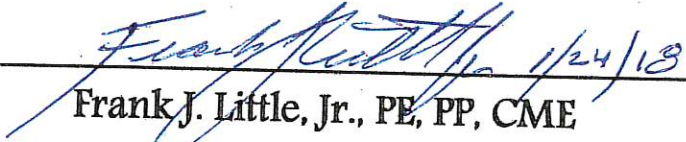


BARNEGAT LIGHT BOROUGH  
MASTER PLAN  
RE-EXAMINATION  
2018



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# TABLE OF CONTENTS

1. INTRODUCTION
2. PROBLEMS AND OBJECTIVES
3. CHANGES IN ASSUMPTIONS, POLICIES AND OBJECTIVES
4. RECOMMENDATIONS REGARDING PLAN AND REGULATIONS
  - A. RESIDENTIAL AND COMMERCIAL LAND USE
  - B. RECREATION
  - C. TRAFFIC CIRCULATION
  - D. SERVICES AND UTILITIES
  - E. STORMWATER MANAGEMENT
  - F. HISTORIC DISTRICT
  - G. SUSTAINABILITY

## APPENDIX

APPENDIX A – MUNICIPAL PUBLIC ASSESS PLAN

APPENDIX B – COASTAL VULNERABILITY ASSESSMENT

## 1. INTRODUCTION

The Borough of Barnegat Light Master Plan was adopted in its current form on April 24, 1979 and that plan recites that it is a revised Master Plan based on a previous Master Plan which was adopted some fourteen years earlier. The 1979 Master Plan was drafted and adopted in accordance with the requirements of the Municipal Land Use Law.

The Master Plan has been reviewed and Re-Examination Reports were issued in 1982, 1989, 1995, 2001 and 2007 in accordance with the requirements of the Municipal Land Use Law. In each instance, the Planning Board found that the basic Master Plan, as revised and formally adopted in 1979, still forms a legitimate basis and guide for development in the Borough. This is true primarily since the Borough is fully built-out with only a few developable vacant parcels of land available.

The Planning Board acknowledges its responsibility pursuant to N.J.S.A 40:55D-89 to examine the original Assumptions Policies and Objectives of the plan and determine their relevance to life in Barnegat Light today. In summary, the Board has completed its review and determines that that no significant changes in the Assumptions, Policies and Objectives set forth have taken place with the exception of realizing the impact of Sea Level Rise on this coastal community and the importance of acquiring open space when available for public use.

Since the 2007 Master Plan was completed, the Borough was faced with the effects of Superstorm Sandy which was a landfalling extra tropical storm with hurricane like impacts that devastated much of the New Jersey shoreline and coastal areas. Approximately half of Barnegat Light experienced flooding during this storm event and near Lighthouse Marina on the northwest side of the Borough, the U.S. Geological Survey (USGS) recorded a high water mark of 5.3 FT NAVD88. Municipal leaders identified that flooding from Sandy was six inches higher at Viking Village than the 1992 Nor'Easter. The Borough purchased all of the ocean front land after the 1962 storm and the undeveloped oceanfront, in combination with a large dune system and sedges on the bayside, protected the community from devastating storm surge. While some water did come over the dune at 30<sup>th</sup> Street, the Borough has addressed this low lying section of dune in the years since Sandy.

As a result of this storm event, the Borough will amend the Master Plan, at the time of the adoption of this Re-examination Report, to include a Sustainability Element. This Element is comprised of a local Coastal Vulnerability Assessment which provides a risk analysis of forecasted storm surge and sea level rise impacts as well as recommendations to mitigate these risks.

2. PROBLEMS AND OBJECTIVES

The 2007 Re-examination Report indicated that due to the massive development occurring since 1995, there were few vacant developable lots left within the Borough. It also noted that many older residences had been demolished to make way for new construction and this trend has continued especially with more homeowners being interested in raising their homes to comply with new FEMA Preliminary Flood Insurance Rate Maps. The original Master Plan sought to maintain family character of the community as a summer resort as well as a year round residence with commercial areas and development since that time as occurred consistent with those goals.

As the community realizes new challenges such as increased nuisance flooding along the Bayfront areas and the effects of nuisance flooding leaving the island through other municipalities as well as an increased focus on sustaining the community as a whole, future municipal decisions should incorporate the recommendations that are made part of the Re-examination report which follow herein.

3. CHANGES IN ASSUMPTIONS, POLICIES AND OBJECTIVES

Other than the increased focus on nuisance flooding and sustainability, there have been no changes in the assumptions, policies and objectives since the adoption of the Master Plan Re-examination in 2007. The Borough is, and has been for many years, a substantially developed community, and other than the reconstruction of existing residences, there have not been significant changes in the policies, objectives or goals set forth in the original Plan or the Re-examination reports.

4. RECOMMENDATIONS REGARDING PLAN AND REGULATIONS

A. Residential and Commercial Land Use

Generally, the Board feels that no significant revisions to the Municipal Land Use Regulations are necessary at this time, however, the following recommendations are offered.

- 1) Maintain the low density and single family character of the community by ensuring minimum lot sizes are maintained at time of subdivisions and to limit multi-family housing units when appropriate.
- 2) Floodproofing of commercial buildings should be encouraged and the method should align with the minimum standards set forth by the Federal Emergency Management Agency (FEMA) for base flood elevations.
- 3) Encourage the raising of floodprone residential structures in accordance with the minimum standards set forth by the Federal Emergency Management Agency (FEMA) for base flood elevations.

B. Recreation

The Borough is a barrier island community with frontage on both the Atlantic Ocean and Barnegat Bay and encourages access to these areas by offering lifeguards, beach wheelchairs and a municipal dock with approximately 45 boat slips. In addition, the Borough maintains a park adjacent to the municipal facility with tennis courts, basketball courts, baseball fields, a dog park and a playground. Recently, the Borough was able to acquire, through the use of Open Space Tax Fund monies, the Coast Guard Barracks which was reverted back to open space. The Borough is now completing a project at that site which includes a pavilion for future concerts and events. The Planning Board encourages the Borough to continue its efforts towards maintaining recreation for year round and summer residents and also offers the following recommendations.

- 1) The Borough should continue to implement its Open Space Tax and purchase property reserved for open space and passive recreation as parcels become available.
- 2) Barnegat Light's Zoning Ordinance encourages private marinas as well as a municipal dock network. In addition, the boat docks at Viking Village are a critical component to the Borough's economy as they provide various types of seafood and shellfish to the local marketplace and dozens of jobs. The Borough should ensure that these docks are maintained and made resilient to future storm events.
- 3) In 2016, the Borough completed a Municipal Public Access Plan which was funded by the New Jersey Department of Environmental Protection. The plan established a chart and map based inventory of all access points to tidal waterways as well as the amenities available at each location. Preparation of the plan and analysis of the access locations confirmed that the Borough successfully provides public access and their efforts should continue towards maintaining this access. Subject to NJAC 7.7, the original Borough Master Plan of 1965 and the Amended and Supplemented Master Plan of 1979 should be further amended to include the Barnegat Light Borough Municipal Public Access Plan. As a condition of the NJDEP Beach and Dune Maintenance Permit Program, this plan must be included in the Borough's Master Plan.

C. Traffic Circulation

Since 2007, no significant issues or problems have been noticed in the Borough related to traffic circulation. The Board finds that no action is required relative to traffic circulation but does offer the following for consideration.

- 1) Continue coordinated efforts with Long Beach Township, Surf City Borough, Harvey Cedars Borough and Ship Bottom Borough to ensure roadways remain passable to the Route 72 and Manahawkin Bay Bridge during times of tidal flood inundation and storm events.

D. Services and Utilities

Barneгат Light continues to be vigilant about water quality and its availability to residents and business owners and also remains vested in its interests related to its critical infrastructure including its wells and water treatment plant. Although no significant changes have been realized, the Planning Board offers the following recommendations to be used in plan making for the future.

- 1) At the present time, the Borough is preparing to install water meters throughout the community to continue its efforts towards water conservation.
- 2) Continue to prioritize and complete raising of all critical infrastructure in the Borough, where appropriate

E. Stormwater Management

In 2007, a Stormwater Management Plan was prepared was adopted as part of the previous Master Plan Re-examination. Since that time, the Stormwater Management Plan remains consistent with the last Re-examination and no revisions are necessary at this time with the exception of prioritizing nuisance flooding as an issue to the public. Therefore, the Planning recommends the following action.

- 1) Pursue the design of and seek funding opportunities to complete a LBI Regional Stormwater Pump Installation and Drainage Improvement Project.

F. Historic District

Due to the lack of centralization of historic buildings in any particular area of Barnegat Light, the Board remains in favor of not establishing a Historic Overlay Zone. The Board would continue to encourage, as it previously did the 2007 Re-examination Report, that the Borough maintain its efforts with the Historical Preservation Committee to preserve structures of historical significance.

G. Sustainability

Since Superstorm Sandy, resiliency and sustainability of coastal communities has become a common and important discussion in municipalities Statewide. The Planning Board encourages that the Borough continue to be a leading stakeholder in these discussions and consider the research and advice provided by local experts, planning and engineering professionals as well as those from regional institutions of Higher Learning as well as the following:

- 1) In 2016, the Borough approved the preparation of a Municipal Coastal Vulnerability Study which ultimately specifically evaluated the Borough's level of exposure of its built environment, natural environment and social environment to storm surge related to a Category 1, 2 and 3 storm events as well as 1 FT, 2 FT and 3 FT of anticipated Sea Level Rise. Superstorm Sandy Surge Extent maps shows extensive flooding in the Borough, However, it has been noted by members of the community that the surge extent did not extend as far as shown. It is understood that no significant damage resulted and no flood insurance claims were paid as the result of any losses. Noted instances of damage resulted from wind only.



Review of the SLOSH models for a Category 1 Hurricane in Barnegat Light indicates that flooding should be expected to be less expansive than when compared to the flooding extent shown on the map of Superstorm Sandy's impacts, however, with local knowledge prevailing, the validity of the Sandy surge is questioned. Potential impacts do appear to increase exponentially the stronger the storm event. A Category 3 storm event would likely be catastrophic to the bayside area and the impacts would be felt throughout the community.

Also, scientists expect this area to be impacted by 1.5 FT of Sea Level Rise prior to 2050. As Sea Level Rise is anticipated to accelerate due to shrinking land and thermal expansion, scientists anticipate that 3.5 FT of Sea Level Rise is very likely before the year 2100. Barnegat Light can expect to see the impacts of Sea Level Rise by about 2065 when 2 FT of rise is anticipated. Areas without bulkheading along Bayview Avenue are most vulnerable as they are not secured by structural barriers and are the first areas to flood during storm events. Three (3) feet of sea level rise will impact all of Bayview Avenue but will not affect the most critical facilities such as wells, the Fire Department, First Aid building and gas station.

A complete copy of the Coastal Vulnerability Study, with all pertinent maps is made part of this Master Plan Re-examination document. During final analysis of the Borough at the local level, the following recommendations were made to aid the community in managing their risk to Storm Surge and Sea Level Rise impacts.

Action Items related to Storm Surge and Sea Level Rise Projections.

- a) It should remain topmost priority to convey to Borough residents, vacationers and business owners that the safest place in the event of any storm event in which local officials declare a Mandatory Evacuation is off the barrier island. There is no location within the Borough of Barnegat Light that is a designated storm shelter.
- b) Steps should be taken to promote enhancement projects along the designated areas on Bayview Avenue that will help mitigate anticipated impacts from Storm Surge.
- c) Consider raising bulkhead heights.
- d) Promote Living Shoreline projects where feasible along the Bayfront areas.
- e) Create a Coastal Conference to provide a means of connecting Borough officials, Land Use and Construction employees as well as Emergency Management with local business owners and members of the public to discuss recent storm events and exchange knowledge, ideas and experiences to address future coastal hazards.
- f) Continue to promote the elevation of homes and businesses.
- g) Develop an Outreach Campaign that specially targets young seasonal tenants, elderly residents with pets and the non-English speaking population.
- h) Screen all infrastructure projects for Sea Level Rise Impacts.

- i) Conserve coastal land and minimize potential loss through acquisition of contiguous flood prone properties or those contiguous to adjacent municipally owned land or for the purpose of increasing the Borough's Open and Greenspace.
- j) Continue to monitor Sea Level Rise projections on a yearly basis, updating maps as necessary, to plan for the future of the Borough.
- k) Review existing evacuation routes and consider modifications to these routes based on Sea Level Rise projections.

APPENDIX A

MUNICIPAL PUBLIC ACCESS PLAN

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# Borough of Barnegat Light Municipal Public Access Plan



**Submitted by: The Borough of Barnegat Light**

**Date of Current Submittal: 8/26/2016**

**Approved by the New Jersey Department of Environmental Protection:  
To be determined**

**Adoption by the Borough:  
Date will be added upon adoption**

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*Financial Assistance provided by: The Coastal Zone Management Act of 1972, as amended, administered by the Office of Coastal Management, National Oceanic and Atmospheric Administration (NOAA) through the New Jersey Department of Environmental Protection, Coastal Management Program.*

Approval of this plan does not eliminate the need for any Federal, State, County or municipal permits, certifications, authorizations or other approvals that may be required by the Applicant, nor shall the approval of this plan obligate the Department to issue any permits, certifications, authorizations or other approvals required for any project described in this plan.

## Index

Introduction	1
I. Municipal Public Access Vision	3
II. Public Access	6
III. Community Needs Assessment	12
IV. Implementation Plan	13
V. Relationship to the Other Regional and State Plans	17
VII. Resolution of Incorporation	18
Appendix 1 MPAP Required Sections per NJAC 8.11 (e)	19
Appendix 2 Resolution for Incorporating MPAP into Master Plan	20
Appendix 3 Tables	21
Appendix 4 Recreation and Open Space Inventory	22
Appendix 5 Sign Ordinance	23

## **Introduction**

The intent of this document is to provide a comprehensive public access plan for the Borough of Barnegat Light which lays out their vision for providing access to tidal waters and shorelines within the municipal boundary. This Municipal Public Access Plan (MPAP) was developed in accordance with the Coastal Zone Management Rules at N.J.A.C. 7:7E-8.11. This MPAP was developed in collaboration with the New Jersey Department of Environmental Protection (NJDEP), and approved by the NJDEP on <date>. The development and implementation of this MPAP supports the policy of local determination of public access locations and facilities, while safeguarding regulatory flexibility and potential funding opportunities for Barnegat Light Borough.

Public rights of access to, and use of, the tidal shorelines and waters, including the ocean, bays, and tidal rivers, in New Jersey are founded in the Public Trust Doctrine. First set by the Roman Emperor Justinian around A.D. 500 as part of Roman civil law, the Public Trust Doctrine establishes the public's right to full use of the seashore.

Through various judicial decisions, the right of use upheld by the Public Trust Doctrine has been incorporated into many state constitutions and statutes, allowing the public the right to all lands, water and resources held in the public trust by the state, including those in New Jersey. The NJDEP adopted new rules governing public access on November 5, 2012 that enable municipalities to develop and adopt MPAPs to govern public access within their municipality. This MPAP consists of an inventory of public access locations, and plans to preserve and enhance access based on community needs and State standards.

In 2015, representatives from Barnegat Light Borough met with NJDEP staff to begin the public access planning process. This plan was then developed in collaboration with the NJDEP, various departments within Barnegat Light Borough and their planning consultant, Owen, Little & Associates, Inc. and was distributed for courtesy review by Planning Board and was submitted to the NJDEP on August 26, 2016. Upon receiving approval from the NJDEP on <date>, the MPAP was incorporated into the Recreation/Open Space Element of the Master Plan by resolution on <date>, see Appendix 2. All public access decisions made within Barnegat Light Borough after this date will be consistent with this plan.

## **Authority for Municipal Public Access Plans**

The premise of the authorization of MPAPs is that public access to tidal waters is fundamentally linked to local conditions. Municipalities have a better awareness and are more responsive to these conditions than a broader State "one size fits all" mandated public access plan.

The voluntary development of a MPAP by Barnegat Light Borough enables the municipality to better plan, implement, maintain, and improve the provision of public access for its residents and visitors. Also, it informs and/or identifies public access requirements associated with any proposed development or redevelopment project. The MPAP was incorporated into the Recreation/Open Space Element of the municipality's Master Plan, in accordance with the Municipal Land Use Law (N.J.S.A 40:55D).



Upon approval of the MPAP by the NJDEP and incorporation into the Master Plan, Barnegat Light Borough will be responsible for ensuring that public access to tidal waterways along the municipality's shorelines is provided in accordance with this plan. For each new public access project, Barnegat Light Borough will provide NJDEP with a letter confirming its consistency with this MPAP. Any permit issued by the NJDEP will reflect, and ensure that public access requirements are satisfied in accordance with, this plan. Per N.J.A.C. 7:7E -8.11(j)4, Barnegat Light Borough is required to submit a progress report on plan implementation to NJDEP within five (5) years from date of plan adoption.

The sections of this plan as indicated below are prescribed by the Coastal Zone Management Rules, N.J.A.C. 7:7E-8.11. See Appendix 1.

# **I. Municipal Public Access Vision**

## **A. Overview of Municipality**

The Borough of Barnegat Light is located on Long Beach Island in Southern Ocean County and is the northernmost community on the barrier island. The Borough has a year round population of 574 (2010 Census), however, the population increases dramatically in the summer months and can reach 10,000 people. With a total area of 0.852 square miles, of which 0.121 square miles is water, the Borough is situated geographically to enjoy the benefits of the associated oceanfront and bayfront shorelines. Barnegat Light Borough is void of any major industry or farmland and is considered fully developed with the exception of small infill lots or new lots created by subdivision. Given the dense population during the summer months, maintenance of existing public access locations along the Barnegat Bay, Barnegat Inlet and the Atlantic Ocean is paramount.

### **1. Public Access Description**

Public Access in Barnegat Light Borough is provided by the municipality and consists of a variety of access points and facilities including beach walkways, bathroom facilities, lifeguarded beaches, surfing and fishing beaches as well as parks, playgrounds and piers. Barnegat Light Borough protects and ensures public access through conservation easements, ordinances and beach fees. For example, many of the open spaces or areas that provide access to tidal water are regulated by the New Jersey Department of Environmental Protection's Green Acres Program and additional ordinances are in effect to guide the use of these parcels. Also, the ordinances assist in guiding development of particular parcels unregulated by the Green Acres Program and provide regulation for same. Beach fees are collected for beach users at a daily, weekly or seasonal rate and the type of tag purchased is the decision of the purchaser, not the Borough.



The overall goal of this MPAP is to establish the Borough of Barnegat Light's commitment to maintain and enhance all existing public access locations to and along tidal waterways and their shores.

### **2. Barnegat Light Borough Tidal Waterways and Lands**



access was hindered.

Map 1 shows all the tidal waterways within the municipality and all lands held by the municipality. More specifically, Barnegat Light's tidal waterways consist of the Atlantic Ocean to its east and the Barnegat Bay to its west and the Barnegat Inlet to its north. All of the community's maritime industry relies on the navigability and access to the ocean through this inlet. The local economy would be dramatically impacted if



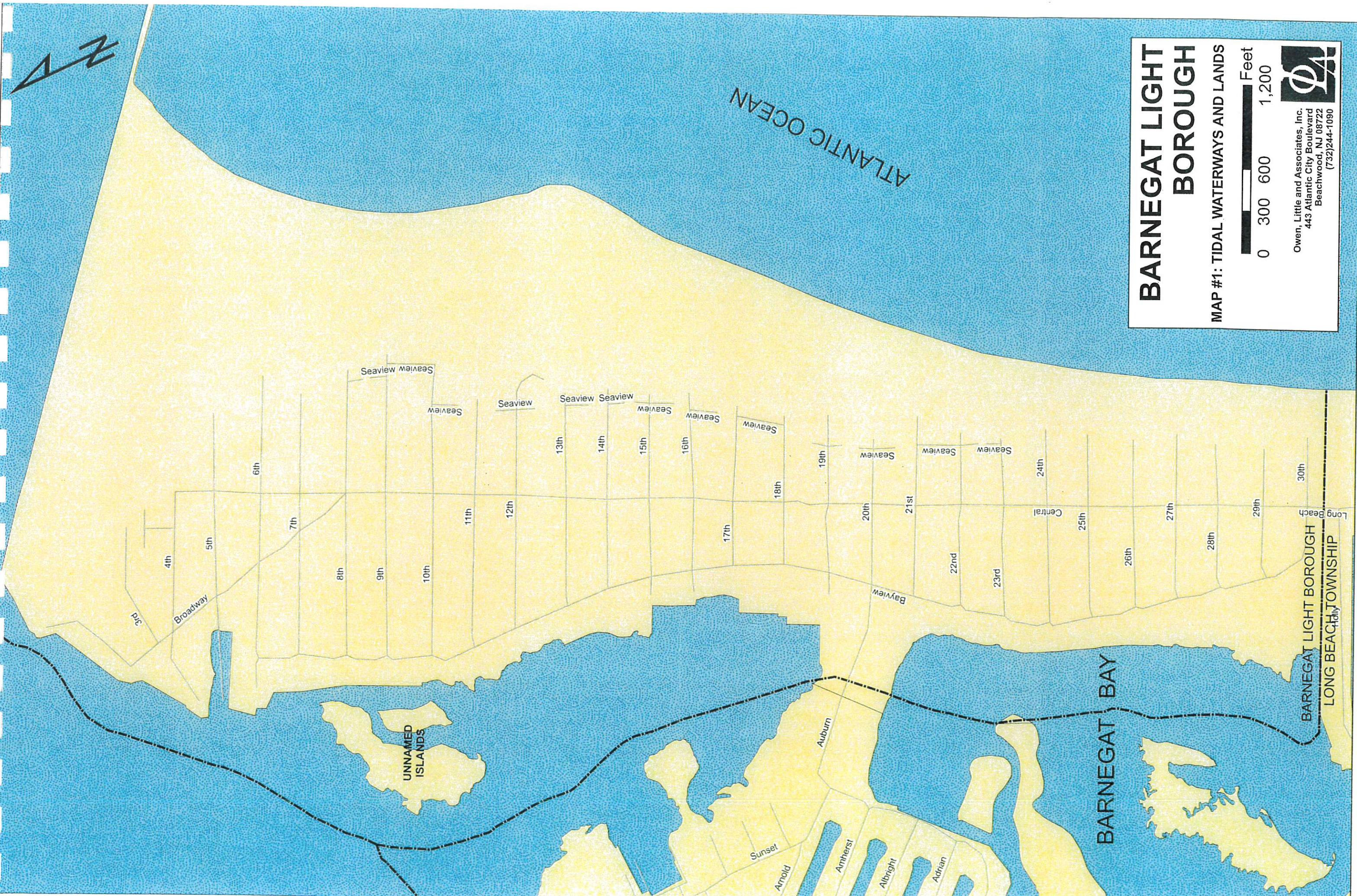
ATLANTIC OCEAN

# BARNEGAT LIGHT BOROUGH

MAP #1: TIDAL WATERWAYS AND LANDS



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Beachwood, NJ 08722  
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UNNAMED ISLANDS

BARNEGAT BAY

BARNEGAT LIGHT BOROUGH  
LONG BEACH, NJ TOWNSHIP

## B. Municipal Public Access Goals and Objectives

### 1. Goals & Objectives

- a. Participate in programs, both Federal and State, that preserve environmentally critical, sensitive or beneficial parcels of land
- b. Promote the continued balance of land uses while ensuring adequate open space and unrestricted access remains.
- c. Maintain and continue to promote a visually pleasing aesthetic along the waterfront areas
- d. Continue to upgrade existing municipal park facilities
- e. Remain motivated to increase and improve public access locations
- f. Utilize native plantings when restoring areas adjacent to tidal water
- g. Remain cognizant of stormwater runoff and its effect on the estuary
- h. Establish an Ordinance that promotes the installation of Public Access signage where appropriate
- i. Prioritize the reconstruction of vulnerable bulkheads and ensure shoreline stabilization for public safety and access


In addition to those goals outlined within the Master Plan below, Barnegat Light Borough establishes the following State required goals specifically for public access:

- j. All existing public access shall be maintained to the maximum extent practicable.
- k. Maintain safe and adequate access locations for fishing in those areas where fishing is safe and appropriate.
- l. Provide clear informative signage for access locations.

Barnegat Light's Municipal Public Access Plan embraces and reflects these goals and will help preserve, protect, and enhance the public's ability to access the Public Trust Lands which surround the community. The previous goals are compliant with the New Jersey Coastal Zone Management Rules (see N.J.A.C 7:7E-1.1 (c)).

### 2. Municipal Master Plan Consistency

The goals and objectives provided in this Municipal Public Access Plan have been reviewed and are consistent with the Barnegat Light Borough Master Plan.



*BARNEGAT LIGHT  
BOROUGH  
REPRESENTS A  
BARRIER ISLAND  
COMMUNITY THAT  
RELIES HEAVILY ON  
THE SURROUNDING  
WATERWAYS FOR  
TOURISM AND  
COMMERCE AND  
PRIDES ITSELF ON  
OFFERING MORE THAN  
30 WAYS OF ACCESS  
TO THESE DESIRABLE  
SHORES*

Specifically, the main objectives of the Municipal Master Plan state the following:

- a. **The beach is the major focus of both conservation and recreation activities in the Borough of Barnegat Light. Protection of the beach and dunes should be a primary concern of the Borough, with efforts towards beach and dune stabilization, access, visibility and maintenance.**
- b. **While the Borough may not be able to feasibly provide for new low income housing, the Borough serves the regional welfare, including the welfare of lower income families, by maintaining the quality and accessibility of the beach as a regional recreation and conservation resource and this resource should be protected.**
- c. **Conservation of existing natural resources should be an integral part of the planning process, with special attention to the constraints of environmentally critical and sensitive areas.**
- d. **The preservation of the existing open space within the Borough should be safeguarded and maintained in order to provide for a balance between development and open space areas planned and used for a variety of passive and active purposes.**
- e. **The Development Plan should emphasize the importance of conservation, protection, maintenance and enhancement of the dunes, beaches, bulkheading and other coastal water resources.**
- f. **The Development Plan should encourage the retention of municipally-owned properties for the protection of oceanfront lands, for open space and recreational purposes and for future expansion of municipal facilities.**
- g. **The existing recreational and open spaces areas should be enhanced and improved in order to promote and maximize the use and enjoyment of these areas, consistent with the 'family resort' identity of the Borough. Adequate ancillary facilities and services should be provided to serve the needs of those using the facilities.**

## II. Public Access

### A. Public Access Locations

Map 2, Barnegat Light Public Access Locations, identifies an inventory of all public access locations within the Borough, and further describes the type of access provided as well as the shoreline condition. For the purpose of this plan, the access points have been defined as follows:

Physical Access:	A location point in which a user can access and physically enter the tidal water for the purposes of swimming, fishing, kayaking or the like.
Visual Access:	A location point in which a user can not physically access the tidal water but still utilize the water way for fishing, birdwatching, photography or sightseeing. In many cases, these locations may be hindered by bulkheads or permanent barriers to alert vehicles of the street ends and intersecting waterways.
Water Access:	A location point which is reserved for islands within the municipal boundary that is accessible only by watercraft.

### B. Enhanced Public Access Locations

Map 3, Barnegat Light Borough's Enhanced Public Access Locations, provides an inventory of the existing public access locations that currently provide access to Public Trust Lands and Waters. See Appendix 3, for detailed information.



to encourage safe boating for children and non-swimmers. Bathrooms are also provided at the boat ramp.

It is evident when surveying Barnegat Light that the community values and prioritizes public access to its waterfront and strives to provide ample opportunity for residents and visitors to have access to the waterways. For example, lifejacket rental kiosks are provided at the boat ramp





ATLANTIC OCEAN

**LEGEND**

**ACCESS POINTS**

- PHYSICAL
- VISUAL
- WATER

**SHORELINE TYPE**

- BEACH/NATURAL SHORE
- BULKHEAD
- ROCK REVETMENT
- WATER

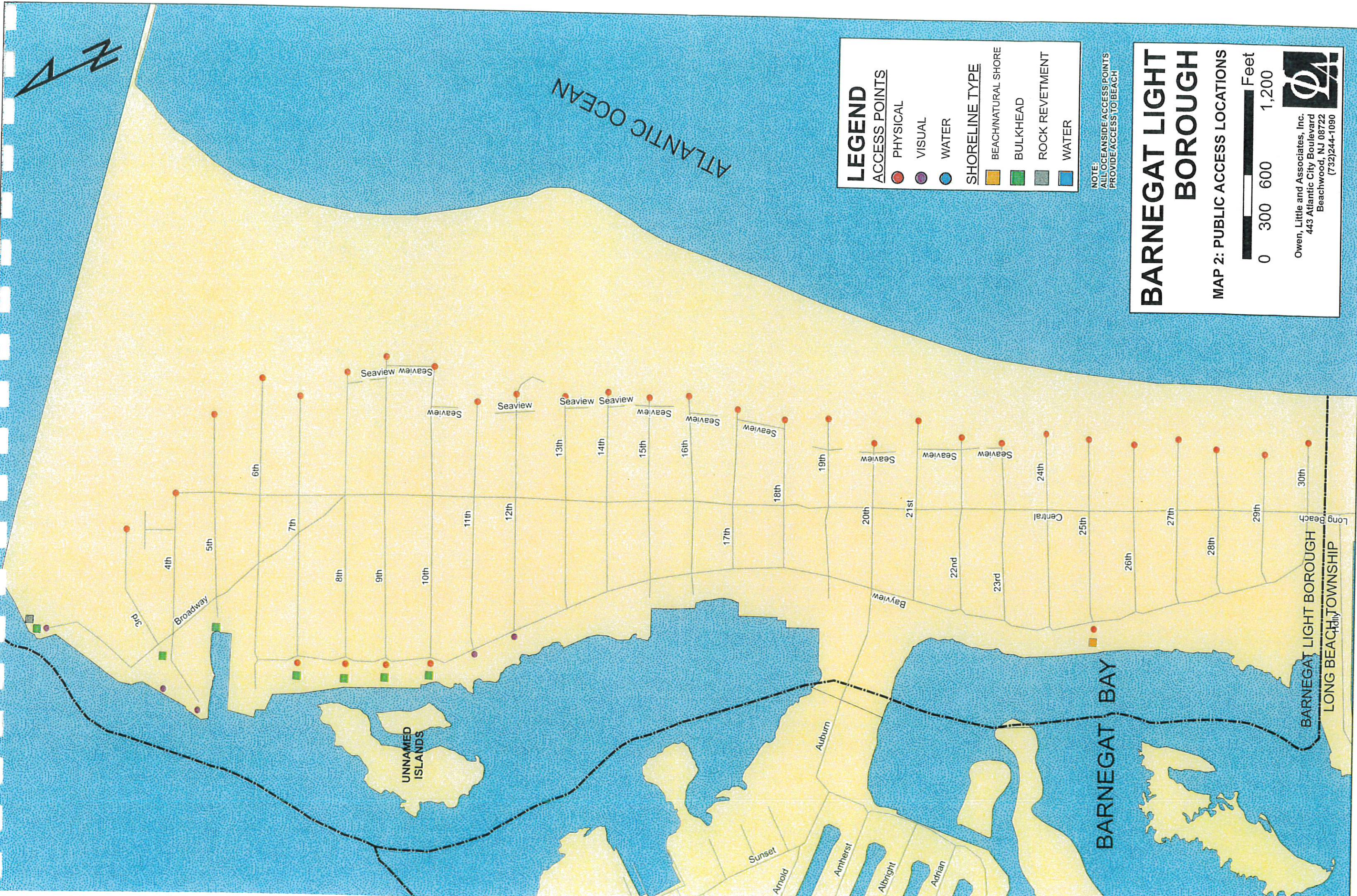
NOTE: ALL OCEANSIDE ACCESS POINTS PROVIDE ACCESS TO BEACH

**BARNEGAT LIGHT BOROUGH**

**MAP 2: PUBLIC ACCESS LOCATIONS**

0 300 600 1,200 Feet

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BARNEGAT LIGHT BOROUGH  
LONG BEACH TOWNSHIP



ATLANTIC OCEAN

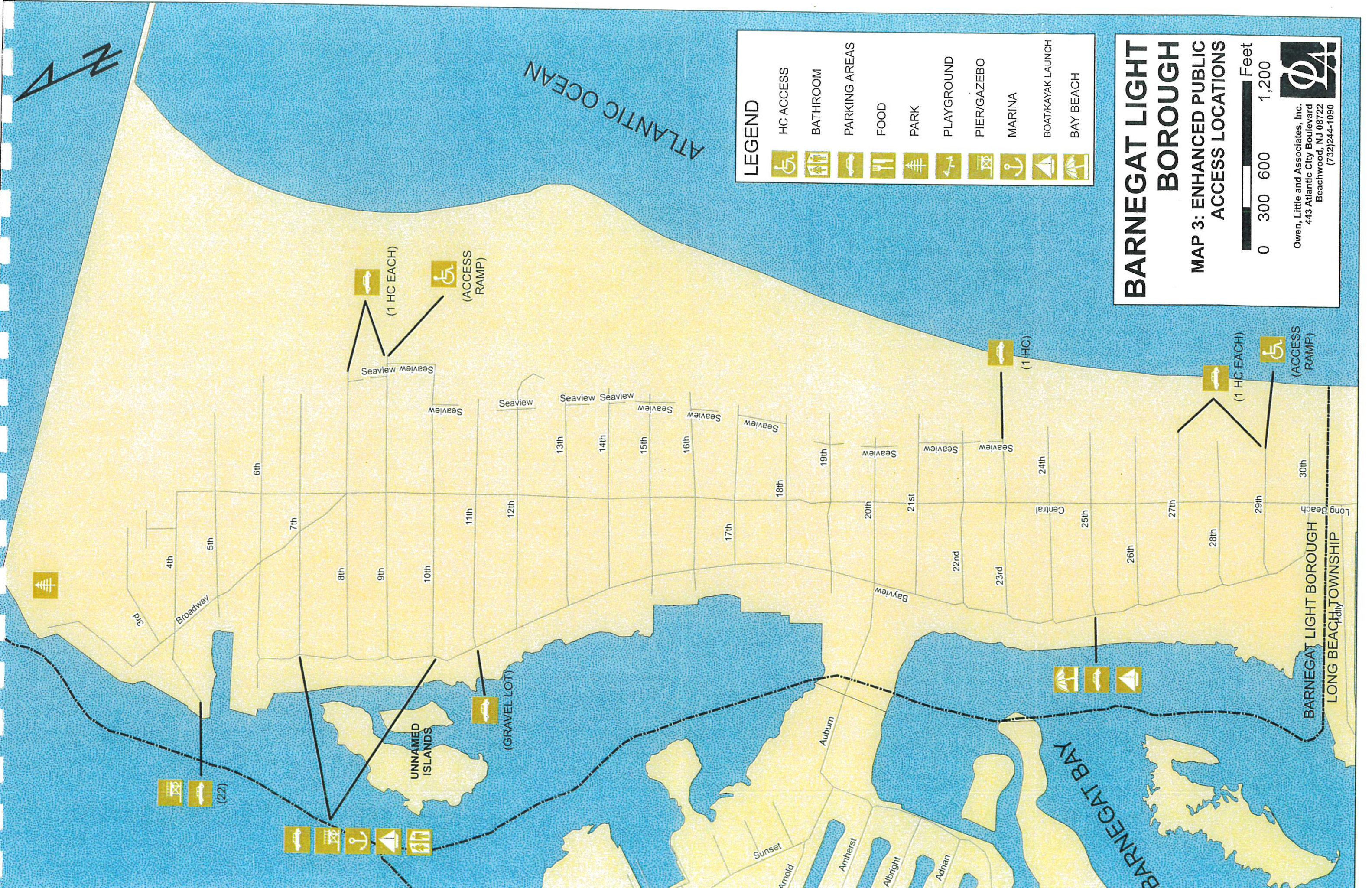
**LEGEND**

-  HC ACCESS
-  BATHROOM
-  PARKING AREAS
-  FOOD
-  PARK
-  PLAYGROUND
-  PIER/GAZEBO
-  MARINA
-  BOAT/KAYAK LAUNCH
-  BAY BEACH

**BARNEGAT LIGHT BOROUGH**  
**MAP 3: ENHANCED PUBLIC ACCESS LOCATIONS**



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BARNEGAT LIGHT BOROUGH  
 LONG BEACH TOWNSHIP



The Barnegat Lighthouse State Park, at the north end of town, is a popular destination for climbing the lighthouse, picnicking and fishing. The Borough offers spacious beaches, surf fishing, bay fishing and crabbing. There are several options for those who like to go fishing or boating. Party boats go out daily for deep sea fishing, charter boats are available for small groups to hire, and for those who like to head out on their own in the bay there are privately held boat liveries that do daily rentals.



### C. Limitations to Public Access

Per the Physical Characteristics Analysis of the September 1991 Master Plan, *"The beach and dune areas represent a very important natural resource to the Borough, and must be protected and maintained. Public accessways across the dunes to the beaches at the ends of each street must be maintained and should be appropriately improved, but additional accessways across the dunes should be discouraged"*.

In addition, the following limitations to public access currently exist:

#### 1. Temporary Restrictions

Barnegat Light provides more than 30 access points to its tidal waters and the vast majority of access points are located on bayfront street ends or ocean blocks while other access points are provided via public parks or access easements. Beach and bay areas of the Borough area are designated as protected bathing areas and defined and declared to be as follows:

- ❖ All of those areas of land along the oceanfront and bayfront owned by the Borough.
- ❖ All of those areas of land along the oceanfront and bayfront in which the Borough controls the use by easement deed or deeds.
- ❖ All other areas set apart by consent of owners where protected bathing areas have been and are established.
- ❖ Public street ends on the bay front or oceanfront.

##### a. Hours

Places of resort shall be kept open during the usual bathing season in the Borough which is generally from the last Saturday in June and including the Sunday after Labor Day. The hours when beaches shall be open are from 10:00am to 5:00 pm., prevailing time, except during inclement weather. Between the hours of 5:00 pm and 10:00 am, the beaches are open to the public but unguarded. Swimming is at your own risk and not advised.

b. Beach Badges

Barnegat Light Borough does utilize beach badges, commonly referred to as 'beach tags', to monitor beach access and establish regulation to ensure continued effectiveness of the beach and dune system as a line of defense from coastal storms. Children under the age of 12 do not require a badge.

No beach badge fee will be collected from any person in active military service in any of the Armed Forces of the United States and any persons who are active members of the New Jersey National Guard who have completed Initial Active Duty training, as well as their spouses and children over the age of 12.

Fees are also not collected from any individual attired in street clothing and not using beaches, bathing or recreational areas for swimming, sunbathing or other recreational purposes.

c. Beach Badge Fees are as follows:

Thirty dollars \$30.00 per person, per season, provided that application is made to the proper authorities prior to June 10<sup>th</sup>.

Forty dollars \$40.00 per person, per season, in the event that applications are made to the proper authorities on or after June 10<sup>th</sup>.

Twenty dollars \$22.00 per person, per week for any week or fractional part thereof of the bathing season.

All senior citizens sixty-five (65) years or older may obtain a seasonal badge for twelve dollars \$12.00 with proof of age.

Five dollars \$5.00 per person, per day, for any day or part thereof, Monday through Sunday, during the bathing season.

Gift boxed beach badges are available November through December, perfect for holiday gift giving.

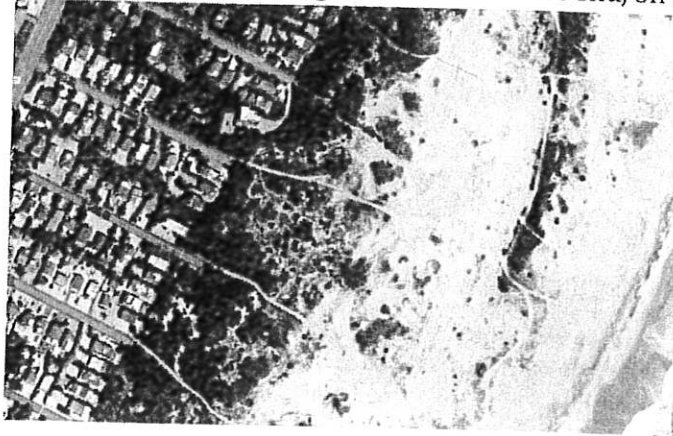
All badges can be purchased on the beach from the Beach Badge Checkers, all badges are \$1.00 additional if purchased on the beach.

d. Beach Wheels:

Barnegat Light is pleased to offer a Beach Wheel Chair to any beach patron who has a mobility limiting disability. The chair has wide balloon wheels, allowing it to be pushed easily on the sand. The chairs are offered on a first come first served basis and reservations are required. There is no charge for the use of the chairs as this program is funded by donations.

e. Beach Tram:

Due to the size of the beaches, for beach patrons between 4<sup>th</sup> and 9<sup>th</sup> Streets, the Borough offers tram service. The tram picks up beachgoers on each street end, on the beach and takes them to the lifeguarded area between 9<sup>th</sup> & 10<sup>th</sup> Street. It operates the same hours as the lifeguards, 10:00am to 5:00pm. It does not operate between 1:00pm to 2:00pm with the last pickup around 4:00pm. The tram is free, however all passengers (over 11 years old) must have a current beach badge.



f. Swimming/Bathing

Bathing in the surf is prohibited during periods of storm, high wind or dangerous conditions. Swim distance is determined by the Beach Patrol Supervisor according to daily ocean and wind conditions. No person is permitted to enter or remain in the surf beyond the northerly or southerly boundaries of bathing districts as designated by red/yellow flag markers posted by lifeguards.

g. Surfing

No person shall ride or operate a surfboard in any area of the beaches not designed for that purpose. The Borough Council, by and through its Beach Committee, shall designate areas of the beaches for the use of those persons desiring to engage in surfing. In these areas, no bathing or rising shall be permitted while the areas are being used for surfing. The use of the designated surfing areas shall be subject to the control and supervision of the Beach Committee. The committee may, from time to time, change the location of the surfing areas, designate the hours of use of these areas and adopt such other regulations for the management of such areas as the public welfare may require. Any area designated for surfing purposes shall be so posted.

As of Summer 2016, surfing may commence at any area outside of a swimming area designed by flags.

h. Beach Buggies

No person shall operate a beach buggy or other motor vehicle, with the exception of authorized Borough vehicles, on any beach during the time and hours when beaches are open for bathers.

i. Boat Launching

2. Non-commercial Kayak Launching Area – All street ends are designated as non-commercial kayak launching areas. On the ocean side, kayaks may be launched only in areas designated by the lifeguards when beaches are guarded or at owners risk after guarded hours.
3. Boat Ramp – A boat ramp exists at the premises situated on the Barnegat Bay between 10<sup>th</sup> Street and Bayview Avenue. No person shall use the boat ramp area unless and until they have paid the required fee to the harbor master for a daily, a one way, or seasonal boat pass. All passes may be purchased from the harbormaster. The fees are as follows:
  - a) Daily - \$20.00
  - b) Seasonal - \$120.00
  - c) Commercial - \$200

A vessel includes jet skis or personal watercraft. Seasonal decals shall be displayed on the portside of the vessel beneath the State registration number.

j. Fishing from Beaches

No person shall surf fish, fish or crab in any area of the beaches not designated for that purpose. The borough council by and through its beach committee shall designate areas of the beaches for the use of those persons desiring to engage in surf fishing or crabbing. In these areas, no bathing shall be permitted when the areas are being used for surf fishing or crabbing. The use of the designated surf fishing and crabbing areas shall be subject to the control and supervision of the Beach Committee. The Beach Committee may from time to time change the location of surf fishing and crabbing areas, designate the hours and use of the areas and adopt such other regulations for the management of the areas as the public welfare may require. Any area designated for surf fishing and crabbing purposes shall be so posted.

k. Horseback Riding

Horses, ponies, donkeys, mules and any animals in the horse family shall not be walked or ridden on any public beach at any place within the Borough of Barnegat Light at any time.

l. Ball Playing and Like Activities

No person shall throw, bat, or catch a baseball, football, basketball or softball or engage in the playing of any game endangering the health or safety of others in protecting beach and supervised bathing areas in the borough. This subsection shall not apply to the playing of beach tennis or reasonable playing "at catch" with a soft rubber or beach ball.

m. Use of Docks

No person shall anchor, tie up or permit any boat to remain alongside any dock or public landing place on land belonging to the Borough or on any street for a longer time than two hours within any twenty four hour period.

**2. Permanent Restrictions**

There are no known restrictions to established public access points in Barnegat Light Borough.

## II. Community Needs Assessment

Barnegat Light has performed a Community Needs Assessment. The methods and results are described in the following section:

Analysis of the collected data including interviews with residents and stakeholders, site inspections and deed research indicates that adequate public access is provided to the tidal waters adjacent to Barnegat Light Borough. In addition, in the past five (5) years, Barnegat Light has initiated and completed numerous bulkhead projects at street ends to ensure shoreline stability and a safe point of access to the waterfront as well as rehabilitated or reconstructed bayside and oceanfront facilities to provide additional services to those utilizing them. In particular, a project was recently completed at 19th Street which included the construction of a new handicap walkway to the oceanfront.

The Borough has embraced a vision of providing increased passive recreational opportunities as well as waterfront access for different age groups at its Borough-owned park facilities. Improvements such as adding playground equipment, park benches and expanding beach areas where appropriate would help improve the local recreational facility offerings. The increase in seasonal population has warranted an expansion of current facilities throughout the community. Unlike other municipalities in the state, Barnegat Light is unique in that all recreational facilities can be accessed via different types of pedestrian oriented modes such as cycling or walking. In turn, this maximizes the potential use of the facilities by the local population. Municipal stakeholders feel it is important to continue park and access point rehabilitation projects to avoid a deterioration in the existing infrastructure.



Field interviews with local residents resulted in a consensus that the access to public waters was satisfactory.

### **III. Implementation Plan**

Barnegat Light Borough has created an Implementation Plan composed of Priorities, Preservation of Public Access Locations, Signage, Proposed Access Improvements and Facilities, and Municipal Tools for Implementation as described in the following section:

#### **A. Priorities**

Barnegat Light Borough has developed the following priorities:

##### **1. Maintain Existing Public Access**

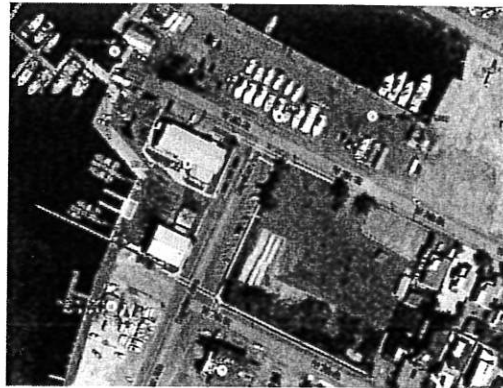
The Borough Department of Public Works routinely checks access points to ensure that they are free from barriers and remain safe for users however, a Municipal Access Maintenance Plan should be developed. Additional signage may be installed at particular access points to advise the general public of their availability such as street ends on the ocean and baysides.

##### **a. Tools**

A schedule of events promoting activities with the Barnegat Bay and the Atlantic Ocean is available throughout Barnegat Light Borough and is also available online. Some of these events include bi-weekly sand sculpting contests held at the 25th Street Ocean Beach.

##### **b. Cost and Funding**

Funding is appropriated at time of budget each year. In addition, in 2008, the Borough passed a referendum to permit a one cent Open Space Tax on property owners with the goal of sustaining a fund that would permit the acquisition of land in the Borough for public use should parcels become available. The tax generates approximately \$100,000 per year in revenue. In 2015, the last piece of open space became available and the Borough spent more than \$3,000,000.00 of tax payer funds to purchase the land which was the two (2) acre site of the former U.S. Coast Guard Barracks located at the Bayview Avenue and Sixth Street. If not preserved, the land would have supported the construction of 12 homes and been a negative detriment to the community. The Borough plans to use the site as a recreational area. Although not directly on tidal water, this parcel lies directly across the road and provides ample views of the waterfront.



## **2. Preserving Public Access**

In an effort to preserve public access, Barnegat Light Borough is continuously seeking funding opportunities to assist with offsetting the cost of access point and recreational park projects.

### **a. Tools**

The community continues to budget for park and public access improvements on a yearly basis. The following projects have been completed to promote and preserve public access:

#### **1) Completed Projects**

- ❖ Acquisition of 2-acre Coast Guard Barracks to be used as Open Space. As noted previously, this parcel was purchased through a one cent open space tax and prevented the possibility of construction of 12 homes on the land. This property will be preserved and will allow additional recreational opportunities for Borough residents and visitors.
- ❖ Construction of ADA compliant ramp at 19<sup>th</sup> Street and the oceanfront

#### **2) Proposed and Ongoing Projects**

### **b. Cost and Funding**

Funding is appropriated at time of budget each year.

## **3. Proposed Locations and Facilities**

No proposed access points are presently proposed.



## B. Signage

The Borough provides signage throughout the community at each of its public access points to clearly direct users to the appropriate entrance locations. Examples of the signage is provided below:



As stated previously, it is recommended that additional signs be added at popular Bayfront street ends to advise of possible kayak or paddleboard launching.

### **C. Municipal Public Access Fund**

At this time, Barnegat Light Borough does not have a Municipal Public Access Fund in place.

### **D. Army Corps of Engineers Requirements for Shore Protection Projects**

Long Beach Island is an 18-mile barrier island in southern Ocean County, New Jersey. The area regularly suffers damages from coastal storms, hurricanes and nor'easters. The Barnegat Inlet to Little Egg Inlet Coastal Storm Risk Management project, also known as the Long Beach Island beachfill or beach nourishment program, is designed to reduce erosion and property damages associated with these events. It is a joint effort of the Army Corps and the New Jersey Department of Environmental Protection.

A Feasibility Report completed in September of 1999 recommended beachfill with periodic nourishment to reduce potential hurricane and storm damages for the island. The project involves the construction of a dune with a top elevation 22 feet above sea level with a 300-400 foot wide berm, depending on the location of the beach on the island, at an elevation of 8 feet above sea level.

The Long Beach Island Coastal Storm Damage Reduction project was only partially completed when Hurricane Sandy hit the New Jersey shore. The Army Corps completed the initial construction of the project at Surf City in 2006; Harvey Cedars in 2010; and Brant Beach between 31st and 57th Streets in Long Beach Township in 2012. The Army Corps repaired beaches in Surf City and Harvey Cedars in 2012 after Hurricane Irene, and fully restored the beaches within all three communities after Hurricane Sandy in 2013. The restoration and repair work was funded 100 percent through the Army Corps' Flood Control and Coastal Emergencies program. On December 5, 2014 the U.S. Army Corps of Engineers awarded a contract to the Great Lakes Dredge and Dock Company, for \$128 million to complete initial construction of the Long Beach Island project. This project is a joint effort of the Army Corps and the New Jersey Department of Environmental Protection.

The project includes 22 foot-high dunes and 200 foot-long beaches in Ship Bottom, Beach Haven and parts of Long Beach Township and Surf City, will encompass a total of 12.7 miles of beaches that will measure between 325 and 415 feet long, including dune berms and reconstructing beach entrances to run diagonally from the dune berm to the sand in order to prevent ocean water from funneling into local streets during future storms.

Under the project, the beach berm itself was built up to approximately eight feet above sea level. The dune system behind the beach has a top elevation of approximately 22 feet above sea level.

This project was completed in Barnegat Light in June 2015.

## V. Relationship to the Other Regional and State Plans

Barnegat Light's MPAP has been reviewed for consistency and has the following relationship to the New Jersey State Development and Redevelopment Plan, prepared by the New Jersey State Planning Commission and Adopted March 1, 2001:

- Coastal Resource Planning Policy #5 promotes *"well-planned and revitalized coastal communities that sustain economies, are compatible with the natural environment, minimize the risks from natural hazards and provide access to coastal resources for the public use and enjoyment."*

Barnegat Light Borough supports this policy and has initiated a Coastal Vulnerability Assessment Study of its public access points and various critical facilities to ensure community leaders and decision makers have a clear understanding of potential future hazard risk to its access locations and to provide a resource which can be utilized to develop future resiliency projects.

- Coastal Resource Planning Policy #11 seeks to *"promote recreational opportunities and public access, and encourage tourism along the oceanfront, bay front and rivers of the coastal area by protecting public access rights."*

*It is estimated that as many as 10,000 people are within the boundaries of Barnegat Light Borough on a given day in the summer months. These people are comprised of year round residents, seasonal residents, day trippers and vacationers and most all seek to enjoy the amenities associated with coastal living. Barnegat Light has established a reputation for hosting various programs focusing on its tidal waters and attracts thousands of visitors to its lighthouse and working Maritime Village.*

## **VI. Resolution of Incorporation**

Upon approval of this plan by the New Jersey Department of Environmental Protection, Barnegat Light Borough will approve a final resolution to incorporate this Municipal Public Access Plan into the Recreation/Open Space Element of the Barnegat Light Borough Master Plan. The Final Resolution will mimic the draft Resolution provided in Appendix 2 of this plan.

**APPENDIX 1**  
**Municipal Public Access Plans**  
**Required Sections per NJAC 8.11 (e)**

1. (e) 1 Statement describing overall **goal of the MPAP** and the **administrative mechanisms** (for example, conservation restrictions, easements, ordinances) that either are already in place, or that shall be put in place to ensure that the municipality will meet public access goals
2. (e) 2 Statement of **Consistency with...Master Plan**
3. (e) 3 Public access **needs assessment** that evaluates:
  - existing access locations and capacities
  - practical limitations (esp. parking and bathrooms)
  - alternatives to address any limitations determined to exist
  - need for additional locations
4. (e) 4 **Digital Map and Inventory** identifying...:
  - tidal waterways within municipality and adjacent lands held by municipality
  - existing and proposed public access ways
  - proposed public access facilities
  - identified facilities compliant with ADA
5. (e) 5 **Implementation strategy**
  - forms of proposed public access responsive to needs assessment (i)
  - comprehensive list of specific public access projects and initiatives with implementation schedule (ii)
  - proposed tools to implement the plan, including (iii)
    - i. adoption or amendment of municipal ordinances
    - ii. uses of monetary compensation (Public Access Fund), if any
  - proposed modifications to existing plans, ordinances & programs to implement MPAP (iv)
  - proposed compliance with ACOE requirements for shore protection projects [see 8.11(r)] (v)
  - cost of implementing, constructing and maintaining the access facilities proposed in the plan and specifies how this cost will be funded (vi)
  - implementation schedule (vii)
  - ordinances in place/to be adopted re signage requirements (viii)
  - measures to permanently protect public access per MPAP (ix)
  - examples/models of easements/restrictions for permanent protections (x)
  - draft resolution incorporating DEP-approved MPAP into a MP element (xi)

APPENDIX 2

**Model Resolution for Incorporating MPAP into Master Plan**

(upon adoption the final resolution will replace this model)

Resolution # \_\_\_\_\_

Title: A RESOLUTION APPROVING THE MUNICIPAL PUBLIC ACCESS PLAN

WHEREAS, the Barnegat Light Borough Municipal Public Access Plan (MPAP) was submitted to the Municipal Council and reviewed at the regular meeting of {date}, and

WHEREAS, the governing body has approved the plan as submitted, and

WHEREAS, the governing body recognizes the need to make the MPAP an authorized component of municipal decision-making by incorporating it into the municipal master plan,

NOW, THEREFORE, BE IT RESOLVED by the Municipal Council of the Borough of Barnegat Light, the "Barnegat Light Borough Municipal Public Access Plan," a copy of which is attached, is hereby approved.

FURTHER RESOLVED, the Municipal Public Access Plan shall be incorporated into the municipal master plan within the Recreation/Open Space Element.

FURTHER RESOLVED a copy of the plan shall be sent to the New Jersey Department of Environmental Protection for review and approval in accordance with N.J.A.C.7.7 and 7.7E.

I hereby certify the foregoing to be a resolution adopted by the *Municipal Council of the Borough of Barnegat Light* at a meeting held on {date}.

\_\_\_\_\_  
Municipal Clerk

**Appendix 3**  
**Public Access Tables**

**Part A : Barnegat Light Borough Ocean Access**

**Part B: Barnegat Light Bay Access**

**PART A: Borough Of Barnegat Light Ocean Access**

ID	Signs	Parking	# of Parking Spaces	Street	Badge Req'd	Swim	Fish	Surf	Playg'd	Park	Pier / Gazebo	Boat Launch	Yacht Club	Marina	Food & Drink Super Market	Rest room	Seats	H/C	Shoreline Type (Ocean, Bay, Beach, Bulkhead)	Access Type (Physical, Visual, Water)
1				3rd Street	x	x											x		Beach	Physical
2				4th Street	x	x													Beach	Physical
3				5th Street	x	x											x		Beach	Physical
4				6th Street	x	x											x		Beach	Physical
5				7th Street	x	x											x		Beach	Physical
6		x	1 HC	8th Street	x	x											x		Beach	Physical
7		x	1 HC	9th Street (Walkover)	x	x											x	x	Beach	Physical
8				10th Street	x	x											x		Beach	Physical
9				11th Street	x	x											x		Beach	Physical
10				12th Street	x	x											x		Beach	Physical
11				13th Street	x	x											x		Beach	Physical
12				14th Street	x	x											x		Beach	Physical
13				15th Street	x	x											x		Beach	Physical
14				16th Street	x	x											x		Beach	Physical
15				17th Street	x	x											x		Beach	Physical
16				18th Street	x	x											x		Beach	Physical
17				19th Street	x	x											x		Beach	Physical
18				20th Street	x	x											x		Beach	Physical
19		x	1 HC	21st Street	x	x											x		Beach	Physical
20				22nd Street	x	x											x		Beach	Physical
21		x	1 HC	23rd Street	x	x											x		Beach	Physical
22				24th Street	x	x											x		Beach	Physical
23				25th Street	x	x											x		Beach	Physical
24				26th Street	x	x											x		Beach	Physical
25		x	1 HC	27th Street	x	x											x		Beach	Physical
26				28th Street	x	x											x		Beach	Physical
27		x	2 HC	29th Street (Walkover)	x	x											x	x	Beach	Physical
28				30th Street	x	x											x		Beach	Physical





## APPENDIX 4 Recreation and Open Space Inventory

County: OCEAN

Municipality: BARNEGAT LIGHT BORO

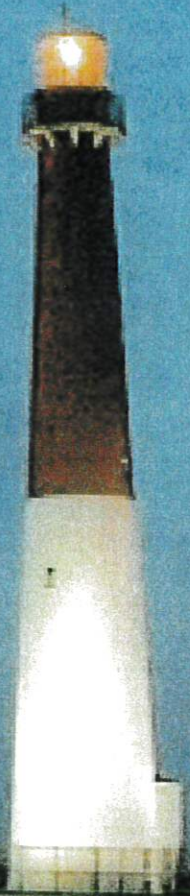
Block	Lot	Facility Name	Interest	Type
10	1	BARNEGAT LIGHT MUSEUM	FEE	M
10	2	BARNEGAT LIGHT MUSEUM	FEE	M
10	3	BARNEGAT LIGHT MUSEUM	FEE	M
16.01	1	DOCKING FACILITIES	FEE	M
18	21	N/A	FEE	M
18	23	NA	FEE	M
18	24	BOROUGH BALLFIELD	FEE	M
18	25	BORO BALLFIELD	FEE	M
18	26	BORO BALLFIELD	FEE	M
18	27	BORO BALLFIELD	FEE	M
18	28	BORO BALLFIELD	FEE	M
18	29	BORO BALLFIELD	FEE	M
18	30	BORO BALLFIELD	FEE	M
18	31	BORO BALLFIELD	FEE	M
18	32	BORO BALLFIELD	FEE	M
18	33	BORO BALLFIELD	FEE	M
18	34	BORO BALLFIELD	FEE	M
18	35	BORO BALLFIELD	FEE	M
18	36	N/A	FEE	M
18	37	NA	FEE	M
18	38	NA	FEE	M
18	39	NA	FEE	M
20.02	6	TENNIS AND BASKETBALL COU	FEE	M
20.03	1	PUBLIC BOAT RAMP	FEE	M
20	10	PLAYGROUND	FEE	M
20	11	PLAYGROUND	FEE	M
20	7	PLAYGROUND	FEE	M
20	8	PLAYGROUND	FEE	M
20	9	PLAYGROUND	FEE	M
22.01	1	N/A	FEE	M
24.01	1	N/A	FEE	M
29.01	1	ATLANTIC OCEAN BEACHFRONT	FEE	M
50.01	2	PUBLIC PARK	FEE	M

APPENDIX B

COASTAL VULNERABILITY ASSESSMENT

# BARNEGAT LIGHT BOROUGH

## A Municipal Assessment of Local Coastal Vulnerabilities



**Financial Assistance provided by: The Coastal Zone Management Act of 1972, as amended, administered by the Office of Coastal Management, National Oceanic and Atmospheric Administration (NOAA) through the Department Of Environmental Protection, Coastal Management Program'**

## INDEX

Vulnerability Assessment Introduction .....	Page 3
Methodology .....	Page 3
Tides .....	Page 5
Land Coverage and Topography .....	Page 6
Stormwater Collection and Disposal .....	Page 6
Sea Level Rise Vulnerability .....	Page 6
Built Environment .....	Page 7
Natural Environment .....	Page 9
Social Environment .....	Page 10
Coastal Vulnerability Index .....	Page 12
Getting to Resilience .....	Page 13
Barnegat Light Recommendations .....	Page 14

## Borough of Barnegat Light

Barnegat Light, is located north of Harvey Cedars and at the northernmost end of Long Beach Island, a barrier island which consists of 6 municipalities, off the mainland coast of southern Ocean County. Long Beach Island, like other barrier islands in the southern part of the United States, has only one means of access via NJSH Route 72 and is geographically vulnerable to natural coastal hazards. The Borough encompasses approximately 0.852 square mile of which 0.731 square miles is land and is bordered to the east by the Atlantic Ocean and to the west by the Barnegat Bay and, consequently, suffered devastating damage from Superstorm Sandy in 2012. In 2010, the population of Barnegat Light was just 574 people but in the summer months, the population soars to well over 10,000 people.

Barnegat Light is home to several distinctive shops and restaurants as well as Viking Village, a maritime shopping area, the Barnegat Lighthouse State Park and numerous commercial fishing fleets with docking facilities on the northern end of the Borough. The only vehicular ingress and egress between the mainland and Barnegat Light is via the Route 72 Manahawkin Bay Bridge in Ship Bottom, also commonly referred to as "The Causeway". As a result, residents of Barnegat Light need to travel lower lying areas of Long Beach Township (Loveladies, North Beach), Harvey Cedars, Surf City, and Ship Bottom which becomes problematic for traffic attempting to navigate potential floodwaters as the number of roads to leave the Borough are limited. As residents and visitors to this shore community do not arrive by way of air, bus or train travel, all means of travel between the barrier island and the mainland occurs by way of personal transportation, making an evacuation a time consuming process. Due to these factors, the island wide Offices of Emergency Management typically starts issuing voluntary evacuation orders at least 72 hours in advance of a storm's anticipated impact. In addition, these same agencies will often issue mandatory evacuation orders in advance of County or State Mandated orders realizing the time and resources to fully evacuate the island. Lastly, the high number of lifelong residents who may have chosen to "ride out" significant storms like the Great Storm of 1962, the Storm of 1992 or even Superstorm Sandy in 2012 may be less inclined to heed the mandatory 72 hour evacuation orders. These people, if they do not leave, are often the last leaving the island and are often being evacuated by highwater vehicle and not utilizing their own transportation.

In our meeting with municipal residents and even some community leaders, we learned there is still very much a mixed view of the necessity to evacuate. Given the extreme damage to the communities south of Surf City, one would anticipate that during the next storm event, those people would certainly leave. Unfortunately, that expectation is not true. Instead, people feel they must protect their property during times of storm event though this isn't always rational. With the high number of homes that have been raised well above the desired FEMA Flood Elevations, we foresee the number of people staying in their homes and ignoring mandatory evacuation orders to be higher during the next event which will undoubtedly put a tremendous strain on emergency personnel and resources. During Superstorm Sandy, it is estimated that only about 50% of the population evacuated and at least 200 people remained in their homes due to the residents being over 65 years of age and the inability to bring pets to shelters on the

mainland. The lack of pet friendly shelters has since been addressed as part of the Ocean County Hazard Mitigation Plan. On October 31<sup>st</sup>, approximately 30 people were evacuated from the Borough and at least three medical episodes were reported.

The shuttle bus service on the island can be utilized during evacuation and stages in the Acme parking lot at 9600 Long Beach Boulevard in Long Beach Township.

The Borough supports its own public works and municipal building while Long Beach Township oversees the policing functions of the Borough. Since the island is only a few blocks wide, the ocean and bay fronts are easily accessible by anyone from anywhere in the Borough. This convenience is precisely what attracts so many vacationers to this area. On the contrary, this narrow swath of land with grid style streets could be the ingredients for impacts and damage from coastal hazards such as storm surge and Sea Level Rise. Historically, Barnegat Light, due to elevation and the existing natural sedges, does not see the level of flooding within the Borough as other parts of the island may experience. Based on the latest Preliminary Work Maps released by the Federal Emergency Management Agency, the majority of Barnegat Light lies within the 100-year floodplain and field inspections indicate that most unmitigated residential development sits at 6 FT feet or below in elevation in relationship to mean sea level. Therefore, a Category 1 hurricane, an intense extra tropical system like Super Storm Sandy or even a Nor'easter all pose a significant threat to this community but no significant impacts have been experienced in recent time. The fishing fleet, for example, which lies near the Barnegat Inlet was not impacted physically but was significantly impacted economically as the commercial boats remained intact but the more than 250 people employed by the fishing industry had no way to get to the docks as the communities to the south were dealing with destroyed infrastructure.

Since Sandy's impact in 2012, and even prior to, residents of this seashore community have noticed to more frequent flooding especially along Bayview Avenue. Any or all of these influences can cause nuisance flooding in the Borough. Described as a nuisance because the flooding typically impacts the streets and disrupts daily activity such as driving or accessing local businesses on foot, it often can cause more significant problems such as flood water intrusion into residential garages, first floors of businesses and can be problematic for traffic attempting to navigate these floodwaters. In particular in Barnegat Light, if flooding is occurring on other parts of the island, all traffic in Barnegat Light will need to travel south through Harvey Cedars, Surf City and Long Beach Township to utilize Ship Bottom as their point of evacuation via 8<sup>th</sup> and 9<sup>th</sup> Streets to the Manahawkin Bay Bridge. Even so, if evacuation due to an impending storm isn't required, nuisance flooding associated with Sea Level Rise can impact those in Barnegat Light from traveling out of the Borough. It should be noted that there is no large scale grocery store in the Borough and many services and conveniences are located elsewhere on the island or on the mainland therefore necessitating the need to leave the Borough.

This Coastal Vulnerability Assessment will specifically evaluate the Borough's level of exposure of its built environment, natural environment and social environment to storm surge related to a Category 1, 2 and 3 storm events as well as 1 FT, 2 FT and 3 FT of anticipated Sea Level Rise. During a recent discussions with Borough leaders regarding flooding events and a US Army Corps

of Engineers Back Bay Flooding Feasibility Study that is underway, these factors were agreed to be the most serious when determining coastal vulnerability of the Borough.

### **Vulnerability Assessment Introduction**

The Borough of Barnegat Light was awarded a grant by the New Jersey Department of Environmental Protection (Department), Division of Coastal and Land Use Planning, with funding through a grant awarded by the National Oceanic and Atmospheric Administration, of the U.S. Department of Commerce, to support the development of a Coastal Vulnerability Assessment (CVA) Report. A Coastal Vulnerability Report is intended to provide coastal communities with the ability to assess their vulnerability to coastal hazards and then identify opportunities to address those mapped concerns.

In addition, the five (5) other municipalities that make up Long Beach Island (LBI) are also analyzing their risks and vulnerabilities to coastal hazards under this program. In doing so and the Department understanding the interconnected resources and challenges the barrier island must contend with during times of significant weather events or federally declared disasters, the Department recommended the development of a Regional Coastal Vulnerability Assessment, which was accepted by all communities, and will address regional hazards and provide recommendations for the barrier island as a whole entity. The Department's objective with promoting a regional CVA Plan is to increase the resiliency of each municipality through consideration of the coastal hazards challenges and potential solutions of the entire island.

An associated component of assessing the Borough's vulnerability was to complete the Getting to Resilience Questionnaire with the technical assistance and support of Jenna Gatto and Lisa Auermuller of the Jacques Cousteau National Estuarine Research Reserve (JC NERR). The GTR questionnaire was initially developed and piloted by the NJDEP's Office of Coastal Management to foster municipal resiliency when confronted with coastal hazards and contains linkages, mitigation and adaptation actions to reduce vulnerability and increase preparedness. At a later date, the GTR process was adapted by the Coastal Training program at JC NERR, converted into a digital format, and placed on an interactive website. JC NERR then added additional linkages to the National Flood Insurance Program's Community Rating System (CRS), Hazard Mitigation Planning and Sustainable Jersey. Jenna Gatto, the region's Community Resilience Specialist, was able to meet with each municipality over the course of at least 2 meetings and provide community specific recommendations based on the outcomes of the questionnaire. All stakeholders are in agreement that this step was an ideal launch pad into the investigation of municipal coastal vulnerability.

### **Methodology**

As noted above, the Borough of Barnegat Light received a grant from the NJDEP to complete the GTR process, a Municipal Public Access Plan and a Coastal Vulnerability Assessment. The CVA was developed by Owen, Little and Associates, Inc. (OLA) team of Land Use and Natural Hazard Mitigation Planners, Civil Engineers, GIS Specialists and Certified Floodplain Managers as well as



numerous stakeholders from the community including government officials and residents. This firm, Owen, Little & Associates, Inc., holds the professional appointment as Borough Engineer for the community of Barnegat Light and has done so for several years. With that, the office has accumulated a significant amount of data that was beneficial and valuable to this process such as base mapping and shapefiles attributed to the built environment including critical facilities and evacuation routes. This already obtained information allowed for an in-field update of the data to be required instead of a new inventory. However, numerous shapefiles had to be created for data sets such as those for water infrastructure. In coordination with JCNERR and assistance from Jennifer Rovito, GISP, at the Environmental Analysis and Communications Group of Edward J. Bloustein School of Planning and Public Policy, Rutgers University, provided data sets including those for Sea Level Rise and storm surge associated with the category 1, 2 and 3 hurricane.

It is important to note that although the Sandy Surge extent depicted on the maps appears to be severe, it has been noted by members of the community that the surge extent did not extend as far as shown. For example, portions of Bayview Avenue did flood but the entire road did not see water. In addition, the maps show water reaching as far as Central Avenue which was not documented on the ground. Water did breach the bay beach at 25<sup>th</sup> Street as well as the boat ramp at 10<sup>th</sup> Street and water did reach the roadway. Viking Village did also experience some inundation and some of the small stores did experience water intrusion. It is our understanding that no significant damage resulted and no flood insurance claims were paid as the result of any losses. Noted instances of damage resulted from wind only.

Review of elevation data and the high water marks provided by the USGS suggests that it is possible water did reach Central Avenue, with the varying differences of proof, and the notion that the tide occurred at night and likely receded quickly, it will take additional research to clearly define the surge extent of Superstorm Sandy.

Review of the SLOSH models for a Category 1 Hurricane in Barnegat Light indicate that flooding should be expected to be less expansive when compared to the flooding extent *shown on the map* of Superstorm Sandy, however, with local knowledge prevailing, we question the validity of the actual surge extent as explained above. Potential impacts appear to increase exponentially the stronger the storm event. A Category 3 Storm event would likely be catastrophic to the bayside areas and impacts will be felt throughout the community.

Also, scientists expect this area to be impacted by 1.5 FT of Sea Level Rise prior to 2050. As Sea Level Rise is anticipated to accelerate due to shrinking land ice and thermal expansion, scientists anticipate that that 3.5 FT of Sea Level Rise is very likely before 2100.

	Sea-level rise (feet)		
	Global	Bedrock	Shore
2030 central	0.5	0.7	0.8
2030 low	0.3	0.5	0.6
2030 high	0.7	1	1.1
2030 higher	0.9	1.2	1.4
2050 central	0.8	1.3	1.5
2050 low	0.5	0.9	1.1
2050 high	1.3	1.8	1.9
2050 higher	1.6	2.1	2.3
2100 central	2.5	3.1	3.5
2100 low	1.4	2.2	2.5
2100 high	4	4.6	4.9
2100 higher	4.6	5.5	5.9
2100 collapse	8.7	9.7	10
<small>NJ sea level rise projection ranges and best estimates. K.G. Miller, R.E. Kopp, B.P. Horton, J.V. Browning and A.C. Kemp, 2013, A Geological Perspective on Sea Level Rise and its Impacts along the U.S. Mid Atlantic Coast. Earth's Future 1:3-18, doi:10.1002/2013EF000135</small>			

## Tides

General tidal fluctuations along the Borough's bay shore, is from elevation -1.0 to elevation +1.5, or so; spring tides are as high as 2.0. Occasionally, maybe once a month, a "blow-out" low tide caused by high pressure and off-shore winds is recorded around elevation -1.5 or lower. Higher tide ranges are experienced at the time of full moons ("spring tides"), and tend to be greater in the winter months when the earth is closer to the moon.

More ominously, storm surge may accompany any severe coastal storm where an extreme low pressure system develops. With some storms a constant easterly wind will "stack up" the ocean waters, causing higher tides, which prevents the bay from emptying out the inlet, and back bay flooding occurs. Stronger and more persistent on-shore winds will mean higher and higher tides. This tends to happen up to four or more times a year and can reach elevations 3 or 4, or higher, flooding roadways and structures constructed close to grade. Being that the Borough lies at the southern side of the Barnegat Inlet and sees the immediate impacts from surges and tide relief, the Borough is spared from the extreme surge or tidal flooding events.

The U.S. Geological Survey (U.S.G.S.) recorded Superstorm Sandy's High Water Mark at 5.3 FT near the Barnegat Lighthouse in the northernmost portion of the Borough. Meanwhile, the tide

gauge at Route 72 failed at the height of the event but was estimated to have reached just under 6.5 FT. With ground surface elevations averaging around 5 to 6 FT, damage was very minimal. All elevations stated in this study are in feet and based on NAVD 1988.

### **Land Coverage and Topography**

General topography of the areas west of Central Avenue is flat, with surface grades of 1 to 2 percent and road grades being even less. In order to achieve drainage flow, the roads have a “see-saw” profile, where low points are created every other block or so. These low areas create pockets, where storm water collects and will be subject to flooding when excessive rainfall, tidal tail water or debris clogging may occur. Where streets have been repaved or overlaid, due to the shallow gutter grades, puddling may occur and runoff is not able to reach the inlets.

Areas to the east of Central Avenue generally are sloped upward towards the Ocean. Elevation change ranges from 4 to 5 feet at the bay area to 14 feet at the eastern street-ends by the beaches.

### **Stormwater Collection and Disposal**

Natural drainage ways exist within the Borough mainly along Bayview Avenue. Most of the Borough has been built on filled lands but wetland and sedge areas remain along the bayfront on Bayview Avenue.

In areas where the Bayfront properties were filled, stormwater runoff from these properties and streets does not naturally drain over the surface into the Manahawkin Bay and instead the stormwater is conveyed to the bay by drainage collection systems.

All of the collected runoff is directed westward through piping systems towards the Bay and outlets through the street-end bulkheads. These drainage collection systems are gravity flow pipe systems, sloping from east to west within the road right-of-ways.

As the Borough grew over the years, the development of the drainage collection system has appeared to be mostly unplanned, and has progressed in a piggyback fashion, with later areas of development simply connecting to the earlier systems, with little upgrade in capacity. Some of the pipe systems may be over 80 years old, and are undersized by today’s engineering standards.

It should be noted that the ownership and responsibility for stormwater collection systems are shared by the Borough and Ocean County.

### **Sea Level Rise Vulnerability**

Sea Level Rise is a documented threat to the Borough of Barnegat Light and the change in Sea Level Rise has been validated by members of the community over the years. The impending sea level will rise, due to glacial and ice sheet melting, and the risk of flooding will also increase due to the anticipated impacts from storms which may be more severe and more frequent. The

historical rate of Sea Level Rise along the New Jersey coast over the past half century was 3-4mm/year or 0.12-0.16 in/year and these rates are expected to increase. In the recent publication entitled "A Geological Perspective on Sea-Level Rise and its Impacts along the U.S. Mid-Atlantic Coast", authors Miller and Kopp state that in the year 2050, the best estimate for Sea Level Rise is 1.5 FT along the Jersey Shore. By the year 2100, the best estimate for Sea Level Rise is 3.5 FT along the same coast. In this context, the term "best" refers to a 50% likelihood of that extent of sea-level rise occurring.

Barnegat Light can expect to see the impacts of Sea Level Rise by about 2065 when 2 FT of rise is anticipated. Areas without bulkheading along Bayview Avenue are most vulnerable as they are not secured by structural barriers and are the first areas to flood during storm events. Three (3) feet of Sea Level Rise will impact all of Bayview Avenue but will not affect the most critical facilities such as wells, the fire department, first aid building and gas station. During Superstorm Sandy, the gas station on Central Avenue near 18<sup>th</sup> Street was critical as its generator allowed servicing of customers to obtain gas for their personal vehicles and generators. In addition, the distance between Barnegat Light and Ship Bottom is at least nine (9) miles which requires those at the northern part of the island to rely on this station for fuel.



### **Built Environment**

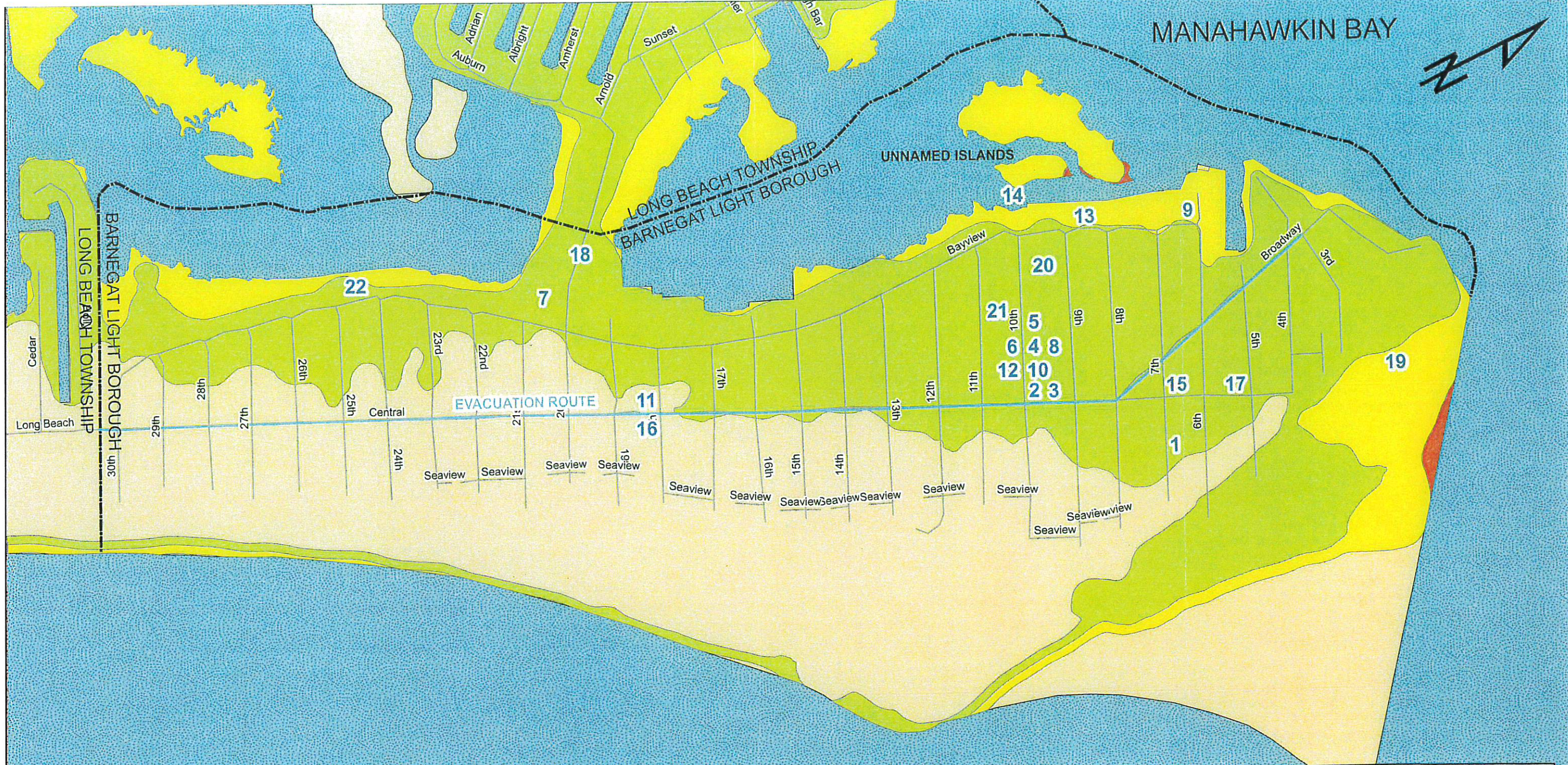
Barnegat Light is a coastal resort community located on Long Beach Island, a barrier island, in southern New Jersey and offers an array of residential housing options, several retail and dining establishments and numerous parks and public access points to the ocean and bayfront all of which make this Borough a sought after destination for vacationers and a highly desirable area in which to live seasonally or year-round. There are approximately 27 blocks south to north, and 3 to 4 blocks from the Bay to the Ocean (east to west). The total land area of the Borough is approximately 0.852 square miles. As of May 2010, the borough had a total of 11.48 miles of roadways, of which 7.46 miles were maintained by the Borough and 4.02 miles by Ocean County. At the time of the 2010 United States Census, there were 574 people, 274 households, and 184.1 families residing in the borough. The population density was 785.1 per square mile and there were 1282 housing units at an average density of 1753.6 per square mile. The flux in population season to season greatly affects the economic, social and physical makeup of the Borough and it's often the year-round residents whom are most affected by these conditions. The summer population can reach 10,000 people or more. Barnegat Light is considered a fully developed municipality, with the exception of in-fill lots for redevelopment.

After the Storm of 1962, the Borough purchased a large extent of oceanfront property for the purpose of preservation and protection. Then in 2008, the Borough passed a referendum to permit a one cent Open Space Tax on property owners with the goal of sustaining a fund that would permit the acquisition of additional land in the Borough for public use should parcels become available. The tax generates approximately \$100,000 per year in revenue. In 2015, the last piece of open space became available and the Borough spent more than \$3,000,000.00 of tax payer funds to purchase the land which was the two (2) acre site of the former U.S. Coast Guard Barracks located at the Bayview Avenue and Sixth Street. If not preserved, the land would have supported the construction of 12 homes and been a negative detriment to the community. The Borough plans to use the site as a recreational area. Although not directly on tidal water, this parcel lies directly across the roadway and provides ample views of the waterfront. Barnegat Light prioritizes open and greenspace.

The Borough is unique in that it is accessible via only one (1) causeway which also serves five other municipalities. Increased vehicle and pedestrian traffic are concerns for this small community especially during the prime summer months when many vacationers are using the unfamiliar roads to drive, walk or ride bicycles. The grid-style road network in Barnegat Light and the composition of its blocks are essential for being able to provide multiple means egress during times of evacuation to the Manahawkin Bay Bridge.

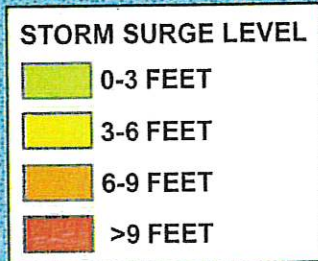
There are many older homes and businesses, built prior to the March, 1962 Great Storm, that are not elevated or on pilings, and are only slightly above the existing street elevation. In past years, many homes have been elevated, but the remaining properties at grade elevation are susceptible to the threat of flooding from both tidal and rainfall events. Although these raised homes will be protected from floodwaters, they often provide a false sense of personal security as the surrounding infrastructure or communities will still be inundated. So although the habitable floors of the structure may not be impacted, a person's ability to leave will be.

Maps indicate that approximately 40% of the community is susceptible to storm surge inundation of a Category 1 hurricane, and most of the community will likely be affected by some extent of coastal flooding by a Category 2 storm. A Category 3 hurricane will be catastrophic to the Borough and evacuation from the Borough by land through all municipalities to the south will be impossible.



ATLANTIC OCEAN

MANAHAWKIN BAY



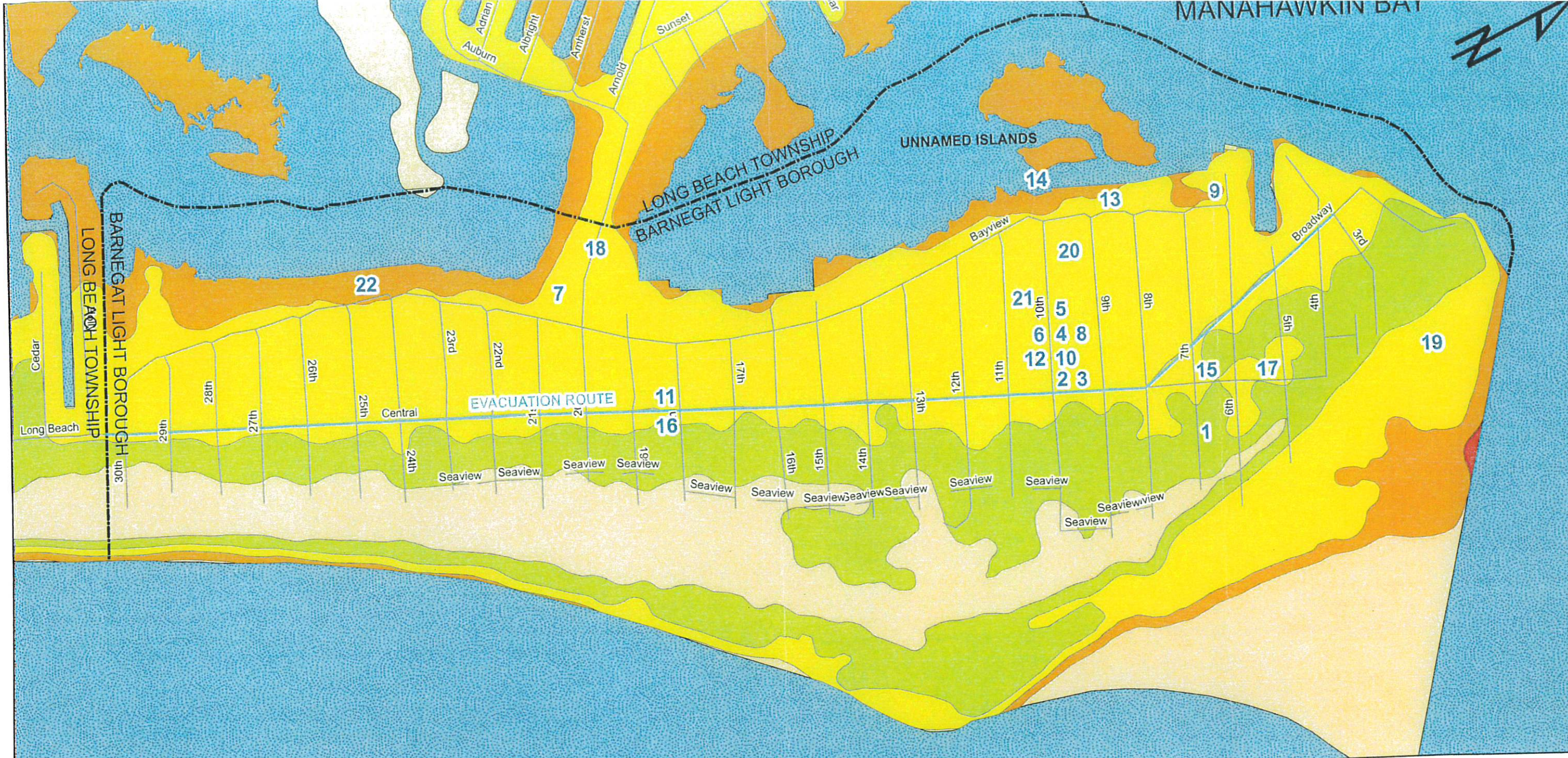
- 1 - BOROUGH HALL
- 2 - FIRE DEPARTMENT
- 3 - FIRST AID
- 4 - WATER DEPT./PUBLIC WORKS YARD
- 5 - WELL #2
- 6 - WELL #3
- 7 - WELL #4
- 8 - STAGING AREA
- 9 - U.S. COAST GUARD STATION
- 10 - MAINTENANCE BUILDING
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- 12 - POST OFFICE
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- 17 - BARNEGAT LIGHT MUSEUM
- 18 - ACCESS TO HIGH BAR HARBOR
- 19 - BARNEGAT LIGHT STATE PARK
- 20 - BASEBALL FIELD
- 21 - BASKETBALL/TENNIS COURTS
- 22 - BAYVIEW PARK

**BARNEGAT LIGHT BOROUGH**

**COASTAL VULNERABILITY ASSESSMENT  
BUILT ENVIRONMENT VULNERABILITY  
CATEGORY 1 STORM**

0 350 700 1,400 Feet

Owen, Little and Associates, Inc.  
443 Atlantic City Boulevard  
Beachwood, NJ 08722  
(732)244-1090



ATLANTIC OCEAN

**STORM SURGE LEVEL**

- 0-3 FEET
- 3-6 FEET
- 6-9 FEET
- >9 FEET

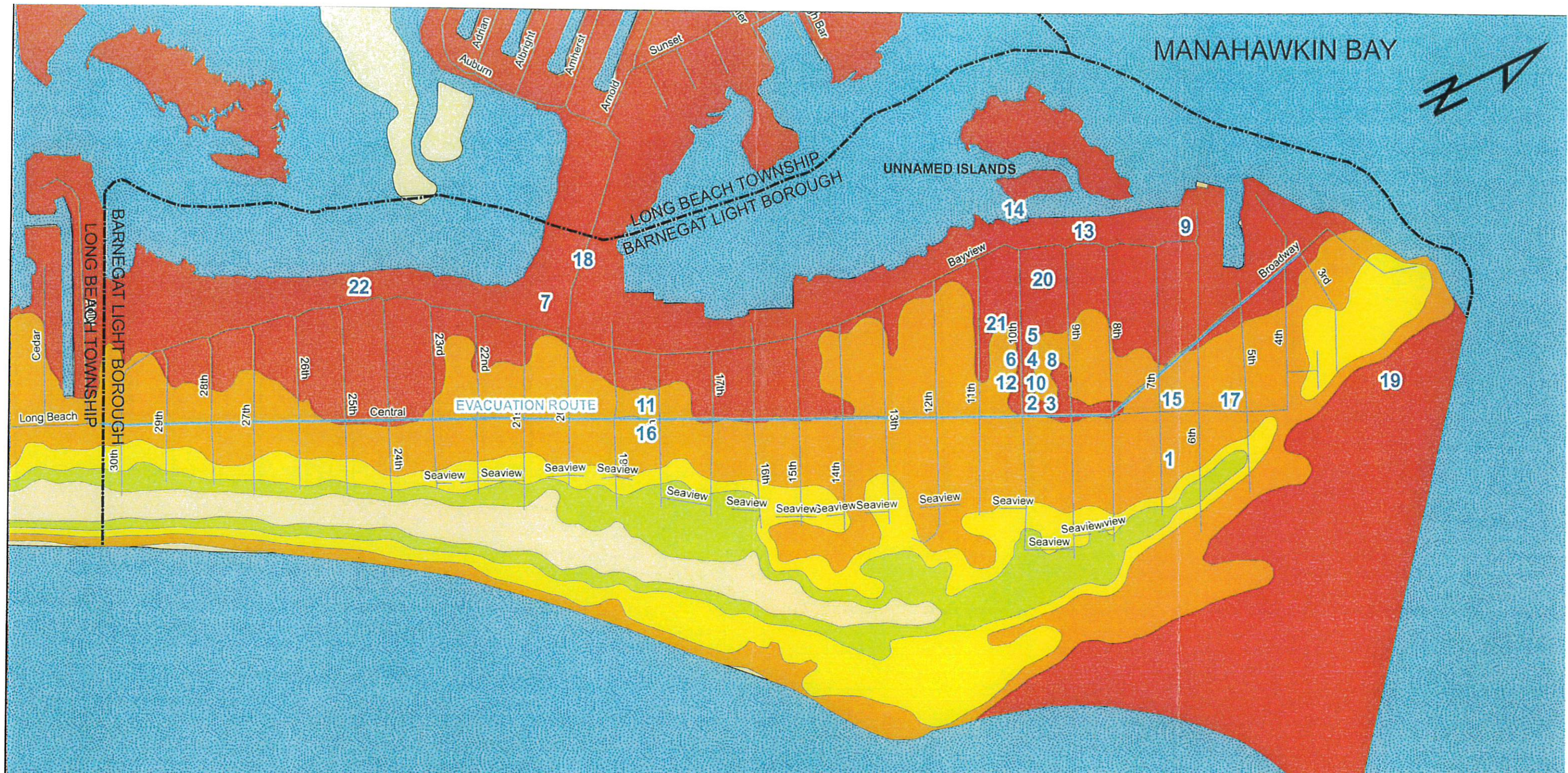
- 1 - BOROUGH HALL
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**BARNEGAT LIGHT BOROUGH**

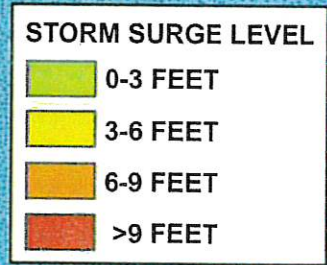
**COASTAL VULNERABILITY ASSESSMENT  
BUILT ENVIRONMENT VULNERABILITY  
CATEGORY 2 STORM**

0 350 700 1,400 Feet

Owen, Little and Associates, Inc.  
443 Atlantic City Boulevard  
Beachwood, NJ 08722  
(732)244-1090



ATLANTIC OCEAN



- 1 - BOROUGH HALL
- 2 - FIRE DEPARTMENT
- 3 - FIRST AID
- 4 - WATER DEPT./PUBLIC WORKS YARD
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**BARNEGAT LIGHT BOROUGH**

**COASTAL VULNERABILITY ASSESSMENT  
BUILT ENVIRONMENT VULNERABILITY  
CATEGORY 3 STORM**

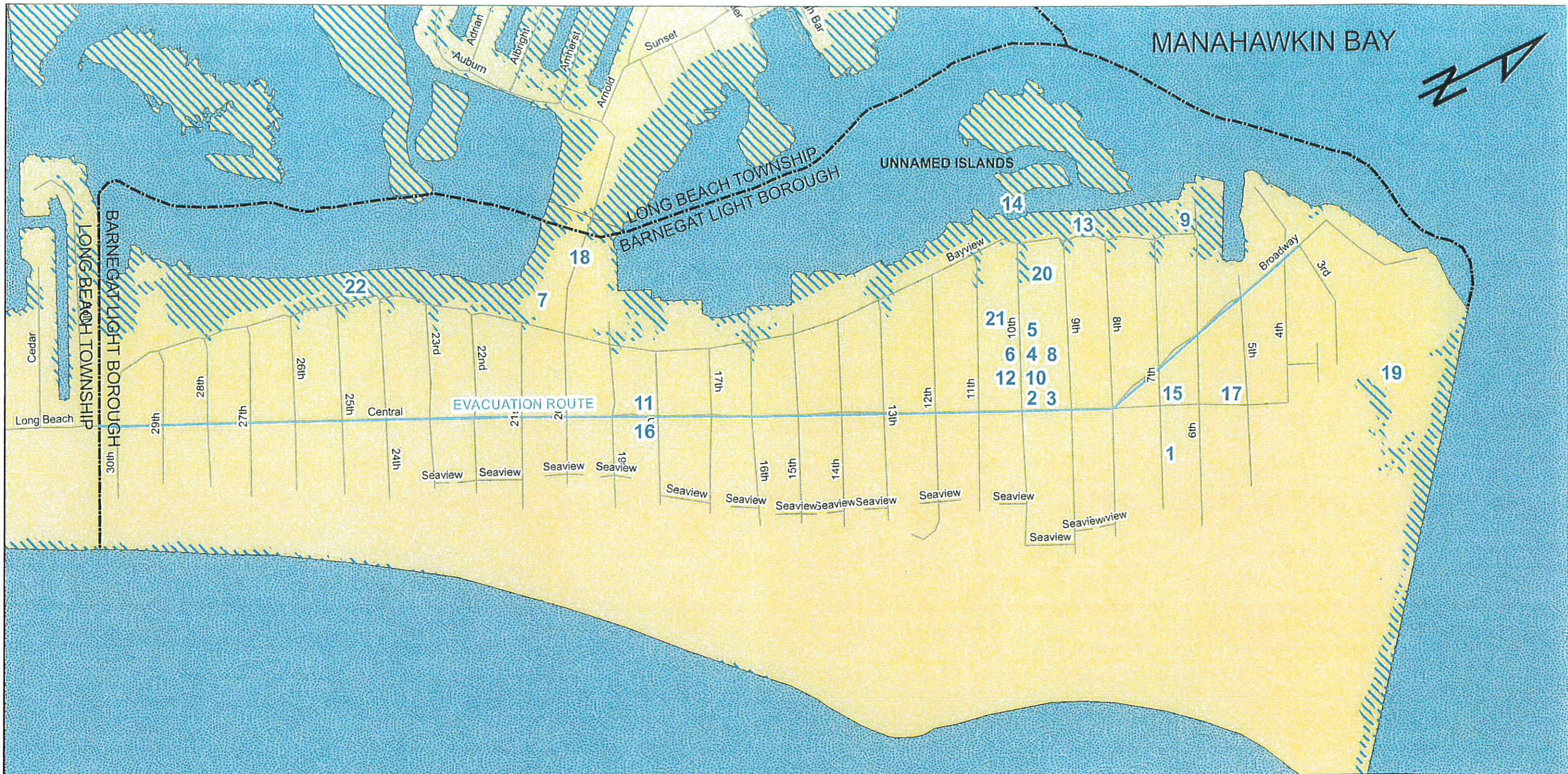
Feet

0 350 700 1,400

Owen, Little and Associates, Inc.  
 443 Atlantic City Boulevard  
 Beachwood, NJ 08722  
 (732)244-1090







ATLANTIC OCEAN

MANAHAWKIN BAY



- 1 - BOROUGH HALL
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SEA LEVEL RISE

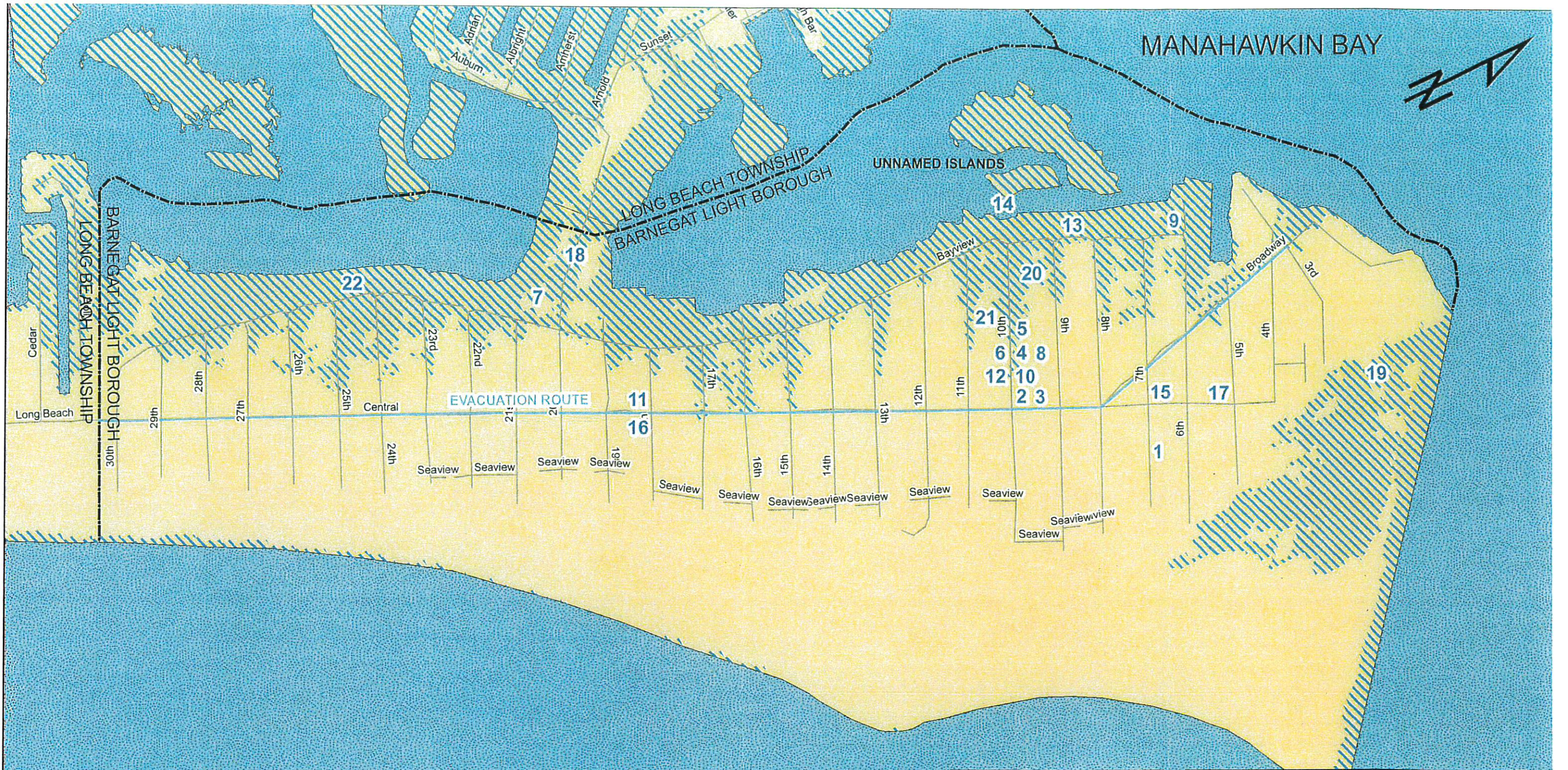
## BARNEGAT LIGHT BOROUGH

**COASTAL VULNERABILITY ASSESSMENT  
BUILT ENVIRONMENT VULNERABILITY**

ANTICIPATED SEA LEVEL RISE (2 FEET)

0 350 700 1,400 Feet

Owen, Little and Associates, Inc.  
443 Atlantic City Boulevard  
Beachwood, NJ 08722  
(732)244-1090



ATLANTIC OCEAN

MANAHAWKIN BAY



- 1 - BOROUGH HALL
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SEA LEVEL RISE

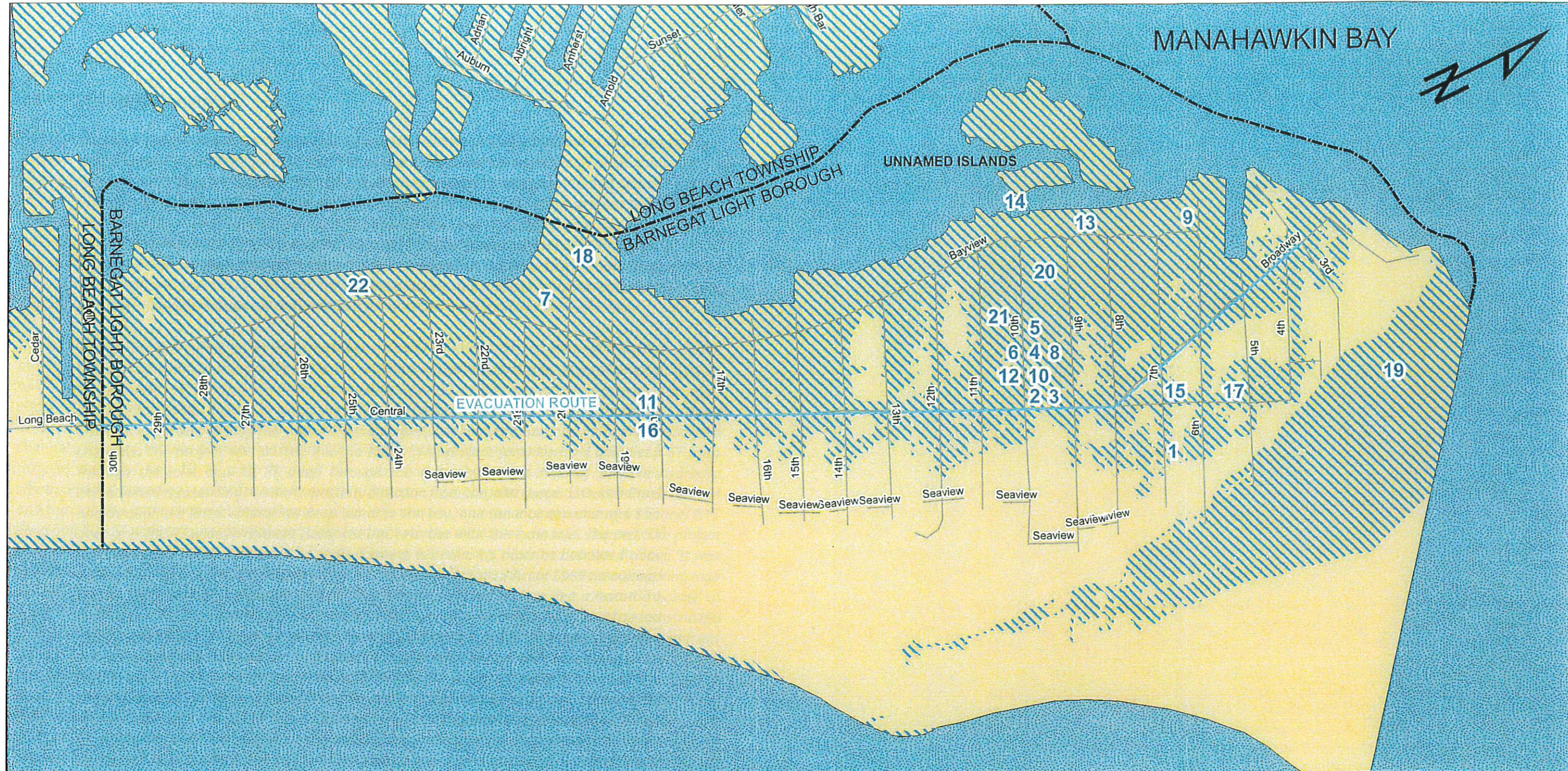
## BARNEGAT LIGHT BOROUGH

**COASTAL VULNERABILITY ASSESSMENT  
BUILT ENVIRONMENT VULNERABILITY**

ANTICIPATED SEA LEVEL RISE (3 FEET)

0 350 700 1,400 Feet

Owen, Little and Associates, Inc.  
443 Atlantic City Boulevard  
Beachwood, NJ 08722  
(732)244-1090



ATLANTIC OCEAN

MANAHAWKIN BAY



- 1 - BOROUGH HALL
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STORM SURGE

## BARNEGAT LIGHT BOROUGH

**COASTAL VULNERABILITY ASSESSMENT  
BUILT ENVIRONMENT VULNERABILITY  
SUPERSTORM SANDY - STORM SURGE**

0 350 700 1,400 Feet

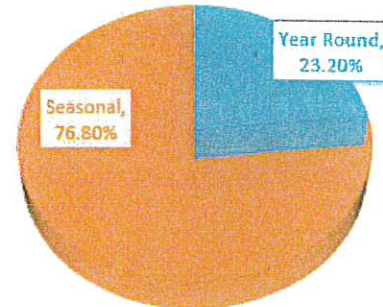
Owen, Little and Associates, Inc.  
443 Atlantic City Boulevard  
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(732)244-1090

## Social Environment

Barneгат Light is a seasonal community with approximately 574 year-round residents and upwards of 10,000 seasonal residents. The community is comprised of a diversified age range and over 41% of its population is 65 years or older. The census data also shows that of the 274 households in the Borough, 9.9% had children under the age of 18 living with them and the average family size was 2.48. In addition, the data indicates that 19.1% of households had someone living alone who was 65 years of age or older. The analysis suggests that seasonal visitors likely pose the most risk in terms of general awareness and responsiveness as they may not be cognizant of their geographical location and the associated risk of flooding at their position. This is true especially in Barneгат Light where low lying areas and nuisance flooding associated with wind direction and heavy rainfall can quickly become problematic.

Initially, our team of Hazard Mitigation Planners intended to utilize the Social Vulnerability Index (SVI) prepared by the Agency for Toxic Substances and Disease Registry (ATSDR) a federal public health agency of the U.S. Department of Health and Human Services, based in Atlanta, Georgia, to analyze factors that contribute to a community's social vulnerability. These factors include socioeconomic status, household composition and disability, minority status and language as well as housing and transportation. The principal obstacle with the data set is its restriction to census block only which is a common theme amongst data sets for social factors. Although some communities can utilize field knowledge of the area to supplement the data set, it was determined by the team that the population and community is too small to see a diversity in the category range. With the Borough being less than one square mile, assigning a range would essentially provide a homogenous outcome.

### BARNEGAT LIGHT HOUSING OCCUPANCY



Next, the team considered creating its own index, using information that may be obtained by the local Office of Emergency Management or Health Department, anticipating that this source may include homebound residents, those with a disability, or those without vehicles. However, the local agencies in this region no longer maintain a list like this. In addition, the team learned that

many people who may be considered vulnerable in a hazardous situation are reluctant to disclose this information to community officials. If the Borough was to initiate a survey such as this, it would have to be updated frequently as the needs of the contributors change frequently.

Social Vulnerabilities		
<b>Housing</b>		
	#	(%)
Total Housing Units	1259	100%
Occupied Housing Units	293	23.20%
Seasonal Use Only	966	76.80%
In group Quarters	0	0
Mobile Home Housing	0	0
<b>Income</b>		
Below Poverty level		4.00%
Median Household Income		\$80,703
<b>Race</b>		
		(%)
Percent Minority		1.90%
Speak only English		93.80%
<b>Age</b>		
		(%)
Age 5 and under		1.70%
Age 17 and under		7.30%
Age 65-74		17.60%
Age 75 +		23.50%

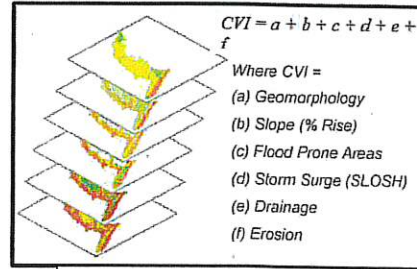
With such a small community, both in

regards to size and year round population, and without a nursing home, assisted living facility, age restricted housing development or subsidized public housing projects, it's impossible to accurately measure social vulnerability in a map format. Community OEM Coordinators and other municipal officials have a greater understanding and capacity at the local level to assist those who may require additional assistance during a storm event.

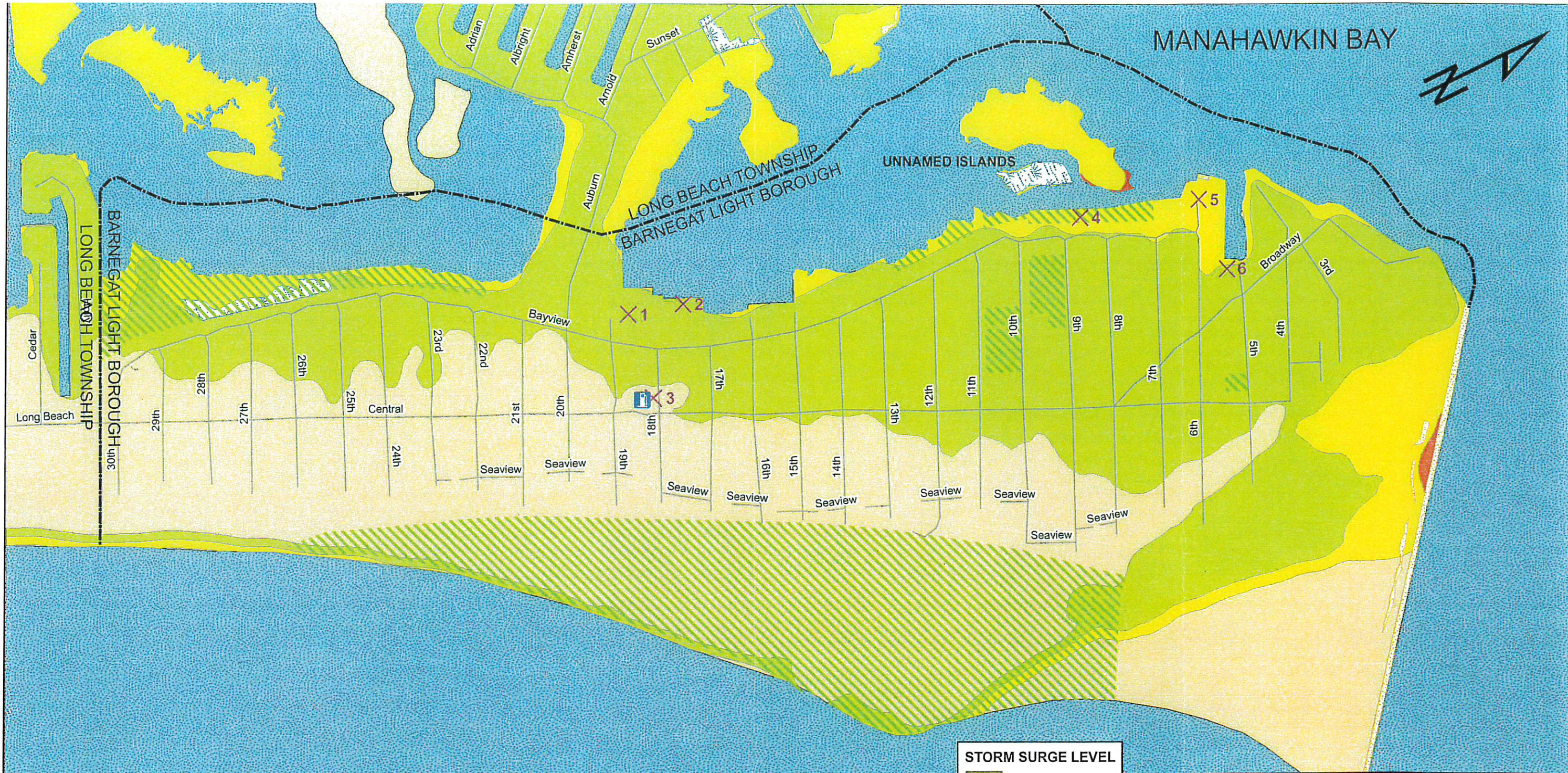
Analysis of some social factors, shown above, indicate that there is not a clear year round population to which the Borough could seek additional outreach programs. Local knowledge indicates that the aging population has been in place in the Borough for decades and is familiar with storm events and the need to evacuate in a timely manner. In addition, during Superstorm Sandy, approximately 50% of the residents abided by the mandatory evacuation order and there were not significant cases of rescue during the event. The main cause of concern was the lack of functional utilities which did cause additional people to leave after the storm was over.

## Coastal Vulnerability Index

By definition, a CVI allows for six variables to be related in a quantifiable manner that expresses the relative vulnerability of the coast to physical changes due to future sea-level rise or other coastal hazards <sup>1</sup>. This method yields numerical data that cannot be equated directly with particular physical effects. It does, however, highlight areas where the various effects of coastal hazards may be the greatest. Once each section of coastline is assigned a vulnerability value for each specific data variable, the coastal vulnerability index (CVI) is calculated as the square root of the product of the ranked variables divided by the total number of variables; where, a = geomorphology, b = slope (% Rise) , c = flood prone areas, d =Storm Surge (SLOSH) , e = drainage, and f = erosion. The calculated CVI value is divided into quartile ranges to highlight different vulnerabilities within the park. The CVI ranges (lower – major water) reported here apply only to Barnegat Light Borough and may vary from other CVI's prepared by alternate agencies. The CVI map for Barnegat Light is provided on the following page.



Source: NJDEP, NJCCVAMP, December 2011



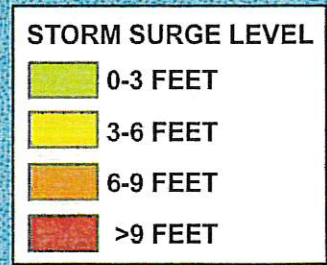
MANAHAWKIN BAY



LONG BEACH TOWNSHIP  
BARNEGAT LIGHT BOROUGH

UNNAMED ISLANDS

ATLANTIC OCEAN



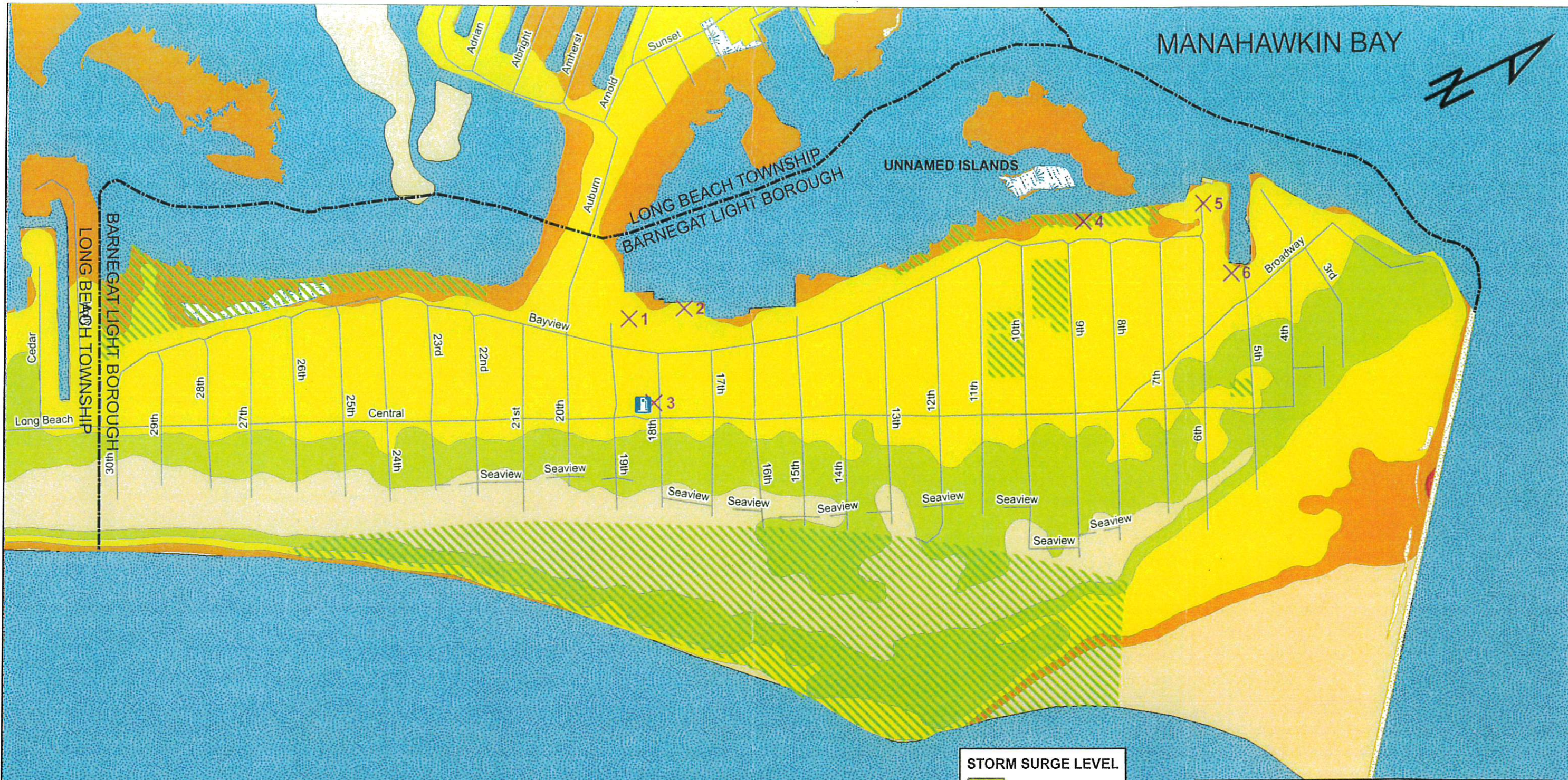
- CONTAMINATED SITES**
- 1 - VIKING VILLAGE INC.
  - 2 - BARNEGAT LIGHT YACHT BASIN
  - 3 - FRIENDLY MANAGEMENT CO.
  - 4 - ED'S BOAT RENTALS
  - 5 - U.S. COAST GUARD STATION
  - 6 - LIGHTHOUSE MARINA

**BARNEGAT LIGHT BOROUGH**

COASTAL VULNERABILITY ASSESSMENT  
NATURAL ENVIRONMENT VULNERABILITY  
CATEGORY 1 STORM

0 350 700 1,400 Feet

Owen, Little and Associates, Inc.  
443 Atlantic City Boulevard  
Beachwood, NJ 08722  
(732)244-1090



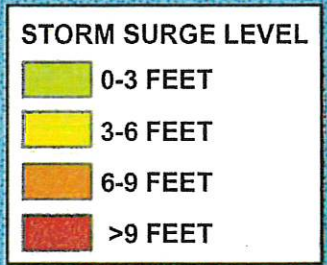
MANAHAWKIN BAY



LONG BEACH TOWNSHIP  
BARNEGAT LIGHT BOROUGH

UNNAMED ISLANDS

ATLANTIC OCEAN



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  - 5 - U.S. COAST GUARD STATION
  - 6 - LIGHTHOUSE MARINA

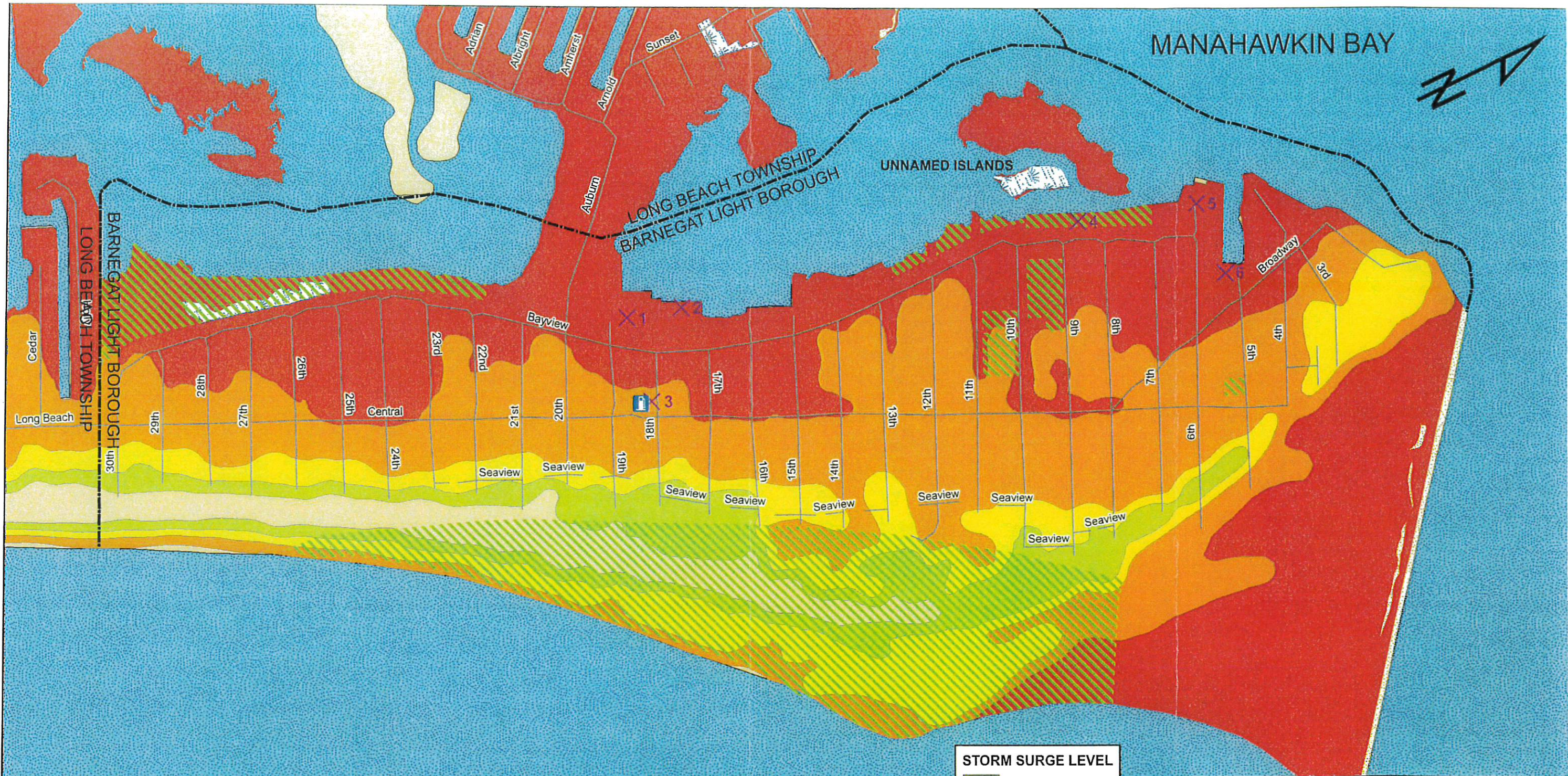
**BARNEGAT LIGHT BOROUGH**

**COASTAL VULNERABILITY ASSESSMENT  
NATURAL ENVIRONMENT VULNERABILITY  
CATEGORY 2 STORM**

0 350 700 1,400 Feet

Owen, Little and Associates, Inc.  
443 Atlantic City Boulevard  
Beachwood, NJ 08722  
(732)244-1090

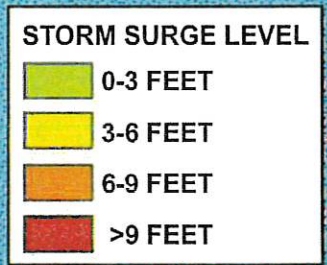




MANAHAWKIN BAY



ATLANTIC OCEAN



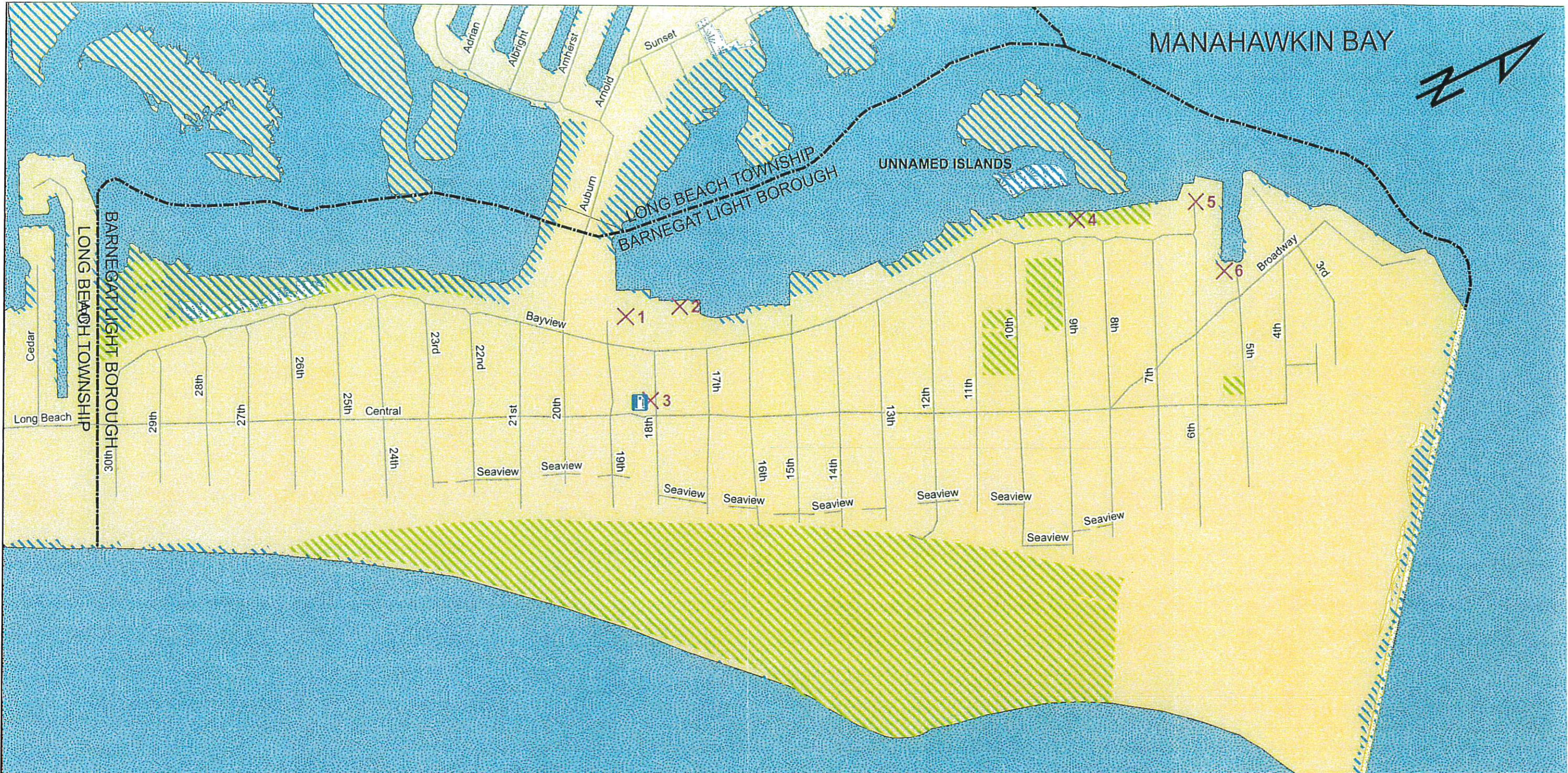
- CONTAMINATED SITES**
- 1 - VIKING VILLAGE INC.
  - 2 - BARNEGAT LIGHT YACHT BASIN
  - 3 - FRIENDLY MANAGEMENT CO.
  - 4 - ED'S BOAT RENTALS
  - 5 - U.S. COAST GUARD STATION
  - 6 - LIGHTHOUSE MARINA

**BARNEGAT LIGHT BOROUGH**

COASTAL VULNERABILITY ASSESSMENT  
NATURAL ENVIRONMENT VULNERABILITY  
CATEGORY 3 STORM

0 350 700 1,400 Feet

Owen, Little and Associates, Inc.  
443 Atlantic City Boulevard  
Beachwood, NJ 08722  
(732)244-1090



ATLANTIC OCEAN

MANAHAWKIN BAY



- CONTAMINATED SITES**
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  - 4 - ED'S BOAT RENTALS
  - 5 - U.S. COAST GUARD STATION
  - 6 - LIGHTHOUSE MARINA

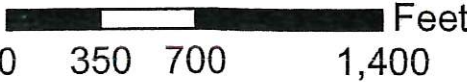
 SEA LEVEL RISE

- LEGEND**
-  CONTAMINATED SITE
  -  GAS STATION
  -  BEACH
  -  WETLANDS
  -  GREEN ACRES LAND

# BARNEGAT LIGHT BOROUGH

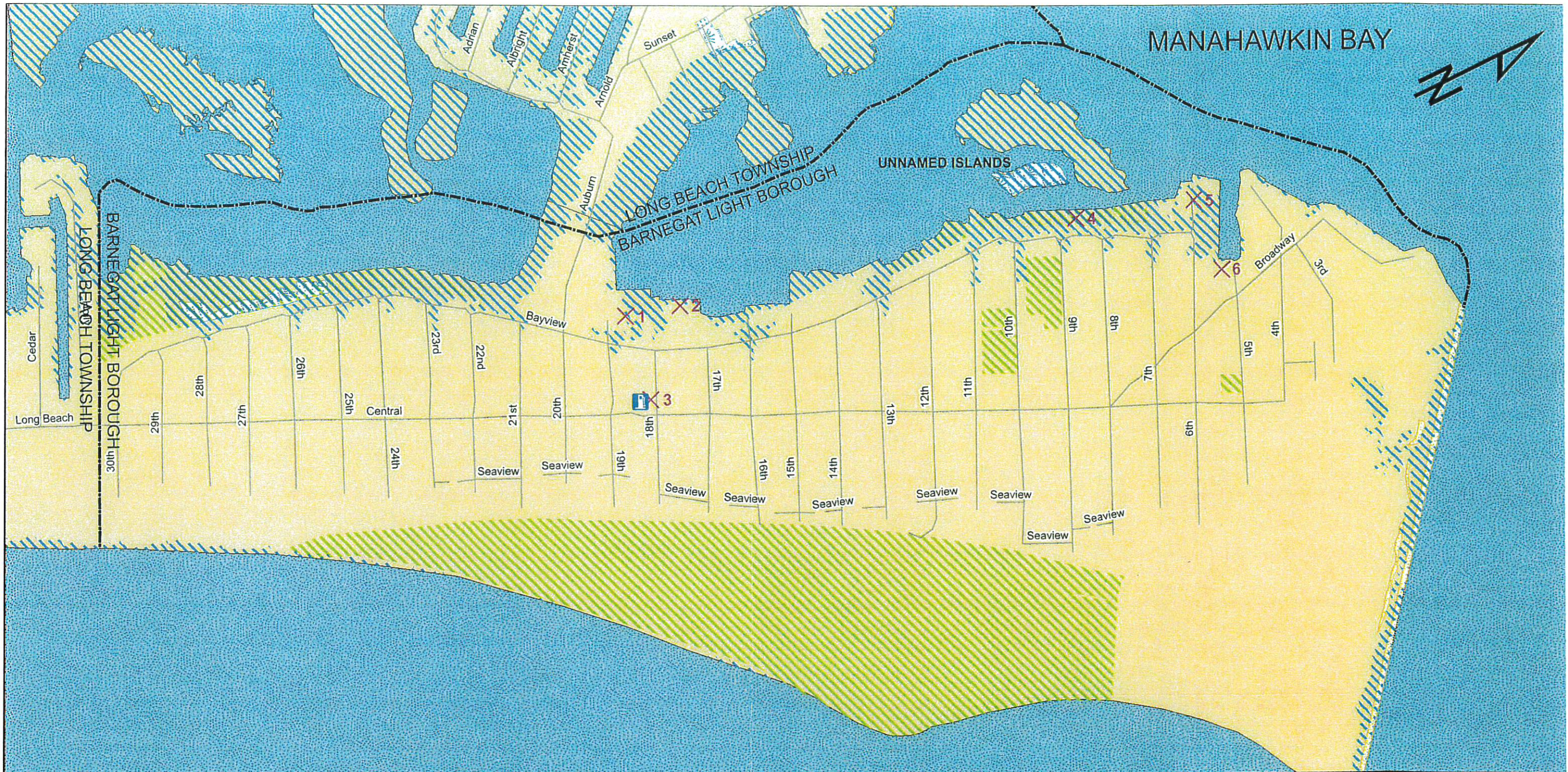
COASTAL VULNERABILITY ASSESSMENT  
NATURAL ENVIRONMENT VULNERABILITY

ANTICIPATED SEA LEVEL RISE (1 FOOT)



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443 Atlantic City Boulevard  
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(732)244-1090





MANAHAWKIN BAY



LONG BEACH TOWNSHIP  
BARNEGAT LIGHT BOROUGH

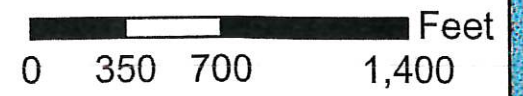
UNNAMED ISLANDS

ATLANTIC OCEAN

# BARNEGAT LIGHT BOROUGH

COASTAL VULNERABILITY ASSESSMENT  
NATURAL ENVIRONMENT VULNERABILITY

ANTICIPATED SEA LEVEL RISE (2 FEET)



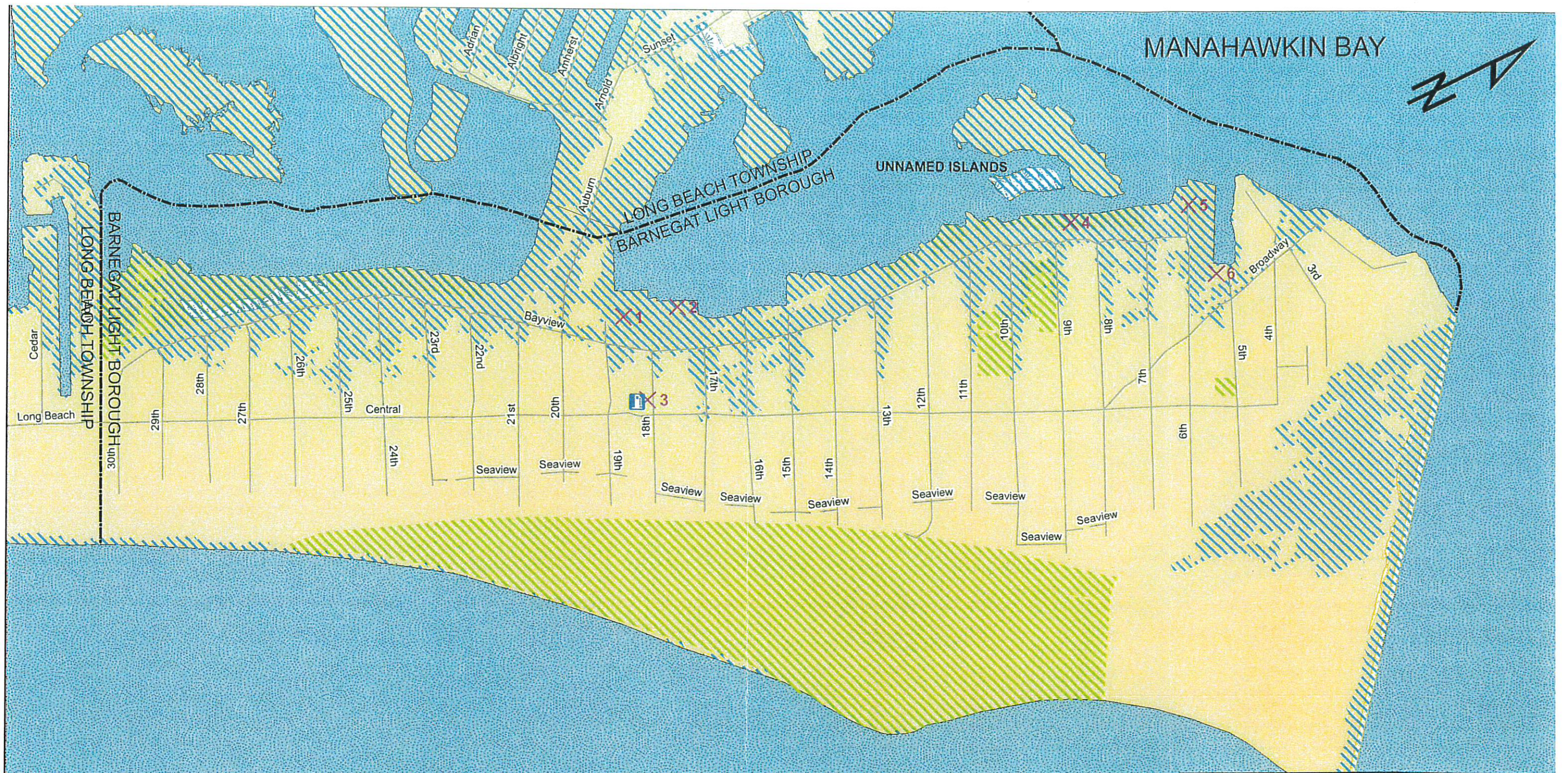
SEA LEVEL RISE

- LEGEND**
- CONTAMINATED SITE
  - GAS STATION
  - BEACH
  - WETLANDS
  - GREEN ACRES LAND

- CONTAMINATED SITES**
- 1 - VIKING VILLAGE INC.
  - 2 - BARNEGAT LIGHT YACHT BASIN
  - 3 - FRIENDLY MANAGEMENT CO.
  - 4 - ED'S BOAT RENTALS
  - 5 - U.S. COAST GUARD STATION
  - 6 - LIGHTHOUSE MARINA

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(732)244-1090





ATLANTIC OCEAN

MANAHAWKIN BAY



- CONTAMINATED SITES**
- 1 - VIKING VILLAGE INC.
  - 2 - BARNEGAT LIGHT YACHT BASIN
  - 3 - FRIENDLY MANAGEMENT CO.
  - 4 - ED'S BOAT RENTALS
  - 5 - U.S. COAST GUARD STATION
  - 6 - LIGHTHOUSE MARINA

SEA LEVEL RISE

- LEGEND**
- CONTAMINATED SITE
  - GAS STATION
  - BEACH
  - WETLANDS
  - GREEN ACRES LAND

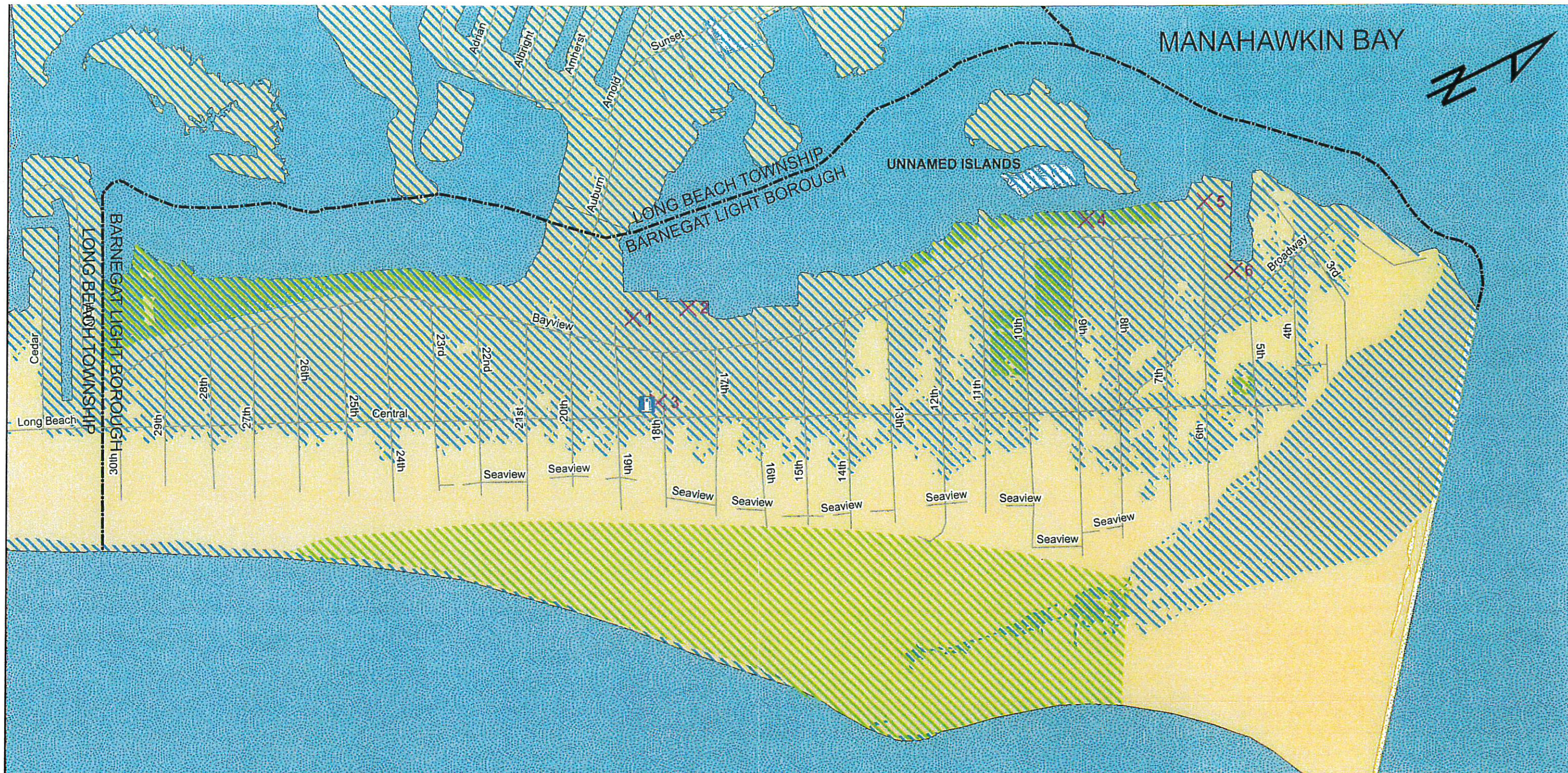
**BARNEGAT LIGHT BOROUGH**

**COASTAL VULNERABILITY ASSESSMENT  
NATURAL ENVIRONMENT VULNERABILITY**

ANTICIPATED SEA LEVEL RISE (3 FEET)

0 350 700 1,400 Feet

Owen, Little and Associates, Inc.  
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(732)244-1090



MANAHAWKIN BAY




LONG BEACH TOWNSHIP  
 BARNEGAT LIGHT BOROUGH

UNNAMED ISLANDS

ATLANTIC OCEAN

# BARNEGAT LIGHT BOROUGH

COASTAL VULNERABILITY ASSESSMENT  
 NATURAL ENVIRONMENT VULNERABILITY  
 SUPERSTORM SANDY - STORM SURGE

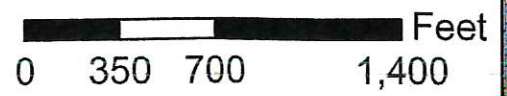
 STORM SURGE

**LEGEND**

-  CONTAMINATED SITE
-  GAS STATION
-  BEACH
-  WETLANDS
-  GREEN ACRES LAND

**CONTAMINATED SITES**

- 1 - VIKING VILLAGE INC.
- 2 - BARNEGAT LIGHT YACHT BASIN
- 3 - FRIENDLY MANAGEMENT CO.
- 4 - ED'S BOAT RENTALS
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# Coastal Vulnerability Index

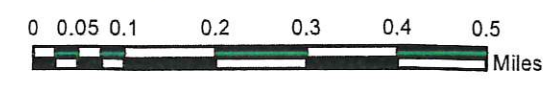
## Barnegat Light Borough, Ocean County

The Coastal Vulnerability Index (CVI) was developed to help assess the vulnerability and resiliency of New Jersey coastal communities to natural hazards. While storm surge inundation and sea level rise are the primary factors influencing coastal flooding threats, those factors alone may not fully define the risk of coastal threats, to both chronic and episodic hazards. As a layer combining data on flood zones, geomorphology, slope, soil erosion, soil drainage, soil flooding frequency, and ground elevation, as well as on storm surge inundation and water elevation changes, the CVI may provide a more complete picture of the flood hazard potential of coastal communities. In this map, the index is used to define three levels of relative vulnerability; Lower, Moderate, and Higher. More risk levels could be used, or break points between levels adjusted, as additional site specific data are examined. This process of fine tuning the CVI will be done by working with individual municipalities through a grant program aimed at improving the resiliency plans of New Jersey's coastal communities.

### Legend

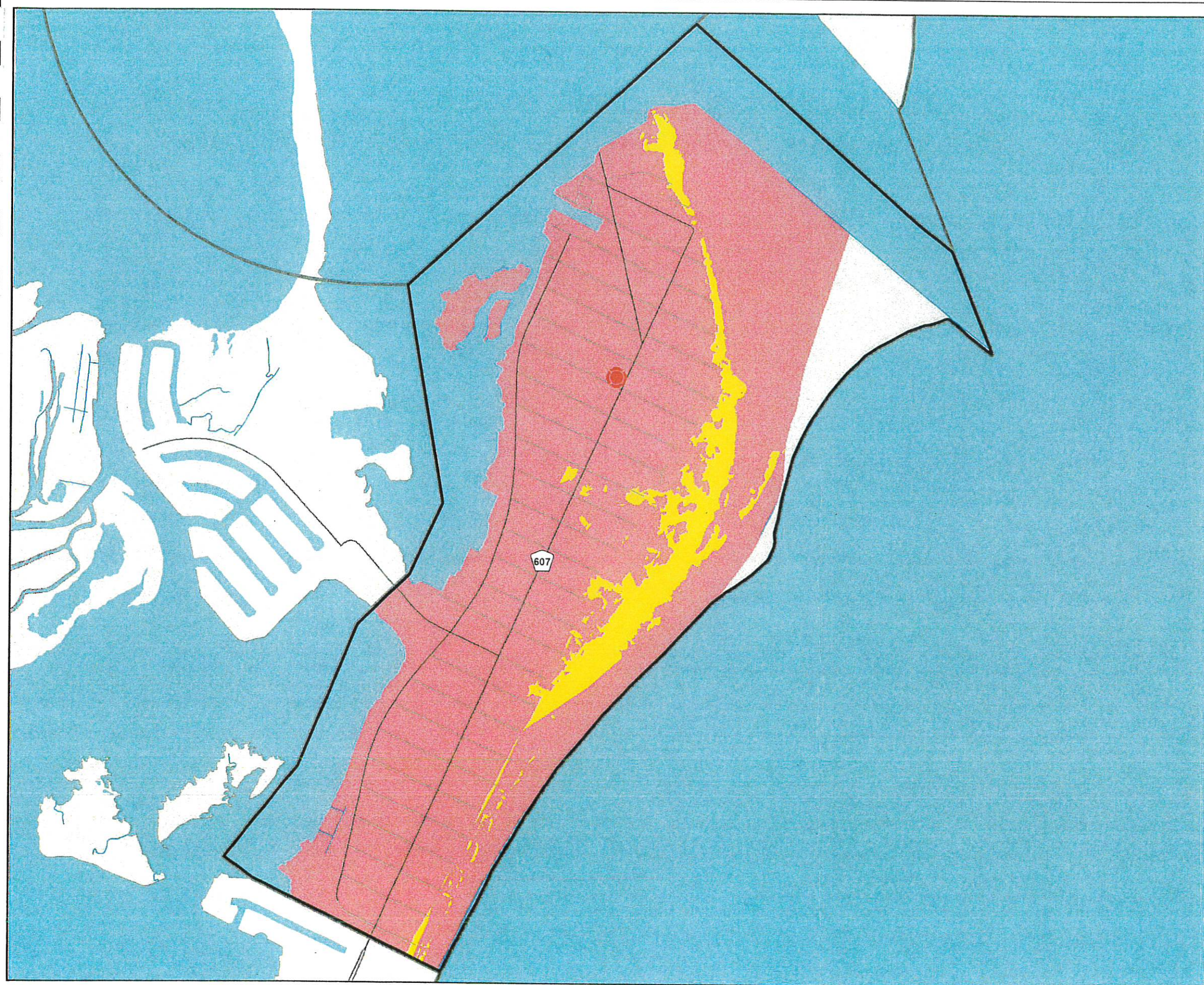
<b>CVI 2050</b>	<b>Facilities</b>	<b>Transportation</b>
Lower	Fire Stations	Interstates
Moderate	Law Enforcement	US Highways
Higher	Medical Facilities	NJ Highways
Major Water	Rail Station	Toll Routes
<b>Water Features</b>	Schools	500 Routes
Streams		County Routes
Waterbodies		Passenger Rail
<b>Municipalities</b>		

The CVI spatial data set is for informational purposes only. It is a preliminary screening layer for use in conjunction with other community specific data in the development of effective coastal management plans. It is not a final layer defining the actual vulnerability of any community to flooding or storm events, either for present day conditions, or those predicted under sea level rise scenarios. It was generated using the best available information, but has not had rigorous review of its use for modeling site specific coastal conditions. Those reviews may require additional contributing and final generated data sets to be edited to more accurately represent actual conditions. The review and refinement of the data set should be done in conjunction with a wide range of partners, including local municipal experts. Additional data sets not used to prepare the CVI will also be needed to refine the outputs and tailor the data to the specific characteristics of individual communities.



1 inch equals 0.25 miles

September 2014



## Getting to Resilience

Barneget Light is governed under the Borough form of New Jersey municipal government. The governing body consists of a Mayor and a Borough Council comprising six council members, with all positions elected at-large on a partisan basis as part of the November general election. A mayor is elected directly by the voters to a four-year term of office. The Borough Council consists of six members elected to serve three-year terms on a staggered basis, with two seats coming up for election each year in a three-year cycle. The governing body is cognizant of the borough's susceptibility and is prepared to address coastal hazards impacts, associated resiliency and sustainability within the community. The Council has the support of residents and business owners to undertake projects to enhance the quality of life surrounding nuisance flooding issues and recognize the significance of addressing current flooding issues now to combat the anticipated conditions in the future.

The Getting to Resilience process had excellent representation from the municipal leaders and department heads including representatives from Public Works, Borough Council, Police Department, Office of Emergency Management, Municipal Clerk, Construction/Zoning Official and Borough Engineer/Planner, as well as outside agency support from the NJDEP. The group participated in an open discussion about the Borough's strengths and challenges involving resiliency and allowed JCNERR to present associated mapping depicting Sea Level Rise, Storm Surge and Sandy Flooding Extent. The group also completed all 5 sections of the Getting to Resilience questionnaire and JCNERR provided a recommendations report based on linkages from the GTR website, notes taken during the group's discussion, various municipal plans and ordinances, and various mapping from outside agencies.

The following are some of the highlights from the five-part questionnaire:

### **Risk and Vulnerability Assessments**

- **Examine municipal plans, strategies and ordinances and reconsider rewriting sections to include the previous recommendations to reflect the risks, hazards, and vulnerabilities explored in the Getting to Resilience Process**

### **Public Engagement**

- **Update and maintain the Flood Protection Information section of the Borough website and continue to make the link visible and available on the Borough website homepages**
- **Develop a pre-flood plan for public information projects that will be implemented during and after a flood**
- **Develop public presentations about flood zones, flooding risk, building recommendations, etc., to be given annually at public meetings**

### **Planning Integration**

- **Create a detailed mitigation plan for areas that experience repetitive loss**

- Incorporate Sea Level Rise as a hazard in Borough plans
- Consider bolstering the Continuity of Operations Plan

#### **Emergency Response and Recovery**

- Work with Ocean County and neighboring municipalities to expand sheltering options
- Expand the Emergency Operations Plan to include more information

#### **Hazard Mitigation and Implementation**

- Create a detailed mitigation plan for areas that experience repetitive loss
- Utilize Sea Level Rise and storm surge mapping to identify possible roadways at risk to Sea Level Rise

#### **Barnegat Light Recommendations**

In concluding the vulnerability analysis of the Borough of Barnegat Light at the local level, we suggest the evaluation of the following recommendations to aid the community in managing their risk to storm surge and Sea Level Rise impacts:

#### **Action Items related to Storm Surge Projections**

- It should remain topmost priority to convey to Borough residents, vacationers and business owners that the safest place in the event of any storm in which local officials declare a Mandatory Evacuation is OFF THE BARRIER ISLAND. There is no location within the Borough of Barnegat Light that is a designated storm shelter.
- Pursue the design of and seek funding opportunities to complete a LBI Regional Stormwater Pump Installation and Drainage Improvement Project.
- Steps should be taken to promote enhancement projects along the sedge areas on Bayview Avenue that will help mitigate anticipated impacts from and Storm Surge.
- Consider raising existing bulkhead heights.
- Promote Living Shoreline projects where feasible along the Bayfront areas.
- Create a coastal conference to provide a means of connecting Borough Officials, Land Use and Construction employees as well as Emergency Management with local business owners and members of the public to discuss recent storm events and exchange knowledge, ideas and experiences to address future coastal hazards.
- Continue to promote the elevation of homes and businesses.



- Continue to prioritize and complete raising all critical infrastructure in the Borough.
- Develop an Outreach Campaign that specifically targets young seasonal tenants, elderly residents with pets and the non-English speaking population.

#### Action Items related to Sea Level Rise Projections

- Pursue the design of and seek funding opportunities to complete a LBI Regional Stormwater Pump Installation and Drainage Improvement Project.
- Steps should be taken to promote enhancement projects along the wetlands areas on Bayview Avenue that will help mitigate anticipated impacts from Sea Level Rise and Storm Surge.
- Review existing evacuation routes and consider modifications to these routes based on projected Sea Level Rise projections.
- Continue to monitor Sea Level Rise projections on a yearly basis, updating mapping as necessary, to plan for the future of the Borough.
- Conserve coastal land and minimize potential loss through acquisition of contiguous storm-prone properties or those contiguous to adjacent municipally owned land or for the purpose of increasing the Borough's Open and Greenspace.
- Create a coastal conference to provide a means of connecting Borough Officials, Land Use and Construction employees as well as Emergency Management with local business owners and members of the public to discuss recent storm events and exchange knowledge, ideas and experiences to address future coastal hazards.
- Continue to promote the elevation of homes and businesses.
- Continue to prioritize and complete raising all critical infrastructure in the Borough.
- Screen all infrastructure projects for Sea Level Rise impacts.