DRAFT

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BOROUGH OF BAY HEAD

STRATEGIC RECOVERY PLANNING REPORT

THIS REPORT WAS PREPARED WITH A GRANT FROM
THE NJ DEPARTMENT OF COMMUNITY AFFAIRS
POST SANDY RECOVERY PLANNING ASSISTANCE PROGRAM

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PURPOSE

The New Jersey Department of Community Affairs (NJDCA) has established a Post Sandy Planning Assistance Grant Program. The purpose of this program is to support long range planning for community redevelopment in the municipalities and counties sustaining damage from Superstorm Sandy. The Program provides grants to municipalities and counties to hire American Institute of Certified Planners/New Jersey Board of Professional Planners (AICP/PP) licensed planners to address conditions created or exacerbated by the storm, identify approaches to rebuilding that will be more resistant to damage from future storm events, and encourage sustainable economic growth.

The first step in the grant process is the preparation of a Strategic Recovery Planning Report (SRPR). An SRPR must be completed for municipalities and counties to be eligible for additional Post Sandy planning assistance. The purpose of the SRPR is to evaluate the impacts of the disaster on relevant community features. The evaluation can be broad or narrow but should focus on planning goals, strategies, and priorities leading to actions that are most urgently needed for public safety and economic recovery. The SRPR should serve as a guide for actions to be taken going forward not only to recover from the effects of Superstorm Sandy, but also to reduce vulnerabilities to future disasters.

Accordingly, the report:

- Assesses and addresses the conditions created by the impact of Superstorm Sandy on properties and community features within the Borough of Bay Head;

- Emphasizes the planning goals and action items needed to improve public safety, recover properties from Sandy damage, mitigate damage from future storms and sea level rise, as well as to enhance the community character; and

- Outlines proposed projects in terms of: the relation to the impacts of Superstorm Sandy; the importance to the Borough's economic and environmental sustainability; major tasks for each project; the estimated implementation costs and identified potential or actual funding sources; and estimated timelines.

The following document serves as the SRPR for the Borough of Bay Head, Ocean County, New Jersey.

IMPACTS & NEEDS ASSESSMENT

COMMUNITY PROFILE

OVERVIEW

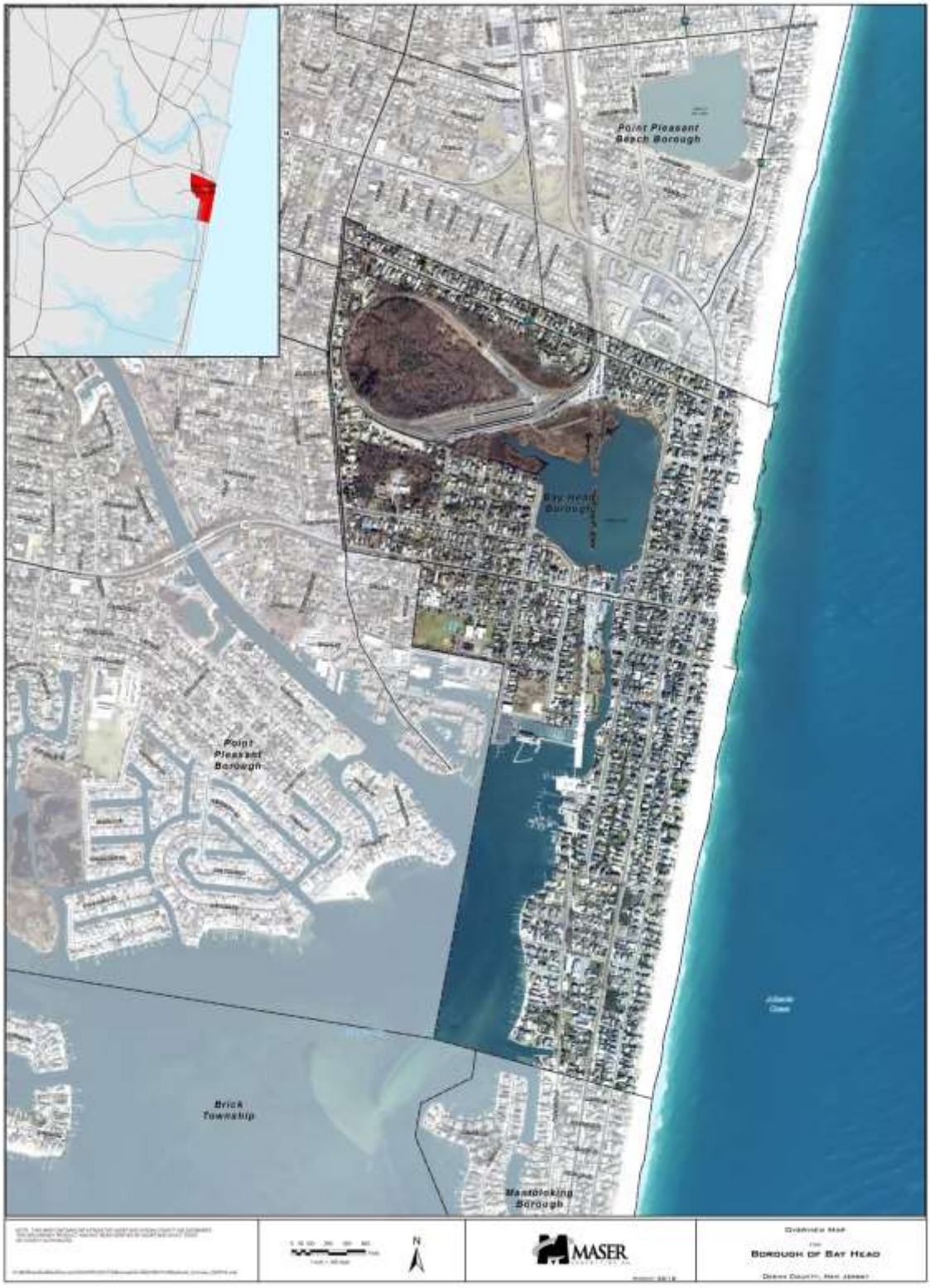
The Borough of Bay Head is a coastal municipality of 0.74 square miles[1], with approximately 0.65 square miles of land[2], located in northern Ocean County, New Jersey. The Borough has bay frontage to the west on Bay Head Harbor (head of Barnegat Bay) and ocean frontage to the east on the Atlantic Ocean. Bay Head was incorporated as a separate municipality from Brick Township in 1886.

The entirety of Bay Head rests on a barrier island, being disconnected from the mainland by the Point Pleasant Canal and Bay Head Harbor/Barnegat Bay to the west. A small canal, Scow Ditch, which connects Twilight Lake and Bay Head Harbor/Barnegat Bay, physically bisects most of the Borough. The Borough is further divided east and west by its main corridor, New Jersey Route 35/Main Avenue, traversing the Barrier Island between the municipal border with Borough of Point Pleasant Beach to the north and the Mantoloking Borough municipal border to the south, creating the "bayfront" and the "oceanfront" of the Barrier Island. County Road 632, known locally as Bridge Avenue, runs through the center of the Borough, connecting to Point Pleasant Borough and Brick Township to the west and Route 35 to the east.

The United States Geological Survey (USGS) mapping refers to the section of Barnegat Bay within the Borough of Bay Head as "Bay Head Harbor". Since the body of water is commonly referred to as Barnegat Bay, references to Bay Head Harbor and Barnegat Bay within the Borough's municipal borders are interchangeable for this report.

[1] New Jersey Geographic Information Network. 2010.
[2] Approximation from Ocean County Parcel GIS data. 2014.

Map 1: Overview Map of the Borough of Bay Head



Population and Development

The Borough of Bay Head is characterized by suburban development consisting primarily of detached single-family residential dwellings. However, unlike many other Barrier Island communities, Bay Head has a historic core of elegant and stately homes mixed with neighborhood commercial uses and public services, reflecting the typical development of wealthy outer suburbs along railcar lines in the late 19th and early 20th centuries.

The Borough is a built-out community of medium-density, with growth potential limited to infill development and redevelopment opportunities. Commercial properties are generally concentrated in the center portion of the Borough along Bridge Avenue and Mount Street. Marine related uses are located along the Barnegat Bay waterfront. Despite its suburban character, as of 2014, the Borough had a compact density of 1,347 persons per square mile[3], well above the population density of Ocean County (760.7 per square mile[4]) and the State of New Jersey (1,016.6 per square mile[5]).

Bay Head has a unique position in Ocean County at the end of the New Jersey Transit North Jersey Coast railroad to New York City Penn Station. Historically, a railroad also connected Bay Head to Seaside Heights and then on to Philadelphia. The portion of the railroad south of the Bay Head train station was abandoned. The railroad has been a driving factor in Bay Head's growth and socioeconomic situation for much of its history because of its direct access to the largest cities in the region, as well as being an ideally located shore town. Access to major roads, such as Route 35 and the Garden State Parkway nearby, have also played a role in the growth and prosperity of the surrounding region. However, the relative distance from the Parkway has excluded the Borough from typical suburban development and beach tourism and has, therefore, helped to preserve the Borough's quaint and exclusive character and limited vacant properties.

Table 1: Historic Population Trends

Year	Bay Head		Ocean County	New Jersey
	Population	Percent Change	Percent Change	Percent Change
1900	247	-	-	-
1910	281	13.8%	-	-
1920	273	−2.8%	-	-
1930	429	57.1%	-	-
1940	499	16.3%	14%	2.9%
1950	808	61.9%	50.2%	16.2%
1960	824	2.0%	91.2%	25.5%
1970	1,083	31.4%	92.6%	18.2%
1980	1,340	23.7%	66%	2.7%
1990	1,226	−8.5%	25.2%	5%
2000	1,238	1.0%	17.9%	8.9%
2010	968	−21.8%	11.3%	3.2%
Est. 2014	997	2.9%		

[3] Source: U.S. Census Bureau, 2010-2014 American Community Survey 5-Year Estimates for Bay Head Borough
[4] Source: U.S. Census Bureau, 2010-2014 American Community Survey 5-Year Estimates for Ocean County, NJ
[5] Source: U.S. Census Bureau, 2010-2014 American Community Survey 5-Year Estimates for New Jersey

The Borough experienced significant changes in population in the late 20th century, as shown in Table 1. However, it has since dramatically slowed and even decreased to pre-1970 levels. Population change in Bay Head has oscillated throughout the years and is largely dependent upon fluctuations in household sizes and residential occupancy rates. Additionally, the published County data indicates that the majority of the housing stock is vacant (564 units or 55.1 percent). However, most of these homes are for seasonal, recreational, or occasional use (511 units or 50.0 percent)[6] and are only vacant during the winter months.

Just after the Borough of Bay Head was incorporated, the 1900 Census showed a population of just 247 people. The Borough grew by about 14 percent for the following decade, decreased by 3 percent between 1910 and 1920 and then experienced growth between 1920 and 1980. The largest increase occurred between 1940 and 1950, when the population increased from 499 persons to 808 persons, a 61.9 percent increase. In comparison, Ocean County grew at a 14 percent increase from 1940 to 1950. However, between 1950 and 1960, Bay Head only grew 2 percent, while Ocean County grew by 91.2 percent and 92.6 percent the following decade. The population of the Borough continued to increase between 1960 and 1970 by 31.4 percent and 23.7 percent in 1980. The continued movement of population from urban areas to suburbs and to the major interchange areas along the Garden State Parkway led to substantial residential growth that is reflected in the dramatic growth of Ocean County's population at the same time.

The growth of the population has been somewhat inconsistent throughout the years, with occasional substantial population fluctuations. A lack of available land, fluctuations in the average household size, and changes in the demographics and earned income have been largely responsible. High home values may have also discouraged or inhibited new population growth in the Borough. Between 1980 and 1990, the Borough experienced its first major population decline since 1920, during which time -8.5 percent of the population was lost. It then grew slightly less than 1 percent between the 1990 and 2000 Census, from 1,226 persons to 1,238 persons (or 12 persons)[7]. Between the 2000 and 2010 U.S. Census, the Borough's population decreased again from 1,238 to 968 persons, or -21.8 percent. It is estimated that the population increased again to just under 1,000 persons in 2014 at 2.9 percent, despite severe storm damage from Superstorm Sandy in 2012.

Based on U.S. Census data, the average household size decreased rapidly from 2.6 in 1980 to 2.31 in 1990 to 2.12 in 2000 and plateaued at 2.11 by 2010, while Ocean County also decreased slightly from 2.54 to 2.51 between 1990 and 2000. Meanwhile, the median household income has been increasing. In 1979, the median income was $22,578, whereas it was $55,073 in 1989. In 2000, there were 580 households in the Borough, of which 36.3 percent had an income of more than $100,000 per year. The Borough median income was $77,790 in 1999, compared with $46,443 in Ocean County in 1999, and the

[6] Source: U.S. Census Bureau, 2010 Census.
[7] Borough of Bay Head 2003 Master Plan Reexamination Report. Page 5.

Borough mean income was $99,847. Out of 517 households in 2010, 47.4 percent earned more than $100,000 and the median income was $88,417[8]. There were estimated to be 459 households in 2014, of which 48.8 percent had an income of $100,000 or greater and the median being $92,708[9]. While the median income has continued to increase (partly due to inflation and partly due to an increase of wealth), the mean household income had increased substantially from 1999 to $175,710 in 2010 and decreased again to $134,451 in 2014. Simultaneously, the number of households earning more than $200,000 per year has also dropped. On the other hand, 13.7 percent of households earned less than $35,000 per year in 2000, 17.1 percent in 2010, and 18.5 percent in 2014.

It is important to note that a large percentage of the population is not in the labor force, since many of the full time residents are retired. This may be a key factor that affects the earned income that is reported, but also relates to the demographics of the population and seasonal use of housing. Out of a population of 867 that is 16 and over, 385 persons (44.4 percent) are not in the labor force, whereas 482 (55.6 percent) are in the labor force and 35 (4.0 percent) are unemployed[10].

STRENGTHS AND OPPORTUNITIES

The benefits associated with the Borough's location on the Atlantic Ocean and Barnegat Bay and the New Jersey Transit rail line are obvious strengths that have allowed the Borough to grow and attract residents and visitors over the years. Furthermore, priorities and goals for the future can be informed by the Borough's geographical, topographical, natural, cultural, and historical characteristics. The Borough of Bay Head has the opportunity to capitalize on many of these strengths, both internal and external to the Borough, to create a more resilient community. This must also be done simultaneously with the mitigation; adaptation to deal with any threats; and the strengthening of any current weaknesses within the Borough.

A strength that the Borough has exercised is its ability and pro-active approach to regulate land uses. Specifically, the Land Use Plan element of the 2003 Master Plan Reexamination Report made recommendations to create two new land use districts that would prevent the excessive utilization of land, which was set into the Land Use Ordinance in 2003. The excessive utilization of land continues to be a challenge for the Borough.

The 2003 revised Land Use Plan recommended the separation of the R-100 Single-Family Residential Bay Front Zone (§147-7.1) and R-100 Single-Family Residential Oceanfront Zone (§147-7.2) from the existing General R-100 Single-Family Residential Zone. This creates smaller, but still generous lot coverage percentages to bring the size of oceanfront and bay front dwellings more in line with those in the rest of

[8] U.S. Census Bureau, 2006-2010 American Community Survey
[9] U.S. Census Bureau, 2010-2014 American Community Survey 5-Year Estimates
[10] U.S. Census Bureau, 2010-2014 American Community Survey 5-Year Estimates for Bay Head Borough

the Borough[11]. The revision was made because the Borough was seeing the start of older oceanfront homes being demolished and replaced with much larger residences that maximized and sometimes exceeded the appropriate and permitted building and lot coverages. The intent of the revision is to preserve the neighborhood character and light, air, and space of the oceanfront, as well as to reduce problems with impervious coverage, storm water run-off issues.

Table 2: Land Use Ordinance 147, Attachment 1, Appendix A: Schedule of Area, Yard, and Building Requirements (§147-5)

[Amended 11-3-1993 by Ord. No. 1993-10; 10-4-1994 by Ord. No. 1994-10; 11-8-1995 by Ord. No. 1995-11; 3-16-1999 by Ord. No. 1999-4; 3-5-2002 by Ord. No. 2002-2; 9-16-2003 by Ord. No. 2003-6; 9-3-2013 by Ord. No. 2013-05]

Zone	Minimum Lot Requirements		Minimum Required Yard Depth (feet)					Maximum Percentage Lot Coverage by Buildings	Maximum Percentage Lot Coverage By Structure	Maximum Height (stories)	Maximum Height[3] (feet)	Accessory Building Maximum Height (feet)
			Principal Building				Accessory Building					
	Area (square feet)	Lot Width (feet)	Front Yard Depth	Each Side Yard Depth	Combined Side Yard Depth	Rear Yard Depth	Distance to any Side Line					
R-100	10,000	100	35	10	25	15	10	35	50	2.5	35	16
R-100-BF	10,000	100	35	10	25	15	10	35	50	2.5	35	16
R-100-OF	10,000[1]	100	20	10[1]	25[5]	20	10	25	40	2.5	35	16
R-50	5,000	50	20	6	16	10	4	35	50	2.5	35	16
B & B	5,000	50	20	6	12	10	4	60[3]	75[3]	2.5	35	16
B-1	5,000	50	20	6	12	20	4[2]	60[3]	75[3]	2.5	35	16
B-2	10,000	100	35	10	25	15	10	35[4]	75[4]	2.5	35	16
C	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

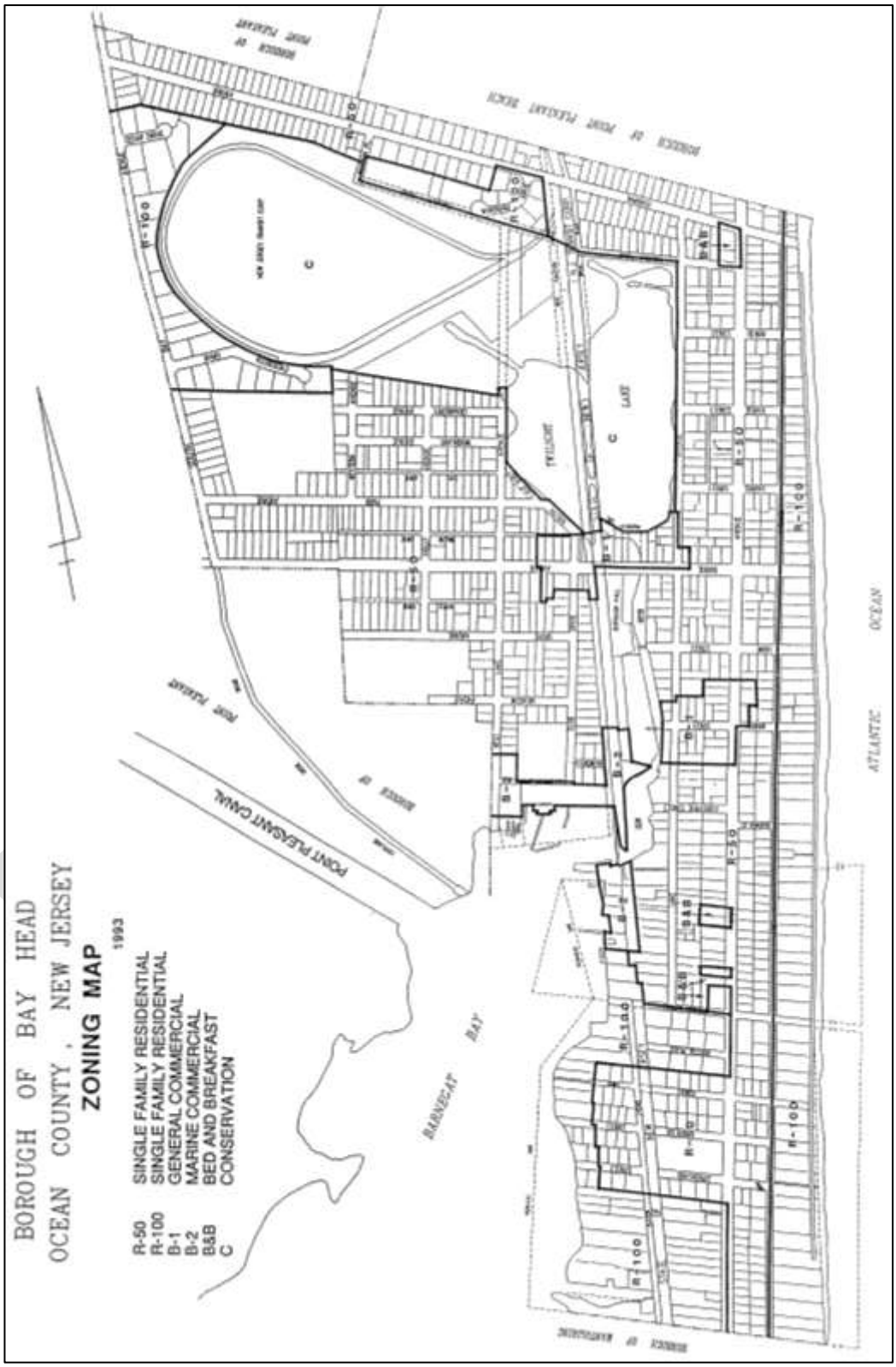
NOTES:
[1] Corner lots in the R-100-OF Zone on the east side of East Avenue shall have a minimum bulk area of 12,000 square feet; see § 147-5B.
[2] Accessory buildings can occupy no more than 30% of the required yard area.
[3] Single-family residences within the B-1 Zone and B&B Zone shall comply with the bulk requirements of the R-50 Zone.
[4] Single-family residences in the B-2 Zone shall comply with the bulk requirements of the R-100-BF Zone.
[5] Buildings in flood hazard areas shall be permitted to have a maximum height of 32.5 feet above base flood elevation.
[6] Existing lots in the R-100-OF Zone which are less than 75 feet in width shall have combined side yards which are at least 1/3 of the lot width.

Bay Head has also taken a strong position on beach and dune protection. The Borough's Protection of Beaches and Dunes Ordinance (§75, Article II) was adopted in 1993 "to control the development or disturbance of dunes thereby furthering shore protection efforts and preserving the dunes as an important environmental resource", as well as attempting to contain the overbuilding evidenced east of East Avenue[12]. The Ordinance recognizes that there may be no long term defense for fixed oceanfront structures against rising sea level, but that intermediate protection against beach erosion and damage to adjacent coastal areas is possible with a rock revetment, continuous barrier of planted dunes, breadth and height of beach, and source of sand.

[11] Borough of Bay Head 2003 Master Plan Reexamination Report. Page 14.
[12] Borough of Bay Head. Chapter 75: Beaches. Article II: Protection of Beaches and Dunes

Located in the northern part of the Borough is Twilight Lake, owned by the State of New Jersey, and a large tract owned by N.J. Transit Rail Operations, containing Block 3.02, Lot 18; Block 4, Lot 1; Block 17, Lot 1; Block 20, Lot 1; and Block 21, Lots 1 and 2. These properties contain wetlands and are located in the Borough's C - Conservation Zone. According to the ordinance (§147-12), "this zone is made up entirely of lands which are in public ownership, most of which are severely constrained due to the presence of wetlands or open waters. The only development permitted in this zone is that which is necessary to support the existing public open space and transportation uses. No other development is permitted."

Map 2: Bay Head Zoning Map (1993)



The Marine Commercial (B-2) zone is intended to encourage water-related and water-dependent uses and the business and commercial uses that serve and support them, including but not limited to fishing, marine transportation and services, outside storage of boats, dockage, yacht clubs, boat sales, and quasi-public buildings and recreation areas. Unique natural features of the marine environment contribute significantly to the economic and social environments, therefore performance standards are required to minimize the impact of development on the natural features on which they depend.

This Plan also evaluates additional opportunities for new design standards, floodproofing, public access, complete streets, and circulation in order to provide safety for residents and to protect the character of the Borough. While the intent is to retain, enhance, and promote residential uses that are resilient to future storms, opportunities also exist to better utilize and improve access to the waterfront and the small business district on Bridge Avenue and Mount Street, which provides the majority of the Borough's retail and non-residential uses. After much of the Borough suffered damage of historic proportions from Superstorm Sandy, a new vision for the area stresses a two-pronged approach to capitalize on the waterfront while reducing the vulnerability of properties.

ASSESSMENT OF THE IMPACT OF SUPERSTORM SANDY ON THE BOROUGH OF BAY HEAD

Superstorm Sandy, which made landfall in New Jersey on October 29, 2012, had severe and long-lasting impacts on the Borough. The damage caused to the Borough of Bay Head during the storm was primarily a result of storm surge, wave action, flooding, and wind. The effects of these forces are detailed below.

STORM SURGE AND FLOODING

The Borough's strategic coastal location along the Atlantic Ocean and at the head of the Barnegat Bay was also cause for major flooding and erosion across much of the Borough. Coupled with strong southeasterly winds and unusually high tides, water was funneled through Scow Ditch and continued to rise until spilling into the streets.

Wave action caused some erosion along the oceanfront beaches, although many oceanfront homes were spared the destruction due to the elevated and healthy sand dune ecosystem that the Borough has worked to maintain and protect, as well as a rock revetment that existed along a portion of the beachfront. In fact, only one oceanfront home was considered destroyed.

Figure 1: Flooding around Saint Paul's Church in Bay Head (Dias, Elizabeth. Oct. 27, 2013. http://nation.time.com/2013/10/27/how-one-church-fed-an-entire-town-destroyed-by-sandy/)

Sand dunes have historically been responsible for the formation of the barrier island; creating higher peaks along ocean side as they mature and move inland from the beaches and shallowing out again along the Bay. Although most of the barrier island is now largely developed, a slight natural elevation change is still evident along East Avenue and the beachfront. The elevations can be seen on the Topography Map on Map 3 below (red lines indicate 10 feet).

The storm surge essentially followed the 10 foot elevation contour, resulting in flooding in most of the Borough. The small downtown area and the areas around the Bay and Twilight Lake were inundated, including Bridge Avenue and Lake Avenue. Once the initial storm surge receded, much of the length of East Avenue and the most northwesterly part of the Borough remained slightly above floodwater.

Map 3: Topographic Map of the Borough of Bay Head with Elevations

A 4,134-foot rock seawall, which runs along the majority of the Bay Head beachfront and part of which was built as far back as 1882, is said to have reduced the potential load of waves during Sandy by a factor of two[13]. According to Jennifer Irish, geoscientist at Virginia Tech, "It was the difference between houses that were flooded in Bay Head and houses that were reduced to piles of rubble in Mantoloking." The 150-year-old seawall was exposed after the dunes did their job and were partly washed away on the seaward side (see Figure 2). The wall had been largely forgotten and came as a surprise to many residents, which underscores the difficulty of planning for future threats in transient and seasonal communities.

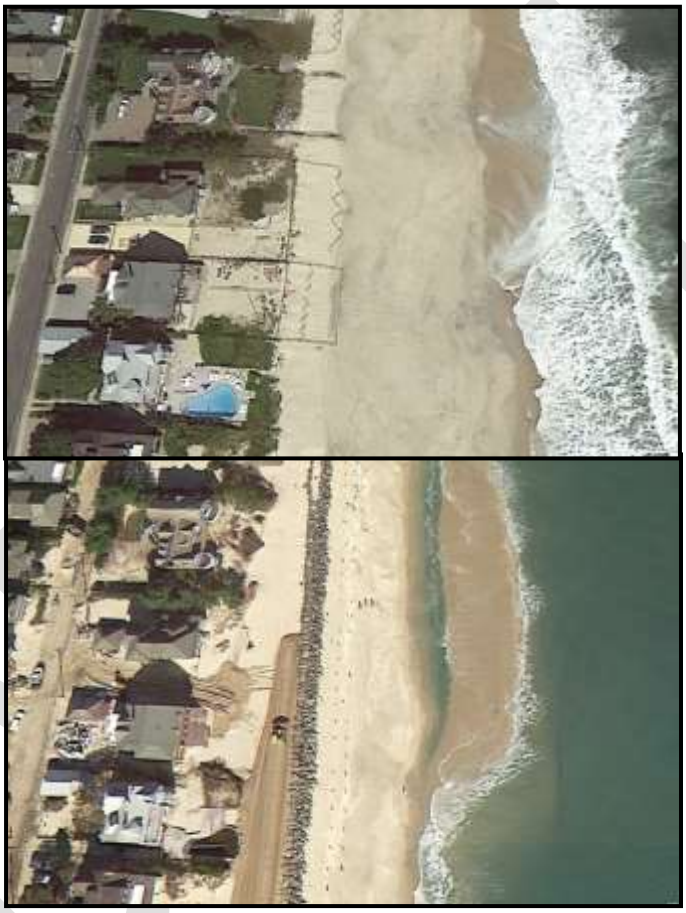


Figure 2: Bay Head Beach – Before: 2010 (Top) & After: Nov. 2012 (Bottom)

Some flooding still occurred on the ocean side of the Borough east of Route 35, but was much less than the rest of the Borough due to the natural elevation of the island to the east. On the other hand, the rise of water level from the wind-driven surge in Barnegat Bay and the overflow of Twilight Lake caused

[13] Press Release 13-126. "Long-Buried New Jersey Seawall Spared Coastal Homes From Hurricane Sandy's Wrath." National Science Foundation. July 16, 2013. http://www.nsf.gov/news/news_summ.jsp?cntn_id=128545&org=NSF&from=news

the majority of the damage in the Borough. Based on reports, homes on the Bay and Scow Ditch/Twilight Lake typically saw several feet of water. Commercial, residential, and public properties alike were impacted, including the Borough Hall and the Police and Fire Stations. The flooding from Sandy tore through many properties, washing all kinds of debris into Twilight Lake, which continues to require proper cleanup and dredging.

PROPERTY DAMAGE

At least 239 properties within Bay Head, including residences, businesses, and public properties, were severely damaged during Superstorm Sandy. Appendix I of this Report provides a list of all properties that were damaged, collected from the Borough of Bay Head based on Material Depreciation Adjustments in 2013.

Figure 3: Devastation after Sandy (Wayne Perry/Associated Press; October 31, 2012)

Figure 4: Beachfront home at end of Mount Street damaged by Superstorm Sandy (Associated Press; Jan. 3, 2013)

Looking at historic trends, the National Flood Insurance Program (NFIP) maintains a database of loss claims. NFIP considers "repetitive loss properties" parcels with structures insured under the program that had at least two paid flood losses of more than $1,000 over any ten-year period since 1978. A property is considered a "severe repetitive loss property" when there are at least four losses (each exceeding $5,000) or when there are two or more losses where the building payments exceed the property value.[14]

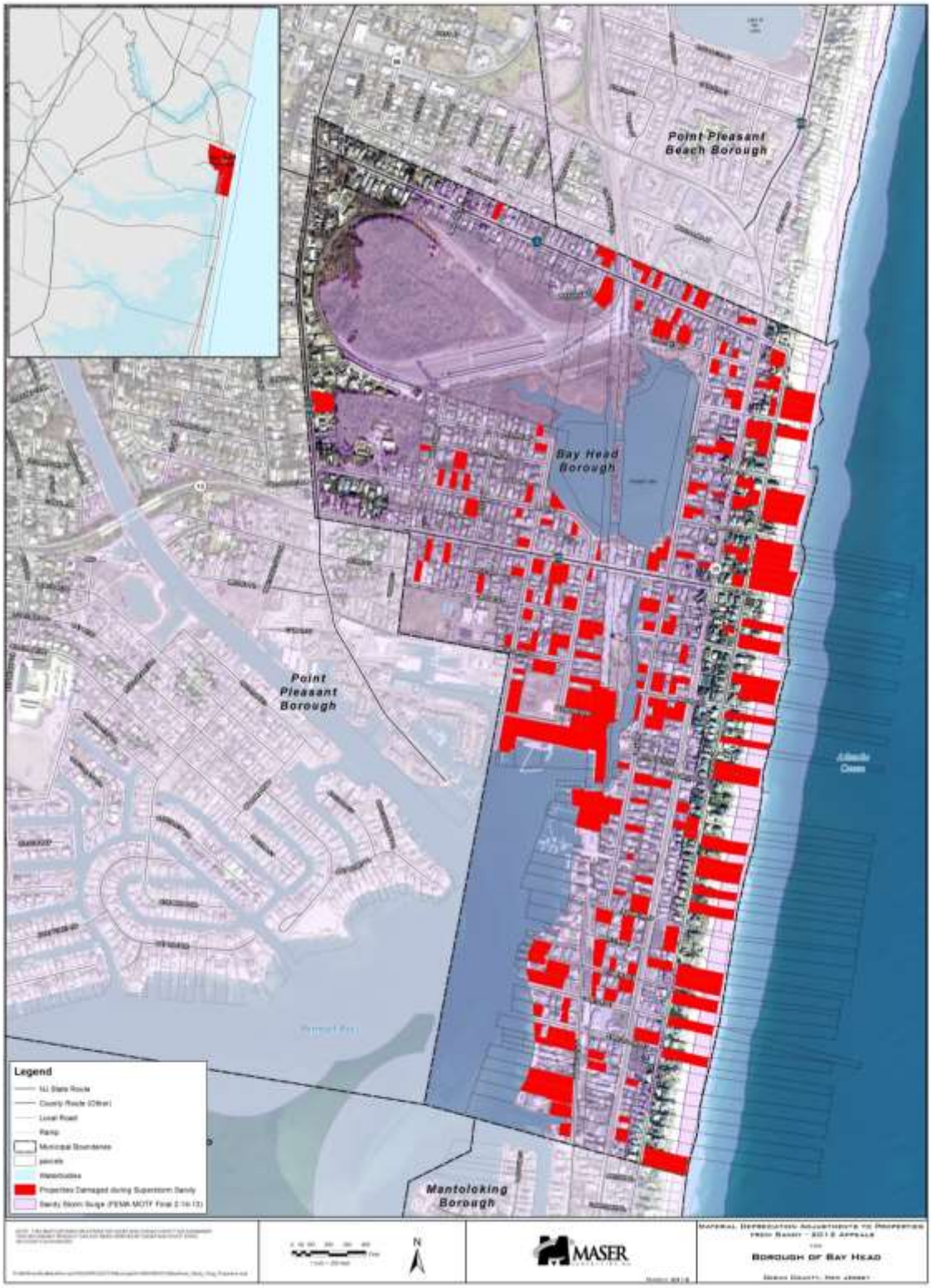
As shown in Table 3 below, there are 732 NFIP policies in force within Bay Head. As of July 31, 2013, 735 claims were paid and closed, totaling over $60.6 million. There have been 108 repetitive loss events within the Borough that have resulted in payments of over $9.3 million. This represents 5.66% of all total repetitive loss payments in Ocean County.

[14] 2014 Multi-Jurisdictional All-Hazard Mitigation Plan, Ocean County, New Jersey, prepared by Michael Baker Jr., Inc. May 13, 2014. Page 111.

Table 3: NFIP Policies, Losses and Repetitive Loss Properties Through July 31, 2013					
	Policies in Force	**# of Closed Paid Losses**	**Amount of Closed Paid Losses**	**Total # of Repetitive Loss Events**	**Total Repetitive Loss Payments**
Borough of Bay Head	732	735	$60,606,930	108	$9,333,831
% of County Total	1.32%	1.73%	3.45%	2.35%	5.66%

Source: 2014 Ocean County Multi-Jurisdictional All-Hazard Mitigation Plan, Table 4.3.5-3

Map 4: Damaged Properties during Superstorm Sandy



There were nine repetitive loss properties in Bay Head reported prior to Superstorm Sandy after a 1992 storm – all of which are located in the mid-to-northern section of the Borough. These properties were identified in a report, "Report on Repetitive Losses", by the Insurance Services Community Rating System, Activity 502 in September 2012. The report identifies five areas, although the properties are generally divided with three oceanfront properties, one located on the west side of East Avenue, and the other five properties are located in the center of the Borough along or near Twilight Lake and Scow Ditch. The report also noted that "Since the 1992 storm, the dune system has been enhanced and, unless a storm of major proportions occurs, should prevent future overwash.[15]"

Figure 5: Homes along East Avenue in disrepair (Google Streetview, August 2013)

Some of the properties from 1992 have since been raised and did not experience severe damage during Superstorm Sandy. However, many more repetitive losses have occurred since 1992, particularly after September 2012, and Superstorm Sandy proved that a storm of major proportions is very possible. While the enhanced sand dunes did prevent overwash in some areas, the storm surge caused damage and the Bay was still the cause for most of the damage. The damaged properties, shown on Map 4, are located all throughout the Borough, with the exception of the northwest. Despite the higher elevation along the beachfront, many homes along East Avenue were still heavily impacted and have taken several years to be rebuilt.

According to the NFIP definition, the Borough of Bay Head had forty-eight properties with repetitive losses. This includes five non-residential, thirty-six residential dwellings, and seven severe repetitive loss properties. The areas with repetitive losses are shown on Map 5.

Table 4: Summary of Repetitive Loss & Severe Repetitive Loss Properties as of September 2013

	Repetitive Loss Properties by Type					Severe Repetitive Loss Properties	Total
	Non-Residential	2-4 Family	Single-Family	Condo	Other Residential		
Borough of Bay Head	5	1	33	2	0	7	48
% of County Total	4.95%	0.85%	2.10%	7.41%	0.00%	3.06%	2.33%

Source: 2014 Ocean County Multi-Jurisdictional All-Hazard Mitigation Plan, Table 4.3.5-4

On the other hand, FEMA has identified two repetitive loss properties and three severe repetitive loss properties in the Borough of Bay Head. The definitions below were taken from the Biggert-Waters Flood

[15] September 2012. "Report on Repetitive Losses." Borough of Bay Head. Insurance Services Community Rating System. Activity 502. Accessed June 4, 2015.

Insurance Reform Act of 2012 (BW12 Act). The Repetitive Loss (RL) definition in the Act references Section 1370, which can be found in 42 United States Code Section 4121. The Flood Mitigation Assistance (FMA) Severe Repetitive Loss (SRL) definition includes non-residential properties and removes the 10-year requirement. Prior to BW12 at least two of the referenced claims must have occurred within any 10-year period for the property to be considered FMA SRL. Please note - these RL and SRL definitions from BW2012 section 100225 ONLY impact the FMA program. These definitions are used for determining awards in the FMA Grant Program. The FMA RL and FMA SRL lists were generated off of the criteria set forth by the Act.

An FMA severe repetitive loss (SRL) property is a structure that:

(a) Is covered under a contract for flood insurance made available under the NFIP; and

(b) Has incurred flood related damage –

(i) For which 4 or more separate claims payments have been made under flood insurance coverage with the amount of each such claim exceeding $5,000, and with the cumulative amount of such claims payments exceeding $20,000; or

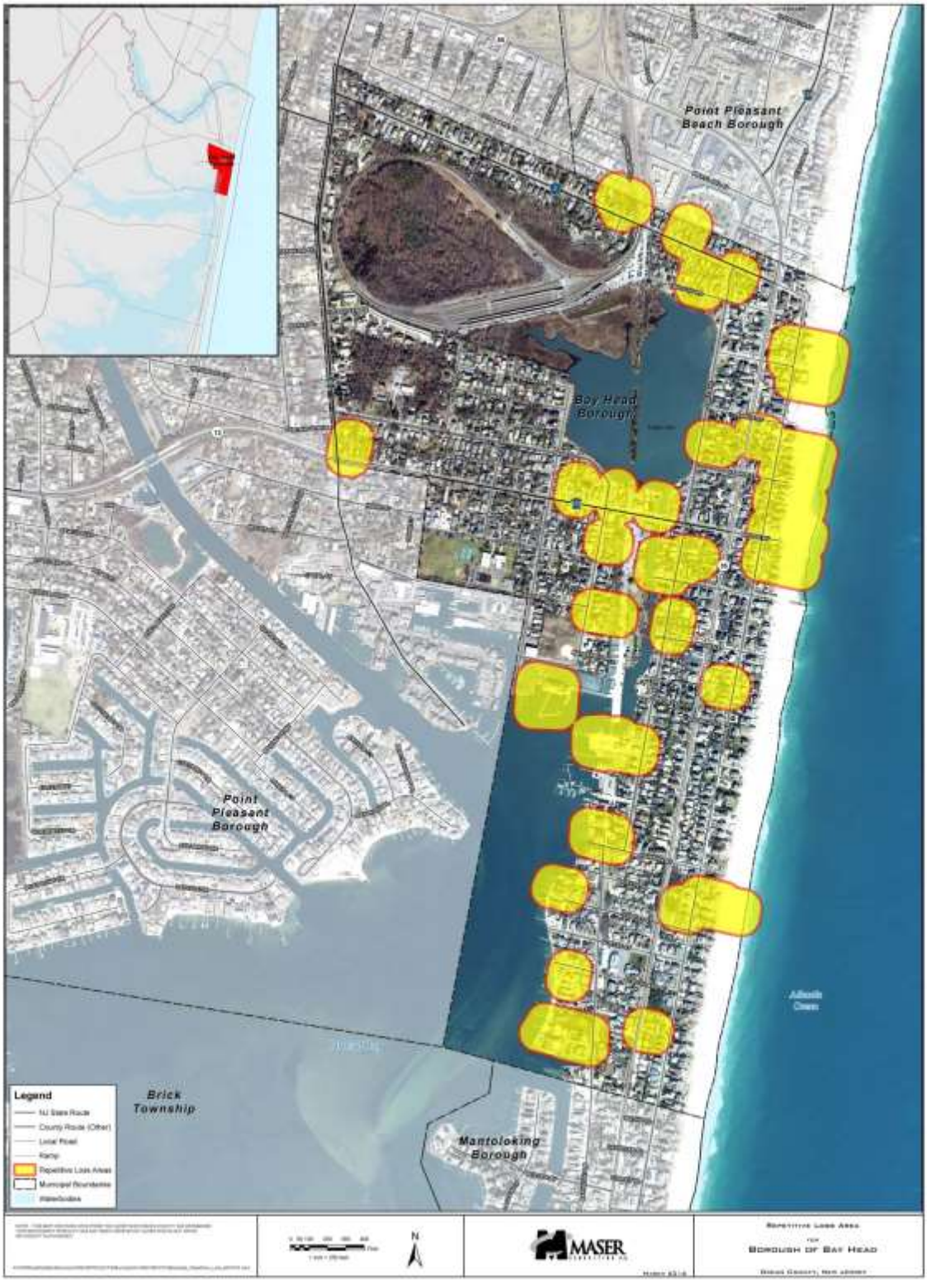
(ii) For which at least 2 separate claims payments have been made under such coverage, with the cumulative amount of such claims exceeding the market value of the insured structure.

An FMA repetitive loss (RL) property is a structure covered by a contract for flood insurance made available under the NFIP that:

(a) Has incurred flood-related damage on 2 occasions, in which the cost of the repair, on the average, equaled or exceeded 25 percent of the market value of the structure at the time of each such flood event; and

(b) At the time of the second incidence of flood-related damage, the contract for flood insurance contains increased cost of compliance coverage.

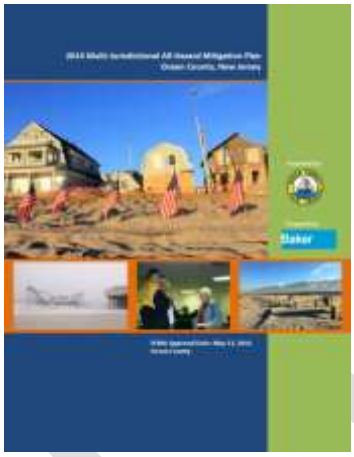
Map 5: Bay Head Repetitive Losses, NFIP (as of September 2013)

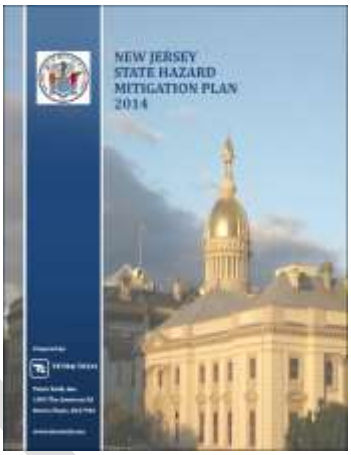


VULNERABILITY ASSESSMENT

HAZARD MITIGATION PLANS

The Borough of Bay Head participated with Ocean County in the preparation of the 2014 Multi-Jurisdictional All-Hazard Mitigation Plan (OCHMP). The 2014 OCHMP was prepared by Michael Baker Jr., Inc. and was approved by FEMA on May 13, 2014. The 2014 OCHMP contains a thorough analysis of vulnerability for the participating municipalizes in Ocean County and analyzes natural hazards, human-made hazards and climate change hazards.





The State of New Jersey 2014 Hazard Mitigation Plan (NJHMP) was prepared by Tetra Tech, Inc. for the New Jersey Office of Emergency Management – Recovery Bureau (NJOEM). The 2014 NJHMP is an update to the 2011 NJHMP to provide additional information regarding recent hazard events, such as Superstorm Sandy. The NJHMP outlines a strategy to reduce risks from hazards and serves as the basis for prioritizing future project funding.

CRITICAL FACILITIES VULNERABILITY ASSESSMENT

The OCHMP summarizes "critical facilities" (hospitals, shelters, fire departments, schools, ambulance buildings, etc.) that would be vulnerable to various hazards, including wildfire, flooding, sea level rise, etc. The Borough of Bay Head has eight critical facilities that were analyzed, 100% of which fall within the Special Flood Hazard Area (SFHA) where there is a 1% annual chance of flooding. Two of the critical facilities are expected to be permanently inundated due to one foot of sea level rise; five are expected to be inundated due to three feet of sea level rise; but none are expected to be isolated from three feet of sea level rise. Similarly, 24% of the Borough may be permanently inundated by 1 foot of sea level rise and 63% inundated by 3 feet of sea level rise. Some facilities may be at risk for more than one incident.

Table 4.3.5-7: Number of parcels and critical facilities in the Special Flood Hazard Area (1% annual chance flood zone).

MUNICIPALITY	PARCELS IN SFHA	TOTAL PARCELS IN MUNICIPALITY	PERCENT VULNERABLE PARCELS	DOLLAR VALUE OF IMPROVEMENTS IN SFHA	TOTAL # OF CRITICAL FACILITIES IN SFHA
Barnegat Township	1,036	13,450	7.70%	$83,185,900	0
Barnegat Light Borough	1,026	1,452	70.66%	$228,158,700	5
Bay Head Borough	1,138	1,238	91.92%	$566,926,100	8

Source: 2014 Multi-Jurisdictional All-Hazard Mitigation Plan, Ocean County, New Jersey, prepared by Michael Baker Jr., Inc. May 13, 2014. Page 122.

The entirety of the land in the Borough of Bay Head is designated under the Coastal Areas Facility Resources Act, which is a State law authorizing the New Jersey Department of Environmental Protection

to regulate and approve the location, design and construction of major facilities in certain coastal areas, from the mean high water inland to an irregular line drawn along public roads, railroads and other features. "Regulated development includes marine terminals, and public projects, such as new roads, wastewater treatment systems, parking lots and landfills."[16] The law has been expanded to include any development on and first landward uses adjacent to beaches, dunes, and tidal areas.

Table 5: Critical Facilities		
	Critical Facilities	**% of Facilities**
High Wildfire Hazard Areas	0	0%
Nuclear Incident Area (Facilities within 10 miles of nuclear plant)	0	0%
Special Flood Hazard Area	8	100%
Sea Level Rise Impacts (up to 3 feet)	5	62.5%
Total Number of Critical Facilities	**8**	

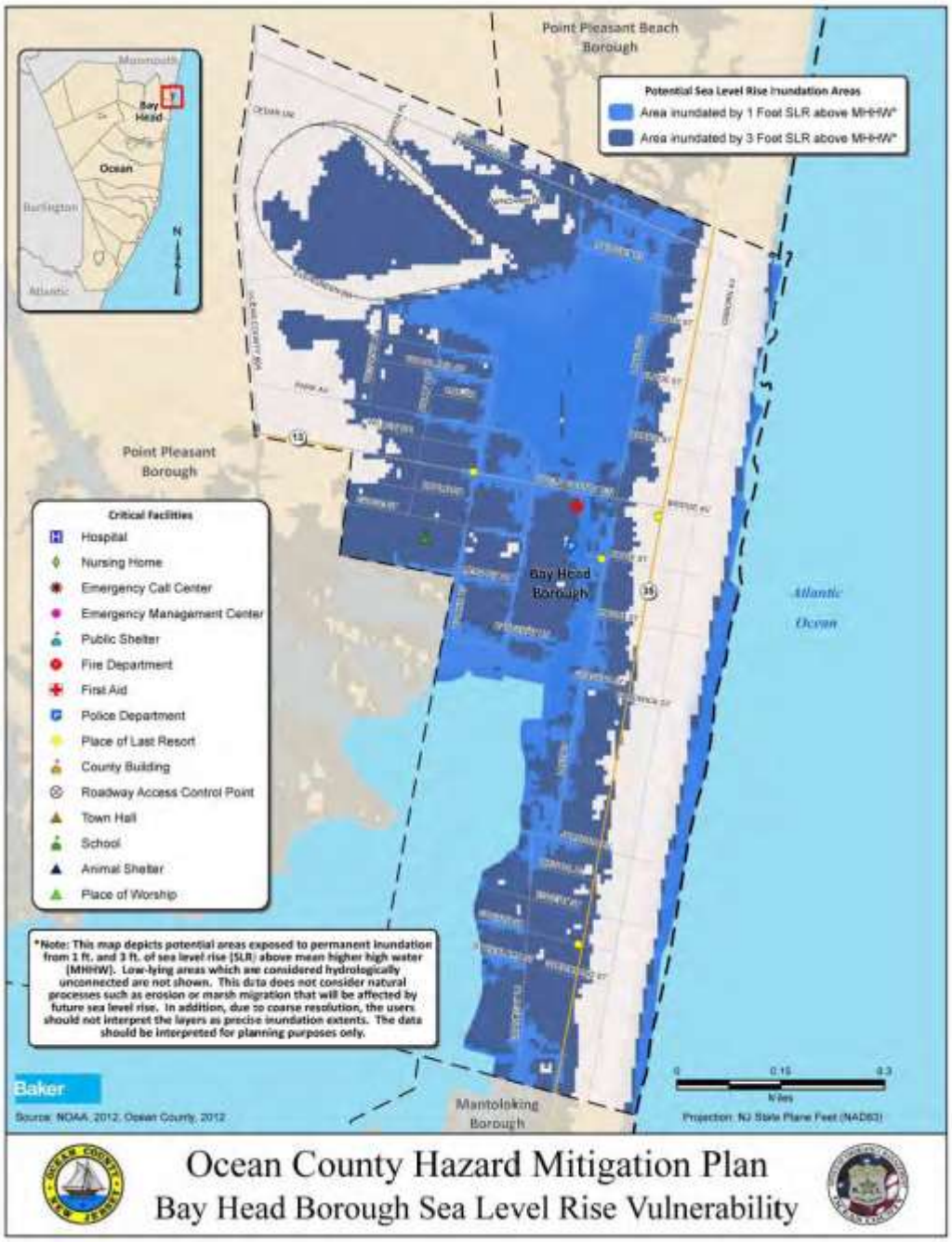
Map 6 shows areas of potential permanent inundation due to a one-foot and three-foot increase in sea level rise relative to mean higher high water in the Borough of Bay Head.

The critical facilities in the Borough of Bay Head include:

- (1) Town Hall
- (1) School
- (1) Fire Department
- (1) Police Department
- (4) Places of Last Resort (e.g. sanitary pump stations)

[16] 2014 Multi-Jurisdictional All-Hazard Mitigation Plan, Ocean County, New Jersey, prepared by Michael Baker Jr., Inc. May 13, 2014. Section 4.3.5.5. Vulnerability Assessment. Page 119.

Map 6: OCHMP Sea Level Rise Vulnerability [17]



[17] Ibid, page 185.

Table 6: Critical Facilities Vulnerable to Sea Level Rise

Table 4.3.15-5: Critical facilities in Ocean County, NJ vulnerable to sea level rise impacts

MUNICIPALITY	TOTAL CRITICAL FACILITIES	CRITICAL FACILITIES WHICH MAY BE PERMANENTLY		
		INUNDATED DUE TO 1 FT. OF SEA LEVEL RISE	INUNDATED DUE TO 3 FT. OF SEA LEVEL RISE	ISOLATED DUE TO 3 FT. OF SEA LEVEL RISE
Bay Head Borough	8	2	5	0

Source: 2014 Multi-Jurisdictional All-Hazard Mitigation Plan, Ocean County, New Jersey, prepared by Michael Baker Jr., Inc. May 13, 2014. Section 4.3.15.5. Vulnerability Assessment. Page 215.

MULTI-HAZARD VULNERABILITY ASSESSMENT

Another measure of vulnerability used in the 2014 OCHMP is the assessed value of properties at-risk to various hazards. Table 7 below shows the hazards, number of properties and value calculated by the OCHMP.

Table 7: Hazard Exposure			
	Parcels	**% of Total Parcels**	**Value**
Erosion [1]	50	4.0%	$58,586,200
Repetitive Flood Loss Properties [2]	48	3.9%	N/A
Special Flood Hazard Area [3]	1,138	91.92%	$566,926,100
Tornadoes/Wind Storms [4]	0	0%	$0
Hazardous Materials Facilities [5]	0	0%	$0
Nuclear Hazards [6]	0	0%	$0
Total	**1,238**		

[1] Parcels within 200 feet of erodible shoreline and beaches

[2] Number of Repetitive Loss Events from Flooding

[3] Area where there is a 1% annual chance of a flood event

[4] Number of mobile homes in municipality

[5] Parcels within 1.5 miles of hazmat facility

[6] Parcels within 10 miles of nuclear facility

Coastal Erosion

According to the Ocean County Hazard Mitigation Plan (OCHMP), Ocean County has 45.2 miles of oceanfront shoreline, the longest of the four New Jersey coastal counties. The Borough of Bay Head occupies approximately 1.25 miles of oceanfront shoreline. The northern section of Ocean County coastline is unique along the New Jersey coastline in that it lies within a zone where sand transport parallel to the shoreline is essentially zero over long periods of time. The OCHMP states that there are

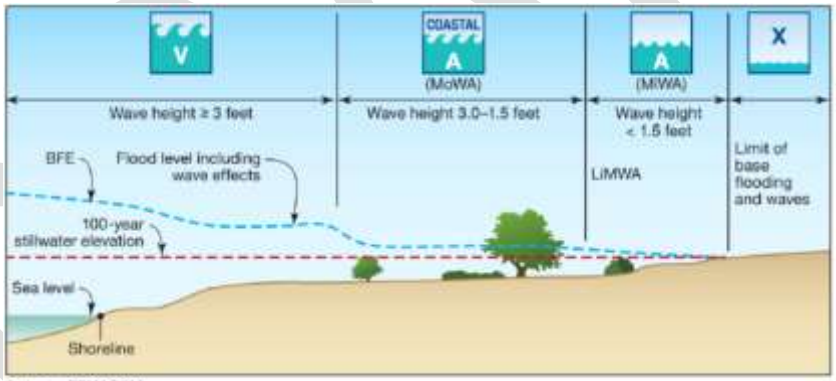
50 parcels in Bay Head with improvements within 200 feet of erodible shoreline and beaches, as defined by NJDEP, representing 4.0% of the total parcels in Bay Head. While damage from storms can be dramatic and may continue to worsen, the Bay Head shoreline is predicted to be less susceptible than many other areas of Ocean County barrier island to the 10- and 100-year storm events.

Table 8: Parcels Vulnerable to Shoreline Erosion

Table 4.3.1-1: Parcel Numbers and Dollar Value on Improvements on Vulnerable Parcels by Municipality and at Risk of erodible shoreline and beaches (Ocean County, 2013, NJDEP Shoreline Type, 1993)				
Municipality	Parcels Located Within 200 Feet of Erodible Shoreline and Beaches	Total Parcels in Municipality	Percent Vulnerable Parcels	Dollar Value of Improvements On Vulnerable Parcels
Borough of Bay Head	50	1,238	4.0%	$58,586,200

Flooding

Coastal flooding is a result of the storm surge where local sea levels rise often resulting in weakened or destroyed coastal structures. Hurricanes and tropical storms, severe storms, and Nor'easters cause most of the coastal flooding in New Jersey. Much of the damage in Bay Head is attributed to storm surge and wave action along the oceanfront and the bayfront. Figure 6 illustrates the effects of water energy dissipation and regeneration of a wave as it moves inland through the V-zone, Coastal A-zone, and A-zone.



Source: FEMA 2011
BFE Base Flood Elevation
LiMWA limit of moderate wave action
MiWA Minimal Wave Action area
MoWA Moderate Wave Action area

Figure 6: Transect Schematic of Zone V, Coastal A-Zone, and Zone A

Figure 4.3.5-1: Diagram Identifying Special Flood Hazard Area, 1 Percent Annual Change (100-Year) Floodplain, Floodway, and Flood

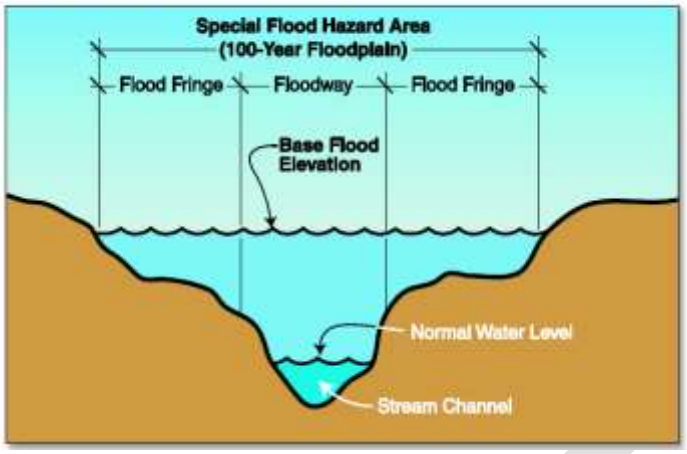


Figure 7: Diagram of Special Flood Hazard Area (*Source: 2014 Multi-Jurisdictional All-Hazard Mitigation Plan, Ocean County, New Jersey, prepared by Michael Baker Jr., Inc. May 13, 2014)*

The OCHMP also identified 1,138 parcels within the Special Flood Hazard Area where there is a 1% chance of flooding. This represents 91.92 percent of the Borough with over $566.9 million in property values at risk.

Table 9: Area of Borough Vulnerable to Sea Level Rise

Table 4.3.15-4: Summary of community area which may be permanently inundated due to 1 ft. and 3 ft. of sea level rise			
Community	Approximate Total Community Area (Acres)	Percentage of Total Community Area Which May Be Permanently Inundated Due To 1 FT. of Sea Level Rise	Percentage of Total Community Area Which May Be Permanently Inundated Due To 3 FT. of Sea Level Rise
Borough of Bay Head	422	24%	63%

High Wind

Due to their light-weight and often unanchored design, mobile homes and commercial trailers are extremely vulnerable to high winds and will generally sustain the most damage. According to the OCHMP, the Borough of Bay Head has no mobile homes in its housing stock.

Wildfire

The Ocean County Hazard Mitigation Plan (OCHMP) states that, based on the wildfire vulnerability assessment from the New Jersey Forest Fire Service, the majority of Ocean County is at an extreme level of risk for wildfires. Much of the remaining land area has a high or very high risk, while a small portion is shown as low or moderate risk. The urban and coastal/beachfront areas are less susceptible to wildfire. The Borough of Bay Head has a very low risk and no portion of the Borough lies within the Pinelands Management Area, which is more susceptible to wildfire.

Earthquake

According to the OCHMP, while earthquakes are unpredictable, the probability of damaging earthquakes affecting New Jersey is low. However, there is a possibility that a major earthquake could cause widespread damage and casualties in New Jersey. In addition to structural damage, earthquakes can also create major tidal waves and surges. Major earthquakes are infrequent in the State and may occur only once every few hundred years or longer, but the consequences of major earthquakes would be very high. The OCHMP reports that a 3.9 magnitude earthquake occurred in 1927 near Asbury Park. Three shocks were felt along the coast from Sandy Hook to South Toms River. The NJHMP ran a FEMA Hazus model to estimate potential losses by County for the 100-, 500-, 1,000- and 2,500-year earthquake events. Table 10 shows potential impacts for Ocean County. Ocean County ranked as 12th highest of the 21 New Jersey Counties in terms of estimated impacts.

Table 10: Estimated Earthquake Impacts for Ocean County

Earthquake Scenario	Displaced Households	Short-Term Sheltering Needs	Potential Losses
100-Year MRP	0	0	$0
500-Year MRP	17	11	$43.1 million
1,000-Year MRP	65	43	$178.6 million
2,500-Year MRP	357	233	$826.4 million

Hazardous Materials

There are no parcels in the Borough of Bay Head that are within 1.5 miles of a Hazardous Materials facility, nor are there any parcels within 10 miles of the Oyster Creek nuclear facility in Forked River Borough or any other nuclear facility.

RUTGERS UNIVERSITY IMPACT ASSESSMENT

In October 2013, Rutgers University published a study entitled "The Impact of Superstorm Sandy on New Jersey Towns and Households". The report presents a detailed geographic analysis to determine where New Jersey remains vulnerable. It also provides the first accurate measure of power outages by town across the state. The report includes a *Sandy Community Hardship Index,* which quantifies the wide range of types and degrees of damage incurred by New Jersey municipalities.

COMMUNITY HARDSHIP INDEX

The Community Hardship Index is a standardized way to measure economic and physical damage, controlling for population differences so that the impact can be compared across all of New Jersey's 21 counties and 553 municipalities that lost power or reported damage. The index covers economic and physical impact in the residential, commercial, and municipal sectors. Ocean County scored 73 on the Community Hardship Index, making it the second hardest hit county in New Jersey.

Power outages added to economic hardship by closing businesses and slowing disaster mitigation efforts by rendering equipment such as sump pumps inoperable. To compensate for inaccurate and conflicting data available from the power companies, the Index uses a proxy - the number of days public schools were closed - to understand the duration of power loss to each community. Based on this evaluation, power was out 8 days in Ocean County following Sandy.

Residential damage measures scope and severity of damage. Because knowledge of FEMA Individual Assistance (IA) may not have been uniform across the state, the scope and severity are measured by the number and amount of private insurance residential claims as reported by the New Jersey Department of Banking and Insurance (DOBI), as of May 3, 2013. In terms of volume, Ocean County had the most number of claims with nearly 50,000 claims. At 17 percent, Ocean County also had the highest percent of housing units filing a private insurance claim.

Commercial damage measures scope and severity of damage, as indicated by the number and amount of private insurance commercial claims. Commercial losses in Ocean County were reported for 1.11 percent of nonresidential properties at $166 per property.

The municipal damage area is measured by the dollar amount of FEMA Public Assistance per capita. Ocean County was the second highest county with $68 per capita. The Borough of Bay Head received $3,056 of FEMA Public Assistance per capita and ranked as the third highest municipality per capita.

Shelter services measures the number of people served as of May 2013, as recorded by the Red Cross National Shelter System, controlled by county size. Ocean County had 9 people per 1,000 in temporary shelters.

The Borough of Bay Head scored 95 on the Community Hardship Index, which ranked it as the fourth hardest hit municipality in the State of New Jersey.

HOUSEHOLD HARDSHIP INDEX

While towns and counties were challenged to respond to the damage inflicted by Sandy, households were not spared the storm's wrath. This is especially true for those that earn less than the cost of basic household necessities, defined as the ALICE (Asset Limited, Income Constrained, Employed) Threshold. To understand how these fragile households fared in particular in the aftermath of the storm, a new measure has been developed, which evaluates conditions at both the county and municipal level. The Household Hardship Index measures the scope, severity, and resilience of households with income below the ALICE Threshold. Ocean County scored 62 on the Household Hardship Index, with over $87 million in lost wages due to Super Storm Sandy. At $7,652, Ocean County had the highest average FEMA IA assistance in New Jersey.

Lack of homeowners insurance threatens one's ability to repair damage or recoup losses. Ocean County had 46 percent of households below the ALICE Threshold with no homeowners insurance.

Despite a high Community and Household Hardship Index score, many residents of the Borough of Bay Head are seasonal only and are not in the labor force, suggesting that the damage that was wreaked in the Borough had less of an impact to the overall population economically in terms of income and residency. Additionally, many businesses in the Borough are closed for the winter months, suggesting that they would have been less impacted by a loss of income and sales opportunities.

The Household Hardship Index at the municipal level reveals an even wider range of impact, including pockets of severe household hardship across the state that was not visible in the county analysis. The Borough of Bay Head scored 70 on the Household Hardship Index and ranked number 17.

BOROUGH BACKGROUND DOCUMENTS

PLANNING DOCUMENTS

THE BOROUGH OF BAY HEAD MASTER PLAN & 2003 MASTER PLAN UPDATE

The Borough of Bay Head Master Plan was adopted in 1990 and a Master Plan Reexamination Report was adopted on February 19, 1997. The most recent Master Plan Reexamination Report was prepared by CMX, Inc. in 2003 and represents a re-examination of the 1997 Reexamination Report.

The 2003 Reexamination addresses five specific areas, including: Provisions of Periodic Reexamination; Problems and Objectives; Changes in Policies and Objectives; Recommended Changes; and Conclusion.

THE BOROUGH OF BAY HEAD COMPLETE STREETS BICYCLE & PEDESTRIAN PLAN

The *Borough of Bay Head Complete Streets Bicycle and Pedestrian Plan* was prepared by The RBA Group with Stokes Creative Group for The New Jersey Department of Transportation and The Borough of Bay Head. The Plan provides an overview, vision, goals and objectives, evaluation and analysis, recommendations, and finally implementation and funding strategies to create a safer, stronger, and more efficient bicycle and pedestrian network throughout the Borough.

According to the overview, "When implemented, this Plan will advance Bay Head's vision of an active-friendly community and establish a bicycle and pedestrian network, linking together key destinations that will encourage more people – of all ages and abilities – to choose healthy transportation." [18]

The *Borough of Bay Head Complete Streets Bicycle and Pedestrian Plan* approach incorporates engineering, enforcement, education, encouragement, and evaluation recommendations.

[18] "Borough of Bay Head Complete Streets Bicycle and Pedestrian Plan". December 2015. The RBA Group, an NV5 Company and Stokes Creative Group, Inc. Page 1.

The recommendations are categorized into five categories, as follows:

1. Education – Teaching people the skills to walk and ride safely and providing opportunities to inform Borough staff about walking and bicycling safety and design.
    a. Street Smart NJ Pedestrian Safety Campaign
    b. Community-Oriented Traffic Calming
    c. Traffic Safety Curriculum
    d. League of American Bicyclist's League Cycling Instruction (LCI) program
    e. Signs
2. Encouragement – Programs, events, and policies that create a culture that welcomes and celebrates walking and bicycling.
    a. Bicycle Mentor Program
    b. Social Bicycle Rides
    c. Safe Routes to School – Map out a School Travel Plan
    d. Bike Rodeo
    e. Open Streets Event
    f. Annual Park(ING) Day
    g. Bike Sharing Programs
    h. Bicycle to School and Walk to School Policies
3. Enforcement – Opportunities to improve compliance with walking and bicycling laws and policies.
    a. Pedestrian Safety Enforcement Program
    b. New Jersey Crossing Guard Training Program
    c. Feedback Signs
    d. Police Bike Patrol
4. Engineering – Creating safe and convenient places to walk and bike.
5. Evaluation & Planning – Ways to assess the impact of policies and measure progress and integrating pedestrians and bicyclists into planning.
    a. Complete Streets Policy and Checklist
    b. Snow Removal & Winter Maintenance Policy
    c. Interactive Maintenance Reporting
    d. Plan4Safety (A planning tool provided by NJDOT)
    e. NACTO and ITE Guidance (National Association of City Transportation Officials and Institute of Transportation Engineers.
    f. Crosswalk and Stop Sign Policy

The *Borough of Bay Head Complete Streets Bicycle and Pedestrian Plan* also addresses the following:

1. Proposed Neighborhood Greenway Network
2. Design Elements
    a. Coordination with Neighboring Jurisdictions and Other Agencies
    b. Signs and Pavement Markings
    c. Pedestrian Accommodations

d. Crossings and Intersections
e. Traffic Calming (speed and volume management)

MUNICIPAL PUBLIC ACCESS PLAN

The Borough of Bay Head is currently in the process of drafting a Municipal Public Access Plan (MPAP), with funding from the State of New Jersey Department of Environmental Protection (NJDEP).

The purpose of the MPAP is to provide a comprehensive public access plan for the municipality, which outlines their vision for providing access to tidal waters and shorelines within the municipal boundary. Upon approval of the MPAP by the NJDEP, the Borough will incorporate the document into the Master Plan and will be responsible for ensuring that public access is provided to tidal waterways along the Borough's shorelines in accordance with the Plan. The MPAP should be coordinated with other Plans, such as the Complete Streets Bicycle & Pedestrian Plan and future Borough/public projects.

According to the MPAP, some of the challenges include:

- There are two handicap beach access points provided at Osborne Avenue and Howe Street. One handicap access point is required every half-mile (or 2 total) in the Borough.
- There is no vehicle access to the beach, whereas emergency vehicles are recommended to access the beach. There is access from adjacent Point Pleasant Beach.
- The beaches on the oceanfront are much smaller to the north of the Borough than in the south.
- There is no signage showing public access locations.

The goals of the MPAP include the following:

Municipal Public Access Goals and Objectives

As part of the planning process, this MPAP has been reviewed and is consistent with the following goals/ objectives established in the Borough of Bay Head's Master Plan:

1. To preserve the single-family residential character and traditions of Bay Head, and to provide zoning that recognizes the established residential character of the Borough.
2. To maintain the existing character of the commercial districts.
3. To recognize the increasing importance of environmental protection in the establishment of development regulations and in the review of development proposals.
4. To understand the role of Bay Head in the region through an awareness of the plans of adjoining municipalities, the County and the State.
5. To maintain the pattern of development established in the Borough and to avoid those uses which would increase development intensity or density.
6. To review and modernize the Borough of Bay Head's land development regulations relating to bulk standards and requirements in various zones.

Based on the goals outlined within the Master Plan and the State of New Jersey Public Access goals, the Borough of Bay Head establishes the following as goals specifically for public access:

1. All existing public access shall be maintained to the maximum extent practicable.
2. Maintain safe and adequate access locations for fishing.
3. Provide clear informative signage for access locations.
4. Construct public access in accordance with the American's with Disabilities Act where feasible.
5. Protect public accesses from future storm damage.

LAND USE REGULATORY DOCUMENTS

The Borough's code book was reviewed to determine if there are any goals, objectives, or policies that would support municipal planning needs related to future storm mitigation or post storm recovery. The following sections review Bay Head's regulatory documents.

CHAPTER 75: BEACHES

According to the 2003 Master Plan Reexamination Report (Provisions of Periodic Reexamination II-4), the Borough adopted the Dune Protection Ordinance "to control development or disturbance of dunes thereby furthering shore protection efforts and preserving the dunes as an important environmental resource. In addition, it is suggested that consideration be given to the improvable area of ocean front properties to attempt to contain some of the overbuilding in evidence on the east side of East Avenue."

Below is the Ordinance:

Article I: Motor Vehicles Prohibited

§75-2 Prohibited areas.

The maintenance, use or operation of a motor vehicle upon, through or across that portion of the oceanfront beach lying within the Borough of Bay Head bounded on the west by the landward edge of the dune and on the east by the waters of the Atlantic Ocean is prohibited.

§75-3 Exceptions.

Designated emergency or patrol motor vehicles may, from time to time, in emergency situations, with the express permission of the Chief of Police, be operated within the beachfront area to preserve and protect the health, safety and general welfare of the citizens of the municipality.

Article II: Protection of Beaches and Dunes

§75-5 Findings; Declarations; Purpose.

A. Although there may be no long term defense for fixed oceanfront structures against a constantly rising ocean level, effective protection of the oceanfront and adjacent coastal areas in the intermediate term against high tides and flooding and against damage by the ocean under storm conditions requires sufficient elevation and breadth in the beach and dune areas to dissipate the force of the waves. The dunes should provide a continuous barrier and a source of sand to

mitigate the effect of storm waves for the benefit of interior lands, as well as oceanfront premises and the recreational beach area. Beach erosion will be less damaging if the dune area is protected by sand fencing and the planting of dune grass. Accordingly, the Borough has a vital interest in the continued maintenance and protection of the beach and dune areas and in the right to cause their restoration in the event of damage or destruction.

B. Dune areas are vulnerable to erosion by wind, water, the absence of husbandry, by those responsible for their maintenance and preservation, and by indiscriminate trespass, construction or other acts which might destroy or damage them. A proven and available means of protecting dune areas against erosion is by preventing indiscriminate trespassing, construction or other acts which might destroy or damage them, and through the aggressive use of indigenous plantings supplemented, when necessary, by sand fencing and other protective devices, or combinations thereof, designed to prevent the erosion of dune areas and to promote the root accumulations, normal contours and other features found in natural dune systems.
C. The beach area and dune area are dynamic and are not capable of rigid definition or delineation or of completely firm stabilization. They can and do migrate so that particular sites, at one time free of dunes, may, as the result of natural or other forces, become a part of the dune area declared to be in the interest of the Borough to protect. Persons owning, using or purchasing such property do so subject to the public interest therein.
D. It is the purpose of this article to define the areas so affected and to establish regulations to assure their continued effectiveness and provide storm and flood protection.
E. This article does not attempt to define and regulate all parameters of dune delineation, function or management, and the Borough Council declares its intent to review and update this article periodically to reflect appropriately new and beneficial knowledge relating to the objectives of this article.
F. This article is declared to be an exercise of the police power in the interest of safety and welfare for the protection of persons and property.

§75-7 Regulations; Lien; Permits; Notice; Fees.

A. Construction east of the setback line is prohibited, except as provided in Subsection **G**, and except as specifically allowed herein or by Chapter **147**, Land Use, and Chapter **126**, Flood Damage Prevention.
B. No person shall be in the dune area unless:
    1) Upon an approved pathway, walkway or dune platform; or
    2) In the performance of such activities as may be reasonably and necessarily required to construct or maintain the dune or allowed structures with the permission of the owner.
C. The removal, cutting, burning or destruction of natural vegetation, sand fence or such other types of dune protection devices as may be approved by the Borough Council in the dune area is prohibited, except as necessary for construction authorized pursuant to Subsections **A** and **G**.
D. The removal of sand from the beach or dune area is prohibited.

E. Sand which is transported upon lands by action of winds, tides, storms or any combination thereof shall not be removed from the lot upon which it is deposited by such action. To the extent practicable, considering the utilization of the premises, such sand as may be relocated by the owner upon the lot shall be moved eastwardly. Sand deposited upon any improved street ends shall be restored into the beach and dune area.

F. One of the purposes of this article is to achieve the maintenance of sand dunes at the highest practical height. To this end, no dune shall be directly or indirectly lowered or reduced in height by the action or inaction of any owner or his agent. If any dune, through natural causes, shall be or become lower than the elevation deemed materially significant by the Dune Consultant, applying recognized criteria, with due regard to the intent of this article and reasonable use of the premises, the owner thereof shall be obliged to install sand fences and plantings. The owner shall have an obligation to maintain and replace, if necessary, these fences and plantings, but shall not be obligated to take any other affirmative action, except as may be specified elsewhere in this article. If the dune is lowered or caused to be lowered by the direct or indirect action of any owner, then the dune shall, upon due notice to the owner, be restored as soon as reasonably possible to its preexisting elevation by the owner or at his expense. The restored dune shall be planted and sand fenced in accordance with specifications promulgated under this article.

G. Walkways.

1) One pathway or walkway across the dune area is permitted for each residence. It shall run, generally, the shortest practical course between the residence and the seaward edge of the dune and shall not exceed four feet in width. At street ends, wider walkways may be delineated by the Dune Inspector or Consultant. In the event that any pathway or walkway shall be or become, in the opinion of the Dune Inspector or Consultant, a substantial detriment to the development and maintenance of the continuous protective dune sought to be achieved by this article, the owner of the premises shall be subject to the provisions of Subsection **M**.

2) A walkway is exempt from any provisions requiring a construction permit, provided that it:

    a) Does not extend westward of the landward edge of the dune or to the eastward of the seaward edge of the dune;

    b) Is at least four inches above the highest point of the dune over which it passes;

    c) Is not wider than four feet;

    d) Provides at least 16% of the walkway surface as gap space between the walkway surface boards in order to permit dune grass to grow underneath; and

    e) Has a walkway surface, including lateral supporting members with a vertical cross section of not more than five inches.

3) The construction of elevated walkways over the crest of the dune is encouraged to preserve the dune area. Where the crest gap is more than two feet, the Dune Inspector shall serve written notice, certified mail, return receipt requested, upon the record

owner westward of the dune at his last known address, requiring that an elevated walkway be constructed and, if such walkway is not in place within a period of 45 days from the date of such notice, the Borough may construct an elevated walkway at the expense of the owner. In such case, the cost of construction shall become a lien on the real property situate immediately westward of the dune.

H. Where an elevated walkway is constructed and sand has accreted to a point where the walkway is on the surface of the sand at the dune crest and is below the adjacent crest, the natural accretion of the dune is impeded, unless the dune height exceeds the height established in Subsection **H**. In such case, the Dune Inspector shall serve written notice, certified mail, return receipt requested, upon the record owner westward of the dune at his last known address, directing that the walkway be raised in compliance with the standards of this article and, if the walkway is not raised within a period of 45 days from the date of such notice, the Borough may raise the walkway at the expense of the owner. In such case, the cost of construction shall become a lien on the real property situate immediately westward of the dune.

I. Acceptable dune height is defined as 16 feet elevation above sea level. In any case where a dune is below the acceptable dune height, the Dune Inspector is directed to serve written notice, certified mail, return receipt requested, upon the record owner westward of the dune at his last known address, directing that sand fencing or other means of dune enhancement be in place, and, if the dune enhancement is not in place within a period of 45 days from the date of such notice, the Borough may construct the dune enhancement at the expense of the owner. In such case, the cost of construction shall become a lien on the real property situate immediately westward of the dune.

J. Dune platforms; permit.

1) Each oceanfront lot shall be allowed a dune platform not to exceed 200 square feet, situated within the dune area and specifically located and delineated by the owner of the premises. Flagpoles located on or immediately adjacent to a dune platform are permitted structures that are not subject to these provisions. Preexisting platforms may exceed a length or depth of 20 feet; however, in the event of their destruction, any replacement platform shall not exceed a length or depth of 20 feet. The dune platform shall, in all events, be maintained in the same fashion and subject to the same regulations as may govern use of pathways and walkways. Dune platforms may not be constructed without a construction permit, to be issued by the Construction Official upon payment of a fee as set forth in the fee schedule on file at the office of the Municipal Clerk. Prior to the issuance of a dune platform permit, the owner shall submit a sketch showing the location of the platform with respect to the property sideline and crest of the dune. The Construction Official shall have the authority to require the submission of an accurate plot plan to show compliance with the side line setback or the requirement that the edge of the platform be at least 10 feet westward of the crest of the dune; provided, however, that if the dune height exceeds the height established under Subsection **I**, the dune platform may be located on the dune crest. No detailed drawing of the dune platform is required if the platform is at least 18 inches above the

highest point of the dune directly beneath it; has neither a length or depth not to exceed 20 feet with a total area not to exceed 200 square feet; is constructed with its surface containing gap area of at least 16% to promote the growth of the dune grass beneath; has a platform with a vertical cross section, including lateral supporting members, of not more than six inches. A walkway or path not to exceed four feet shall be provided for access east and west of the platform to minimize damage to vegetation by pedestrian traffic.

2) The Borough Council finds that a dune platform that is not constructed in accordance with the above specifications is a detriment to the dune protection system. In a storm, as the dune erodes back, the platforms existing in declivities in the dune become gaps in the dune frontal system. Further, the dune platform, being undercut by the ocean storm current, interrupts the flow of sand and causes increased erosion at that point, representing a potentially serious battering hazard. Accordingly, where the surface of a dune platform is two feet or more below a line connecting the highest points of the dune, within 50 feet to the north or south parallel to the dune crest line and on the surface of the sand at any point, it must be removed. The Dune Inspector shall serve written notice, certified mail, return receipt requested, upon the record owner westward of the dune at his last known address. Immediately following its removal, the area must be protected by sand fencing. Such property owner may apply to reconstruct a dune platform in accordance with the specifications in this article. If such dune platform is not removed within a period of 45 days from the date of such notice, the Borough may remove the dune platform at the expense of the owner. In such case, the cost of the removal shall become a lien on the real property situate immediately westward of the dune.

K. In order to provide for effective protection and/or restoration of the dune area, each owner shall plant or cause to be planted in the dune area adjoining his property suitable vegetation and erect or cause to be erected suitable sand fencing all in accordance with acceptable standards.

L. Dune mechanical replenishment; permit.

1) No person shall engage in mechanical replenishment on ocean beach dunes within the Borough without first obtaining approval from the Dune Inspector and a municipal permit for such activity. Permits issued under this section shall authorize replenishment of sand only from areas above the mean high-water level. Mechanical replenishment shall be broadly defined to include the transport of sand from the beach area, above mean high water, by any mechanical means (bulldozing or like activity) to or into the dune area.

2) Dune replenishment permits shall be issued by the Municipal Clerk and be conditioned as follows:

a) No mechanical dune replenishment activity is allowed from June 1 to September 1, except in case of emergency circumstances which constitute an immediate threat to the public health, safety and welfare.

b) No scraping or bulldozing of sand from the beach area at a depth greater than one foot from the grade existing prior to activity under the permit.
c) Transport of sand from below the high-water line is prohibited, except such removal as may be authorized by a permit issued by the New Jersey Department of Environmental Protection and Energy.
d) Permits shall be issued for a six-month term.
e) All replenished dunes shall be immediately protected by the erection of a sand fence.

3) A permit may, in the event of violation of the terms of the permit or in the event of conditions of the beach and dune systems and weather which are not, at the time, consistent with the attainment and maintenance of a proper dune system, be suspended by the Dune Inspector. The action of the Dune Inspector shall be subject to review by the Borough Council upon written application of the property owner. The Borough Council shall promptly, after public hearing, reverse or modify the determination of the Dune Inspector.
4) The failure of any owner to obtain a permit for dune replenishment activities or to abide the terms and conditions of the permit shall be deemed a violation of this article.

M. The Borough Dune Inspector and, in his absence, the Chief of Police and, in all events, the Borough Council shall enforce the affirmative duty of each oceanfront owner, as set forth in this article, by service of a written notice, certified mail, return receipt requested, upon the record owner westward of the dune at his last known address requiring specific compliance with obligations concerning dune protection and/or restoration. The notice shall also advise that, unless the owner shall take appropriate corrective action and complete the same within 45 days from the date of mailing said notice, the Borough may perform such acts of protection and/or restoration at the expense of the owner. Such expenditures by the Borough, if any, shall be due and payable upon demand. In the event that any such owner shall fail to pay, then the sum together with interest at the highest legal rate thereon shall become a lien upon the property and be collected in the same manner as delinquent real property taxes. In addition to the action described above, the owner may, at the election of the enforcement officials or the Borough Council, be prosecuted for violation of this article in accordance with § **75-9**.
N. No person shall operate a motor vehicle (as defined in Article **I**) across or upon any dune area except as may be necessitated for allowed construction or for dune maintenance or at North Street where sailboats are permitted to gain entry to the beach on a trailer.
O. No person shall walk across or upon any dune area except as may be necessitated for allowed construction or for dune maintenance or at designated beach access areas.

CHAPTER 126: FLOOD DAMAGE PREVENTION

It is the purpose of this chapter to promote the public health, safety and general welfare and to minimize public and private losses due to flood conditions in specific areas through methods and by provisions designated to:

A. Protect human life and health.
B. Minimize expenditure of public money for costly flood control projects.
C. Minimize the need for rescue and relief efforts associated with flooding and generally undertaken at the expense of the general public.
D. Minimize prolonged business interruptions.
E. Minimize damage to public facilities and utilities, such as water and gas mains, electric, telephone and sewer lines, streets and bridges, located in areas of special flood hazards.
F. Help maintain a stable tax base by providing for the sound use and development of areas of special flood hazard so as to minimize future flood blight areas.
G. Ensure that potential buyers are notified that property is in an area of special flood hazard.
H. Ensure that those who occupy the areas of special flood hazard assume responsibility for their actions.

Before Superstorm Sandy, FEMA had begun a coastal flood study to update Flood Insurance Rate Maps (FIRMs) and Flood Insurance Study (FIS) reports for portions of New Jersey using improved methods and data to better reflect coastal flood risk. After Sandy, FEMA released Advisory Base Flood Elevation (ABFE) maps for certain communities based on the partially completed FIS's, which were designed to help in rebuilding and recovery efforts. Subsequently, FEMA released preliminary work maps, which included the full results of the coastal flood study on June 18, 2013. Preliminary FIRMs and FIS reports for Ocean County were released March 27, 2014.

While the National Flood Insurance Program (NFIP) floodplain management regulations do not require communities to use flood hazard data from the advisory or preliminary flood data, in cases where BFEs have increased and/or a more restrictive flood zone has been established, communities have the responsibility to ensure that new or improved construction as well as the health and safety of citizens are protected. Chapter 126 of the Borough Code, entitled "Flood Damage Prevention", addresses the flood hazard regulations of FEMA and NJDEP. The ordinance was adopted in 2006 by the Borough Council by Ordinance #2006-18, amended in its entirety on 3-4-2013 by Ordinance #2013-03. The areas of special flood hazard for the Borough of Bay Head Community No. 340379, are identified and defined on the following documents prepared by the Federal Emergency Management Agency:

(1) A scientific and engineering report "Flood Insurance Study, Ocean County, New Jersey (All jurisdictions)" dated September 29, 2006.

(2) Flood Insurance Rate Map for Ocean County, New Jersey (All Jurisdictions), as shown on Index and Panel Number(s) 0327, 0329, 03126, whose effective date is September 29, 2006.

(3) The best available and most current data released by FEMA shall take precedence over previous panels and FIS in construction and development regulations only. Where the Special Flood Hazard Area (SFHA) and the Flood Hazard Area (FHA) Maps conflict or overlap, whichever imposes the more stringent requirement shall prevail.

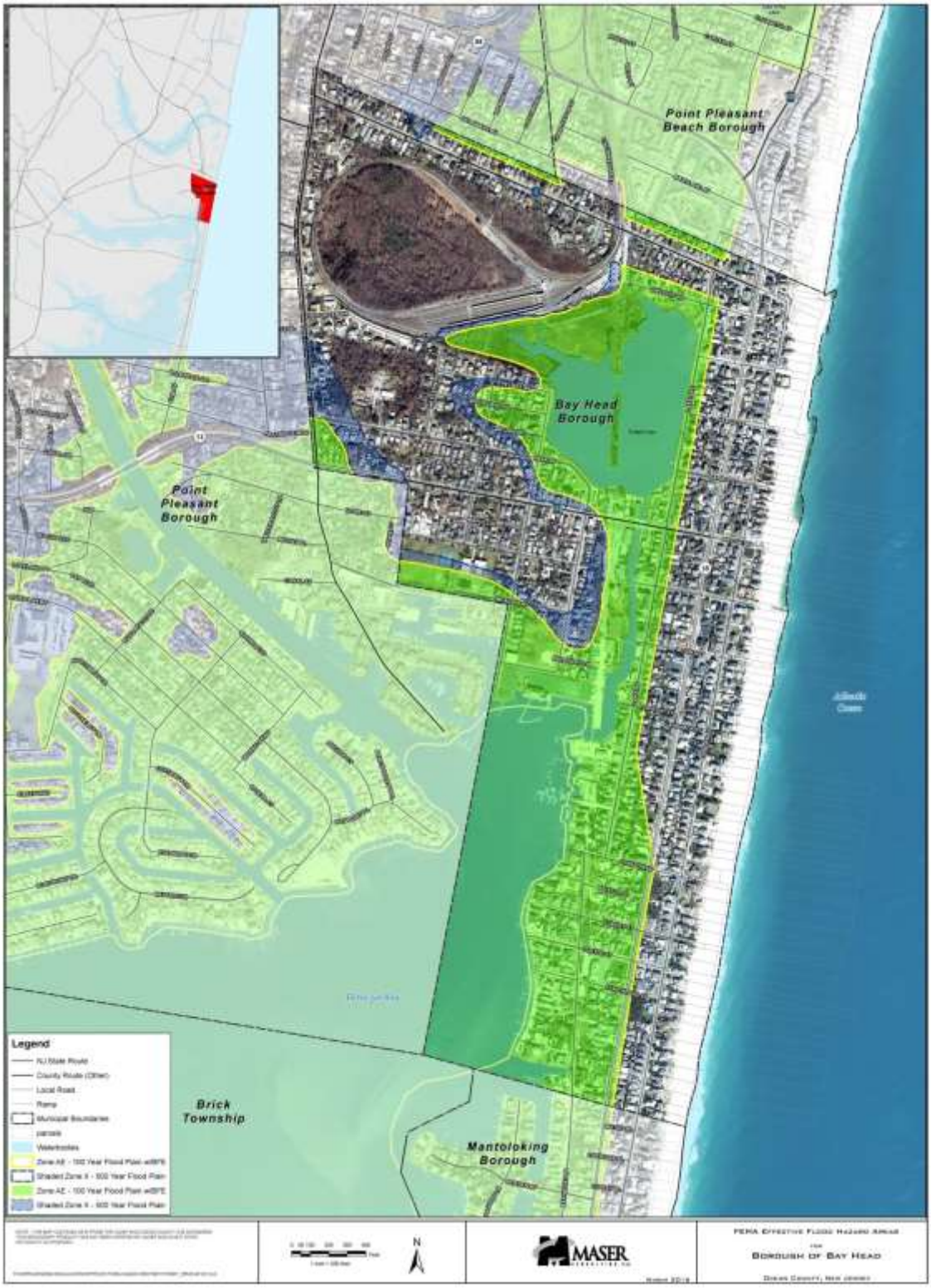
As shown in Table 11, 372.89 acres lie within a Preliminary Flood Hazard Area, representing 98.75 percent of the total area of the Borough of Bay Head (including water area).

Table 11: Bay Head Preliminary Flood Zones		
Flood Zone	**Acres**	**Percent of Borough**
Preliminary Zone AE - 100 Year Flood Plain (w/ BFE)	292.08	77.35%
Preliminary Zone VE - 100 Year Flood Plain (w/ High Velocity Wave Action)	75.65	20.03%
Preliminary Shaded Zone X - 500 Year Flood Plain	5.16	1.37%
Total	**372.89**	**98.75%**

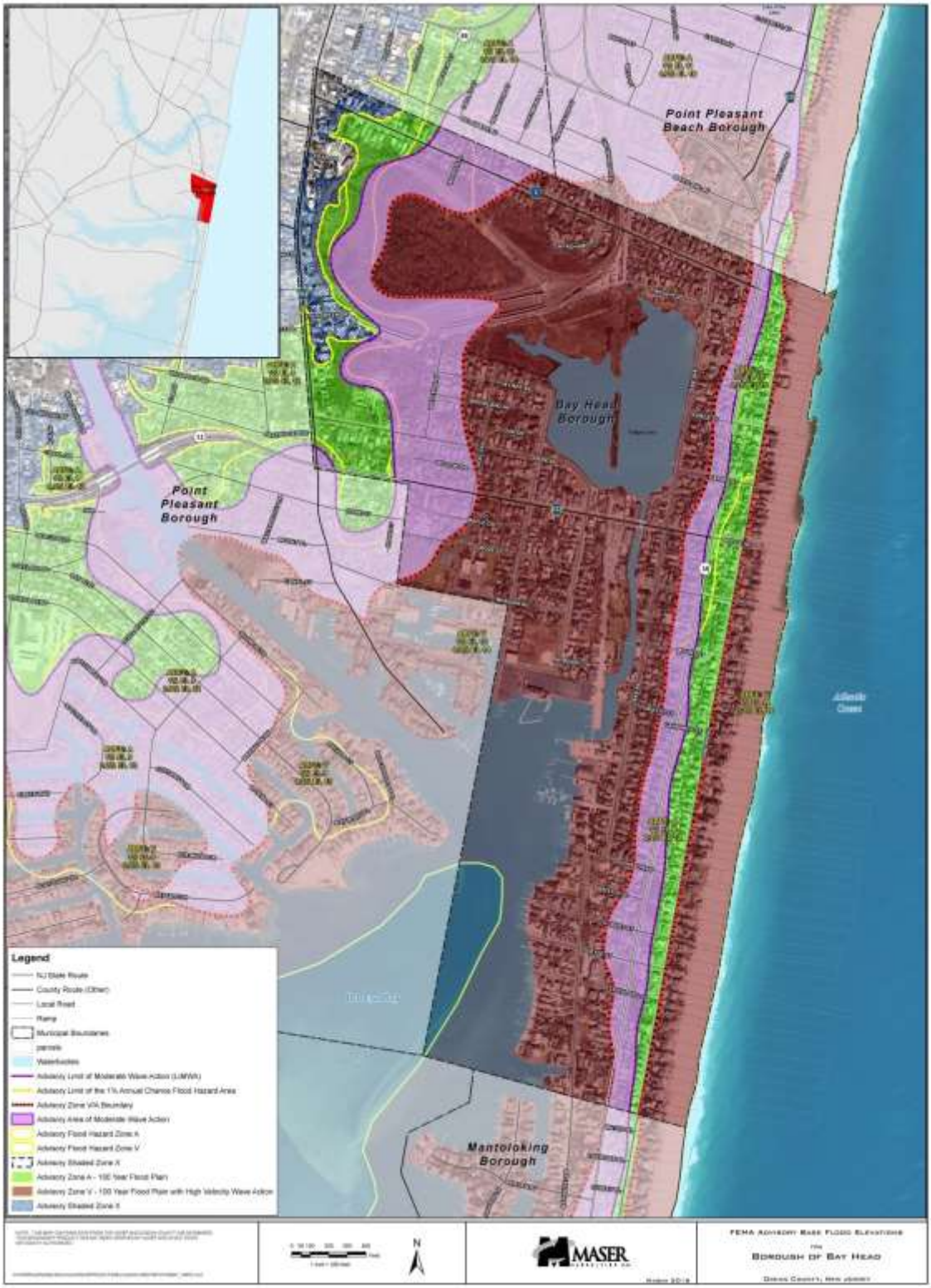
Map 7 through

Map 10 compare the subsequent successive FEMA ABFE, Preliminary Working Map, and Preliminary Flood Hazard mapping for the Borough of Bay Head that were prepared based on the impact and analysis Superstorm Sandy.

Map 7 - FEMA Effective Hazard Areas



Map 8 - FEMA Advisory Base Flood Elevations



Map 9: FEMA Preliminary Working Flood Map

Map 10 - FEMA Preliminary Flood Hazard Areas

The purpose of the chapter is to "secure safety from fire, flood, panic and other natural and man-made disasters" and establishes the zoning districts and map, as well as the district regulations for each zone within the Borough of Bay Head. The Land Use chapter also establishes the Planning Board organization and its jurisdiction, and procedure on application for development. The Land Use regulations do not include any other goals, objectives or policies that would support planning needs related to future storm mitigation or post-storm recovery.

§147-15 Nonconforming Uses.

A. Continuance. Except as otherwise provided in this chapter, the lawful use of the land or a building existing at the date of the adoption of this chapter may be continued although such use or building does not conform to the regulations specified by this chapter for the zone in which such land or building is located; provided, however, that: [Amended 10-4-1994 by Ord. No. 1994-10; 11-8-1995 by Ord. No. 1995-11]
    1) No nonconforming lot shall be further reduced in size.
    2) No nonconforming building shall be enlarged, extended or increased, unless such enlargement is conforming.
    3) No nonconforming use may be expanded.
B. Reversion and change of use. [Amended 10-4-1994 by Ord. No. 1994-10]
    1) No nonconforming use of a lot or structure shall, if once changed into a conforming use, be changed back into a nonconforming use.
    2) A nonconforming use shall not be changed to, substituted by or replaced by another nonconforming use.
C. Discontinuance and abandonment. [Amended 10-4-1994 by Ord. No. 1994-10]
    1) Any lot or structure used in a lawful character or manner or for a lawful purpose which creates a nonconforming use, which shall have discontinued such use for a period of one year shall be considered to be an abandonment of such use and shall not be reused or superseded by any use not permitted under the respective zone classification provisions of this chapter.
    2) A nonconforming use shall be adjudged abandoned when there occurs a cessation of any such use or activity by an apparent act or failure to act on the part of a tenant or owner to reinstate such use within one year from the date of cessation or discontinuance. The use shall not thereafter be reinstated and the structure shall not be reused, except in conformance with this chapter.
    3) The provisions in this subsection shall refer to the actual use and to the use indicated by the form and construction of the building.
D. Restoration and alteration. [Amended 10-4-1994 by Ord. No. 1994-10; 11-8-1995 by Ord. No. 1995-11; 9-16-2003 by Ord. No. 2003-6]
    1) If any nonconforming building or structure shall be destroyed by reason of windstorm, fire, explosion or act of God or otherwise to an extent of more than partial destruction

as provided for in § **147-2C**, then such destruction shall be deemed complete destruction, and the structure may not be rebuilt, restored or repaired, except in conformity with the regulations of this chapter. Nothing in this chapter shall prevent the strengthening or restoring to a safe condition of any wall, floor or roof which has been declared unsafe by the Construction Official.

2) A nonconforming building or structure may be altered, but not enlarged or extended, during its life to an extent not exceeding, in the aggregate, 50% of the structure unless said building or structure is changed to a building or structure conforming to the requirements of this chapter.

E. Change of location. No nonconforming use or any portion of a lot or structure may be moved to another part of the lot or structure upon or within which the same was conducted as of the effective date of this chapter. [Amended 10-4-1994 by Ord. No. 1994-10]

F. Construction approved prior to chapter. Nothing herein contained shall require any change in plans, construction or designated use of a structure for which a construction permit has been heretofore issued and substantial construction to the extent of completion of footings has taken place prior to the date of the adoption of this chapter. [Amended 10-4-1994 by Ord. No. 1994-10]

G. Zoning district changes. Whenever the boundaries of a zoning district shall be changed so as to transfer an area from one zone to another zone of a different classification, the foregoing provisions shall apply to any use which shall be made nonconforming by said change.

CHAPTER 169: PARKS AND WILDLIFE SANCTUARIES

§169-1 Establishment of parks and wildlife sanctuaries

A. Kellogg Memorial Island. There is hereby established a wildlife sanctuary to be known as "Kellogg Memorial Island," described as an island within Twilight Lake in the Borough of Bay Head which is part of Lot No. 1 in Block No. 21, as shown on the Bay Head Tax Map,[1] as is more particularly described and shown on a certain survey and plan of property entitled, "Proposed Island For Wildlife Sanctuary, Twilight Lake, Borough of Bay Head, Ocean County, New Jersey," dated August 4, 1980, prepared by Remington and Boyd, Borough Engineers, Kenneth R. Remington, License #6634, which survey and plan of property is hereby filed with the offices of the Municipal Clerk, is available for public inspection and is hereby incorporated and made a part hereof.

[1]Editor's Note: Said map is on file at the office of the Municipal Clerk.

B. Evergreen Park. The site of the old municipal sewer plant, known and designated as Lot No. 13 in Block No. 5 as shown on the Bay Head Tax Map, is hereby named and designated as "Evergreen Park," a municipal park.

C. Scow Ditch Park. The site of the former Borough Hall, known and designated as Lot No. 6 in Block No. 52 as shown on the Bay Head Tax Map, is hereby named and designated as "Scow Ditch Park," a municipal park.

CHAPTER 207: STORMWATER MANAGEMENT

The purpose of the Stormwater Management Regulations is to establish minimum stormwater management requirements and controls for major development, consistent with the statewide stormwater requirements at N.J.A.C. 7:8, and the provisions of the adopted Master Plan and Land Use ordinances of the Borough of Bay Head.

The goal of the regulations is to reduce flood damage, including damage to life and property. The regulations ensure the proper design of stormwater systems to mitigate against impacts from stormwater runoff, flooding, and pollution in environmentally sensitive areas. However, there are no other goals, objectives or policies that would support planning needs related post-storm recovery.

§207-1 Scope and purpose.

A. Policy statement. Flood control, groundwater recharge, and pollutant reduction through nonstructural or low-impact techniques shall be explored before relying on structural BMPs. Structural BMPs should be integrated with nonstructural stormwater management strategies and proper maintenance plans. Nonstructural strategies include both environmentally sensitive site design and source controls that prevent pollutants from being placed on the site or from being exposed to stormwater. Source control plans should be developed based upon physical site conditions and the origin, nature, and the anticipated quantity or amount of potential pollutants. Multiple stormwater management BMPs may be necessary to achieve the established performance standards for water quality, quantity, and groundwater recharge.
B. Purpose. It is the purpose of this article to establish minimum stormwater management requirements and controls for major development, as defined in § 207-2.
C. Applicability.
    1) This article shall be applicable to all site plans and subdivisions for the following major developments that require preliminary or final site plan or subdivision review:
        a) Nonresidential major developments; and
        b) Aspects of residential major developments that are not preempted by the Residential Site Improvement Standards at N.J.A.C. 5:21.
    2) This article shall also be applicable to all major developments undertaken in the Borough of Bay Head.
D. Compatibility with other permit and ordinance requirements. Development approvals issued for subdivisions and site plans pursuant to this article are to be considered an integral part of development approvals under the subdivision and site plan review process and do not relieve the applicant of the responsibility to secure required permits or approvals for activities regulated by any other applicable code, rule, act, or ordinance. In their interpretation and application, the provisions of this article shall be held to be the minimum requirements for the promotion of the public health, safety, and general welfare. This article is not intended to interfere with, abrogate, or annul any other ordinances, rule or regulation, statute, or other provision of law except that, where any provision of this article imposes restrictions different

from those imposed by any other ordinance, rule or regulation, or other provision of law, the more restrictive provisions or higher standards shall control.

PUBLIC OUTREACH

The coordination of public input within the Borough has been handled by the Steering Committee.

For purposes of this SRPR, the Mayor and two Council members serve as the steering committee to provide direction and guidance on the identification of projects for Phase II Post Sandy planning. This Draft SRPR will be posted on the Borough's website and will be presented at public hearings to the Borough Council and Land Use Board for public comment.

STRATEGIC RECOVERY ACTION PLAN

IDENTIFICATION OF PROJECTS

The following sections discuss the projects that have been identified in the 2014 Ocean County HMP, projects recommended by stakeholders during the public workshops and projects recommended based on the needs assessment and vulnerability analysis.

PROJECTS IDENTIFIED IN THE OCEAN COUNTY HMP

Chapter 6 of the Ocean County HMP lists the recommended municipal action plan summary[19]. For the Borough of Bay Head, there are fourteen recommended actions:

Table 6.4-1: Municipal Action Plan Summary

Action	Action Number	Hazards Addressed	Action Category
Continue dune grass planting in the fall	Action 6.4.3-10	Coastal Erosion; Flood, Flash Flood, Ice Jam; Hurricane, Tropical Storm, Nor'easter; Climate Change	Natural Systems Protection
Continue Police and/or Fire outreach programs in schools	Action 6.4.3-14	All	Education and Awareness Program
Continue to enforce building codes	Action 6.4.2-6	Coastal Erosion; Earthquake; Flood, Flash Flood, Ice Jam; Hurricane, Tropical Storm, Nor'easter; Tornado, Wind Storm; Wildfire; Winter Storm; Urban Fire and Explosion	Local Plans and Regulations
Continue to participate in the NFIP	Action 6.4.3-5	Coastal Erosion; Flood, Flash Flood, Ice Jam; Hurricane, Tropical Storm, Nor'easter; Climate Change	Local Plans and Regulations
Elevate community facilities/infrastructure	Action 6.4.3-9	Coastal Erosion; Flood, Flash Flood, Ice Jam; Hurricane, Tropical Storm, Nor'easter; Climate Change	Structure and Infrastructure Project and/or Natural Systems Protection

[19] 2014 Ocean County Multi-Jurisdictional All-Hazard Mitigation Plan, Section 6.4.36, pages G-17; G-522 to G-532.

Elevate residential properities	Action 6.4.3-1	Coastal Erosion; Flood, Flash Flood, Ice Jam; Hurricane, Tropical Storm, Nor'easter; Climate Change	Structure and Infrastructure Project
Implement flood control related project	Action 6.4.3-4	Flood, Flash Flood, Ice Jam; Hurricane, Tropical Storm, Nor'easter	Structure and Infrastructure Project
Join, maintain, and/or increase rating for CRS Program	Action 6.4.3-11	Coastal Erosion; Flood, Flash Flood, Ice Jam; Hurricane, Tropical Storm, Nor'easter; Climate Change	Education and Awareness Program
Maintain and improve information on website	Action 6.4.3-13 Action 6.4.3-16	All	Education and Awareness Program
Maintain Verbal Mutual Aid Agreement among Point Pleasant Beach, Point Pleasant, Bay Head, and Mantoloking	Action 6.4.3-7	All	Local Plans and Regulations
Maintain, improve, and expand education and awareness programs	Action 6.4.3-15	All	Education and Awareness Program
Obtain, improve, and/or maintain warning related systems, including Nixle and Reverse 911	Action 6.4.3-12	All	Education and Awareness Program
Protect EOC, Police, and/or Fire Station	Action 6.4.3-3	Hurricane, Tropical Storm, Nor'easter; Flood, Flash Flood, Ice Jam; Tornado, Wind Storm ; Winter Storm; Utility Interruption	Structure and Infrastructure Project
USACE beach replenishment and/or dune restoration projects	Action 6.4.3-8	Coastal Erosion; Flood, Flash Flood, Ice Jam; Hurricane, Tropical Storm, Nor'easter; Climate Change	Natural Systems Protection

The summary Action Item tables from the Ocean County HMP are included and incorporated by reference to ensure consistency in the recommendations. The Ocean County HMP is especially relevant to this SRPR in that it was prepared after Sandy and incorporates the impacts from Sandy in its mitigation project recommendations.

6.4.3. Bay Head Borough

Action 6.4.3-1: Elevation of 165 homes to the new FEMA ABFM in Bay Head Borough.	
Assessing the Risk	
Hazard(s) addressed	Coastal Erosion; Flood, Flash Flood, Ice Jam; Hurricane, Tropical Storm, Nor'easter; Climate Change
Risk finding	Flooding risk exists throughout the community along the bay front and oceanfront areas.
Describing the Action	
Action category	Structure/Infrastructure Project (Property Protection)
Action type	Elevation
Action description	Elevation project for 165 homes to build to higher standards and elevation that will mitigate impact of flood related hazards while maintaining residents in community
Existing, future &/or NA	Elevates the existing structures to remove them from the floodplain
Evaluating the Action	
Losses avoided (i.e., benefits)	
Cost estimate	$14,000,000
Cost effectiveness (i.e., benefit/cost)	
Technical	Technically feasible.
Political	No adverse political ramifications are expected
Legal	Homes must be elevated in compliance with the new preliminary FEMA ABFM and the new FEMA flood maps once they are finalized.
Environmental	Positively impacts the environment by increasing the permeable surface for each homeowner property.
Social	Does not adversely affect any particular social group. Perceived by the public to be a good thing because of repetitive nature of flooding in the project area.
Administrative capability	Borough has sufficient capacity and experience to administer this action
Local champion	Local champion is the emergency management office that has taken the lead on coordinating the letters of interest for the community.
Other community objectives	
Implementing the Action	
Priority	High
Local planning mechanism	Hazard Mitigation Plan
Responsible party	Bay Head Borough Engineer
Potential funding sources	HMGP, RFC, and FMA. For 25% local match, in-kind services, Community Development Block Grant (CDBG) and NFIP Increased Cost of Compliance (ICC).
Time line	1 year

Action 6.4.3-2:	Plan to elevate one building in Bay Head Borough.
Assessing the Risk	
Hazard(s) addressed	Coastal Erosion; Flood, Flash Flood, Ice Jam; Hurricane, Tropical Storm, Nor'easter; Climate Change
Risk finding	Flooding risk exists throughout the community along the bay front and oceanfront areas.
Describing the Action	
Action category	Structure/Infrastructure Project (Property Protection)
Action type	Elevation
Action description	Elevation project for one primary residential dwelling to build to higher standards and elevation that will mitigate impact of flood related hazards while maintaining residents in community
Existing, future &/or NA	Elevates the existing structures to remove them from the floodplain
Evaluating the Action	
Losses avoided (i.e., benefits)	
Cost estimate	$2,250,000
Cost effectiveness (i.e., benefit/cost)	
Technical	Technically feasible.
Political	No adverse political ramifications are expected
Legal	Building must be elevated in compliance with the new preliminary FEMA ABFM and the new FEMA flood maps once they are finalized.
Environmental	Positively impacts the environment by increasing the permeable surface for the property.
Social	Does not adversely affect any particular social group. Perceived by the public to be a good thing because of repetitive nature of flooding in the project area.
Administrative capability	Borough has sufficient capacity and experience to administer this action
Local champion	Local champion is the emergency management office that has taken the lead on coordinating the letters of interest for the community.
Other community objectives	
Implementing the Action	
Priority	High
Local planning mechanism	Hazard Mitigation Plan
Responsible party	Bay Head Borough Engineer
Potential funding sources	HMGP, RFC, and FMA. For 25% local match, in-kind services, Community Development Block Grant (CDBG) and NFIP Increased Cost of Compliance (ICC).
Time line	1 year

Action 6.4.3-3: Rebuild Police Headquarter/ municipal buildings to minimize flood risk by re-location or mitigation in its present location	
Assessing the Risk	
Hazard(s) addressed	Hurricane, Tropical Storm, Nor'easter; Flood, Flash Flood, Ice Jam; Tornado, Wind Storm ; Winter Storm; Utility Interruption
Risk finding	The municipal office and police department building was substantially damaged during the storm and is located in a floodprone zone.
Describing the Action	
Action category	Structure/Infrastructure Project
Action type	Structural Project
Action description	Rebuild Police Headquarter/ municipal buildings to minimize flood risk by re-location or mitigation in its present location to protect from flood related hazards
Existing, future &/or NA	Elevates the existing structure to remove it from the floodplain
Evaluating the Action	
Losses avoided (i.e., benefits)	
Cost estimate	$5,000,000
Cost effectiveness (i.e., benefit/cost)	
Technical	Technically feasible.
Political	No adverse political ramifications are expected
Legal	Buildings must be located and elevated in compliance with the new FEMA flood maps once they are finalized.
Environmental	Positively impacts the environment by increasing the permeable surface for each homeowner property if elevated.
Social	Does not adversely affect any particular social group. Perceived by the public to be a good thing because the emergency services will be more reliable once it's relocated or rebuilt in the same location and mitigated.
Administrative capability	Borough has sufficient capacity and experience to administer this action
Local champion	Local champion is the emergency management office that has taken the lead on coordinating past letters of interest for the community.
Other community objectives	
Implementing the Action	
Priority	High
Local planning mechanism	Hazard Mitigation Plan
Responsible party	Bay Head Borough (Emergency Services)
Potential funding sources	HMGP, RFC, and FMA. For 25% local match, in-kind services, and Community Development Block Grant (CDBG).
Time line	1 year

Action 6.4.3-5: Continue to participate in the NFIP	
Assessing the Risk	
Hazard(s) addressed	Coastal Erosion; Flood, Flash Flood, Ice Jam; Hurricane, Tropical Storm, Nor'easter; Climate Change
Risk finding	Community is susceptible to flooding from coastal storms on oceanfront and/or bay front sides
Describing the Action	
Action category	Local Plans and Regulations
Action type	Planning Mechanism/Prevention
Action description	Continue to participate in the NFIP to support pro-active floodplain management that will protect property from flood related hazards, clearly inform property owners about the risks of being in and near the SFHA, and promote flood insurance
Existing, future &/or NA	Existing participation in the NFIP
Evaluating the Action	
Losses avoided (i.e., benefits)	
Cost estimate	N/A
Cost effectiveness (i.e., benefit/cost)	
Technical	N/A
Political	Purchase of flood insurance is encouraged in order to support the funding base for claims and reduce overall impact to communities post-flood.
Legal	Flood insurance is mandatory for homes located within zone A, AE, AR, A99, AH, or AO.
Environmental	Does not adversely affect the environment.
Social	Does not adversely affect any particular social group. Perceived by the public to be a good thing because it reduces risk for individual homeowners; problems arise from high population of renters who do not participate in NFIP.
Administrative capability	Borough has sufficient capacity and experience to administer this action
Local champion	Local champion is the Borough departments that help share information about NFIP
Other community objectives	
Implementing the Action	
Priority	High
Local planning mechanism	Municipal codes
Responsible party	Bay Head Borough (Emergency Services) and borough residents
Potential funding sources	Homeowners
Time line	5 years

Action 6.4.3-6: Continue to enforce building codes	
Assessing the Risk	
Hazard(s) addressed	Coastal Erosion; Earthquake; Flood, Flash Flood, Ice Jam; Hurricane, Tropical Storm, Nor'easter; Tornado, Wind Storm; Wildfire; Winter Storm; Urban Fire and Explosion
Risk finding	Bay Head Borough residents are at risk for both natural and man-made hazards to impact their homes.
Describing the Action	
Action category	Local Plans and Regulations
Action type	Planning Mechanism/Prevention
Action description	Continue to enforce building codes to require building, renovations, and re-building meets or exceeds the Uniform Construction Code thus protecting homes from risk related to hazards including flooding, fire, wind, earthquake, and winter storm
Existing, future &/or NA	Existing compliance with National and local building code standards
Evaluating the Action	
Losses avoided (i.e., benefits)	
Cost estimate	N/A
Cost effectiveness (i.e., benefit/cost)	
Technical	N/A
Political	Compliance with building codes is encouraged politically in order to reduce overall impact of natural and man-made disasters on homes and residents.
Legal	Compliance with building codes is mandated legally.
Environmental	Does not adversely affect the environment.
Social	Does not adversely affect any particular social group. Perceived by the public to be a good thing because it reduces risk for individual homeowners.
Administrative capability	Borough has sufficient capacity and experience to administer this action
Local champion	Local champion is the borough that enforces the building codes
Other community objectives	
Implementing the Action	
Priority	High
Local planning mechanism	Municipal codes
Responsible party	Bay Head Borough and borough residents
Potential funding sources	N/A
Time line	5 years

Action 6.4.3-7: Verbal Mutual Aid Agreement among Point Pleasant Beach, Point Pleasant, Bay Head, and Mantoloking.	
Assessing the Risk	
Hazard(s) addressed	All
Risk finding	Borough needs and can provide more help from and to other municipalities during emergencies.
Describing the Action	
Action category	Local Plans and Regulations
Action type	Planning Mechanism/Prevention
Action description	Maintain and/or formalize verbal Mutual Aid Agreement among Point Pleasant Beach, Point Pleasant, Bay Head, and Mantoloking to support each other in disaster response for all hazards
Existing, future &/or NA	Existing agreement to maintain
Evaluating the Action	
Losses avoided (i.e., benefits)	
Cost estimate	Shared
Cost effectiveness (i.e., benefit/cost)	Cost savings due to resource sharing
Technical	Technically feasible
Political	Requires cooperation amongst four municipalities
Legal	Legally binding verbal contract
Environmental	No adverse environmental impacts from agreement
Social	Does not adversely affect any particular social group. Perceived by the public to be beneficial because the agreement is mutually beneficial for all communities involved.
Administrative capability	Borough has sufficient capacity and experience to administer this action
Local champion	Local champion are the participating municipalities: Point Pleasant Beach, Point Pleasant, Bay Head, and Mantoloking.
Other community objectives	
Implementing the Action	
Priority	High
Local planning mechanism	Verbal Mutual Aid Agreement
Responsible party	Bay Head Borough and borough residents
Potential funding sources	Point Pleasant Beach, Point Pleasant, Bay Head, and Mantoloking.
Time line	5 years

Action 6.4.3-8: USACE replenishment project and dune restoration (dunes are located on the street side)	
Assessing the Risk	
Hazard(s) addressed	Coastal Erosion; Flood, Flash Flood, Ice Jam; Hurricane, Tropical Storm, Nor'easter; Climate Change
Risk finding	Flood risk in community
Describing the Action	
Action category	Natural Systems Protection
Action type	Natural Resource Protection
Action description	Complete USACE dune and beach replenishment project to protect community from flood related hazards
Existing, future &/or NA	Allow for construction of large dune from Manasquan to Barnegat Light
Evaluating the Action	
Losses avoided (i.e., benefits)	
Cost estimate	N/A
Cost effectiveness (i.e., benefit/cost)	
Technical	Technically feasible.
Political	There is pressure from top government officials such as Governor Chris Christie for homeowners to cooperate and sign the easement in order to better protect all the homeowners on the barrier islands.
Legal	Pending lawsuits are expected due to controversy over the easement.
Environmental	No adverse environmental effects from dunes.
Social	Adversely impacts view of many beachfront property owners; private beachfront owners fear that their beaches will become public beaches
Administrative capability	Borough has sufficient capacity and experience to administer this action
Local champion	Local champions are the Army Corps and the borough engineer that has taken the lead on coordinating mitigation within the community.
Other community objectives	
Implementing the Action	
Priority	High
Local planning mechanism	Hazard Mitigation Plan
Responsible party	Bay Head Borough; USACE
Potential funding sources	USACE
Time line	5 years

Action 6.4.3-9: Maintain higher walkways over dunes to eliminate gaps in dune protection or install hurricane straps to mitigate the entrances.	
Assessing the Risk	
Hazard(s) addressed	Coastal Erosion; Flood, Flash Flood, Ice Jam; Hurricane, Tropical Storm, Nor'easter; Climate Change
Risk finding	Breach in dunes due to walkways; walkways allowed flood waters to flow beyond the dunes
Describing the Action	
Action category	Natural Systems Protection
Action type	Natural Resource Protection
Action description	Maintain higher walkways over dunes to eliminate gaps in dune protection or install hurricane straps to mitigate entrances from allowing coastal flooding to coming through dunes
Existing, future &/or NA	Fill in dune system and provide dune walkovers in the future
Evaluating the Action	
Losses avoided (i.e., benefits)	
Cost estimate	N/A
Cost effectiveness (i.e., benefit/cost)	
Technical	Technically feasible.
Political	There is pressure from top government officials such as Governor Chris Christie to provide full dune protection in order to better protect all the homeowners on the barrier islands.
Legal	Pending lawsuits are expected due to controversy over the easement.
Environmental	No adverse environmental effects from dunes.
Social	Adversely impacts view of many beachfront property owners; private beachfront owners fear that their beaches will become public beaches
Administrative capability	Borough has sufficient capacity and experience to administer this action
Local champion	Local champion is the borough engineer that has taken the lead on coordinating mitigation within the community.
Other community objectives	
Implementing the Action	
Priority	High
Local planning mechanism	Hazard Mitigation Plan
Responsible party	Bay Head Borough Engineer
Potential funding sources	HMGP, CDBG, USACE
Time line	1 year

Action 6.4.3-10: Maintain Fall Dune grass planting	
Assessing the Risk	
Hazard(s) addressed	Coastal Erosion; Flood, Flash Flood, Ice Jam; Hurricane, Tropical Storm, Nor'easter; Climate Change
Risk finding	Flood risk in community and past occurrences of dune breaching
Describing the Action	
Action category	Natural Systems Protection
Action type	Natural Resource Protection
Action description	Plant dune grass to strengthen the ability of the dune to stay in place and protect community form flood related hazards
Existing, future &/or NA	Existing maintenance program
Evaluating the Action	
Losses avoided (i.e., benefits)	
Cost estimate	N/A
Cost effectiveness (i.e., benefit/cost)	
Technical	Technically feasible.
Political	No adverse political ramifications are expected
Legal	No legal issues are anticipated
Environmental	Positive environmental benefits from dune habitat
Social	Does not adversely affect any particular social group. Perceived by the public to be beneficial because the dunes protect the property and residents in the Borough
Administrative capability	Borough has sufficient capacity and experience to administer this action
Local champion	Local champion is the residents who want protection for their homes and the Boy Scouts, who volunteer each year to carry out the planting
Other community objectives	
Implementing the Action	
Priority	High
Local planning mechanism	Hazard Mitigation Plan
Responsible party	Bay Head Borough Engineer
Potential funding sources	Local, Boy Scouts, donations.
Time line	1 year

Action 6.4.3-11: Continue participation in CRS program; consider upgrading to the next class level	
Assessing the Risk	
Hazard(s) addressed	Coastal Erosion; Flood, Flash Flood, Ice Jam; Hurricane, Tropical Storm, Nor'easter; Climate Change
Risk finding	Flooding has been an ongoing problem for Bay Head Borough residents
Describing the Action	
Action category	Education and Awareness Program
Action type	Public Education and Awareness
Action description	Continue participation in CRS program and consider upgrading to the next class level to complete pro-active floodplain management and assist residents with flood insurance costs
Existing, future &/or NA	Existing program to continue in the future
Evaluating the Action	
Losses avoided (i.e., benefits)	
Cost estimate	N/A
Cost effectiveness (i.e., benefit/cost)	
Technical	Technically feasible.
Political	Politically acceptable and encouraged in order to reduce flood insurance premiums for residents.
Legal	No legal issues anticipated.
Environmental	No adverse environmental effects from participation in CRS
Social	Does not adversely affect any particular social group. Perceived by the public to be a good thing because the participation provides a reduction in insurance premiums.
Administrative capability	Borough has sufficient capacity and experience to administer this action
Local champion	Local champion is the Borough and especially the CRS coordinator.
Other community objectives	
Implementing the Action	
Priority	High
Local planning mechanism	Hazard Mitigation Plan
Responsible party	Bay Head Borough
Potential funding sources	Bay Head Borough; HMGP, FEMA.
Time line	5 years

Action 6.4.3-12: Considering new alert system, such as Reverse 911	
Assessing the Risk	
Hazard(s) addressed	All
Risk finding	Borough had difficulty reaching residents during emergency situations and disasters.
Describing the Action	
Action category	Education and Awareness Program
Action type	Public Education and Awareness
Action description	Develop new alert system, such as Reverse 911, to assist in communication for all hazards
Existing, future &/or NA	New communication/alert system to consider for the future
Evaluating the Action	
Losses avoided (i.e., benefits)	
Cost estimate	N/A
Cost effectiveness (i.e., benefit/cost)	
Technical	Technically feasible.
Political	Politically acceptable and encouraged in order to reach all residents with crucial information.
Legal	No legal issues anticipated.
Environmental	No adverse environmental effects from the outreach program.
Social	Does not adversely affect any particular social group; perceived by the public to be beneficial because the Reverse 911 system helps to keep residents alert and informed.
Administrative capability	Borough has sufficient capacity and experience to administer this action
Local champion	Local champion is the Bay Head Borough Police Department.
Other community objectives	
Implementing the Action	
Priority	High
Local planning mechanism	Hazard Mitigation Plan
Responsible party	Bay Head Borough
Potential funding sources	Bay Head Borough; HMGP, FEMA.
Time line	5 years

Action 6.4.3-13: Maintain Police Department Facebook page	
Assessing the Risk	
Hazard(s) addressed	All
Risk finding	Borough has had difficulty reaching residents during emergency situations and disaster.
Describing the Action	
Action category	Education and Awareness Program
Action type	Public Education and Awareness Program
Action description	Maintain and improve information on Facebook to reach community members effectively before, during, and after disasters
Existing, future &/or NA	Existing outreach program to continue in the future
Evaluating the Action	
Losses avoided (i.e., benefits)	
Cost estimate	Staff time to keep page updated.
Cost effectiveness (i.e., benefit/cost)	
Technical	Technically feasible.
Political	Politically acceptable and encouraged in order to communicate reach all residents with crucial information.
Legal	No legal issues anticipated.
Environmental	No adverse environmental effects from the outreach program.
Social	Does not adversely affect any particular social group. Perceived by the public to be a good thing because the Facebook page helps to keep residents alert and informed and allows them to communicate information to the police department in return.
Administrative capability	Borough has sufficient capacity and experience to administer this action
Local champion	Local champion is the Bay Head Borough police department
Other community objectives	
Implementing the Action	
Priority	High
Local planning mechanism	Hazard Mitigation Plan
Responsible party	Bay Head Borough police department
Potential funding sources	Bay Head Borough, State, HMGP
Time line	5 years

Action 6.4.3-14: Continue Police outreach programs in schools	
Assessing the Risk	
Hazard(s) addressed	All
Risk finding	Risk and interest in risk changes. Police can tailor message to current and local risk needs based on any hazard.
Describing the Action	
Action category	Education and Awareness Program
Action type	Public Education and Awareness
Action description	Continue Police outreach programs in schools to include children in outreach and improve families capability for disaster mitigation, preparedness, response and recovery
Existing, future &/or NA	Existing outreach program to continue in the future
Evaluating the Action	
Losses avoided (i.e., benefits)	
Cost estimate	N/A
Cost effectiveness (i.e., benefit/cost)	
Technical	Technically feasible.
Political	Politically encouraged to better educate young students and help them make better decisions.
Legal	No legal issues anticipated.
Environmental	No adverse environmental effects from the outreach program.
Social	Does not adversely affect any particular social group. Police can tailor message to current and local risk needs based on any hazard as trusted local official.
Administrative capability	Borough has sufficient capacity and experience to administer this action
Local champion	Local champion is the Bay Head Police Department and schools.
Other community objectives	
Implementing the Action	
Priority	High
Local planning mechanism	Hazard Mitigation Plan
Responsible party	Bay Head Borough Police Department and Schools
Potential funding sources	Bay Head Borough
Time line	5 years

Action 6.4.3-15: Start quarterly emergency management town hall meetings	
Assessing the Risk	
Hazard(s) addressed	All
Risk finding	Borough had difficulty making residents aware of emergencies and preparations and reaching residents during emergency situations and disasters.
Describing the Action	
Action category	Education and Awareness Program
Action type	Public Education and Awareness
Action description	Maintain, improve, and expand education and awareness programs to provide effective and relevant information to community members
Existing, future &/or NA	Existing outreach program to continue in the future
Evaluating the Action	
Losses avoided (i.e., benefits)	
Cost estimate	Staff time for meetings
Cost effectiveness (i.e., benefit/cost)	
Technical	Technically feasible.
Political	Politically acceptable and encouraged in order to increase awareness of emergency preparation
Legal	No legal issues anticipated.
Environmental	No adverse environmental effects from the outreach program.
Social	Does not adversely affect any particular social group. Perceived by the public to be a good thing because meetings are educational and help to give residents awareness.
Administrative capability	Borough has sufficient capacity and experience to administer this action
Local champion	Local champion is the Bay Head Borough.
Other community objectives	
Implementing the Action	
Priority	High
Local planning mechanism	Hazard Mitigation Plan
Responsible party	Bay Head Borough
Potential funding sources	N/A
Time line	5 years

Action 6.4.3-16: Maintain borough website; continue to update	
Assessing the Risk	
Hazard(s) addressed	All
Risk finding	Borough had difficulty making residents aware of emergencies and preparations and reaching residents during emergency situations and disasters.
Describing the Action	
Action category	Education and Awareness Program
Action type	Public Education and Awareness Program
Action description	Maintain and improve information on website to reach community members effectively before, during, and after disasters
Existing, future &/or NA	Existing outreach program to continue in the future
Evaluating the Action	
Losses avoided (i.e., benefits)	
Cost estimate	Staff time for updating the site
Cost effectiveness (i.e., benefit/cost)	
Technical	Technically feasible.
Political	Politically acceptable and encouraged in order to increase awareness of emergency preparation
Legal	No legal issues anticipated.
Environmental	No adverse environmental effects from the outreach program.
Social	Does not adversely affect any particular social group. Perceived by the public to be a good thing because the website allows for better communication between the borough and the residents.
Administrative capability	Borough has sufficient capacity and experience to administer this action
Local champion	Local champion is Bay Head Borough.
Other community objectives	
Implementing the Action	
Priority	High
Local planning mechanism	Hazard Mitigation Plan
Responsible party	Bay Head Borough
Potential funding sources	N/A
Time line	5 years

PROJECTS IDENTIFIED IN THE BOROUGH OF BAY HEAD MUNICIPAL PUBLIC ACCESS PLAN

Based on the existing challenges and opportunities for public access in the Borough of Bay Head, the *Municipal Public Access Plan* has identified several high- to mid-priority projects. These projects may be strategized in a coordinated effort with other Borough projects through the SRPR.

1. Provide handicap access every half-mile;
2. Create vehicular access for emergency vehicles, as designated in Section 75-3 of the Borough's Beaches Ordinance;
3. Provide exterior public restrooms at the new municipal building in the summer;
4. Install signage to identify public access areas; and

5. Create plan for public access to the Bay on the south side of the Borough, which could be through a private-public partnership.

PROJECTS IDENTIFIED BY THE PUBLIC

Preliminary projects cited by members of the public during public meetings and hearings on the draft SRPR include:

1.

PROJECTS RECOMMENDED IN BAY HEAD STRATEGIC RECOVERY PLANNING REPORT

Projects identified by the Borough and the public during the strategic recovery planning process in the Borough of Bay Head can be divided into two categories: (1) Mitigation, and (2) Resiliency. Mitigation projects relate to physical alterations to natural or manmade features such as the construction of dunes, elevation of roads, bridges, utilities and buildings, or improvements to stormwater management facilities. Resiliency projects relate to planning activities that look ahead to plan for increased preparedness and protection against future storm events or measures intended to prevent damage to vulnerable properties and facilities, particularly for facilities where elevation above the flood elevation is not feasible.

The matrices that follow provide the recommended projects for Mitigation and Resiliency for the Borough of Bay Head. Mitigation projects incorporate those recommended in the Ocean County HMP and add projects as appropriate from the list of projects identified by the public above. Resiliency projects relate specifically to the Post Sandy Recovery Planning Assistance Grants of the NJDCA for which this SRPR is a prerequisite.

Altogether, these Planning documents and projects earn the Borough more Community Rating System (CRS) points. The Borough of Bay Head entered the CRS program on October 1, 1993 and was effective October 1, 1998. The Borough's Class 6 designation earns a 20 percent discount for SFHA and 10 percent discount for non-SFHA properties[20].

The following projects have been considered Phase II projects in other communities in New Jersey and Ocean County.

NEIGHBORHOOD PLANS

[20] Table 5.6-1. "Participating CRS Communities in New Jersey." State of New Jersey 2014 Hazard Mitigation Plan. Prepared by Tetra Tech, Inc.

Noteworthy among the projects recommended for the second phase of the NJDCA Planning Assistance Grants through the Department of Housing and Urban Development (HUD) are three Neighborhood Plans. The purpose of the Community Development and Neighborhood Plans is to prepare, modify or replace plans for local neighborhoods or specific areas within the municipality (i.e. Redevelopment or Rehabilitation Plans, Economic Development Plans and Strategies, Historic District Plans and Open Space/Recreation Plans). The maximum grant award for each plan is $50,000.

The outlined neighborhoods, as shown on Map 12 below, have been identified based on common attributes and challenges in each respective area, specifically regarding one of the major bodies of water in the Borough.

Figure 8: Houses and beach along East Avenue (Google Streetview, Aug. 2013)

One of the neighborhood plans addresses the vulnerable portions of the Beachfront, which includes the area along East Avenue and eastward. East Avenue is a low-speed north-to-south road extending from Osborne Avenue near the northern municipal border with Point Pleasant Beach Borough to the southern municipal border with Mantoloking Borough. This neighborhood is mostly characterized by large single-family residential oceanfront properties, many of which are summer homes, and falls between the R-100 zone to the east and R-50 zone to the west of East Avenue. During Superstorm Sandy, the Beachfront area experienced the worst damage directly on the ocean.

Figure 9: Johnson Street at Bay Head Harbor in Bayfront (Google Streetview, August 2014)

In the southwest of the Borough, west of East Avenue and generally south of Meadow Avenue (west of Scow Ditch) and Forsyth Street (east of Scow Ditch), the *Bayfront* neighborhood occupies the area along Bay Head Harbor/Barnegat Bay. The marina on Lake Avenue and Bay Head Yacht Club on Metcalfe Street are also included in this area. The focus of this neighborhood is on the Bay, which experienced a very unique set of issues and flooding from Superstorm Sandy. The Bay is connected by Scow Ditch to Twilight Lake and both are estuarine waterbodies; however, the Bayfront neighborhood fronts on navigable water, whereas Twilight Lake and Scow Ditch are not. This overwhelmingly single-family residential neighborhood is also divided up into the R-50 zone in the interior and R-100 zone along the water, with some spot B&B and B-2 zoning. The Bay is the neighborhood's core asset, as well as the cause of major tidal flooding.

Figure 10: Bridge Avenue Bridge over Scow Ditch (Google Streetview, Aug. 2014)

The section of the Borough, from Forsyth Street and Meadow Avenue in the south; the Borough of Bay Head-Borough of Point Pleasant Beach Municipal Boundary to the north; Route 35 in the east; and Western Avenue in the west, is known as the *Twilight Lake* Neighborhood. Twilight Lake, for which the neighborhood is named, is a medium-sized estuarine body of water that is connected to the Bay via Scow Ditch – a narrow canal that runs north to south and separates the Borough into east and west.

Both Twilight Lake and Scow Ditch are centrally located within the neighborhood that simultaneously serves as a focal point and a corridor for public access and open space. Although they are connected to the Bay and essentially the same body of water hydrologically, Scow Ditch and Twilight Lake are unnavigable by motorized watercraft and also provide a unique set of challenges. During Superstorm Sandy, the surge of floodwater from the Bay bottlenecked in Scow Ditch and overflowed into the neighborhood and Twilight Lake, carrying with it debris.

The Twilight Lake neighborhood is the most densely developed within the Borough and lies mostly within the Bay Head Historic District with a mix of residential R-50 zone and commercial B-1 and B-2 zones. The neighborhood is also unique to the Borough because it contains the "business district" in Bay Head. The commercial business area is fairly small and generally found along Bridge Avenue and Mount Street between Lake Avenue and Main Avenue. Municipal services, including the Borough Hall, Police and Fire Headquarters, and Bay Head Elementary School are also located in this neighborhood.

Figure 11: Lake Avenue homes along Twilight Lake (east) (Google Streetview, Aug. 2013)

The northwestern part of the neighborhood is partially occupied by wetlands and New Jersey Transit Railroad. The NJ Transit railroad station is located near the northern border with Point Pleasant Beach along Osborne Avenue, while the elementary school flanks the southern border of the neighborhood.

The 2003 Master Plan Reexamination Report indicates that sidewalks are an important asset in the community and identifies proposed sidewalk locations for both high and low priority throughout the Borough. The Neighborhood Plans can address these locations and funding for improvement projects, such as sidewalks.

Additional tasks and projects that may compliment the Bay Head Complete Streets Bicycle and Pedestrian Plan include: Wayfinding and trail signage study; and mapping speed limits and one-way streets with neighborhood destinations

The Plans may also review the existing zoning and streetscape and make recommendations to address overbuilding/excessive utilization of land, which was noted as problem and recommended change in 2003. The proposed Neighborhood Plans would recommend traffic improvements, including improvements to roads, intersections, sidewalks, and bike lanes, and would provide proactive standards for the rehabilitation and development of the business district and residential neighborhoods, as well as potential flood mitigation strategies along the Borough-owned floodplain lands to protect the Borough from future flooding and sea level rise.

Map 12: Bay Head Neighborhood Plan

Hazard Mitigation Plan

Hazard mitigation is defined as "sustained action taken to reduce or eliminate long-term risk to life and property," and involves planning, policy change, programs, projects, and other activities that can mitigate the impacts of hazards on a community or defined area. Mitigation strategies rely on many bodies of influence, including businesses, local, state, and federal government, and property owners.

The Borough of Bay Head has participated in the 2014 Ocean County Hazard Mitigation Plan. However, this is the minimum requirement for receiving points toward the Borough's CRS (Community Rating System) rating through the National Flood Insurance Program (NFIP) of FEMA.

It is recommended that the Borough of Bay Head pursue funding for a Hazard Mitigation Plan (HMP), which will provide more in-depth analysis, recommendations, and action planning for all Borough-specific hazards. This will help to increase the Borough's CRS rating and increase the Borough's leverage to receive funding for identified capital improvement projects.

Additionally, FEMA has acknowledged the impact of climate change by allowing communities to incorporate Sea Level Rise (SLR) into eligible Hazard Mitigation Proposals and associated projects. To achieve a greater level of risk reduction, the Borough can account for the effects of sea level rise in the mitigation project design and associated Benefit-Cost Analysis (BCA), which incorporates the Design Flood Elevation (DFE) as the post-mitigation event, and the amount of projected sea level rise is added to the respective Stillwater Elevations (SWEL) and the Base Flood Elevation (BFE). Adding sea level rise to the SWELs shifts the risk analysis to expected future flood conditions, increasing the likelihood that floodwaters reach a certain height[21]. Therefore, the estimated sea level rise should be added to the current 10-, 25-, 50-, and 100-year flood elevations for the Borough.

Whereas the Hazard Mitigation Plan and sea level rise impacts the Borough as a whole, to the extent that sea level rise and related mitigation projects are neighborhood-specific, they should be referenced in the individual Neighborhood Plans identified above, using a HAZUS model to evaluate for specific projects. The HAZUS Model is a software tool provided by FEMA to allow Planners to carry out flood hazard analyses.

Floodplain Management Plan

FEMA defines Floodplain Management as the operation of a community program of preventive and corrective measures to reduce the risk of current and future flooding, resulting in a more resilient community. High standards for floodplain management will create safer, stronger, and more resilient communities.

[21] Incorporation of Sea Level Rise in Hazard Mitigation Programs. Memorandum for: Region II State NFIP Coordinators and State Hazard Mitigation Officers. Moriarty, Michael F. FEMA. March 31, 2016.

Due to both regular flooding events and severe storm surge during Superstorm Sandy, which inundated nearly the entire Borough of Bay Head, it is recommended that the Borough pursue funding for a Floodplain Management Plan.

A plan for capital improvements for stormwater and flood hazard mitigation, specifically, can reduce the costs associated with cleanup and rebuilding after future storms and sea level rise. The Plan can address the pump pipe from Point Pleasant into Twilight Lake in Bay Head and the flooding that occurs in the area surrounding the lake during regular storm events.

After Superstorm Sandy, Twilight Lake and Scow Ditch were flooded and littered with debris, silt, and sand. Twilight Lake, which is owned by the State of New Jersey was not dredged and only cleaned of major debris. As a result, extra silt in the canal and in drainage pipe may be responsible for backing up water in the lake and exacerbated flooding.

Additionally, a Floodplain Management Plan can explore the concept of a "living shoreline" used in parts of the Borough. Hardscape man-made barriers, such as bulkheads, jetties, and revetment walls, can often exacerbate erosion and push floodwater elsewhere rather than absorb the water. Living shorelines, on the other hand, which include wetlands, are a better long-term alternative to impermeable barriers that allows the land and water to coexist while averting major damage during flooding events. Living shorelines use gentle slopes with sediment, sand, and small rocks, and are anchored by native coastal vegetation.

The Borough could experiment with replacing damaged or unnecessary bulkheads that are not directly protecting improved properties in strategic locations with a living shoreline, such as the one shown below. This should be attempted in areas where it does not interfere with neighboring properties, boat traffic, or boat launching.

Figure 12: Example of "Living Shoreline" (Courtesy: Virginia Institute of Marine Science, College of William & Mary, 2016)

Small lots, street-ends, and land adjacent to bulkheads that are insufficient to build upon, especially those already owned by the Township, and public right-of-ways along Twilight Lake provide an exceptional opportunity to add living shorelines and/or passive public recreational space.

Due to the vulnerability of the Borough of Bay Head to chronic and acute coastal and stormwater flooding from multiple sources, the Borough is considering a Municipal Flood Resiliency Assessment. The firm Matrix has proposed to evaluate the Borough's flooding vulnerabilities and to provide recommendations for pursuing flood mitigations. It is envisioned that the Study can provide a blueprint for the Borough's flood mitigation strategy moving forward. The Municipal Flood Resiliency Assessment is recommended to complement and be coordinated with the Hazard Mitigation Plan and Floodplain Management Plan.

The Study will have the following components:

Summary of Existing Information – Matrix will gather existing, available information, including topographic/utility surveys, accounts of prior flooding, engineering drawings (municipal, NJDOT, Corps, private shore protection, etc.), and engineering studies (FEMA, Corps, NJDOT, etc.). This will include a public meeting concerning the matter to hear residents' concerns and their unique flooding conditions and a summary of existing studies and their findings.

Flood Risk Assessment – Based upon existing information, supplemented with Matrix field investigations of the Borough, Matrix will prepare a flood risk assessment for the Borough, highlighting flooding issues of concern. The findings will be "map-based" and will present a visually-accessible means of identifying flood vulnerabilities. The evaluation will consider flooding from multiple sources, including Atlantic Ocean, Barnegat Bay/canal, stormwater, and pump stations.

Flood Mitigation Alternatives & Recommendations – The consultant will identify and comment upon available alternatives for flood mitigation. The evaluation will include, but not be limited to the following:

- Infrastructure improvements
- Maintenance recommendations
- Shore protection alternatives
- Local and regional planning initiatives
- Third party improvements (e.g. NJDOT, Corps, NJT)
- Response planning

Recommendations will be based upon input from the Borough and will include consideration of estimated costs, regulatory concerns, local priorities, and other considerations.

Funding Sources – The consultant will identify available local, state and federal funding sources for recommended improvements, including grants, low-interest loans, and other forms of financing. The estimated fee is $15,000.

Repetitive Loss Area Analysis

A Repetitive Loss Area Analysis (RLAA) is typically completed in conjunction with the Floodplain Management Plan and Hazard Mitigation Plan described above. The RLAA further evaluates the risk to the properties identified earlier as repetitive losses.

According to data from the Ocean County Hazard Mitigation Plan, there are forty-eight such properties in the Borough of Bay Head as of 2013 – up from nine that were identified by the Borough in 1992. These properties pose a tremendous economical, health, and safety risk to the residents and the Borough as a whole. The RLAA can make recommendations as to how to address and manage such properties to reduce risk. The preparation of the RLAA can also provide additional points for the Borough's CRS program.

Master Plan Update

The most recent Master Plan Reexamination Report for the Borough of Bay Head was adopted in 2003 and prior to that, a Master Plan Reexamination Report was adopted on February 19, 1997.

Although the overall character of the Borough has remained unchanged, the impact of Superstorm Sandy in 2012 – four years prior to this Plan – has had long-lasting effects on the Borough that have altered demographics, housing units, public/government services, and regulations in building heights and floodplains. Superstorm Sandy has completely changed assumptions that were previously made and, therefore, it is recommended that the Borough of Bay Head pursue a Master Plan Update or Reexamination Report.

The N.J. Department of Community Affairs (DCA) will award a maximum grant of $50,000 for Municipal Land Use Law Comprehensive Plans, Reexamination Reports, Plan Elements, Community Resiliency Plans, and Master Plan Re-examination Reports. The purpose of such a grant is to modify or replace existing Master Plans or Master Plan Elements to address Post Sandy issues or establish Post Sandy strategies and policies.

Many of the problems identified in the 2003 Master Plan Reexamination Report are outdated or exacerbated by the impact of Sandy and new problems have arisen. For example, vacant lots posed a challenge to the Borough in 2003. With extreme property damage, the need to rebuild, and changes in regulations since Superstorm Sandy, the challenges have changed

Additionally, the 2003 Reexamination Report notes that changes in assumptions, policies, and objectives in the Borough found that a major portion of the Borough meets the criteria for establishment of an historic district. This was then noted as a recommended change. Since 2003, the majority of the Borough was designated as an historic district – one of the largest of its kind – and can be seen in Map 13. This designation can be beneficial for the Borough to receive additional grant funding for projects related to historic properties in flood hazard areas and to rebuild damaged historic buildings.

Changes since 2003 and the ideas that come out of the Master Plan Update should then inform and be reflected in the updated Zoning Regulations.

Map 13: Historic Districts in Bay Head as of 2011

Zoning Regulations Update/Design Standards

Zoning Regulations will be informed by an update to the Borough's Master Plan. As previously stated, changes in federal regulations, such as Base Flood Elevation (BFE), have impacted the Borough's property build-out, including the way in which it can regulate bulk standards, such as building height and setbacks.

After Superstorm Sandy, many properties needed to be rebuilt, but were either previously non-conforming due to the age of the structures, or were no longer conforming due to the changes in requirements.

Additionally, there are few commercial properties in the Borough and many experienced severe property damage from Sandy, including five non-residential repetitive losses. Commercial businesses have come back into operation after Sandy but have had a difficult time surviving in the Borough over the past few years.

One new development and one existing property have been proposed with design elements to raise properties out of the flood zone and to provide public/semi-public access to the waterfront. The two properties are between the application and development phases. Both properties are adjacent and are located within the Neighborhood in the B-1 General Business Zone.

The impacts of these projects on the streetscape, accessibility, and flooding should be studied and, if successful, used as a starting point or replicated in the Borough's zoning standards. Properties should be evaluated for the neighborhood and zoning within which they lie, and then property owners could be given various options for design standards for floodproofing (dryproofing versus wetproofing), parking standards (screening versus lot or street parking), and streetscape, entry treatments, and landscape grading based on the results of effective projects that are already being built.

The elevation drawings and renderings from each project are shown below from Shopper's Village at Block 25, Lots 5, 6, 9 & 11 on Bridge Avenue; and Lake Avenue and from the Shopper's Wharf at Block 25, Lot 4 on Bridge Avenue along Twilight Lake.

Figure 13: Shopper's Village Elevation Drawings

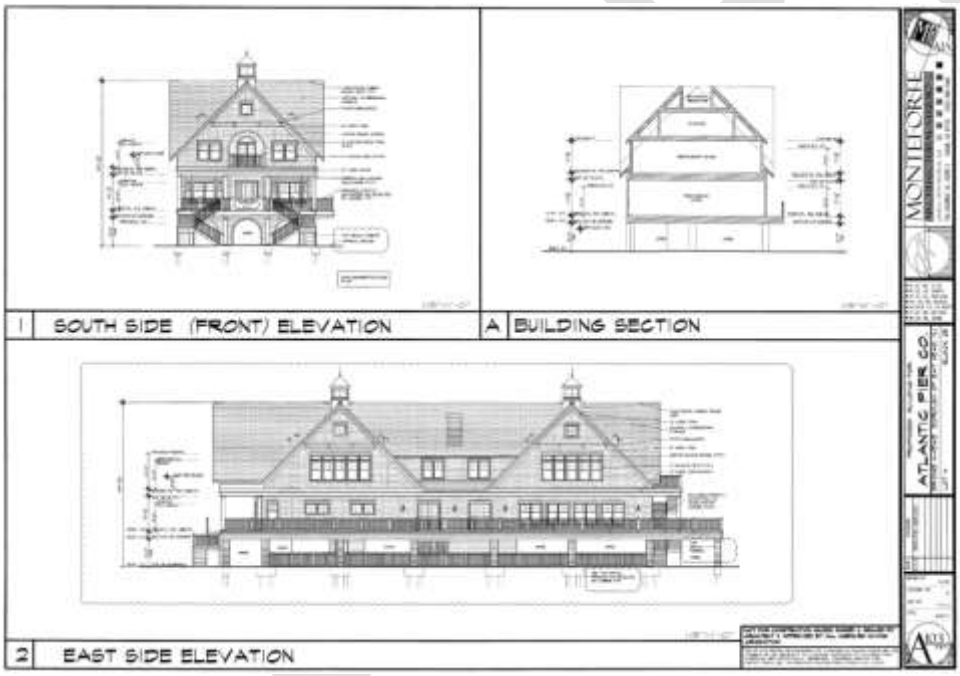


Figure 14: Shopper's Wharf Elevation Drawings

Figure 15: Aerial image showing location of Shopper's Village outlined in yellow and Shopper's Wharf under construction to the left

Figure 16: Plan Rendering of Shopper's Village – showing building layout, parking, and outdoor space

The NJDCA awards maximum grants of $50,000 for Design Standards to prepare community design standards specific to flood hazard areas that will foster communities of place and set standards for flood resiliency at the street level for public, residential, commercial and mixed-use buildings. This type of grant may allow the Borough to re-evaluate how its bulk standards impact the property buildout and

streetscape and how the community is impacted as a whole. This is especially important with homes generally becoming much larger in height and floor area, despite the lots remaining the same.

Green Building and Environmental Sustainability Plan Element

The Green Building and Environmental Sustainability Plan Element (GBESE) is an element that is adopted into the Municipal Master Plan, as permitted by the amended Municipal Land Use Law (MLUL) in August 2008.

The MLUL describes the GBESE as such: "A green buildings and environmental sustainability plan element, which shall provide for, encourage, and promote the efficient use of natural resources and the installation and usage of renewable energy systems; consider the impact of buildings on the local, regional and global environment; allow ecosystems to function naturally; conserve and reuse water; treat storm water on-site; and optimize climatic conditions through site orientation and design."

According to Sustainable Jersey, the GBESE, like all Master Plan Elements, "is intended to guide land-use decisions and provide the basis for ordinances addressing sustainability and land use issues. For many communities, this element is a good first step at introducing sustainability concepts into local planning documents. Ultimately, it is most effective when towns take the additional step of infusing these concepts throughout each of the Elements. Guidance for doing so is under development. "[22]

The Borough of Bay Head, like other municipalities, has the authority to adopt laws and regulations to protect public health and welfare and to promote the general welfare in the community outside of the planning and zoning powers, such as environmental and health based regulations and ordinances, that pertain to all properties. These may include tree protection ordinances, stream corridor protection ordinances, recycling ordinances, wildlife protection ordinances, etc. The Borough currently has ordinances for Beaches and Parks and Wildlife Sanctuaries and Recycling.

The Borough's Master Plan lays a foundation for the local zoning and land ordinances that govern development and redevelopment. The Green Building and Environmental Sustainability Element guides land-use decisions and provides the basis for ordinances addressing sustainability and land use issues.

Capital Improvement Plan

The NJDCA awards grants up to $30,000 for Capital Improvement Plans. The Borough already has the municipal planning capability for a Capital Improvement Plan; however, the grant will be to prepare a 5-year Capital Improvement Plan that will focus municipal capital investment on public facilities, fleets,

[22] *Green Building and Environmental Sustainability Element*. Sustainable Jersey. Updated May 2012. Accessed April 1, 2016. http://www.sustainablejersey.com/actions-certification/actions/?type=1336777436&tx_sjcert_action%5BactionObject%5D=484&tx_sjcert_action%5Baction%5D=getPDF&tx_sjcert_action%5Bcontroller%5D=Action&cHash=59168d0c4fe4b82c3ec482e1f98ba5c2

and equipment to build community resiliency in plants and equipment (i.e. scheduling and funding items such as elevation of generators above flood hazard elevations, contingency plans for storing and moving rolling stock and emergency equipment acquisition plans).

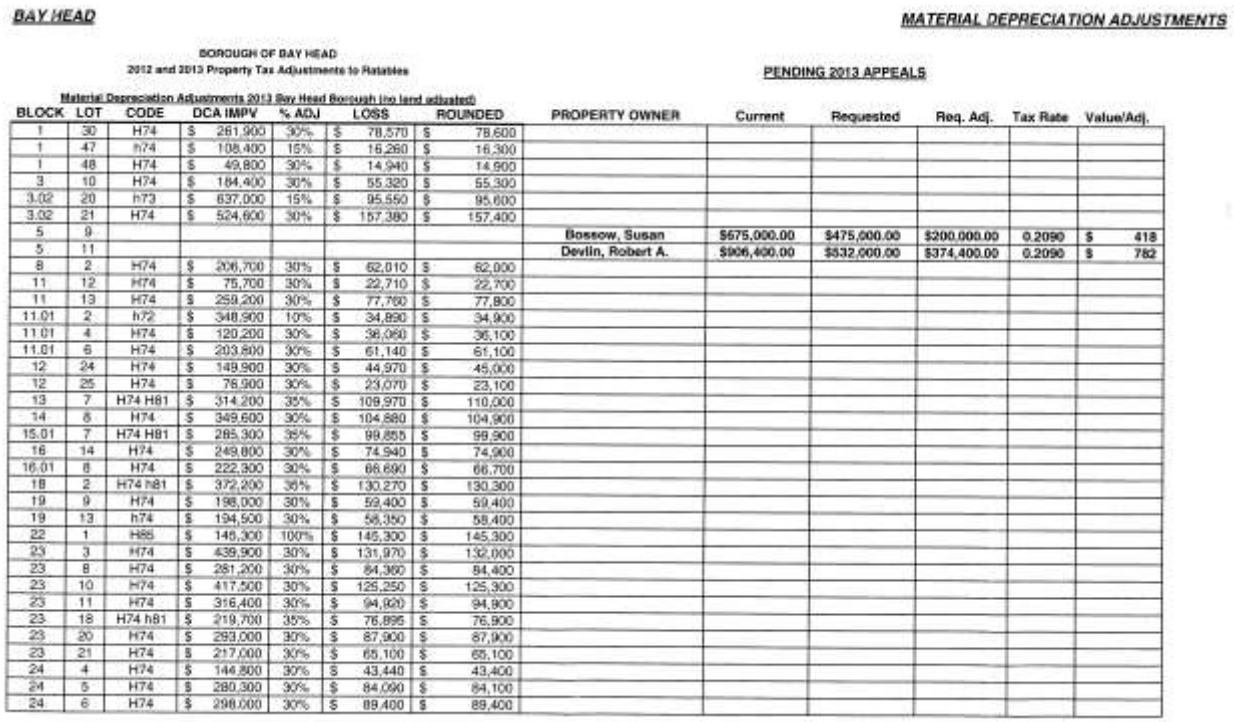
An updated Capital Improvement Plan should, therefore, focus on projects related to flood management, using analysis and recommendations provided in the Hazard Mitigation Plan and Floodplain Management Plan.

TABLE 12: BOROUGH OF BAY HEAD PHASE II PLANNING PROJECTS

Borough of Bay Head Post Disaster Recovery Planning Implementation Matrix – Phase II Planning Projects							
Recovery Project		Responsible Entity	Funding Source	Duration	Recovery Value		
					Need	Feasible	Sustainable
1.	Master Plan Update	Borough of Bay Head	NJDCA	Short (12 months)	High	High	High
2.	Update Zoning Regulations/Design Standards with recommendations from Master Plan Update and Neighborhood Plans	Borough of Bay Head	NJDCA	Short (12 months)	High	High	High
3.	Elevate homes and public buildings that remain in the floodplain	Borough of Bay Head	Property owners, Borough, FEMA	Moderate (12-24 months)	High	Mod	Mod
4.	Prepare Hazard Mitigation Plan for Borough including evaluation of Sea Level Rise and FEMA Benefit-Cost Tool	Borough of Bay Head	NJDCA	Short (12 months)	High	High	High
5.	Prepare Floodplain Management Plan	Borough of Bay Head	NJDCA	Short (12 months)	High	High	High
6.	Prepare Repetitive Loss Area Analysis (RLAA) for 48 Repetitive Loss Properties	Borough of Bay Head	NJDCA	Short	High	High	High
7.	(4) Neighborhood Plans – Beachfront; Bayfront; Twilight Lake; and Core/Scow Ditch	Borough of Bay Head	NJDCA (up to $50,000 each)	Short (12 months)	High	High	High
8.	Preparation and Adoption of Green Building & Sustainability Plan into Master Plan	Borough of Bay Head	Borough; ANJEC; Sustainable Jersey	Short (10-18 months)	High	High	High
9.	Prepare Capital Improvement Plan for flood mitigation and resiliency projects	Borough of Bay Head	NJDCA	Short (6 months)	High	High	High
10.	Implementation of Capital Improvement Projects	Borough of Bay Head	Borough, FEMA, NJDEP	Long	High	Mod	High
11.	Prepare Municipal Flood Resiliency Assessment	Borough of Bay Head	NJDCA, Local, State, & Federal	Short	High	High	High
12.	**INSERT OTHER PROJECTS PER PUBLIC REVIEW & COMMENT**						

APPENDIX I

Material Depreciation Adjustments for properties within the Borough of Bay Head for 2012 to 2013 Property Tax Adjustments to Ratables. Data was provided by the Borough of Bay Head.



BAY HEAD

MATERIAL DEPRECIATION ADJUSTMENTS

BOROUGH OF BAY HEAD
2012 and 2013 Property Tax Adjustments to Ratables

Material Depreciation Adjustments 2013 Bay Head Borough (no land adjusted)

BLOCK	LOT	CODE	DCA IMPV	% ADJ	LOSS	ROUNDED
1	30	H74	$ 261,900	30%	$ 78,570	$ 78,600
1	47	h74	$ 108,400	15%	$ 16,260	$ 16,300
1	48	H74	$ 49,800	30%	$ 14,940	$ 14,900
3	10	H74	$ 184,400	30%	$ 55,320	$ 55,300
3.02	20	h73	$ 637,000	15%	$ 95,550	$ 95,600
3.02	21	H74	$ 524,600	30%	$ 157,380	$ 157,400
5	9					
5	11					
8	2	H74	$ 206,700	30%	$ 62,010	$ 62,000
11	12	H74	$ 75,700	30%	$ 22,710	$ 22,700
11	13	H74	$ 259,200	30%	$ 77,760	$ 77,800
11.01	2	h72	$ 348,900	10%	$ 34,890	$ 34,900
11.01	4	H74	$ 120,200	30%	$ 36,060	$ 36,100
11.01	6	H74	$ 203,800	30%	$ 61,140	$ 61,100
12	24	H74	$ 148,900	30%	$ 44,670	$ 45,000
12	25	H74	$ 76,900	30%	$ 23,070	$ 23,100
13	7	H74 H81	$ 314,200	35%	$ 109,970	$ 110,000
14	8	H74	$ 349,600	30%	$ 104,880	$ 104,900
15.01	7	H74 H81	$ 285,300	35%	$ 99,855	$ 99,900
16	14	H74	$ 249,800	30%	$ 74,940	$ 74,900
16.01	8	H74	$ 222,300	30%	$ 66,690	$ 66,700
18	2	H74 h81	$ 372,200	35%	$ 130,270	$ 130,300
19	9	H74	$ 198,000	30%	$ 59,400	$ 59,400
19	13	h74	$ 194,500	30%	$ 58,350	$ 58,400
22	1	H85	$ 145,300	100%	$ 145,300	$ 145,300
23	3	H74	$ 439,900	30%	$ 131,970	$ 132,000
23	8	H74	$ 281,200	30%	$ 84,360	$ 84,400
23	10	H74	$ 417,500	30%	$ 125,250	$ 125,300
23	11	H74	$ 316,400	30%	$ 94,920	$ 94,900
23	18	H74 h81	$ 219,700	35%	$ 76,895	$ 76,900
23	20	H74	$ 293,000	30%	$ 87,900	$ 87,900
23	21	H74	$ 217,000	30%	$ 65,100	$ 65,100
24	4	H74	$ 144,800	30%	$ 43,440	$ 43,400
24	5	H74	$ 280,300	30%	$ 84,090	$ 84,100
24	6	H74	$ 298,000	30%	$ 89,400	$ 89,400

PENDING 2013 APPEALS

PROPERTY OWNER	Current	Requested	Req. Adj.	Tax Rate	Value/Adj.
Bossow, Susan	$675,000.00	$475,000.00	$200,000.00	0.2090	$ 418
Devlin, Robert A.	$906,400.00	$532,000.00	$374,400.00	0.2090	$ 782

BAY HEAD **MATERIAL DEPRECIATION ADJUSTMENTS**

BOROUGH OF BAY HEAD
2012 and 2013 Property Tax Adjustments to Ratables

PENDING 2013 APPEALS

Material Depreciation Adjustments 2013 Bay Head Borough (no land adjusted)

BLOCK	LOT	CODE	DCA IMPV	% ADJ	LOSS	ROUNDED	PROPERTY OWNER	Current	Requested	Req. Adj.	Tax Rate	Value/Adj.
24	8	H74	$ 273,900	30%	$ 82,170	$ 82,200						
24	9	H74	$ 600,700	30%	$ 180,210	$ 180,200						
24	13	h74	$ 176,700	30%	$ 53,010	$ 53,000						
24	19	H74	$ 215,900	30%	$ 64,770	$ 64,800						
25	5	H74	$ 207,800	30%	$ 62,340	$ 62,300						
25	6	H74 H81	$ 282,000	35%	$ 98,700	$ 98,700						
25	8	H74	$ 244,800	30%	$ 73,440	$ 73,400						
25	9	H74	$ 253,300	30%	$ 75,990	$ 76,000						
25	11	H74	$ 132,000	30%	$ 39,600	$ 39,600						
26	2	H74	$ 274,600	30%	$ 82,380	$ 82,400						
26	8	H74	$ 143,400	30%	$ 43,020	$ 43,000						
27	6	H74 H82	$ 393,400	50%	$ 196,700	$ 196,700	Clayton, James	$1,688,300.00	$842,200.00	$846,100.00	0.2090	$ 1,768
27	10	H84	$ 320,400	90%	$ 288,360	$ 288,400						
27	11	H81	$ 338,100	5%	$ 16,905	$ 16,900						
27	14	h72	$ 200,300	10%	$ 20,030	$ 20,000						
28	2	H74	$ 249,600	30%	$ 74,880	$ 74,900						
28	8	H72 H81	$ 336,700	15%	$ 50,355	$ 50,400						
28	9						Brunner, Robert	$1,005,800.00	??			
29	1	H74	$ 252,300	30%	$ 75,690	$ 75,700						
29	2	H74	$ 545,300	30%	$ 163,590	$ 163,600						
29	5	H74 H81	$ 594,300	35%	$ 208,005	$ 208,000						
29	11	H72 H81	$ 289,400	10%	$ 28,940	$ 28,900						
30	4	H74	$ 239,500	30%	$ 71,850	$ 71,900						
32	5	H74 H82	$ 268,600	50%	$ 134,300	$ 134,300						
32	11						Michaels, Paul	$2,660,300.00	??			
32	12	h74	$ 485,200	30%	$ 145,560	$ 145,600						
32	14						Bilanin, Alan	$2,281,800.00	??			
32	21	H72 H81	$ 601,700	15%	$ 90,255	$ 90,300						
32.01	15	H74 H83	$ 717,700	90%	$ 645,930	$ 645,900						
33	3	H74 H81	$ 473,900	35%	$ 165,865	$ 165,900						
33	4	h74 h82	$ 385,400	50%	$ 192,700	$ 192,700						
33	5	h72 h82	$ 405,000	30%	$ 121,500	$ 121,500						
33	6	H84	$ 384,100	90%	$ 345,690	$ 345,700						
33	7	h85	$ 528,000	100%	$ 528,000	$ 528,000						
33	8	H74	$ 583,100	30%	$ 174,930	$ 174,900						

BAY HEAD **MATERIAL DEPRECIATION ADJUSTMENTS**

BOROUGH OF BAY HEAD
2012 and 2013 Property Tax Adjustments to Ratables

PENDING 2013 APPEALS

Material Depreciation Adjustments 2013 Bay Head Borough (no land adjusted)

BLOCK	LOT	CODE	DCA IMPV	% ADJ	LOSS	ROUNDED	PROPERTY OWNER	Current	Requested	Req. Adj.	Tax Rate	Value/Adj.
34	3	H72 H81	$ 2,535,400	15%	$ 380,310	$ 380,300						
34	5	h72 h81	$ 715,300	15%	$ 107,295	$ 107,300						
34	6	h72 h82	$ 208,700	30%	$ 62,610	$ 62,600						
34	8	H72 H81	$ 497,100	10%	$ 49,710	$ 49,700						
34	9						344 East LLC	$1,984,600.00	??			
35	5	H72 H82	$ 465,100	30%	$ 139,530	$ 139,500						
35	10	H72 H83	$ 460,800	70%	$ 322,560	$ 322,600						
35	11	H74	$ 314,100	30%	$ 94,230	$ 94,200						
35	13	H72 H81	$ 573,500	15%	$ 86,025	$ 86,000						
37	1	H85	$ 478,800	100%	$ 478,800	$ 478,800						
37	2	H74 H83	$ 995,800	90%	$ 896,220	$ 896,200						
37	3	H74 H83	$ 1,006,900	90%	$ 906,210	$ 906,200						
38	4	H74 H82	$ 687,100	50%	$ 343,550	$ 343,600	Baurais Trust	$4,359,400.00	??			
39	2	H74 H82	$ 995,300	50%	$ 497,650	$ 497,700						
39	3	H74 H82	$ 1,688,400	50%	$ 844,200	$ 844,200						
39	4	H74 H82	$ 463,000	50%	$ 231,500	$ 231,500						
39	5	H74 H82	$ 534,400	50%	$ 267,200	$ 267,200						
40	1	h74	$ 1,780,200	30%	$ 534,060	$ 534,100						
40	2	H74	$ 2,229,100	30%	$ 668,730	$ 668,700						
40	3	H74 h81	$ 1,287,200	35%	$ 450,520	$ 450,500						
40	4	H74 H82	$ 916,600	50%	$ 458,300	$ 458,300						
40	5	H74 H82	$ 1,107,100	50%	$ 553,550	$ 553,600						
40	7	H74 H82	$ 1,612,400	50%	$ 806,200	$ 806,200						
41	8						Haarlander, George	$1,235,900.00	??			
41	12	H71	$ 291,600	5%	$ 14,580	$ 14,600						
41	15	H74	$ 291,100	30%	$ 87,330	$ 87,300						
43	10	H74 H81	$ 976,400	35%	$ 341,740	$ 341,700						
43	15	H74 h81	$ 245,500	35%	$ 85,925	$ 85,900						
43.01	8	h74	$ 207,600	30%	$ 62,280	$ 62,300						
44	1	H74	$ 203,300	30%	$ 60,990	$ 61,000						
45	1	H74	$ 206,600	30%	$ 61,980	$ 62,000						
45	6	H74	$ 271,200	30%	$ 81,360	$ 81,400						
45	8	H73	$ 441,900	15%	$ 66,285	$ 66,300						
45	10	h74 h81	$ 130,600	35%	$ 45,710	$ 45,700						
45	11	H74	$ 552,900	30%	$ 165,870	$ 165,900						

BAY HEAD **MATERIAL DEPRECIATION ADJUSTMENTS**

BOROUGH OF BAY HEAD
2012 and 2013 Property Tax Adjustments to Ratables

PENDING 2013 APPEALS

Material Depreciation Adjustments 2013 Bay Head Borough (no land adjusted)

BLOCK	LOT	CODE	DCA IMPV	% ADJ	LOSS	ROUNDED	PROPERTY OWNER	Current	Requested	Req. Adj.	Tax Rate	Value/Adj.
45	12	H74	$ 245,800	30%	$ 73,740	$ 73,700						
45	16	H74	$ 807,000	30%	$ 242,100	$ 242,100						
45	19	H74 HB1	$ 100,700	35%	$ 35,245	$ 35,200						
46	1	H74	$ 167,400	30%	$ 50,220	$ 50,200						
46	3	h73	$ 325,400	15%	$ 48,810	$ 48,800						
46	7	H73 HB1	$ 158,100	20%	$ 31,620	$ 31,600						
46	13	h74 hB1	$ 144,600	35%	$ 50,610	$ 50,600						
46	16	H74	$ 261,800	30%	$ 78,540	$ 78,500						
46	17	h74 hB1	$ 118,000	35%	$ 41,300	$ 41,300						
47	1	H74	$ 801,800	30%	$ 240,540	$ 240,500						
47	2	H74	$ 295,500	30%	$ 88,650	$ 88,700						
47	4	H74	$ 117,500	30%	$ 35,250	$ 35,300						
47	7	H74	$ 406,800	30%	$ 122,040	$ 122,000						
47	8	H74	$ 428,900	30%	$ 128,670	$ 128,700						
47	9	H74	$ 292,300	30%	$ 87,690	$ 87,700						
47	13	H74	$ 243,700	30%	$ 73,110	$ 73,100						
48	2	h74 hB2	$ 3,000,000	50%	$ 1,500,000	$ 1,500,000						
48	4	hB5	$ 316,500	100%	$ 316,500	$ 316,500						
48	5	hB5	$ 296,100	100%	$ 296,100	$ 296,100						
49	1	h74	$ 169,100	30%	$ 50,730	$ 50,700						
49	9	h74	$ 308,800	30%	$ 92,640	$ 92,600						
49	10	h74 hB1	$ 120,700	35%	$ 42,245	$ 42,200						
49	11	h74	$ 192,200	30%	$ 57,660	$ 57,700						
49	14	H74	$ 216,400	30%	$ 64,920	$ 64,900						
49	18	H74	$ 214,900	30%	$ 64,470	$ 64,500						
49	20	H74	$ 274,400	30%	$ 82,320	$ 82,300						
49	21	h74 hB1	$ 489,000	35%	$ 171,150	$ 171,200						
49	22	H74	$ 266,700	30%	$ 80,010	$ 80,000						
49	23	h74	$ 282,000	30%	$ 84,600	$ 84,600						
52	2	H74 HB1	$ 385,300	35%	$ 134,855	$ 134,900						
52	4	H74	$ 221,500	30%	$ 66,450	$ 66,500						
52	5	H74 HB2	$ 251,300	50%	$ 125,650	$ 125,700						
53	1	H74	$ 415,100	30%	$ 124,530	$ 124,500						
53	5	H74 HB1	$ 309,600	35%	$ 108,360	$ 108,400						
54	2	h74	$ 480,000	30%	$ 144,000	$ 144,000						

BAY HEAD **MATERIAL DEPRECIATION ADJUSTMENTS**

BOROUGH OF BAY HEAD
2012 and 2013 Property Tax Adjustments to Ratables

PENDING 2013 APPEALS

Material Depreciation Adjustments 2013 Bay Head Borough (no land adjusted)

BLOCK	LOT	CODE	DCA IMPV	% ADJ	LOSS	ROUNDED	PROPERTY OWNER	Current	Requested	Req. Adj.	Tax Rate	Value/Adj.
55	9	h74	$ 500,000	30%	$ 150,000	$ 150,000						
55	12	H74 HB3	$ 59,700	90%	$ 53,730	$ 53,700						
55	18	h73	$ 700,000	15%	$ 105,000	$ 105,000						
56	1	H74	$ 289,600	30%	$ 86,880	$ 86,900						
56	2	h74	$ 304,000	30%	$ 91,200	$ 91,200						
56	15	H74	$ 167,200	30%	$ 50,160	$ 50,200						
57	1	h74 hB1	$ 560,300	35%	$ 196,105	$ 196,100						
57	2	h74 hB1	$ 259,300	35%	$ 90,755	$ 90,800						
57	8	h73	$ 685,900	15%	$ 102,885	$ 102,900						
57	12	H74	$ 156,500	30%	$ 46,950	$ 47,000						
57	13	h72	$ 396,400	10%	$ 39,640	$ 39,600						
58	5	H74	$ 239,500	30%	$ 71,850	$ 71,900						
58	6	H74	$ 185,700	30%	$ 55,710	$ 55,700						
58	7	H74	$ 166,000	30%	$ 49,800	$ 49,800						
58	8	h74 hB1	$ 320,900	35%	$ 112,315	$ 112,300						
58	9	h74 hB1	$ 897,500	35%	$ 314,125	$ 314,100						
58	17	H74	$ 238,000	30%	$ 71,400	$ 71,400						
59	10	H74	$ 225,600	30%	$ 67,680	$ 67,700						
59	13	H74	$ 475,400	30%	$ 142,620	$ 142,600						
59	17	H74	$ 425,500	30%	$ 127,650	$ 127,700						
59	22						Campbell, Elizabeth	$1,061,000.00				
59	33	H72 HB1	$ 434,700	15%	$ 65,205	$ 65,200						
59	35	h72	$ 294,300	10%	$ 29,430	$ 29,400						
59	36	H72 HB1	$ 865,400	15%	$ 129,810	$ 129,800						
59	37	H74	$ 249,500	30%	$ 74,850	$ 74,900						
59	39	h74	$ 94,800	30%	$ 28,440	$ 28,400						
60	12						Heldrick, John	$2,128,200.00	??			
63	20						O'Connor, Martin	$2,672,200.00	??			
63	21						O'Connor, Martin	$1,748,000.00	??			
63	10	H72	$ 448,900	10%	$ 44,890	$ 44,900						
63	12	H81	$ 727,600	5%	$ 36,380	$ 36,400						
63	19	H72 H81	$ 302,000	15%	$ 45,300	$ 45,300						
64	1	h74	$ 3,850,000	30%	$ 1,155,000	$ 1,155,000						
64	3	h74 hB1	$ 2,282,500	35%	$ 798,875	$ 798,900	Gerhard, Peter	$6,424,500.00	$5,500,000.00	$924,500.00	0.2090	$ 1,932
66	3	h74	$ 1,078,600	30%	$ 323,580	$ 323,600						

BAY HEAD **MATERIAL DEPRECIATION ADJUSTMENTS**

BOROUGH OF BAY HEAD
2012 and 2013 Property Tax Adjustments to Ratables

PENDING 2013 APPEALS

Material Depreciation Adjustments 2013 Bay Head Borough (no land adjusted)

BLOCK	LOT	CODE	DCA IMPV	% ADJ	LOSS	ROUNDED	PROPERTY OWNER	Current	Requested	Req. Adj.	Tax Rate	Value/Adj.
65	7	h74 h81	$ 426,000	35%	$ 149,100	$ 149,100						
65	8	H74 H82	$ 736,800	50%	$ 368,300	$ 368,300						
66	2	H74	$ 870,400	30%	$ 261,120	$ 261,100						
66	4	H74 H82	$ 1,049,700	50%	$ 524,850	$ 524,900						
66	6	H74 H81	$ 770,000	35%	$ 269,500	$ 269,500						
66	7	H74 H81	$ 3,766,600	35%	$ 1,318,310	$ 1,318,300	Hartington J. Trust	$7,760,800.00	??			
66	9	H74 H83	$ 820,000	90%	$ 738,000	$ 738,000						
66	16	H74 H81	$ 1,988,800	35%	$ 696,080	$ 696,100						
66	16.01	H74 H82	$ 2,240,600	50%	$ 1,120,300	$ 1,120,300	Bay Head Property II LLC	$5,067,800.00	??			
66	20	H72 H82	$ 1,191,900	30%	$ 357,570	$ 357,600						
66	22	H85	$ 807,200	100%	$ 807,200	$ 807,200						
67	1	H74	$ 930,200	30%	$ 279,060	$ 279,100						
67	2	H74	$ 831,600	30%	$ 249,480	$ 249,500						
68	1	H74 H81	$ 1,600,000	35%	$ 560,000	$ 560,000						
68	4	H74 H81	$ 332,400	35%	$ 116,340	$ 116,300						
68	5	H74	$ 413,200	30%	$ 123,960	$ 124,000						
68	6	H74	$ 411,800	30%	$ 123,540	$ 123,500						
68	10	H74	$ 1,265,900	30%	$ 379,770	$ 379,800						
68	12	H74 H81	$ 519,100	35%	$ 181,685	$ 181,700						
68	13	H74	$ 387,000	30%	$ 116,100	$ 116,100						
69	1	H74	$ 1,600,000	30%	$ 480,000	$ 480,000						
69	5	H74	$ 382,800	30%	$ 114,840	$ 114,800						
69	12	H74	$ 505,100	30%	$ 151,530	$ 151,500						
70	2	H74 H81	$ 251,900	35%	$ 88,165	$ 88,200						
70	3	h81	$ 1,445,000	5%	$ 72,250	$ 72,300						
70	7	H74	$ 426,200	30%	$ 127,860	$ 127,900						
70	10	H74 H81	$ 1,060,600	35%	$ 371,210	$ 371,200						
70	12	H74	$ 236,300	30%	$ 70,890	$ 70,900						
70	13	H74 H81	$ 393,000	35%	$ 137,550	$ 137,600						
70	15	H74 H81	$ 359,800	35%	$ 125,930	$ 125,900						
70	17	H74 H81	$ 1,182,700	35%	$ 413,945	$ 413,900						
70	18	H74	$ 398,800	30%	$ 119,640	$ 119,600						
71	1	H74 H81	$ 410,000	35%	$ 143,500	$ 143,500						
71	3	H74 H81	$ 275,500	35%	$ 96,425	$ 96,400						
71	6	H74	$ 232,000	30%	$ 69,600	$ 69,600						

BAY HEAD **MATERIAL DEPRECIATION ADJUSTMENTS**

BOROUGH OF BAY HEAD
2012 and 2013 Property Tax Adjustments to Ratables

PENDING 2013 APPEALS

Material Depreciation Adjustments 2013 Bay Head Borough (no land adjusted)

BLOCK	LOT	CODE	DCA IMPV	% ADJ	LOSS	ROUNDED	PROPERTY OWNER	Current	Requested	Req. Adj.	Tax Rate	Value/Adj.
71	7	H74	$ 459,700	30%	$ 137,910	$ 137,900						
72	1	H74 H81	$ 479,600	35%	$ 167,860	$ 167,900						
72	3	H74	$ 267,600	30%	$ 80,280	$ 80,300						
72	4	H74 H81	$ 413,200	35%	$ 144,620	$ 144,600						
72	7	H74	$ 503,000	30%	$ 150,900	$ 150,900						
72	11	H74	$ 264,500	30%	$ 79,350	$ 79,400						
72	12	H74	$ 285,300	30%	$ 85,590	$ 85,600						
74	8	H74	$ 690,600	30%	$ 207,180	$ 207,200						
74	19	H74	$ 96,800	30%	$ 29,040	$ 29,000						
75	5						Friend, Suzanne	$875,000.00	$825,000.00	$50,000.00	0.2090	$ 105
75	8						Gallea, Christopher	$2,405,000.00	$1,993,000.00	$412,000.00	0.2090	$ 861
75	9	H72 H81	$ 467,200	15%	$ 70,080	$ 70,100						
75	10	H72 H81	$ 890,900	15%	$ 133,635	$ 133,600						
77	1	H74 H81	$ 330,000	35%	$ 115,500	$ 115,500						
77	3	H72 H81	$ 547,400	15%	$ 82,110	$ 82,100						
78	4	H74	$ 247,900	30%	$ 74,370	$ 74,400						
78	25	H74	$ 166,900	30%	$ 50,070	$ 50,100						
78	19	h74 h81	$ 462,800	35%	$ 161,980	$ 162,000						
78	20	H74	$ 237,500	30%	$ 71,250	$ 71,300						
79	1	h74 h81	$ 2,800,000	35%	$ 980,000	$ 980,000						
79	2	H74 H81	$ 1,350,000	35%	$ 472,500	$ 472,500	Millar, Lowell	$5,948,700.00	??			
80	3						Parker, George	$5,727,000.00	$4,747,000.00	$980,000.00	0.2090	$ 2,048
80	5						Kamine, Harold	$7,306,400.00	??			
81	1	H74 H81	$ 2,244,600	35%	$ 785,610	$ 785,600						
81	8	H74	$ 1,980,200	30%	$ 594,060	$ 594,100						
81	9	H81	$ 1,614,100	20%	$ 322,820	$ 322,800						
82	3	H74	$ 413,900	30%	$ 124,170	$ 124,200						
82	5	h74 h82	$ 284,800	50%	$ 142,400	$ 142,400	Mignon, Joseph S.	$1,379,000.00	??			
82	7						Jorge, Lionel	$1,469,200.00	??			

TOTAL: $ 43,743,800