, *supra* note 29, at 16. "Fire Island supports twenty small communities that with a few exceptions are likely to suffer severe damage in time of a major storm." *Id.* at 69-70. The barrier island, itself, is extensively developed with many homes, restaurants, and beach facilities. Due to the increased likelihood of severe overwash during storms, there is a need for adequate evacuation measures. *Id.* at 70. During the summer months, Fire Island's population soars to twenty thousand people as vacationers flock to the beaches, thus making a complete evacuation unlikely. *Id.* Those that either remain willingly or are unable to evacuate these communities are stuck in potential "death traps." *Id.* Fire Island consists of a single dune ridge, which has experienced recent erosion, leaving most oceanfront homes in peril on a daily basis. In addition, Fire Island is home to many endangered species and sensitive habitats. In sum, Fire Island is desperately in need of a solution to protect its landform, the inhabitants and their property, and its natural habitat and native species.

101. The proposed ordinance was designed by the authors of this article. It is not a documented ordinance; any references to the substance of the proposed ordinance is the authors' own creations.

102. *See, e.g.,* the Southampton proposed new zoning district, which will limit the size of new houses on the barrier island. Bill Sutton, *Builders Balk at Proposed Barrier Island Restrictions*, SOUTHAMPTON PRESS, Feb. 21, 2002, *at* http://www.southamptonpress.com.

Compatible uses are those that do not adversely affect the island's natural processes and habitats. As-of-right compatible uses are permitted by the ordinance.[103] Such uses include: public beaches; catwalks; campsites; non-motorized boating; picnic areas; outdoor recreational uses operated by a governmental division or agency; conservation uses; wildlife sanctuaries and facilities; hunting and fishing preserves; hiking trails and bridle paths; and preservation of scenic and scientific areas. In addition, uses that are compatible, but require more extensive construction, such as bait and tackle shops, lockers, docks, piers, boat houses, parking lots, and public restrooms will be allowed as special uses subject to the issuance of a special permit.[104] The ordinance, in effect, will prohibit uses that upset the natural environment. All proposed uses must conform to the general purposes for which the ordinance is established.

The zoning ordinance will contain a provision for a special permit to develop on land, which was purchased under the pretense that structural solutions would be employed indefinitely. Under the discretion of the Planning Board, this special permit will be issued upon a showing of a legitimate hardship because of a reasonable investment-backed expectation to build a permanent structure. The landowner has also been paying taxes on property zoned for permanent development. The permit will allow the owner to build a residential cottage on the parcel, as defined by the zoning ordinance, at a density of one acre per cottage. This permit is time limited and expires fifty years from the date of the zoning adoption. The landowner bears the burden of proving to the planning board that their investment-backed expectations in

103. "An as-of-right use is a land use that is permitted as a principle use in a zoning district. In a single-family district, the construction of a single-family home is an as-of-right use of the lot." NOLON, *supra* note 72, at 431.

104. Special use permits are defined by section 274(b) of the New York Town Law as:

> an authorization of a particular land use which is permitted in a zoning ordinance or local law, subject to requirements imposed by such zoning ordinance or local law to assure that the proposed use is in harmony with such zoning ordinance or local law and will not adversely affect the neighborhood if such requirements are met.

N.Y. TOWN LAW § 274(b) (McKinney 2001). If the local legislative body delegates the authority to approve special permits to another board, than it must also develop standards for that board to apply in issuing permits. Otherwise, the board's power to review will be invalidated. Little v. Young, 85 N.Y.S.2d 41 (App. Div. 1948), *aff'd*, 87 N.E.2d 74 (1949).

developing some permanent structure are legitimate and that a hardship would be affected if that expectation were denied.

Current permanent structures located on fragile barrier island environments that are not compatible uses under the legislation will be deemed nonconforming uses. A nonconforming use is created when "existing land uses, valid when established, are prohibited by a new or amended zoning law."[105] Existing structures that will be considered nonconforming include all homes, restaurants, and shops. The proposed zoning ordinance will contain a nonconforming use provision providing a variety of methods to terminate such uses.[106] The ordinance will disallow the reestablishment of nonconforming uses after they have been discontinued for a period of time, require the termination of the nonconforming use after a stipulated amount of time (amortization period), place limitations on the expansion or enlargement of nonconforming uses, and prohibit or limit reconstruction of damaged nonconforming structures.[107]

An amortization period allows nonconforming uses to continue for a time and then to terminate.[108] "[W]here the benefit to the public has been deemed of greater moment than the detriment to the property owner [the court] has sustained the prohibition of continuation of prior nonconforming uses."[109] In establishing an amortization period, the time period must be of a length appropri-

105. NOLON, *supra* note 72, at 134.

> The allowance of nonconforming uses has been characterized by the courts as a "grudging tolerance" of them. The right of municipalities to adopt reasonable measures to eliminate them has been recognized. The ultimate goal of the zoning law is to achieve uniformity of uses within each zoning district which can only be accomplished by the elimination of uses that do not conform to the specifications of district regulations.

Id. at 134-35.

106. *Id.* at 134. "When property owners purpose the improvement, expansion, rebuilding or other change in their nonconforming property use, they must be certain to comply with local regulations governing those matters. Normally, these regulations are found in a discrete articles of the local zoning law, entitled Nonconforming Uses." *Id.*

107. If a structure on the coastline is unoccupied for a specified period of time, regardless of the intent of the landowner, it will be deemed abandoned. Darcy v. Zoning Bd. of Appeals, 586 N.Y.S.2d 44 (App. Div. 1992). In addition, if the structure is unoccupied as the result of a natural disaster, it will still be deemed abandoned. *Id.* Once a home is abandoned the right to continue the nonconforming use will no longer be authorized, therefore, the structures will be destroyed. *Id.*

108. NOLON, *supra* note 72, at 134.

109. Harbison v. City of Buffalo, 152 N.E.2d 42, 44 (N.Y. 1958).

ate to allow landowners to recoup their investment.[110] The beach zone's ordinance will allow a fifty-year amortization period, giving landowners sufficient time to settle any outstanding mortgages and recoup their initial capital investments through occupancy or rental-income. Following the fifty-year amortization period,[111] only compatible uses will be permitted.[112] Therefore, any existing structures, not deemed compatible, must be destroyed at the end of the amortization period.

During this fifty-year period, nonconforming uses cannot be expanded or enlarged.[113] If twenty-five percent or more of a structure is destroyed, that existing structure will not be allowed to be rebuilt.[114] "In such a case, the property rights were destroyed by the disaster, rather than by the law."[115] During the amortization period, if natural processes destroy the nonconforming use, the landowner will be permitted to construct a cottage, limited in size and scope, which can be occupied or rented. Following the fifty-year amortization period, the right to build a cottage is no longer available, and the cottage itself must be removed, leaving only compatible uses in the designated fragile environmental area.

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110. The state's enabling statutes that delegate to local governments the authority to adopt zoning regulations implicitly authorizes local legislatures to adopt reasonable measures to protect the legitimate investment expectations of owners of developed land. N.Y. TOWN LAW §§ 261-263 (McKinney 2001); *see* NOLON, *supra* note 72, at 135.

111. Nonconforming uses that are particularly inconsistent with zoning districts within which they exist and not immediately dangerous to public health or safety may be terminated or amortized within a prescribed number of years. This amortization period allows the landowner to recoup some or all of his investment in the offensive nonconforming use. NOLON, *supra* note 72, at 430.

112. *See Harbison*, 152 N.E.2d 42 (court sustained an amortization period which required the termination of nonconforming uses within three years); *see also* Stringfellow's v. City of New York, 694 N.E.2d 407 (N.Y. 1998) (court allowed ordinance which contained a one year amortization period).

113. Normally the law allows the owner of nonconforming land uses to perform property repairs, conduct normal maintenance, and complete internal alterations that do not increase the degree of, or create any new, noncompliance with the locality's zoning regulations. NOLON, *supra* note 72, at 136.

One of the prime purposes of restrictive zoning is the phasing out of nonconforming uses by prohibiting any extension thereof. While the benefit to the public of restrictive zoning does not justify immediate destruction of nonconforming uses, the basic principle of zoning embraces the concept of ultimate elimination of nonconforming uses. Cave v. Zoning Bd. of Appeals, 373 N.Y.S.2d 932, 937 (App. Div. 1975) (citation omitted).

114. These provisions are premised on the theory that owners do not have a right to reconstruct a nonconforming building after damage by fire, weather, natural disaster, or otherwise. Bobandal Realties, Inc. v. Worthington, 250 N.Y.S.2d 575 (App. Div. 1964), *aff'd*, 205 N.E.2d 685 (1965).

115. NOLON, *supra* note 72, at 136.

The proposed zoning ordinance will contain a findings section that provides its legal significance. The findings will outline the information regarding the transitional environment of Fire Island, and how natural processes create an unsuitable environment for permanent development. The findings will document the shortcomings of structural and nonstructural solutions. In addition, the findings will contain a list of the critical natural functions served by the barrier island. Barrier island systems protect life and property, support tourism, and provide habitats for numerous species, several of which are threatened or endangered. The ordinance will identify on the municipal zoning map the precise location of the Barrier Island Critical Zone on the municipality's portion of Fire Island.

B. Local Authority to Zone to Protect Natural Resources

Before the viability of the proposed zoning law can be addressed, the authority to enact the law must be found within the local government's realm of power. Municipalities get the power to protect natural resources from enabling statutes adopted by the state legislature.[116]

Although the New York State Constitution does not actually delegate authority to the municipalities, it establishes natural resource conservation as a goal.[117] The Constitution of the State of New York states that

> [t]he policy of the state shall be to conserve and protect its natural resources and scenic beauty and encourage the development and improvement of its agricultural lands for the production of food and other agricultural products. The legislature, in implementing this policy, shall include adequate provision for the protection of agricultural lands, wetlands and shorelines, and the development and regulation of water resources.[118]

Inherently, municipalities lack any power to create local zoning laws or regulate the use of land.[119] This authority is vested in the Legislature of the State of New York from the police powers in the State Constitution.[120] The specific authority to plan and zone is

116. *See, e.g.*, N.Y. MUN. HOME RULE LAW § 10 (McKinney 2000).
117. *See, e.g.*, N.Y. CONST. art. XIV, § 4.
118. *Id.*
119. *Id.*
120. New York State Constitution police powers are for the health, safety, morals or the general welfare of the community.

granted by the Legislature to the municipalities through enabling statutes.[121] These enabling statutes can be found in the General City, Town and Village Laws.[122]

The zoning enabling statutes grant authority to Towns to

> regulate and restrict the height, number of stories, and size of buildings and other structures, the percentage of lot that may be occupied, the size of yards, courts and other open spaces, the density of population, and the location and use of buildings, structures, and land for trade, industry, residence or other purposes.[123]

Moreover, zoning regulations:

> [S]hall be made in accordance with a comprehensive plan and designed to lessen congestion in the streets, to secure safety from fire, flood, panic and other dangers; to promote health and general welfare; to provide adequate light and air; to prevent the over crowding of land; to avoid undue concentration of population; to make provision for, so far as conditions may permit, the accommodation of solar energy systems and equipment and access to sunlight necessary therefore; to facilitate the adequate provision of transportation, water, sewage, schools, parks, and other public requirements. . .with a view to conserve the value of buildings and encouraging the most appropriate use of land throughout such municipalities.[124]

The specific use of language such as "open spaces" and the "most appropriate use of land" connotes a sense of preservation and conservation of environmental habitats. This gives authority to municipalities to adopt zoning laws aimed at protecting the shoreline environment.[125]

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121. N.Y. TOWN LAW § 261.

122. Each of these laws grants this power to cities, towns and villages separately, but contains in essence the same language.

123. N.Y. TOWN LAW § 261 (McKinney 2001). Towns are delegated authority to create districts "as may be deemed best suited to carry out the purposes of this act." *Id.* § 262.

124. N.Y. TOWN LAW § 262.

125. In addition, zoning regulations must be consonant with a total planning strategy and courts will determine this strategy absent a comprehensive plan. When a local government exceeds its delegated or implied authority such action will be considered ultra vires. Ultra vires claims allege that the municipality did not have the legal authority to take the challenged action. They assert that the regulatory body acted beyond the scope of its delegated or implied authority; therefore the action is invalid. *See id.*

The second grant of authority to municipalities to create local environmental laws is found in the Municipal Home Rule Law,[126] which gives local governments broad authority "to act in relation to the property, affairs or government. . .."[127] Saliently seen, section 10(1)(ii)(a)(11) of the Municipal Home Rule Law states that a municipality may adopt local laws for the "protection and enhancement of its physical and visual environment," which clearly includes the beachfront environment of beach zones.[128]

C. Compatibility with Federal and State Law

The municipality not only has the legal authority to adopt the proposed zoning, it also has the support of the federal and state governments in doing so. Federal and state initiatives to date have been compatible and consistent with the proposed zoning solution.[129] In 1972, the federal government created the Coastal Zone Management Act (CZMA)[130] to protect the coast from the environmentally damaging effects of development.[131] "It established a national program to assist the states in comprehensively managing the nation's precious coastal resources through wise management practices."[132] National Oceanic and Atmospheric Administration (NOAA), in conjunction with coastal states, administers the CZMA.[133] The coastal state's involvement in administering the CZMA is discretionary.[134] Those that choose to participate develop coastal zone management programs, which must be federally approved.[135] Ninety-four percent of the Nation's coastlines have such programs.[136]

In 1982, the state of New York received federal approval of its program.

> The purpose of the New York State program is to provide for better utilization of the coast by balancing the need to conserve

126. N.Y. CONST. art. IX, § 2; N.Y. MUN. HOME RULE LAW § 10 (McKinney 2000).
127. N.Y. CONST. art. IX, § 2(b)(2).
128. N.Y. MUN. HOME RULE LAW § 10.
129. *See, e.g.,* Coastal Zone Management Act, 16 U.S.C. §§ 1451-1465 (1994); Shoreowners Protection Act, N.Y. ENVTL. CONSERV. LAW § 34-0101.
130. 16 U.S.C. §§ 1451-1465 (1994).
131. NAT'L RESEARCH COUNCIL, BEACH, *supra* note 2, at 61.
132. *Id.*
133. 16 U.S.C. § 1452; *see also* NAT'L. RESEARCH COUNCIL, BEACH *supra* note 2, at 62.
134. 16 U.S.C. § 1452.
135. *Id.* § 1454.
136. NAT'L. RESEARCH COUNCIL, BEACH, *supra* note 2, at 62.

> the state's coastal resources with the continued pressure for coastal development. It is hoped that these ends will be served by addressing eleven areas: (1) aesthetics; (2) agriculture; (3) air quality; (4) economic activity; (5) energy; (6) fish and wildlife; (7) flooding and erosion; (8) offshore oil development; (9) coastal access by the public; (10) recreation; and (11) water quality.[137]

To address these concerns, New York has developed forty-four specific laws, including the state's 1981 Shoreowner's Protection Act.[138] The Act was created to ensure that beaches and coastal areas are protected from erosion.[139] "The Legislature explicitly so found in this section, and set the State's helm for limiting coastal development so as to minimize erosion and consequent loss of property."[140]

Anyone planning to build (including structural solutions) in the critical erosion areas delineated in the maps of the Department of Environmental Conservation (DEC), is required to obtain from the DEC an erosion area permit and must conform to setback requirements. Local municipalities may create their own programs to issue permits upon the DEC's approval of the local regulations.[141] Therefore, the important role of the CZMA in coastal management is really carried out by the state and local governments.

With the DEC's approval, municipalities can regulate coastal erosion hazard areas.[142] The municipality can adopt a local program that has been certified by the Commissioner.[143] The Shoreowner's Protection Act requires that submission of a local program be accompanied by "a certified copy of the erosion management local law or ordinance and all other local laws, ordinances, zoning regulations, subdivision and site plan approval regulations, or any other applications of police power that are elements of the local program."[144] "Where they fail to do so (establish a local program), the Department is to regulate these areas, but local laws are not

137. MCCORMICK ET AL., *supra* note 29, at 79.

138. *Id.*

139. N.Y. ENVTL. CONSERV. LAW § 34-0101 (McKinney 2001).

140. *Id.*, *reviewed by* Philip Weinberg. "DEC [(Department of Environmental Conservation)] is charged with mapping critical erosion areas, notifying property owners, furnishing them opportunity to be heard, and issuing a final map (§ 34-0104) . . . DEC's regulations are found in [N.Y. COMP. CODES R. & REGS. pt. 505]." *Id.*

141. *Id.*

142. N.Y. ENVTL. CONSERV. LAW § 34-0105 (McKinney 2001).

143. *Id.*

144. N.Y. COMP. CODES R. & REGS. tit. 6, § 505.16 (2001).

preempted unless inconsistent with State controls."[145] Not only is the proposed zoning compatible with the Act, it is encouraged by it. "[T]he state coastal management program attempts to move local government toward assuming a major role in developing a management program that will conform to the generally laudable goals set up by the state."[146] In essence, the Act is requiring that municipalities take initiatives such as the proposed zoning. If not addressed, the state will take action. Since the portion of Fire Island encompassed by the proposed zoning is in a coastal erosion hazard area established by the State, the Act is applicable. While the Act limits new development, it does not address existing structures.

To ensure consistency with the proposed ordinance it is vital that the municipality take over this permitting process. When the municipality considers granting or denying a special permit under the proposed ordinance, this should be congruent with the consideration of an erosion area permit under the Act. This would avoid a situation where an erosion area permit to a landowner is granted by the DEC, but a special permit to build a cottage, due to a hardship, is denied by the municipality. Therefore, if the municipality was in charge of both permitting processes, it would have the power to ensure that there are no discrepancies.

Another federal initiative consistent with the intent of the proposed zoning ordinance is the Coastal Barrier Resources Act (CBRA).[147] In enacting the 1982 CBRA, Congress explicitly recognized the vulnerability of barrier islands. The CBRA restricts federal financial assistance, including flood insurance, within the Coastal Barrier Resource System (CBRS).[148] The CBRS protects undeveloped coastal barriers and has "three goals: reduc[ing] wasteful federal expenditures; reduc[ing] loss of human life; and reduc[ing] damage to natural resources."[149] In 1990, Congress expanded the CBRS by passing the Coastal Barrier Improvement Act (CBIA), which limits construction within the CBRS to those structures consistent with the protection of these vulnerable areas.[150] This specifically denies federal flood insurance to any new

145. N.Y. ENVTL. CONSERV. LAW § 34-0106.

146. MCCORMICK ET AL., *supra* note 29, at 80.

147. 16 U.S.C. § 3501 (2000).

148. *Id.*

149. Coast Alliance, *The Coastal Barrier Resources System: Discouraging Coastal Development*, *at* http://www.coastalliance.org/cbrsfact.htm (last visited Nov. 15, 2002).

150. Coastal Barrier Improvement Act, Pub. L. No. 101-591, 104 Stat. 2931 (1990).

construction inconsistent with the intent of the CBIA. The framework of the CBIA is congruent with the proposed zoning ordinance in that it limits development to compatible uses, however it is not as far reaching.[151] It does not limit privately financed construction, nor does it address existing structures. In addition, for barrier islands that are developed, such as Fire Island, it is inapplicable.[152]

In order for the goals of these federal and state statutes to be realized, a local counterpart is necessary. Such a local solution is the proposed beach zone ordinance. The federal and state statutes are limited in several respects. The most significant limitation is that these statutes only address undeveloped parcels of land, which does not take into account the vast majority of the barrier islands.[153] The proposed zoning ordinance, through its amortization period and compatible use restriction, addresses these developed parcels.[154] Therefore, the proposed zoning fills the gaps of the federal and state initiatives, resulting in a comprehensive approach.

D. Public Opposition to Proposed Ordinance

In order to amend a local zoning regulation, the local legislature must give public notice and hold a hearing.[155] This will allow the public to voice its support or opposition regarding the proposed zoning ordinance.[156] Although there will be opposition, some environmental, taxpayer and good-government groups can

151. *Id.*; *see also* Coast Alliance, *supra* note 149.

152. Coast Alliance, *supra* note 149.

153. *See id.*

154. *See id.*

155. N.Y. TOWN LAW §§ 265 (McKinney 2000).

156. Given the personal stake in the outcome of coastal management decisions, the private sector has played a dominant role in coastal management. The private sector participants consist primarily of coastal property owners; homeowner associations; neighbors or other residents affected by the use of a particular site; developers and builders; lenders; and realtors. NAT'L RESEARCH COUNCIL, MANAGING, *supra* note 16, at 48. Each of these private parties has its own unique role in the management of the coast.

Private property owners have substantial authority to determine the use of their land, however this authority is not unchecked. Some constraints on the exercise of property rights include nuisance laws; covenants and deed restrictions; municipal/county zoning; subdivision regulations; state building codes; wetland and floodplain regulations; coastal zone management regulations; and federal environmental regulations. *Id.* Often times property owners ban together by forming homeowner associations in order to protect their mutual interests. *Id.* at 49. In addition, neighbors and other residents may participate in decision-making, when it affects their property or the community in general. *Id.* at 48.

Developers and builders are responsible for development on the coast. "Developers/builders may or may not hold an ownership interest in the site in question." *Id.* at 49. Nevertheless, professional developers and builders face a higher risk of liability than nonprofessionals, when they participate in unwise construction in erosion prone locations. *Id.* Thus, they bear the burden of taking into account the risk of living and building on the coastline. This increased liability can act as a constraint on coastal development. NAT'L RESEARCH COUNCIL, MANAGING, *supra* note 16, at 49. Therefore, developers/builder's projects greatly influence the landscape of the coast making them an essential player in coastal management.

Lenders play a significant part in coastal management. "Lenders include banks, savings and loans associations, pension funds, insurance companies, and other institutions that finance land development." *Id.* Financing is an essential element to a property owner or developer's ability to live or build on the coast. When lenders are considering applicants, they take into account the added risks of lending money for coastal projects. Thus, they may require borrowers to have a greater amount of insurance. However, traditional insurance programs and companies are unable to take on the risks of coastal development. "The reason it's hard to get private flood insurance is that it's just an uninsurable risk. Private insurance can't afford it because it is a stupid thing to do — to ensure someone's house when it's a sure thing it's going to fall into the water. The federal government is the one dope left on the block." Riley, *supra* note 66, at A8.

To cope with these issues the federal government instituted the National Flood Insurance Program, which requires federally related lenders to require the purchase of flood insurance on sites located within a "special flood hazard area." NAT'L RESEARCH COUNCIL, MANAGING, *supra* note 16, at 49. This federal program enables coastal development because it provides the insurance needed to get the proper financing for barrier island development. *See supra* notes 65-67 and accompanying text. The lender, thus, plays a key role in coastal management by being a gatekeeper to development in these areas.

Lastly, realtors have a professional duty to disclose information of erosion hazards. Like developers, realtors can be held liable to a buyer for concealing or failing to ascertain the existence of such hazards. *See supra* notes 65-67. The following is a checklist of questions one should ask before buying on the barrier islands:

1. How wide is the island? A wide island is not as easily breached by inlets of flooded by storm surge.
2. What is the island's elevation? The higher the island; the greater the storm necessary to flood it, and the more secure it will be against rising sea level.
3. Is there natural shelter from high winds on the island? A forest canopy sheds some wind and blunts its force.
4. Does the island have a fixed bridge or a drawbridge for access to the mainland? A fixed bridge cannot jam open.
5. How many bridges provide island access? More bridges mean more escape routes. Bridge approaches should be high enough to stay above flood waters. . .
6. What has been the storm history of the island? How have houses fared in past storms? Remember, local residents, especially real estate agents, tend to have short memories.
7. Does the island have a history of inlet formation during storms? Will inlets block roads and cut off services?
8. Is the fresh-water supply likely to be cut off during a storm? On some islands, water pipes cross bridges or the sites of possible inlets and could be ruptured in a storm. Loss of water supply can be long-term or even permanent.

be rallied in support.[157] The proposed zoning ordinance however will face serious opposition from the current landowners. There will be significant political difficulties in overcoming these affluent landowner's resistance to such a zoning change.[158] The key to attracting public support and overcoming certain opposition is fostering understanding of how barrier islands work and behave. "To avoid [putting ourselves and our possessions in serious danger the public] must realize that the ocean, headland, barrier islands, and beaches are major elements in a natural system. It is important that [the public] know and understand all the basic elements of this system and how they interrelate."[159] To better inform the public, the municipality should institute programs promoting active public participation and take steps to ensure that those using the beaches, suffering the ill effects of erosion, and paying the costs of rebuilding understand the goal of the ordinance and seek their involvement and support.

E. State Environmental Quality Review Act

Towns must conduct an environmental review of the impact of the adoption of the zoning ordinance under the State Environmental Quality Review Act (SEQRA).[160] Upon successful completion

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9. Where does the sand for the beach come from? If the beach is artificially nourished, chances are the sand will wash away and future nourishment costs are likely to fall heavily on local taxpayers. If beach material is derived from nearby bluffs or cliffs, attempts by cliff-dwellers to protect themselves might starve the beaches.

KAUFMAN & PILKEY, *supra* note 12, at 296. In most cases, landowners do not ask themselves these questions, and therefore development is occurring in unstable areas. Realtor's disclosures or failure to disclose greatly affects the purchase of coastal property.

157. Public support has materialized to oppose the use of structural solutions in areas along New York's coastline. For example, agencies and their advocates have forestalled beach nourishment plans for Shinnecock Inlet. Aram v. Terchunian, *Shinnecock Inlet on the Brink: Coastal Politics and Erosion Disasters in New York, at* http://www.saveourseashore.org/fall_2001.shtml (2001).

158. During the public hearing regarding the Fire Island Interim Project, which proposes the utilization of structural solutions, the vast majority of speakers were in support of the project. Fire Island Association, Inc., *Fire Island Interim Project Public Hearing, at* http://www.fireislandassn.org/fiip_1_12_2000.htm (Jan. 12, 2000).

159. MCCORMICK ET AL, *supra* note 29, at 16.

160. N.Y. ENVTL. CONSERV. LAW art. 8 (McKinney 2000). SEQRA states "[n]o agency involved in an action may undertake fund or approve the action until it has complied with the provisions of SEQRA." N.Y. COMP. CODES R. & REGS. tit. 6, § 617.3(a) (2000). "Action" is defined to include, "adoption of agency rules, regulations, and procedure, including local laws, codes, ordinances, executive orders and resolutions that may affect the environment." N.Y. COMP. R. & REGS. tit. 6, § 617.2(b)(3) (2000). "Agency" is defined as "a state or local agency." N.Y. COMP. R. &

of the review, the proposed ordinance can be adopted by a majority vote of the local legislature. "[SEQRA] requires local legislatures and land use agencies to consider, avoid, and mitigate significant environmental impacts of the projects that they approve, plans or regulations they adopt, and the projects they undertake directly."[161]

> In adopting SEQRA, it was the Legislature's intention that all agencies conduct their affairs with an awareness that they are stewards of the air, water, land and living resources, and that they have an obligation to protect the environment for the use and enjoyment of this and all future generations."[162]

Furthermore, "[i]t was the intention of the Legislature that the protection and enhancement of the environment, human and community resources should be given appropriate weight with social and economic considerations in determining public policies. . .."[163] By conducting an extensive environmental review and noting all the environmental findings and conditions that have led to the adoption of the zoning ordinance, the local legislature will greatly strengthen its hand if the ordinance is challenged legally. SEQRA requires a local legislature to prepare an Environmental Assessment Form before adopting a zoning ordinance.[164]

The requirements of SEQRA provide an opportunity for the local legislature, before adopting the beach zone amendments, to fully involve and educate the public. The legislature may decide that it should prepare a full Environmental Impact Statement (EIS)[165] or a General Environmental Impact Statement (GEIS),[166]

REGS. tit. 6, § 617.2(b)(4)(c) (2000). "Local agency" is defined as "any local agency, board, authority, district, commission or governing body, including any city, county and other political subdivision of the state." N.Y. COMP. R. & REGS. tit. 6, § 617.2(b)(4)(v) (2000).

161. NOLON, *supra* note 72, at 446.

162. N.Y. COMP. R. & REGS. tit. 6, § 617.1(b) (2000).

163. *Id.* § 617.1(d).

164. *Id.* § 617.2(m). SEQRA states that "the fact that an action or project has been listed as a Type I action carries with it the presumption that is likely to have a significant adverse impact and may require an EIS." *Id.* § 617.4(a)(1).

165. *Id.* § 617.2(n).

> Environmental Impact Statement (EIS) means a written "draft" or "final" document . . . [and] provides a means for agencies, project sponsors and the public to systematically consider significant adverse environmental impacts, alternatives and mitigation. An EIS facilitates the weighing of social, economic and environmental factors early in the planning and decision-making process.

Id.

before adopting the amendments. This allows it to prepare a full study of the environmental benefits and economic costs and benefits of the action. Further, SEQRA provides the community with a built-in mechanism for public participation in developing the scope of the EIS or GEIS,[167] attending public hearings for the draft environmental impact statement,[168] and providing comments before the final environmental impact statement is accepted.[169]

Part Five: Constitutional Challenges

Once the municipality has adopted the proposed zoning ordinance, it may be attacked by landowners within the designated zoning district. The most significant constitutional challenges a landowner may raise against the proposed zoning ordinance are due process and "takings" claims. The Fifth Amendment of the United States Constitution prescribes that "[n]o person shall be . . . deprived of life, liberty, or property without due process of law; nor shall private property be taken for public use without just compensation."[170] The Fourteenth Amendment protects property owners from the actions of state governments and their local governments.[171] In addition, the New York State Constitution, Article I, § 7, states that "private property shall not be taken for public use without just compensation."[172]

The taking of private property usually occurs when the government acts to condemn property through the exercise of its

166. (a) Generic EISs may be broader, and more general than site or project specific EISs and should discuss the logic and rationale for the choices advanced. They may also include an assessment of specific impacts if such details are available. They may be based on conceptual information in some cases. They may identify the important elements of the natural resource base as well as the exiting and projected cultural features, patterns and character. They may discuss in general terms and constraints and consequence of any narrowing of future options. They may present and analyze in general terms a few hypothetical scenarios that could and are likely to occur. A generic EIS may be used to assess the environmental impacts of: (4) an entire program or plan having wide application or restricting the range of future alternative policies or projects, including new or significant changes to existing land use plans, development plans, zoning regulations or agency comprehensive resource management plans. N.Y. COMP. R. & REGS. tit. 6, § 617.10(a)(4) (2000).

167. *See id.* § 617.8(e).

168. *See id.* § 617.9(a)(4).

169. *See id.* § 617.9(a)(3).

170. U.S. CONST. amend. V.

171. *See* U.S. CONST. amend. XIV, § 1.

172. N.Y. CONST. art. I, § 7.

power of eminent domain.[173] A regulatory taking occurs when a governmental action goes "too far", preventing the property owner from using his/her land for any economically viable purpose.[174] A principal purpose of the Takings Clause is ensuring that the government does not burden an individual, when in the interest of fairness and justice the general public should bear the burden.[175] However, "the authority of state and local governments to engage in land use planning has been sustained against constitutional challenge [since the Supreme Court of the United States] decision in *Village of Euclid v. Ambler Realty*."[176] In *Euclid v. Ambler Realty Company*,[177] the Court held that zoning did not deprive an individual of liberty and property without due process of law, although a large diminution of property value resulted.[178] "Government hardly could go on if to some extent values incident to property could not be diminished without paying for every such change in the general law."[179] A land use regulation does not effect a taking if it "substantially advance[s] legitimate state interests" and does not "den[y] an owner economically viable use of his land."[180]

A. Regulatory Taking

When legislation is challenged as a violation of the Fifth Amendment, the court determines whether the impact of a regulation on private property rights is too burdensome.[181] If the court finds the regulation too burdensome, then the regulation constitutes a total taking requiring the government to compensate the property owner.[182] The Supreme Court in *Agins v. City of*

173. *See* NOLON, *supra* note 72, at 390.

174. *See* Pa. Coal Co. v. Mahon, 260 U.S. 393, 415 (1922).

175. *See* Armstrong v. United States, 364 U.S. 40, 49 (1960); *see also* Penn Cent. Transp. Co. v. New York City, 438 U.S. 104, 123-25 (1978).

176. Dolan v. City of Tigard, 512 U.S. 374, 384 (1994) (citing Euclid v. Ambler Realty Co., 272 U.S. 365 (1926) (citation omitted)).

177. 272 U.S. 365 (1926) (court upheld village-zoning ordinance, which divided plaintiff's property into three use districts resulting in a seventy-percent diminution in value).

178. *Id.*

179. *Pa. Coal*, 260 U.S. at 413.

180. Agins v. City of Tiburon, 447 U.S. 255, 260 (1980). The first half of the test refers to the first portion of the Fifth Amendment, "deprived of life, liberty, or property without due process of law;" and the second test refers to the second half of the Amendment, "shall private property be taken for public use without just compensation." U.S. CONST. amend. V.

181. NOLON, *supra* note 72, at 389-95.

182. *Id.*

Tiburon[183] required that the property owners show a denial of "economically viable use of his land."[184] In *Lucas v. South Carolina Coastal Council*,[185] the Supreme Court held that the State of South Carolina's Beachfront Management Act, which prohibited the construction of permanent structures within a designated critical erosion area, constituted a total taking.[186] The Act's complete prohibition left no economic use within the critical erosion area on the barrier islands.[187] In New York, the Court of Appeals requires a finding that all but a bear residue of the economic value is destroyed by the regulation for a total taking to occur.[188]

In the case of the proposed rezoning ordinance, a property owner would not likely be successful in a takings challenge. The zoning ordinance, proposed above, allows for compatible uses either authorized by as-of-right or special permits. In addition, it allows property owners fifty years to recoup their investment. Furthermore, the ordinance allows the property owner to build small cottages when their homes are destroyed within the fifty-year amortization period or if they are eligible for a special permit due to an investment-backed expectation. Thus, under the ordinance there are several options a private landowner could exercise in order to make economic use of the land.

The U.S. Supreme Court in *Penn Central Transportation Co. v. City of New York*[189] held that in determining "whether a particular restriction will be rendered invalid by the government's fail-

183. 447 U.S. 255 (1980).
184. *Id.* at 260; Lucas v. S.C. Coastal Council, 505 U.S. 1003, 1015 (1992).
185. 505 U.S. 1003 (1992).
186. *Id.* at 1007, 1019.
187. *Id.*
188. Spears v. Berle, 397 N.E.2d 1304 (N.Y. 1979). The court noted:
> a land use regulation, be it a universally applicable zoning law or a more circumscribed measure governing only certain designated properties, is deemed too onerous when it renders the property unsuitable for any reasonable income productive or other private use for which it is adapted and thus destroys its economic value, or all but a bare residue of its value.

Id. at 1307. The court further explained that a landowner:
> who challenges land regulations must sustain a heavy burden of proof, demonstrating that under no permissible use would the parcel as a whole be capable of producing a reasonable return or be adaptable to other suitable private use . . . To carry this burden the landowner should produce dollar and cents evidence as to the economic return that could be realized under each permitted use . . . Only when evidence shows that the economic value, or all but a bare residue of the value, of the parcel has been destroyed has a taking been established.

Id. at 1308.
189. 438 U.S. 104 (1978).

ure to pay for any losses proximately caused by it depends largely 'upon the particular circumstances [in that] case.'"[190]

> In these instances, the court will examine the character of the regulation, the public purpose it serves, the legitimate investment-backed expectations of the property owner, and the extent to which the regulation distributes its burdens as evenly and fairly as possible. . .. [A]pplying these standards, New York courts routinely uphold complex, special purpose regulations like wetland controls and historic district restrictions.[191]

Based on these several factors, the proposed zoning ordinance is likely to withstand any regulatory takings challenge.

1. Character of the Regulation

The character of the regulation is a relevant factor in the inquiry of whether the action constitutes a taking. "A 'taking' may more readily be found when the interference with property can be characterized as a physical invasion by government, than when interference arises from some public program adjusting the benefits and burdens of economic life to promote the common good."[192] In such cases, the regulation seeks to deprive the property owner of their right to exclude others, "one of the most essential sticks in the bundle of rights that are commonly characterized as property."[193] The proposed ordinance does not seek to force any type of conveyance, nor disturb the owner's exclusive right to posses the land.

Next, the court will look at the distribution of burdens. "[The] Fifth Amendment's guarantee . . . [is] designed to bar Government from forcing some people alone to bear public burdens which, in all fairness and justice, should be borne by the public as a whole."[194] The proposed ordinance applies evenly to all residents in designated coastal areas, all of whom bought their property knowing about the physical characteristics and the location on a

190. *Id.* at 124 (quoting United States v. Central Eureka Mining Co., 357 U.S. 155, 168 (1958)).

191. NOLON, *supra* note 72, at 392; *see, e.g., Penn Cent. Transp. Co.*, 438 U.S. 104; Gazza v .N.Y. Dept. of Envtl. Conservation, 679 N.E.2d 1035 (N.Y. 1997).

192. *Penn Cent. Transp. Co.*, 438 U.S. at 124 (citation omitted); *see, e.g.*, Loretto v. Teleprompter Manhattan CATV Corp., 458 U.S. 419 (1982).

193. Dolan v. City of Tigard, 512 U.S. 374, 384 (1994) (quoting Kaiser Aetna v. United States, 444 U.S. 164, 176 (1979) (court applied a more stringent "essential nexus" test coupled with a showing of "rough proportionality" and thus finding that the condition on the building permit was unconstitutional).

194. Armstrong v. United States, 364 U.S. 40, 49 (1960).

fragile barrier island. Therefore, all similarly situated properties are similarly regulated, and thus, the court is less likely to find a taking here than when only a handful of property owners are singled out for regulation that confers discrete benefits on the public as a whole.[195]

As discussed previously, there is a strong public purpose in protecting our nation's coastline. The proposed regulation protects people and property from the natural process of coastal erosion, which can result in the loss of life, injury to people, and devastating loss of physical property.

2. Economic Impact

"The economic impact of the regulation on the claimant and, particularly, the extent to which the regulation has interfered with distinct investment-backed expectations are, of course, relevant considerations."[196] Property owners purchase land on a barrier island either fully aware of, or with the information available to them regarding the risks of the purchase of land in an inhospitable environment. This awareness is derived from the general requirement of property owners to conduct a full investigation of the physical condition of property before purchase and the specific obligation, in fragile beachfront areas, to obtain federal flood insurance.[197] Purchasers of property in recent years are on notice of the great increase in the frequency of major storms, the subsidence of dunes, the erosion of beaches, the failure of structural solutions, and changes in public attitudes and policies regarding the construction of permanent structures on migratory barrier islands.

The inclusion of a fifty-year amortization period further bolsters the argument that property owners will be able to recoup their expected investment. The proposed zoning ordinance requires that all nonconforming uses be amortized over a fifty-year period. In addition, it allows a landowner to rebuild a cottage, if his home is destroyed within the fifty-year amortization period. The fifty-year amortization period is a length appropriate in relation to the investment.[198] The period provides enough time for all

195. *See* Bonnie Briar Syndicate, Inc. v. Town of Mamaroneck, 721 N.E.2d 971 (N.Y. 1999) (court upheld zoning ordinance which allowed solely recreational use because it applied to all recreational properties).

196. *Penn Cent. Transp.*, 438 U.S. at 124; *see* Goldblatt v. Town of Hempstead, 369 U.S. 590, 594 (1962).

197. *See supra* notes 65-67, 139 and accompanying text.

198. NOLON, *supra* note 72, at 138.

mortgages to be settled and for a reasonable return or investment to be recouped.

Another provision established to ensure that landowners can recoup their expected investment is through a special permit, allowing landowners to build a cottage on undeveloped land if they prove that the purchase of the land was based on the assumption that structural solutions would be used indefinitely. This special permit is available for fifty-years after the adoption of the proposed ordinance. This permit and the amortization period allow the property owner substantial time to recoup his investment in the land.

D. Due Process

The Fifth Amendment also provides that "[n]o person shall be . . . deprived of life, liberty, or property without due process of law."[199] This provision provides property owners substantive due process rights. Substantive due process seeks to protect property owners from being burdened by the government without just-cause. The standard set forth by the Supreme Court in *Agins*, to satisfy substantive due process requires that a land use regulation must "substantially advance a legitimate state interest."[200] In addition, there must be a reasonable relation between the ends sought to be achieved by the regulation and the means used to achieve that end.[201] If this standard is not met, the regulation will be deemed arbitrary and capricious and set aside as unconstitutional.[202] For most land regulations, there is a strong presumption of constitutionality in favor of the municipality.[203]

The proposed zoning ordinance aims to protect the critical environment of barrier islands, property, human life, and endangered and threatened species, all of which constitute legitimate state interests. Due to the dynamic nature of the barrier island, the coastline is a volatile and dangerous place for all permanent structures involving human occupancy.[204] The elimination of structures on the coastline will save lives, investments, and taxpayer dollars. Protecting barrier islands protects irreplaceable

199. U.S. CONST. amend. V.
200. Agins, 447 U.S. at 260 (1980).
201. *Id.*
202. *Id.*
203. *Id.* at 261. "The specific zoning regulation at issue are exercises of the city's police power to protect the residents of Tiburon from the ill effects of urbanization. Such governmental purposes long have been recognized as legitimate." *Id.*
204. *See supra* notes 11-27 and accompanying text.

habitats for many species, including flora, fauna and bird life.[205] These essential state interests are substantially advanced by the proposed rezoning ordinance.

CONCLUSION

At the conclusion of the fifty-year amortization period, the use of the barrier island will be limited to compatible uses. As the barrier island returns to its natural process, however, additional issues will arise. As the barrier island migrates, the shoreline will continually change and, quite likely the natural processes will eventually reclaim the entire barrier island. Since these natural processes allow for migration, breaching, and overwash, many property owners will lose their land to the ocean or find themselves unable to determine where property lines begin and end. This problem will leave property owners with three options: sell the property, donate the property or its development rights, or allow it to be reclaimed by nature. The property owners will not be obligated to sell or donate the land,[206] but as the natural processes continue, their land will eventually cease to exist. In addition, finding a willing buyer may be increasingly difficult, due to the uncertain nature of that investment. As these options are exercised, the Barrier Island Critical Zone (BICZ) will eventually come under the public domain and resume its natural function of protecting the landward shore. As the barrier island functions through its transitional processes, the BICZ will also expand with this process. If history is a judge, the ultimate eventuality is the destruction of all permanent structures by acts of God, not man, resulting in a barrier island that will endure through time for the enjoyment of future generations.

> They commonly celebrate those beaches only which have a hotel on them, not those which have a humane house alone. But I wished to see that seashore where man's works are wrecks; to put up at the true Atlantic House, where the ocean is land-lord as well as sea-lord, and comes ashore without a wharf or landing; where the crumbling land is the only invalid, or at best is but dry land, and that is all you can say of it.
>
> – *Henry David Thoreau*[207]

205. *See supra* note 8 and accompanying text.

206. Dolan v. City of Tigard, 512 U.S. 374 (1994); Nollan v. Cal. Coastal Comm'n, 483 U.S. 825 (1987).

207. THOREAU, *supra* note 1, at 65.