



2017 Floodplain Management Plan

Borough of Point Pleasant
Ocean County, New Jersey

2017 Floodplain Management Plan

May 2017

Prepared for:

Borough of Point Pleasant
Ocean County, New Jersey

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*The original of this document was signed
and sealed in accordance with New Jersey Law*

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Executive Summary

This plan is intended to identify and assess flood hazards within Point Pleasant Borough, establish goals and objectives for floodplain management and resiliency, and to present a series of actions designed to minimize flooding and mitigate the impacts from flooding in the future. This Floodplain Management Plan was funded using Phase II- Post Sandy Planning Assistance Grant Funding from the New Jersey Department of Community Affairs and will be incorporated as an element of the Borough's Master Plan.

This plan has been organized according to the guidelines of the 2013 National Flood Insurance Program Community Rating System Coordinator's Manual to receive credit points in the FEMA Community Rating System Program and follows the 10-step planning process outlined in the manual. The planning process was conducted through a committee consisting of public members as well as Borough employees and officials. The committee met frequently throughout the planning process to discuss each step of the plan and provide input on suggested activities and actions.

To assess the problems and flood hazards impacting the Borough of Point Pleasant Borough, a review was done of all relevant planning studies, documents, and relevant zoning ordinances. Outside stakeholder agencies were contacted for input on the planning process. Historical flooding events, repetitive loss properties and known flood hazards were reviewed to determine problem areas within the Borough. Much of this work was completed utilizing the Borough's newly created Geographic Information Systems (GIS) program.

Possible activities to mitigate the impacts of flooding in the community were discussed. The committee determined a list of goals for the Point Pleasant Borough Floodplain Management Plan and determined a prioritized list of action items from the list of possible activities, using the goals as guidance. The Borough's recently updated Hazard Mitigation Plan was also used as a reference when determining proposed activities.

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I. INTRODUCTION

PURPOSE AND SCOPE

This plan has been prepared as Point Pleasant Borough's Floodplain Management Plan (FMP) and will be incorporated as an element of the Borough's Master Plan and reviewed and adopted by the Borough's governing body. The FMP identifies and assesses flood hazards within the Borough, establishes the goals and objectives for floodplain management in Point Pleasant Borough, and presents a series of actions designed to minimize flooding and mitigate the impacts from flooding in the future. The FMP evaluates the need and potential options for wetland restoration and maintenance and/or other engineering control measures to mitigate potential storm surge in those areas of the Borough that may be vulnerable. This Floodplain Management Plan is designed to receive points under FEMA's Community Rating System Program.

FLOODPLAIN MANAGEMENT PLANNING

Floodplain management is defined by FEMA 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. While FEMA has minimum floodplain management standards for communities participating in the National Flood Insurance Program (NFIP), adopting higher standards will lead to safer, stronger, more resilient communities.

COMMUNITY RATING SYSTEM

The Community Rating System (CRS) is a voluntary incentive program of the National Flood Insurance Program (NFIP) that provides participating communities with discounted flood insurance premium rates for undertaking community floodplain management activities that exceed the minimum NFIP requirements. Flood insurance premium rates are discounted in increments of 5%, reflecting the reduced flood risk resulting from community actions in four categories: public information, mapping and regulations, flood damage reduction, and flood preparedness. The three goals of the Community Rating System Program are:

1. Reduce flood damage to insurable property;
2. Strengthen and support the insurance aspects of the NFIP; and
3. Encourage a comprehensive approach to floodplain management.

ORGANIZATION OF THE PLAN

This plan has been organized according to the guidelines of the 2013 National Flood Insurance Program Community Rating System Coordinator's Manual to receive credit points under FEMA's Community Rating System Program. This Floodplain Management Plan follows the 10- step planning process outlined in the manual:

- Step 1: Organize
- Step 2: Involve the public
- Step 3: Coordinate
- Step 4: Assess the hazard
- Step 5: Assess the problem
- Step 6: Set goals
- Step 7: Review possible activities
- Step 8: Draft an action plan
- Step 9: Adopt the plan
- Step 10: Implement, evaluate, revise



II. POINT PLEASANT BOROUGH PROFILE

Point Pleasant Borough is located in northeastern Ocean County, New Jersey. It is bounded to the east by the Boroughs of Point Pleasant Beach and Bay Head, and the Barnegat Bay; to the south by the Township of Brick and the Beaver Dam Creek; and by Brick Township to the west. The Manasquan River forms the northern boundary of the Borough and of Ocean County. Across the Manasquan River from Point Pleasant Borough is the Borough of Brielle, located in Monmouth County.

The Borough of Point Pleasant is approximately 4.2 square miles, about 3.6 square miles of which are land. The Borough is nearly fully developed and has very little land available for development (approximately 53 acres of the land area is devoted to open space use). Land use in Point Pleasant is mainly residential, with single family homes being the predominant residential building type.



Figure 1. Borough Map

The Borough of Point Pleasant has a moderate climate with hot, humid summers and cold winters. The Borough is located in the Coastal Climate zone, one of New Jersey's five zones (Office of the New Jersey State Climatologist, Rutgers University). In the coastal zone, seasonal temperature fluctuations are less prone to extremes due to the high heat capacity of the Atlantic Ocean. During the fall months, temperatures in Point Pleasant Borough will remain slightly warmer than inland due to the warm ocean water nearby. Similarly, during the spring and early summer months, temperatures will often be cooler than further inland.

POPULATION TRENDS

The 2013 Point Pleasant Borough Master Plan Reexamination Report found that the Borough's population had declined by 4.7 percent in the period from 2000 to 2010, from 19,306 to 18,392. During the same time period Ocean County's population increased by 12.8 percent and the State of New Jersey's by 4.5 percent. The population of Point Pleasant Borough also aged during the decade from 2000- 2010, with a median age increase to 43.0 years old from 39.5 in 2000. It should be noted that these census counts were taken prior to Sandy and do not account for any residents who have been displaced by the storm, or new residents moving to Point Pleasant Borough post- Sandy.

III. PROJECT ORGANIZATION & PUBLIC MEETINGS

T & M Associates assisted Point Pleasant Borough in preparing this Floodplain Management Plan, as a sub-consultant to the Borough's Planner. The planning process was conducted under the supervision of a New Jersey licensed professional planner.

The planning process was conducted through a Floodplain Management Plan Steering Committee consisting of both Borough staff and representatives of the public. The Committee was formed by Borough Council Resolution #096-2017 and met on a bi-weekly basis from March 2017 to April 2017 to discuss the existing hazards and problems related to flooding in the Borough, review potential goals and hazard mitigation activities, prepare an action plan, and make recommendations to revise existing Borough Ordinances. The resolution forming the Floodplain Management Plan Steering Committee can be found in Appendix A and outlines of all steering committee meetings are located in Appendix B. The following are the members of the Floodplain Management Plan Steering Committee:

- Public Officials:
 - Michael Thulen, Borough Council
 - Frank Pannucci, Borough Administrator
 - Robert Forsyth, Public Works Director
 - Timothy Skinner, Construction Official, Floodplain Coordinator
 - Ray Savacool, P.E., P.P., CFM, Consulting Engineer
 - Christine Bell, P.P., AICP, CFM, T&M Associates Planner
- Members of the Public:
 - Dennis Blazak, Resident
 - Elissa Commins, Resident
 - James Giordano, Resident
 - Albert Faraldi, Resident
 - Lori Coe, Resident

In addition to the Steering Committee meetings, a separate public information meeting was held during the initial stages of planning on February 13, 2017. This meeting was publicly advertised on the Borough website and open to all members of the public. The public was informed of the proposed Floodplain Management Plan and was given the opportunity to provide input and recommendations.

A second open public meeting was held on May 16, 2017. The draft Floodplain Management Plan was made available on the Borough website and the public was encouraged to provide input on the recommended plan.

Additional information on these public meetings can be found in Appendix C.

IV. COORDINATION

Existing Documents

It is important to coordinate floodplain management goals with other planning and community development goals in Point Pleasant Borough. As part of the planning process, the following documents were reviewed:

- 1999 Master Plan/ 2006 Master Plan Reexamination Report
- 2008 Open Space and Recreation Plan
- 2013 Master Plan Reexamination Report
- 2015 Strategic Recovery Planning Report

Information from the following documents was identified as important to the floodplain management planning process:

1999 MASTER PLAN / 2006 MASTER PLAN REEXAMINATION REPORT

The 1999 Master Plan outlines various goals and objectives that are relevant to this Floodplain Management Plan. For each of these goals and objectives, a status update from the 2006 Master Plan Reexamination Report is provided below in italics, followed by commentary as to their relevance to this floodplain management plan (FMP), also in italics.

Land Use Plan

- To recognize and protect the predominantly single-family character of the Borough.
 - *2006 Reexamination: Since the 1999 Master Plan, the Borough has revisited its residential zoning provisions, specifically the minimum lot size requirements and side yard setbacks, in order to maintain the Borough's single-family character and to discourage development on undersized lots.*
 - *FMP: The practices of maintaining minimum lot size requirements and side yard setbacks, as well as discouraging development on undersized lots, will help maintain a relatively low development density and will not negatively impact stormwater runoff or groundwater infiltration.*
- To reduce the potential for conversion of single-family dwellings to two-family dwellings.
 - *2006 Reexamination: Since the 1999 Master Plan, two-family dwellings have been removed from the R-3 Residential and Office District.*

- *FMP: As is the case with the aforementioned goal, this goal will help maintain lot density in the Borough and will not negatively impact stormwater runoff or groundwater infiltration.*

Circulation Plan

- To encourage the State of New Jersey and the County of Ocean to maintain their roadways within the Borough and to install all needed drainage and pedestrian improvements.
 - *2006 Reexamination: This is still valid. The Borough should coordinate with Ocean County and the State of New Jersey Department of Transportation to monitor and maintain their roadways. These agencies should take a proactive approach to overseeing maintenance issues, and installing drainage or sidewalk improvements on an as-needed basis.*
 - *FMP: Improved drainage will help reduce stormwater runoff.*

Community Facilities Plan

- To continue to cooperate with the Board of Education in long range facility planning for schools.
 - *2006 Reexamination: This is still valid.*
 - *FMP: Effective long-range facility planning will help maintain the High School as effective emergency shelter in times of need.*
- To recognize the continuing need to provide adequate community facilities and services, especially recreation and open space, in spite of the essentially developed character of the Borough.
 - *2006 Reexamination: Since the 1999 Master Plan, an addition to the municipal building was completed. The tract of land located across from the municipal building and police station, at the intersection of Bridge Avenue and Beaver Dam Road, was developed into a 6-acres Community Park with two baseball fields, one soccer field, a tot lot play area, a concession stand, jogging path and trails, an amphitheater, and a parking area.*
 - *FMP: The need to provide adequate community facilities and services includes not only recreation and open space areas, but also shelter locations, comfort stations, emergency services, among others.*

Conservation, Open Space, and Recreation Plan

- To preserve and protect areas of environmental sensitivity, such as marshes and waterfront areas.
 - *2006 Reexamination: This is still valid.*

- *SRPR: This goal is essential to uphold in order for the Borough to maintain its resiliency against future Sandy-type storms.*

Additionally, the 1999 Master Plan outlined the Borough's evacuation plan in the case of hurricane, nuclear accident, flooding, or other hazards. The evacuation plan is the Borough's predetermined set of actions of responsible persons, types of notifications of the population, staging areas, evacuation routes, and methods of transportation to ensure the safety of the citizens of the Borough. The major evacuation routes identified are State Highway Route 88, Bridge Avenue, Bay Avenue, and Arnold Avenue. Alternate routes for westbound traffic are Herbertsville Road and River Road.

2013 MASTER PLAN REEXAMINATION REPORT

The 2013 Master Plan Reexamination Report was adopted on December 19, 2013, after Superstorm Sandy's destruction had already reached New Jersey. While this Reexamination Report does not specifically reference Superstorm Sandy or damages from the storm, it does discuss new efforts in sustainability and green infrastructure that the Borough has undertaken since Superstorm Sandy.

The 2013 Master Plan Reexamination Report recommends specific changes to the Master Plan and development regulations. The recommendations that are relevant to this Floodplain Management Plan include the following:

Comprehensive Goals

- Encourage the development of both active and passive recreation opportunities for the residents and visitors, while maintaining sensitivity to environmental and cultural resources.
- To encourage the establishment of policies, codes, and standards that promote the use of sustainable development practices, including but not necessarily limited to: infrastructure, public and private buildings, open space and recreation, local waste and recycling, among other things.
- To continually improve the sustainability profile of the Borough.
- To continue to promote the health, safety, and general welfare and to minimize public and private losses due to flood conditions and specific areas by provisions designed to: protect human life and health; minimize expenditure of public money for costly flood control projects; minimize the need to rescue and relief efforts associated with flooding and generally undertaken at the expense of the general public; minimize prolonged business interruption; and 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 hazard.

Comprehensive Objectives

- To promote energy efficiency, conservation, and increased use of renewable energy to reduce waste and increase recycling; to reduce the use of hazardous materials and eliminate toxic substances; to reduce greenhouse gas emissions and to plan for mitigating the effects of climate change.

Recommendations

- Advances in renewable energy technology coupled with State and Federal legislation promoting sustainable energy that is incumbent for the Borough to encourage the establishment of requirements that would address onsite renewable energy infrastructure for both residential and commercial properties. Specific attention shall be given to the identification of appropriate locations for wind, solar, tidal, and other renewable energy resources and opportunities.
- It is recommended that Point Pleasant develop a plan for reducing and mitigating its direct and indirect greenhouse gas (GHG) emissions. Direct emissions could be reduced through more efficient vehicles and the use of alternative fueled vehicles. Indirect emissions could be reduced through more efficient use of electricity and the use of renewable energy. Steps to mitigate GHG emissions could include increasing carbon sequestration capacity through tree planting and preservation of established forested areas. Point Pleasant should work closely with county, state, and private sector (electric utilities) initiatives to access resources for reducing and mitigating greenhouse gas emissions and addressing the effects of global climate change.

In addition to the aforementioned recommendations, the 2013 Master Plan Reexamination Report recommends various sustainability measures be taken, and provides a “Sustainability” section, which consists of the following:

- Borough’s Sustainability Profile Recommendations
 - Increase the Borough’s sustainability profile by setting forth a Borough wide “green” initiative.
 - Seek Sustainable New Jersey certification
 - Promote more walkability within the Borough
 - Provide greater access and linkage for greenways, walkways, and bike paths in accordance with the Circulation Plan Element of the Borough Master Plan
 - Evaluate opportunities to purchase additional parcels for dedicated open space.

- Rain Gardens Recommendations
 - The Borough should consider offering incentives for the incorporation of rain gardens.
 - Any proposed rain garden should be positioned near runoff areas like downspouts and driveways and for the utilization of parking lots for water capture.

2008 OPEN SPACE AND RECREATION PLAN

The Open Space and Recreation Plan aims to help guide future open space acquisitions and recreational development in Point Pleasant Borough. The Borough seeks to conserve important environmental and historical resources as well as provide well maintained recreational areas and facilities throughout the community.

The goals of the Open Space and Recreation Plan act as a guide for Point Pleasant Borough to conserve open space and to create recreational areas for residents. The goals consist of the following:

Goals

- Support passive/non-organized and organized/active recreation for both residents and visitors. Especially consider sites that are either adjacent to existing open space areas or demonstrate possible use for both passive and recreational uses.
- Protect contiguous parcels of land to preserve desirable environmental features and provide habitat and protection for wildlife and native vegetation. This includes vernal ponds for amphibians and osprey nesting areas.
- Reduce the amount of land that would otherwise become impervious and by doing so increase stormwater absorption. This would facilitate the recharging of aquifers and wells and help reduce flooding, improve groundwater quality, and reduce lake and waterway bank degradation from excessive runoff.
- Enact environmentally preferable purchasing for recreational purposes, including fertilizers and chemicals, to reduce the environmental impacts in both surface water and groundwater.
- Identify and protect scenic views and vistas in the Borough.
- Protect historic features and sites.
- Maintain property values by improving the quality of life in Point Pleasant.

Overall, the goals of the Open Space and Recreation Plan aim to protect the Borough's existing environmental features and to promote stormwater infiltration, which can help promote effective floodplain management.

STORMWATER MANAGEMENT

In February 2006, Point Pleasant Borough adopted Ordinance 03-2006 which amended the Borough Code to include a new chapter titled “Stormwater Control” (codified as Chapter XVIII), with the purpose of establishing minimum stormwater management requirements and controls for major development. The ordinance serves as the Borough’s stormwater management program.

The ordinance sets standards for new major development that are intended to minimize the impact of stormwater runoff on quality on water quality and quantity in receiving water bodies and maintain groundwater recharge. This is done through encouraging the implementation of nonstructural stormwater management strategies. Nonstructural stormwater management strategies: protect areas that provide water quality benefits or areas particularly susceptible to erosion and sediment loss; minimize the impervious surfaces and break up or disconnect the flow of runoff over impervious surfaces; maximize the protection of natural drainage features and vegetation; and minimize land disturbance including clearing and grading, among others.

In addition to the above, the ordinance contains minimum design and performance standards to control erosion, encourage and control infiltration and groundwater recharge, and control stormwater runoff quantity impacts of major development.

The Stormwater Control ordinance also requires development applications to be submitted along with an environmental site analysis which should include a discussion of soil conditions, slopes, wetlands, waterways, and vegetation on the site.

FLOOD DAMAGE PREVENTION ORDINANCE

Also in 2006, the Borough adopted Ordinance 18-2006, which supplemented the Borough’s Land Use Ordinance with a section devoted entirely to flood damage prevention (codified as Section 19-37). Whereas the Borough has no official floodplain management plan, this ordinance serves as the Borough’s floodplain management program.

The ordinance presents the following findings of fact about Point Pleasant Borough:

- The Borough’s flood hazard areas are subject to periodic inundation which results in the potential loss of life and property, health and safety hazards, disruption of commerce and governmental services, extraordinary public expenditures for flood protection and relief, and impairment of the tax base, all of which adversely affect the public health, safety, and general welfare.

- These flood losses are caused by the cumulative effect of obstructions in areas of special flood hazard which increase flood heights and velocities, and when inadequately anchored, cause damage in other areas. Uses that are inadequately flood proofed, elevated, or otherwise protected from flood damage also contribute to flood loss.

The purpose of this ordinance is to promote the public health, safety, and general welfare, and to minimize public and private losses due to flood conditions in specific areas by provisions designed:

- To protect human life and health;
- To minimize expenditure of public money for costly flood control projects;
- To minimize the need for rescue and relief efforts associated with flooding and generally undertaken at the expense of the general public;
- To minimize prolonged business interruptions;
- To minimize damage to public facilities and utilities such as water and gas mains, electric, telephone and sewer lines, streets, bridges located in areas of special flood hazard;
- To help maintain a stable tax base by providing for the second use and development of areas of special flood hazard so as to minimize future flood blight areas;
- To insure that potential buyers are notified that property is in an area of special flood hazard; and
- To ensure that those who occupy the areas of special flood hazard assume responsibility for their actions.

In order to accomplish its purposes, this ordinance includes methods and provisions for:

- Restricting or prohibiting uses which are dangerous to health, safety, and property due to water or erosion hazards, or which result in damaging increases in erosion or in flood heights or velocities;
- Requiring that uses vulnerable to floods including facilities that serve such uses, be protected against flood damage at the time of initial construction;
- Controlling the alteration of natural flood plains, stream channels, and natural protective barriers, which help accommodate or channel floodwaters;
- Controlling filling, grading, dredging, and other development which may increase flood damage; and
- Preventing or regulating the construction of flood barriers which will unnaturally divert floodwaters or which may increase flood hazards in other areas.

In 2013, the Borough adopted Ordinances 2013-05 and 2013-18 to supplement the Flood Damage Prevention Ordinance with the following additional provisions:

- **Floodways:** Encroachments on floodways shall be prohibited, including fill, new construction, substantial improvements, and other development in floodways.
- **Coastal High Hazard Area (Velocity/"V" zones):** Provisions for structures in the V zone include the following:
 - Locating all structures on the landward side of the reach of the mean high tide;
 - Elevating new construction and substantial improvements on pilings or columns one foot or more above the base flood elevation (one foot freeboard). All portions of the building below the base flood elevation must be constructed using flood-damage resistant materials;
 - Prohibiting any alteration, repair, reconstruction, or improvement to a structure to enclose the space below the lowest floor, with the exception of breakaway walls, open wood lattice-work, or insect screening which are intended to collapse under wind and water loads without causing collapse, displacement, or other structural damage to the elevated portion of the building or support system; and
 - Prohibiting the alteration of sand dunes in order to prevent potential flood damage.

CHANGES TO DEVELOPMENT REGULATIONS

In 2013, Point Pleasant Borough adopted a series of ordinances to facilitate rebuilding and recovery, including the following:

- Ordinance 2013-01, recognizing that all buildings located in special flood hazard areas may be raised up to three feet above the FEMA Advisory Base Flood Elevation (ABFE) map, or effective FIRM elevations, whichever is more restrictive. This facilitated rehabilitation and reconstruction of properties.
- Ordinance 2013-03, amending the Land Use ordinance to include a new section "Restoration of a Nonconforming Use," in order to allow nonconforming properties in the R-1, R-1A, R-3, R-M, and RM/POS zoning districts that were either destroyed by Superstorm Sandy, or sustained a loss in total market value of 50 percent damage or more, to rebuild to the height, area, and bulk of the previous structure.
- Ordinances 2013-05 and 2013-18, supplementing the Flood Damage Prevention Ordinance and incorporate storm-resilient practices (as discussed earlier).

2015 STRATEGIC RECOVERY PLANNING REPORT

The Strategic Recovery and Planning Report, adopted in 2015, discusses the vulnerabilities that have been exacerbated by Hurricane Sandy, and the opportunities it created. They are as follows:

Vulnerabilities exacerbated:

- The loss of fuel exposed residents to the dangers of cold fall nights;
- The loss of power and cell phone service impacted the communication between emergency personnel;
- Communicating the need for evacuation to residents before Superstorm Sandy made landfall could have been improved with a more effective alerting system. While the Borough currently participates in the Nixle program for emergency notifications, residents must subscribe before receiving notifications from the Borough;
- The Borough also feels that a quicker and mandatory evacuation would have been preferred and would have aided in exposing residents to danger;
- Regular moon tide inundation has increased as a result of stream siltation from Superstorm Sandy;
- Erosion in areas adjacent to waterways resulted in an immediate threat of additional damage or destruction to improved property and the general public in these areas;
- Flooding throughout the Borough hindered the capacity of emergency response vehicles. The Borough did not have sufficient access to boats, rafts, and other minor emergency equipment necessary to facilitate evacuation of stranded residents in flooded streets;
- Destruction of and damage to homes threatened the Borough's residents, 5.3 percent of whom live below the poverty level and may not have access to the same emergency protection and recovery resources as the remainder of the population.

Opportunities Created:

Hurricane Sandy has provided Point Pleasant Borough with an important learning opportunity, and its impacts demonstrate that the borough may become more resilient to future hurricanes and storms by doing the following:

- Promoting public awareness of hazard mitigation and resiliency issues;

- Focusing public agencies on community vulnerabilities to hazards such as flooding;
- Encouraging regional solutions to flood- and storm-related impacts;
- Ensuring that future capital projects are designed and constructed to incorporate features that are resilient to storm- and flood-related impacts;
- Encouraging/supporting the use of sustainable development techniques and green building design in future development and redevelopment; and
- Improving the drainage throughout the Borough.

The SPRP also recommended the following actions to promote recovery:

- Developing a GIS database and user interface to catalog all Borough-owned infrastructure;
- Automating, updating, and expediting the Borough's system for processing zoning and construction permits;
- Installing a Supervisory Control and Data Acquisition (SCADA) system to communicate critical alarms to a centralized location or operational personnel;
- Preparing a Borough Debris Management Plan;
- Updating the Borough's Capital Improvement Plan;
- Preparing a Borough Floodplain Management Plan;
- Increase participation in FEMA's Community Rating System (CRS);
- Increasing warning systems; and
- Acquiring more evacuation equipment.
- Identifying a location for a potential second emergency shelter;
- Identifying a new permanent location for the Office of Emergency Management; and
- Obtaining generator-powered portable lighting to be utilized during power outages.

COORDINATION WITH OUTSIDE AGENCIES

Notices were sent to the following groups, commissions, municipalities, and agencies soliciting data or information related to flooding, as well as any specific actions the agency or organization has undertaken that may affect flooding. The following agencies and organizations were contacted:

- Township of Brick
- Borough of Brielle

- Point Pleasant Beach
- Borough of Bay Head
- Ocean County Department of Parks and Recreation
- Point Pleasant Borough Fire Department
- Point Boro EMS
- Point Pleasant Borough Police Department
- Point Pleasant Borough Office of Emergency Management
- Borough of Point Pleasant Open Space Committee
- Borough of Point Pleasant Environmental Commission
- Ocean County Sheriff's Department Office of Emergency Management
- Ocean County Planning Department
- Ocean County Soil Conservation District
- North Jersey Transportation Planning Authority
- Natural Resources Conservation Service
- New Jersey Coastal Management Program
- U.S. Army Corp of Engineers, Philadelphia District
- American Red Cross, Jersey Coast Chapter
- American Littoral Society, Barnegat Bay Office
- Jacques Cousteau National Estuarine Research Reserve
- Shore Builders Association of Central Jersey
- Comcast Cable
- New Jersey American Water
- New Jersey Department of Environmental Protection, State Floodplain Manager
- Barnegat Bay Partnership
- Save Barnegat Bay
- New Jersey Natural Gas

A sample of the letter sent out to all the above mentioned stakeholders, agencies, and individuals can be found in Appendix D. Many agencies responded and discussed information that could be beneficial to the Borough's Plan. An example of this work is the various mapping provided by the Jacques Cousteau Reserve and the Rutgers University Center for Remote Sensing and Spatial Analysis (CRSSA). A log of all agencies contacted, along with their responses can be found in Appendix E.

V. FLOOD HAZARD ASSESSMENT

FLOODING HISTORY

Description of Known Flood Hazards

The Flood Insurance Rate Map (FIRM) for the Borough of Point Pleasant is currently in the process of being updated. The Effective FIRM maps dated September 29, 2006 can be found in Appendix F. The Advisory Base Flood Maps, which were adopted shortly after Hurricane Sandy, can be found in Appendix G. The new Preliminary FIRM maps issued on January 30, 2015 indicates that much of the southern portion of the Borough, along Beaver Dam Creek, is located in the Special Flood Hazard Area, as well as the area along the Manasquan River in the north, the far eastern portion of the Borough, and the canal in its entirety. The Nellie Bennett Elementary School is located within the 100 year floodplain on the preliminary FIRM. The Municipal Building, Police Department, and EMS Building are located just outside of the 500 year floodplain. The Preliminary FIRM map for the Borough is identified in Figure 2. below and in Appendix H. The Borough's flood damage prevention ordinance requires buildings to be elevated using the best available data, recognizing that new data (such as the ABFEs or PFIRMs) may be more stringent than the effective panels, and therefore take precedence over effective panels.

Severe flooding in the Borough is caused by storm surge from the Manasquan River, Beaver Dam Creek, and Barnegat Bay. Much of the repetitive loss areas in Point Pleasant Borough are located along the Beaver Dam Creek. Severe flooding in these areas is due to storm surge.

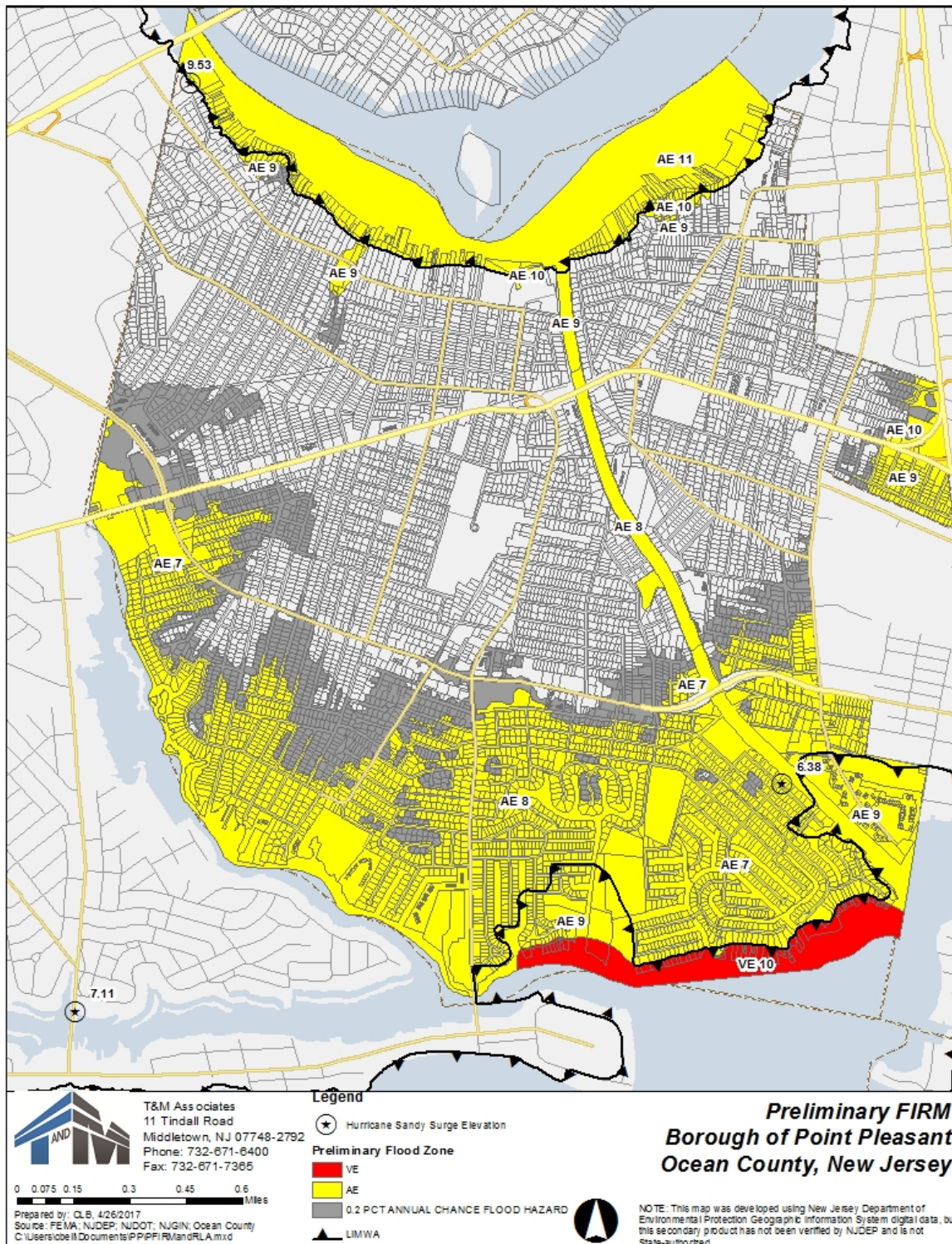
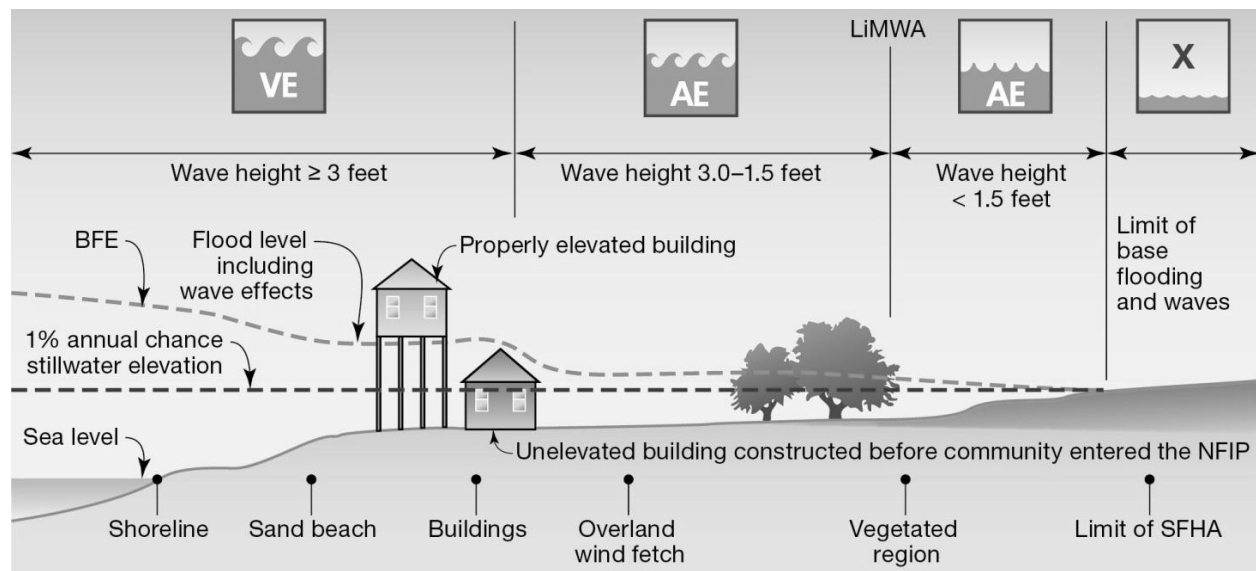


Figure 2. Preliminary FIRM

There are two (2) designated flood zones in Point Pleasant Borough; the VE Zone and the AE Zone. VE Zones are areas subject to inundation by the 1-percent-annual-chance flood event with additional hazards due to storm-induced velocity wave action. Predicted wave heights are three feet or greater. Base Flood Elevations (BFEs) are derived from detailed hydraulic analyses and are indicated by the elevation provided. Among other criteria, the lowest horizontal structural member of a proposed structure must be located above the BFE in V Zones. AE Zones are areas subject to inundation by the 1-percent-annual-chance flood event determined by detailed methods. Base Flood Elevations (BFEs) are shown. Average flood depths derived from detailed hydraulic analyses are shown in this zone.

In addition to the above designations Point Pleasant Borough also contains some areas mapped as Coastal A Zones. These are areas adjacent to VE Zones where waves could be propagated of greater than 1.5 feet but less than 3 feet. Laboratory tests and field data has shown that a wave as small as 1.5 feet may cause failure of light framed or masonry walls and in these designated areas V Zone construction standards are recommended. A graphic depiction of the flood zones can be found below in Figure 3.



Source: FEMA

Figure 3. Flood Hazard Area Description

Point Pleasant Borough is bordered to the north by the Manasquan River and to the south by the Beaver Dam Creek and the Barnegat Bay. The Point Pleasant Canal intersects the Borough. The regions most susceptible to flooding in Point Pleasant Borough are those located along these waterbodies as well as the easternmost portion of Borough, which is susceptible to storm surge from the Atlantic Ocean through the Manasquan Inlet, as well.

Hurricane Sandy made landfall along the coast of New Jersey on October 29, 2012, causing major flooding and destruction. This event has become the flood of record (the highest flood recorded) for much of New Jersey and New York. Where available, Hurricane Sandy Surge Elevations were mapped throughout Point Pleasant Borough and surrounding communities and are noted on the Preliminary FIRM map located in Figure 2 above and in Appendix H. A map of the Sandy Surge Extent can be found in Appendix I. Storm Surge elevation data can be found in the report entitled 'Monitoring Storm Tide and Flooding from Hurricane Sandy Along the Atlantic Coast of the United States, October 2012,' and is located at the following web site <http://pubs.usgs.gov/of/2013/1043/> Additional description of the effort to gather surge data can be found at http://www.state.nj.us/dep/wms/suro_hurricanesandy_njwatermonitoring_meeting.pdf

Historical Flooding Events

Point Pleasant Borough is susceptible to flooding from Barnegat Bay and Atlantic Ocean through the Manasquan River and has flooded repeatedly throughout time. Some of the major storm events that have affected the Borough and the greater Ocean County area with flooding and damage are as follows:

- September 14 – 15, 1944: A Category 2 hurricane passed within 47 miles of the coast of New Jersey in September 1944, producing wind velocities over 100 mph and a maximum tidal elevation of 7.4 feet at the gage in Sandy Hook.
- Hurricane Donna: On September 12, 1960 Hurricane Donna was classified as a Category 2 hurricane when it reached Monmouth County. Wind speeds of up to 110 mph were recorded, as was a maximum tidal elevation of 8.6 feet at Sandy Hook.
- The Ash Wednesday Storm: A nor'easter struck the coast of New Jersey lasting 3 days and 5 tidal cycles from March 6- 8, 1962, causing massive amounts of destruction and 10 deaths in the state of New Jersey.
- Hurricane Belle: On August 9, 1976, Hurricane Belle impacted New Jersey as a Category 1 hurricane with wind speeds of up to 90 mph. In Asbury Park, 2.56 inches of rain was recorded as having fallen in a 24-hour period.

- March 1984: This nor'easter coincided with astronomically high tides and caused flooding, erosion, and damage to roads and boardwalks.
- Hurricane Gloria: On September 27, 1985, Hurricane Gloria came onshore in Long Island, NY as a Category 2 hurricane. The storm caused extensive power outages through New Jersey and forced people to be evacuated from their homes. However, coastal flooding was minimized as the peak storm surge arrived during low tide.
- The Perfect Storm: The Perfect Storm, also known as the Halloween Storm, was a nor'easter that caused coastal flooding on October 31, 1991.
- The Storm that Stole Christmas: A nor'easter struck the coast of New Jersey on December 11, 1992 and continued to impact the area through eleven (11) tidal cycles, causing extensive beach erosion and a 3 to 5 foot storm surge.
- Tropical Storm Floyd: Tropical Storm Floyd impacted New Jersey on July 16, 1999. Heavy rains coincided with high tide to exacerbate flooding. However, the greatest impacts were felt away from coastal areas in Bergen and Somerset Counties.
- Tropical Storm Irene: Tropical Storm Irene produced heavy rains from August 27-28, 2011, causing tidal flooding and beach erosion, making it the costliest storm in New Jersey after Hurricane Floyd prior to Hurricane Sandy.
- Hurricane Sandy: Hurricane Sandy made landfall in Brigantine on October 29, 2012, becoming the costliest natural disaster in the State of New Jersey and second only to Hurricane Katrina nationwide. The coastal areas of Monmouth and Ocean Counties were among the hardest hit with record breaking high tides and wave action. Many homes throughout the coastal communities were destroyed or impacted by severe



Figure 4. Flooding from Hurricane Sandy

flooding. All communities within Ocean County faced power outages, some lasting up to two (2) weeks.

Storms with Repetitive Loss

Using repetitive loss data provided by FEMA, areas in Point Pleasant Borough were identified as generally being affected by flooding. A repetitive loss property is classified as one which has experienced two or more claims of more than \$1,000 that have been paid by the National Flood Insurance Program (NFIP) within any 10 year period since 1978. To protect the privacy of homeowners' individual repetitive loss properties were not mapped, but rather a 200 foot buffer was created around each repetitive loss property and any parcel falling in the buffer was categorized as in an area generally affected by flooding. The highest concentration of repetitive loss properties are located surrounding in the southern portion of the Borough, along the Beaver Dam Creek and Point Pleasant Canal. It is important to note that not all properties within a repetitive loss area are necessarily at higher risk for flooding. Risk can be determined by a number of factors including the elevation standard to which a residence was built and the height of the ground underneath. A map of the repetitive loss areas in Point Pleasant Borough can be found in Appendix J.

The average number of losses per repetitive loss property in the Borough of Point Pleasant is two (2). The average pay-out per loss for a repetitive loss property in the Borough is \$49,498.44, with an average total pay-out per property of \$100,882.31 for all losses. Storm events that have resulted in repetitive losses since 1978 include:

- "The Storm that Stole Christmas": The nor'easter of December 1992 caused massive coastal flooding and erosion. Hurricane force winds, a lunar eclipse, a full moon, and four inches of rain in 24 hours all contributed to the flooding. The strongest portion of the storm remained over New Jersey for several days, resulting in elevated surge levels through a number of tidal cycles. In Point Pleasant Borough, one (1) flood insurance claim was made on a repetitive loss property on December 11, 1992.
- July 8, 2005: One (1) flood insurance claim from a repetitive loss property was made on this date.
- October 12- 15, 2005: A total of four (4) flood insurance claims from repetitive loss properties were made over the course of these four (4) days in Point Pleasant Borough. One (1) claim was filed on October 12th, one (1) claim on October 13th, and two (2) claims on October 15, 2005.

- December 12, 2008: Two (2) flood insurance claims from repetitive loss properties were made on this date.
- Nor'easter: A nor'easter in mid-March caused severe storms and flooding in New Jersey. On March 13, 2010, two (2) flood insurance claims for repetitive loss properties were filed in the Borough of Point Pleasant.
- March 30, 2010: One (1) flood insurance claim from a repetitive loss property was made on this date.
- Tropical Storm Irene: Tropical Storm Irene caused flooding throughout the state of New Jersey. In the Borough of Point Pleasant, a total of 15 flood insurance claims were submitted for repetitive loss properties; four (4) of these on August 27, 2011 and eleven (11) on August 28th, 2011.
- Hurricane Sandy: Hurricane Sandy is the costliest storm to hit the state of New Jersey. It caused extensive damage and severe flooding throughout the state. Coastal Ocean County was one of the areas hardest hit by the storm with power outages in some areas lasting up to two weeks. A total of 25 flood insurance claims were filed on repetitive loss properties in Point Pleasant Borough during Hurricane Sandy. On October 29, 2012, 19 claims were filed, followed by an additional six (6) on October 30th, 2012.
- December 12, 2012: One (1) flood insurance claim from a repetitive loss property was made on this date.
- July 3, 2013: One (1) flood insurance claim from a repetitive loss property was made on this date.

DESCRIPTION OF FUTURE EVENTS FOR OTHER HAZARDS

In addition to flooding, the Borough of Point Pleasant is susceptible to a number of other hazards. While the intent of this plan is to focus on flood hazards, it is important to identify and recognize other hazards that impact the Borough. Information on other hazards was taken from the 2014 Ocean County Multi-Jurisdictional All-Hazards Mitigation Plan.

Coastal Erosion

Coastal erosion occurs when more sediment is being lost than is being gained at a particular location. Coastal erosion can result from natural or man-made causes, including sea level rise, flooding, strong wave action or large storms, some types of shore protection structures, some land uses, and other alterations to the natural environment. Coastal erosion can occur gradually, as shorelines recede over a period of time or can be

caused by a rapid recession of shoreline due to another hazard event. Erosion increases the vulnerability of near-shore structures to damage from storms and flooding events. The impacts of coastal erosion can be lessened by implementing living shoreline techniques, undertaking a variety of shoreline protection measures, and frequent beach nourishment projects. Point Pleasant Borough is susceptible to erosion along the river banks of the Manasquan and Beaver Dam. Additionally, coastal erosion in the barrier beach communities of Point Pleasant Beach, Bay Head, and Mantoloking may have cascading effects in Point Pleasant Borough.

Climate Change

The Borough of Point Pleasant Borough will be affected by increasing sea levels along the Manasquan River, Beaver Dam Creek, and Point Pleasant Canal. The effects of sea level rise will be more pronounced in low-lying areas of the Borough and will exacerbate existing problems with flooding. Additionally, severe storm events are predicted to become more frequent as the climate warms. The impacts of climate change in the future will depend on the rate which sea level rises and human actions and response to the threats caused by climate change. Sea level rise will worsen the impacts of storm surges on Point Pleasant Borough.

Dam Failure

There are no dams in the Borough of Point Pleasant nor are there any dams upstream whose failure would affect flooding in Point Pleasant Borough; therefore, the hazard from a dam failure is low.

Drought

A drought is a period of low or no precipitation in a given area. The severity of the drought depends on the length of time, geographic reach, regional water supply demands, and the impact of other hazards, such as extreme heat. There is a low probability of severe drought conditions occurring in Point Pleasant due to Borough's relatively low elevation and abundant groundwater supply; although short term, less severe droughts may be more likely. If extended drought conditions do occur in Point Pleasant, the Borough may be subject to restricted water usage and other regulations. Recent periods of drought in New Jersey include:

- October 1997
- 1998- 1999
- October 2001- 2002
- August- September 2008

- August to October 2010
- October 2016 – April 2017

Earthquake

The probability of a significant, damaging earthquake in Point Pleasant Borough is low. While low magnitude earthquakes do occur throughout New Jersey on a fairly regular basis, most earthquakes impacting Point Pleasant Borough will have only minor effects. The greatest probability of an earthquake occurrence in New Jersey exists in the northern portion of the State near the Ramapo Fault.

Extreme Temperature

Point Pleasant Borough is highly susceptible to both extreme heat and extreme cold events. The Ocean County Multi-Jurisdictional All-Hazards Mitigation Plan defines extreme heats as occurring when temperatures hover 10 degrees or more above the average high temperature for a region for several weeks. The plan defines extreme cold temperatures as well below the average level for an area during the winter and often coinciding with winter storm events. Long periods of extreme temperatures can overstress power supply systems, resulting in brown-outs or black outs and leaving residents without heat or air conditioning. Generally, the impact on humans of extreme weather events is minimal, with the exception of the very young and elderly populations, who are more susceptible to the health impacts of extreme temperatures.

Extreme Cold

Extreme cold events often accompany a winter storm or occur soon after. Prolonged exposure to the cold can cause frostbite or hypothermia. Recent periods of extreme cold in Point Pleasant Borough include:

- Jan 14- 29, 2003
- Jan 9-11, 2004
- Jan 16- 18, 2009
- Jan 23, 2014
- Jan 4, 7, & 22, 2014

Extreme Heat

Point Pleasant Borough is more likely to experience extreme heat than extreme cold events. Extreme heat events occur during the summertime when the weather in Point Pleasant Borough is substantially hotter and/or more humid than the Borough average for that time of year. Recent periods of extreme heat include:

- July 4- 11, 1999
- August 1-3, 2006
- June 7-10, 2008
- July 5-7, 2010
- July 21- 24, 2011
- July 17- 18, 2012
- July 18-19, 2013

The extent of extremely hot temperatures are typically measured through the Heat Index, which calculates the temperature that is felt when the effects or relative humidity are added to the base air temperature, highlighting dangerous extreme heat conditions. The NOAA National Weather Service Heat Index is illustrated in Figure 5.

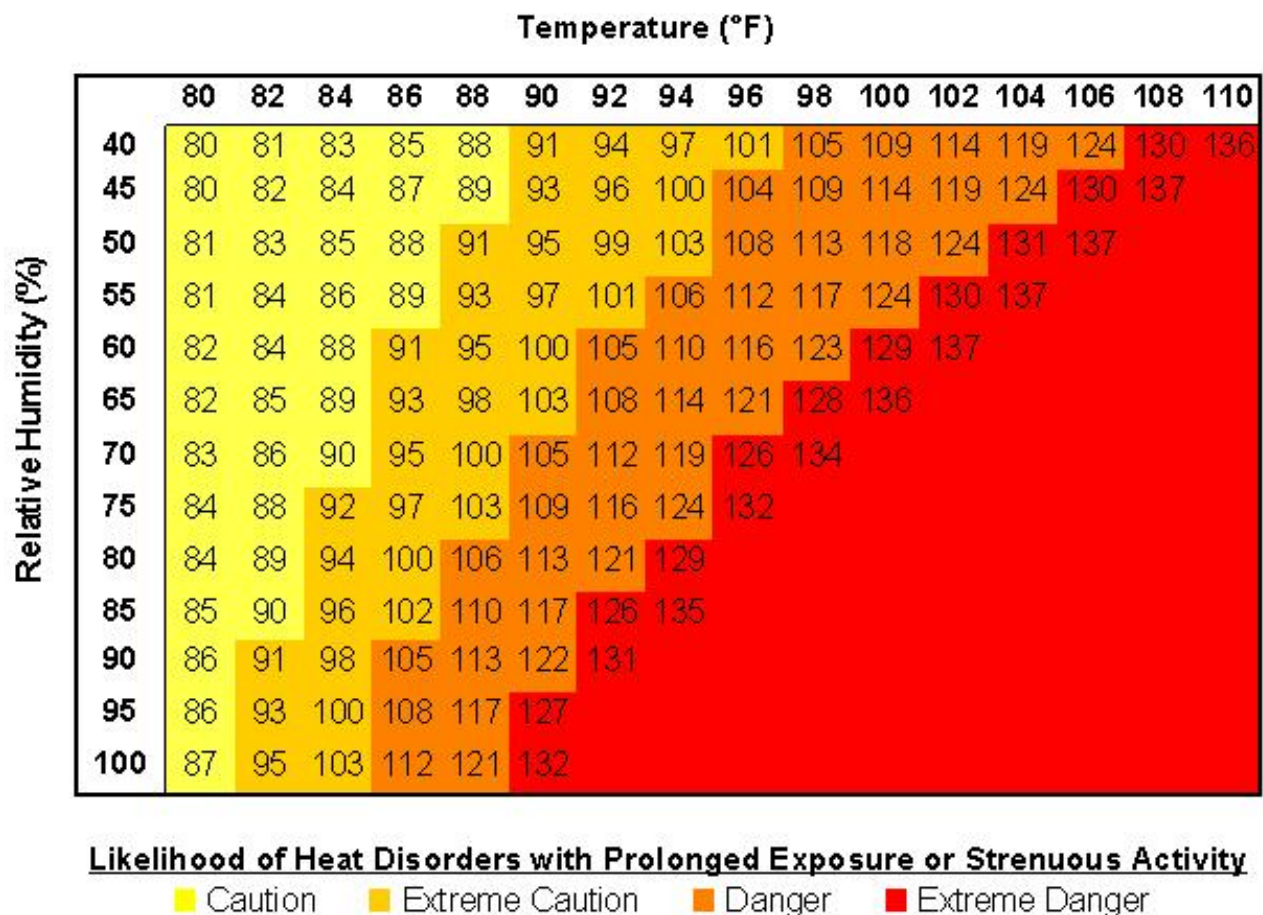


Figure 5. NOAA National Weather Service Heat Index

Extreme Wind

Extreme wind can occur alone or with other natural hazards, often occurring during thunderstorms. The impacts of extreme winds can be critical and can include flying debris and downed trees and power lines. The probability of future extreme wind events is high, with an average of 5- 10 extreme wind events occurring each year in the Central New Jersey region. Recent extreme wind events near Ocean County, New Jersey include:

- Thunderstorm on September 9, 1998
- Thunderstorm on August 7, 2000
- Thunderstorm on August 2, 2002
- Thunderstorm on July 22, 2003
- January 18, 2006
- Thunderstorm on August 17, 2007
- February 13, 2008
- March 5, 2008
- March 13, 2010
- Hurricane Irene, August 27- 28, 2011
- Hurricane Sandy, October 29, 2012

Hurricanes, Tropical Storms, & Nor'easters

Hurricanes, tropical storms, and nor'easters are events consisting of a number of damaging hazards including heavy precipitation, high winds, wave action, storm surge, coastal flooding, and coastal erosion. All of New Jersey, including the Borough of Point Pleasant, falls within the Hurricane Susceptible Region, and there is a 24- 36% chance of experiencing a tropical storm or hurricane event between June and November of any given year in Ocean County. Ocean County lies within a design Zone II, meaning that shelters and critical facilities should be designed to withstand a 3 second wind gust of up to 160 mph. Nor'easters generally occur during the winter months and are named after the wind direction of the storm. They tend to last for more than one tidal cycle, often generating flooding events. Severe storms that have impacted Point Pleasant Borough with flood damages were discussed in the Historical Flooding Events section of this document.

Lightning

Point Pleasant Borough is susceptible to lightning events, but not as much as other areas of the United States, particularly the Southeast. The probability of future lightning events in Point Pleasant Borough is certain, however, lightning often occurs with other natural hazards, such as thunderstorms.

Storm Surge

All coastal areas are at high risk for storm surge. The severity of storm surge is generally related to the severity of the storm making landfall, as well as the tidal and lunar cycles. Within the Borough of Point Pleasant, the locations most susceptible to storm surge are located along Beaver Dam Creek.

Tornado

The probability of a tornado in Point Pleasant Borough is low. If a tornado is to occur, it is mostly likely to do so between March and August, forming in the late afternoon or early evening at the trailing edge of a thunderstorm.

Wave Action

All immediate coastal and shoreline areas along the Atlantic Ocean are at risk from wave action. Waves are caused by wind during storm events, even those which remain offshore, and generally the more severe the storm, the more destructive waves become. The size of wind generated waves is related to the speed of the wind, the distance over which the wind travels (the fetch length) and the depth of the water. The velocity zone is an area where a 3 foot wave is capable of being propagated and the hazard from the force of those waves is high. Beyond the velocity zone is an area known as the Coastal A Zone where waves of from 1.5 to 3 feet are capable of being propagated. Post storm analysis has shown that a wave of this height is still capable of producing damage to building using typical construction techniques. The Coastal A zone, as delineated on Point Pleasant Borough's PFIRM map, as well as the small V- zone area, are the areas within the Borough most susceptible to wave action. These areas are located along the Manasquan River and Beaver Dam Creek.

Wildfire

Wildfires typically occur in unoccupied, rural, or forested areas and happen during the fall and spring when it is hot and dry. In New Jersey, 99% of wildfires are caused by human activity. Due to the developed nature of Point Pleasant Borough, the probability of wildfires occurring is low, although the probability of wildfires occurring in Ocean County is high, due to the presence of the Pinelands.

Winter Storms

Although Point Pleasant is located south of the typical boundary between freezing and non-freezing precipitation during the wintertime, there is a high probability of occurrence of winter storms in Point Pleasant Borough, with Coastal Ocean County

averaging approximately 15 inches of snowfall annually. Winter storms generally occur from November through mid- April, with the peak season being December through March. Winter storms can consist of blizzards, heavy snow, sleet, and/or ice storms.

Winter storms can result in downed trees, damaged vegetation, transportation accidents, road closings, stranded travelers, power outages, and a depletion of heating supplies. They can cause major disruptions to transportation, commerce, and electrical power. Recent winter storm events that have impacted Point Pleasant Borough include:

- January 6-8, 1996
- February 16-17, 2003
- January 22, 2005
- February 17, 2007
- December 26, 2010
- November 7-8, 2012
- January 22 -24, 2016

SPECIAL FLOOD RELATED HAZARDS

There are many special localized situations in which flooding or flood-related problems do not fit the national norm for riverine and coastal floodplain management. These special flood-related hazards include:

Uncertain Flow Paths

Alluvial fans, moveable bed streams, channel migration, and other floodplains where the channel shifts during a flood are classified as uncertain flow paths. This hazard is not an issue in Point Pleasant.

Closed Basin Lakes

Lakes that have a small or no outlet that may stay above flood stage for weeks, months, or years are called closed basin lakes. This hazard is not relevant to Point Pleasant.

Ice Jams

Ice jams, also known as ice dams, typically occur in late winter or early spring when a frozen river begins to thaw. Blocks of ice break free and can accumulate at bends in the river, mouths of tributaries, or near structures such as bridge piers. The ice can restrict the flow of a river and cause flooding upstream. A flash flood type event can also occur downstream if the ice jam suddenly breaks free. Although the Manasquan River has been known to freeze in winter months, this has occurred further upstream and the threat of

flooding from ice jams in Point Pleasant Borough is low due to the width, depth and tidal nature of the river. However, there is a possibility of damage to structures such as bulkheads, docks and piles from floating ice.

Land Subsidence

Land Subsidence, as defined by the United States Geological Survey, is the process by which land sinks or lowers; this, combined with rising water levels can cause a relative sea-level rise. Roughly 80% of land subsidence in the United States is caused by groundwater withdrawals. Evidence suggests that the global sea-level rise rate during the last century is on average 1.0 to 2.0 mm/year. During this time, the sea level rose by 3 to 5 millimeters per year in the region between North Carolina and New Jersey. On the coast of New Jersey, tidal gauges predicted that the relative sea-level rise was about 3.53 mm/year during the last century, but only 2mm/year can be particularly attributed to land subsidence and sediment compaction. Land subsidence is an aggravating factor in relative sea level rise.

Mudflow hazards

Mudflow hazards are identified as a river, flow, or inundation of liquid mud down a hillside, usually as a result of a dual condition of loss of brush over and the subsequent accumulation of water on the ground, preceded by a period of unusually heavy or sustained rain. This is not considered to be a threat in Point Pleasant.

Coastal Erosion

This hazard was discussed in the previous section. It has and will continue to have a large impact on Point Pleasant Borough.

Tsunamis

Tsunamis are large ocean waves typically caused by an earthquake, landslide, or underwater volcano. Although Tsunamis are far more likely on the west coast, there are three DART (Deep-ocean Assessment and Reporting of Tsunamis) monitoring stations off the coast of New Jersey, near the Hudson Canyon.

VI. PROBLEM ASSESSMENT

FEMA is currently in the process of updating the Flood Insurance Rate Map (FIRM) for the Borough of Point Pleasant. The updated Preliminary FIRM indicates that northern, southern, and eastern boundaries of the Borough is located within the 100-year floodplain, also known as the Special Flood Hazard Area (SFHA). Table 1 below indicates the properties and land area located within both the 100-year and 500-year floodplains. The table also shows the percentage of each category that is located within the 100-year floodplain to get a better understanding of how much of the Borough is vulnerable to flooding.

Table 1. Floodplain Property Data

Item	Borough Total	100-Year Floodplain	500-Year ¹ Floodplain	100-Year + 500-Year Floodplain	Percent Located within the 100-Year Floodplain
Properties	8,451	3,167	1,519	4,686	37.47%
Land Area (acres) ²	1,833.50	645.65	194.80	840.45	35.21%

1. This does not include the area within the 100-year floodplain.

2. Land area only includes land parcel areas. Waterways and roads are not included in this area.

Most of Point Pleasant’s critical facilities are located out of the 100-year floodplain, with the exception of the Nellie F. Bennett Elementary School. The school is owned by the Point Pleasant Board of Education. Critical facilities must be protected from flooding so valuable equipment is not destroyed and community and emergency services can be provided during and after storm events. FEMA recommends that any critical facility be properly flood proofed or elevated to withstand the 500-year storm event. A map showing the Borough’s critical facilities and the Special Flood Hazard Areas can be found in Appendix K.

HAZARD IMPACT

Borough residents and first responders are particularly vulnerable to the impacts of flooding in Point Pleasant Borough. Residents who live within the SFHA should be encouraged to take all necessary precautions to ensure their homes are safe from flood hazards. Additionally, those residents who do not live within the SFHA, but live in areas which are known to flood should take similar precautions as their neighbors living within the SFHA. In addition to the possible damage to buildings and other infrastructure, there is the possibility of injury or even death to residents or responders who could get trapped in a flooded building or swept away in fast moving floodwaters. The Borough and its residents must also be aware of the potential impacts to public health from flooding.

Mold will quickly develop in many structures and cause respiratory issues for those attempting to rebuild. Debris from damaged and demolished structures could also contain hazardous materials such as mold, lead or asbestos. Early warning and evacuation, as well as making the necessary preparations to protect facilities from flooding, can protect the health and safety of residents and emergency workers and facilitate a rapid response and recovery from future flood events. Additionally, it will be importation to ensure that damaged areas can be secured after flooding recedes to prevent scavengers and gawkers. In 2013, Point Pleasant Borough updated its Emergency Operations Plan; and a Debris Management Plan is currently being finalized. These documents address hazard preparedness issues and minimize their impacts to the maximum extent practical.

Many of the hazards to which Point Pleasant Borough is vulnerable generally occur concurrently with flooding. Areas that are susceptible to flooding will only increase in their vulnerability as impacts due to sea level rise become greater in the future. Homes which are not raised above the base flood elevation are particularly vulnerable to flood related hazards, as are areas prone to flooding but not located within the SFHA. Local observations indicated that after Sandy, older homes and newer homes built to the BFE fared well, while those built 40 years ago fared the worst. The Borough of Point Pleasant Borough should work with FEMA to ensure that all flood maps illustrate an accurate portrayal of flood risk within the community. Currently, Point Pleasant Borough had adopted the Advisory Base Flood Elevations and subsequently, the Preliminary FIRMs (Best Available Flood Hazard Data) and requires that new or substantially damaged homes be elevated to the more restrictive of the PFIRM or Effective FIRM in order to minimize the vulnerability of homes within Point Pleasant Borough to flood events.

Repetitive loss areas indicate portions of the Borough where the risk of flooding may be higher as indicated by multiple flood insurance claims filed on a single property. The average number of losses per repetitive loss property within Point Pleasant Borough is two (2), and the highest concentration of these properties are located in the southern portion of the Borough along Beaver Dam Creek. The Repetitive Loss Areas can be found mapped in Appendix J.

Category 1, 2, & 3 SLOSH models for the Borough of Point Pleasant Borough were run by the Jacques Cousteau National Estuarine Research Reserve (JCNERR) to estimate storm surge heights and wind resulting from historical, hypothetical, or predicted hurricanes. SLOSH is a computer model developed by the National Weather Service (NWS) and stands for Sea, Lake, and Overland Surge from Hurricanes. It is important to

note that the SLOSH model does not include rainfall amounts, river flow, or wind-driven waves and accuracy is generally within 20% (NOAA).

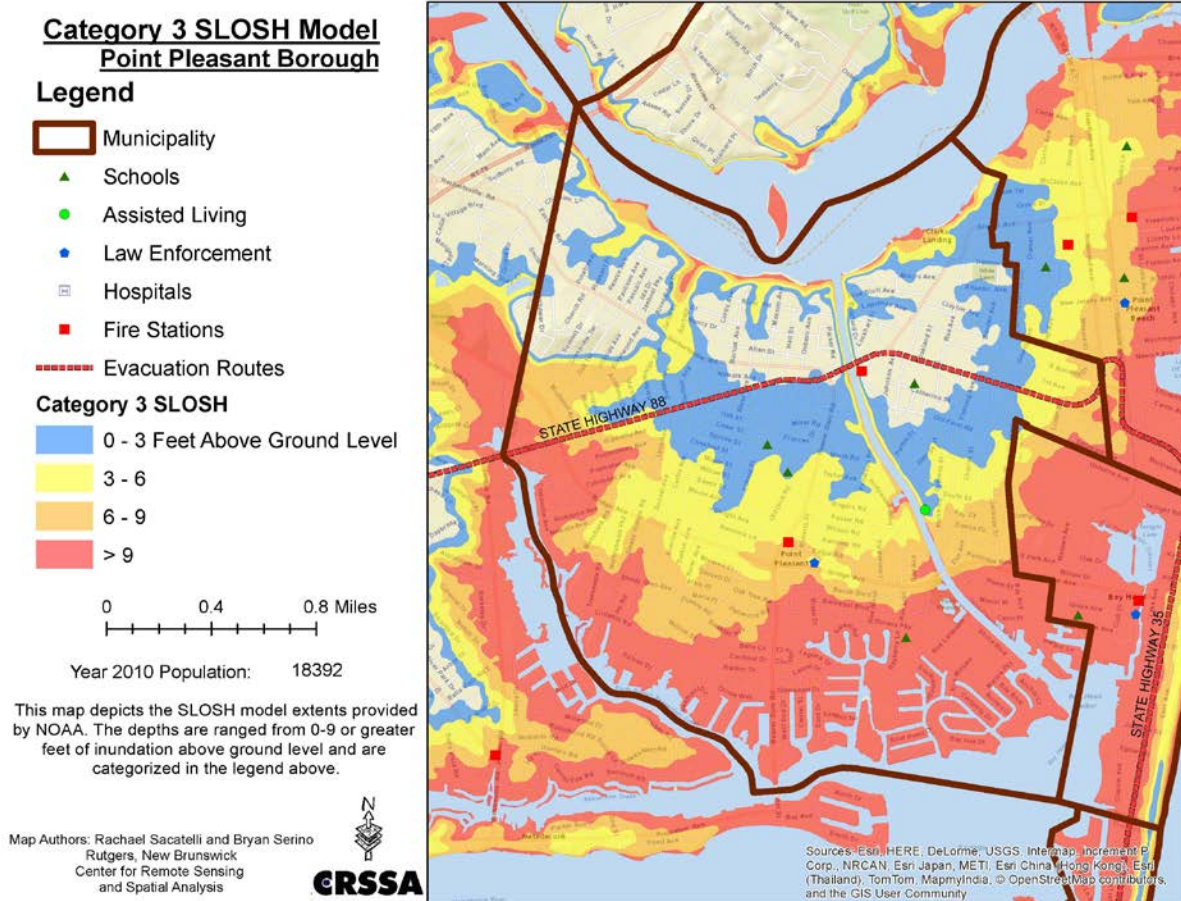


Figure 6. Category 3 SLOSH Model

As depicted in the maps found in Appendix L., during a Category 1 storm event storm surge would be above ground level along all water boundaries with the Borough, extending slightly inland in the Bay Head Shores neighborhood. During a Category 2 storm event, storm surge would further inundate the Borough from Beaver Dam Creek and the Barnegat Bay. East of Beaver Dam Road, storm surge would reach Bridge Ave. Additionally, storm surge would extend further inland along the banks of the Manasquan River. As shown above in Figure 7, the majority of the Borough would be inundated by storm surge during a Category 3 storm event, with the exception of a small portion of areas around Herbertsville Road in the west of the Canal and Arnold Ave, east of the Canal.

The impacts of Sea Level Rise and marsh retreat on the Borough of Point Pleasant Borough were also analyzed by JCNERR. With a one foot increase in sea level rise, there would be some encroachment along the Beaver Dam Creek and Barnegat Bay in the southern portion of the Borough, as well as along the banks of the Manasquan River in the north. Small portions of tidal marsh would convert to open water and there would be some areas of marsh retreat along the Beaver Dam Creek. With two feet of sea level rise, water will encroach slightly more in the same areas as discussed with a one foot increase in sea level rise, as well as along the Point Pleasant Canal. Marshes will undergo conversion and retreat will look similar to the one foot sea level rise predictions. Three feet of sea level rise will encroach further along all water boundaries within the Borough. With three feet of sea level rise, the areas of marsh retreat and conversion will increase slightly. Sea level rise maps and marsh retreat maps can be found in Appendices M and N, respectively.

Point Pleasant Borough is a predominately residential community, with commercial areas for the marine industries along the rivers and commercial corridors along Route 88 and Bridge Ave. Much of the areas that will be affected by storm surge and/or sea level rise are residential. These are also the areas that are and will continue to be most impacted by storm and flooding events.

Point Pleasant Borough has an established land use pattern and is essentially a fully developed community. As such, there are not many viable options for major changes to zoning and development regulations. However, the Borough should consider adopting stricter regulations to limit the impacts of flooding and protect those residents building in flood zones.

HISTORICAL DAMAGE

Hurricane Sandy caused the most damage of any storm in recent history. During the storm, Point Pleasant Borough experienced major impacts from wind, storm surge, rain, and waves, resulting in significant damage to structures and buildings, the disruption of electrical service, downed trees, and damage to roadways. The storm also deposited debris onto roads and rights-of-way.

The United States Department of Housing and Urban Development considers a residential unit to have sustained “major” damage when there is between \$8,000 and \$28,799 of physical damage or more than one foot of flooding on the first floor and “severe” damage when there is more than \$28,800 of physical damage or more than four feet of flooding on the first floor. The State of New Jersey’s CDBG Disaster Recovery Plan Action identified four census tracts in Point Pleasant Borough where homes sustain severe

or major damage according to HUD classifications. Additionally, 151 properties in Point Pleasant Borough were deemed to be substantially damaged (total costs of restoring the structure to its before damaged condition would equal or exceed 50% of the structure's pre-storm market value). Properties substantially damaged by Hurricane Sandy were primarily confined to the coastal neighborhoods in the southern section of the Borough.

Downed trees and power lines resulted in power outages for 6 to 14 days. Additionally, 200 trees blocked roads, making them impassable. 8,060.50 cubic yards of debris was deposited throughout the Borough, requiring immediate clearance and removal due to immediate threat to lives, public health, safety, and improved property.



Figure 7. Downed Tree from Hurricane Sandy

Community facilities including the Riverfront Park, Point Pleasant Community Park, Maxson Avenue Beach, and the Recycling Center Building all sustained damages during Hurricane Sandy.

ECONOMIC IMPACTS

Economic impacts of flooding to the Borough are felt in the cost of debris removal, municipal facility repair, and personnel costs during the event. The impact of costs to the community would depend on the severity and longevity of the event as well as reductions in the tax base due to property loss or migration.

NATURAL FEATURES

Point Pleasant Borough is a largely built out community, with small areas of parks and open spaces interspersed throughout the Borough. These parks provide passive and active recreational opportunities and aid in the natural recharge of stormwater.

There are a few areas of wetlands within the Borough of Point Pleasant Borough, most located along Beaver Dam Creek. A map of all the natural feature areas in Point Pleasant Borough can be found in Figure 8. and in Appendix P.

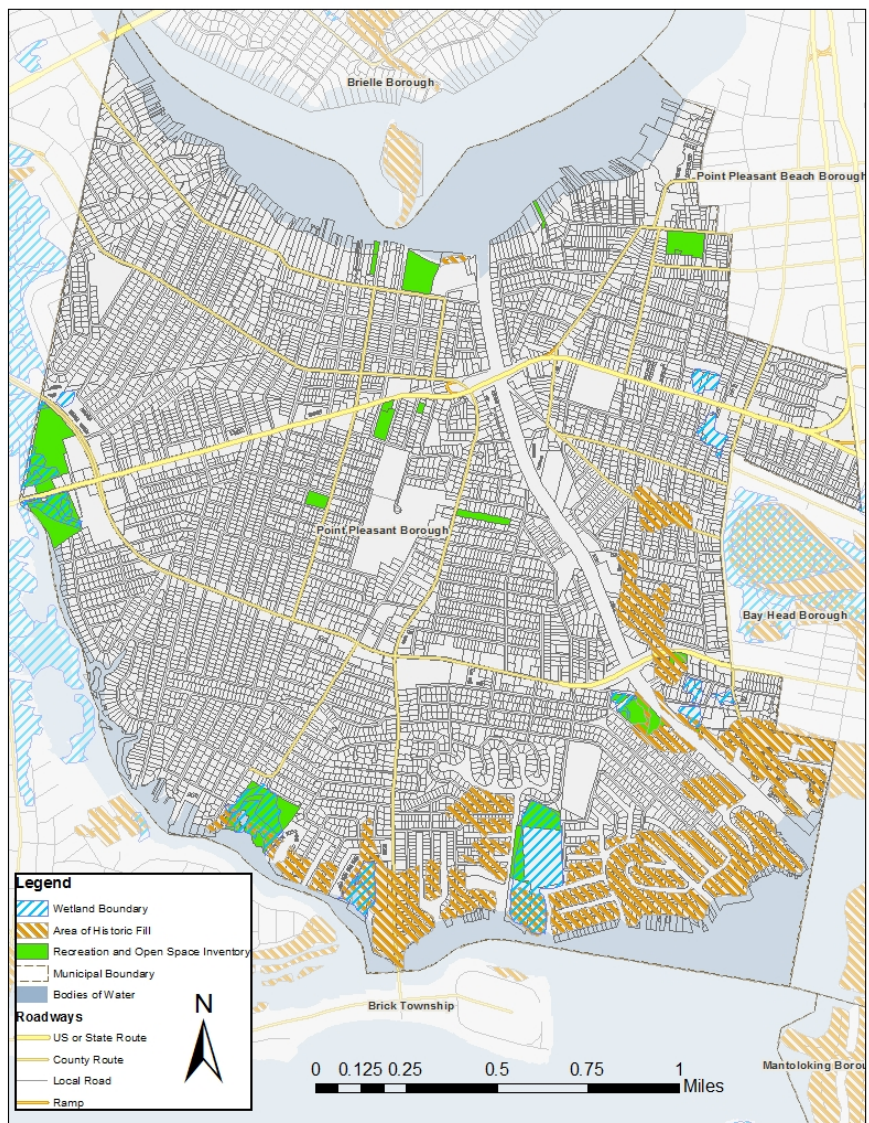


Figure 8. Natural Features

FUTURE FLOODING IMPACTS

As previously indicated, the Borough of Point Pleasant is predominantly built-out. Due to existing development and current regulations, there is little vacant land available for new development. The Borough should continue to enforce the existing development standards and maintain its open spaces and natural features. This is critical to maintaining permeable surfaces and limiting stormwater runoff.

As sea levels rise and marshes retreat, Point Pleasant Borough could become more vulnerable to impacts from flooding. The overall impacts of flooding on the community

will be contingent on how effectively the Borough mitigates current vulnerabilities and plans for future conditions. It is imperative that the Borough utilize this Floodplain Management Plan as a valuable tool to plan for the future.

VII. GOALS

Over the course of the various Floodplain Management Plan Steering Committee meetings, the Committee reviewed the goals from the Borough's existing planning documents and discussed potential goals to determine what the Borough would like to achieve with the Floodplain Management Plan to increase resiliency and mitigate damage from future storm events. The following is a list of the goals agreed upon by the Committee:

1. Protect private property and infrastructure;
2. Reduce loss from flood damage and other hazards through codes and standards;
3. Protect and ensure that Borough infrastructure and critical facilities are able to withstand future hazard events and remain operational during and after such events;
4. Provide public information resources to Borough residents and business owners so they are informed of the natural hazards within the community and the precautions they can take to protect their properties;
5. Educate decision makers and the public about stormwater management and floodplain management;
6. Reduce losses by continuing to develop and improve the existing warning system and maintain it;
7. Minimize the need for rescue and relief efforts associated with flooding and generally undertaken at the expense of the general public;
8. Preserve and protect areas of environmental sensitivity, such as marshes and waterfront areas; and
9. Reduce flood insurance premiums through education to encourage compliance.

VIII. POSSIBLE FLOODPLAIN MANAGEMENT ACTIVITIES

As part of the planning process, all existing and potential floodplain management activities and measures to mitigate property damage and impacts to community infrastructure were reviewed. The benefits, costs and general feasibility of each action were considered prior to making a recommendation to proceed with the action. Many of the proposed activities coincide with actions recommended in the 2014 Ocean County Multi-Jurisdictional All Hazards Mitigation Plan and the Borough's 2015 Strategic Recovery Planning Report. All activities and measures have been grouped into the following six mitigation strategies: Preventative Measures, Property Protection, Natural Resource Protection, Emergency Services, Structural Projects and Public Information. The findings are as follows.

PREVENTIVE

Preventive activities keep flood problems from getting worse by limiting the use and development of flood-prone areas through planning, land acquisition, or regulation. These activities are generally administered by the Borough building, zoning, planning, and code enforcement offices.

Floodplain mapping and data

The Borough of Point Pleasant has been studied and its flood-prone areas mapped by FEMA in entirety. FEMA is currently in the process of updating the flood maps for the Borough. The Borough's adopted effective FIRM map is dated 2006. In 2014, Preliminary FIRMs were published for the Borough. These are still in revision process and have yet to be adopted as the effective FIRM maps for flood insurance purposes. Additionally, the Borough is developing Geographic Information Systems (GIS) to increase the community's resiliency and enable them to better prepare for, respond to and recover from disasters. The components of GIS will support facilities and public works infrastructure, land information, and floodplain management-related data layers and applications. This will be done as part of the Round 2 Post-Sandy Planning Assistance Grant program.

Open Space Preservation

The opportunity for future open space preservation in Point Pleasant is small, due to the largely built-out nature of the Borough. However, there are already parks and areas of preserved open space scattered through-out the community. While the opportunity for future open space preservation within the Borough is low, measures should be taken to ensure that existing areas of open space within the Borough remain as such and new

opportunities for open space preservation within the floodplain are taken advantage of when they arise. The Floodplain Management Committee recommends the Borough consider rezoning areas currently being used for recreational purposes, such as the Sunshine Harbor and Bay Head Shores neighborhood associations properties and the Nellie Bennett Marsh, to a recreational and open space zone district to ensure they remain as such.

Floodplain Regulations

Floodplain Regulation are in place throughout the Borough by zoning and development regulations at the local, county, state, and federal levels. The Borough's floodplain ordinance requires new or substantially improved structures to be built to one (1) above the best available flood hazard data. The SRPR recommended the preparation of a Borough Floodplain Management Plan. This plan is being funded by the NJDCA Post-Sandy Planning Assistance Grant Program.

Erosion Setbacks

This is not relevant to the Borough of Point Pleasant.

Planning and Zoning

The Borough of Point Pleasant adopted ordinance 2013-01 to encourage house elevations and amended height allowance, 2013-03 to allow for the restoration of non-conforming structures, and 2013-05 and 2013-13 which amended the flood damage prevention ordinance. The Ocean County Hazard Mitigation Plan recommends that the Borough continue to enforce its land use codes and maintain a flood mitigation plan.

Stormwater Management

The Borough has adopted a stormwater management ordinance in accordance with the State's regulations. The Borough's Stormwater Management ordinance regulates quantity, quality and groundwater recharge. It also follows CAFRA regulations. The Floodplain Management Committee would like the Borough to conduct a Hydraulic Study of the Borough to determine infrastructure issues related to flooding. Additionally, the Floodplain Management Committee recommends the Borough undertake a low-flying survey of Point Pleasant to identify existing topography and all stormwater systems and inverts. It is recommended that this be done in conjunction with Bay Head and Point Pleasant Beach to gain a greater understanding of the flow patterns and stormwater systems within the area.

Drainage System Maintenance

The Borough is governed by a Stormwater Management Permit which requires cleaning and inspection.

Building Codes

The Ocean County Hazard Mitigation Plan recommends the Borough of Point Pleasant continue to enforce its building codes. The Borough's SRPR recommends that the Borough automate, update, and expedite the Borough's system for processing zoning and construction permits. Point Pleasant has already automated their system, but would be open to improving and upgrading the system if funding became available. Building codes, building permits and inspections are required for construction.

PROPERTY PROTECTION

Property protection activities are usually undertaken by property owners on a building-by-building or parcel basis.

Acquisition

Wide-scale acquisition of structures within the floodplain is not feasible within Point Pleasant. However, the County Hazard Mitigation Plan recommends the acquisition of 14 structures within the Borough, though the locations were not defined.

Relocation

The wholesale acquisition and relocation of properties located within flood prone areas is not practical in the Borough of Point Pleasant. The Borough is fully developed with no potential for relocation elsewhere in the Borough. This action is not applicable to the Borough of Point Pleasant.

Building Elevation

Requiring that structures within the flood hazard area be elevated to at least the highest regulatory standard is the best method for reducing flood problems and losses in Point Pleasant Borough. The elevation of approximately 449 homes within the Borough and the demolition and reconstruction of an additional 21 homes are recommended actions in the 2014 Ocean County Multi-Jurisdictional All Hazards Mitigation Plan. The Borough of Point Pleasant adopted ordinance 2013-01 to encourage first floor elevations above the required BFE.

Retrofitting

The Borough provides information to property owners on various types of flood protection and floodproofing, including the installation of flood vents, filling in of basements, and flood resistant duct work, through the construction office. As property owners utilize these techniques, they should be encouraged to get new elevation certificates. Commercial buildings within Point Pleasant can be encouraged to utilize flood-proofing techniques.

Sewer Backup Protection

Sewer Backup is not a considered a problem in the Borough of Point Pleasant.

Insurance

Point Pleasant participates in the National Flood Insurance Program. Homeowners are encouraged to maintain flood insurance to protect against loss of structure and contents in case of flooding. Homeowners who are not necessarily located within a flood zone should also be encouraged to carry flood insurance. The Borough of Point Pleasant participates in the Community Rating System (CRS), a voluntary program of the NFIP that can reduce the flood insurance premiums community wide in increments of 5% for participating communities. This plan assists in gaining points towards that program. The Ocean County Multi-Jurisdictional All Hazards Mitigation Plan and the Borough's SRPR recommend Point Pleasant consider increasing its rating in the CRS program. Before working towards the next rating level in the CRS program, the Borough should ensure it has the resources to maintain a higher level of certification.

NATURAL RESOURCE PROTECTION

Natural resource protection activities preserve or restore natural areas or the natural functions of floodplain and watershed areas. They are implemented by a variety of agencies including parks, recreation, or conservation agencies and organizations.

Wetlands Protection

The State regulates wetlands protection through NJDEP freshwater and coastal wetland permit programs.

Erosion and Sediment Control

Soil erosion and sediment control is regulated through New Jersey's Soil Erosion and Sediment Control Act and is administered by the Freehold Soil Conservation District.

Natural Area Preservation

Existing natural areas are preserved. The Nellie Bennett Marsh was identified as an area for future preservation.

Natural Area Restoration

The Borough is working with the American Littoral Society on a project at the Slade Dale Sanctuary to halt erosion and regain marsh habitat by constructing a branch box breakwater and planting native species.

The Borough should explore invasive species management, shoreline preservation, and water quality improvement techniques where applicable.

Water Quality Improvement

There are existing regulations for street sweeping, catch basin maintenance, and cleaning. Point Pleasant also has ordinances regarding pet waste cleanup and feeding of water fowl.

Coastal Barrier Protection

While there is no barrier beach within the boundaries of the Borough, Point Pleasant is protected by the barrier beaches of Point Pleasant Beach, Bay Head, and Mantoloking and is therefore a stakeholder in their beach nourishment and dune projects. Point Pleasant will be impacted if a breach occurs similar to during Hurricane Sandy.

Environmental Corridors

This is not applicable to Point Pleasant.

Natural Functions Protection

The new stormwater management ordinance encourages non-structural measures. State Flood Hazard Area rules protect stream corridors by requiring setbacks and no net fill.

EMERGENCY SERVICES

Emergency services are measures taken during an emergency to minimize its impact. These measures are usually the responsibility of municipal or county emergency management staff and the owners or operators of major or critical facilities.

Hazard Threat Recognition

Prior to storm events, warnings are issued by the National Weather Service. The Ocean County Multi-Jurisdictional All Hazards Mitigation Plan recommends that Borough

participate in the National Weather Service's StormReady Program. The Borough should explore this program and determine if participation is right for them. It was noted that CRS points are available for participation in the program. Prior to a storm event, the NWS issues warnings. The Borough of Point Pleasant is well covered by weather radar.

Hazards Warning

The Borough notifies residents of hazard events through email, radio, Nixle, social media, loudspeaker via truck, and door to door notifications. The Borough should continue to provide Nixle-system notifications to residents and encourage more residents to sign up for the notifications. In the Borough's SRPR, the Borough of Point Pleasant identified installing a Supervisory Control and Data Acquisition (SCADA) system in conjunction with the Borough's owned and operated facilities to communicate critical alarms to a centralized location or operational personnel. The Floodplain Management Committee recommends the Borough maintain a special needs registry to provide additional warning, outreach, and evacuation services (if needed) to elderly residents and others who may require additional assistance.

Hazards Response Operations

The Borough of Point Pleasant maintains a verbal mutual aid agreement with the Boroughs of Point Pleasant Beach, Bay Head, and Mantoloking. The Borough's SRPR recommended that Point Pleasant identify a second location for a potential emergency shelter. The Floodplain Management Committee agreed that this was important, and further specified that a non-school and/or regional shelter location should be identified. The SRPR also recommended that a new permanent location be identified for OEM activity. At the time of this writing (April 2017), a location for OEM activity has been identified in the public works facility and the OEM facility is almost complete.

The Borough's SRPR also identified the need to obtain generator-powered portable lighting to be used during power outages. Point Pleasant has purchased some in its capital budget and hopes to obtain more in the upcoming years. The Floodplain Management Committee recommends the Borough develop a traffic control plan for when the Borough loses power, identifying priority intersections. The Borough should obtain generators for traffic signals at those identified priority locations during times of power outages to reduce traffic controls pressures on the police department and re-open roadways as quickly as possible. The Ocean County Multi-Jurisdictional All Hazards Mitigation Plan recommended that the Borough of Point Pleasant improve its Evacuation Plan and maintain an Emergency Operations Plan. These Plans are the responsibility of the Borough's Office of Emergency Management.

Critical Facilities Protection

The County Hazard Mitigation Plan recommends Point Pleasant develop and implement Shelter Management Plans and Capability and purchase and install three (3) permanent generators to be located at three (3) schools (designated shelters) located throughout the Borough. It was noted by the Floodplain Management Committee that the Nellie Bennett school is located within the Special Flood Hazard Area and may not be an appropriate shelter for a flood event. However, it could be utilized for other types of hazards. Additionally, as mentioned previously, the Floodplain Management Committee recommends that a non-school shelter location be identified to allow schools to re-open as soon as possible in the aftermath of a hazard event, quickening a return to normalcy in the community. The Good Shepard Church was identified as a potential shelter location to be further explored.

The Borough's SRPR recommended an update to the Borough Capital Improvement Plan. The Borough regularly evaluates long term capital needs and budgets accordingly.

Health and Safety Maintenance

The County Hazard Mitigation recommended the Borough development ordinance requirements for the storage of hazardous material to prevent spills and contaminations as a secondary impact of flood related hazards. It was decided by the Floodplain Management Committee that this action would be hard to enforce in ordinance form, but rather should be developed as a public education campaign. As such, it will be discussed further in the Public Information activities section of this review.

Post-disaster Mitigation Actions

The Borough is currently preparing a Debris Management Plan, as recommended in the 2015 SRPR, to provide the Department of Public Works with an emergency staging facility and a designated debris management area. This project is being funded through the NJDCA Post- Sandy Planning Assistance Grant Program and will be completed in May 2017.

The Floodplain Management Committee recommends that following a storm event the Borough Police Department should perform a resident check on those identified in the special needs registry, recommended in the Hazard Warning section. The Borough should also conduct a Hazard Tree Survey to identify trees that may pose hazards in the community.

STRUCTURAL PROJECTS

Structural projects keep flood waters away from an area with a levee, reservoir, or other flood control measure. They are usually designed by engineers and managed or maintained by the public works staff.

Reservoirs

This is not applicable to Point Pleasant.

Bulkheads

The County Hazard Mitigation Plan recommends the Borough complete shoreline stabilization and bulkheading of unprotected street ends to protect from coastal erosion and flood related hazards. However, the Floodplain Management Committee felt that at street ends where no bulkheading currently existed, it was important to maintain the natural functions of these areas. Riverfront Park was identified as an area that may need bulkheading, by the Committee, as it is currently eroding.

Levees/ floodwalls

This is not applicable to Point Pleasant as there is not sufficient acreage for levees and excessive shorefront for the development of flood walls.

Storm Water Pumps

There are no stormwater pump stations in Point Pleasant. The County Hazard Mitigation Plan recommends the purchase and installation of three permanent generators to be located at Borough's water supply wells and treatment plant. This has recently gone out to bid.

Diversions

This is not applicable to Point Pleasant as the hazard is predominantly coastal flooding.

Channel Modifications

This is not applicable to Point Pleasant for the same reason as above.

Storm Drain Improvements

The County Hazard Mitigation Plan recommends the installation of five (5) Tide Flex Valves in the following locations:

1. On the east side of Beaver Dam across from the Riviera Parkway
2. Dellwood Road at the lagoons on the outfall side

3. One-way valve pipe- to- creek
4. Various outflows to the bay
5. Various outflows to the lagoon

The Borough is currently purchasing several back flow valves for installation.

PUBLIC INFORMATION

Public Information activities advise property owners, potential property owners and visitors about the hazards, ways to protect people and property from the hazards, and the natural and beneficial functions of local floodplains. In Point Pleasant, these activities are implemented largely by the Borough's construction official and CRS coordinator.

Map Information

Copies of the FIRM maps are available for the public to review in the Borough Construction Office. The Borough's construction official and floodplain manager, is available to explain the maps as needed. A log should be kept of information provided to residents who come in to view maps or who call with questions for CRS credit documentation. Additionally, FIRM map information is available for the public to view from the Borough's website. Map information is available on the web at <http://www.region2coastal.com/view-flood-maps-data/what-is-my-bfe-address-lookup-tool/>

Outreach Projects

The Floodplain Management Committee recommends the Borough participate in FEMA's High Water Mark Initiative Program. Placing signage at key points throughout the Borough to indicate the high water mark during major storm events (such as Hurricane Sandy), will serve as a constant reminder of the real flood risk in the area. This activity should be coordinated with the County's CRS User Group. As mentioned in the Emergency Services section of this discussion, the Committee recommends a public education campaign to inform residents of the proper storage of hazardous materials to prevent spills and contamination from occurring during storm events.

Currently, the Borough utilizes the electronic signage at public parks to provide information about flooding, community events, and other concerns.

The following outreach actions were recommended for the Borough of Point Pleasant in the County Hazard Mitigation Plan. The Borough's progress is noted in italics.

- Continue Community Watch Program. *This is ongoing.*
- Continue National Night Out program to connect to the community. *This is ongoing.*
- Continue outreach through local radio station. *Ongoing.*
- The Borough will continue to maintain the Facebook page. *The Borough is active on a number of social media platforms and has recently won an award for its social media pages.*
- The Borough will continue to host Town Hall meetings to allow Borough officials and residents to gather and communicate with each other post-disaster or at other strategic times. *The Borough's Office of Emergency Management continues to host quarterly meetings which serve this function.*
- Support and share information on grant programs that support residential business and natural resource mitigation projects with appropriate stakeholders. *The Borough's administrative offices provide this information as it becomes available. The Borough holds an annual information session, run by SmartVent, to provide residents with resources to reduce their flooding risks and potentially increase their flood insurance savings.*

Real Estate Disclosure

The Borough's construction official and floodplain manager sends annual mailings to local realtors.

Library

The Ocean County Library System, including the local Point Pleasant Branch, has copies of educational materials on flood risks from FEMA on file. These are updated as new documents become available.

Technical Assistance

The Borough construction official and floodplain manager, provides technical information to anyone who calls or visits his office, as well as FEMA pamphlets and booklets regarding flood preparedness, the NFIP, flood venting, etc.

Environmental Education

The Point Pleasant Environmental Commission hosts an annual Environmental Fair each April. At the Environmental Fair, residents and visitors can learn about native

landscaping, water conservation, etc. The Environmental Commission also maintains a presence at the Borough Fair in June.

IX. ACTION PLAN

The previous section presented a wide range of possible floodplain management activities to address the goals established by the Floodplain Management Plan Steering Committee. This section presents an Action Plan that describes which activities should be implemented, who is responsible for implementing the activity, the deadline for completing the activity, the proposed budget and the funding source. The Committee realizes that there are many proposed activities, and that not all activities can be completed immediately based on available funds. The Borough should initially focus on those projects that are economically feasible and will aid in the recovery and resiliency of the Borough. The following priority levels were therefore established:

- High Priority – Activities in this category are critical to protecting the Borough’s critical facilities and creating a more resilient community. The benefits of these activities far outweigh the costs. Funding for these projects is currently in place or there is the high likelihood for grant funds to be secured in the near future. It is recommended that the majority of these projects be completed prior to the next hurricane season.
- Medium Priority – Activities in this category are necessary to increase the Borough’s resiliency and provide flood protection. Benefits outweigh the costs; however, funding has not yet been secured for those activities with physical improvements. The Borough should continue to seek grants and other funding sources for these activities. It is recommended that these projects be completed in the next three years as funding becomes available.
- Low Priority – Activities in this category will mitigate hazard risks for the Borough and are cost-effective. However, it is understood that these projects are not as critical as those identified as high or medium priority and that funding may be difficult to obtain for some of the larger construction projects.
- Ongoing – Activities in this category are required on a continuous or regular basis to be effective. These activities do not require special funds outside of the Borough’s standard budget.

The following is the recommended Action Plan for the Borough of Point Pleasant:

PREVENTATIVE MEASURES

Action Item	Priority	Responsible Party	Deadline	Budget	Funding Source
Develop a Geographic Information System (GIS) Program	High	Borough Staff and T&M Associates	May 2017	\$50,000	NJDCA Grant (secured)
Adopt a Floodplain Management Plan	High	Borough Staff, Floodplain Management Committee, and T&M Associates	May 2017	\$50,000	NJDCA Grant (secured)
Regularly check for blocked storm drains, outfalls, and other major drainage features; and remove sediment and debris.	Ongoing	Department of Public Works	Quarterly	Borough Staff Time	Borough Funds
Rezone areas throughout Borough for recreational purposes	Low	Borough Planner, Council, and Staff	Fall 2017	Borough Funds	Borough Funds
Undertake a hydraulic study of the Borough and hire a flight survey of the Borough's stormwater system including an inventory of all inverts, manholes, and catch basins	Medium	Borough Staff	Early 2018	TBD	TBD
Create an automated and expedited system for zoning and construction permit administration	Low	Construction Official	If funds become available	TBD	TBD

Update the Borough's system for processing zoning and construction permits.	Low	Construction Official	If funds become available	TBD	TBD
Continue to enforce floodplain regulations utilizing best available information	Ongoing	Borough Floodplain Manager	Ongoing	Borough Staff Time	Borough Funds
Adopt stormwater management ordinances in accordance with the State's regulations	Ongoing	Borough Staff	Ongoing	Borough Staff Time	Borough Funds
Continue to enforce building codes.	Ongoing	Construction Official	Ongoing	Borough Funds	Borough Funds

PROPERTY PROTECTION

Action Item	Priority	Responsible Party	Deadline	Budget	Funding Source
Continue to participate in FEMA's Community Rating System (CRS) Program and consider increasing the Borough's rating.	Ongoing	Borough Administrator and Floodplain Manager	May and October, annually	Borough Staff Time	Borough Funds
Continue to participate in the National Flood Insurance Program	High	Borough Staff	Ongoing	Borough Staff Time	Borough Funds
Encourage the elevation of homes within the Borough to higher standards and elevations	Medium	Homeowners	Ongoing	Will vary by home	Potential HMGP, ICC, FEMA SRL, HUD RREM
Make the public aware of the various types/ methods of flood protection and floodproofing.	Ongoing	Construction Official	Ongoing	Borough Staff Time	Borough Funds
Update the Borough's Floodplain Ordinance to require coastal A	Ongoing	Construction Official	Ongoing	Borough Staff time	Borough Funds

construction be built to V zone standards.					
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NATURAL RESOURCE PROTECTION

Action Item	Priority	Responsible Party	Deadline	Budget	Funding Source
Work with the American Littoral Society to implement living shoreline projects at the Slade Dale Sanctuary	High	Borough Environmental Commission	Will start in late 2017	TBD	NFWF
Act as a stakeholder in decisions regarding beach nourishment and dune projects in the barrier beach communities	Ongoing	Borough Council	Ongoing	Borough Staff Time	Borough
Encourage Borough participation in the Jersey Shore Partnership	Low	Borough Council	Ongoing	\$100	Borough
Continue to follow state regulations in regards to wetlands protections, soil erosion and sediment control, and Phase 2 stormwater.	Ongoing	New Jersey DEP	Ongoing	Ongoing	The State of New Jersey

EMERGENCY SERVICES

Action Item	Priority	Responsible Party	Deadline	Budget	Funding Source
Prepare a Debris Management Plan	High	Borough Staff and CME	May 2017	\$10,000	NJDCA Grant (secured)
Maintain a special needs registry	High	Borough OEM	ASAP	TBD	Borough Funds
Maintain the Borough's various hazard warning systems and social media sites. Educate the public on these systems.	High	Borough Office of Emergency Mgmt.	Ongoing	Borough Staff Time	Borough Funds
Conduct a Hazard Tree Survey post-disaster Event	High	Environmental Commission, Construction Official, Borough OEM	After storm events	Borough Staff Time	Borough
Post-disaster, conduct a resident check on those identified in the special needs registry	High	Borough OEM Borough Police	After storm event	Borough Staff Time	Borough
Obtain Generators for traffic signals at identified priority locations during power outages	Medium	County Office of Emergency Mgmt.	Ongoing	TBD	Capital Funds
Prepare a traffic control plan for power outages	Medium	Borough Office of Emergency Mgmt.	TBD	Borough Staff Time	Borough
Identify a non-school and/or regional shelter	Medium	Borough Office of Emergency Mgmt.	TBD	Borough Staff Time	Borough Funds
Improve the Borough's Evacuation Plan	Medium	Borough Office of Emergency Mgmt.	TBD	Borough Staff Time	Borough

Become a NWS Storm Ready Community	Low	Floodplain Manager	Spring 2018	Borough Staff Time	Borough Funds
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STRUCTURAL PROJECTS

Action Item	Priority	Responsible Party	Deadline	Budget	Funding Source
Purchase and install three (3) permanent generators to be located at 2 water pumps and public works	High	DPW	Summer 2017	Funded	Capital Funds
Install Tide Flex Valves	Medium	DPW	Summer 2018	\$85,000	Capital Funds/ FEMA HMP
Maintain the natural functions of non-bulkheaded street ends	Ongoing	DPW	Ongoing	Borough Staff Time	Borough

PUBLIC INFORMATION

Action Item	Priority	Responsible Party	Deadline	Budget	Funding Source
Conduct outreach projects by sending out annual mailings on flood risks, flood proofing, etc.	High	Borough Administrator and Floodplain Manager	Ongoing	Borough Staff Time	Borough
Participate in FEMA’s High Water Mark Initiative	High	Floodplain Manager	June 2018	Volunteer	None

Continue participation in the Community Watch Program and National Night Out	Medium	Borough Police	Ongoing	Borough Staff Time	Borough
Continue to maintain educational materials on flooding from FEMA at the local branch of the Ocean County Library	Ongoing	Ocean County Library System and Borough Floodplain Manager	Annually	Ocean County Library Staff	FEMA
Provide information regarding flood preparedness, NFIP, and floodproofing techniques as requested by residents. Maintain a log of all inquiries.	Ongoing	Floodplain Manager	Ongoing	Borough Staff Time	Borough
Continue to maintain the Borough’s website, providing information on floodplain mapping	Ongoing	Borough Construction Official	Ongoing	Borough Staff Time	Borough
Provide floodplain mapping information for residents to look at in Borough Hall. Keep a log of all questions answered.	Ongoing	Borough Construction Official	Ongoing	Borough Staff Time	Borough
Continue to support and share information on grant programs that support residential businesses and natural resource mitigation projects with local stakeholders and	Ongoing	Borough Administrative Offices	Ongoing	Borough Staff Time	Borough

residents. Have this information available in Borough Administrative offices.					
Continue to send annual letters to local realtors, informing them of flood hazards in Point Pleasant.	Ongoing	Borough Floodplain Manager	Ongoing	Borough Staff Time and postage	Borough
Continue to provide information to Borough Residents at the annual Environmental Fair and Borough Fair	Ongoing	Environmental Commission	April and June, annually	Borough Staff Time	Borough

X. PLAN IMPLEMENTATION & MAINTENANCE

It is anticipated that this Plan will be introduced to the Borough Planning Board and adopted on May 25, 2017. The Plan will also be adopted by the Borough Council by a formal Resolution on June 6, 2017.

This floodplain management plan is intended to be a dynamic document, adapting to changes in flood hazards and the needs of Point Pleasant Borough. The recommendations and actions identified in this plan should be implemented by the designated lead for each action item as funding and resources become available. Changes in future conditions and funding availability may determine the timeline for when some actions get implemented. As the plan is evaluated each year and updated every five years, the goals and objectives of this plan should also be evaluated and revised as necessary.

The Borough's CRS Coordinator will be responsible for monitoring the plan and ensuring that the Floodplain Management Plan Steering Committee will meet at least once per year to aid with the yearly plan evaluation. The original members of the committee will remain, unless they wish to be replaced. Then a like representative will replace them. The committee will review the plan on an annual basis to evaluate changes to hazard conditions, goals and objectives, and progress made towards objectives. The committee will identify any necessary changes or revision to the plan. The annual review will include:

- A review of the original plan;
- Identification of any flood, hurricane, or other disaster that has impacted Point Pleasant Borough since the last review;
- Review of action items from the original plan, including what has been accomplished;
- Discussion on why actions have not been completed;
- Where vulnerabilities have increased, identify why and what additional measures can be taken to decrease the vulnerability of that area to flood hazards;
- Recommendations for new projects or revised action items; and
- Survey of available resources to address action items.

This Floodplain Management Plan will be updated every five years and reviewed for CRS credit according to the CRS Coordinator's Manual in effect at the time. The 5-year update must include the following steps to retain CRS credit:

- The update must be conducted by a committee;

- A public meeting must be conducted to review and receive comments on the draft update;
- Review of new studies, reports, and technical information of the community's needs, goals, and plans for the area;
- New floodplain or hazard mapping;
- Identification of additional repetitive loss properties or completed mitigation projects;
- Discussion of any major flood or other disasters that have occurred since the plan was adopted;
- Review of any other changes in flooding conditions or development exposed to flooding or other hazards;
- Goals must be evaluated to determine if they are still appropriate;
- The action plan will be revised to account for projects that have been completed, dropped, or changed, and for changes in the hazard and problem assessments; and
- The update shall be adopted by the community's governing body.

Appendix A: Ordinance Forming Steering Committee

RESOLUTION NO. 096 - 2017

**RESOLUTION OF THE BOROUGH COUNCIL OF THE BOROUGH OF
POINT PLEASANT, COUNTY OF OCEAN, STATE OF NEW JERSEY,
APPOINTING MEMBERS TO THE FLOODPLAIN MANAGEMENT
COMMITTEE**

WHEREAS, the Borough Council of the Borough of Point Pleasant, County of Ocean, State of New Jersey (the "Borough") has adopted Ordinance No. 2017-03 which has established the Floodplain Management Committee (the "Committee"); and

WHEREAS, pursuant thereto the Borough needs to appoint Members of the Floodplain Management Committee pursuant to the Ordinance; and

WHEREAS, said Members shall hold a term of office retroactive from January 1, 2017 to December 31, 2017; and

WHEREAS, the Members of the Floodplain Management Committee shall serve without any salary or compensation; and

WHEREAS, the Borough finds it necessary and appropriate to appoint the following Borough Members to the Floodplain Management Committee

Council Member Michael Thulen Jr.	Borough Representative
Frank Pannucci, Jr., Borough Administrator	Borough Representative
Robert Forsyth, Superintendent of DPW	Borough Representative
Timothy Skinner, Construction Official	Borough Representative
Dennis Blazak	Public Representative
Elissa Commins	Public Representative
Jim Giordano	Public Representative
Al Faraldi	Public Representative
Lori Coe	Public Representative

NOW, THEREFORE, BE IT RESOLVED, this 7th day of February, 2017, by the Mayor and Borough Council of the Borough of Point Pleasant Borough, County of Ocean, State New Jersey, as follows:

DASTI, MURPHY
McGUCKIN, ULAKY,
KOUTSOURIS & CONNORS
COUNSELLORS AT LAW
620 WEST LACEY ROAD
P.O. BOX 1057
FORKED RIVER, N.J. 08731

1. The Borough hereby appoints Council Member Michael Thulen, Jr., Frank Pannucci, Jr., Robert Forsyth, Timothy Skinner, Dennis Blazak, Elissa Commins, Jim Giordano, Al Faraldi and Lori Coe as Members of the Borough Floodplain Management Committee for a one-year term beginning January 1, 2017 until December 31, 2017.

2. The Borough authorizes and directs the Mayor, Borough Clerk, Borough Administrator and Borough Solicitor to execute any and all necessary documents in order to implement the intent of this Resolution.

3. A certified copy of this Resolution shall be forwarded by the Borough Clerk to the following:

- (a) The Honorable Robert A. Sabosik, Mayor;
- (b) John Wisniewski, Council President;
- (c) Frank Pannucci, Administrator;
- (d) Christopher J. Dasti, Esquire;
- (e) Ray Savacool, P.E., of CME Associates;
- (f) Council Member Michael Thulen, Jr.;
- (g) Robert Forsyth, DPW Superintendent;
- (h) Timothy Skinner;
- (i) Dennis Blazak;
- (j) Elissa Commins;
- (k) Jim Giordano;
- (l) Al Faraldi; and
- (m) Lori Coe.

DASTI, MURPHY
McGUCKIN, ULAKY,
KOUTSOURIS & CONNORS
COUNSELLORS AT LAW
620 WEST LACEY ROAD
P.O. BOX 1057
FORKED RIVER, N.J. 08731

Council Member Snyder presented the following Resolution

Seconded by Wisniewski

RECORD OF VOTE	JOHN WISNIEWSKI	JOSEPH FURMATO	WILLIAM BOROWSKY	ANTOINETTE DEPAOLA	PAMELA SNYDER	MICHAEL THULEN, JR.	MAYOR SABOSIK
COUNCIL							
YES	X	X	X	X	X	X	
NO							
ABSTAIN							
ABSENT							

I, Antoinette Jones, RMC, CMR, Borough Clerk of the Borough of Point Pleasant, DO HEREBY CERTIFY that the foregoing Resolution was duly adopted by the Point Pleasant Borough Council at a meeting held on the 7th day of February, 2017.

BOROUGH OF POINT PLEASANT, IN
THE COUNTY OF OCEAN, NEW JERSEY



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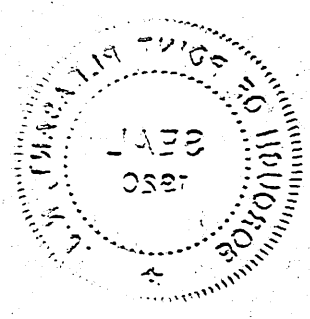
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Appendix B: Steering Committee Meeting Outlines

Borough of Point Pleasant
Floodplain Management Plan
Committee Meeting Minutes
Monday, February 27, 2017

The Point Pleasant Floodplain Management Committee held a committee meeting on February 27, 2017 at 7 pm. An ad notifying of same was posted on the Borough web site. In attendance were the following:

- Ray Savacool, Borough Engineer
- Elissa Commins, Resident
- Dennis Blazak, Resident
- Lori Coe, Resident
- Al Faraldi, Resident
- Jim Giordano, Resident
- Christine Bell, T&M Associates

Members of the public and a reporter from the Ocean Star Newspaper were also in attendance.

Ray Savacool led the meeting and discussed the following:

This Floodplain Management Plan will be written following the process outlined by the *Community Rating System (CRS)*. This process consists of 10 steps. At this meeting **Step # 4, Assess the Hazard** and **Step #5 Assess the Problem** were discussed. The main hazard in Point Pleasant for the purpose of this Floodplain Management Plan is flooding.

Assess the Hazard:

Flooding generally occurs along Beaver Dam Creek in the southern portion of the Borough, in the coastal flood hazard area, with some nuisance flooding in other areas, including the Bay Head Shores area and Bridge Avenue due to undersized drainage (on Bridge Ave). Nuisance flooding also occurs near the Stop and Shop (on Bridge Ave). Areas of the Borough bordering the Manasquan River can experience flooding during high tides and full moons.

The Coastal Flood Hazard Zone consists of:

- V (velocity) zone: waves greater than 3 feet are likely during 100 year storm event
- A zone: will flood during 100 year storm event
- Coastal A zone: area between A & V zone, waves less than 3 feet are possible

The new NJ Building Code makes it mandatory that homes within the coastal A zone are built to V zone standards.

In Point Pleasant, the flood hazards are coastally based, sometimes caused by heavy rainfall. Less Frequent Flood Hazards include coastal erosion and marsh degradation.

The topic of climate change and sea level rise was discussed by the group but consensus on same was not reached. It was acknowledged that portions of the east coast were sinking leading to relative rise in sea level.

It was discussed how best to present Repetitive Loss Areas.

Assess the Problem:

The committee identified the following problems as a result of flood hazards:

- Bridges- if something takes them out, evacuation is difficult.
- While not located on the barrier island, Point Pleasant is a stakeholder in beach replenishment. The Borough will be impacted if the barrier island breaches again.
- Is Bridge Avenue an official evacuation route?
- People do not evacuate because shelter don't take pets
- Outreach- better communication is needed. Nixle is used only for the schools
- Elderly may not be attuned to modern media outlets
- Sheltering in places- risks due to fuel fumes, carbon monoxide, etc.
- Tree Stability- recommend a "hazard tree survey" be undertaken after storm events to identify trees that may pose hazards.
- Structure assessments should be conducted post event to determine what is habitable and what is not.
- A Traffic Control Plan should be created for when the electricity goes out.
- Electric poles snapped in half during Sandy.
- Health and Safety: hernias, electrocution, mold, chemicals and sewage when areas are flooded.
- Critical Water Supply- Loss of electricity can mean the loss of clean potable water supply. Forge Pond has salinization a few times a year. There are 3 wells in the Borough. Most water comes from pump stations.
- The Nelly Bennett School is located in the Floodplain and the municipal building is on the edge of the SFHA.
- Loss of cars due to flooding- people are unsure where to park them
- The Army Corps of Engineers is undertaking a back bay study which could offer potential solution to flooding issues.

Next Meeting: Monday, March 13, 2017; 7pm

Borough of Point Pleasant
Floodplain Management Plan
Committee Meeting
Monday, March 13, 2017

The Borough of Point Pleasant Floodplain Management Committee held a meeting on Monday, March 13, 2017 at 7pm. The meeting was posted on the Borough website. In attendance were the following:

- Ray Savacool, T&M Associates, Planning Consultant
- Christine Bell, T&M Associates, Planning Consultant
- Michael Thulen, Borough Council Member
- Robert Forsyth, Public Works Director
- Timothy Skinner, Construction Official, Floodplain Coordinator
- Elissa Commins, Resident
- James Giordano, Resident
- Albert Faraldi, Resident
- Lori Coe, Resident

Setting Goals:

The goals should set the context for the subsequent review of floodplain management activities and drafting of the action plan. They should incorporate or be consistent with other community goals for the affected areas. The goals must address all flood-related problems identified in the “Assess the Problem” step.

A list of proposed goals was provided to the Floodplain Management Plan Committee. Members of the public in attendance provided comment on the goals proposed by the committee. Through discussion, feedback, and goal revision, the following list of goals for the Floodplain Management Plan was agreed upon:

Floodplain Management Plan Goals:

1. Protect private property and infrastructure;
2. Reduce loss from flood damage and other hazards through codes and standards;
3. Protect and ensure that Borough infrastructure and critical facilities are able to withstand future hazard events and remain operational during and after such events;
4. Provide public information resources to Borough residents and business owners so they are informed of the natural hazards within the community and the precautions they can take to protect their properties;

5. Educate decision makers and the public about stormwater management and floodplain management;
6. Reduce losses by continuing to develop and improve the existing warning system and maintain it;
7. Minimize the need for rescue and relief efforts associated with flooding and generally undertaken at the expense of the general public;
8. Preserve and protect areas of environmental sensitivity, such as marshes and waterfront areas; and
9. Reduce flood insurance premiums through education to encourage compliance.

Borough of Point Pleasant
Floodplain Management Plan
Committee Meeting
Monday, March 27, 2017

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- Ray Savacool, T&M Associates, Planning Consultant
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Review Possible Activities:

The plan reviews different activities that could prevent or reduce the severity of the problems described at our previous meetings and in the Assess the Problem section. This is a systematic review of a wide range of activities to ensure that all possible measures are explored, not just the traditional approaches of flood control, acquisition, and regulation of land use. The review, including the pros and cons of each activity, must be included in the plan document.

The credited categories are as follows:

1. Preventive
2. Property Protection
3. Natural Resource Protection
4. Emergency Services
5. Structural Projects
6. Public Information

A list of possible activities was distributed prior to the meeting. These include activities suggested in the 2015 Strategic Recovery Planning Report, the 2014 Ocean County All- Hazards Mitigation Plan, and Committee suggestions from previous Floodplain Management Committee Meetings. These activities were discussed for their pros, cons, and feasibility, as indicated.

Next Meeting: The next committee meeting will be April 10th at 7 pm in Borough Hall.

PREVENTIVE

Preventive activities keep flood problems from getting worse by limiting the use and development of flood-prone areas through planning, land acquisition, or regulation. These activities are generally administered by the Borough building, zoning, planning, and code enforcement offices.

Floodplain mapping and data

The Borough of Point Pleasant has been studied and its flood-prone areas mapped by FEMA in entirety. FEMA is currently in the process of updating the flood maps for the Borough. The Borough's adopted effective FIRM map is dated 2006. In 2014, Preliminary FIRMs were published for the Borough. These are still in revision process and have yet to be adopted as the effective FIRM maps for flood insurance purposes. Additionally, the Borough is developing Geographic Information Systems (GIS) to increase the community's resiliency and enable them to better prepare for, respond to and recover from disasters. The components of GIS will support facilities and public works infrastructure, land information, and floodplain management- related data layers and applications. This will be done as part of the Round 2 Post-Sandy Planning Assistance Grant program.

Open Space Preservation

The opportunity for future open space preservation in Point Pleasant is small, due to the largely built-out nature of the Borough. However, there are already parks and areas of preserved open space scattered through-out the community. While the opportunity for future open space preservation within the Borough is low, measures should be taken to ensure that existing areas of open space within the Borough remain as such and new opportunities for open space preservation within the floodplain are taken advantage of when they arise. The Floodplain Management Committee recommends the Borough rezone areas currently being used for recreational purposes, such as the Sunshine Harbor and Bay Head Shores neighborhood associations properties and the Nellie Bennett Marsh, to a recreational and open space zone district to ensure they remain as such.

Floodplain Regulations

Floodplain Regulation are in place throughout the Borough by zoning and development regulations at the local, county, state, and federal levels. The Borough's floodplain ordinance requires new or substantially improved structures to be built to one (1) above the best available flood hazard data. The SRPR recommended the preparation of a Borough Floodplain Management Plan. This plan is being funded by the NJDCA Post- Sandy Planning Assistance Grant Program.

Erosion Setbacks

This is not relevant to the Borough of Point Pleasant.

Planning and Zoning

The Borough of Point Pleasant adopted ordinance 2013-01 to encourage house elevations and amended height allowance, 2013-03 to allow for the restoration of non-conforming structures, and 2013-05 and 2013-13 which amended the flood damage prevention ordinance. The Ocean County Hazard Mitigation Plan recommends that the Borough continue to enforce its land use codes and maintain a flood mitigation plan.

Stormwater Management

The Borough has adopted a stormwater management ordinance in accordance with the State's regulations. The Borough's Stormwater Management ordinance regulates quantity, quality and groundwater recharge. It also follows CAFRA regulations. The Floodplain Management Committee would like the Borough to conduct a Hydrologic Study of the Borough to determine issues related to flooding. Additionally, the Floodplain Management Committee recommends the Borough undertake a low-flying survey of Point Pleasant to identify all stormwater systems and inverts. It is recommended that this be done in conjunction with Bay Head and Point Pleasant Beach to gain a greater understanding of the stormwater systems within the area.

Drainage System Maintenance

The Borough is governed by a Stormwater Management Permit which requires cleaning and inspection.

Building Codes

The Ocean County Hazard Mitigation Plan recommends the Borough of Point Pleasant continue to enforce its building codes. The Borough's SRPR recommends that the Borough automate, update, and expedite the Borough's system for processing zoning and construction permits. Point Pleasant Beach has already automated their system, but would be open to improving and upgrading the system if funding became available. Building codes, building permits and inspections are required for construction.

PROPERTY PROTECTION

Property protection activities are usually undertaken by property owners on a building-by-building or parcel basis.

Acquisition

Wide-scale acquisition of structures within the floodplain is not feasible within Point Pleasant. However, the County Hazard Mitigation Plan recommends the acquisition of 14 structures within the Borough.

Relocation

The wholesale acquisition and relocation of properties located within flood prone areas is not practical in the Borough of Point Pleasant. The Borough is fully developed with no potential for relocation elsewhere in the Borough. This action is not applicable to the Borough of Point Pleasant.

Building Elevation

Requiring that structures within the flood hazard area be elevated to at least the highest regulatory standard is the best method for reducing flood problems and losses in Point Pleasant Borough. The elevation of approximately 449 homes within the Borough and the demolition and reconstruction of an additional 21 homes are recommended actions in the 2014 Ocean County Multi-Jurisdictional All Hazards Mitigation Plan. The Borough of Point Pleasant adopted ordinance 2013-01 to encourage first floor elevations above the required BFE.

Retrofitting

The Borough provides information to property owners on various types of flood protection and floodproofing, including the installation of flood vents, filling in of basements, and flood resistant duct work through the construction office. As property owners utilize these techniques, they should be encouraged to get new elevation certificates. Commercial buildings within Point Pleasant can be encouraged to utilize flood-proofing techniques.

Sewer Backup Protection

Sewer Backup is not a problem in the Borough of Point Pleasant.

Insurance

Point Pleasant participates in the National Flood Insurance Program. Homeowners are encouraged to maintain flood insurance to protect against loss of structure and contents in case of flooding. Homeowners who are not necessarily located within a flood zone should also be encouraged to carry flood insurance. The Borough of Point Pleasant participates in the Community Rating System (CRS), a voluntary program of the NFIP that can reduce the flood insurance premiums community wide in increments of 5% for participating communities. This plan assists in gaining points towards that program. The Ocean County Multi-Jurisdictional All Hazards Mitigation Plan and the Borough's SRPR recommend Point Pleasant consider increasing its rating in the CRS program. Before working towards the next rating level in the CRS program, the Borough should ensure it has the resources to maintain a higher level of certification.

NATURAL RESOURCE PROTECTION

Natural resource protection activities preserve or restore natural areas or the natural functions of floodplain and watershed areas. They are implemented by a variety of agencies including parks, recreation, or conservation agencies and organizations.

Wetlands Protection

The State regulates wetlands protection through NJDEP freshwater and coastal wetland permit programs.

Erosion and Sediment Control

Soil erosion and sediment control is regulated through New Jersey's Soil Erosion and Sediment Control Act and is administered by the Freehold Soil Conservation District.

Natural Area Preservation

Existing natural areas are preserved. The Nellie Bennett Marsh was identified as an area for future preservation.

Natural Area Restoration

The Borough is working with the American Littoral Society on a project at the Slade Dale Sanctuary to halt erosion and regain marsh habitat by constructing a branch box breakwater and planting native species.

The Borough should explore invasive species management, shoreline preservation, and water quality improvement techniques where applicable.

Water Quality Improvement

There are existing regulations for street sweeping, basin maintenance, and cleaning.

Coastal Barrier Protection

While there is no barrier beach within the boundaries of the Borough, Point Pleasant is protected by the barrier beaches of Point Pleasant Beach, Bay Head, and Mantoloking and is therefore a stakeholder in their beach nourishment and dune projects. Point Pleasant will be impacted if a breach occurs similar to during Hurricane Sandy.

Environmental Corridors

This is not applicable to Point Pleasant.

Natural Functions Protection

The new stormwater management ordinance encourages non-structural measures. State FHA rules protect stream corridors.

EMERGENCY SERVICES

Emergency services are measures taken during an emergency to minimize its impact. These measures are usually the responsibility of municipal or county emergency management staff and the owners or operators of major or critical facilities.

Hazard Threat Recognition

Prior to storm events, warnings are issued by the National Weather Service. The Ocean County Multi-Jurisdictional All Hazards Mitigation Plan recommends that Borough participate in the National Weather Service's StormReady Program. The Borough should explore this program and determine if participation is right for them. It was noted that CRS points are available for participation in the program. Prior to a storm event, the NWS issues warnings. The Borough of Point Pleasant is well covered by weather radar.

Hazards Warning

The Borough notifies residents of hazard events through email, radio, Nixle, social media, loudspeaker via truck, and door to door notifications. The Borough should continue to provide Nixle-system notifications to residents and encourage more residents to sign up for the notifications. In the Borough's SRPR, the Borough of Point Pleasant identified installing a Supervisory Control and Data Acquisition (SCADA) system in conjunction with the Borough's owned and operated facilities to communicate critical alarms to a centralized location or operational personnel. The Floodplain Management Committee recommends the Borough maintain a special needs registry to provide additional warning, outreach, and evacuation services (if needed) to elderly residents and others who may require additional assistance.

Hazards Response Operations

The Borough of Point Pleasant maintains a verbal mutual aid agreement with the Boroughs of Point Pleasant Beach, Bay Head, and Mantoloking. The Borough's SRPR recommended that Point Pleasant identify a second location for a potential emergency shelter. The Floodplain Management Committee agreed that this was important, and further specified that a non-school and/or regional shelter location should be identified. The SRPR also recommended that a new permanent location be identified for OEM activity. At the time of this writing (March 2017), a location for OEM activity has been identified in the public works facility and the OEM facility is almost complete.

The Borough's SRPR also identified the need to obtain generator-powered portable lighting to be used during power outages. Point Pleasant has purchased some in its capital budget and hopes to obtain more in the upcoming years. The Floodplain Management Committee recommends the Borough develop a traffic control plan for when the Borough loses power, identifying priority intersections. The Borough should obtain generators for traffic signals at those identified priority locations during times of power outages to reduce traffic controls pressures on the police

department and re-open roadways as quickly as possible. The Ocean County Multi-Jurisdictional All Hazards Mitigation Plan recommended that the Borough of Point Pleasant improve its Evacuation Plan and maintain an Emergency Operations Plan. These Plans are the responsibility of the Borough's Office of Emergency Management.

Critical Facilities Protection

The County Hazard Mitigation Plan recommends Point Pleasant develop and implement Shelter Management Plans and Capability and purchase and install three (3) permanent generators to be located at three (3) schools (designated shelters) located throughout the Borough. It was noted by the Floodplain Management Committee that the Nellie Bennett school is located within the Special Flood Hazard Area and may not be an appropriate shelter for a flood event. However, it could be utilized for other types of hazards. Additionally, as mentioned previously, the Floodplain Management Committee recommends that a non-school shelter location be identified to allow schools to re-open as soon as possible in the aftermath of a hazard event, quickening a return to normalcy in the community. The Good Shepard Church was identified as a potential shelter location to be further explored.

The Borough's SRPR recommended an update to the Borough Capital Improvement Plan. This is being funded under the NJDCA Post-Sandy Planning Assistance Grant Program and will be completed by May 2017.

Health and Safety Maintenance

The County Hazard Mitigation recommended the Borough development ordinance requirements for the storage of hazardous material to prevent spills and contaminations as a secondary impact of flood related hazards. It was decided by the Floodplain Management Committee that this action would be hard to enforce in ordinance form, but rather should be developed as a public education campaign. As such, it will be discussed further in the Public Information activities section of this review.

Post-disaster Mitigation Actions

The Borough is currently preparing a Debris Management Plan, as recommended in the 2015 SRPR, to provide the Department of Public Works with an emergency staging facility and a designated debris management area. This project is being funded through the NJDCA Post-Sandy Planning Assistance Grant Program and will be completed in May 2017.

The Floodplain Management Committee recommends that following a storm event the Borough Police Department should perform a resident check on those identified in the special needs registry, recommended in the Hazard Warning section. The Borough should also conduct a Hazard Tree Survey to identify trees that may pose hazards in the community.

STRUCTURAL PROJECTS

Structural projects keep flood waters away from an area with a levee, reservoir, or other flood control measure. They are usually designed by engineers and managed or maintained by the public works staff.

Reservoirs

This is not applicable to Point Pleasant.

Bulkheads

The County Hazard Mitigation Plan recommends the Borough complete shoreline stabilization and bulkheading of unprotected street ends to protect from coastal erosion and flood related hazards. However, the Floodplain Management Committee felt that at street ends where no bulkheading currently existed, it was important to maintain the natural functions of these areas. Riverfront Park was identified as an area that may need bulkheading, by the Committee, as it is currently eroding.

Levees/ floodwalls

This is not applicable to Point Pleasant.

Storm Water Pumps

The County Hazard Mitigation Plan recommends the purchase and installation of three permanent generators to be located at the stormwater pump stations. This has recently gone out to bid.

Diversions

This is not applicable to Point Pleasant.

Channel Modifications

This is not applicable to Point Pleasant.

Storm Drain Improvements

The County Hazard Mitigation Plan recommends the installation of five (5) Tide Flex Valves in the following locations:

1. On the east side of Beaver Dam across from the Riviera Parkway
2. Dellwood Road at the lagoons on the outfall side
3. One-way valve pipe- to- creek
4. Various outflows to the bay
5. Various outflows to the lagoon

PUBLIC INFORMATION

Public Information activities advise property owners, potential property owners and visitors about the hazards, ways to protect people and property from the hazards, and the natural and beneficial functions of local floodplains. In Point Pleasant, these activities are implemented largely by the Borough's construction official and CRS coordinator.

Map Information

Copies of the FIRM maps are available for the public to review in the Borough Construction Office. The Borough's construction official and floodplain manager, is available to explain the maps as needed. A log should be kept of information provided to residents who come in to view maps or who call with questions for CRS credit documentation. Additionally, FIRM map information is available for the public to view from the Borough's website.

Outreach Projects

The Floodplain Management Committee recommends the Borough participate in FEMA's High Water Mark Initiative Program. Placing signage at key points throughout the Borough to indicate the high water mark during major storm events (such as Hurricane Sandy), will serve as a constant reminder of the real flood risk in the area. This activity should be coordinated with the County's CRS User Group. As mentioned in the Emergency Services section of this discussion, the Committee recommends a public education campaign to inform residents of the proper storage of hazardous materials to prevent spills and contamination from occurring during storm events.

Currently, the Borough provides utilizes the electronic signage at public parks to provide information about flooding, community events, and other concerns.

The following outreach actions were recommended for the Borough of Point Pleasant in the County Hazard Mitigation Plan. The Borough's progress is noted in italics.

- Continue Community Watch Program. *This is ongoing.*
- Continue National Night Out program to connect to the community. *This is ongoing.*
- Continue outreach through local radio station. *Ongoing.*
- The Borough will continue to maintain the Facebook page. *The Borough is active on a number of social media platforms and has recently won an award for its social media pages.*
- The Borough will continue to host Town Hall meetings to allow Borough officials and residents to gather and communicate with each other post-disaster or at other strategic times. *The Borough's Office of Emergency Management continues to host quarterly meetings which serve this function.*
- Support and share information on grant programs that support residential business and natural resource mitigation projects with appropriate stakeholders. *The Borough's administrative offices provide this information as it becomes available. The Borough holds an*

annual information session, run by SmartVent, to provide residents with resources to reduce their flooding risks and potentially increase their flood insurance savings.

Real Estate Disclosure

The Borough's construction official and floodplain manager sends annual mailings to local realtors.

Library

The Ocean County Library System, including the local Point Pleasant Branch, has copies of educational materials on flood risks from FEMA on file. These are updated as new documents become available.

Technical Assistance

The Borough construction official and floodplain manager, provides technical information to anyone who calls or visits his office, as well as FEMA pamphlets and booklets regarding flood preparedness, the NFIP, flood venting, etc.

Environmental Education

The Point Pleasant Environmental Commission hosts an annual Environmental Fair each April. At the Environmental Fair, residents and visitors can learn about native landscaping, water conservation, etc. The Environmental Commission also maintains a presence at the Borough Fair in June.

Borough of Point Pleasant
Floodplain Management Plan
Committee Meeting
Monday, April 10, 2017

The Borough of Point Pleasant Floodplain Management Committee held a meeting on Monday, March 27, 2017 at 7pm. The meeting was posted on the Borough website. In attendance were the following:

- Ray Savacool, T&M Associates, Planning Consultant
- Christine Bell, T&M Associates, Planning Consultant
- Robert Forsyth, Public Works Director
- Michael Thulen, Borough Council Member
- Timothy Skinner, Construction Official, Floodplain Coordinator
- Dennis Blazak, Resident
- Elissa Commins, Resident
- Albert Faraldi, Resident
- Lori Coe, Resident

Action Plan: A wide range of possible floodplain management activities were discussed at the previous meeting to address the goals established by the Floodplain Management Plan Steering Committee. Proposed actions were identified and discussed as per the review of possible activities.

An Action Plan will be established that describes which activities should be implemented, who is responsible for implementing the activity, the deadline for completing the activity, the proposed budget and the funding source; with the following priority levels:

- High Priority – Activities in this category are critical to protecting the Borough’s critical facilities and creating a more resilient community. The benefits of these activities far outweigh the costs. Funding for these projects is currently in place or there is the high likelihood for grant funds to be secured in the near future. It is recommended that the majority of these projects be completed prior to the next hurricane season.
- Medium Priority – Activities in this category are necessary to increase the Borough’s resiliency and provide flood protection. Benefits outweigh the costs; however, funding has not yet been secured for those activities with physical improvements. The Borough should continue to seek grants and other funding sources for these activities. It is recommended that these projects be completed in the next three years as funding becomes available.
- Low Priority – Activities in this category will mitigate hazard risks for the Borough and are cost-effective. However, it is understood that these projects are not as critical as those identified as high or medium priority and that funding may be difficult to obtain for some of the larger construction projects.

- Ongoing – Activities in this category are required on a continuous or regular basis to be effective. These activities do not require special funds outside of the Borough's standard budget.

The following is the Action Plan decided by the Floodplain Management Committee:

PREVENTATIVE MEASURES

Action Item	Priority	Responsible Party	Deadline	Budget	Funding Source
Develop a Geographic Information System (GIS) Program	High	Borough Staff and T&M Associates	May 2017	\$50,000	NJDCA Grant (secured)
Adopt a Floodplain Management Plan	High	Borough Staff, Floodplain Management Committee, and T&M Associates	May 2017	\$50,000	NJDCA Grant (secured)
Regularly check for blocked storm drains, outfalls, and other major drainage features; and remove sediment and debris.	Ongoing	Department of Public Works	Quarterly	Borough Staff Time	Borough Funds
Rezone areas throughout Borough for recreational purposes	Low	Borough Planner, Council, and Staff	Fall 2017	Borough Funds	Borough Funds
Undertake a hydraulic study of the Borough and hire a flight survey of the Borough's stormwater system including an inventory of all inverts, manholes, and catch basins	Medium	Borough Staff	Early 2018	TBD	TBD
Create an automated and expedited system for zoning and construction permit administration	Low	Borough Staff & CME	May 2017	\$25,000	NJDCA Grant (secured) and Borough
Update the Borough's system for processing zoning and construction permits.	Low	Construction Official	If funds become available	TBD	TBD
Continue to enforce floodplain regulations utilizing best available information	Ongoing	Borough Floodplain Manager	Ongoing	Borough Staff Time	Borough Funds
Adopt stormwater management ordinances in accordance with the State's regulations	Ongoing	Borough Staff	Ongoing	Borough Staff Time	Borough Funds

Continue to enforce building codes.	Ongoing	Construction Official	Ongoing	Borough Funds	Borough Funds
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PROPERTY PROTECTION

Action Item	Priority	Responsible Party	Deadline	Budget	Funding Source
Continue to participate in FEMA's Community Rating System (CRS) Program and consider increasing the Borough's rating.	Ongoing	Borough Administrator and Floodplain Manager	May and October, annually	Borough Staff Time	Borough Funds
Continue to participate in the National Flood Insurance Program	High	Borough Staff	Ongoing	Borough Staff Time	Borough Funds
Encourage the elevation of homes within the Borough to higher standards and elevations	Medium	Homeowners	Ongoing	Will vary by home	Potential HMGP, ICC, FEMA SRL, HUD RREM
Make the public aware of the various types/ methods of flood protection and floodproofing.	Ongoing	Construction Official	Ongoing	Borough Staff Time	Borough Funds
Update the Borough's Floodplain Ordinance to require coastal A construction be built to V zone standards.	Ongoing	Construction Official	Ongoing	Borough Staff time	Borough Funds

NATURAL RESOURCE PROTECTION

Action Item	Priority	Responsible Party	Deadline	Budget	Funding Source
Work with the American Littoral Society to implement living shoreline projects at the Slade Dale Sanctuary	High	Borough Environmental Commission	Will start in late 2017	TBD	NFWF

Act as a stakeholder in decisions regarding beach nourishment and dune projects in the barrier beach communities	Ongoing				
Encourage Borough participation in the Jersey Shore Partnership	Ongoing				
Continue to follow state regulations in regards to wetlands protections, soil erosion and sediment control, and Phase 2 stormwater.	Ongoing	New Jersey DEP	Ongoing	Ongoing	The State of New Jersey

EMERGENCY SERVICES

Action Item	Priority	Responsible Party	Deadline	Budget	Funding Source
Prepare a Debris Management Plan	High	Borough Staff and CME	May 2017	\$20,000	NJDCA Grant (secured)
Maintain a special needs registry	High	Borough OEM	ASAP	TBD	Borough Funds
Maintain the Borough's various hazard warning systems and social media sites. Educate the public on these systems.	High	Borough Office of Emergency Mgmt.	Ongoing	Borough Staff Time	Borough Funds
Conduct a Hazard Tree Survey post-disaster Event	High	Environmental Commission, Construction Official, Borough OEM	After storm events		

Post-disaster, conduct a resident check on those identified in the special needs registry	High				
Obtain Generators for traffic signals at identified priority locations during power outages	Medium	County Office of Emergency Mgmt.	Ongoing		Capital Funds
Prepare a traffic control plan for power outages	Medium	Borough Office of Emergency Mgmt.			
Identify a non-school and/or regional shelter	Medium	Borough Office of Emergency Mgmt.	TBD	Borough Staff Time	Borough Funds
Improve the Borough's Evacuation Plan	Medium	Borough Office of Emergency Mgmt.			
Become a NWS Storm Ready Community	Low	Floodplain Manager	Spring 2018	Borough Staff Time	Borough Funds
Purchase generator powered portable lighting	Ongoing	Borough	Ongoing		Capital Funds

STRUCTURAL PROJECTS

Action Item	Priority	Responsible Party	Deadline	Budget	Funding Source
Purchase and install three (3) permanent generators to be located at 2 water plans and public works	High	DPW			
Install Tide Flex Valves	Medium	DPW		\$85,000	Capital Funds/ FEMA HMP

Maintain the natural functions of non-bulkheaded street ends	Ongoing				
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PUBLIC INFORMATION

Action Item	Priority	Responsible Party	Deadline	Budget	Funding Source
Conduct outreach projects by sending out annual mailings on flood risks, flood proofing, etc.	High	Borough Administrator and Floodplain Manager	Ongoing	Borough Staff Time	Borough
Participate in FEMA's High Water Mark Initiative	High	Floodplain Manager			
Continue participation in the Community Watch Program and National Night Out	Medium				
Continue to maintain educational materials on flooding from FEMA at the local branch of the Ocean County Library	Ongoing	Ocean County Library System and Borough Floodplain Manager	Annually	Ocean County Library Staff	FEMA
Provide information regarding flood preparedness, NFIP, and floodproofing techniques as requested by residents. Maintain a log of all inquiries.	Ongoing	Floodplain Manager	Ongoing	Borough Staff Time	Borough

Continue to maintain the Borough's website, providing information on floodplain mapping	Ongoing	Borough Construction Official	Ongoing	Borough Staff Time	Borough
Provide floodplain mapping information for residents to look at in Borough Hall. Keep a log of all questions answered.	Ongoing	Borough Construction Official	Ongoing	Borough Staff Time	Borough
Continue to support and share information on grant programs that support residential businesses and natural resource mitigation projects with local stakeholders and residents. Have this information available in Borough Administrative offices.	Ongoing	Borough Administrative Offices	Ongoing	Borough Staff Time	Borough
Continue to send annual letters to local realtors, informing them of flood hazards in Point Pleasant.	Ongoing	Borough Floodplain Manager	Ongoing	Borough Staff Time and postage	Borough
Continue to provide information to Borough Residents at the annual Environmental Fair and Borough Fair	Ongoing	Environmental Commission	April and June, annually		

Appendix C: Public Meetings Information

BORO EVENTS

To submit a calendar listing or Boro news story, email kmars@theoceanstar.com

AARP TAX AIDE

Date: through April 18
Time: by appointment 9 a.m. to 1 p.m. Tuesdays, Thursdays
Location: St. Martha's Church, 3820 Herbertsville Road
Contact: 732-830-5890

Committee plans public meetings

THE OCEAN STAR

The Floodplain Committee of the Borough of Point Pleasant will be holding public meetings about the Floodplain Management Plan for the borough.

Members of the public and interested parties are invited to attend and provide input on the natural hazards, problems and possible solutions.

The meetings will be held in the Point Pleasant Borough Hall Meeting Room, 3233 Bridge Ave., at 7 p.m. on:

- Feb. 27, which will focus on assessing the hazard/assessing the problem

- March 13, which will focus on setting goals

- March 27, which will focus on reviewing possible activities

- April 10, which will establish an action plan

Those interested in commenting, but who cannot attend, may address comments to T&M Associates, 9 Grand Ave., Building 4, Toms River, NJ 08723. Attention: Raymond W. Sevacoal.

Courtsiders will prepare and electronically file federal and New Jersey income tax returns at no cost. While special attention is paid to those over the age of 60 with low to moderate incomes, all tax payers are welcome. Appointments are also available on Mondays at Good Shepherd Lutheran Church at 708 Ocean Road (Route 88) in Point Pleasant. Call 201-743-2158.

SPRING SENIOR FAIR EXPO

Date: Thursday, April 27
Time: 10 a.m. to 2 p.m.
Location: St. Martha's Church, 3820 Herbertsville Road
This expo is for seniors, their families and/or individuals who are caring for a senior. We will have educational and informational resources available to all regarding care in the home. Come empower yourself with knowledge as to the resources that may be available to you. This is a free community event to promote our Senior Center and is open to any resident of New Jersey.

MAYOR AND COUNCIL MEETINGS

Date: First and Third Tuesday
Time: 7 p.m.
Location: Borough Hall, 2233 Bridge Ave.

PLANNING BOARD MEETINGS

Date: Third Thursday, except November
Time: 7 p.m.
Location: Borough Hall

ZONING BOARD OF ADJUSTMENT MEETINGS

Date: First and Third Wednesday
Time: 7 p.m.
Location: Borough Hall
The meeting the first Wednesday of each month will be utilized to hear residential applications and the third Wednesday of each month to hear commercial applications.

ENVIRONMENTAL COMMISSION MEETINGS

Date: Third Monday
Time: 7 p.m.
Location: Borough Hall

RECREATION COMMISSION MEETINGS

Date: Fourth Wednesday
Time: 7 p.m.
Location: Borough Hall

COMMUNITY WATCH MEETINGS

Date: Fourth Monday
Time: 6:30 p.m.
Location: Borough Hall

OPEN SPACE ADVISORY COMMITTEE MEETINGS

Date: Second Wednesday
Location: Bennett Cabin, River Road
Contact: Kerry Jones, 732-899-1144 or kjones@comcast.net

THE PET PANTRY

Date: Last Saturday of every month
Time: 9 a.m. to noon
Location: Harvey Memorial United Methodist Church, 1122 Arnold Avenue, Point Pleasant Beach
Contact: Church Office 732-892-1660 or trunack@umcny-nj.org
Open to assist pet owners who are in need and would benefit from the services of the Pet Pantry. Donations of pet food gladly accepted. Volunteer help also appreciated.

VINTAGE AUTOMOBILE MUSEUM OF NEW JERSEY

Date: Wednesday, Thursday, Friday and Sunday
Time: noon to 4 p.m.
Dates Saturday
Time: 10 a.m. to 4 p.m.
Location: 1800 Bay Ave., Building 13 Johnson Brothers Boat Works
The museum has unveiled its newest display: "Antique Stock Cars and Racing." Dating back as far as 1917, each car on display is unique, from dirt cars and Drag cars to one still racing on tracks across the state. You'll wish they could take it only to tell about their many thrilling trips around the tracks.

ROTARY CLUB OF POINT PLEASANT BORO MEETINGS

Date: Wednesdays
Time: 6:15 p.m.
Location: Simio's Grill, 403 Higgins Ave., Brlie
The Rotary Club of Point Pleasant Boro is a volunteer service organization whose members donate their time and resources to help others in the community and throughout the world.

POINT PLEASANT SOCCER CLUB

Date: Ongoing
Soccer club is for both boys and girls. Please register online at www.pointpleasantsooccer.com.

POINT PLEASANT GARDEN CLUB

Date: Meetings are held on the second Tuesday of each month September through June
Time: 7 p.m.
Location: Moose Lodge, 706 River Ave.
The Point Pleasant Garden Club is always looking for new members interested in all types of gardening. We meet to learn, share ideas, plan, commonly support and analyze.

Membership is open to anyone, including non-residents. Club meetings are held on the second Tuesday of the month September through June. Our new location will be at Moose Lodge, 706 River Ave., Point Pleasant Beach. Hope to see you there.

TOP SOCCER PROGRAM

Cost: \$10
Contact: Point Pleasant Soccer Club, www.pointpleasantssc.org
TOP Soccer is run through the Point Pleasant Soccer Club (PPSC). The program provides an opportunity for players with special needs ages 5 through 25 to experience the game of soccer through motor skills, soccer skills and scrimmages. Registration is still open at www.pointpleasantssc.org. All players must register either via the PPSC website or by mailing in a form. Registration for this program will not close out. The \$10 player fee is to cover New Jersey Youth Soccer insurance and program expenses.

POINT PANS KITTIE ADOPTION

Date: every Sunday
Time: 2 to 4 p.m.
Location: Point Pans Rescue Center, 733 Albert E. Clifton Ave.
Contact: Point Pans, 732-295-

7279

GOLDEN ELKS POP WARNER (EPW) FOOTBALL AND CHEER REGISTRATION FOR FALL 2017 SEASON
Contact: For additional information call 732-600-0431 or email pwg@goldenelkspopwarmer@gmail.com
Online Registration: <http://www.goldenelkspopwarmer.org>

Tackle Football, Dance & Cheer (for ages 5 through 15) \$150 first child; 125 second child; \$100 third child; fourth child free. Discount of \$25 if registered by March 1. Free Flag Football for ages 5 to 7. Cheer for free for ages 5 to 15. For children with disabilities, EPW offers Challenger Flag Football or Challenger Cheer. Free for ages 5 to 16.

Easter fun, safety fill recreation spring schedule

Registration begins Monday, March 13, at 9 a.m. online

BY KAYLA MARSH
THE OCEAN STAR

POINT PLEASANT — The Point Pleasant Recreation Department has released the schedule of special events and programs for the spring 2017 season.

Registration will take place beginning at 9 a.m. Monday, March 13, and is available online for residents convenience.

SPECIAL EVENTS

The borough will get into the Easter spirit with an "Easter Egg-citement" program on April 8.

The event will be fun-filled with arts and crafts, a "glow stick" egg hunt, games and even a special visit from the Easter Bunny himself.

An "Easter Break" Soccer Camp will run from April 17 to 21 at Community Park on Bridge Avenue.

Participants will learn a variety of new skills every day through daily themes

PRAYER TO THE HOLY SPIRIT

Holy Spirit, you who solve all problems, light all roads so that I can achieve my goal. You who give me a divine gift to forgive and forget all evil against me and that in all my life I am with me. I want this about prayer to thank you for all things you confirm once again that I never want to be separated from you, even in spite of all material things. I wish to be with you in eternal joy and thank you for your mercy towards me and mine. The person must say this prayer for 3 consecutive days. After 3 days the favor requested will be granted even if it seems difficult. The prayer must be published immediately after the favor is granted without mention of the favor, only your thank should appear at the bottom. M.V.

and scrimmages. During a Pediatric Heart-Saver CPR Class on April 12, attendees will learn cardiopulmonary resuscitation for infants, procedures for choking conscious and unconscious children and infant as well as rescue breathing.

The department will offer a Safe Boating Course on April 26 and 27. Upon completion of the two session, seven-hour course, attendees will receive their New Jersey Safe Boating certificate.

An "Imagination" Light Show Concert will take place on June 21 in Community Park.

Follow "daydreamer" as she uses the powers of her magical paintbrush to make paintings of her favorite Disney and Disney Pixar scenes come to life — accompanied by thrilling music, choreography and other spectacular surprises.

PRESCHOOL REGISTRATION

The department offers many preschool activities for children ages 12 months to 5 years old.

Preschool registration for the 2017-18 school year begins on Monday, April 3, at 9 a.m. for residents who currently have a child attending the department's preschool program.

Residents who do not currently have a child in the program will be able to register beginning at 11 a.m.

Registration for nonresidents will begin on Monday, May 1, starting at 9 a.m.

Registration takes place in person at the Recreation Center on River Avenue.

SPORTING FUN

Among the wide variety of adult and children's sporting programs that will be held are microsoccer; skateboarding for beginners, intermediate and

advanced level riders; After School Bowling Fun; Biddy Basketball for grades one through three youth tennis, as well as adult volleyball and tennis.

ADDITIONAL PROGRAMMING

Intro to 3D Video Game Making will be offered at STEM Academy on Bay Avenue where youth will be introduced to the basics of game development while learning to use Kodu game-making software.

The Recreation Department will also offer Children's Martial Arts & Personal Safety classes, as well as Tai Chi Fusion and Mindfulness and Meditation for Children classes.

The Borough of Point Pleasant and St. Martha's Church Senior Beehive have also announced programs residents can sign up for including knitting, games, card groups, Mahjong groups, art and other senior socialization programs.

Other programs to be offered during the spring season include pottery classes, dance classes, boot camp classes, yoga classes for kids, tweens and adults as well as movie nights.

Full descriptions of all the programs are available at [Point Pleasant Borough's website, www.ptboronj.com](http://www.ptboronj.com).


Registration for programs and special events will close out at the end of the day on Friday, March 31.

Visit the Recreation Department's page on the borough website for links to set up online family accounts and to register for programs.

For more information, call 732-899-1813 or visit the website.

Kayla Marsh can be reached at kmars@theoceanstar.com or 732-899-7606 Ext 16.

all are welcome!



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BASEBALL, SOFTBALL, & BUDDY BALL

(Ages 5-15)

Registration OPEN now through March 17, 2017.

Please visit www.pointbaseball.com to register.

Questions??
Email us directly at info@pointbaseball.com



New committee will focus on flood hazards, solutions

Public invited to provide input at meetings in February, March, April

BY KAYLA MARSH
THE OCEAN STAR

POINT PLEASANT — As the fifth anniversary of Superstorm Sandy approaches, a new committee has been formed to identify flood hazards within the borough to help the local community be better prepared for future storm events.

According to local officials, during Sandy, more than 150 homes in the borough sustained substantial damage.

"In total there are 2,700 parcels in hazard areas with a combined assessed value of over \$50 million" — about one-third of the parcels within the borough," said Ray Savacool, supervising engineer at TRM Associates.

"You can see there is a substantial value [to the plan] and that's one of the reasons to do this and to come up with the best action items to either inform or somehow improve the situation within the community," Mr. Savacool said.

As the newly formed floodplain committee gets ready to work on establishing the borough's floodplain management plan, members are looking to the public to provide input to help create a plan that will be successful.

"We want the community's input toward the floodplain

management plan," Mr. Savacool said during the committee's initial kick-off meeting Feb. 12.

"We want to know what's important to the community and what matters or doesn't to them."

Over the next several months, the committee will hold public meetings where members of the community and interested parties are invited to provide insight as committee members discuss and assess flood hazards within the borough, establish goals and objectives for management and develop actions to help minimize flooding and mitigate impacts of future flooding.

Meetings will take place at 7 p.m. on Mondays Feb. 27, March 13 and 27 and April 10 in borough hall on Bridge Avenue.

FLOODPLAIN PLAN OBJECTIVES
Recently, the borough was the recipient of a \$50,000 grant through the Post-Sandy Planning Assistance Grant Program.

Officials sought the grant in order to prepare a floodplain management plan that will be incorporated as an element of the borough's master plan.

To help make the plan a reality, the borough established a 10-member floodplain committee that includes borough officials and public representatives.

"The floodplain group will work to create a plan that

identifies actions the community can take to increase awareness of flood risks and mitigate the hazards of extreme weather events," said member Dennis Blazak. "We will make a plan that meets FEMA [Federal Emergency Management Agency] standards to reduce flood insurance rates, a benefit to homeowners."

"We have just begun to talk about the actions that will help Point Pleasant become more storm resilient."

In addition, the plan will help secure lower flood insurance premiums for residents, through FEMA's Community Rating System.

Borough officials previously stated that through steps such as hiring a flood plain manager and hosting various seminars to discuss FEMA regulations and mitigation methods, the borough has already helped save residents on average between 10 and 15 percent on flood insurance premiums.

"Right now you are getting a 15 percent community discount because we have so many points in place already and with this we are trying to get that percentage higher," said member Lori Coe.

"Sandy was devastating. We're still dealing with it. I'm sure you can drive around and still see houses damaged, lots emptied ... it's terrible. We're just trying to get more credits toward our policies to help everyone."

ASSESSING HAZARDS

According to Mr. Savacool as plans get underway, the committee will work with surrounding communities that have also developed their own plans.

"We'll coordinate with other agencies, seek out information from the county, state and federal governments," he said. "We'll notify adjoining communities and ask them what they're doing and seek input from them."

One of the first steps he said will be assessing hazards and problems, which will be discussed at the Feb. 27 meeting.

"I think everybody is pretty [sure] that the main hazard in Point Pleasant Borough is coastal flooding," Mr. Savacool said. "So we need to talk about what the problem is, whether [it's] having built infrastructure because when you have construction in the floodplain ... there's inherent risks to that. So the committee will discuss that."

GOALS AND ACTIVITIES

According to Mr. Savacool topics that will be discussed during the committee's March meetings include setting goals and establishing actions that can be taken.

"Perhaps it's better ways of communicating potential flooding to the community, providing additional insurance information on how you can make your house more resilient," he said.

"The committee will hash all these out and once we establish the goals for the community we'll then review potential activities."

According to Mr. Savacool, activities could potentially involve open space preservation, planning and zoning actions, natural resource protection, storm drain improvements, outreach and much more.

"An informed community is a more resilient and a more prepared community," he said.

Mr. Blazak discussed one activity already planned to take place this year.

"Restoring salt marshes has shown benefits across the Atlantic Coast by absorbing storm surge and storm water from extreme weather events," he said. "One project, with the American Littoral Society — is to restore the Shick Dale Preserve, just off Dorsett Dock Road, back to its 1977 extent using Christmas trees and shell bags."

ACTION PLANS

Once the committee goes through all the goals and activities, the final step will be establishing an action plan, which will be the focus of the April meeting.

"The action plan will say who is going to do what, when," Mr. Savacool said.

"Once we have everything in place then it's left to adopt the plan by the governing body and as part of the master plan by the planning board."

"Then it's a matter of talking the plan and ... utilizing the plan, writing on the plan, implementing it, evaluating it, revising it as time goes by and crossing off the items that you've completed, adding items that might have come to fruition later on and deleting items that don't appear fiscally responsible or plausible at the time."

Mr. Savacool said he is excited to get the process started.

"I'm pretty excited because it is a pretty good group," he said. "We have a pretty diverse group from the engineering community, the insurance community, construction, so I think we'll be able to make some headway."

Those interested in commenting, but who cannot attend, may address comments to TRM Associates, 9 Grand Ave., Building 1, Toms River, NJ 08793. Attention: Raymond W. Savacool.

Kayla Marsh can be reached at kmars@theoceanstar.com or 732-899-7606 Ext 15.

Family hopes to raise funds to make home more accessible for son

APPEAL
FROM PAGE 1

"He spent eight days at Jersey Shore [University Medical Center] in the trauma unit and on Superbowl Sunday they transferred him to the Meridian rehab facility over in Wall Township."

According to Mr. Rooney, the road to recovery for his

son will unfortunately be a long one.

"Doctors said it could be six months to a year possibly until he can start doing normal things again," he said.

"My son ... he works hard for a living and ... to be sitting home doing nothing, it's hard on him and he is in a lot of pain."

"As a parent, when your kid is hurting you want to do

everything you can for them and we feel so helpless because you just want to snap your fingers and have the pain go away or take their place."

Already seeing the amount of physical pain and struggle his son was going through, Mr. Rooney wanted to help relieve some of the financial burden on his son's shoulders as well.

The family has started a GoFundMe page and are trying to raise funds to make the Rooney residence handicap accessible — one of many expenses that have arisen as a result of the accident.

"My wife's boss had the suggestion to start a GoFundMe for out-of-pocket expenses, which is going to be plenty," he said.

"We're paycheck to paycheck people ... but something like this happens you want to make sure you get all the necessary treatment and help that you need."

"[Doctors] are hoping to release him [by the end of the week] and [money will be used] to get ramps built and get the house ready so he can get to things and won't be restricted."

"Whatever is not being used, once we pay for everything out of pocket, this kid, he's got bills [and other] payments so it is all for Christopher, every penny."

So far approximately \$3,879 of a \$10,000 goal has been raised by family and community members alike.

"These people donating that I don't even know ... and it makes you feel like everyone comes together in times of crisis and it's nice," Mr. Rooney said.

"It just makes you feel good that people who don't even know my son are donating to help."

To make a donation or to follow updates on Christopher's progress, visit <http://www.gofundme.com/rxap-dad>.

Kayla Marsh can be reached at kmars@theoceanstar.com or 732-899-7606 Ext 15.



CHRISTINE WACE THE OCEAN STAR

LEADERSHIP TRANSITION

New officers of the Board of Directors for the Point Pleasant Chamber of Commerce were sworn in during the 18th Annual President's Leadership and Installation Gala Feb. 10.

SAILOR Trading Co.
EST 2011

WINTER CLEARANCE

PRESIDENTS WEEKEND!
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Appendix D: Sample Letter to Outside Agencies



YOUR GOALS. OUR MISSION.

PBOR-00050

March 2, 2017

Mayor John G. Ducey
Township of Brick
401 Chambersbridge Road
Brick, NJ 08723

Dear Mayor Ducey:

The Borough of Point Pleasant is currently in the process of preparing a Floodplain Management Plan to be incorporated as an element of the Borough Master Plan. The Floodplain Management Plan will identify and assess flood hazards within the Borough, establish the goals and objectives for floodplain management planning in Point Pleasant, and present a series of actions designed to minimize flooding and mitigate the impacts from flooding in the future. The Plan is being funded through a Post- Sandy Planning Assistance Grant issued by the New Jersey Department of Community Affairs (DCA). As we continue to recover from the effects of Superstorm Sandy, the Borough has prioritized flood prevention and mitigation as key elements of its post-Sandy planning strategy. The project implements recommendations of the Strategic Recovery Planning Report (SRPR) adopted by the Borough Council in 2015.

As part of the Floodplain Management planning process, we are seeking the input of valued stakeholders to develop a foundation for assessing known hazards and flood impacts in Point Pleasant. We would appreciate any information from your organization regarding flood hazards in the Borough of Point Pleasant and/ or anything your agency or organization is doing that may affect flooding or properties in flood-prone areas. Additionally, we would like to invite you, or another representative of your agency or organization to become more actively involved in our floodplain management planning process. Your input and involvement in this planning process is important to help identify key floodplain management issues affecting the Borough of Point Pleasant and to establish goals and objectives to make Point Pleasant more resilient to flooding events in the future.

Please contact Christine Bell, PP, AICP, CFM, Staff Planner, T&M Associates at 732-671-6400 or cbell@tandmassociates.com on or before March 23, 2017 if you have any comments, suggestions, input, or would like to set up a meeting to discuss the floodplain management plan in greater detail.

Very truly yours,

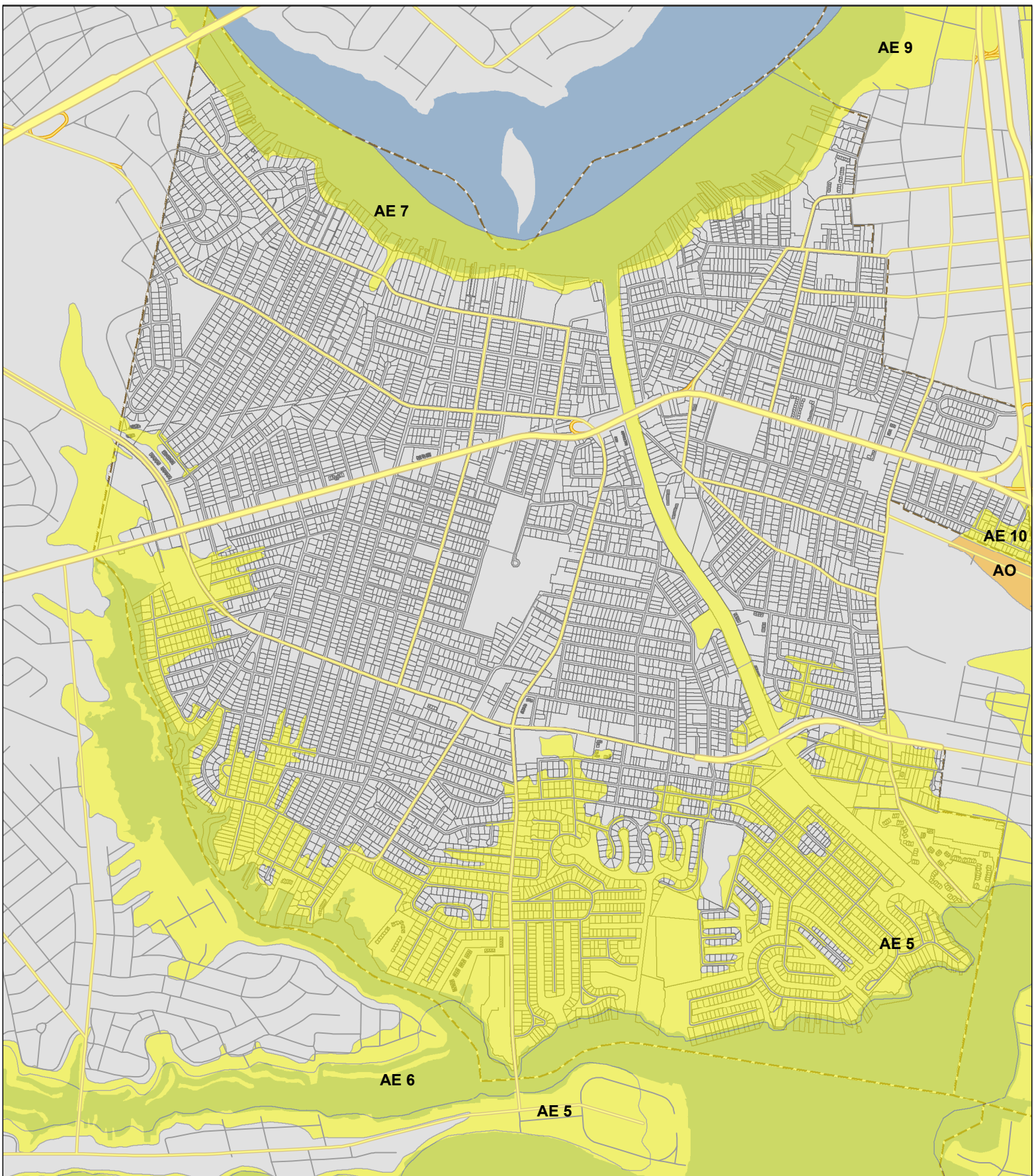
T & M Associates

Christine L. Bell, P.P., AICP, CFM

Appendix E: Log of Stakeholder Interactions

Organization	Contact	Sent	Responded
Township of Brick	John G. Ducey	3/2/2017	Did not respond
Borough of Brielle	Thomas B. Nicol	3/2/2017	Did not respond
Borough of Point Pleasant Beach	Stephen D. Reid	3/2/2017	Did not respond
Borough of Bay Head	William W. Curtis	3/2/2017	Did not respond
Ocean County Department of Parks and Recreation	Michael Mangum	3/2/2017	3/13/17- phone call from Joe P.
Point Pleasant Fire Department	Charlie Wilever	3/2/2017	Did not respond
Point Boro EMS		3/2/2017	Did not respond
Point Pleasant Borough Police Department	Richard P. Larsen	3/2/2017	Did not respond
Point Pleasant Borough Office of Emergency Management	William J. Dikun	3/2/2017	Did not respond
Borough of Point Pleasant Environmental Commission	Chris Constantino	3/2/2017	Did not respond
Borough of Point Pleasant - Open Space Committee		3/2/2017	Did not respond
Ocean County Sheriff's Office		3/2/2017	Did not respond
Ocean County Planning Department	David McKeon	3/2/2017	4/17- email convo with Mark Villinger regarding High Water Mark Initiative. County is in the planning stages of this project.
Ocean County Soil Conservation District	Christine Raabe	3/2/2017	Did not respond
North Jersey Transportation Planning Authority	Zenobia Fields	3/2/2017	Did not respond
Natural Resources Conservation Service	David Lamm	3/2/2017	email response on 3/7/2017
NJ Coastal Management Program		3/2/2017	Did not respond
US Army Corps of Engineers		3/2/2017	3/10/2017 - email response from Jason Miller, new POC. Indicated he had some thoughts for potential data sources and on-going studies.
American Red Cross		3/2/2017	Did not respond
American Littoral Society	Helen Henderson	3/2/2017	Did not respond
Jacques Cousteau National Estuarine Research Reserve	Christopher Huch	3/2/2017	3/10/17- email with link to mapping done for Borough.
Shore Builders Association of Central Jersey	Gina Woolley	3/2/2017	Did not respond
Comcast Cable	Lawrence Fary	3/2/2017	Did not respond
New Jersey American Water	Paul Richards	3/2/2017	Did not respond
New Jersey Department of Environmental Protection	John H. Moyle	3/2/2017	Did not respond
New Jersey Department of Environmental Protection	Joseph Ruggeri	3/2/2017	Did not respond
Barneгат Bay Partnership	Stan Hales	3/2/2017	Did not respond
Save Barneгат Bay	Britta Forsberg- Wenzel	3/2/2017	Did not respond
New Jersey Natural Gas	David Menaker, PE	3/2/2017	Did not respond

Appendix F: Effective FIRM Map



T&M Associates
 11 Tindall Road
 Middletown, NJ 07748-2792
 Phone: 732-671-6400
 Fax: 732-671-7365

0 0.075 0.15 0.3 0.45 0.6 Miles

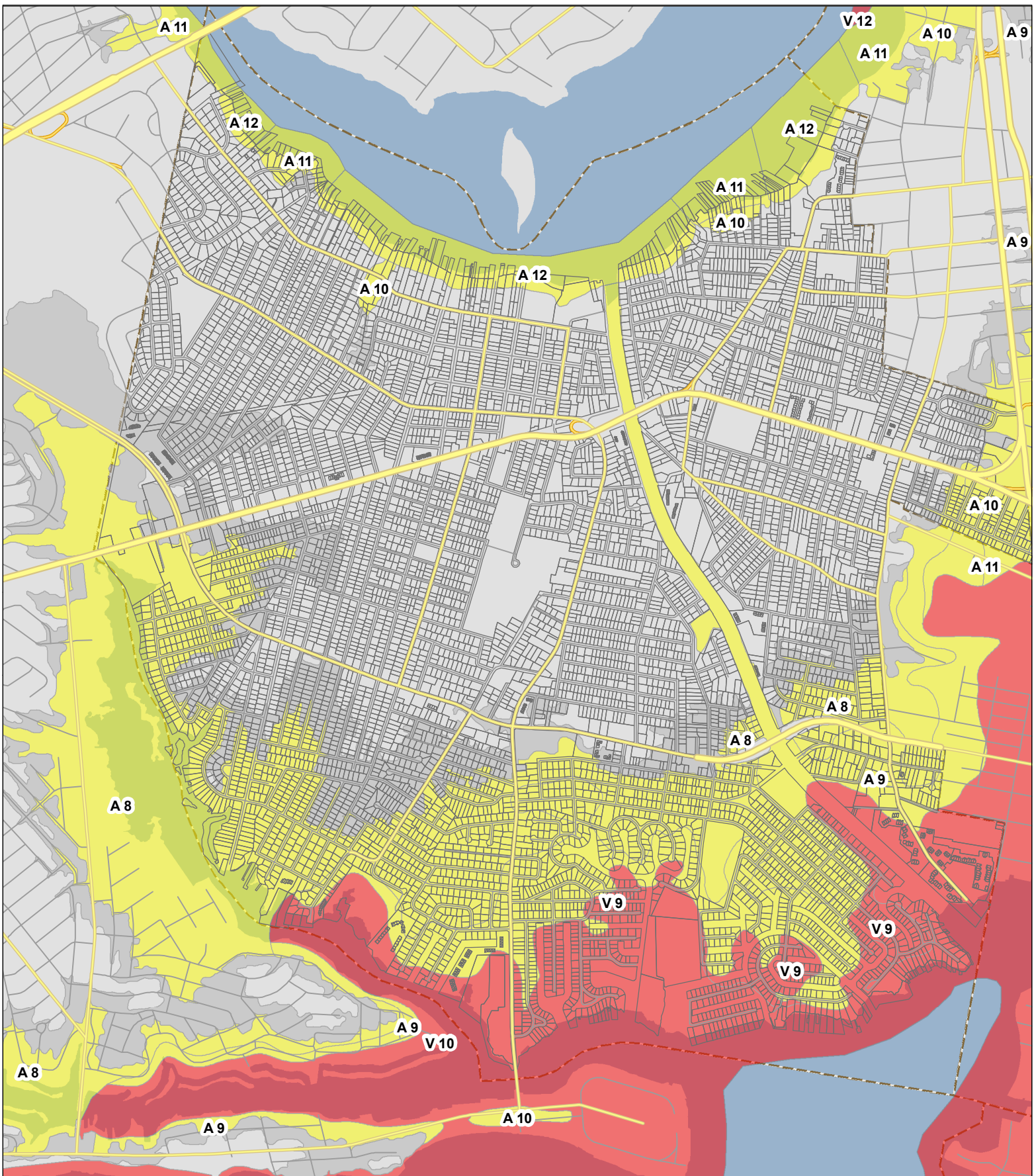
Prepared by: CLB, 5/2/2017
 Source: FEMA; NJDEP; NJDOT; NJGIN; Ocean County
 C:\Users\cbell\Documents\PPP\FIRMandRLA.mxd

**Effective FIRM Map -2006
 Point Pleasant Borough
 Ocean County, New Jersey**



NOTE: This map was developed using New Jersey Department of Environmental Protection Geographic Information System digital data, but this secondary product has not been verified by NJDEP and is not State-authorized.

Appendix G: Advisory Base Flood Map



T&M Associates
 11 Tindall Road
 Middletown, NJ 07748-2792
 Phone: 732-671-6400
 Fax: 732-671-7365

Advisory Base Flood Elevations (ABFEs) Point Pleasant Borough Ocean County, New Jersey

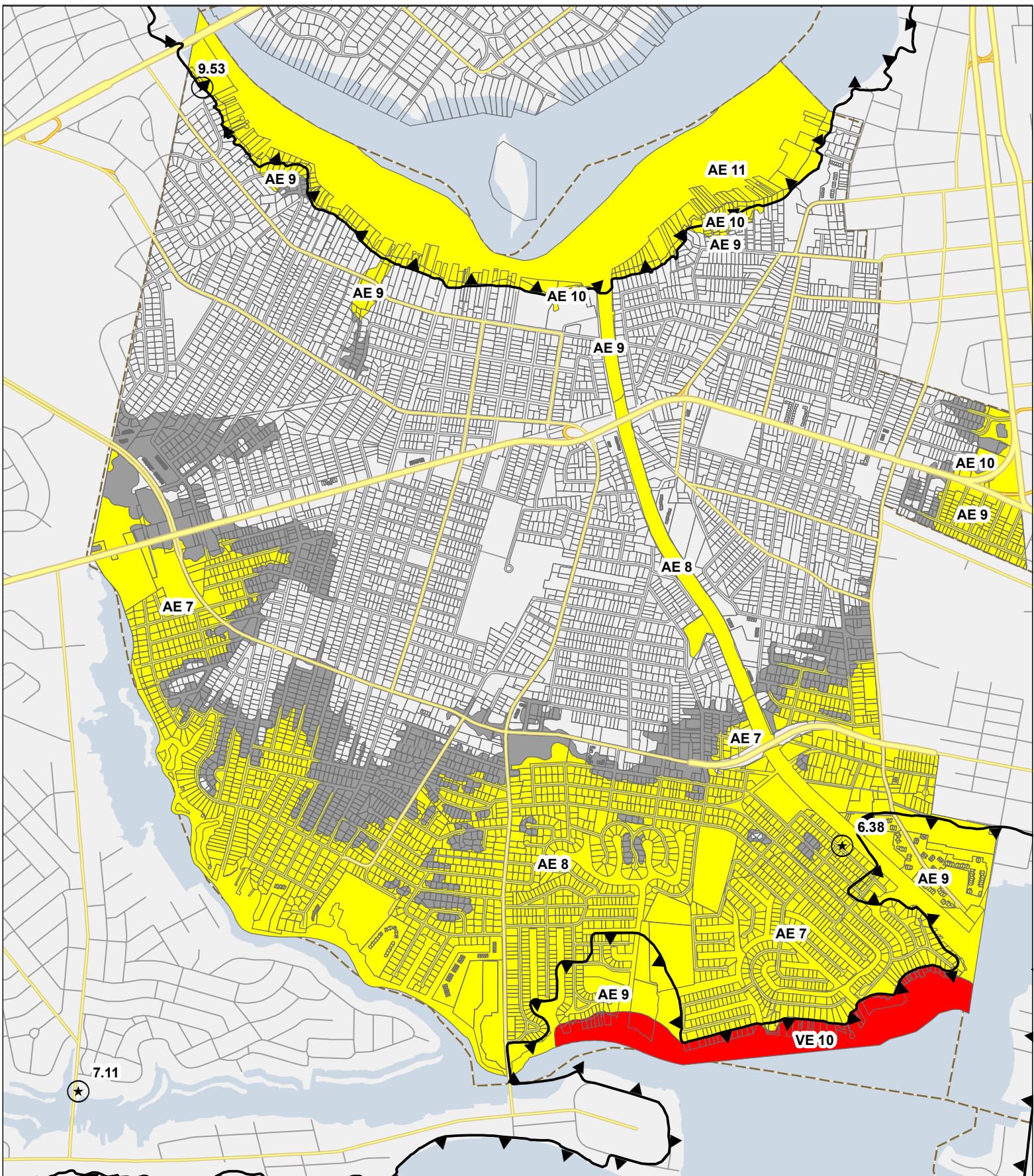
0 0.075 0.15 0.3 0.45 0.6 Miles

Prepared by: CLB, 5/2/2017
 Source: FEMA; NJDEP; NJDOT; NJGIN; Ocean County
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NOTE: This map was developed using New Jersey Department of Environmental Protection Geographic Information System digital data, but this secondary product has not been verified by NJDEP and is not State-authorized.

Appendix H: Preliminary FIRM Map



T&M Associates
 11 Tindall Road
 Middletown, NJ 07748-2792
 Phone: 732-671-6400
 Fax: 732-671-7365

Legend

- Hurricane Sandy Surge Elevation
- Preliminary Flood Zone**
- VE
- AE
- 0.2 PCT ANNUAL CHANCE FLOOD HAZARD
- LiMWA

0 0.075 0.15 0.3 0.45 0.6 Miles

Prepared by: CLB, 4/26/2017
 Source: FEMA; NJDEP; NJDOT; NJGIN; Ocean County
 C:\Users\cbell\Documents\PP\PFIRMandRLA.mxd

**Preliminary FIRM
 Borough of Point Pleasant
 Ocean County, New Jersey**



NOTE: This map was developed using New Jersey Department of Environmental Protection Geographic Information System digital data, but this secondary product has not been verified by NJDEP and is not State-authorized.



Appendix I: Sandy Surge Extents

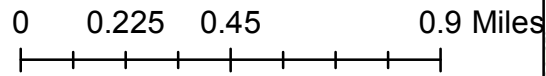
Sandy Storm Surge Point Pleasant Borough

Legend

-  Municipality
-  Schools
-  Fire Stations
-  Law Enforcement
-  Assisted Living
-  Hospitals
-  Evacuation Routes

Sandy Storm Surge

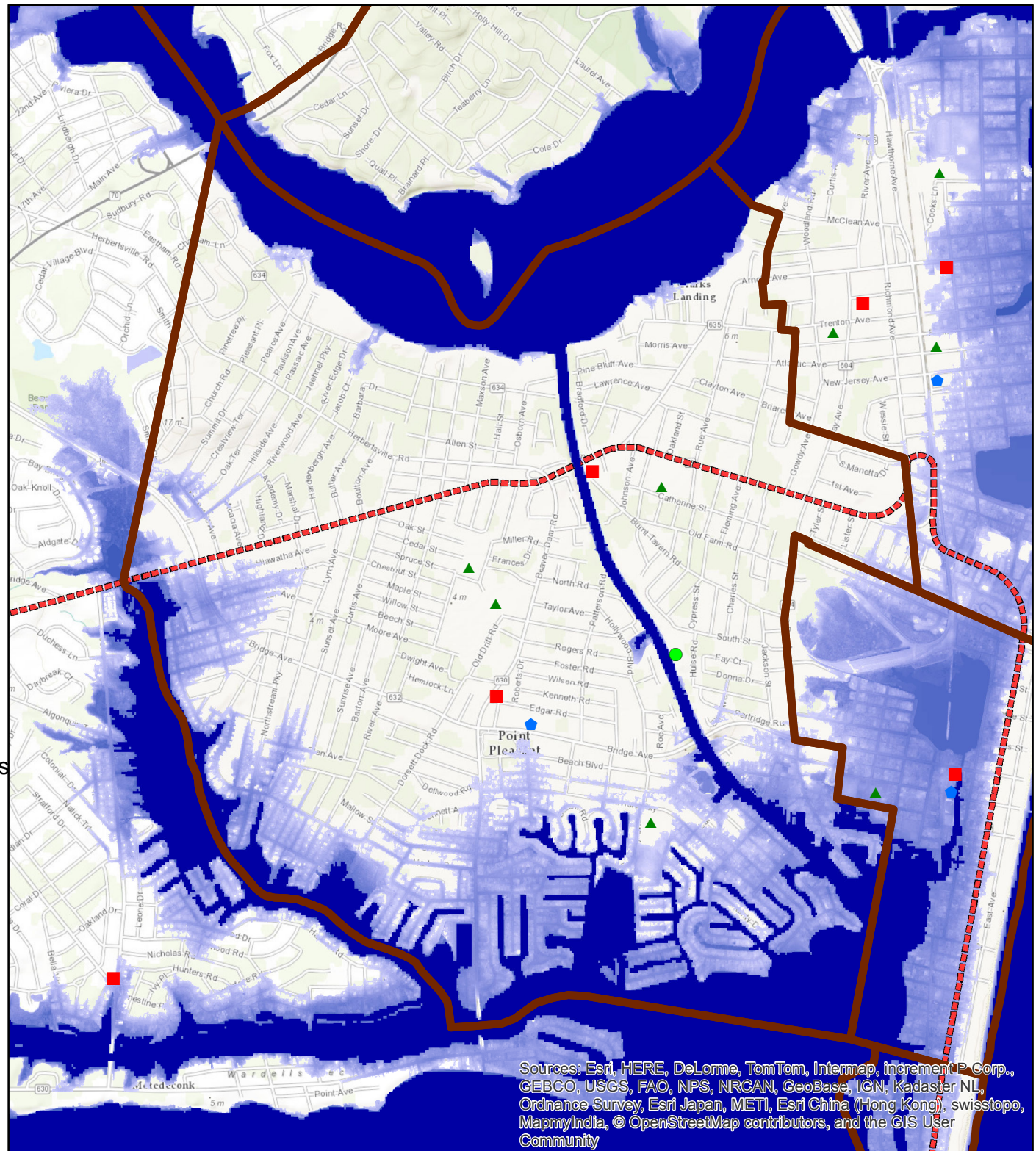
-  High: More Water
-  Low: Less Water



Year 2010 Population: 18392

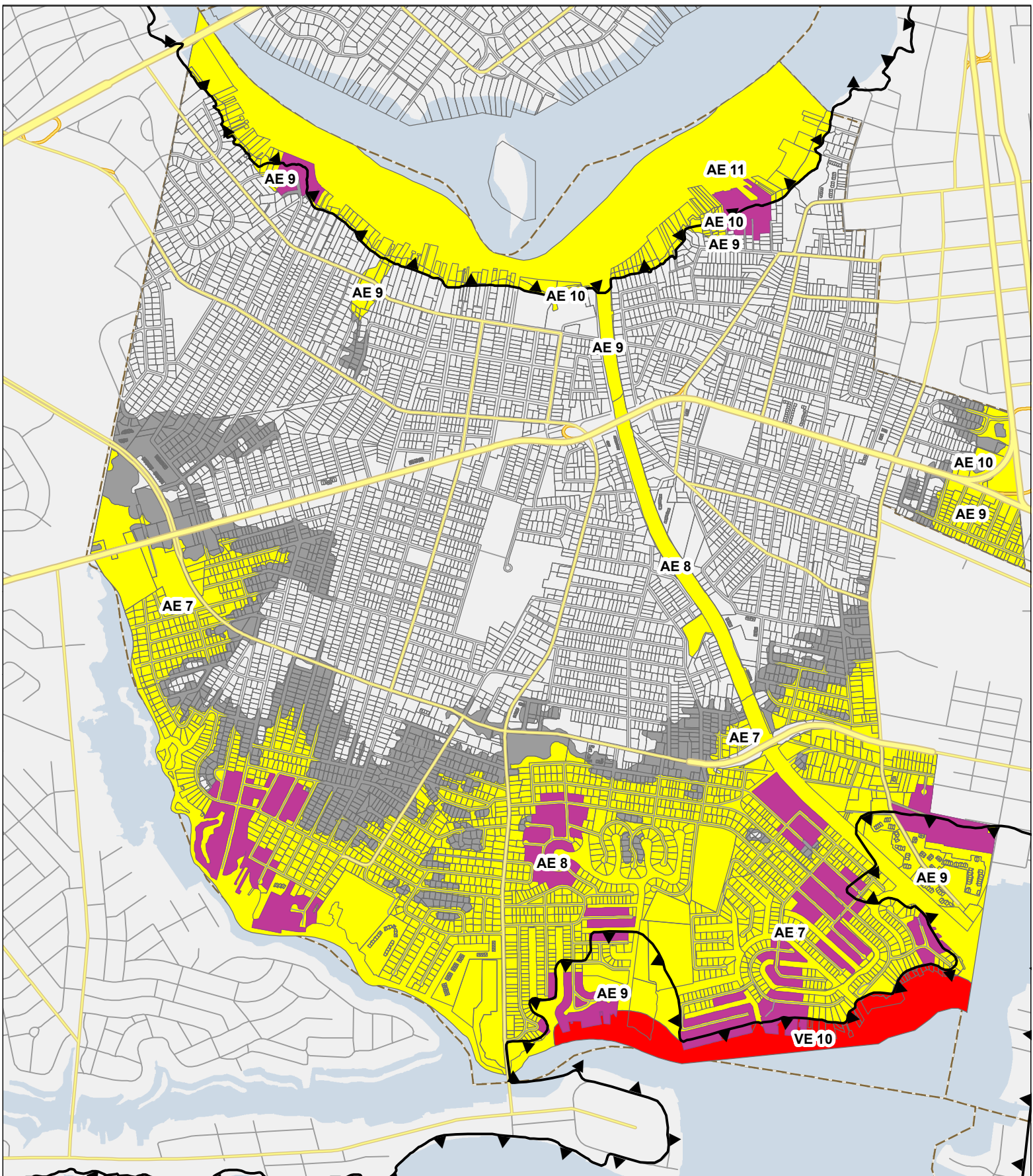
This map depicts the Sandy Storm Surge extents provided by FEMA. The depths are ranged in meters of inundation above ground level and are categorized in the legend above.

Map Authors: Rachael Sacatelli and Bryan Serino
Rutgers, New Brunswick
Center for Remote Sensing
and Spatial Analysis



Sources: Esri, HERE, DeLorme, TomTom, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), swisstopo, MapmyIndia, © OpenStreetMap contributors, and the GIS User Community

Appendix J: Repetitive Loss Areas Map



T&M Associates
 11 Tindall Road
 Middletown, NJ 07748-2792
 Phone: 732-671-6400
 Fax: 732-671-7365

Legend

- Repetitive Loss Areas - Parcels within 200 ft of RL Property
- Preliminary Flood Zone**
- VE
- AE
- 0.2 PCT ANNUAL CHANCE FLOOD HAZARD
- LIMWA

**Repetitive Loss Areas
 Borough of Point Pleasant
 Ocean County, New Jersey**

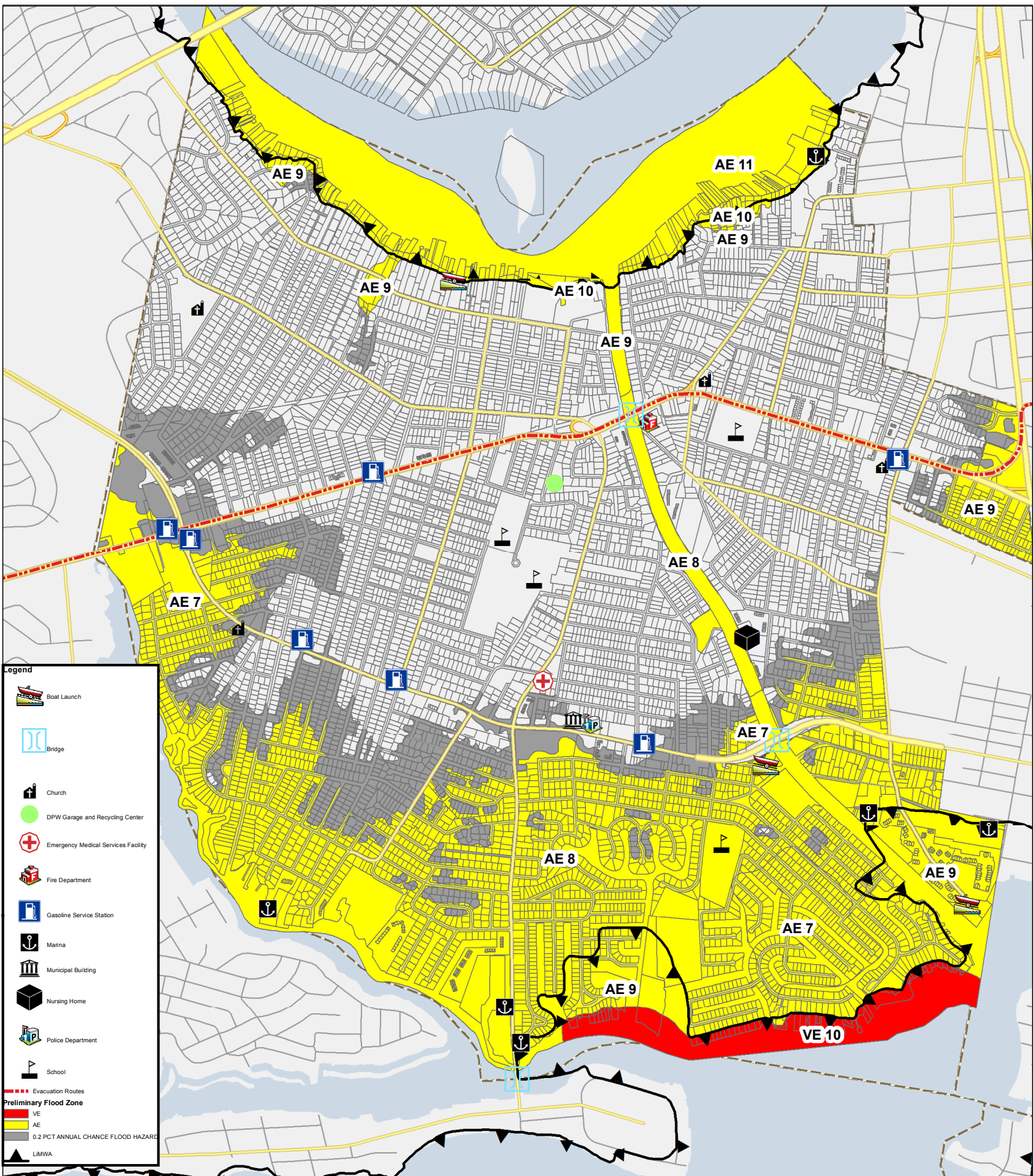
0 0.075 0.15 0.3 0.45 0.6 Miles

Prepared by: CLB, 3/13/2017
 Source: FEMA; NJDEP; NJDOT; NJGIN; Ocean County
 C:\Users\cbe\Documents\PP\PFIRMANDRLA.mxd



NOTE: This map was developed using New Jersey Department of Environmental Protection Geographic Information System digital data, but this secondary product has not been verified by NJDEP and is not State-authorized.

Appendix K: Critical Facilities Map

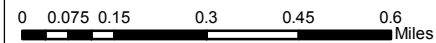


Legend

- Boat Launch
- Bridge
- Church
- DPW Garage and Recycling Center
- Emergency Medical Services Facility
- Fire Department
- Gasoline Service Station
- Marina
- Municipal Building
- Nursing Home
- Police Department
- School
- Evacuation Routes
- Preliminary Flood Zone**
- VE
- AE
- 0.2 PCT ANNUAL CHANCE FLOOD HAZARD
- LMWA



T&M Associates
 11 Tindall Road
 Middletown, NJ 07748-2792
 Phone: 732-671-6400
 Fax: 732-671-7365



Prepared by: CLB, 4/26/2017
 Source: FEMA; NJDEP; NJDOT; NJGIN; Ocean County
 C:\Users\cbe\Documents\PP\PPFIRMandRLA.mxd

Critical Facilities Borough of Point Pleasant Ocean County, New Jersey






NOTE: This map was developed using New Jersey Department of Environmental Protection Geographic Information System digital data, but this secondary product has not been verified by NJDEP and is not State-authorized.





Appendix L: SLOSH Maps

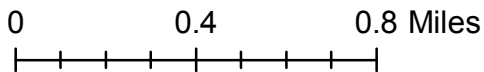
Category 1 SLOSH Model Point Pleasant Borough

Legend

-  Municipality
-  Schools
-  Assisted Living
-  Law Enforcement
-  Hospitals
-  Fire Stations
-  Evacuation Routes

Category 1 SLOSH

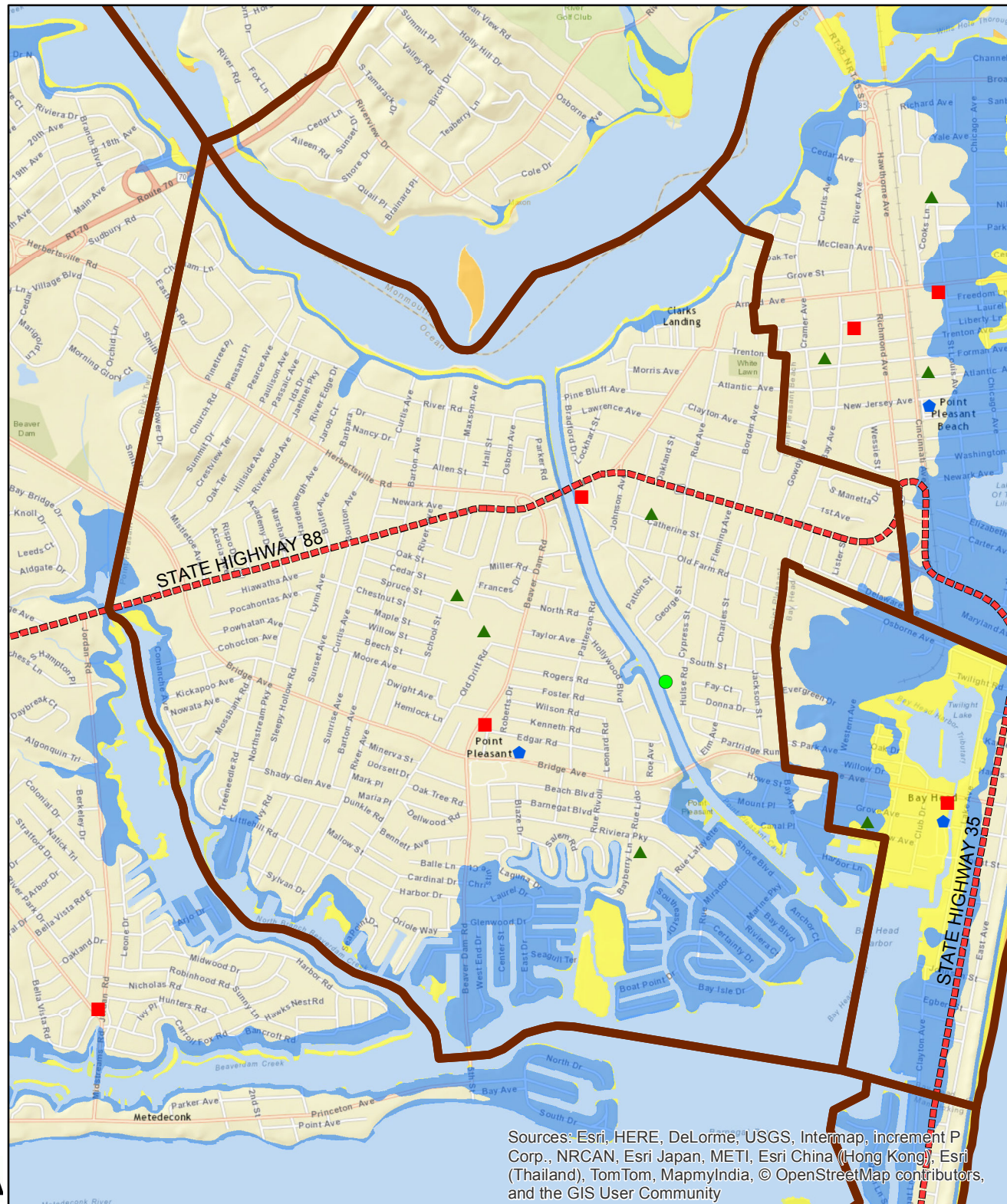
-  0 - 3 Feet Above Ground Level
-  3 - 6
-  6 - 9
-  > 9



Year 2010 Population: 18392

This map depicts the SLOSH model extents provided by NOAA. The depths are ranged from 0-9 or greater feet of inundation above ground level and are categorized in the legend above.






Map Authors: Rachael Sacatelli and Bryan Serino
Rutgers, New Brunswick
Center for Remote Sensing
and Spatial Analysis







Sources: Esri, HERE, DeLorme, USGS, Intermap, increment P Corp., NRCAN, Esri Japan, METI, Esri China (Hong Kong), Esri (Thailand), TomTom, MapmyIndia, © OpenStreetMap contributors, and the GIS User Community

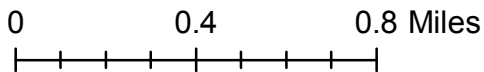
Category 2 SLOSH Model Point Pleasant Borough

Legend

-  Municipality
-  Schools
-  Assisted Living
-  Law Enforcement
-  Hospitals
-  Fire Stations
-  Evacuation Routes

Category 2 SLOSH

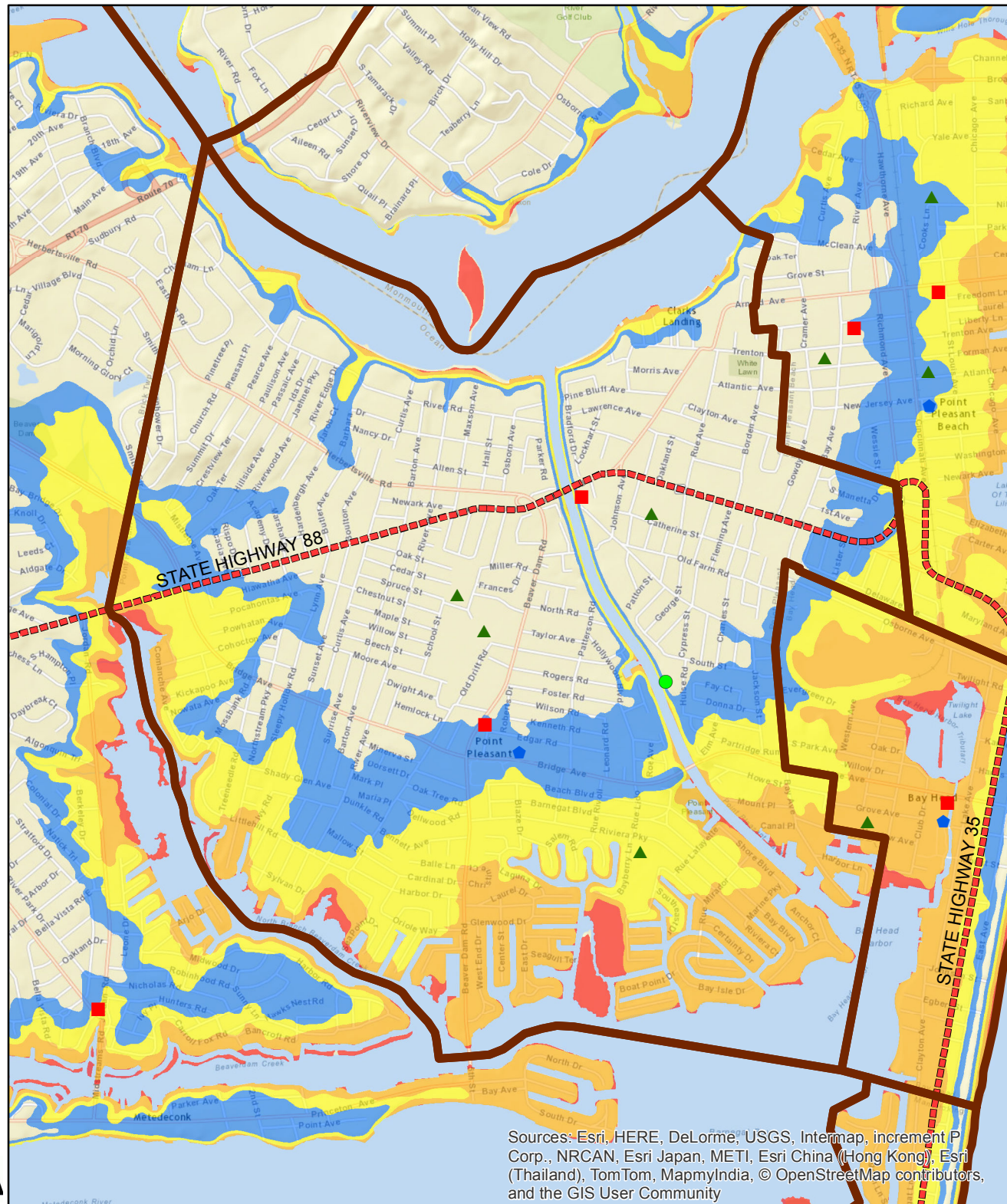
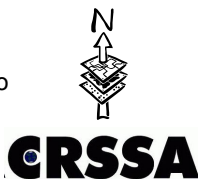
-  0 - 3 Feet Above Ground Level
-  3 - 6
-  6 - 9
-  > 9



Year 2010 Population: 18392

This map depicts the SLOSH model extents provided by NOAA. The depths are ranged from 0-9 or greater feet of inundation above ground level and are categorized in the legend above.






Map Authors: Rachael Sacatelli and Bryan Serino
Rutgers, New Brunswick
Center for Remote Sensing
and Spatial Analysis







Sources: Esri, HERE, DeLorme, USGS, Intermap, increment P Corp., NRCAN, Esri Japan, METI, Esri China (Hong Kong), Esri (Thailand), TomTom, MapmyIndia, © OpenStreetMap contributors, and the GIS User Community

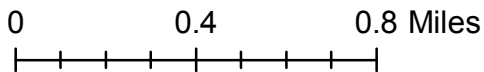
Category 3 SLOSH Model Point Pleasant Borough

Legend

-  Municipality
-  Schools
-  Assisted Living
-  Law Enforcement
-  Hospitals
-  Fire Stations
-  Evacuation Routes

Category 3 SLOSH

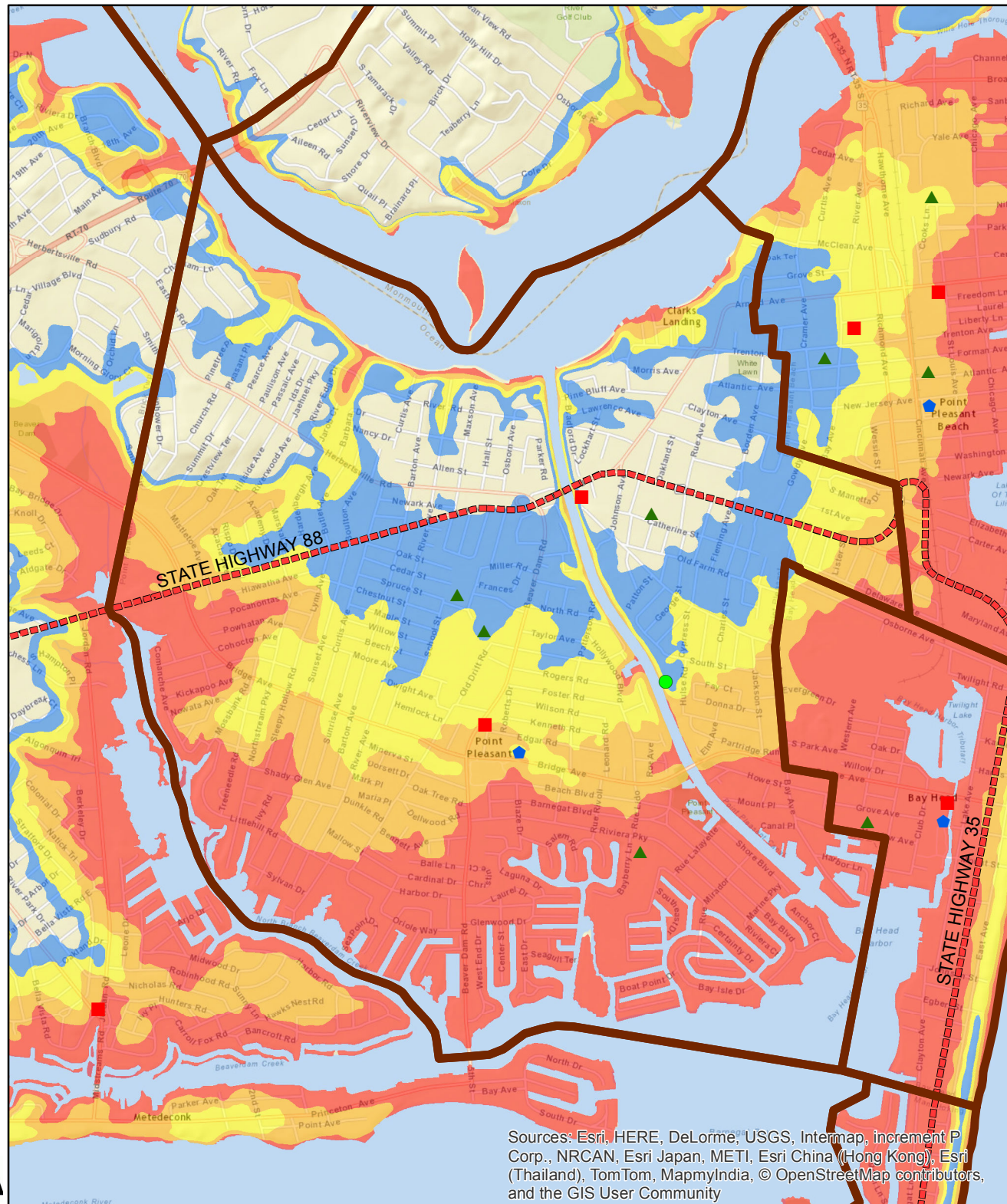
-  0 - 3 Feet Above Ground Level
-  3 - 6
-  6 - 9
-  > 9



Year 2010 Population: 18392

This map depicts the SLOSH model extents provided by NOAA. The depths are ranged from 0-9 or greater feet of inundation above ground level and are categorized in the legend above.

Map Authors: Rachael Sacatelli and Bryan Serino
Rutgers, New Brunswick
Center for Remote Sensing
and Spatial Analysis











Sources: Esri, HERE, DeLorme, USGS, Intermap, increment P Corp., NRCAN, Esri Japan, METI, Esri China (Hong Kong), Esri (Thailand), TomTom, MapmyIndia, © OpenStreetMap contributors, and the GIS User Community

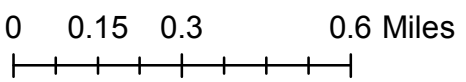
Appendix M: Sea Level Rise Maps

1 foot of Sea Level Rise

Point Pleasant Borough

Legend

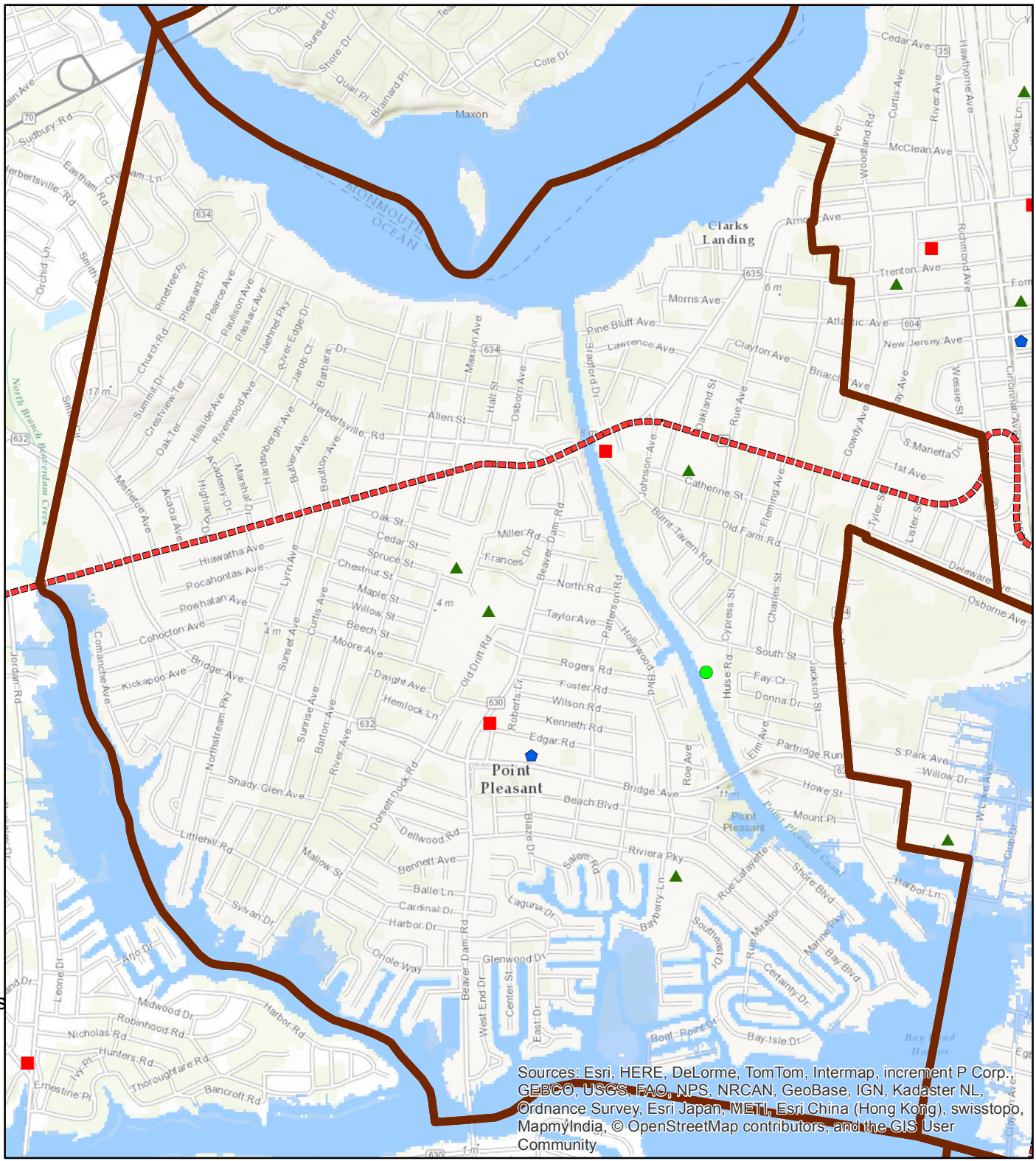
-  Municipality
-  Schools
-  Fire Stations
-  Law Enforcement
-  Assisted Living
-  Hospitals
-  Evacuation Routes
-  1ft SLR



Year 2010 Population: 18392

According to Kenneth G. Miller et al. in the 2013 study "A Geological Perspective on Sea-Level Rise and its Impacts Along the U.S. Mid-Atlantic Coast" a probable threat is the 1ft sea level rise condition that could be expected by 2050. This map depicts that sea level rise as well as the proceeding projections thereafter and is centered on target municipalities

Map Authors: Rachael Sacatelli and Bryan Serino
Rutgers, New Brunswick
Center for Remote Sensing
and Spatial Analysis








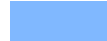


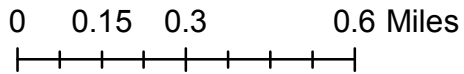
Sources: Esri, HERE, DeLorme, TomTom, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), swisstopo, MapmyIndia, © OpenStreetMap contributors, and the GIS User Community

2 feet of Sea Level Rise

Point Pleasant Borough

Legend

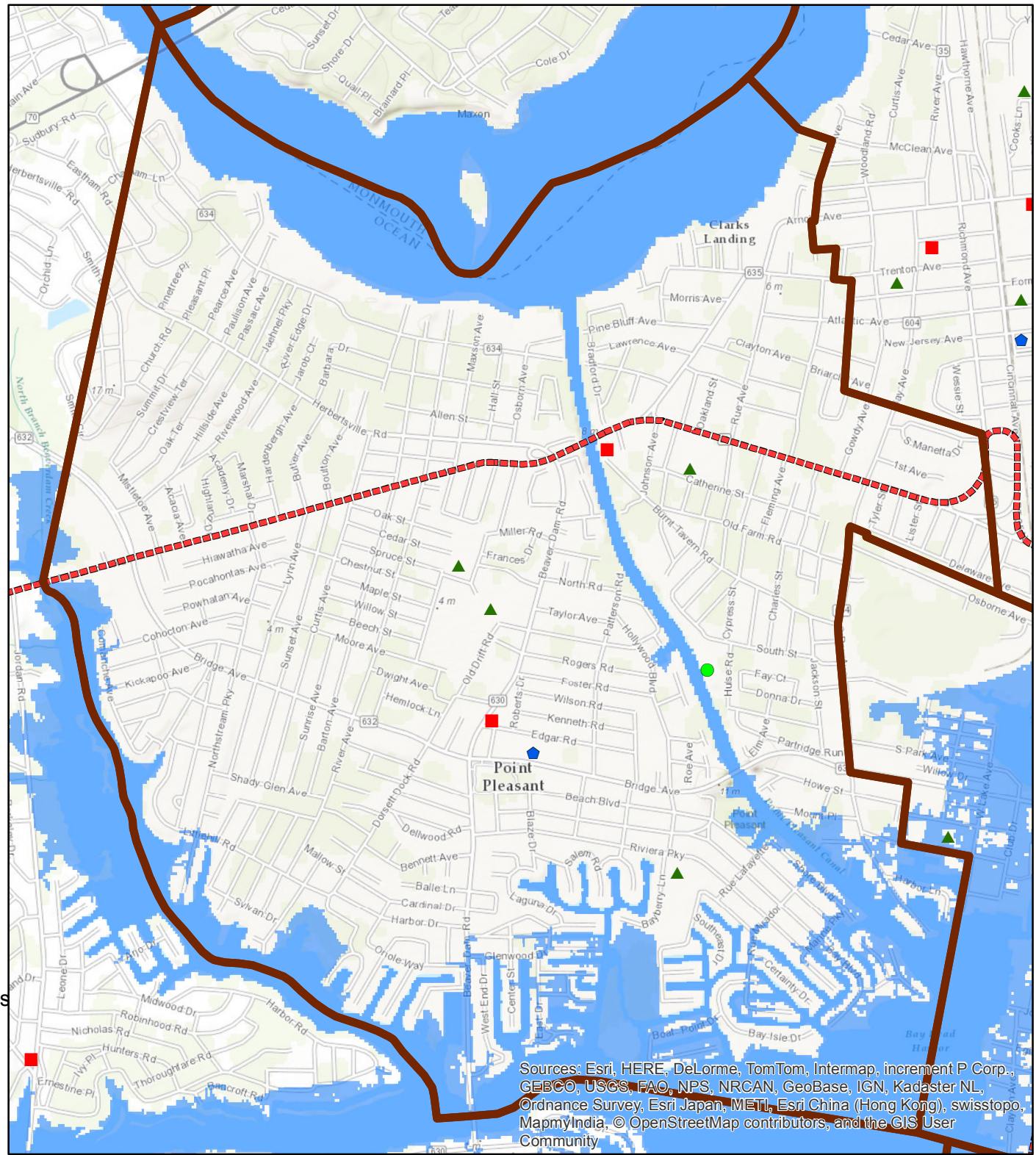
-  Municipality
-  Schools
-  Fire Stations
-  Law Enforcement
-  Assisted Living
-  Hospitals
-  Evacuation Routes
-  2ft SLR



Year 2010 Population: 18392

According to Kenneth G. Miller et al. in the 2013 study "A Geological Perspective on Sea-Level Rise and its Impacts Along the U.S. Mid-Atlantic Coast" a probable threat is the 1ft sea level rise condition that could be expected by 2050. This map depicts that sea level rise as well as the proceeding projections thereafter and is centered on target municipalities

Map Authors: Rachael Sacatelli and Bryan Serino
Rutgers, New Brunswick
Center for Remote Sensing
and Spatial Analysis











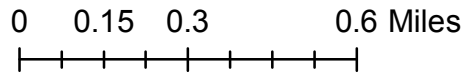
Sources: Esri, HERE, DeLorme, TomTom, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), swisstopo, MapmyIndia, © OpenStreetMap contributors, and the GIS User Community

3 feet of Sea Level Rise

Point Pleasant Borough

Legend

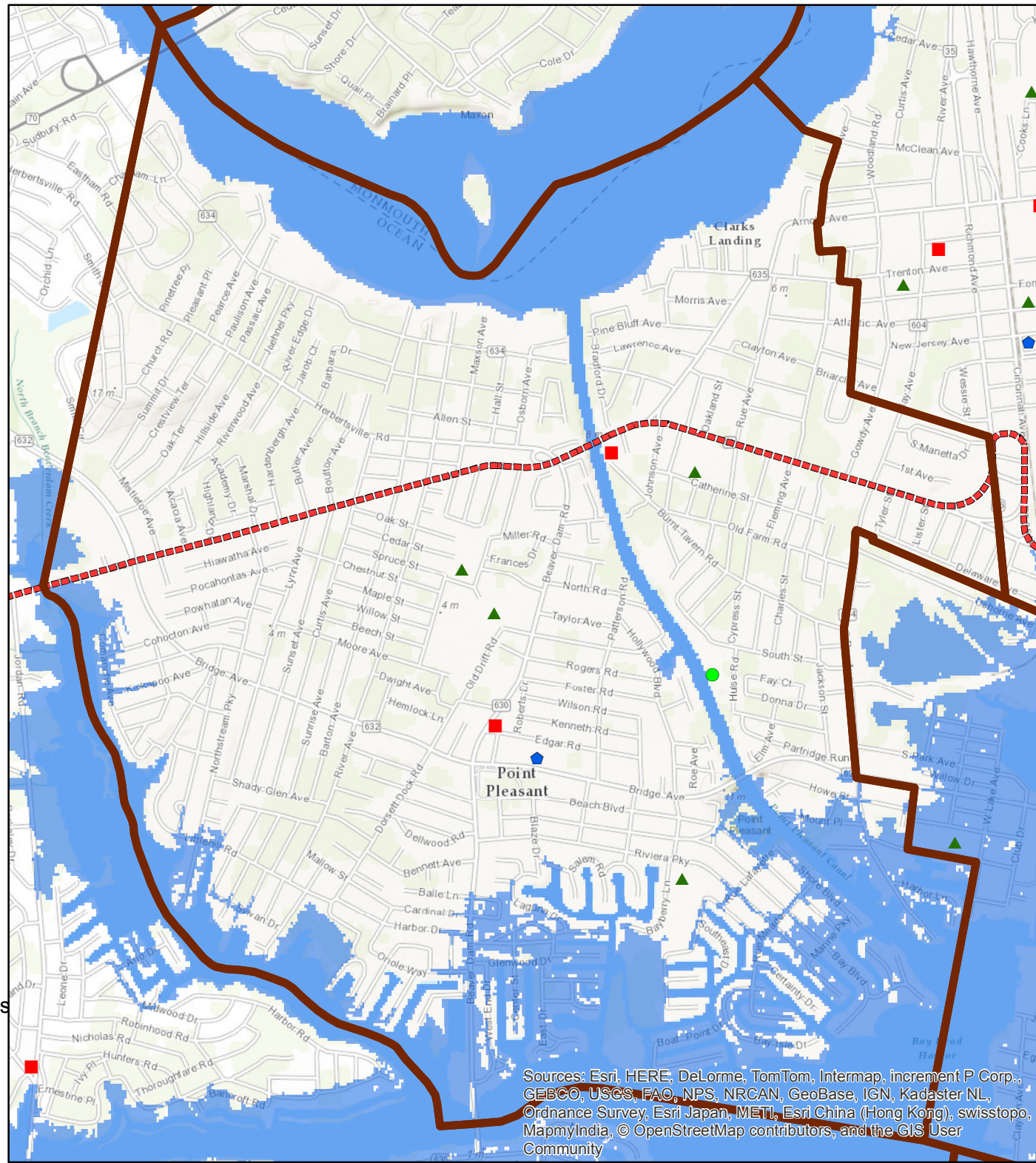
-  Municipality
-  Schools
-  Fire Stations
-  Law Enforcement
-  Assisted Living
-  Hospitals
-  Evacuation Routes
-  3ft SLR



Year 2010 Population: 18392

According to Kenneth G. Miller et al. in the 2013 study "A Geological Perspective on Sea-Level Rise and its Impacts Along the U.S. Mid-Atlantic Coast" a probable threat is the 1ft sea level rise condition that could be expected by 2050. This map depicts that sea level rise as well as the proceeding projections thereafter and is centered on target municipalities

Map Authors: Rachael Sacatelli and Bryan Serino
Rutgers, New Brunswick
Center for Remote Sensing
and Spatial Analysis










Sources: Esri, HERE, DeLorme, TomTom, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), swisstopo, MapmyIndia, © OpenStreetMap contributors, and the GIS User Community






Appendix N: Marsh Retreat Maps

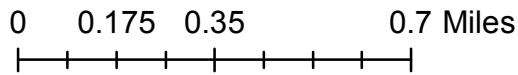
Marsh Retreat at 1 foot of Sea Level Rise Point Pleasant Borough

Legend

-  Municipality
-  Schools
-  Fire Stations
-  Law Enforcement
-  Assisted Living
-  Hospitals
-  Evacuation Routes

Marsh Retreat at 1ft SLR

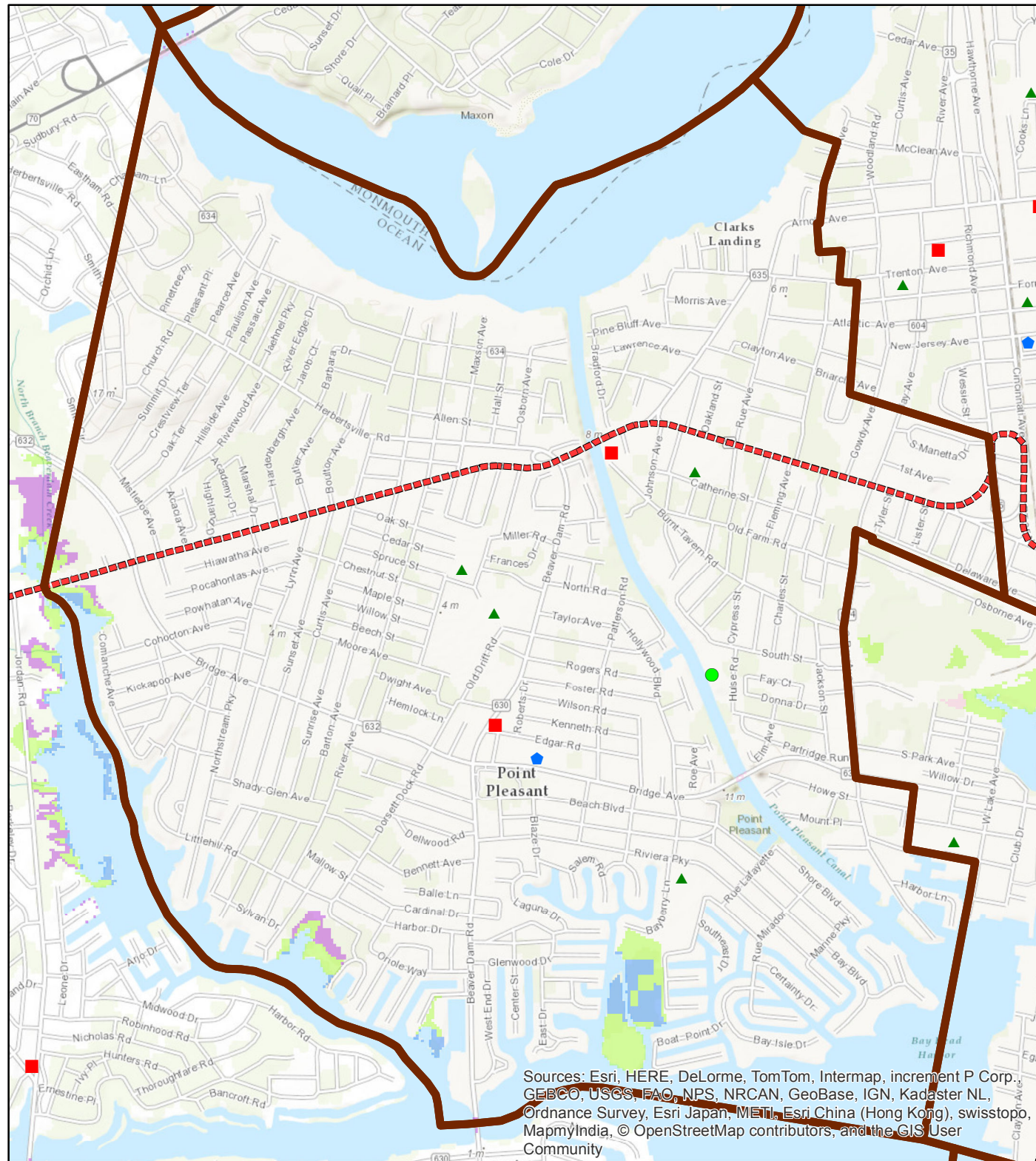
-  Unimpeded Marsh Retreat Zone
-  Impeded Marsh Retreat Zone
-  Marsh Conversion: Unconsolidated Shore
-  Marsh Conversion: Open Water
-  Unchanged Tidal Marsh



Year 2010 Population: 18392

According to Kenneth G. Miller et al. in the 2013 study "A Geological Perspective on Sea-Level Rise and its Impacts Along the U.S. Mid-Atlantic Coast" a probable threat is the 1ft sea level rise condition that could be expected by 2050. This map depicts the marsh retreat caused by sea level rise centered on target municipalities.




Map Author: Rachael Sacatelli
Rutgers, New Brunswick
Center for Remote Sensing
and Spatial Analysis








Sources: Esri, HERE, DeLorme, TomTom, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), swisstopo, MapmyIndia, © OpenStreetMap contributors, and the GIS User Community

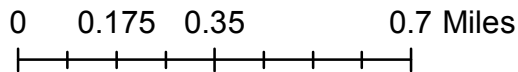
Marsh Retreat at 2 feet of Sea Level Rise Point Pleasant Borough

Legend

-  Municipality
-  Schools
-  Fire Stations
-  Law Enforcement
-  Assisted Living
-  Hospitals
-  Evacuation Routes

Marsh Retreat at 2ft SLR

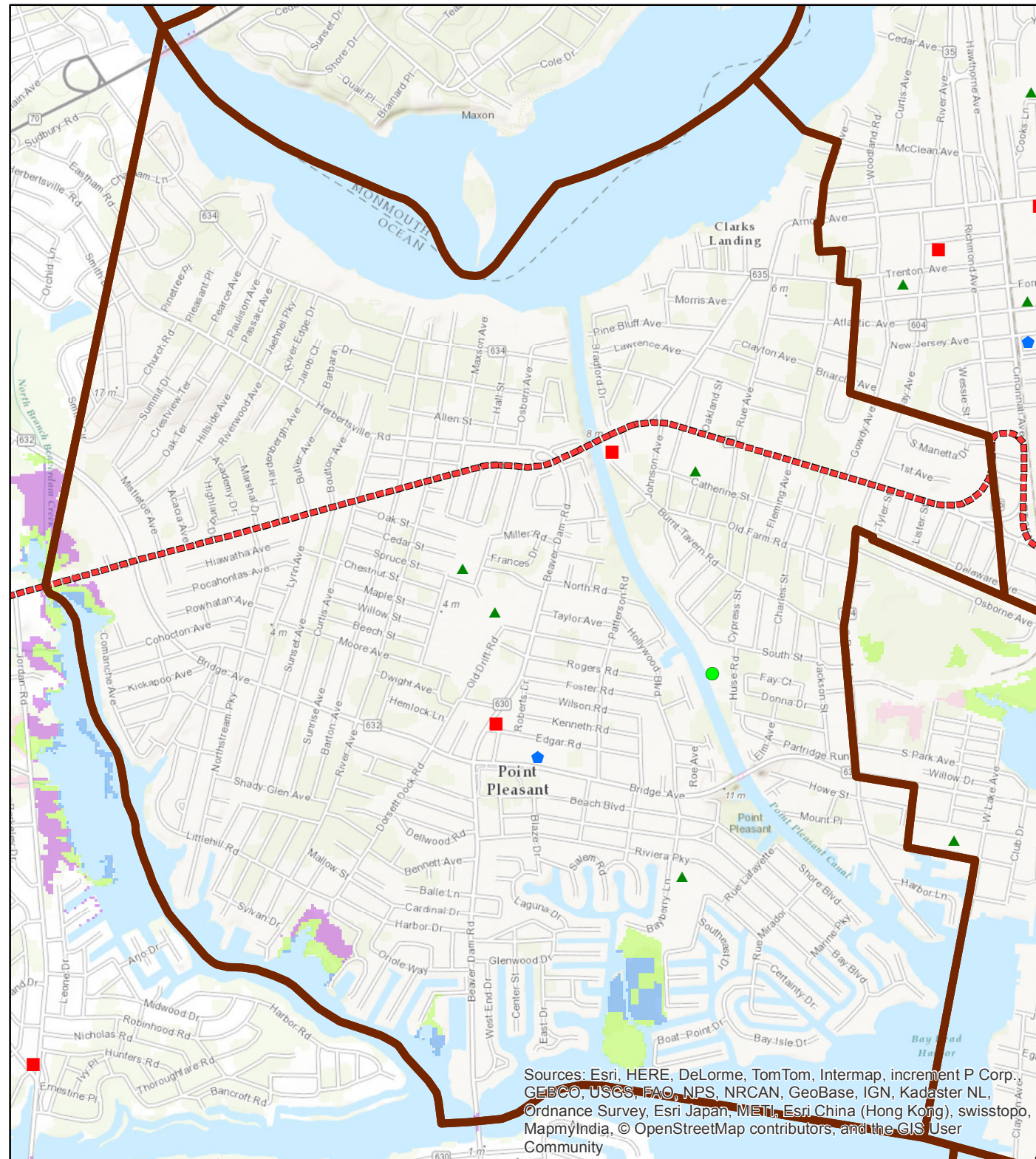
-  Unimpeded Marsh Retreat Zone
-  Impeded Marsh Retreat Zone
-  Marsh Conversion: Unconsolidated Shore
-  Marsh Conversion: Open Water
-  Unchanged Tidal Marsh



Year 2010 Population: 18392

According to Kenneth G. Miller et al. in the 2013 study "A Geological Perspective on Sea-Level Rise and its Impacts Along the U.S. Mid-Atlantic Coast" a probable threat is the 1ft sea level rise condition that could be expected by 2050. This map depicts the marsh retreat caused by sea level rise centered on target municipalities.







Map Author: Rachael Sacatelli
Rutgers, New Brunswick
Center for Remote Sensing
and Spatial Analysis



Sources: Esri, HERE, DeLorme, TomTom, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), swisstopo, MapmyIndia, © OpenStreetMap contributors, and the GIS User Community

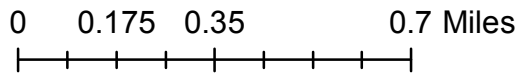
Marsh Retreat at 3 feet of Sea Level Rise Point Pleasant Borough

Legend

-  Municipality
-  Schools
-  Fire Stations
-  Law Enforcement
-  Assisted Living
-  Hospitals

Evacuation Routes

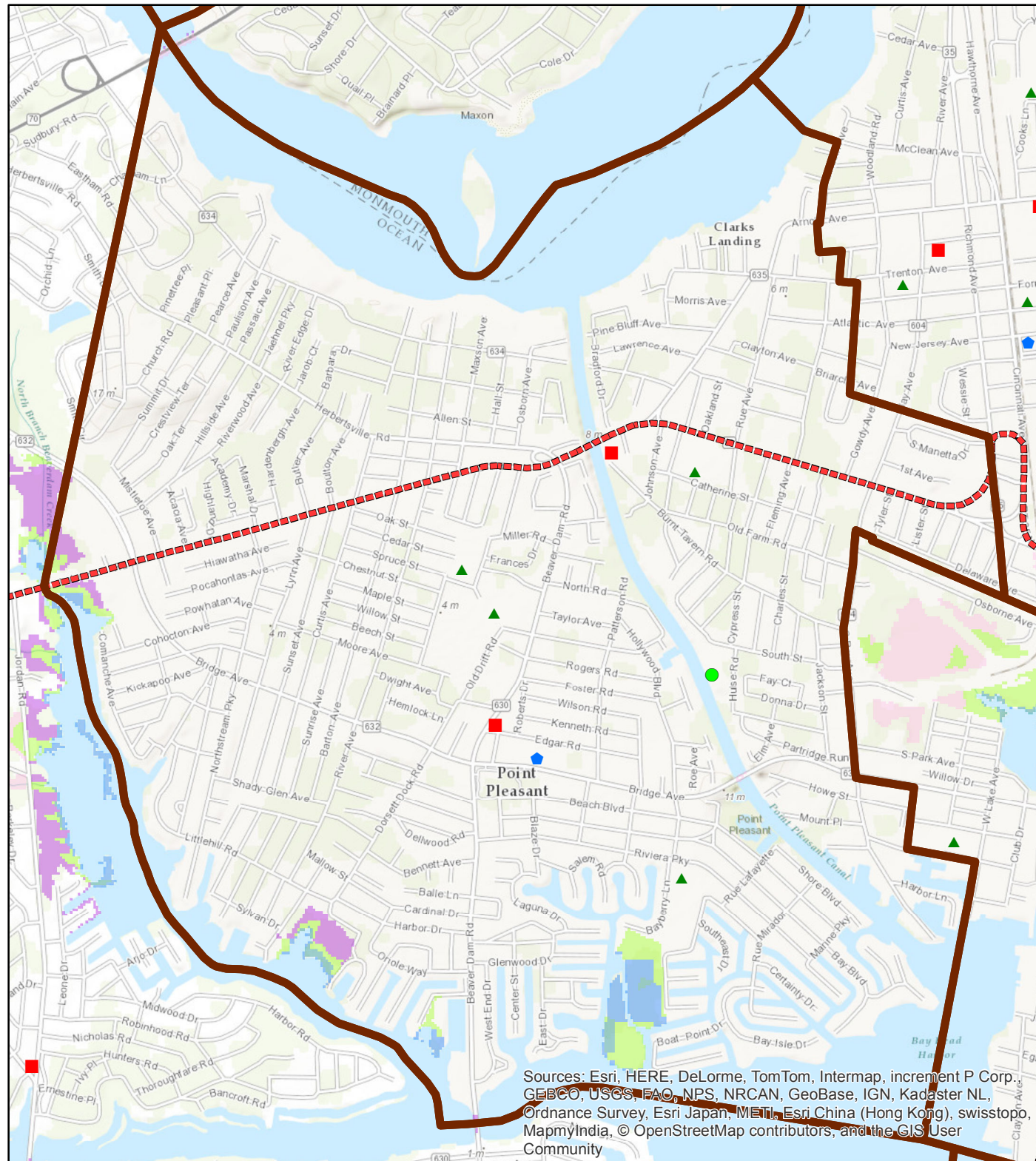
-  Evacuation Routes
-  Unimpeded Marsh Retreat Zone
-  Impeded Marsh Retreat Zone
-  Marsh Conversion: Unconsolidated Shore
-  Marsh Conversion: Open Water
-  Unchanged Tidal Marsh



Year 2010 Population: 18392

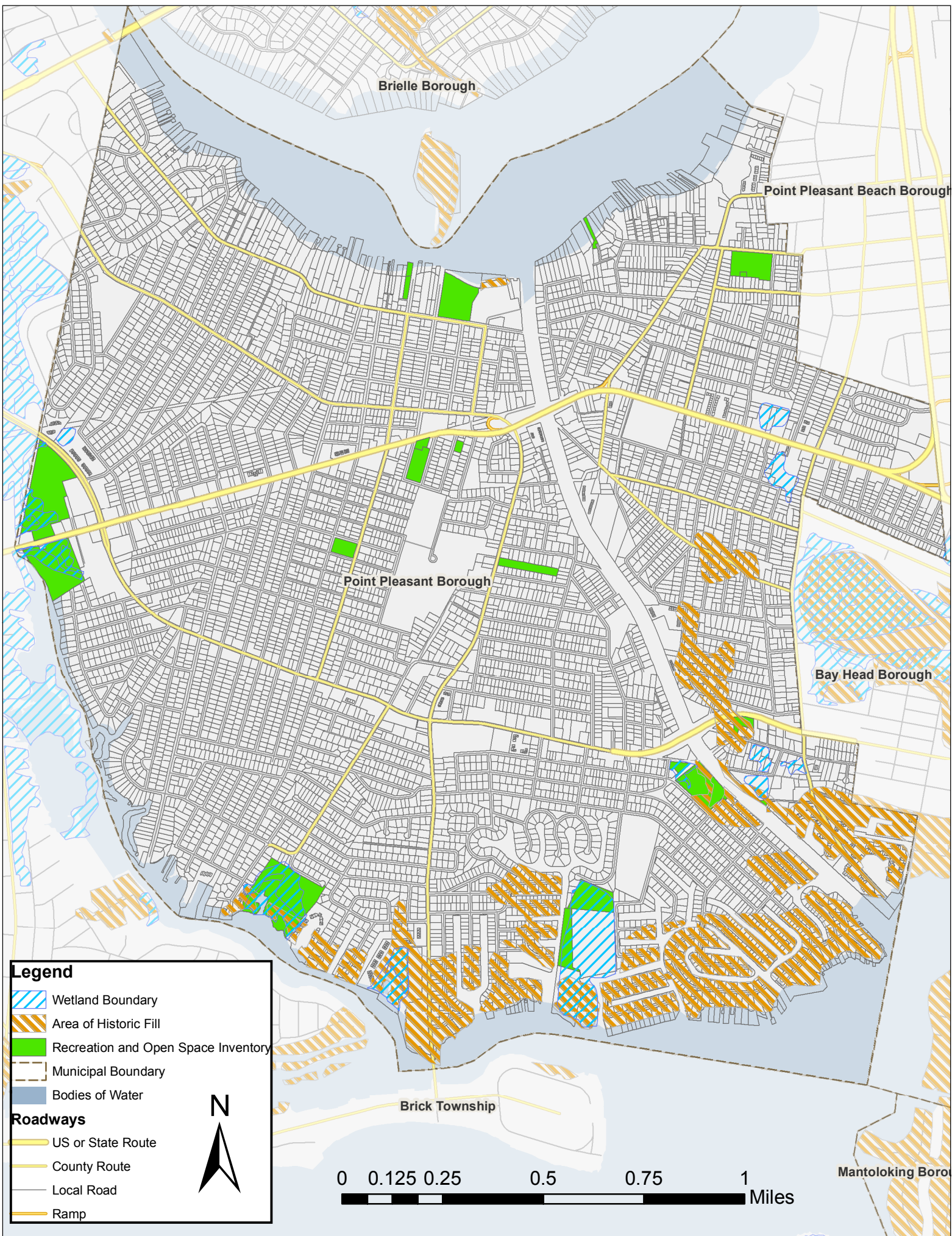
According to Kenneth G. Miller et al. in the 2013 study "A Geological Perspective on Sea-Level Rise and its Impacts Along the U.S. Mid-Atlantic Coast" a probable threat is the 1ft sea level rise condition that could be expected by 2050. This map depicts the marsh retreat caused by sea level rise centered on target municipalities.

Map Author: Rachael Sacatelli
Rutgers, New Brunswick
Center for Remote Sensing
and Spatial Analysis



Sources: Esri, HERE, DeLorme, TomTom, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), swisstopo, MapmyIndia, © OpenStreetMap contributors, and the GIS User Community

Appendix O: Natural Features Map



Brielle Borough

Point Pleasant Beach Borough






Point Pleasant Borough

Bay Head Borough





Brick Township

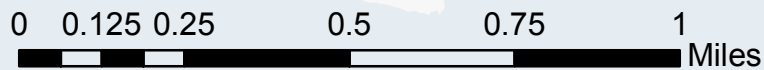
Mantoloking Borough

Legend

-  Wetland Boundary
-  Area of Historic Fill
-  Recreation and Open Space Inventory
-  Municipal Boundary
-  Bodies of Water

Roadways

-  US or State Route
-  County Route
-  Local Road
-  Ramp



**Appendix P: Resolution Adopting Floodplain Management
Plan**