

SHIP BOTTOM COMPREHENSIVE MASTER PLAN RE-EXAMINATION

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SHIP BOTTOM
Gateway to Long Beach Island



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INTRODUCTION

Goals and Objectives

The Borough of Ship Bottom's Master Plan is based upon a set of goals which have been developed by the Master Plan Committee. These goals relate to each of the Plan elements including: Land Use, Circulation, Community Facilities, Recreation and Open Space, and Compatibility with other Planning Initiatives and Documents.

Land Use

- Promote policies and strategies that meet the demands of the current and future populations.
- Encourage occupancy of vacant commercial properties within the Commercial District.
- Continue to require residential on-site parking especially in areas where on-street parking availability is minimal.
- Maintain the use of planning techniques and zoning regulations that preserve the integrity of the existing residential districts and preserve the character of the town as a seashore destination.
- Encourage attractive exterior elevations for dwellings raised to meet FEMA's Flood Regulations.
- Prioritize the value of public access to the waterfront and the importance of a sustainable shoreline void of erosion.

Circulation

- To maintain a community-wide circulation system that provides for the safe, convenient and efficient movement of people and goods within and through the Borough by means of transportation and land use planning.
- Support and assist the Borough's efforts in maximizing the number of available off-street and on-street parking spaces.
- Encourage continuation of walking and biking lanes where appropriate.
- Provide continued support of the LBI Shuttle System as a means of local mass transportation.

Community Facilities

- Maintain and support the acquisition of additional parcels to be used for community facilities.
- Provide adequate municipal, education and cultural facilities to meet the needs of Ship Bottom residents and vacationers.
- Utilize grant and loan programs to improve facilities provided the costs of applying for and administering the funding do not outweigh the benefits.
- Prioritize the raising or reconstruction of the Borough Hall to achieve compliance with the minimum FEMA Flood Standards for critical facilities.

Recreation and Open Space

- Maintain existing parkland and support the acquisition of additional parcels to be used for open space and recreation.
- Promote the revitalization of the existing parks system while specifically enhancing the natural features of each and support the development of park-specific improvement plans that are cost effective and achievable within a reasonable time period. An emphasis should be placed on sustaining the shorelines with natural vegetation or hard structures, if necessary.

Utilities

- Provide safe and dependable utilities to residential and commercial users.
- Continue coordination with local, State and Federal partners to combat storm surge and nuisance flooding.
- Consider Best Available Sea Level Rise data when designing new utility infrastructure.
- Implement appropriate actions derived from recommendations relating to studies of storm water drainage, vulnerability and resiliency.
- Utilize Best Available Technology when upgrading existing utility infrastructure public water, sanitary sewer and storm water facilities.

Environmental Sustainability

- Protect, maintain and conserve the natural resources of Ship Bottom for continued environmental quality and health of all residents.
- Support and apply Best Available Data related to Sea Level Rise and Storm Surge risks for substantial improvements, new developments and community facilities.
- Encourage provisions of such environmentally friendly features such as rain gardens, porous pavement and natural landscapes with native plantings as appropriate.

Compatibility with other Planning Initiatives and Documents

- Participate in the Ocean County Master Plan Process.
- Participate in the Ocean County All Hazard Mitigation Plan.
- Participate in planning initiatives aimed at resiliency, mitigation and shoreline stability.

LAND USE PLAN ELEMENT

PART 1 - MAJOR TRENDS AND ISSUES

This barrier island community is the third largest on Long Beach Island and provides many amenities needed for a full time year round resident but also caters to the vacationer by providing recreational areas for swimming, access to the bay front for fishing, boating and birdwatching as well as a community that is easily accessible, in all its neighborhoods, by the Long Beach Island Shuttle System. This Borough, as well as the neighboring communities, have seen a surge in real estate prices over the last decade and older and smaller structures are being demolished in favor of larger homes that can accommodate multiple families simultaneously. Also, larger parcels, especially those that are at least 100 FT in width, are being subdivided to allow for the construction of two or more homes. The west side of Ship Bottom also has many lots that are long and narrow with some being only 20 FT wide. Many of these parcels are also located in FEMA's Preliminary 'Coastal A' zone which requires the structure to be built to a V Zone construction standard. This change is modifying the appearance of the low lying bayside neighborhood.

From an environmental viewpoint, the increase in large scale residential development, increasing sea level rise and recent historic storm events are directly affecting the Borough's shoreline and infrastructure. One of the most problematic issues is the increased occurrence of nuisance flooding throughout the town and also to south and north in the neighboring Boroughs of Surf City and Long Beach Township. On average, the Borough experiences a nuisance flooding event that affects local roadways and one time every two months and this event may span several tide cycles and often inhibits the use of certain roads, especially Long Beach Boulevard which is a major evacuation route. The areas of 8th and 9th Street are especially problematic as they flood often yet are the primary roadways onto and off Long Beach Island. The New Jersey Department of Transportation has included stormwater and drainage improvements to the Route 72 Bridge Rehabilitation Project and should be completed by 2022. It is important to note that these flood events discourage island residents and off island visitors from traveling to the sections of town and causes issues for all residents on the island to access their homes. The Borough has been working with its Municipal Engineers and also seeking guidance and recommendations from the New Jersey Department of Environmental Protection and the United States Army Corps of Engineers for possible solutions to combat this problem. As many other coastal communities are facing similar issues with coastal flooding, Ship Bottom Borough understands the effect these events have on the local community and are initiating plans to install additional tide valves, new bulkheading and stormwater pumps to help combat this issue.

PART 2 - DEMOGRAPHICS

As a seasonal barrier island community, Ship Bottom's population increases to an estimated 20,000 people in the summer months which includes second homeowners, seasonal and weekly tenants and those on day-trips. As the construction of new large scale homes and the request for subdivisions of existing parcels continues, it is anticipated that this estimate will increase. A significant portion of the population leaves the Borough for the winter months and reside outside of the area. Analysis of Land Use records show that requests for subdivisions are not as prevalent as they were a decade ago therefore suggesting that the Borough is fully built out. Seasonal population growth though could continue in the way of smaller homes being demolished and larger homes, with more bedrooms, being constructed.

Since the 1990 Census, the year round population has decreased after each decade which can be attributed to a generational turnover of homes where retired couples only resided full time in the Borough and now, these homes have been transferred to heirs and are only used in a seasonal capacity.

Ship Bottom Population Trends

1930	277
1940	396
1950	533
1960	717
1970	1079
1980	1427
1990	1352 people
2000	1384
2010	1156
Est. 2016	1139

Source: US Census, NJTPA Forecast
2016

PART 3 - ESTABLISHED ZONING DISTRICTS AND LAND USE RECCOMENDATIONS

The Borough utilizes the following Districts to enact and enforce local zoning regulations: R-1 Single Family Residential District, R-2 Single Family Residential District, R-3 Single and Two-Family Residential District, MFR- Multi Family Residential District, OR- Office Residential District, SC – Shore Commercial Zone, and GC – General Commercial Zone. The parameters associated with these Districts have functioned well for controlling development in accordance with its goals for land use. The Borough remains steadfast in ensuring that the identity of the community is primarily as a family vacation resort area with moderately dense residential neighborhoods and a central strip of community services.

In the SC- Shore Commercial Zone, single family homes are not a permitted use however, more and more landowners are seeking Use Variances to build single family homes. Instead of modifying the permitted uses in this zone, the Land Use Board feels to control the development and ensure commercial uses remain, variance requests should continue to be submitted to the Board and reviewed on a case by case basis.

As property values continue to rise and more commercial establishments are being demolished in favor of single family homes, the Borough should consider providing incentives to retain commercial business or construct new commercial development and allow for as many apartments above a commercial unit as can be constructed while adhering to the parking requirements of the Ordinance. Allowing commercial apartments promotes a business owner to live above their business which is sometimes financially beneficial for the success of the commercial establishment.

As noted earlier in this plan, the Borough's new construction of single family homes is trending to be larger and accommodate more people or several families at one time. At the present time, two (2) parking spaces are required to be part of a plot plan to obtain a building permit and one of those spaces can be in the garage area. It is typical though for the garages to be used for storage and then vehicles are parked on the streets or encroaching in to the right of way from the driveway area. Therefore, it is recommended that the garage space be eliminated and the proposed dwelling be designed for the site in a way that accommodates the parking of two (2) vehicles each within a 9 FT x 18 FT space.

The Borough's Ordinance currently requires a buffer of five feet between a residential use and a commercial use. In evaluating this requirement and in an effort to provide open space in the commercial zones between commercial uses, the Board recommends that buffering be evaluated and standards established for buffering between commercial uses.

RECREATION AND OPEN SPACE ELEMENT

PART 1 – PARKS

The Borough offers eight (8) parks within its municipal boundary limits and each offer different recreational opportunities for the user. These parks include Beach Arlington Park & Bay Beach, Ship Bottom Waterfront Park Fishing & Crabbing Pier, 5th Street Bay side Park, 4th Street Remembrance Park, John J. Guild Jr., Recreation & Ball Field. Fishing and Crabbing Pier at 25th Street and the Bay, 20th Street Bayside Park, and the Purple Martin Colony which is a community park on the Barnegat Bay that includes a very successful Purple Martin colony that has been producing an average of 70 or more birds in recent years.

Beach Arlington Park is the most critical park that requires improvements at this time due to ongoing coastal erosion of its shoreline. This area suffered significant damage during Superstorm Sandy and has since been rehabilitated and is fully functioning for residents and guests. However, with the consistent onshore flow and high velocity wave action, the southern shoreline continues to erode and is beginning to compromise the structural integrity of the existing parking. The Borough is anxious to proceed with establishing a Living Shoreline to protect this area but funding from the State of New Jersey has proved challenging to obtain. A final solution would be the installation of a structural measure such as a bulkhead but the Borough hopes to utilize a more organic means of shoreline stabilization that will enhance one of the Borough's most utilized park facilities.

PART 2 – NJDEP MUNICIPAL RECREATION AND OPEN SPACE INVENTORY (ROSI)

The following list represents the most current ROSI available from the NJDEP Green Acres Program

County: OCEAN		Municipality: SHIP BOTTOM BORO	
Block	Lot	Facility Name	Interest Type
101	1	BOAT RAMP AREA	FEE M
101	2	BOAT RAMP AREA	FEE M
116	2	7TH & OCEAN	FEE M
12	1	PAVILLION, DOCK & BATHING	FEE M
120	18	WATERFRONT PARK	FEE M
120	22	WATERFRONT PARK	FEE M
120	23	WATERFRONT PARK	FEE M
123	4	BAYFRONT	FEE M
124	2	5TH & BAYFRONT	FEE M
125	16	4TH ST PARK	FEE M
125	17	3RD TO LAGOON	FEE M
125	18	3RD TO LAGOON	FEE M
126	12	PLAYGROUND	FEE M
136	13	PARK	FEE M
136	14	4TH ST	FEE M
136	15	4TH ST	FEE M
17	1	31ST & OCEAN	FEE M
29	1	24TH & 25TH & OCEAN	FEE M
30	1	23TH & 24TH & OCEAN	FEE M
37	1	22TH & 23TH & OCEAN	FEE M
45	1	BEACH & DUNE ACQ.	FEE M
45	2	BEACH & DUNE ACQ.	FEE M
56	2	BEACH & DUNE ACQ.	FEE M
57	2	114 E17TH ST	FEE M
57	3	114 E17TH ST	FEE M
67	1	15TH & 16TH & OCEAN	FEE M
71	1	PAVILLION, DOCK & BATHING	FEE M
72	1	PAVILLION, DOCK & BATHING	FEE M
72	2	BAYFRONT	FEE M
76	1	14TH & 15TH & OCEAN	FEE M
77	1	14TH & OCEAN	FEE M
77	2	14TH & OCEAN	FEE M
81	1	PAVILLION, DOCK & BATHING	FEE M
82	1	PAVILLION, DOCK & BATHING	FEE M
82	2	PAVILLION, DOCK & BATHING	FEE M
86.01	1	12TH & 13TH & OCEAN	FEE M
87.01	1.01	BEACH & DUNE ACQ.	FEE M
91	1	BOAT RAMP AREA	FEE M
91.01	1	BOAT RAMP AREA	FEE M
92	1	BOAT RAMP AREA	FEE M

PART 3- PUBLIC ACCESS PLAN

Introduction

The intent of this document is to provide a comprehensive public access plan for the Borough of Ship Bottom 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 is under review by the NJDEP. 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 Ship Bottom 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 Ship Bottom 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 Ship Bottom Borough and their planning consultant, Owen, Little & Associates, Inc. and was distributed for courtesy review by the Land Use Review Board and was submitted to the NJDEP on August 26, 2017. Upon receiving approval from the NJDEP, the MPAP will be incorporated into the Recreation/Open Space Element of the Master Plan by resolution, see Appendix 2. All public access decisions made within Ship Bottom 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 Ship Bottom 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, Ship Bottom 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, Ship Bottom 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, Ship Bottom 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.

Municipal Public Access Vision

A. Overview of Municipality

The Borough of Ship Bottom is located on Long Beach Island in Southern Ocean County. Long Beach Island is the largest barrier island community in the Barnegat Bay Watershed. The Borough has a year round population of 1,156 (2010 Census), however, the population increases dramatically in the summer months and can reach 20,000 people. With a total area of 1.001 square miles, of which 0.288 square miles is water, the Borough is situated geographically to enjoy the benefits of the associated oceanfront and bayfront shorelines. Ship Bottom 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 and the Atlantic Ocean is paramount.

1. Public Access Description

Public Access in Ship Bottom 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. Ship Bottom Borough protects and ensures public access through 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 Ship Bottom's commitment to maintain and enhance all existing public access locations to and along tidal waterways and their shores



SHIP BOTTOM BOROUGH REPRESENTS A BARRIER ISLAND COMMUNITY THAT RELIES HEAVILY ON THE SURROUNDING WATERWAYS FOR TOURISM AND COMMERCE AND PRIDES ITSELF ON OFFERING MORE THAN 40 WAYS OF ACCESS TO THESE DESIRABLE SHORES

2. Ship Bottom Borough Tidal Waterways and Lands

Map 1 shows all the tidal waterways within the municipality and all lands held by the municipality. More specifically, Ship Bottom's tidal waterways consist of the Atlantic Ocean to its east and the Barnegat Bay to its west. The adjacent bay is called specifically the Little Egg Harbor Bay and although the Barnegat Inlet is farther north and actually adjacent to Barnegat Light, a significant portion of the Borough's recreational and economic activities are dependent upon this inlet.



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, Ship Bottom 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.

Ship Bottom'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 Ship Bottom Borough Master Plan.

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 Ship Bottom. 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, Ship Bottom Borough 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, Ship Bottom 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.



It is evident when surveying Ship Bottom 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, Shore Avenue Park is a staffed facility in the summer months and offers not only a beach area and parking, but also a fishing and crabbing pier, boardwalk, paddleboard/kayak ramp, boat ramp, full bathroom facilities and a playground within approximately 2.5 acres. This is a Green Acres Permanent Recreation and Open Space

Area funded by the New Jersey Department of Environmental Protection. In an effort to facilitate safe crossing of the NJ State Route 72 corridor, a walkway/bikeway is provided to provide access between 8th Street and 9th Street.

Another valuable asset to Ship Bottom's Open Space is Bayfront Bay Terrace/Sunset Pointe. This bayside area offers public restrooms, a bathing beach, playground, gazebos, parking and a native garden. A handicap accessible ramp is also provided for beach access.



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

Ship Bottom provides 45 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.

b. Beach Badges

Ship Bottom 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 the first day of June

Forty dollars \$40.00 per person, per season, in the event that applications are made to the proper authorities on or after June 1st.

Twenty dollars \$20.00 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 ten dollars \$10.00. No mail orders accepted.

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

All Veterans and children under the age of 12 do not require a badge.

d. 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.

e. 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 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.

f. 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.

g. Boat Launching

- 1) 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.
- 2) Boat Ramp – A boat ramp exists at the premises situated on the Barnegat Bay between 9th Street and 12th Street. No person shall use the property hereinafter described between 9th Street and 12th Street in 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:

- i. Daily - \$20.00
- ii. One Way - \$20.00
- iii. Seasonal- \$70.00 per vessel

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

h. 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.

i. 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 Ship Bottom at any time.

j. 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.

k. 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 Ship Bottom Borough.

III. Community Needs Assessment

Ship Bottom 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 Ship Bottom Borough. In addition, in the past five (5) years, Ship Bottom 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 Shore Avenue Park which included the construction of a paddleboard ramp.

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, Ship Bottom 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 its 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. Since the Borough does have an Ordinance that permits non-commercial kayaks on all street ends, it is recommended that additional signage be added advertising this access. Also the fishing pier located at 10th Street and Shore Avenue is a popular viewing location for the sunset. It was recommended by local residents that additional benches be added to this location to support this use.

IV. Implementation Plan

Ship Bottom 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

Ship Bottom 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 Ship Bottom Borough and is also available online. Some of these events include the PBA Flounder Fishing Tournament and the Kite Festival.

b. Cost and Funding

Funding is appropriated at time of budget each year.

2. Preserving Public Access

In an effort to preserve public access, Ship Bottom Borough is continuously seeking funding opportunities to assist with off-setting 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

a) Shore Avenue Park

A paddleboard ramp was installed at this park in 2014 for all users. This park has also been the recipient of other upgrades including new public restrooms, a rock revetment for



shoreline stabilization and ongoing maintenance of the jet-ski and public boat ramp which is staffed during the day with a harbormaster to assist boaters. A playground, fishing and crabbing pier, vending machines, a life jacket loaner's station and more than 80 parking spaces attract large crowds to this bay beach. A walking path/bike trail is also provided under the Route 72 Bridge which encourages people to safely visit the park from the other side of Ship Bottom by alleviating the need for those living at the north end to cross numerous lanes of traffic.



b) Handicap Access



It's evident while reviewing the Borough's access points to tidal water that providing handicap access is paramount. The bay beaches provide handicap accessible ramps directly to the sand and provide ADA compliant handicap parking spaces. Ramps are available for the physically challenged at the oceanfront on 4th, 8th, 9th, 14th, 15th, 19th, 20th, 21st, and 25th Streets. Beach Wheels are available with advance

reservation by calling the Ship Bottom Beach Patrol. Handicap access signs are provided at the intersections of Long Beach Boulevard and 15th Street, 14th Street and 9th Street which direct beachgoers to handicap accessible points of entry. Handicap parking stalls are also posted on the ocean blocks of 15th, 14th, 9th, 8th, 7th, and 4th Streets.



c) **Gazebo Construction**

A gazebo was added to the Park at 20th Street and Bay Terrace in 2015.

d) **Fourth Street Park**

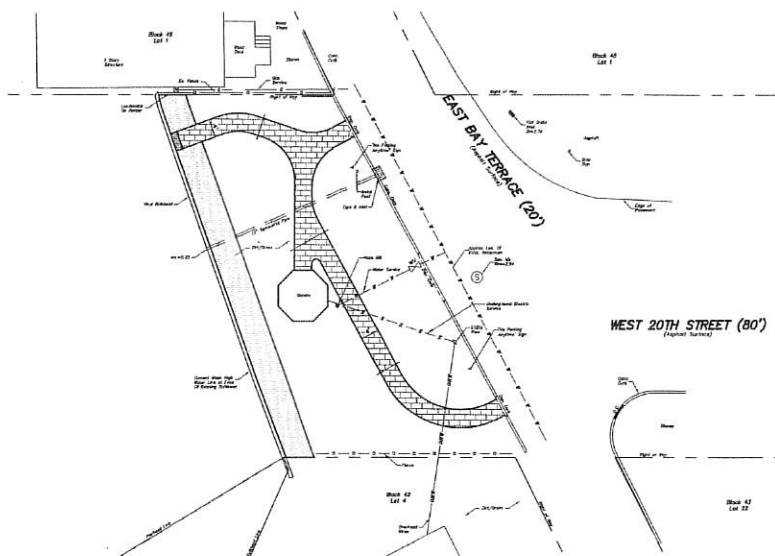
Fourth Street Park was recently rehabilitated with new walkways which are handicap accessible, benches, a gazebo, 21 standard parking stalls and 3 handicap parking stalls. This parcel is bulkheaded and provides an excellent location for crabbing and fishing.



2) **Proposed and Ongoing Projects**

a) **20th Street Park**

To date, a gazebo has been constructed onsite and curb improvements have been made. As noted on the plan below, a 4 FT paver walkway has been installed as well as utility and drainage upgrades and landscaping. The parcel can accommodate fishing along more than 80 FT of bulkhead.



b) **Cost and Funding**

Funding is appropriated at time of budget each year.

c) **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, Ship Bottom 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 Ship Bottom in June 2015.

V. Relationship to the Other Regional and State Plans

Ship Bottom'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."*

Ship Bottom 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 20,000 people are within the boundaries of Ship Bottom 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. Ship Bottom has established a reputation for hosting various programs focusing on its tidal waters such as a Junior Lifeguard program amongst others.

VI. Resolution of Incorporation

Upon approval of this plan by the New Jersey Department of Environmental Protection, Ship Bottom Borough will approve a final resolution to incorporate this Municipal Public Access Plan into the Recreation/Open Space Element of the Ship Bottom 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) 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) Statement of Consistency with...Master Plan
- 3 (e) 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) 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) 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)
 - adoption or amendment of municipal ordinances
 - 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 *Ship Bottom 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 Ship Bottom*, the "*Ship Bottom 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 Ship Bottom* at a meeting held on {date}.

Municipal Clerk

Appendix 3
Public Access Tables

Part A : Ship Bottom Borough Ocean Access

Part B: Ship Bottom Borough Bay Access

APPENDIX 4

Recreation and Open Space Inventory

County: OCEAN

Municipality: SHIP BOTTOM BORO

Block	Lot	Facility Name	Interest	Type
101	1	BOAT RAMP AREA	FEE	M
101	2	BOAT RAMP AREA	FEE	M
116	2	7TH & OCEAN	FEE	M
12	1	PAVILLION, DOCK & BATHING	FEE	M
120	.18	WATERFRONT PARK	FEE	M
120	22	WATERFRONT PARK	FEE	M
120	23	WATERFRONT PARK	FEE	M
123	4	BAYFRONT	FEE	M
124	2	5TH & BAYFRONT	FEE	M
125	16	4TH ST PARK	FEE	M
125	17	3RD TO LAGOON	FEE	M
125	18	3RD TO LAGOON	FEE	M
126	12	PLAYGROUND	FEE	M
136	13	PARK	FEE	M
136	14	4TH ST	FEE	M
136	15	4TH ST	FEE	M
17	1	31ST & OCEAN	FEE	M
29	1	24TH & 25TH & OCEAN	FEE	M
30	1	23TH & 24TH & OCEAN	FEE	M
37	1	22TH & 23TH & OCEAN	FEE	M
45	1	BEACH & DUNE ACQ.	FEE	M
45	2	BEACH & DUNE ACQ.	FEE	M
56	2	BEACH & DUNE ACQ.	FEE	M
57	2	114 E17TH ST	FEE	M
57	3	114 E17TH ST	FEE	M
67	1	15TH & 16TH & OCEAN	FEE	M
71	1	PAVILLION, DOCK & BATHING	FEE	M
72	1	PAVILLION, DOCK & BATHING	FEE	M
72	2	BAYFRONT	FEE	M
76	1	14TH & 15TH & OCEAN	FEE	M
77	1	14TH & OCEAN	FEE	M
77	2	14TH & OCEAN	FEE	M
81	1	PAVILLION, DOCK & BATHING	FEE	M
82	1	PAVILLION, DOCK & BATHING	FEE	M
82	2	PAVILLION, DOCK & BATHING	FEE	M
86.01	1	12TH & 13TH & OCEAN	FEE	M
87.01	1.01	BEACH & DUNE ACQ.	FEE	M
91	1	BOAT RAMP AREA	FEE	M
91.01	1	BOAT RAMP AREA	FEE	M
92	1	BOAT RAMP AREA	FEE	M

APPENDIX 5

Sign Ordinance

The Borough of Ship Bottom does not have an Ordinance that regulates signage on property adjacent to tidal waters, however, as evident in the examples of signage provided within this document, the Borough effectively advertises public access at designated locations.

CIRCULATION ELEMENT

Existing Traffic Patterns

Ship Bottom's transportation system is long recognized as one focused mainly on the personal automobile as this well maintained residential community lacks close proximity to major bus depots, airports or train stations. However, regional growth on the island fueled by the replacement of small bungalows with much larger homes that can accommodate many more people, is putting pressure on the local road network and the availability of parking as well as the safety of pedestrians. The Borough must balance the needs of increased municipal traffic and the traffic of all those entering and leaving the island through the Causeway Bridge.

The Borough has only one main principal arterial road, Long Beach Boulevard, which serves as a feeder road to the regional roadway network once at the Dorland Henderson Bridge and NJSH Route 72 on the mainland in Stafford Township. Typical design of these roads includes fewer curb cuts in an effort to facilitate efficient movement of traffic throughout the area. For this reason, curb cuts are usually offered on the side road of corner lots when available. Overall, installing curb cuts results in a decrease in the number of on-street parking spaces available and therefore should be limited.

The remainder of the streets are collector and local streets which are maintained by the municipality and typically carry between 500 and 3000 vehicles per day. This varies depending on the month in this seasonal community. These streets are often more pleasant to drive and the preservation of these streets is important in the town's efforts to maintain the character of the area.

As the Borough is fully developed, the existing street pattern is expected to continue which will maintain the atmosphere of the town.

Roadway Improvements

A large scale transportation project by the New Jersey Department of Transportation is currently underway and involves the Route 72 bridges and approach roadways and is expected to last through the year 2020.

Prior to the start of construction, all four bridges of the Route 72 span from Stafford Township to Ship Bottom Borough exhibited severe deterioration and were outdated. The recently completed deck resurfacing project was only expected to extend the life of the deck until the existing Manahawkin Bay Bridge rehabilitation was completed after the proposed new parallel Manahawkin Bay Bridge is constructed.

Age and deterioration of the structures, increased marine and highway traffic, and the potential for storms to disrupt normal operations are some of the reasons why these bridges needed to be rehabilitated. The existing Manahawkin Bay Bridge and three trestle bridges along Route 72 are over 50 years old. Their serviceable life without major rehabilitation is limited based on their existing conditions and the increasing expenditures of tax dollars for necessary repairs. The continuing development of fatigue cracks in the floor beams of the Manahawkin Bay Bridge and progression of severe rusting requires replacement of its superstructure. The chipping and cracking of the pier caps of the three trestle bridges requires extensive retrofitting for these bridges. It was deemed to be more cost effective to perform a major rehabilitation than to continue repairing the bridges as problems develop.

As noted previously, highway traffic on Route 72 to Long Beach Island has increased with additional population and the popularity of the shore areas. The combination of increased recreational and commuter traffic causes more congestion on the bridges and its access roads, which also hampers access for emergency vehicles. The project will provide wider lanes and shoulders on Route 72 and constructing a new parallel Manahawkin Bay Bridge will provide redundancy for the bridge crossing that can be used during a possible emergency and/or for future maintenance and rehabilitation of either of the twin bridges.

Since Route 72 is a coastal evacuation route and is a vital link as the only access point to and from Long Beach Island, the improvements will allow better traffic flow, shoulders for increased safety and emergency access, continuous sidewalk access from the mainland to Long Beach Island, and relief from storm-related drainage issues in Ship Bottom.

The project has been broken down into five different contracts for completion. Construction on Contracts 3 and 5 began in February 2015. Contract 3 will rehabilitate the trestle bridges over East Thorofare and West Thorofare along the Route 72 Causeway between the mainland and Long Beach Island, along with various associated improvements.

Included in Contract 5 will be the environmental mitigations needed to comply with the environmental permit conditions for the entire project. The project includes wetland creation, mitigation for freshwater wetlands and retrofit of two existing stormwater basins within the Barnegat Bay watershed and public access improvements.

A contract to rehabilitate the existing Manahawkin Bay Bridge and the trestle bridge over Hillard's Thorofare will be next and the entire Manahawkin Bay Bridge superstructure was removed and replaced.

A separate construction contract will address safety and operational issues at the Route 72/ Marsha Drive intersection in Stafford Township. This contract will also include operational and drainage improvements in Ship Bottom Borough, on Long Beach Island. The water and sewer infrastructure will also be upgraded within the corridor. Two-way traffic will be restored along Central Avenue and Long Beach Boulevard and traffic signals along 8th and 9th Streets (Route 72) will be improved.

Mass Transportation

Regional Service

Ship Bottom is not serviced by any large scale mass transit bus or train network. Regional transportation hubs are available in Atlantic City which is approximately 40 miles away and both bus and trains are available there to Philadelphia and New York City. Connections can then be made to other major cities on the Northeast Corridor as well as to the Philadelphia and Newark International Airports.

Airports

The Atlantic City International Airport is approximately 37 miles from Ship Bottom and is served by Spirit Airlines which offers direct flight service to 10 major cities including several in Florida where many residents of Ship Bottom spend their winters. The nearest major hub airport is Philadelphia International Airport which is approximately 70 miles from the Borough.

Long Beach Island Shuttle

Long Beach Island Shuttles were introduced in 2014 by Long Beach Township and is a free service that runs along all 18 miles of the island. With designated areas to stop, it is easy to find a shuttle or wave one down to get anywhere you need on the island. The service now offers an app for use on wireless cellular devices that enables riders to track the proximity of a bus to their location. This service is sponsored by local business and is gaining in popularity. It is well suited to the island as it decreases the number of personal vehicles being driven on the roads and each shuttle can also be used as an emergency vehicle in the event of a mass evacuation. The Borough should continue to support this mass transit initiative.

Biking Network

A designated bike lane is provided from 31st Street in Ship Bottom and continues south to Liberty Avenue in Beach Haven. During the summer months, this area is greatly utilized by bicycle riders along with walkers, joggers and those pushing baby strollers. The intense use of this 10 FT wide +/- bicycle lane is dangerous as bicycle riders and vehicles have been known to hit pedestrians. Since this type of activity is synonymous with vacationers, the issue is expected to continue and could likely worsen.

A bike lane also exists from 9th Street to 19th Street on Barnegat Avenue and connects with the existing pedestrian walkway and bike path underneath the East Thoroughfare Bridge which is part of the expansive Route 72 Bridge project. The construction project includes a new fence which will be installed between the bulkhead and the pedestrian walkway under the bridge as this path is used by both walkers and riders to cross Route 72 without having to utilize 8th or 9th Street which carry large volumes of traffic. When the bridge project is complete, it will include bicycle lanes and wider shoulders on the twin Manahawkin Bay Bridges and a 6 FT wide bicycle lane on the trestle bridges. The new configuration will allow bicyclists to exit off the bridge by the Ship Bottom boat ramp and head north to Surf City without crossing traffic on 8th or 9th Streets. Guardrails will also protect bicyclists from vehicular traffic on the bridge itself.

It is recommended that the Borough explore options of adding additional bike lanes, where feasible.

COMMUNITY FACILITIES ELEMENT

Borough Government

Ship Bottom is governed under the Borough form of New Jersey Municipal government. The governing body consists of a Mayor and a Borough Council comprising of six council members all with positions elected at-large on an artisan basis as part of the November General Election. The 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 available for election each year in a three year cycle. Each Council member chairs a committee that oversees a department including Revenue and Finance, Public Safety, Water/Sewer, Parks and Recreation, Public Property and Community Affairs and Public Works.

The Borough Hall building located on Long Beach Boulevard was impacted by Superstorm Sandy in 2012 and suffered flood damages. The building was remediated of the water but the building remains below FEMA's minimum base flood elevation. This is critical as this building functions as a staging area when evacuating people off of Long Beach Island in advance of a storm event. Either the raising or reconstruction of this building should be prioritized and completed in the coming years.

The year round population served by the Borough's various departments is approximately 1156 residents but the seasonal variations in residents and visitors substantially increase this number and consequently the demand for services is much higher. The Police Department is just one of the departments that is directly impacted by the population followed closely by the Public Works Department.

Public Safety

The Ship Bottom Borough Police Department is a full service municipal law enforcement agency whose goals are to preserve life and property, enforce Federal, State and local laws and maintain a safe and peaceful environment for the residents and visitors of Ship Bottom. The Department currently employs 10 full-time police officers and numerous seasonal police officers to enhance the force during the busy summer tourist season. The Department occupies a portion of the space within the Municipal Building but all communication is handled through Ocean County dispatch and Long Beach Township.

Public Works

The Borough offers its own Public Works Department for service to its residents who are primarily responsible for the maintenance of municipally-owned buildings and grounds, municipal water and sewer utilities as well as storm water drainage.

The Borough of Ship Bottom does not pick up household hazardous waste and the placement of these items on the curb is not permitted. For all permitted mixed rigid plastics, the Public Works Department will pick up these items curbside on a weekly basis.

Beach Patrol

The Ship Bottom Beach Patrol oversees the safety of users of the Borough's beaches and enforces the regulations of the beach as well as provide assistance to distressed swimmers or injured beach goers. The beach is also monitored by beach badge checkers who are primarily responsible for ensuring that those who are utilizing the oceanfront are in possession of a beach badge, if required. In late spring each year, lifeguard tryouts are held and a staff of guards is assembled. The beaches are guarded by a skeleton crew on select beaches starting Memorial Day weekend and typically are not guarded on a daily basis until late June. Beaches are then guarded again by a skeleton crew after Labor Day Weekend in early September.

Ship Bottom Volunteer Fire Company

The Ship Bottom Volunteer Fire Company #1 is an organization founded in 1922 that provides professional level fire protection services with 100% volunteer staffing. The company relies on donations and fundraisers to provide services, maintain equipment and continue training exercises. The company covers all of Ship Bottom and part of Long Beach Township and runs with Surf City as well as all the other fire companies on Long Beach Island.

Long Beach Island Elementary School

The Long Beach Island School is a community public school within the Long Beach Island Consolidated School District that serves K through 6 and receives children from Ship Bottom, Surf City, Harvey Cedars, Barnegat Light and Long Beach Township.

For seventh through twelfth grades, public school students attend the Southern Regional School District, in the Manahawkin section of Stafford Township.

UTILITIES PLAN ELEMENT

Existing Infrastructure

Ship Bottom's utility infrastructure consists of public water, sanitary sewers and storm sewers and is served by natural gas, electric, cable service and solid waste and recycling provided by the municipality. The Borough's utility infrastructure is generally adequate to meet the needs of current residents, businesses and vacationers. Numerous infrastructure improvements have been completed since 2009 including the replacement of approximately 90,000 FT of sanitary sewer main and 70,000 FT of water main thorough the New Jersey Environmental Infrastructure Trust. During Superstorm Sandy in 2012, the pumps and water treatment plants at 16th Street and 18th Street were damaged and as a result, will be reconstructed to include all new technologies and be resilient to future storm events. All structures within these plants will be built to the 500-Year flood elevation for this area, i.e. 11.0 FT. The Borough should continue to periodically televise the system when excess flows are noticed. System upgrades are also made in conjunction with the municipal road paving program on an annual basis.

At this time, the Borough should continue its maintenance plan of its water and sanitary sewer systems and prioritize the replacement of water distribution mains where needed.

Stormwater and Nuisance Flooding

The Borough continues to battle nuisance flooding and stakeholders in the government, business and residential communities agree that it is one of the town's primary problems and also creates issues related to evacuation of the island. Numerous steps have been taken to begin addressing this issue including full participation with the United States Army Corps NJ Back Bays Flood Feasibility Study which is currently underway and expected to be completed by the year 2020.

One of the most inundated sections of town is the drainage area between 24th and 28th Streets between Central Avenue and Long Beach Boulevard. This area, when flooded, can completely restrict any traffic from the south from leaving the island. Borough officials are requesting support and assistance from the Ocean County Department of Engineering in achieving complete mitigation of this consistently increasing flooded area.

On January 5, 2004, the New Jersey Department of Environmental Protection adopted new rules to establish and implement a Municipal Stormwater Regulation Program. The rule is part of a Comprehensive approach being taken by the State to address the water quality and the water quantity problems that arise from nonpoint pollution and the loss of groundwater recharge areas. The rules at N.J.A.C. 7:8-4.3(a) require that a municipality adopt a municipal stormwater management plan as an integral part of its master plan. The Borough addressed the planning requirement and adopted the stormwater plan in 2005 and then revised the plan in 2007. Within one year of the adoption of the stormwater plan, the Borough was required to adopt stormwater control ordinances to implement the plan. The Borough adopted a stormwater control ordinance within one year through Ordinance No. 2006-23.

No changes have been made to the stormwater control ordinances or the stormwater management plan and the contents of both remain consistent with N.J.A.C 7:8 and the remainder of the Borough's Master Plan.

Other Utilities

Utilities and services such as gas, electric and telephone and cable are provided by independent suppliers and service to Borough residents is provided directly from the supplier. The Borough should ensure that these services continue to be available to residents by utility providers as technology changes and are rehabilitation projects are completed in the community.

When feasible, steps should be taken to install utilities below grade as a way to enhance the aesthetic of this coastal community. However, the impact of flooding to these utilities should also be a consideration prior to construction.

New Technology

With technology consistently increasing, the Land Use Board should continue to monitor the new technology and adequate resources should be provided to the Board to ensure the members stay current especially in terms of telecommunications technology.

Recommendations

1. Continue coordination with local, State and Federal partners to combat storm surge and nuisance flooding impacts.
2. Consider Best Available Sea Level Rise data when designing new utility infrastructure.
3. Implement appropriate actions derived from recommendations relating to studies of storm water drainage, vulnerability and resiliency.
4. Utilize Best Available Technology when upgrading existing utility infrastructure including public water, sanitary sewer and storm water facilities.
5. Encourage bulkheads and living shorelines or other forms of shoreline erosion barriers that will assist to minimize flooding and enhance the natural resources of the waterway and prioritize the shoreline erosion at Shore Avenue Park .
6. The condition of roadways should continue to be monitored and repaving should occur as necessary.

SUSTAINABILITY ELEMENT

PART 1 - COASTAL VULNERABILITIES ASSESSMENT

Ship Bottom, the Gateway to Long Beach Island, is located in the physical center 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 1.0 square mile of which 0.72 square miles is land and is bordered to the east by approximately 7200 feet of ocean front on the Atlantic Ocean and to the west by 12,200 LF of Bayfront on the Barnegat Bay and, consequently, suffered devastating damage from Superstorm Sandy in 2012. In 2010, the population of Ship Bottom was just 1156 people but in the summer months, the population soars to well over 20,000 people.

The Borough is home to many distinctive shops and restaurants and offers the only means of vehicular ingress and egress to and from the mainland via the Route 72 Manahawkin Bay Bridge also commonly referred to as "The Causeway". 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 these communities, 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. Residents that do not evacuate risk many safeties. They risk not being able to have food, water, shelter and/or medical care. They also risk not having law enforcement, fire and rescue protection as services are hampered or overwhelmed. Should there be a prolonged power outage situation, they face a delay in vital Public Information Announcements, further endangering themselves and emergency personnel. Also,

due to the damage caused by Superstorm Sandy, many areas of the island were not able to be permanently occupied in the days after the storm. A mandatory evacuation was ordered on October 28th at 4pm and Superstorm Sandy made landfall at 11:30pm on October 29th near Brigantine, NJ. Contractors were allowed on the island to start making repairs on November 5th and a permanent return of residents to the island, with the exception of Holgate, was permitted at 6am on November 10th if the home was habitable. No re-entry to the island was permitted by residents during the 6 day period of time when damage assessment of homes, infrastructure and utilities was being completed and clean up was underway to permit safe travel of the roads. It was during this time that residents feel they may have had an opportunity to permit further damage to their homes by removing water and water logged pieces of the structure as well as furnishings and immediately mitigating the mold. Instead, there was adequate time for mold growth in the flooded homes. In meetings with homeowners after the storm, and even during past storm events like Joaquin and Jonas, there is a significant population that feels they will not evacuate the next storm for fear they will not be permitted to re-enter the island in time to mitigate damage and prevent potentially further destruction. This is a concern for local OEM's as it can be grimly dangerous to occupy the island after a major storm event due to the probable lack of electricity, water and sewer service and natural gas. Local emergency managers are viewing this group as a vulnerable population. It has also been said that due to the time it took to reenter the island, local officials feel many people, whom own property on LBI as second homes or vacation homes, may actually occupy their homes during a storm event instead of staying at their full time residence elsewhere. If a storm occurs during the off-season, this population is not only increasing the calculated year-round population but may not be familiar with the local geography enough to realize areas that are more prone to flooding thereby increasing their risk.

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 elementary school, public works, police department, library and municipal building. 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 this 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. Based on the latest Preliminary Work Maps released by the Federal Emergency Management Agency, the majority of Ship Bottom lies within the 100-year floodplain and field inspections indicate that most unmitigated residential development sits at 5 FT feet or below in elevation in relationship to mean sea level. Therefore, a Category 1 hurricane, an extra tropical system like Super Storm Sandy or even a Nor'easter all pose a significant threat to this community. Since Sandy's impact in 2012, and even prior to, residents of this seashore community have noticed no more frequent flooding that occurs after brief heavy rain storms, summer thunder showers or even a strong northeast wind. Central Avenue in particular is a commonly flooded area as well as the area surrounding 25th and 26th Streets on the west side of the Boulevard.

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 Ship Bottom, if flooding is also occurring on other parts of the island, all traffic will need to utilize Ship Bottom as their point of evacuation via 8th and 9th Streets to the Manahawkin Bay Bridge.

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 town.

Vulnerability Assessment Introduction

The Borough of Ship Bottom 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 town's vulnerability was to complete the Getting to Resilience Questionnaire with the technical assistance and support of Jenna Gatto and Lisa Auer-muller 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 Ship Bottom 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 Ship Bottom and has done so for more than two decades. 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.

As stated within the Getting to Resiliency Recommendations Report prepared by JC NERR, SLOSH models for Ship Bottom indicate that flooding should be expected to be similar to Sandy's flood levels for a powerful Category 1 hurricane and impacts increase exponentially the stronger the storm. 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 many structures.

The U.S. Geological Survey (U.S.G.S.) recorded Superstorm Sandy's High Water Mark at 5.5 FT on Robert Drive in the southwestern 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 around 3 to 4 FT, devastating flooding occurred with great property damage. 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 Long Beach Boulevard is flat, with surface grades of 1 to 2 percent. Road grades are even less with many roads being as low as 0.3 percent. 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 has occurred and runoff is not reaching the inlets.

Areas to the east of Long Beach Boulevard generally are sloped upward towards the Ocean. Elevation change ranges from 3 at the bay area to 12 feet at the eastern street-ends by the beaches.

Stormwater Collection and Disposal

There are no natural drainage ways within the Borough, since most of the Borough has been built on filled lands. Limited natural wetlands remain along the Bayfront and no living shorelines exist. With most of the bayfront properties being filled and having bulkheads, any stormwater runoff from private properties and streets does not naturally drain over the surface into the Manahawkin Bay. All 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 Ship Bottom 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.

Built Environment

Ship Bottom 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, countless retail and dining establishments within a generalized district on the Boulevard and numerous parks and public access points to the ocean and bayfront all of which make this town a sought after destination for vacationers and a highly desirable area in which to live seasonally or year-round. There are approximately 34 blocks south to north, and 3 to 4 blocks from the Bay to the Ocean (east to west). The total land area of the town is approximately 0.72 square miles. As of May 2010, the borough had a total of 18.57 miles of roadways, of which 13.32 miles were maintained by the Borough, 4.65 miles by Ocean County and 0.60 miles by the New Jersey Department of Transportation.

At the time of the 2010 United States Census, there were 1384 people, 664 households, and 396 families residing in the borough. The population density was 1,991.0 per square mile and there were 2218 housing units at an average density of 3191 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 20,000 people or more. Ship Bottom is considered a fully developed municipality, with the exception of in-fill lots for redevelopment.

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 Ship Bottom 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. Since Superstorm Sandy in 2012, 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 will still be inundated. So although the habitable floors of the structure may not be impacted, a person's ability to leave will be.

The Borough is in the process of acquiring funding and designing construction drawings for new water plants at both 15th and 17th Streets. This new infrastructure will be constructed to the 500 year flood elevation as mandated for critical facilities that are funded under Federal HUD dollars. In addition, the Borough Hall is located within FEMA Flood Zone AE and currently the building sits one foot below FEMA's base flood elevation. As part of the Ocean County Hazard Mitigation Plan, the Borough did recognize the need for possibly raising, reconstructing or relocating the Borough Hall Building.



Existing 15th Street Well #5 and Emergency Generator (Replacement Under Design)

As confirmed during Superstorm Sandy, approximately 80% of the community is susceptible to storm surge inundation of a Category 1 hurricane, and the entire community will likely be submerged under a Category 2 storm. A Category 3 hurricane will be catastrophic to the Borough and most of its infrastructure. Access to any remaining infrastructure will be impossible.



Existing 17th Water Plant (Replacement Under Design)

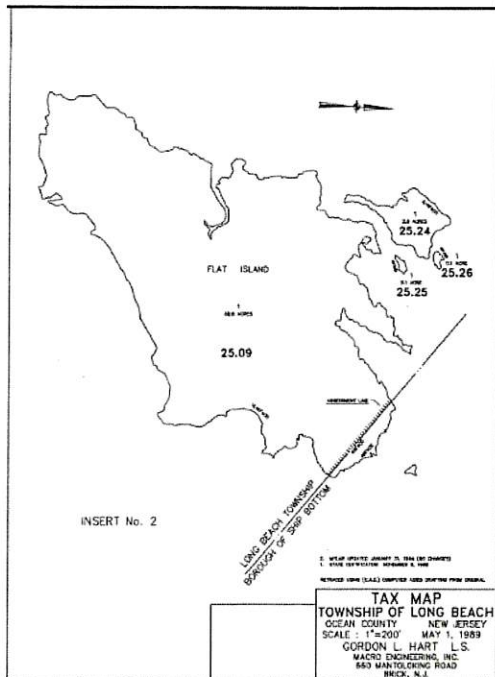
As referenced in Long Beach Island Re-Entry Plan last updated in October 2014, the staging areas for Emergency Responders and Municipal Government employees will be set up as close as practical to the entrance of the causeway bridge. During Superstorm Sandy, the Borough Hall parking lot located between 16th and 17th Streets was the main staging area for meetings and evacuation convoys. This area should remain dry during tide events associated with 1 FT and 2 FT of Sea Level Rise. With 3 FT of Sea Level Rise, this area may be partially inundated as will the majority of 8th Street which is needed to exit the island.

Analysis of the area surrounding the Long Beach Island Grade School remains essentially dry during all Sea Level Rise projections did not see floodwater inundation during Superstorm Sandy. In this future, based on the available projections, this may be a suitable location for relocation of the Municipal Borough Hall facilities. We note that access to and from the site may pose challenges during specific tide events but that is a consistent concern amongst all areas of the island.

Long Beach Boulevard, being the main roadway for all travelers to utilize to access other communities, is projected to remain dry during at least 1 FT and 2 FT of projected Sea Level Rise. Portions of the roadway may see standing water by the year 2085 or so.

Natural Environment

Ship Bottom's location on the barrier island between the Atlantic



Ocean and the Barnegat Bay provide ideal habitat for wildlife and native plant species and also offers one island called Flat Island in the bay which also lies within the jurisdiction of Long Beach Township. Although, ultimately, this parcel provides protection to the Borough, the town owns only 1.19 Acres of its 69.99 Acres and therefore any potential enhancement or restoration projects would have to be a joint effort between the Borough and the Township. According to the Coastal Research Center at Stockton University, *"this barrier island has a very different morphology and depositional history from the beaches farther north in Monmouth County. In particular, these beaches tend to contain sand that is half the average diameter of that found on the beaches farther north and contains an entirely different set of trace materials. This indicates that the sand supply has either been derived from different sources than that in Monmouth County or that geologic reworking on the continental shelf has modified the original sediment prior to its inclusion in the barrier island"*. This island will be impacted by all categories of storm events but maybe even more importantly, this area will see substantial impacts from 1 FT of Sea Level Rise and 2 FT of Sea Level Rise will begin to inundate a significant portion of the land mass. Steps should be taken to preserve and protect these areas.

The Borough recently received beach replenishment from the US Army Corps of Engineers and as a condition of that replenishment, the Borough is required to prepare a Beach Management Plan which addresses a wide range of issues including symbolic fencing for protection and management of listed species, trash collection and beach raking, sand fencing, vegetation movement and predator management. The widened beaches are known to attract state and federally listed endangered species including nesting birds, plants and insects.

Beach Nesting Birds



Piping plover (*Charadrius melodus*) – federally listed as threatened and State-listed as endangered, territorial nester

Black skimmer (*Rynchops niger*) – State-listed as endangered, colonial nester

Least tern (*Sterna antillarum*) – State-listed as endangered, colonial nester

Horned lark (*Eremophila alpestris*) – State-listed as threatened, solitary nester

Common tern (*Sterna hirundo*) – State species of special concern, colonial nester

American oystercatcher (*Haematopus palliatus*) – State species of special concern, territorial nester

Beach Insect



Northeastern beach tiger beetle (*Cicindela dorsalis dorsalis*) – federally listed as threatened and State-listed as endangered

Beach Plants



Seabeach amaranth (*Amaranthus pumilus*) – federally listed as threatened and State-listed as endangered, annual plant

Seabeach knotweed (*Polygonum glaucum*) – State-listed as endangered, annual plant

Seabeach sandwort (*Honckenya peploides*) – State-listed as endangered, perennial plant

Seabeach evening-primrose (*Oenothera humifusa*) – State species of concern, annual plant

Seabeach purslane (*Sesuvium maritimum*) – State species of concern, annual plant

Sea-milkwort (*Clauis maritima*) – State species of concern (presumed extirpated), perennial plant

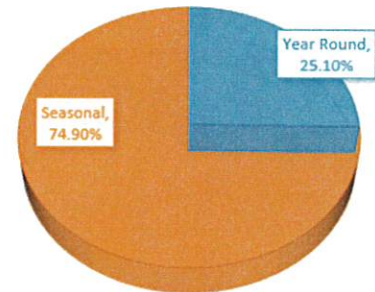
Later in 2018, the Borough will be preparing this plan and addressing any critical habitats and designating different beach zones to differentiate more recreation areas with passive areas that promote bird watching, shell collecting and other similar activities.

USFWS, 2016

Social Environment

Ship Bottom is a seasonal community with approximately 1156 year-round residents and upwards of 20,000 seasonal residents. The community is comprised of a diversified age range and over 30% of its population is 65 years or older. The Borough also supports the Long Beach Island Grade School which services all towns on the island except Beach Haven and as of July 2016, has a current enrollment of 124 children. The census data also shows that of the 555 households in the Borough, 14% had children under the age of 18 living with them and the average family size was 2.6. In addition, the data indicates that 14.8% 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 Ship Bottom where low lying areas and nuisance flooding associated with wind direction and heavy rainfall can quickly become problematic.

SHIP BOTTOM HOUSING OCCUPANCY



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 town being less than one square mile, assigning a range would essentially provide a homogenous outcome.

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 town was to initiate a survey such as this, it would have to be updated frequently as the needs of the contributors change frequently.

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.

Social Vulnerabilities

Housing	#	(%)
Total Housing Units	1975	100%
Occupied Housing Units	496	25.10%
Seasonal Use Only	1479	74.90%
In group Quarters	0	0
Mobile Home Housing	0	0

Race	(%)
Percent Minority	9.20%
Speak only English	93.60%

Income	
Below Poverty level	3.30%
Median Household Income	\$71,750

Age	(%)
Age 5 and under	4.30%
Age 17 and under	9.70%
Age 65-74	18.70%
Age 75 +	13.40%

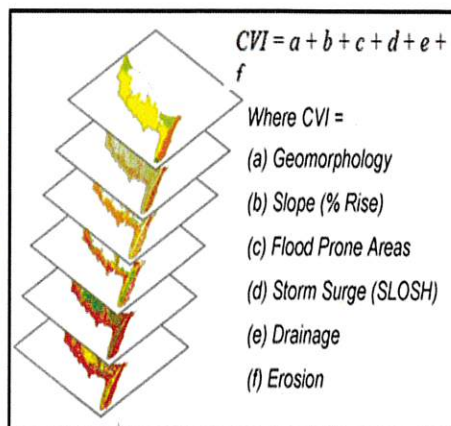
Analysis of some social factors, shown below, indicates that there is not a clear year round population to which the Borough could seek additional outreach programs. Local knowledge indicates that the aging population has been in place in the Borough for decades and is familiar with storm events and the need to evacuate in a timely manner. However, there were instances of people during Superstorm Sandy refusing to evacuate, especially the elderly, because of their pets. The County of Ocean has been working since Superstorm Sandy to address this issue as the lack of pet-friendly shelters was the cause for countless people not heeding mandatory evacuation orders. In addition, it was recognized that a portion of the non-English speaking population, which may be greater

than what is reflected in the last census, may not have been aware of the urgency to evacuate the island prior to Sandy. A local official on the island felt concerned when she saw a non-English speaking family doing laundry at a local laundromat during the mandatory evacuation. When she approached them and tried to convey the urgency of the situation, they explained they had no television and no telephone and were not aware they had to leave. Weeks later, this family located the official specifically to thank her for urging them to leave the island. We have provided recommendations to address this population within the report. It should be noted that in the hours prior to the arrival of Superstorm Sandy, the majority of the residents abided by the mandatory evacuation order and there were not significant cases of rescue during the event.

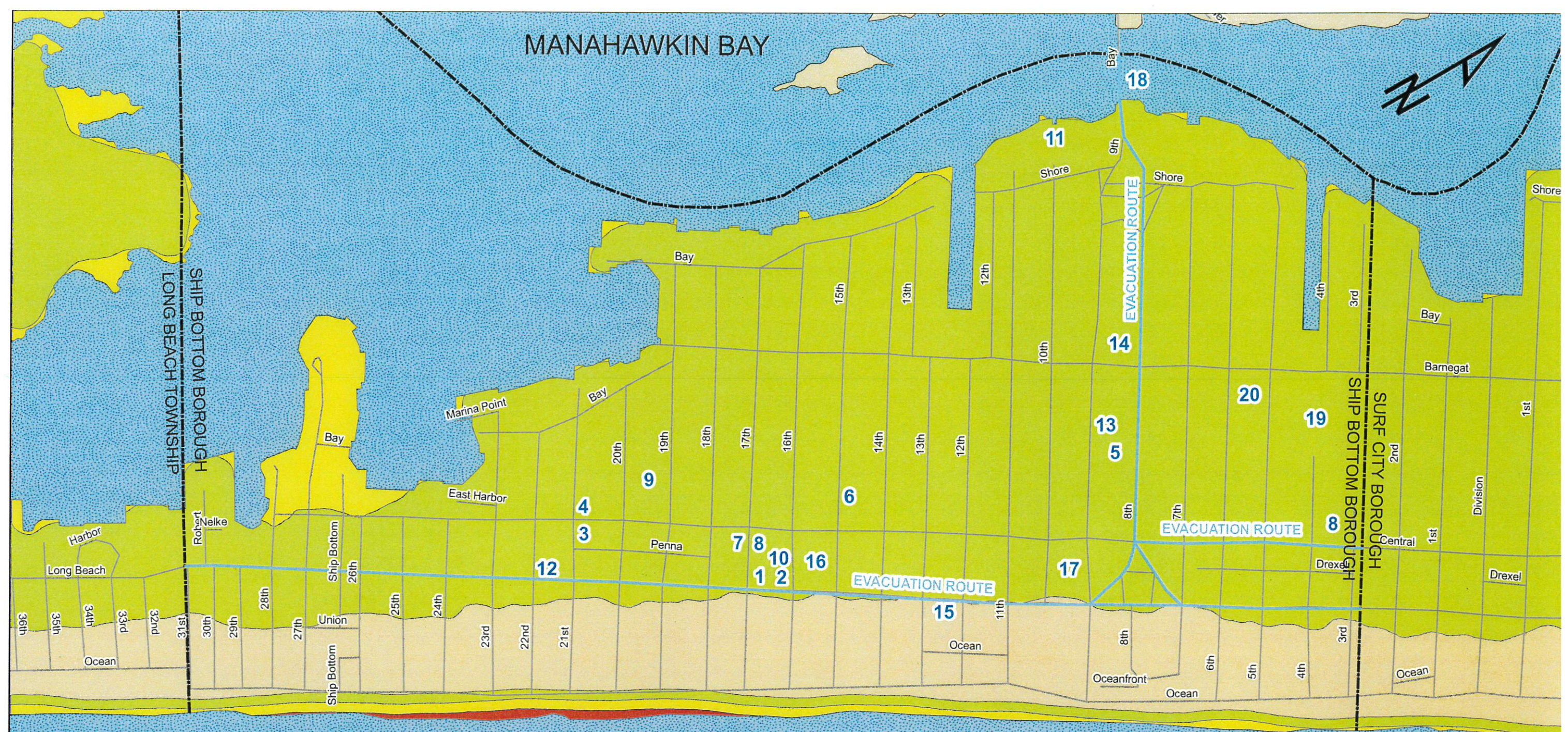
Coastal Vulnerability Index

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 hazards¹. 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 divid-

ed 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 Ship Bottom Borough and may vary from other CVI's prepared by alternate agencies. The CVI map for Ship Bottom is provided on the following page.



Source: NJDEP, NJCCVAMP,



ATLANTIC OCEAN

MANAHAWKIN BAY

STORM SURGE LEVEL

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

- 1 - BOROUGH HALL
- 2 - POLICE DEPARTMENT
- 3 - FIRE DEPARTMENT
- 4 - FIRST AID SQUAD
- 5 - ELECTRICAL SUBSTATION
- 6 - WELL #5
- 7 - WELL #6
- 8 - STAGING AREAS
- 9 - LONG BEACH ISLAND GRADE SCHOOL
- 10 - POST OFFICE
- 11 - PUBLIC BOAT RAMP
- 12 - OCEAN COUNTY HEALTH DEPT.
- 13 - OCEAN COUNTY CHAMBER OF COMMERCE
- 14 - CVS PHARMACY
- 15 - COMCAST
- 16 - BANK OF AMERICA
- 17 - ISLAND DRY CLEANERS
- 18 - ROUTE 72/CAUSEWAY BRIDGE
- 19 - 4TH STREET PARK
- 20 - TENNIS COURTS

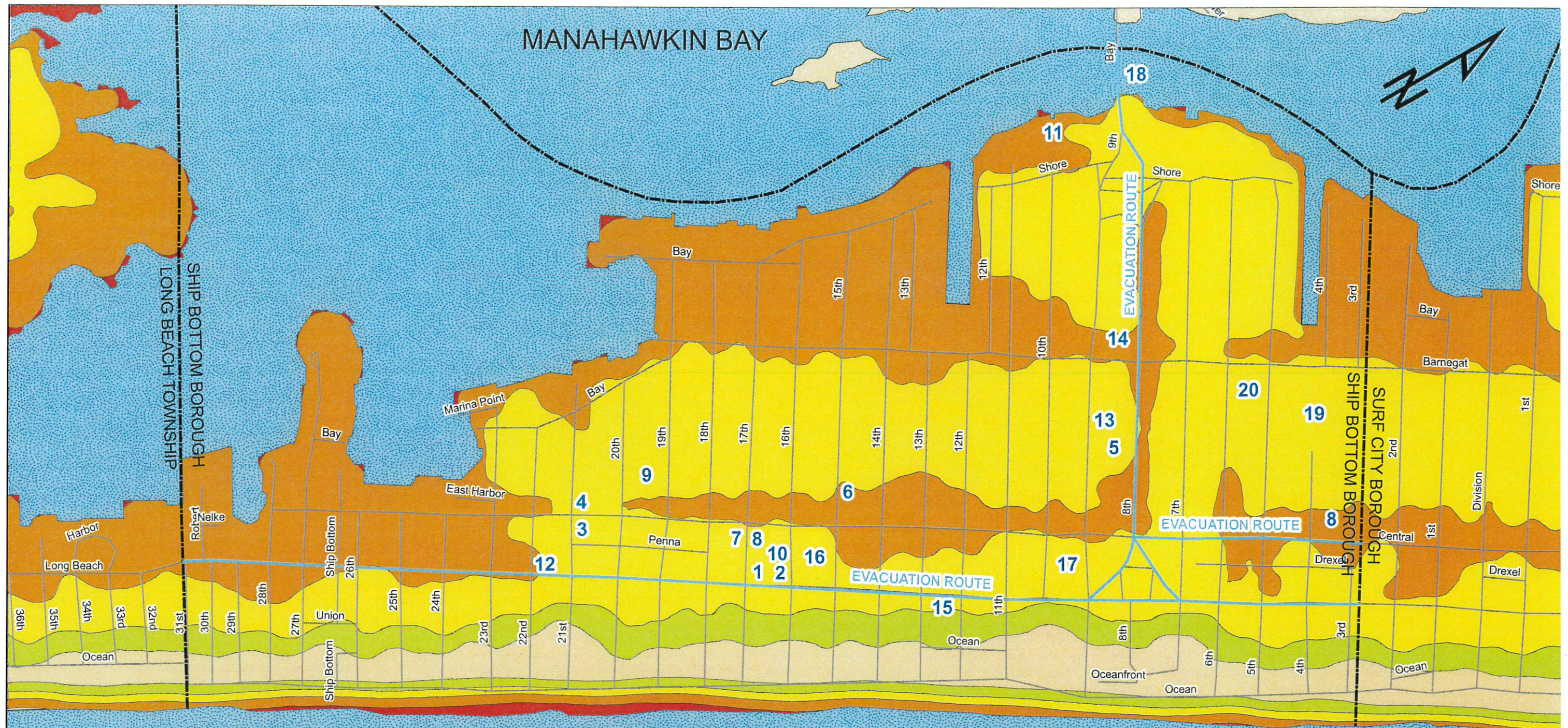
SHIP BOTTOM BOROUGH

COASTAL VULNERABILITY ASSESSMENT
BUILT ENVIRONMENT VULNERABILITY
CATEGORY 1 STORM

0 300 600 1,200 Feet

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

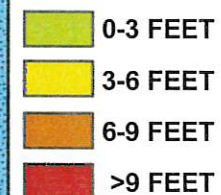




ATLANTIC OCEAN

MANAHAWKIN BAY

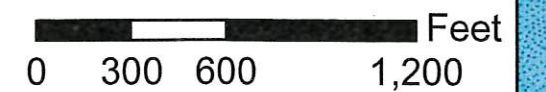
STORM SURGE LEVEL



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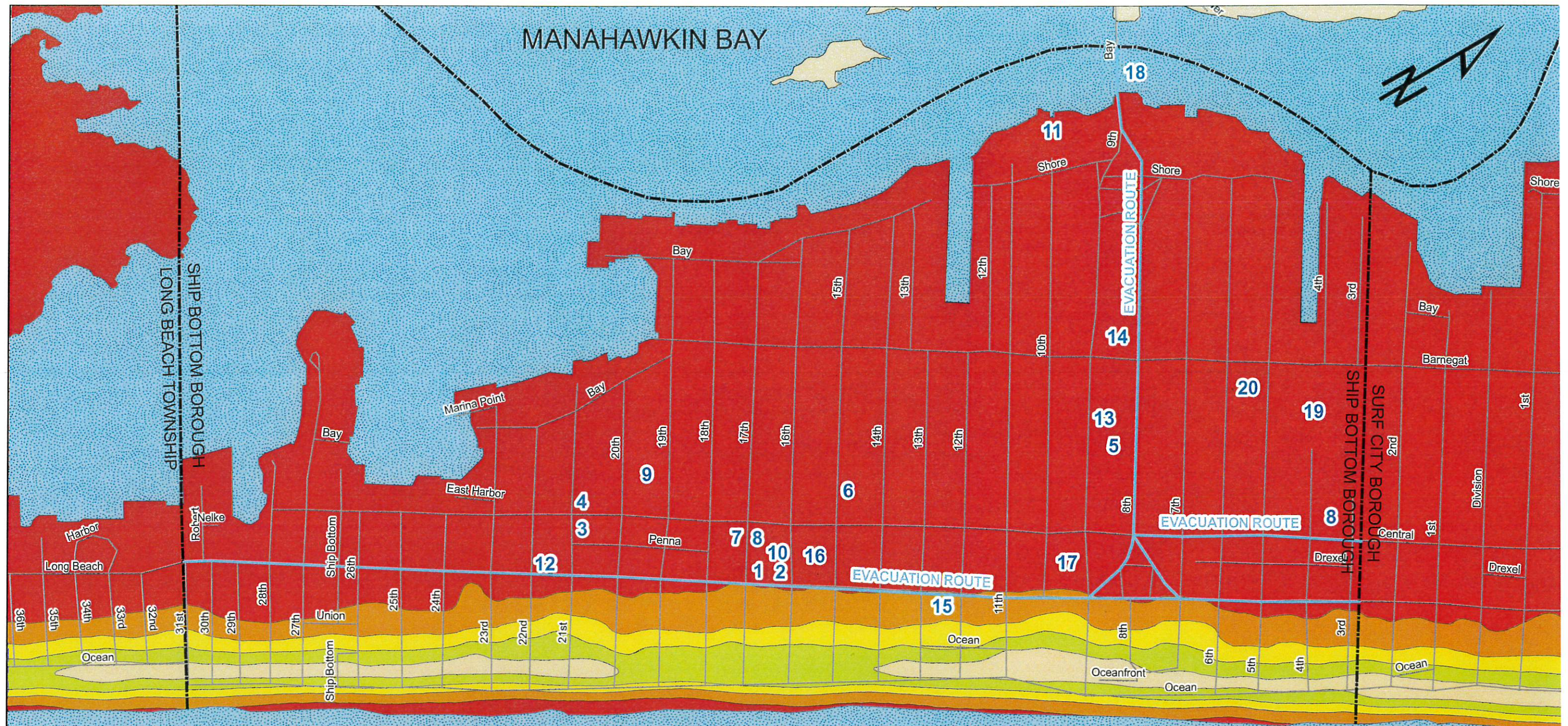
SHIP BOTTOM BOROUGH

COASTAL VULNERABILITY ASSESSMENT
BUILT ENVIRONMENT VULNERABILITY
CATEGORY 2 STORM



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





ATLANTIC OCEAN

MANAHAWKIN BAY

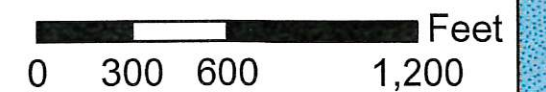
STORM SURGE LEVEL



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- 17 - ISLAND DRY CLEANERS
- 18 - ROUTE 72/CAUSEWAY BRIDGE
- 19 - 4TH STREET PARK
- 20 - TENNIS COURTS

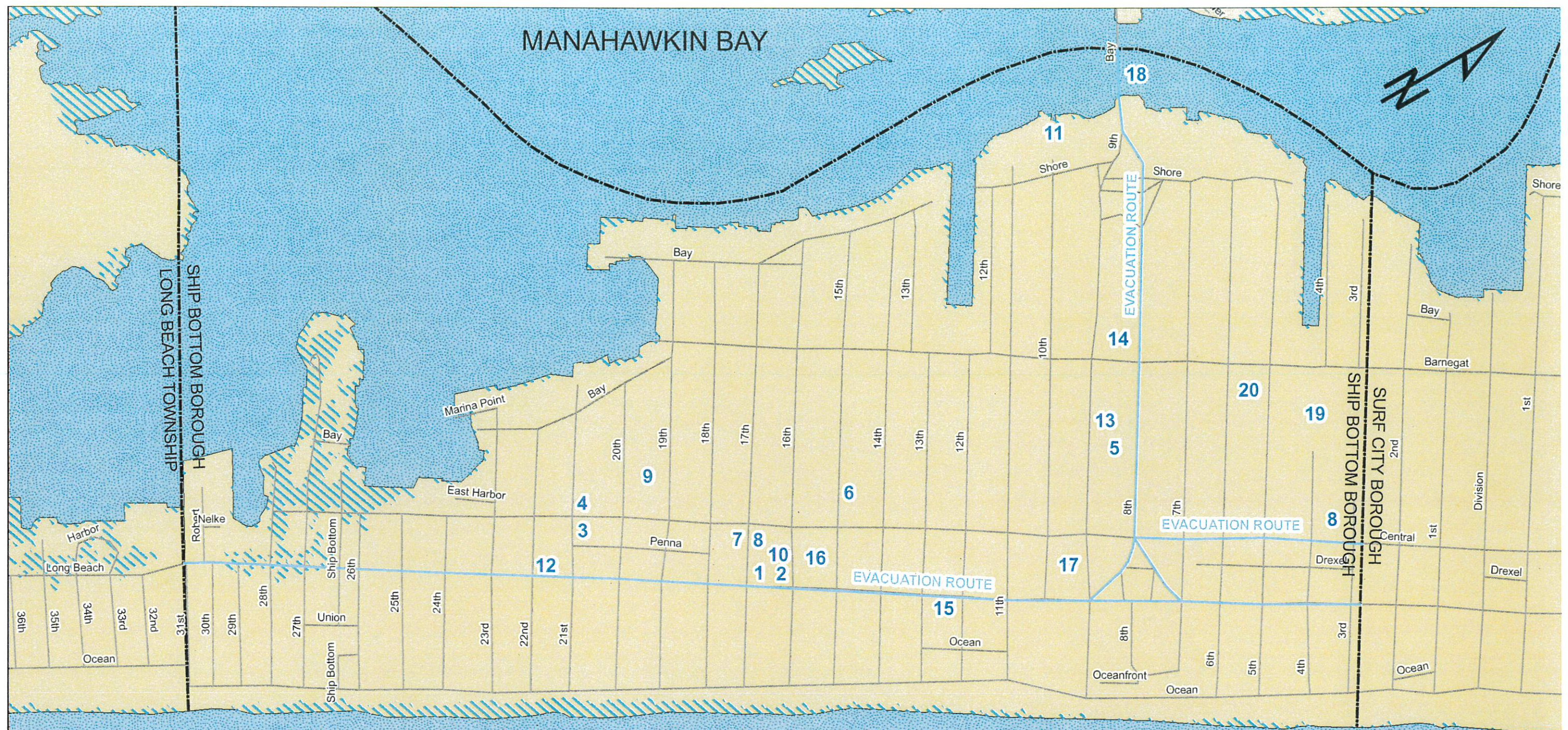
SHIP BOTTOM BOROUGH

COASTAL VULNERABILITY ASSESSMENT
BUILT ENVIRONMENT VULNERABILITY
CATEGORY 3 STORM



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





- 1 - BOROUGH HALL
- 2 - POLICE DEPARTMENT
- 3 - FIRE DEPARTMENT
- 4 - FIRST AID SQUAD
- 5 - ELECTRICAL SUBSTATION
- 6 - WELL #5
- 7 - WELL #6
- 8 - STAGING AREAS
- 9 - LONG BEACH ISLAND GRADE SCHOOL
- 10 - POST OFFICE
- 11 - PUBLIC BOAT RAMP
- 12 - OCEAN COUNTY HEALTH DEPT.
- 13 - OCEAN COUNTY CHAMBER OF COMMERCE
- 14 - CVS PHARMACY
- 15 - COMCAST
- 16 - BANK OF AMERICA
- 17 - ISLAND DRY CLEANERS
- 18 - ROUTE 72/CAUSEWAY BRIDGE
- 19 - 4TH STREET PARK
- 20 - TENNIS COURTS

SHIP BOTTOM BOROUGH

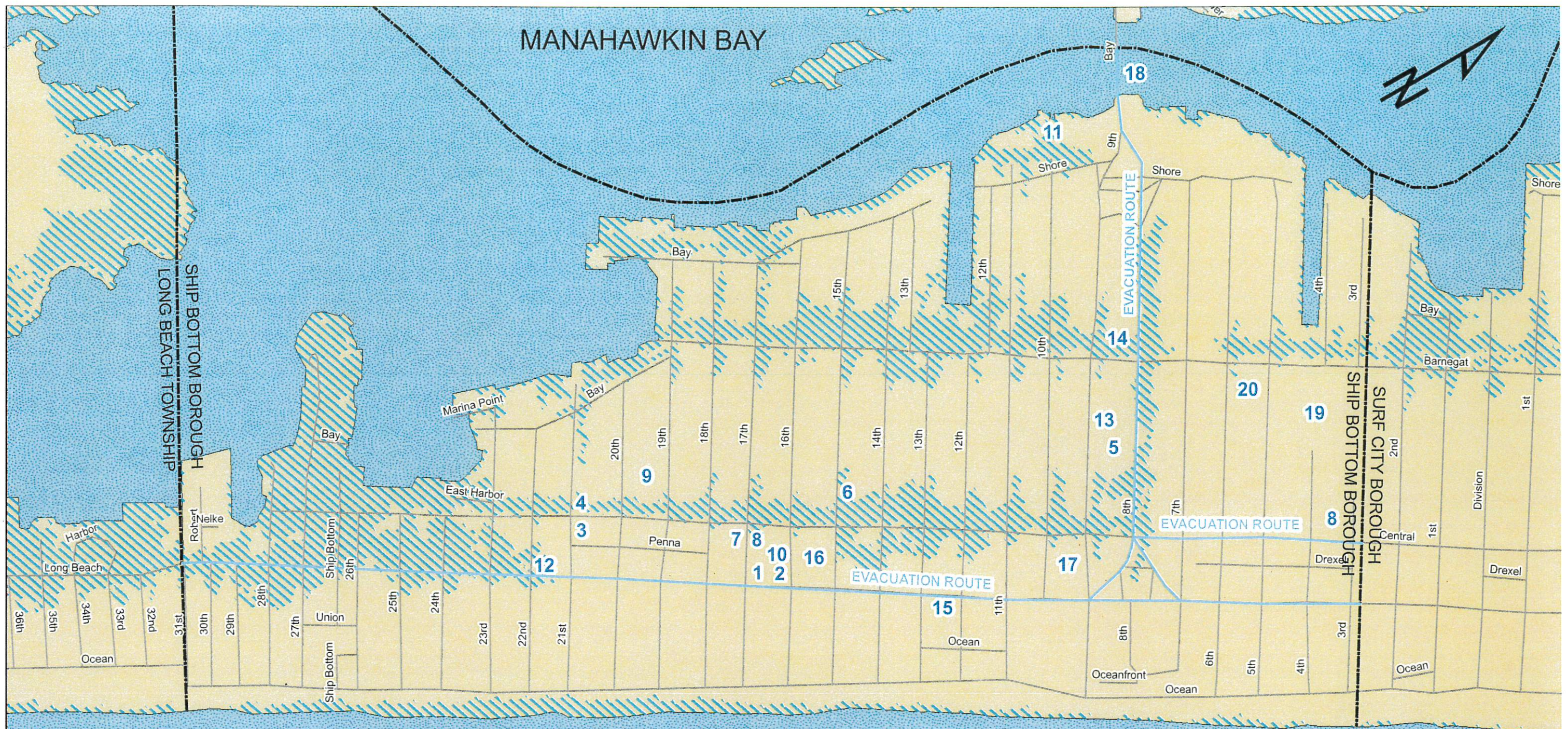
COASTAL VULNERABILITY ASSESSMENT BUILT ENVIRONMENT VULNERABILITY

ANTICIPATED SEA LEVEL RISE (1 FOOT)

0 300 600 1,200 Feet

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443 Atlantic City Boulevard
Beachwood, NJ 08722
(732)244-1090





- 1 - BOROUGH HALL
- 2 - POLICE DEPARTMENT
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SEA LEVEL RISE

SHIP BOTTOM BOROUGH

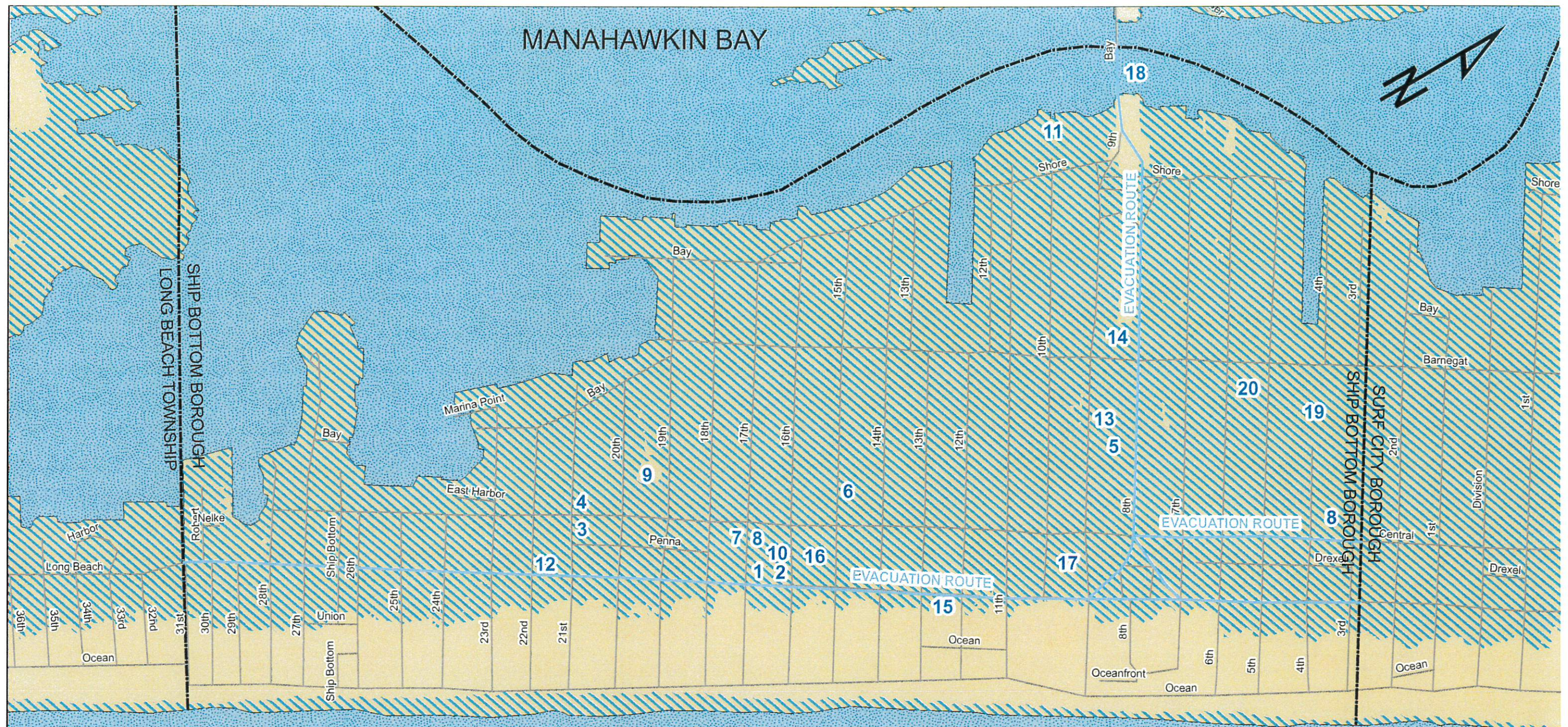
COASTAL VULNERABILITY ASSESSMENT
BUILT ENVIRONMENT VULNERABILITY

ANTICIPATED SEA LEVEL RISE (2 FEET)



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443 Atlantic City Boulevard
Beachwood, NJ 08722
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- 1 - BOROUGH HALL
- 2 - POLICE DEPARTMENT
- 3 - FIRE DEPARTMENT
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- 18 - ROUTE 72/CAUSEWAY BRIDGE
- 19 - 4TH STREET PARK
- 20 - TENNIS COURTS

 **STORM SURGE**

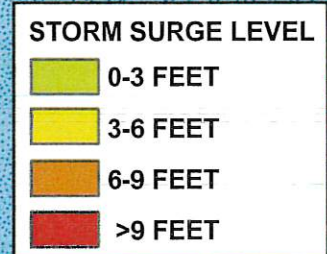
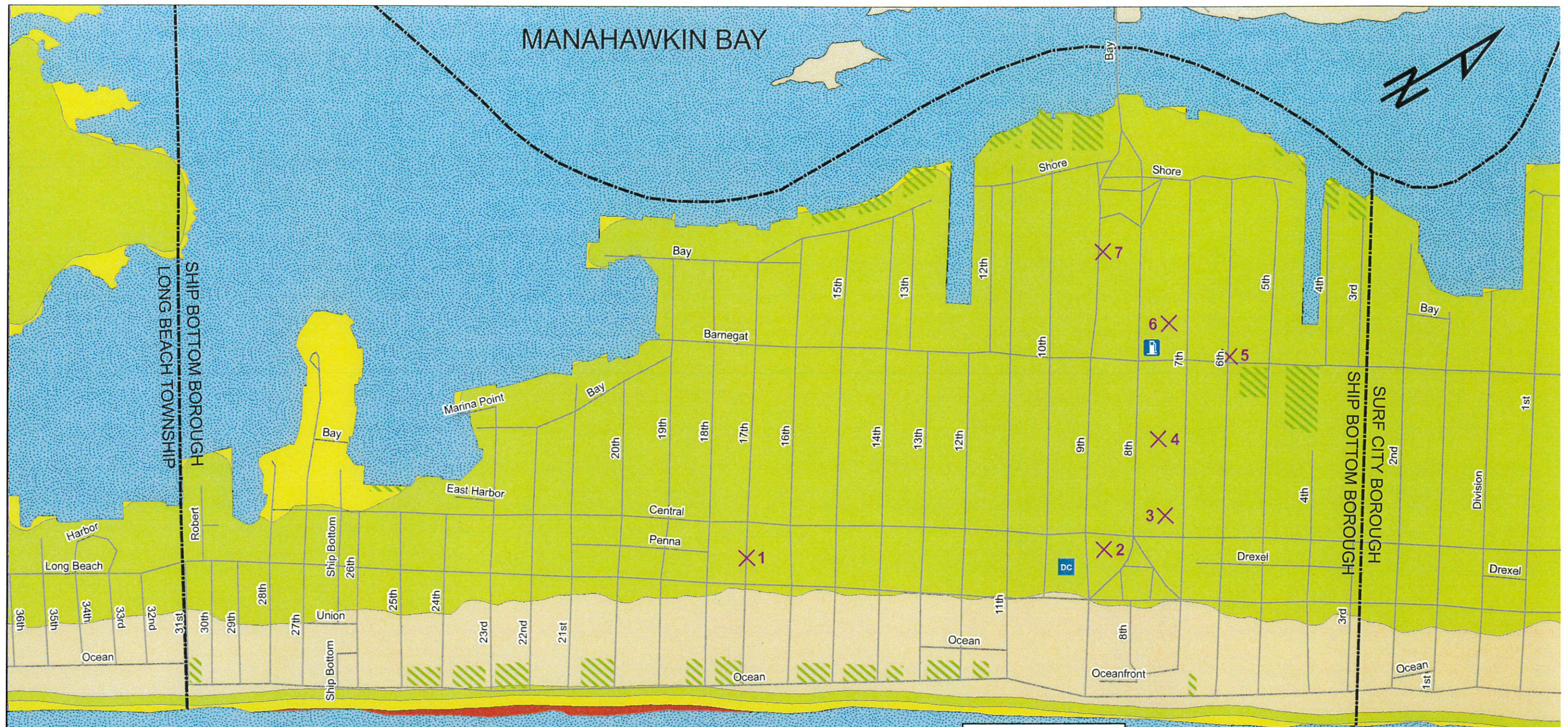
SHIP BOTTOM BOROUGH

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

 Feet
0 300 600 1,200

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





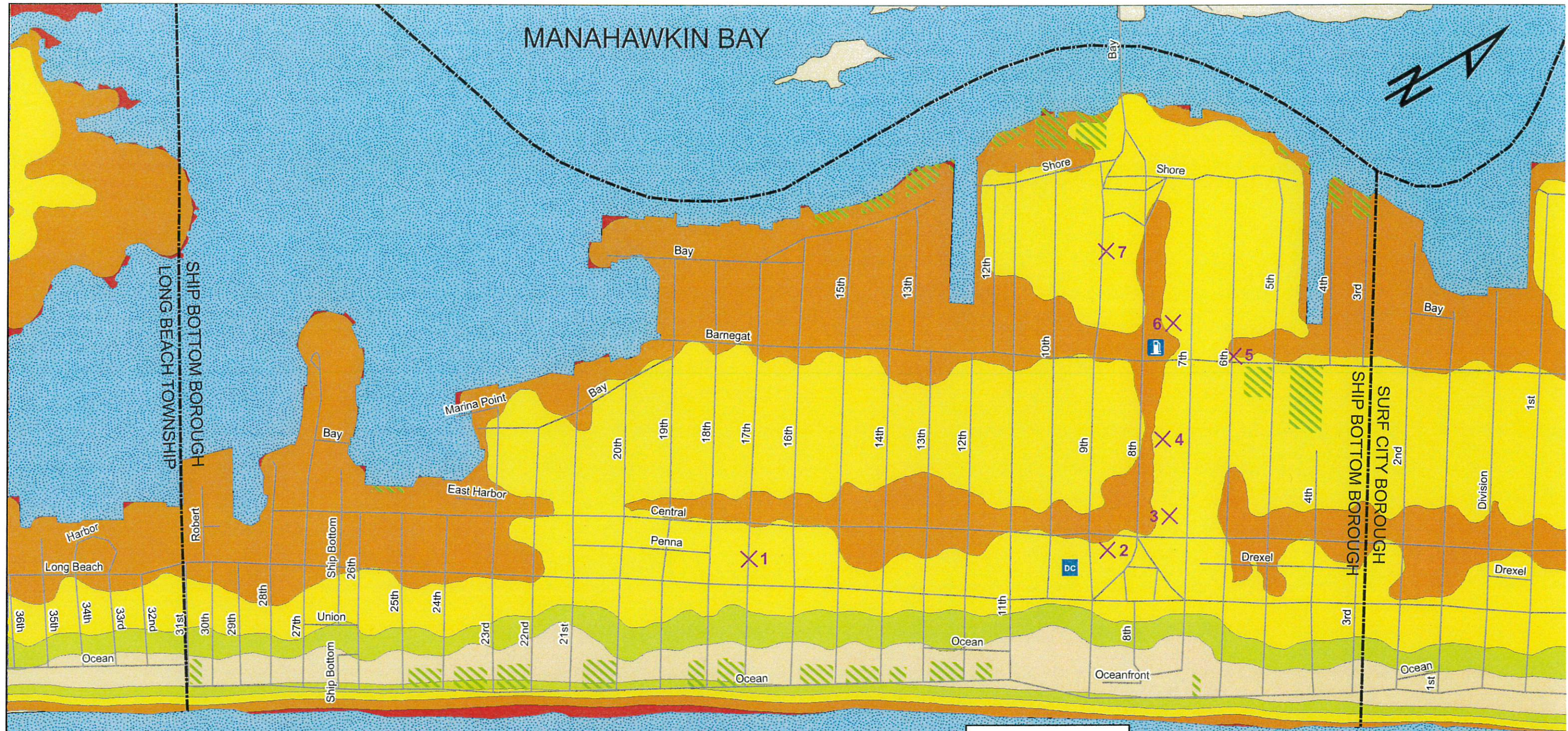
- CONTAMINATED SITES**
- 1 - SICO
 - 2 - EXXON
 - 3 - LUKOIL
 - 4 - FRIENDLY MANAGEMENT CO.
 - 5 - SHIP BOTTOM GARAGE
 - 6 - FRIENDLY MANAGEMENT CO.
 - 7 - WOOLLEY PROPERTY

SHIP BOTTOM BOROUGH

COASTAL VULNERABILITY ASSESSMENT
NATURAL ENVIRONMENT VULNERABILITY
CATEGORY 1 STORM

0 300 600 1,200 Feet

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Beachwood, NJ 08722
(732)244-1090



- CONTAMINATED SITES**
- 1 - SICO
 - 2 - EXXON
 - 3 - LUKOIL
 - 4 - FRIENDLY MANAGEMENT CO.
 - 5 - SHIP BOTTOM GARAGE
 - 6 - FRIENDLY MANAGEMENT CO.
 - 7 - WOOLLEY PROPERTY

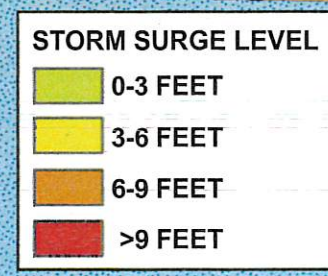
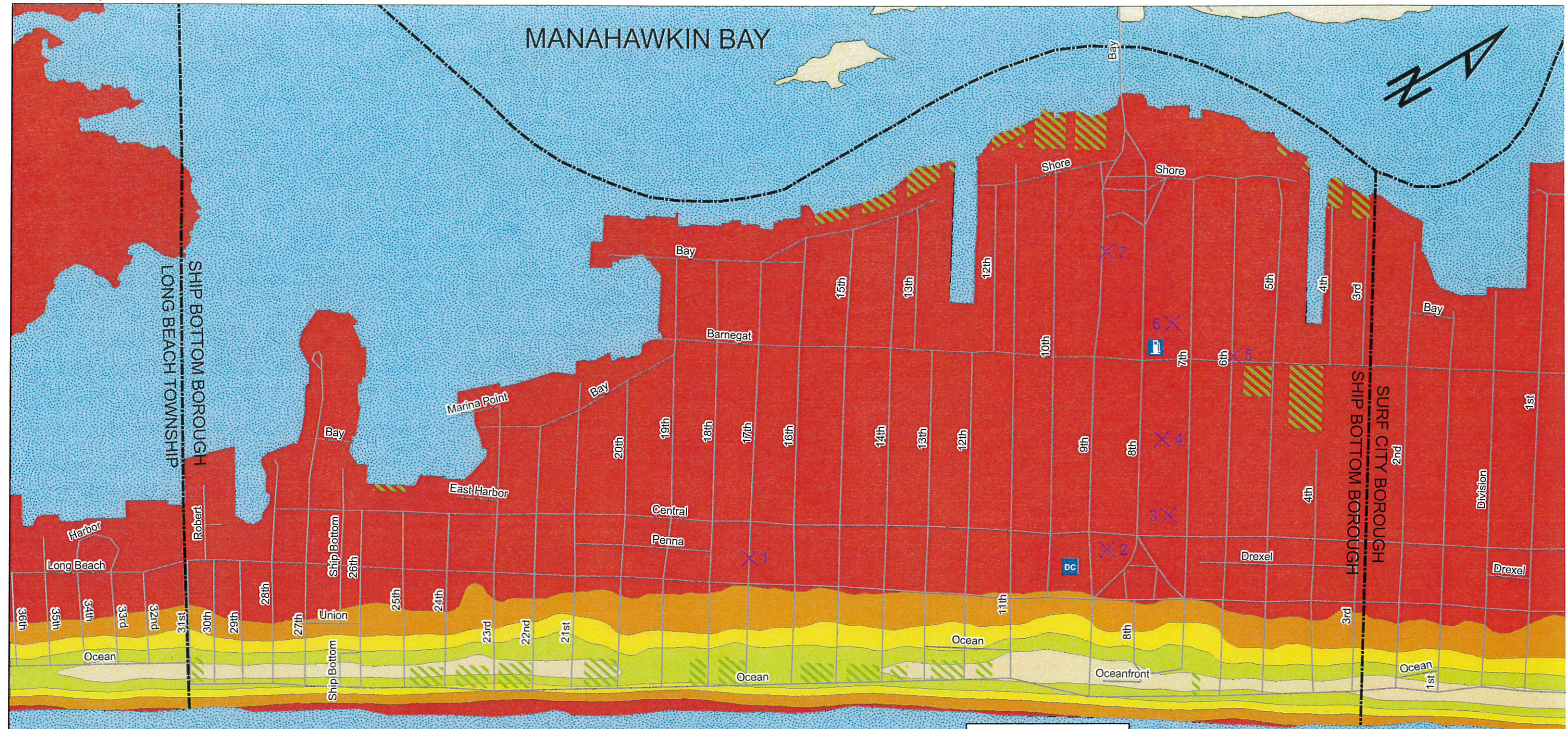
- LEGEND**
- ✕ CONTAMINATED SITE
 - GAS STATION
 - DRY CLEANERS
 - BEACH
 - WETLANDS
 - GREEN ACRES LAND

SHIP BOTTOM BOROUGH

COASTAL VULNERABILITY ASSESSMENT
NATURAL ENVIRONMENT VULNERABILITY
CATEGORY 2 STORM

0 300 600 1,200 Feet

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Beachwood, NJ 08722
(732)244-1090



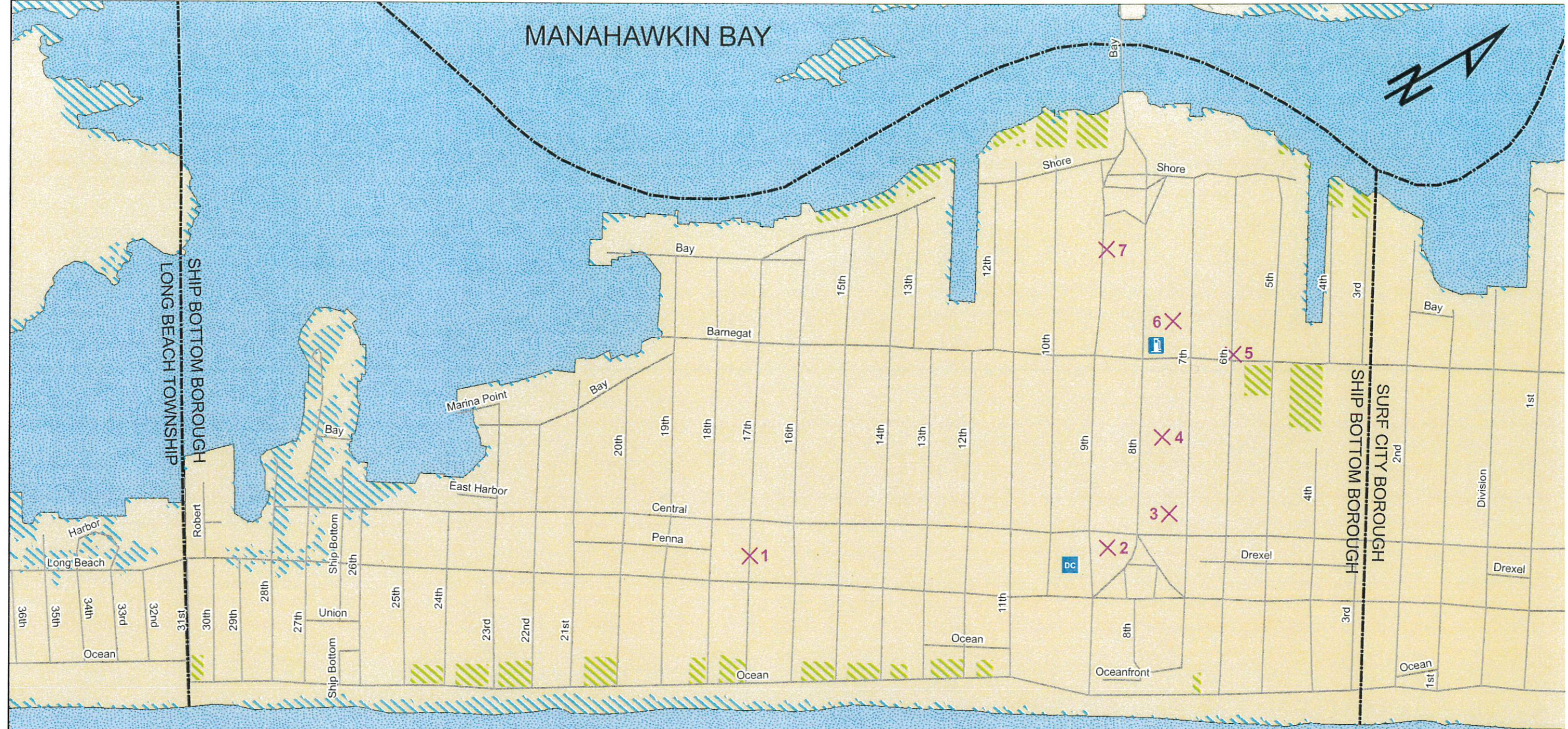
- CONTAMINATED SITES**
- 1 - SICO
 - 2 - EXXON
 - 3 - LUKOIL
 - 4 - FRIENDLY MANAGEMENT CO.
 - 5 - SHIP BOTTOM GARAGE
 - 6 - FRIENDLY MANAGEMENT CO.
 - 7 - WOOLLEY PROPERTY

SHIP BOTTOM BOROUGH

COASTAL VULNERABILITY ASSESSMENT
NATURAL ENVIRONMENT VULNERABILITY
CATEGORY 3 STORM

0 300 600 1,200 Feet

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ATLANTIC OCEAN

- CONTAMINATED SITES**
- 1 - SICO
 - 2 - EXXON
 - 3 - LUKOIL
 - 4 - FRIENDLY MANAGEMENT CO.
 - 5 - SHIP BOTTOM GARAGE
 - 6 - FRIENDLY MANAGEMENT CO.
 - 7 - WOOLLEY PROPERTY

LEGEND

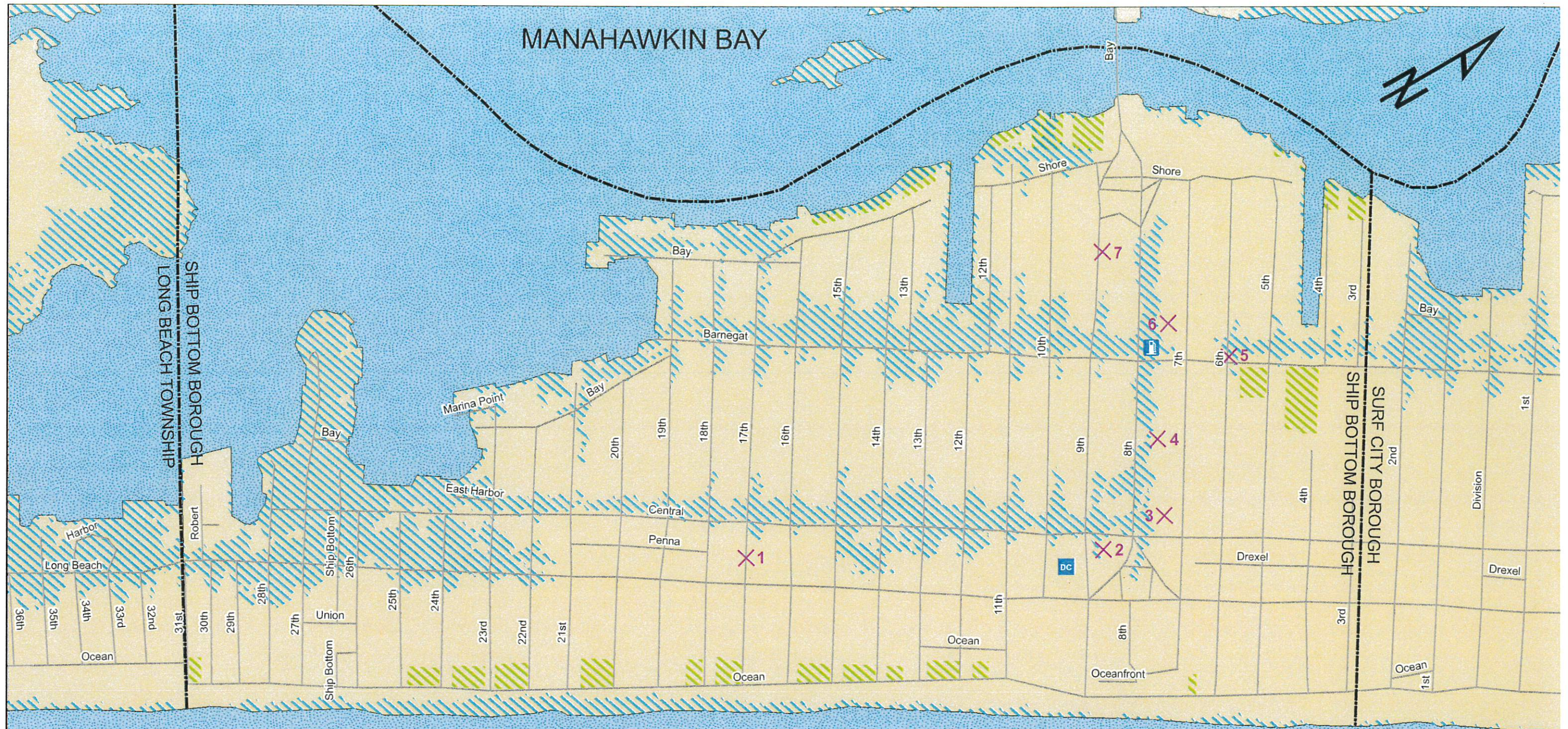
- SEA LEVEL RISE
- CONTAMINATED SITE
- GAS STATION
- DRY CLEANERS
- BEACH
- WETLANDS
- GREEN ACRES LAND

SHIP BOTTOM BOROUGH

COASTAL VULNERABILITY ASSESSMENT
NATURAL ENVIRONMENT VULNERABILITY
ANTICIPATED SEA LEVEL RISE (1 FOOT)

Feet
0 300 600 1,200

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



ATLANTIC OCEAN

CONTAMINATED SITES

- 1 - SICO
- 2 - EXXON
- 3 - LUKOIL
- 4 - FRIENDLY MANAGEMENT CO.
- 5 - SHIP BOTTOM GARAGE
- 6 - FRIENDLY MANAGEMENT CO.
- 7 - WOOLLEY PROPERTY

LEGEND

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

SEA LEVEL RISE

SHIP BOTTOM BOROUGH

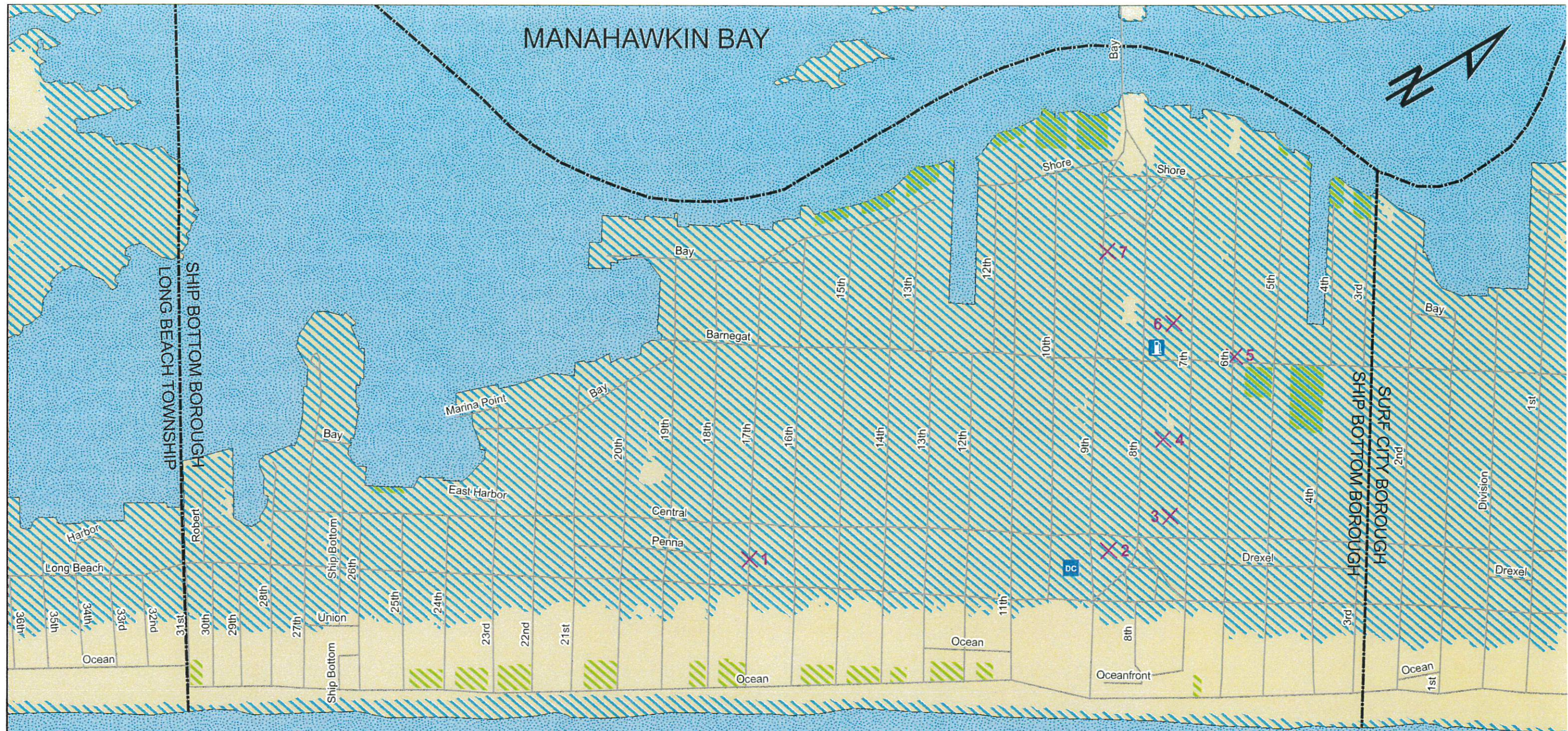
COASTAL VULNERABILITY ASSESSMENT
NATURAL ENVIRONMENT VULNERABILITY

ANTICIPATED SEA LEVEL RISE (2 FEET)

Feet
0 300 600 1,200

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ATLANTIC OCEAN

MANAHAWKIN BAY

- CONTAMINATED SITES**
- 1 - SICO
 - 2 - EXXON
 - 3 - LUKOIL
 - 4 - FRIENDLY MANAGEMENT CO.
 - 5 - SHIP BOTTOM GARAGE
 - 6 - FRIENDLY MANAGEMENT CO.
 - 7 - WOOLLEY PROPERTY

LEGEND

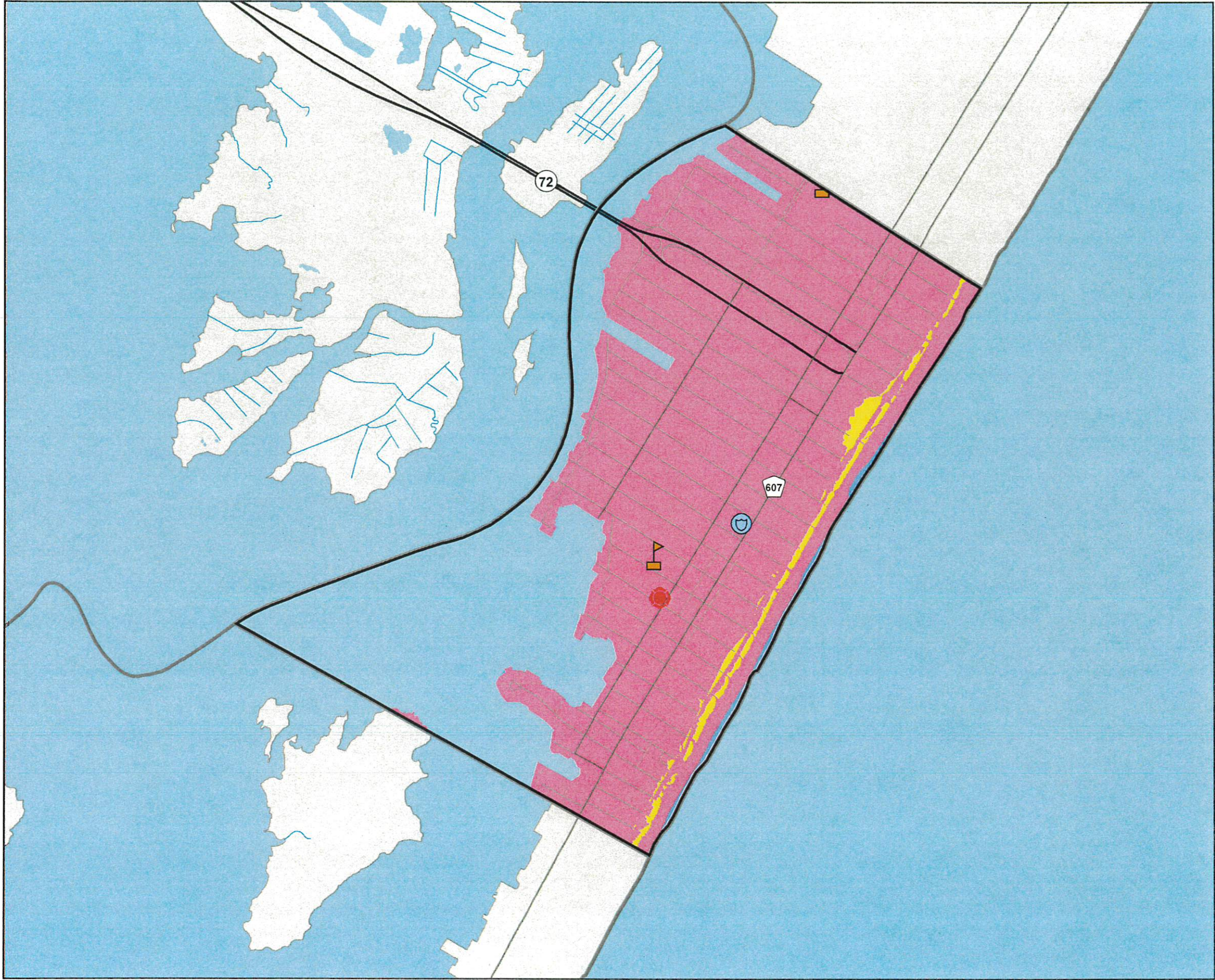
- STORM SURGE
- CONTAMINATED SITE
- GAS STATION
- DRY CLEANERS
- BEACH
- WETLANDS
- GREEN ACRES LAND

SHIP BOTTOM BOROUGH

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

0 300 600 1,200 Feet

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Coastal Vulnerability Index



Ship Bottom Borough, Ocean County


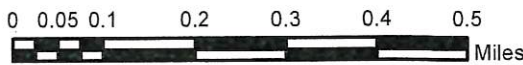
The Coastal Vulnerability Index (CVI) was developed to help assess the vulnerability and resiliency of New Jersey coastal communities to natural hazards. While storm surge inundation and sea level rise are the primary factors influencing coastal flooding threats, those factors alone may not fully define the risk of coastal communities 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

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

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

Ship Bottom 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 town'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 consider 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

Ship Bottom Recommendations

In concluding the vulnerability analysis of the Borough of Ship Bottom 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 Ship Bottom 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 restoration projects on Flat Island to help mitigate anticipated impacts from Sea Level Rise and Storm Surge.
- Borough Officials should coordinate with State Department of Transportation officials on the potentially raising of 8th and 9th Streets to ensure access to and from the mainland.
- Consideration and feasibility of modifications to the existing boat ramp at Shore Avenue should be made to ensure this facility can be utilized during storm events for supply delivery.

- Consider acquisition of the existing Elementary School, should it be available in the future, to ensure perpetual green space. The Municipal Administrative Offices (Borough Hall) could also potentially be relocated to this site utilizing the existing structure.
- Consider raising minimum bulkhead heights along commercial and residential street ends as well as along municipal street ends.
- Promote Living Shoreline projects where feasible along the Bayfront areas and islands.
- 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

- Borough Officials should establish a parking area at which could serve as a location for vehicle parking during high tide events.
- 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 restoration projects on Flat Island to help mitigate anticipated impacts from Sea Level Rise and Storm Surge.
- Borough Officials should coordinate with State Department of Transportation officials on the potentially raising of 8th and 9th Streets to ensure access to and from the mainland during times of high tide.
- 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 and 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.
- Consider raising minimum bulkhead heights along commercial and residential street ends as well as along municipal street ends.
- 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.

RELATIONSHIP TO OTHER PLANS

Introduction

The Municipal Land Use Law requires that all municipal master plans consider the relationship of their Master Plan to Plans of contiguous municipalities, County Plans and the New Jersey State Development and Redevelopment Plan (SDRP). This section reviews the plans and zoning ordinances of the municipalities bordering Ship Bottom, the Ocean County Master Plan and the State Development and Redevelopment Plan.

State Development And Redevelopment Plan

The Ship Bottom Master Plan is consistent with the plans and policies of the New Jersey State Development and Redevelopment Plan (SDRP) adopted in 2001. The State Plan has eight goals:

- Revitalize the State's cities and towns.
- Conserve the State's natural resources and systems.
- Promote beneficial economic growth, development and renewal for all residents of New Jersey.
- Protect the environment, prevent and clean up pollution.
- Provide adequate public services and facilities at a reasonable cost.
- Provide adequate housing at a reasonable cost.
- Preserve and enhance areas with historic, cultural, scenic, open space and recreational value.
- Ensure sound and integrated planning and implementation statewide.

The Ship Bottom Master Plan is consistent with the State Plan goals by promoting the preservation and enhancement of an existing, long-established seasonal community, protecting Ship Bottom's natural resources, particularly the Manahawkin Bay and the Borough's bayside shoreline, promoting the fiscally sound expansion of municipal services, and ensuring new developments are planned in and constructed in a sustainable manner. As called for in the SDRP, the Ship Bottom Master plan is also consistent with regional planning efforts, including the Ocean County Master Plan and the Ocean County Hazard Mitigation Plan.

The State Plan Policy Map of the SDRP divides the State into five Planning Areas, each of which has specific policy recommendations associated with it. Ship Bottom lies in only one planning area: Environmentally Sensitive Barrier Islands (PA5B) Planning Area.

The State Plan designates PA5B as the Planning area that contains large contiguous land areas with valuable ecosystems, geological features and wildlife habitats. It also recognizes existing centers that remain the focus of residential and commercial growth and public facilities and services for their region as well as supporting the recreation and tourism industries. Ship Bottom is almost fully built out. This Master Plan encourages more efficient utilization of land by preserving the existing pattern of development in the Borough.

Ocean County Master Plan

The Ship Bottom Master plan is generally in conformance with the Ocean County Comprehensive Master Plan, adopted in December 2011.

Surrounding Communities

Ship Bottom is bordered to its north by Surf City and to its south by Long Beach Township. Both municipalities can be characterized by residential and commercial development that is predominantly used on a seasonal basis. The land uses categories of these municipalities are substantially compatible.