



2015 Floodplain Management Plan

Borough of Rumson
Monmouth County, New Jersey

2015 Floodplain Management Plan

March 2015

Prepared for:
Borough of Rumson
Monmouth County, New Jersey

Prepared by:



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*The original of this document was signed
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Executive Summary

This plan is intended to identify and assess flood hazards within the Borough of Rumson, 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 maximize the amount of points available for credit in the 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 Rumson, 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 Rumson 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 the Borough of Rumson's Floodplain Management Plan (FMP) and will be incorporated as an element of the Borough's Master Plan. The FMP identifies and assesses flood hazards within the Borough, establishes the goals and objectives for floodplain management in Rumson, and presents a series of actions designed to minimize flooding and mitigate the impacts from flooding in the future. The Plan 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. The FMP also includes recommendations for the Borough's current Floodplain Development Protection Ordinance.

The Floodplain Management Plan is designed to maximize points available under the 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 maximize the amount of points available for credit in the 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. BOROUGH OF RUMSON PROFILE

The Borough of Rumson is a compact residential community settled in 1665 that is located in the coastal area of northeastern Monmouth County, New Jersey, and is bounded by the Navesink River to the north and the Shrewsbury River to the east and south. The Boroughs of Fair Haven and Little Silver border Rumson to the west. Both the Shrewsbury and Navesink Rivers are listed by NJDEP as Category-1 streams. Additionally, there are a number of unnamed tributaries and ponds throughout the Borough.

Rumson is a mature community of about 5.2 square miles. The Borough has an established development pattern consisting of compact, pedestrian-scale business

areas surrounded by residential streets. According to the 2013 U.S. Census Borough estimate, the Borough has a population of approximately 7,006, and the median age was 41.6 in the 2010 U.S. Census. Rumson has been significantly influenced by its proximity to the New York Metropolitan Region. New York City is located approximately 40 miles north of Rumson and is easily accessible by ferry from Highlands, Atlantic Highlands or Belford and the New Jersey Transit North Jersey Coast Line, which has stops locally in Red Bank and Little Silver. Additionally, the Garden State Parkway is located approximately 4 miles west of Rumson and is accessible by exit 109. County

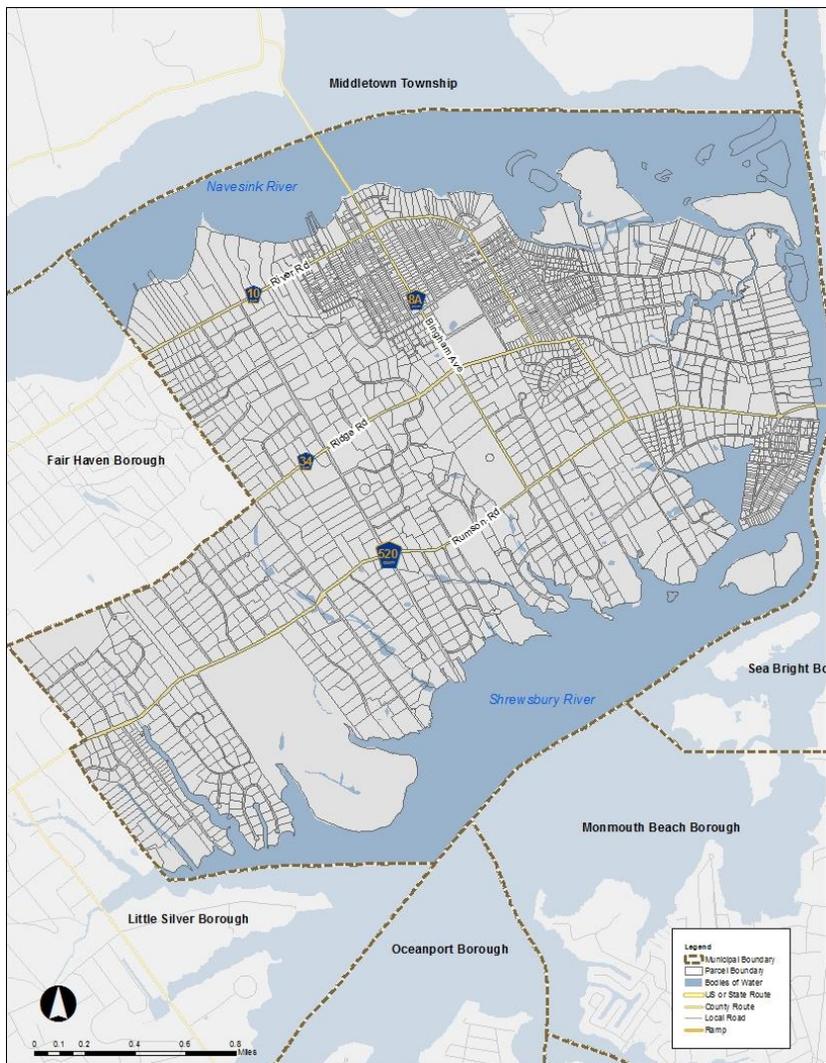


Figure 1. Borough Map

Route 520 provides access from the Borough to the Parkway. Other major roads in close proximity to Rumson include State Highway Routes 35 and 36. The Oceanic Bridge crosses the Navesink River and provides connections from Rumson to Middletown and the greater Bayshore region via Navesink River Road. The Shrewsbury River Bridge provides access from Rumson Road (County Route 520) to State Highway 36 in Sea Bright over the Shrewsbury River.

The Borough of Rumson 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 Rumson 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. In the Borough of Rumson, the largest amount of precipitation generally falls in the month of July, averaging close to 5 inches, with average yearly precipitation amounts totaling almost 47 inches. On average, the warmest month in Rumson is July and the coldest is February (The Weather Channel, LLC).

POPULATION TRENDS

The 2015 Master Plan Reexamination Report states that the overall density and population distribution have not changed significantly from the 2012 Master Plan Reexamination Report. The total population of the Borough as of the US Census in 2010 was 7,122 and decreased to 7,006 in 2013 (according to the 2013 American Community Survey estimates). The Borough's future population is not expected to change significantly from its current level due to the fact that the Borough is mostly built out. The predominate form of housing within the Borough of Rumson are single family homes.

III. PROJECT ORGANIZATION & PUBLIC MEETINGS

As the Borough's designated Planner and Office Responsible for Community Planning, T & M Associates assisted the Borough of Rumson in preparing this Floodplain Management Plan. 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 met on a monthly basis from November 2014 to February 2015 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 meeting outlines can be found in Appendix A. The following are the members of the Committee:

- Borough Staff:
 - Thomas Neff, PE, PP, CME – T&M Associates
 - Martin Truscott, AICP, PP – T&M Associates
 - Thomas Rogers – Administrator & Clerk
 - Fred Andre – Zoning Officer
 - Dennis Peras – Construction Official & Floodplain Manager
 - Sabine O'Connor – Construction Office Technical Assistant
- Public Representatives:
 - Mark Rubin – Councilman and Planning Board Member
 - John Conklin – Zoning Board Chairman
 - Alex Shanley – Planning Board Member
 - Gary Casazza – Planning Board Member and Local Home Builder
 - James Anderson, AIA – Local Architect
 - Matt Cronin, AIA – Local Architect
 - James Kennedy, PE, PP – Local Engineer

In addition to the Steering Committee meetings, a separate public information meeting was held during the initial stages of planning on November 3, 2014. 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 April 13, 2015 during the Planning Board Meeting. The proposed Floodplain Management Plan was presented to the Board and the public was encouraged to provide input on the recommended plan.

Additional information on these meetings can be found in Appendix B.

IV. FLOOD HAZARD ASSESSMENT

EXISTING DOCUMENTS

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

- 1988 Master Plan
- 2006 Stormwater Management Plan
- 2008 Housing Element Plan
- 2012 Master Plan Reexamination Report
- 1982 Monmouth County Growth Management Plan
- 2013 Monmouth County Master Plan
- 2014 Monmouth County Multi-Jurisdictional Natural Hazard Mitigation Draft Plan
- Borough of Rumson Emergency Management Guide
- 2014 Borough of Rumson Strategic Recovery Planning Report
- Borough Zoning Ordinances

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

1988 Master Plan

The following objectives of the 1988 Master Plan, as endorsed by the 2012, November 2002, June 2002, and 1997 Reexamination Reports, support floodplain management planning within the Borough of Rumson:

- Encourage the most appropriate use of land consistent with neighborhood character and its suitability for development
- Establish appropriate population densities and limit the intensity of development to both preserve the natural environment and to ensure neighborhood, community, and regional well-being.
- Secure the public's safety from fire, flood, panic, and other natural and man-made disasters.
- Ensure that Rumson's development does not conflict with the development and general welfare of neighboring municipalities, the County, and the State as a whole.
- Coordinate development with land use policies to encourage the appropriate and efficient expenditure of public funds.

- Protect the natural resources and qualities of the Borough including freshwater and saltwater wetlands, floodplains, stream corridors, open space, steep slopes, and areas with scenic, cultural, and recreational values.

Stormwater Management Plan 2006

The following objectives of the Stormwater Management Plan are relevant to this floodplain management plan:

- Reduce flood damage, including damage to life, property and the environment;
- Minimize, to the extent practical, any increase in stormwater runoff from any new development;
- Reduce soil erosion from development, redevelopment, and construction projects;
- Assure the adequacy of existing and proposed culverts and bridges, as well as for drainage;
- Maintain groundwater recharge;
- Maintain the integrity of stream channels for their biological function, as well as for drainage;
- Minimize pollutants in stormwater runoff from new and existing development to restore, enhance, and maintain the chemical, physical, and biological integrity of the waters of the State, to protect the public health, to safeguard fish and aquatic life and scenic and ecological values, and to enhance the domestic, municipal, recreational, commercial, and other uses of water;
- Protect public safety through the proper design and operation of stormwater basins;
- Properly manage and maintain existing natural ponds and waterways on private property; and
- Encourage the use of indigenous vegetation in landscape design

2010 Emergency Operations Procedures Manual

This manual, approved in 2010, sets forth the general policies and procedures to be carried out by municipal and volunteer entities (such as the Fire Department and EMS) in order to provide the citizens of the Borough with an effective integrated emergency response plan designed to minimize the loss of life and property during an emergency. The manual is comprised of the Basic Plan and the following accompanying annexes: Alerting, Warning, and Communications; Damage Assessment; Emergency Medical; Emergency Operations Center; Emergency Public Information; Evacuation; Fire and Rescue; Hazardous Materials; Law Enforcement; Public Health; Public Works;

Radiological Protection; Resource Management; Shelter, Reception, and Care; Social Services; Weapons of Mass Destruction; and Public Demonstrations and Civil Disorders.

The purpose of the Emergency Operations Procedures Manual is to protect life and property in emergencies by coordinating response activities of municipal and volunteer entities to ensure their optimum use. It provides for actions to be taken to mitigate, prepare for, respond to, and recover from the effects of an emergency. The plan is an “all-hazards” approach to emergency management and covers natural disasters, technological disasters, and national security crises.

2014 Strategic Recovery Planning Report

The Strategic Recovery Planning Report was adopted in 2014 to serve as a blueprint to guide the recovery of the Borough of Rumson from the effects of Superstorm Sandy and to reduce vulnerabilities to future storms. It highlighted community vulnerabilities exacerbated by the storm, including:

- The vulnerability of homeowners located in low-lying areas to the flooded waterways that surround Rumson Borough and their homes;
- The loss of power exposed residents to the dangers of cold fall nights; and
- The eight sewage pump stations that went offline threatened the health of residents by failing to prevent the backflow of raw sewage into flooded Borough streets.

The impacts of Superstorm Sandy on the Borough of Rumson also shed light on areas in which the Borough can improve its resiliency. They are as follows:

- Improving community outreach during emergency situations through emergency siren system, social media outlets, and other communication methods;
- Promoting public awareness of hazard mitigation and resiliency issues;
- Focusing public agencies on community vulnerabilities to hazards such as flooding;
- Encouraging regional solutions.

2014 Monmouth County Multi-Jurisdictional Natural Hazard Mitigation Plan

The Monmouth County Multi-Jurisdictional Natural Hazard Mitigation Plan was adopted in 2009 to meet the requirements of the Disaster Mitigation Act (DMA) of 2000. Its development was led by the County under a FEMA planning grant that covered the costs of its preparation. Monmouth County adopted a multi-jurisdictional approach,

and every municipality in the County was invited to participate as an equal partner with the County.

The successful implementation of the Plan will result in an increasingly resilient Monmouth County. In addition, the Plan ensures that Monmouth County and its jurisdictions are compliant with the Disaster Mitigation Act of 2000, which makes the County and its jurisdictions eligible to apply for Federal aid for technical assistance and post-disaster hazard mitigation project funding.

Rumson's participation in the 2014 Plan Update has identified numerous hazard mitigation actions that are included in the proposed floodplain management activities and action plan of this FMP.

Borough Zoning Ordinances

The Borough of Rumson adopted zoning amendments 13-002G and 13-003D in January 2013 to reflect FEMA's Advisory Base Flood Elevations and map dated December 12, 2012. This required new residential construction and substantially damaged homes to comply with municipal flood hazard rules in which the lowest habitable floor must be above the advisory base flood elevation.

COORDINATION WITH OUTSIDE AGENCIES

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

- The Borough of Little Silver
- The Borough of Fair Haven
- The Borough of Sea Bright
- The Borough of Monmouth Beach
- The Township of Middletown
- Monmouth County Planning Department, CRS User Group
- Monmouth County Office of Emergency Management
- Borough of Rumson Police Department
- Rumson Fire Company
- Oceanic Hook and Ladder
- Rumson First Aid Squad
- Rumson Historic Preservation Commission
- Rumson Environmental Commission

- Rumson Recreation Commission
- Freehold Soil Conservation District
- North Jersey Transportation Planning Authority
- Natural Resources Conservation Service
- NJ Coastal Management Program
- FEMA Region II
- US Army Corp of Engineers
- American Red Cross
- Clean Ocean Action
- American Littoral Society
- Jacques Cousteau National Estuarine Research Reserve
- Shore Builders Association of Central Jersey
- Comcast Cable
- New Jersey American Water
- JCP&L
- New Jersey Department of Environmental Protection, State Floodplain Manager

A sample letter that was sent out to each agency can be found in Appendix C. A summary of the contacted agencies can also be found in the appendix. 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.

FLOODING HISTORY

Description of Known Flood Hazards

The Flood Insurance Rate Map (FIRM) for the Borough of Rumson is currently in the process of being updated. The Effective FIRM maps dated September 25, 2009 can be found in Appendix D. The Advisory Base Flood Maps, which were adopted shortly after Superstorm Sandy, can be found in Appendix E. The new Preliminary FIRM maps issued on January 31, 2014 indicate that the portions of the Borough located along the Shrewsbury and Navesink Rivers are located within the 100-year floodplain, also known as the Special Flood Hazard Area (SFHA), with the floodplain extending further inland along the northern banks of the Shrewsbury River. All of the Borough's boundaries with water bodies are located within the floodplain. Rumson's Borough Hall and Police Department are located within the 500 year floodplain on the Preliminary FIRM. Additionally, a number of pump stations are located within the SFHA, many of which were damaged during Superstorm Sandy. The Preliminary FIRM map for the Borough is identified in Figure 2 below and in Appendix F.

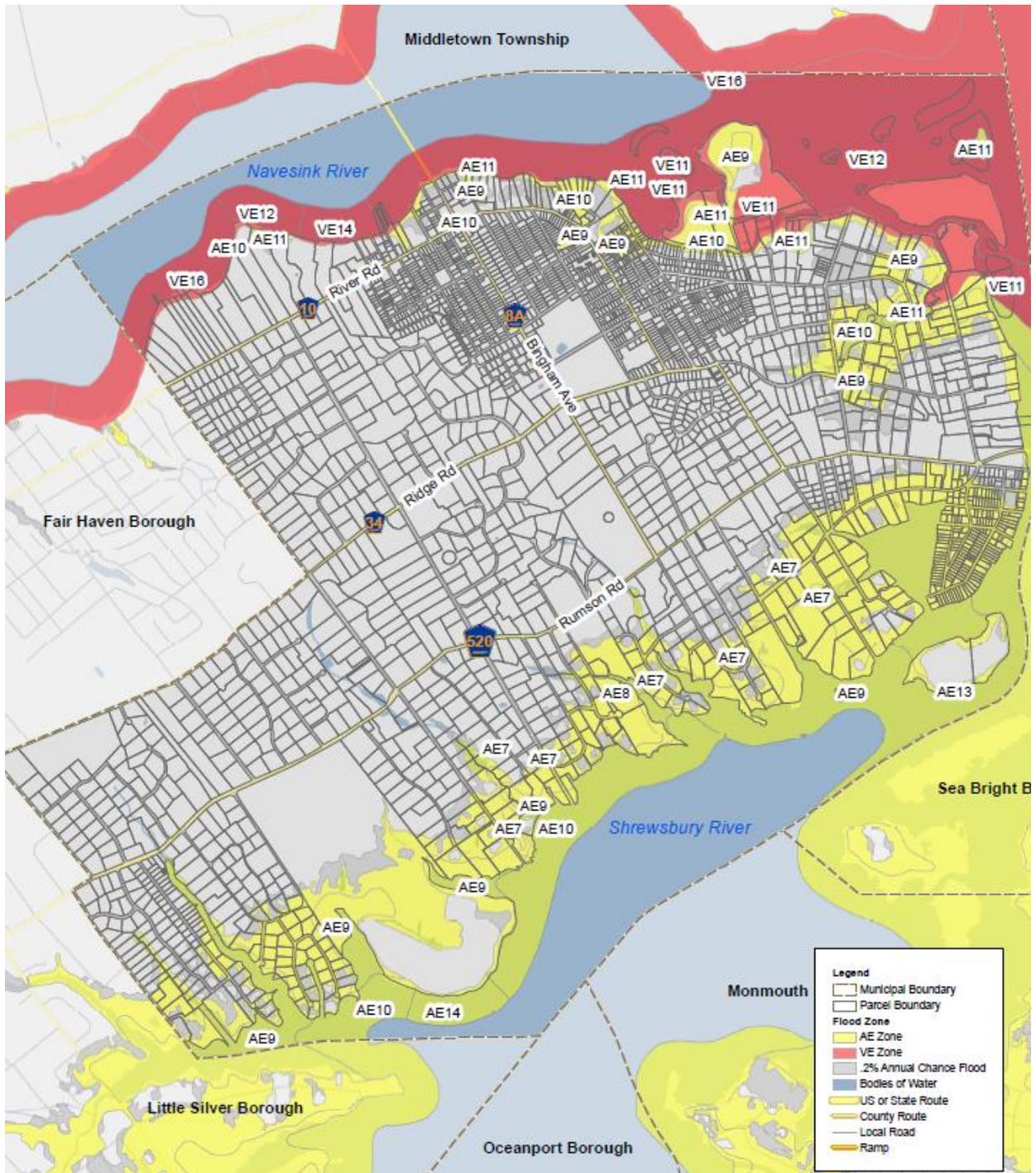


Figure 2. Preliminary FIRM

In addition to the flood hazard areas identified on the Preliminary FIRM, there is a portion of the south end of Wardell Avenue that is known to flood, but is not located within a flood hazard zone. Additionally, some lots in this area are located only partially within the SFHA, whereas the entire lot is known to flood. It is recommended that these areas be treated as though they are located within the adjacent flood zone.

Flooding generally occurs in low-lying areas of the Borough along the banks of the Navesink and Shrewsbury Rivers. In particular, the northeastern portion of the Borough near Barley Point Island, the southwestern portion of the Borough along the Shrewsbury River, and southeast corner of the Borough, just south of the Sea Bright Bridge in the West Park neighborhood are highly susceptible to flood events during large storms. Portions of the Borough are also susceptible to flooding on a regular basis from higher than normal high tides. These areas include Shrewsbury Drive near Avenue of the Two Rivers, the intersection of Holly Tree Lane and Navesink Avenue, the southern end of Club Way, and the entire West Park neighborhood, including South Ward Avenue, Waterman Avenue, Warren Street, Washington Avenue, Grant Avenue, and River Place. Flooding also occurs from a small stream to the west of Brookside Drive. This stream backs up during heavy rainfalls, causing flooding to the neighboring residential properties and occasionally Rumson Road. Residents typically have a 24 hour warning of severe coastal flooding events. There are no levees or dams located in the Borough that would result in a flood if they failed or were damaged.

Superstorm Sandy made landfall along the coast of New Jersey on October 29, 2012, causing major flooding and destruction. This event has become the storm of record (the highest flood recorded) for much of New Jersey and New York. Sandy surge elevations were recorded by FEMA and also the Borough of Rumson DPW. Where available, Superstorm Sandy Surge Elevations were mapped throughout the Borough of Rumson and surrounding communities. These maps can be found in Appendix G. In many parts of the Borough, Sandy surge elevations are higher than the Preliminary FIRM flood elevation. Residents should therefore be required to build to above this elevation and provide additional protection from flooding.

Historical Flooding Events

Rumson is susceptible to flooding from both the Navesink and Shrewsbury Rivers and has flooded repeatedly throughout time. Some of the major storm events that have affected the Borough and the greater Monmouth 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 Superstorm Sandy.



Figure 3. Displaced Ships from Superstorm Sandy
Source: Rumson-Fair Haven Patch

- Superstorm Sandy: Superstorm 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 flooding. All communities within Monmouth County faced power outages, some lasting up to two (2) weeks.

Storms with Repetitive Loss

Using repetitive loss data provided by FEMA, six areas in the Borough of Rumson were identified as being particularly prone to flood events. 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 500 foot buffer was created around each repetitive loss property and any parcel falling in that buffer was categorized as in an area generally affected by flooding. The Repetitive Loss Areas map can be found in Appendix H. The general areas are as follows:

- 1) From the Shrewsbury River northwest approximately halfway to Rumson Road, from the Borough boundary in the southwest to Widgeon Road in the northeast;
- 2) From the Shrewsbury River north toward Rumson Road, from Osprey Lane to the west to the Navesink River to the east;
- 3) From Ridge Road and Hartshorne Lane, north and east to the Navesink River
- 4) From Forest Ave to the west to Ave of Two Rivers to the East, from Blackpoint Road to the south to the Navesink River to the north
- 5) Third St to Lafayette Street on either side of West River Road
- 6) Bellevue to Sheraton Lane north of River Road

The highest concentration of repetitive loss properties are located in the West Park neighborhood of the Borough, which is surrounded by the waters of Oyster Bay and the Shrewsbury River on three sides. Numerous homes in this area were substantially damaged during Superstorm Sandy.

The average number of losses per repetitive loss property in the Borough of Rumson is three (3). The average pay-out per loss for a repetitive loss property in the Borough is \$60,719, with an average total pay-out per property of \$183,672 for all losses. Storm events that have resulted in repetitive losses since 1978 include:

- January 25, 1978: One (1) repetitive loss property in the Borough of Rumson filed a claim for this flood event.
- Blizzard of '78: The Blizzard of 1978 was a nor'easter that impacted the northeastern portion of the United States from February 5- 7, 1978. Heavy snow and winds contributed to the flooding in Rumson. Two (2) repetitive loss properties in Rumson filed claims for this event on February 6, 1978.
- August 18, 1983 : One (1) repetitive loss property in the Borough of Rumson filed a claim for this flood event.
- Nor'easter: A nor'easter on March 29, 1984 caused over \$3 million in damage throughout the state. In the Borough of Rumson, thirty-four (34) repetitive loss properties filed claims for this event.
- Hurricane Gloria: Hurricane Gloria was a Category 2 storm when it made landfall in Long Island, NY. Hurricane Gloria caused extensive power outages throughout New Jersey due to a large amount of downed trees. Although the storm surge averaged about 6.5 feet above predicted tide levels, the peak surge arrived during low tide, minimizing coastal flooding. In the Borough of Rumson, three (3) flood insurance claims on repetitive loss properties were made on September 27, 1985 for this event.

- The Perfect Storm (The Halloween Storm): The Perfect Storm, also known as the Halloween Nor'easter, was a nor'easter that caused extensive damage along the east coast from North Carolina to Maine. It began on October 28th and lasted until November 1, 1991. On October 30, 1991, seven (7) flood claims for repetitive loss properties were made in Rumson and eight (8) were made on October 31, 1991; totaling fifteen (15) claims for this event.
- "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 Rumson, 57 flood insurance claims were made on repetitive loss properties, second only in number to Superstorm Sandy in 2012. One (1) claim was made on December 10, 1992 and the remaining fifty-six (56) were made on December 11, 1992.
- Severe Storm/ Flooding: One (1) repetitive loss property in the Borough of Rumson filed a claim for this flood event on November 15, 1995.
- Severe Storm/ Flooding: Three (3) repetitive loss properties in the Borough of Rumson filed claims for this flood event on October 19, 1996.
- February 3, 1997: One (1) repetitive loss property in the Borough of Rumson filed a claim for this flood event.
- February 2, 1998: One (1) repetitive loss property in the Borough of Rumson filed a claim for this flood event.
- December 15, 2003: One (1) repetitive loss property in the Borough of Rumson filed a claim for this flood event.
- October 12- 15, 2005: A total of four (4) flood insurance claims from repetitive loss properties were made over the course of these three (3) days in the Borough of Rumson. One (1) claim was filed on October 12th, one (1) claim on October 13th, and two (2) claims on October 14, 2005.
- Nor'easter: A nor'easter in mid- March caused severe storms and flooding in New Jersey. On March 12, 2010, one (1) flood insurance claim for a repetitive loss property was filed in the Borough of Rumson, followed by eight (8) on March 13th and two (2) on March 14, 2010; for a total of eleven (11) claims over three days in the Borough.
- Tropical Storm Irene: Tropical Storm Irene caused flooding throughout the state of New Jersey. In the Borough of Rumson, a total of forty-four (44) flood insurance claims were submitted for repetitive loss properties; six (6) of these on

August 27, 2011, thirty-six (36) on August 28th, one (1) on August 29th, and one (1) on August 31, 2011.

- Tropical Storm Lee: Tropical Storm Lee caused heavy rain throughout the state of New Jersey and led to one (1) flood insurance claim from a repetitive loss property in Rumson on September 6, 2011.
- Superstorm Sandy: Superstorm Sandy is the costliest storm to hit the state of New Jersey. It caused extensive damage and severe flooding throughout the state. Coastal Monmouth 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 seventy-four (74) flood insurance claims were filed on repetitive loss properties during Superstorm Sandy. On October 28, 2012 one (1) claim was filed, followed by sixty-five (65) on October 29th, six (6) on October 30th, one (1) on October 31st, and one (1) on November 1, 2012.
- Nor'easter: One week after Superstorm Sandy a nor'easter hit the area, bringing significant amounts of snow and causing additional power outages. The Weather Channel named the storm Winter Storm Athena, although the National Weather Service does not recognize the naming of winter storms. One (1) repetitive loss property in Rumson filed a claim for this flood event on November 6, 2012.
- December 26, 2012: Two (2) repetitive loss properties in the Borough of Rumson filed a claim for this flood event.

DESCRIPTION OF FUTURE EVENTS FOR OTHER HAZARDS

In addition to flooding, Rumson 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 incorporated from the 2014 Draft Monmouth County Multi-Jurisdictional All-Hazards Mitigation Plan.

Coastal Erosion

Coastal erosion occurs when more sediment is lost than is 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, certain types of shore protection structures, particular 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 a hazard event. Erosion increases the vulnerability of near-shore structures to damage from storms and flooding events.

Rumson is susceptible to erosion along the banks of the Navesink and Shrewsbury Rivers. The impacts of coastal erosion can be lessened by implementing living shoreline techniques and undertaking a variety of shoreline protection measures. Measures to prevent coastal erosion may also reduce flooding impacts.

Climate Change

The Borough of Rumson will be affected by increasing sea levels along the banks of the Navesink and Shrewsbury River. The New Jersey Geological Survey indicates a sea level rise of 3.8mm/year in New Jersey. The effects of sea level rise will be more pronounced in low-lying areas of the Borough, such as the West Park neighborhood, and will exacerbate 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 at which sea level rises and human actions and response to the threats caused by climate change. Impacts from climate change will lead to an increase in flooding events.

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 Rumson, 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 Rumson, 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- October 2010

Earthquake

The probability of a significant, damaging earthquake in Rumson is low. While low magnitude earthquakes do occur throughout New Jersey on a fairly regular basis, most earthquakes impacting Rumson 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

Rumson is highly susceptible to both extreme heat and extreme cold events. Long periods of extreme temperatures can overstress power supply systems, resulting in brownouts or blackouts and leaving residents without heat or air conditioning. Generally, the impact on humans of extreme temperature events is minimal, with the exception of the very young and elderly populations, who are more susceptible to the health impacts of extreme temperatures. If the population of Rumson ages over time, the vulnerability to extreme temperature events will increase. Improved weather forecasting, community warnings, and community preparedness can help to reduce the risks of extreme temperature events, as well as other hazard events such as flooding, to vulnerable populations.

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 Rumson include:

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

Extreme Heat

Rumson is more likely to experience extreme heat than extreme cold events. Extreme heat events occur during the summertime when the weather in Rumson 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

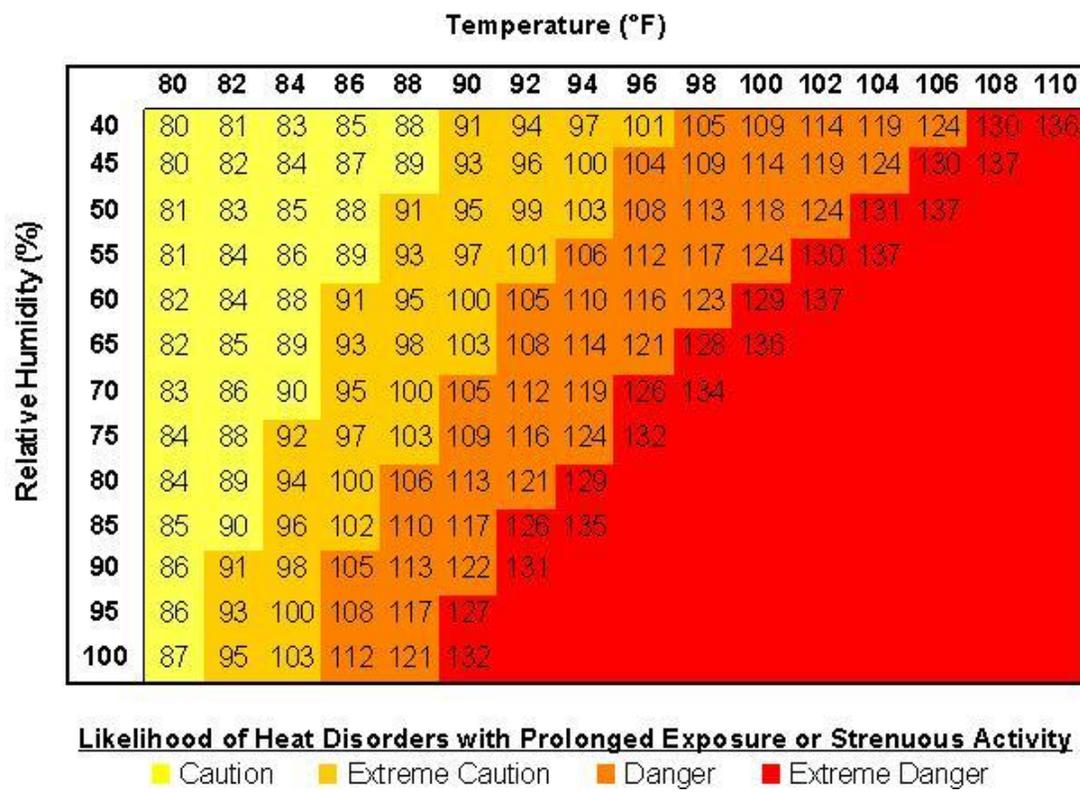


Figure 4. NOAA National Weather Service Heat Index

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 to 10 extreme wind events occurring each year in the Central New Jersey region. Extreme wind events can accompany hurricanes, winter storms, and other events which generally produce flooding. Extreme wind can also exacerbate flooding by causing an increase in storm surge. The Borough of Rumson has seen damage in recent years due to wind, mainly on trees, telephone poles and power lines. Recent extreme wind events in Monmouth 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
- Superstorm Sandy, October 29, 2012

Hurricanes, Tropical Storms, & Nor'easters

Hurricanes, tropical storms, and nor'easters are storm events which consist 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 Rumson, falls within the Hurricane Susceptible Region, and there is an 18% to 24% chance of experiencing a tropical storm or hurricane event between June and November of any given year in Monmouth County. Since 1850, thirty-six (36) Hurricane or Tropical Storm tracks have passed within 75 miles of Monmouth County. 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 the Borough of Rumson with flood damages were discussed in the Historical Flooding Events section of this document.



Figure 5. Wind Damage from Superstorm Sandy
Source: Rumson-Fair Haven Patch

Landslide

There is a high probability of landslide events in Northeastern Monmouth County, including the Borough of Rumson. Landslides are most likely to occur in the northern portion of the Borough along the southern banks of the Navesink River.

Lightning

Rumson 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 Rumson 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. The highest storm surge to date in Rumson was recorded during Superstorm Sandy on October 29, 2012. The highest recorded storm surge elevation during Superstorm Sandy was 12.06 feet on Bellevue Avenue.

Tornado

The probability of a tornado in Rumson 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 and inland bays are at risk from wave action. Waves are generally caused by wind and storm events, even those which remain offshore, and generally the more severe the storm, the more destructive waves become. Rumson may be impacted by small, wind generated waves in the Shrewsbury and Navesink Rivers, but the probability of severe impacts due to wave action in the Borough of Rumson is relatively low since the Borough is not directly adjacent to the Atlantic Ocean; and the Navesink and Shrewsbury Rivers are not wide enough to generate large waves.

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 the Borough of Rumson, the probability of wildfires occurring is low.

Winter Storms

Although the Borough of Rumson is located south of the typical boundary between freezing and non-freezing precipitation during the wintertime, there is still a high probability of the occurrence of winter storms in the Borough, with Monmouth County averaging approximately 25 to 26 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 the Borough of Rumson include:

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

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 Navesink and Shrewsbury Rivers have been known to freeze in winter months, the threat of flooding from ice jams in the Borough of Rumson is low due to the width, depth and tidal nature of the rivers. However, there is a high likelihood of damage to structures such as bulkheads, docks and piles from floating ice.

Land Subsidence

Along the East Coast, land is sinking towards sea-level in a process known as subsidence. This will accelerate the impacts of sea level rise, causing actual water levels to be much higher than some predicted estimates.

V. PROBLEM ASSESSMENT

FEMA is currently in the process of updating the Flood Insurance Rate Map (FIRM) for the Borough of Rumson. The updated Preliminary FIRM indicates that the perimeter of the Borough located along the Shrewsbury and Navesink Rivers is located within the 100-year floodplain, also known as the Special Flood Hazard Area (SFHA), with the floodplain extending further inland along the northern banks of the Shrewsbury River. A total of 503 residential homes and 14 commercial buildings are located within the SFHA. Table 1 below indicates the total structures, 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 Floodplain ¹	100-Year + 500-Year Floodplain	Percent Located within the 100-Year Floodplain
Structures	3,196	595	191	786	18.6%
Properties	2,677	756	115	871	28.2%
Land Area (acres) ²	2,975	731	166	897	24.6%

- 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.

Numerous critical facilities are also located within either the 100-year or 500-year floodplain. The Department of Public Works buildings are located within 550 feet of the Navesink River, and a significant portion of the facilities are within the 100-year floodplain. It is critical that these facilities be protected from flooding so valuable equipment is not destroyed and emergency services can be provided during and after storm events. A number of sanitary sewer pump stations are also located within the SFHA, many of which were damaged during Superstorm Sandy. The pump stations located at Club Way, Thornton Way, Navesink Avenue, Grant Avenue, Avenue of Two Rivers South, Buena Vista Avenue and Avenue of Two Rivers are all located within the 100-year floodplain. It should also be noted that the pump station on Riverside Drive is located within the 0.2% Annual Flood Hazard Area. In addition, Rumson’s Borough Hall and Police Department are located within the 500-year floodplain. FEMA recommends that any critical facility be properly floodproofed 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 I. The map also indicates which roads have the potential for flooding during the 100-year flood.

At the time of this Plan, the Borough was in the process of obtaining flood insurance for the Department of Public Works building that contains the employees' offices. Although the sanitary sewer pump stations are not covered under a specific flood insurance policy, they are insured for flood damage through an addendum to the Borough's standard property insurance. The Borough may also wish to consider obtaining flood insurance for Borough Hall and the Police Station as they are located within the 500-year floodplain.

HAZARD IMPACT

Borough residents and first responders are particularly vulnerable to the impacts of flooding in Rumson. 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. The Borough is in the process of preparing Emergency Operation and Debris Management Plans that should address these issues and minimize their impacts to the maximum extent practical.

Many of the hazards to which Rumson 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. The Borough of Rumson should work with FEMA to ensure that all flood maps illustrate an accurate portrayal of flood risk within the community.

Repetitive Loss Areas were mapped throughout Rumson, as illustrated in Appendix H, with repetitive loss properties averaging three (3) losses per property. The highest concentration of repetitive loss properties are located in the West Park neighborhood of the Borough, which is surrounded by Oyster Bay and the Shrewsbury River on three

sides. A number of homes in this area were substantially damaged during Superstorm Sandy.

Category 1, 2, & 3 SLOSH models for the Borough of Rumson 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).

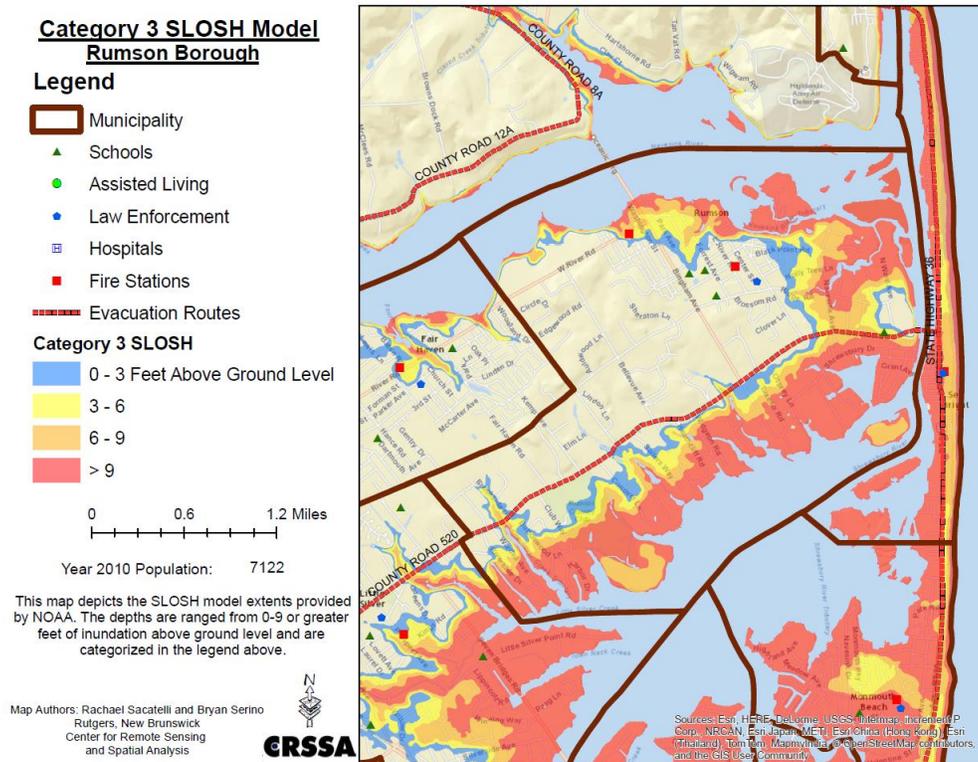


Figure 6. Category 3 SLOSH Model Map

As depicted in the maps found in Appendix J, during a Category 1 storm event storm surge would be above ground level along the banks of the Shrewsbury and on all of the islands in the in Navesink River. During a Category 2 storm event, storm surge would further inundate the Borough along the banks of the Shrewsbury River. Storm surge would also inundate the northeastern portion of the Borough along the Navesink River. The entire width of the Borough along Navesink Avenue would become flooded. As shown above in Figure 6, a Category 3 storm event would produce storm surge along

all of the Borough's shoreline, within inundation reaching further inland along the Shrewsbury River. Additionally, the eastern portion of the Borough would be inundated with storm surge, except for a small portion of land just north of the Sea Bright Bridge.

The impacts of Sea Level Rise on the Borough of Rumson were also analyzed by JCNERR. With a one foot increase in sea level rise, some of the small islands in the eastern portion of the Navesink River and low-lying regions of the Borough along the Shrewsbury River would be underwater. Much of the tidal marsh will remain, however in these areas there would be slight uninhibited marsh retreat, as well as the loss of some land area from the island portions of the Borough. With two feet of sea level rise, water will encroach on the land area of Rumson along all of the water boundaries. A portion of the Rumson Country Club property and portions of the West Park neighborhood will be underwater. Many islands within the boundaries of Rumson will be completely underwater. Much of the tidal marsh will remain; however, there will be some areas of uninhibited marsh retreat in the more upland areas of the Shrewsbury River. Additionally, in small areas along the Navesink River and the offshore islands, marsh will convert to open water. Three feet of sea level rise will encroach on all shorelines within the Borough. Many of the properties along the Shrewsbury River will be underwater, as will most of the offshore islands. Much of the tidal marsh will continue to remain; however areas of uninhibited marsh retreat in the more upland areas of the Shrewsbury River and along the present day land boundaries will convert to unconsolidated shoreline. Additionally, in small areas along the Navesink River and the offshore islands, marsh will convert to open water. Sea level rise maps and marsh retreat maps can be found in Appendices K and L, respectively.

Rumson is a predominately residential community, and as such, much of the areas that will be affected by storm surge and/or sea level rise are residential areas. The West Park neighborhood in the southeast corner of the Borough contains some of the highest densities of single family homes throughout the community. This is also the area that is and will continue to be most impacted by storm and flooding events.

Due to the high build-out of the Borough, 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

All NFIP claims from 1978 to the present in the Borough of Rumson were mapped with a 200 foot buffer to protect the privacy of the property owners. Almost all properties along the Shrewsbury River fall within this claim area, as well as about three-quarters of the properties along the Navesink River, as illustrated in Appendix M. A total of 533 flood insurance claims have been filed in the Borough since 1978.

Superstorm Sandy caused the most damage of any storm in recent history. During Superstorm Sandy, Rumson experienced major impacts from wind, storm surge, and flooding. Significant portions of the town were cut off from emergency services and residents were stranded in their homes due to flooding. Debris from the neighboring Boroughs of Sea Bright and Monmouth Beach washed onto the eastern shoreline of Rumson, causing physical damage to waterfront structures and costing the Borough approximately \$4 million in debris collection and removal. Heavy winds caused many trees and power lines to fall throughout the Borough.

Two census tracts in Rumson contained homes which sustained severe or major damage as a result of Superstorm Sandy. A total of 284 properties within the Borough sustained substantial damage during the storm. A structure is considered substantially damaged when the total costs of restoring the structure to its before damaged condition would equal or exceed 50% of the structure market value. Most of these properties were located in one of two clusters, close to Barley Point Island or near the Shrewsbury River Bridge.

Superstorm Sandy also affected the Borough's sewage pump stations, causing eight (8) of Rumson's eleven (11) to go offline due to power failure as a result of tidal flooding. The Rumson Borough Department of Public Works also sustained damage during Superstorm Sandy to the office, locker room, mechanic's shop, and garage bays; as did equipment and materials stored inside the building.

As part of Rumson's Hazard Mitigation Plan, flood-prone structures throughout the Borough were mapped along with their damage percentage from Sandy and mitigation status, if available. The majority of the flood-prone structures within the Borough are located within the 100 year floodplain. These maps can be found in Appendix N.

ECONOMIC IMPACTS

Due to the residential character of the Borough, the majority of flood damage within Rumson has been, and will continue to be, to single family homes. The cost of flood damage to residential property is generally covered by insurance pay-outs and owner

out of pocket expenses. The average flood insurance pay-out for a repetitive loss property within the Borough of Rumson is \$60,719. If property owners can no longer pay their taxes or decide to abandon their property prior to making necessary repairs, there could be a potential impact on the tax base of the Borough due to flooding events.

Impacts of flooding on businesses within the Borough of Rumson would be realized mostly in the form of lost profits for times when they are not able to operate. Most of the businesses within the Borough are not located within a flood zone, however some restaurants like the Salt Creek Grill or Barnacle Bills may experience flood damage in addition to lost revenue.

The largest economic impact of flooding to the Borough is 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

Rumson is a predominately built-out community. However, there are a number of parks scattered throughout the Borough that provide recreational opportunities and aid in the natural recharge of stormwater. Victory Park is 3.55 acres located along the Navesink River and contains a small beach, playgrounds and grassed open space. Additionally, there is a 0.52 acre crew facility adjacent to Victory Park along the waterfront. West Park consists of 2.87 acres, located on either side of the Sea Bright Bridge along the Shrewsbury River and contains a playground, as well as grassed open space. The Borough also has 9 acres of multi-use fields at Riverside Park, located at the end of Riverside Drive, along the Little Silver Creek tributary of the Shrewsbury River. The Meadow Ridge Park, located on Ridge Road near the border with Fair Haven, consists of 23.4 acres of multi-use fields, playgrounds, and natural open space. Rodgers Park and Piping Rock Park in the Borough also contain playgrounds and fields.

The Borough of Rumson has a total of 71.55 acres of open space, including a number of small islands in the Navesink and Shrewsbury River, as well as small areas on East River Road, Ward Ave, and Allen Street. Mercer Field on Rumson Road is the largest parcel of open space, consisting of over 15 acres. There is also a 4.5 acre disposal area on Buena Vista Avenue. Additionally, the Borough owns two bird sanctuaries along the banks of the Shrewsbury River, one on Rumson Road near Widgeon Road, and the other off of Buena Vista Avenue. Both of these areas contain wetlands. The parks and bird sanctuaries along the riverfronts can act as natural buffers and absorb storm surge without any harm to buildings. The small islands in the Navesink and Shrewsbury

Rivers, along with the Boroughs of Sea Bright and Monmouth Beach across the rivers, create a natural buffer around Rumson. It is important that the Borough maintain such areas as open space.

The private Rumson County Club, along the Shrewsbury River, is not considered open space; however, it consists of a golf course along Rumson Road and lands in a natural state closer to the river. This also acts as a natural buffer and sponge, protecting the more developed properties around it. However, since the Country Club is privately owned and is not deed restricted, there is no guarantee this property will remain in its natural state in perpetuity.

There are many areas of wetlands throughout Rumson, most located on the southern side of the Borough and including the islands in the Navesink and Shrewsbury Rivers. Additionally, there are some areas of wetlands in the northeastern portion of the Borough, particularly near Barley Point Island. There is a small area of steep slopes in the northwestern portion of the Borough. This area has the potential for



Figure 7. Coastal Area of Rumson

increased rates of erosion, especially during storm events. However, steep slopes also provide a layer of flood protection for anything located on top of the slope.

There are two designated Coastal Barrier Resources System areas within the boundaries of Rumson; one in the Navesink River to the northeast of the Borough and the other in the Shrewsbury River to the southeast of the Borough. Both are secondary barriers, maintained primarily by internally generated wind waves and formed on unconsolidated sediments. A Coastal Barrier Resources System (CBRS) is a unique

landform that provides protection for aquatic habitats and serves as the mainland's first line of defense against erosion and severe coastal storms. Development is restricted on CBRS's by the Coastal Barrier Resources Act (CBRA) of 1982 to protect the barrier system and prevent future flood damage. A map of these areas and other natural features can be found in Appendix O.

FUTURE FLOODING IMPACTS

As previously indicated, the Borough of Rumson 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.

However, as sea levels rise and marshes retreat, Rumson 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.

VI. GOALS

Over the course of the various Floodplain Management Plan Steering Committee meetings, the Committee discussed the goals that the Borough would like to achieve with the Floodplain Management Plan to increase resiliency and mitigate future storm events. The following is a list of the goals agreed upon by the Committee:

1. Secure the public's safety from floods and other natural hazards. Adapt efforts accordingly to reflect updated flood levels and data from FEMA and NOAA.
2. Utilize various planning tools and programs to better prepare for and respond to floods and other natural disasters.
3. Reduce flood damage, including damage to life, property and the environment.
4. Protect the natural resources and qualities of the Borough, including freshwater and saltwater wetlands, floodplains, stream corridors, open space, steep slopes, and areas with scenic, cultural, and recreational values.
5. Ensure that Borough infrastructure and critical facilities are able to withstand future flood events and remain operational during and after such events.
6. Provide adequate resources to Borough residents and business owners so they are properly informed of the natural hazards they face and the precautions they can take to protect their properties.

VII. 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 Draft Monmouth County Multi-Jurisdictional All Hazards Mitigation Plan and 2015 Master Plan Reexamination 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.

PREVENTATIVE MEASURES

Capital Improvement Plan

The Borough should prepare a 5-year Capital Improvement Plan. An existing inventory of Borough property, equipment and infrastructure should be prepared. The recommended improvements and capital investments should focus on community recovery, resiliency and hazard mitigation. This project is currently underway and is being funded by Phase 2 of a Post-Sandy Planning Assistance Grant.

Hazard Mitigation Plan

The Borough should prepare an update to the Hazard Mitigation Plan and coordinate with the County on updates to the Monmouth County Multi-Jurisdictional All Hazards Mitigation Plan. The plan should identify and assess the various flooding hazards within the Borough, as well as the associated vulnerabilities to those hazards. Alternative mitigation actions that can be implemented to reduce the Borough's risk from flooding and other hazards shall be identified. This project is currently underway and is being funded by Phase 2 of a Post-Sandy Planning Assistance Grant.

Zoning and Construction Permit Process Automation and Updates

The Borough should create an automated and expedited system for zoning and construction permit administration. There was a significant lag time after Superstorm Sandy for issuing zoning and construction permits in the Borough due to the high volume of permit applications. The addition of this system would reduce this lag time and allow residents and business owners to start repair efforts as soon as possible. Residents will be able to move back into their houses sooner and avoid costly

temporary relocation expenses. The new system will also track substantially damaged buildings and mitigated properties, increasing the Borough's ability to enforce compliance with its mitigation standards. This project is currently underway and is being funded by Phase 2 of a Post-Sandy Planning Assistance Grant.

Floodplain Mapping and Geographic Information System (GIS)

The Borough of Rumson is in the process of developing a Geographic Information System (GIS) program and mapping to increase the community's resiliency and enable them to better prepare for, respond to and recover from disasters. The components of the GIS will support critical facilities and public works infrastructure, land information, and floodplain management- related data layers and applications. By preparing a GIS database the Borough can effectively plan for future infrastructure improvements and repairs by having an intelligent basemap which includes data from various existing infrastructure and utilities. The ability to plan improvement programs around the data which is obtained and mapped on GIS can prevent hundreds of thousands to millions of dollars in potential future damages from weather events. This project is currently being undertaken as part of the Phase 2 Post Sandy Planning Assistance Grants. The Borough should continue to maintain and update the GIS maps in the future as additional data becomes available.

Zoning Ordinance Updates

In the aftermath of Superstorm Sandy, the Borough of Rumson adopted the Advisory Base Flood Elevations established by FEMA. The Borough also made zoning adjustments to building height requirements within the floodplain, as indicated in the existing documents section of the plan. As part of this Floodplain Management Plan the Borough will be updating various ordinances related to construction in flood zones, grading and stormwater management. The Borough should continue to monitor and update their ordinances as necessary. The Flood Damage Prevention Ordinance should be updated again once the Preliminary FIRM maps become effective.

CRS Program

The Borough should utilize planning services to enter the Borough of Rumson into the FEMA Community Rating System for reduced flood insurance rates. Besides the benefit of reduced insurance rates, CRS floodplain management activities enhance public safety, reduce damages to property and public infrastructure, avoid economic disruption and losses, reduce human suffering, and protect the environment. This floodplain management plan is being written with the intention of gaining points for that program.

Stormwater Management

The Borough Stormwater Management Plan and Stormwater Management Ordinance were amended in 2006 to be consistent with the New Jersey Stormwater Best Management Practices Manual prepared by the New Jersey Department of Environmental Protection. The ordinance sets specific standards for flood control, groundwater recharge and pollutant reduction. The Borough should continue to enforce these requirements for all applicable development to reduce the impacts of stormwater runoff to neighboring properties and Borough infrastructure. The Borough should also consider amending the Stormwater Management Plan to address green infrastructure techniques to promote resiliency in the Borough, while keeping in mind hazard mitigation, community resiliency, and sea level rise.

Open Space Preservation

The opportunity for additional open space preservation in Rumson is small, due to the fact that it is largely built-out and the high value of land within the community. However, there are numerous existing parks and areas of preserved open space scattered throughout the community. Many of the islands located in the Shrewsbury and Navesink Rivers are also owned by the State or Borough for conservation. While the opportunity for future open space preservation within the Borough is low, if the opportunity arises it should be further explored to aid in storm resiliency.

Erosion Setbacks

The Borough of Rumson should consider adopting an erosion setback ordinance based on erosion rates along the Navesink and Shrewsbury Rivers. An erosion setback ordinance would reduce the need for erosion control structures along the shoreline, minimize property damage due to erosion, and maintain the natural shoreline dynamics. In order to maintain effective setback requirements, reliable scientific data must be used. Additionally, erosion rates change over time and would require a periodic reevaluation of the setback lines along the riverfronts.

Drainage System Maintenance

The Borough Department of Public Works checks for blocked storm drains routinely. They also regularly inspect and report debris in streams and ditches. The 2014 Draft Monmouth County Multi-Jurisdictional All Hazards Mitigation plan recommends the removal of flow impeding debris and sediment accumulation in receiving waterways and creeks. The maintenance of these waterways is important to ensure proper

drainage and protect the health and safety of the Borough residents. The Borough should continue to support this maintenance program.

Building Codes

Building codes are a vital tool used to ensure that new construction is built to withstand various hazards. The Borough of Rumson has adopted and enforces the 2009 International Residential and Building Codes, New Jersey Editions, as well as the Uniform Construction Code. It is imperative that the Borough continue to enforce these standards. The Borough should also consider participating in the Building Code Effectiveness Grading Schedule (BCEGS). The BCEGS is a national program, similar to the CRS program, that assesses a community's building codes and how well they are enforced, with a particular emphasis on mitigation of losses from natural hazards. The lower the BCEGS grade, the greater the insurance savings are for residents. CRS points are also available for certain grades.

Tree Trimming

The 2014 Draft Monmouth County Multi-Jurisdictional All Hazards Mitigation plan recommends that the Borough of Rumson conduct periodic tree trimming and pruning to prevent downed power lines. Downed power lines can contribute to power outages during severe storms. The loss of power can be devastating to the community, as was observed during Superstorm Sandy. The Borough should continue to support this maintenance program with the Department of Public Works.

PROPERTY PROTECTION

Acquisition & Relocation

The wholesale acquisition of properties located within flood prone areas is not practical in the Borough of Rumson. Due to the high value of real estate within the Borough, the relocation of existing buildings or the acquisition of individual properties at market value may not be feasible either.

Building Elevation

The Borough's Flood Damage Prevention Ordinance currently requires that new, substantially damaged or substantially improved buildings located in a special flood hazard area be elevated to or above the Advisory Base Flood Elevation (ABFE). The Ordinance should be revised to indicate that buildings shall be elevated to or above the Effective FIRM, ABFE or Preliminary FIRM elevation, whichever is greater. The Borough should also require and maintain elevation certificates for all elevated

buildings in a special flood hazard area. Additional information on these recommended ordinance revisions can be found in Appendix N.



Figure 8. Rumson Home Elevation on Warren Street
Source: RedBankGreen.com

Retrofitting

The Borough should encourage the floodproofing of non-residential buildings within the flood zone that do not meet the base flood elevation requirements. Information regarding the different floodproofing techniques should be made available to the public.

Barriers

As part of the Shrewsbury Drive road improvements in 2010, the road was elevated and a series of low flood walls were constructed adjacent to low-lying properties to prevent flood waters from entering the properties. This practice has proven successful and should be further evaluated for future road improvements.

Insurance

The Borough of Rumson currently 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. The Borough of Rumson can reduce the flood insurance rates for property owners by participating in the Community Rating System program. This plan is intended to gain points towards that program. The Borough should continue to pursue the CRS program.

NATURAL RESOURCE PROTECTION

Wetlands Protection

There are many areas throughout the Borough that contain wetlands. The wetlands are classified as deciduous wetlands, disturbed wetlands, herbaceous wetlands, managed wetlands, phragmites dominant wetlands and salt marshes. These wetlands, especially those adjacent to the Navesink and Shrewsbury Rivers, provide the Borough a vital asset during storms and floods. Not only do wetlands provide a natural buffer between buildings and the rivers, but they also slow the speed of surging floodwaters and provide an area for retention and recharge. State regulations through the NJDEP freshwater and coastal wetland permit programs are currently in place to limit development in these areas. The Borough should continue to support and enforce these programs. The Borough should also consider further investigation of living shorelines to augment these areas and provide additional shoreline stabilization.

Erosion and Sediment Control

The Standards for Soil Erosion and Sediment Control in New Jersey are regulated by the New Jersey Department of Agriculture and locally enforced through the Freehold Soil Conservation District. The Borough should continue to support and enforce these standards for all applicable development.

Water Quality Improvement

The Borough of Rumson currently enforces the NJDEP Best Management Practices for stormwater runoff quality and reduction of total suspended solids. Green infrastructure techniques should also be used to promote resiliency in the Borough and improve the water quality entering the Navesink and Shrewsbury Rivers. Green infrastructure uses permeable surfaces, landscape formations, and plant material to intercept stormwater runoff before it enters storm drains by promoting infiltration and filtration. Their use can promote resiliency by mitigating flooding and helping the

Borough to quickly recover from storms. Additionally, green infrastructure captures runoff pollution and prevents it from entering waterways.

Coastal Barrier Protection

Rumson is protected from the Atlantic Ocean by the Borough of Sea Bright. Additionally, there are a number of uninhabited islands located throughout the rivers that act as natural buffers. A number of these islands are identified on the Preliminary FIRM map as Coastal Barrier Resource System Areas. The Borough should continue to maintain these islands as undeveloped open space.

Stream Dumping

The Borough Ordinance currently prohibits the disposal of waste and refuse upon any parking place, street, road, avenue, park or other public place or upon any lot or other premises, except in receptacles or containers provided for such purposes. The ordinance should be revised to clearly prohibit the dumping of any waste or refuse in any stream or waterway.

EMERGENCY SERVICES

Emergency Operations Plan

The Borough should prepare an update to the Emergency Operations Plan (EOP). The updates and revisions should identify flood hazard specific risk areas and evacuation routes, specify provisions and protocols for warning the public and disseminating emergency public information, and specify the necessary types of protective equipment and detection devices for responders. This project is currently underway and is being funded by Phase 2 of a Post-Sandy Planning Assistance Grant.

Debris Management Plan

The Borough should create a Debris Management Plan that would identify an emergency staging facility and designated Temporary Debris Storage and Reduction (TDSR) sites to handle storm related debris. Components of the Debris Management Plan shall include identifying and prioritizing TDSR sites, establishing collection strategies, and developing debris reduction methods. This project is currently underway and is being funded by Phase 2 of a Post-Sandy Planning Assistance Grant.

Hazard Threat Recognition

The Borough Department of Public Works checks for fallen trees and blocked storm drains as part of routine daily work. The Borough should continue these practices in an effort to decrease blockages and backups during storms.

Hazards Warning

The Borough of Rumson alerts its residents to floods, storms, and other hazards through a Reverse 911 calling system, the Borough website, AM radio, and an emergency siren alerting system. The 2014 Draft Monmouth County Multi-Jurisdictional All Hazards Mitigation plan recommends that the Borough of Rumson continue to maintain these current warning systems. Early warnings give residents time to prepare for the hazard and evacuate if necessary, resulting in reductions to the loss of life and property from an event. It is recommended that the Borough provide additional information to the public, perhaps through the Borough website, on the emergency sirens to ensure that all members of the public are aware of the various sirens and their meanings. For a relatively low cost, maintaining current warning systems will help protect the health and safety of the Borough residents and ensure they are properly notified of incoming threats.

It is recommended that the Borough also consider implementing early flood warning systems for the Shrewsbury and Navesink Rivers. To lower the initial cost of this project, the Borough should reach out to neighboring communities to complete the project as a shared service with other towns along the rivers.

Critical Facilities Protection

Rumson's Borough Hall and the Police Station are located along the edge of the 500 year floodplain. Additionally, a fuel storage station is located within the 500 year floodplain. Efforts should be taken to ensure these critical facilities are floodproofed in case of an extreme flooding event. Additionally, many of the Borough's sanitary sewer pump stations are located within the 100 year floodplain and are prone to flooding. The following actions are recommended to protect critical facilities in the Borough:

- Install reinforced steel, rubber gasket-lined storm doors at the DPW building's service bays to provide greater protection from wave action and flooding to the building's structure and contents. This will reduce the vulnerability of the Department of Public Works garage to flood damage and will protect the equipment within the building from being damaged or destroyed. The storm door installation could result in significant cost savings to the Borough and will

protect crucial equipment and vehicles needed for emergency repairs, assisting Borough emergency personnel and clearing debris. The Borough is already in the process of receiving FEMA funds to complete this work.

- Install a quick connection system for a portable generator with a manual switch at Borough Hall. This will ensure backup power in the event of primary and secondary power loss. This action is necessary in order to protect the health and safety of employees of the Borough of Rumson and to continue coordinating relief efforts and maintaining critical system functionality.



Figure 9. Emergency Generator at the DPW Yard

- Upgrade the Borough-wide Supervisory

Control and Data Acquisition (SCADA) system to more efficiently and effectively control and monitor critical facilities such as pump stations, buildings, and other critical facilities. The upgrades would aid in the proper functionality of the equipment and quickly identify potential risks or problems. SCADA monitoring systems are extremely effective in remotely monitoring and collecting data from critical infrastructure and facilities. The upgrades to this system will allow for reduced response times for repair efforts, increased efficiency, and data gathering for future planning efforts. Losses avoided could be in the hundreds of thousands of dollars per year in damages from storm events.

- Install an emergency generator at the Oceanic Hook and Ladder Fire House. The proposed improvements will ensure backup power in the event of primary power loss. This action is necessary to ensure that the Oceanic Hook & Ladder Fire House stays operational in the event of a major disaster like Superstorm

Sandy. Loss of power can delay first responders and in term lead to loss of life or additional damages.

- Upgrade the Borough shelter facility located at Rumson Fair Haven Regional High School, including an emergency power facility to ensure backup power in the event of primary power loss. This action is necessary to protect health and safety of individuals in RFH Regional High School and those seeking shelter during natural disasters.
- Remove and replace two existing underground fuel storage tanks with a new aboveground fuel storage tank at the Borough's Department of Public Works Yard. Flood events cause the existing underground storage tanks to be rendered inaccessible and have contaminated the fuel stored in these tanks with flood waters, rendering the fuel unusable. After past storm events, the Borough has had to find alternative sources of fuel, which is very costly. This project will prevent the unnecessary costs for finding alternative fuel sources and will prevent possible environmental contamination.
- The 2014 Draft Monmouth County Multi-Jurisdictional All Hazards Mitigation plan recommends improvements to eight sanitary sewer pump stations within the Borough. These improvements consist of installing emergency backup generators; raising access lids, covers, and vault chambers above the 500-year flood elevation; and installing reinforced steel and rubber gasket lined storm doors. These improvements will protect against pump station failure in the event of power loss and/or flooding and will ensure continued operation of the Borough's sanitary sewer system. The proposed pump station improvements and backup generator installations will protect public health and safety and result in a significant cost savings to the Borough and homeowners. A \$220,000 HMGP Grant was awarded to the Borough in December 2014 for the installation of four emergency backup generators at the Riverside Drive, Club Way, Thornton Way, and Navesink Avenue pump stations. FEMA Hazard Mitigation funds were also obtained in 2014 to complete the raising of the access lids, covers and vault chambers and the installation of the storm doors.

Bingham Hall Comfort Station

The Borough would like to develop Bingham Hall as a comfort station for emergencies. Any efforts to develop Bingham Hall as a comfort station should include the installation of an emergency standby generator, installation of a high-speed wireless network, acquisition of comfort supplies (emergency cots, food and water supplies, etc.),

installation of electronic device charging stations, preparation of computer terminals, and installation of a television with a cable feed for news updates.

Health and Safety Maintenance

After flooding and other severe storms, the Police Department is responsible for patrolling evacuated areas to prevent break-ins and looting. Clearing streets and removing debris is performed through the Borough Department of Public Works and outside contractors when necessary. The Borough should continue to make the health and safety of its residents and business owners a priority after storms.

Building Inspections

Many buildings were severely damaged during Superstorm Sandy. The process of inspecting each house for structural damage and possible condemnation can be lengthy and result in homeowners being kept out of their houses for extended periods of time. As part of the Emergency Operations Plan, the Borough should prepare a written procedure for inspecting damaged properties before they can be reoccupied. The Borough should consider hiring outside consultants to aid in the process if necessary.

Mitigation Funding

After severe storm events, Borough officials are in regular contact with County and State OEM offices, as well as FEMA representatives, to identify various mitigation opportunities and funding sources. The Borough should continue this process to ensure both the Borough and its residents have access to all appropriate grants and that proper procedures are followed prior to repairs.

Bridge Improvements

The Borough should continue coordination with Monmouth County to expedite the maintenance and/or replacement of the two drawbridges between the Borough and Middletown and Sea Bright in order to allow for more successful improvements and evacuation during emergencies.

STRUCTURAL PROJECTS

Shrewsbury Drive & Avenue of Two Rivers Intersection

This area experiences regular nuisance flooding due to high tides and full moon tides. During these periods the intersection becomes impassable, requiring detours to access areas east and west of the intersection. It is recommended that the Borough install

approximately 150 linear feet of new elevated bulkhead, rehabilitate and replace existing drainage pipes, and install a new tide valve on the stormwater outfall.

Rumson Boat Launch Bulkhead

There is currently no bulkhead along the Borough's property to the northwest of the municipal boat ramp. It is recommended that the Borough install approximately 225 linear feet of new bulkhead in this area. The existing timber bulkhead on the northwest side of the ramp should also be replaced due to severe rot and inadequate length. The installation of these bulkheads will reduce flooding in the area, prevent further erosion of the shoreline soils and prevent future roadway deterioration. Due to the close proximity of critical facilities such as the DPW yard, Borough Hall and Police Station, it is imperative that these facilities are protected and stay operational during a storm event.

West Park Tide Valves

There are numerous stormwater outfall pipes located throughout the West Park neighborhood. If these outfalls do not have functioning tide valves, the river water can enter the outfalls and surcharge through the catch basins into the streets. This is a regular occurrence during full moon high tide events and results in flooded, impassable roads. A recommendation of the 2014 Draft Monmouth County Multi-Jurisdictional All Hazards Mitigation Plan was to install tide valves on all outfalls in this area where none exist. The Borough has since funded this project through Borough funds, and the project is underway to install seven new tide valves.



Figure 10. Waterman Avenue Stormwater Outfall

West Park Bulkheads

In addition to the surcharging mentioned above, the West Park neighborhood also floods when the surrounding waters overtop the bulkheads. The existing bulkhead at the western terminus of Washington Avenue is in very poor condition. It is therefore recommended that a new elevated bulkhead be installed. Although it is desirable to install new elevated bulkheads at all other locations in this area, the cost is not feasible at this time since the bulkheads are not in poor condition. As a cost saving measure, it is recommended to install earthen berms at these locations to provide temporary protection. The locations are the western and eastern terminus of Grant Avenue and the southwestern terminus of Waterman Avenue.

Storm Drain & Channel Maintenance

The Borough of Rumson Department of Public Works checks for blocked storm drains routinely. They also inspect and report debris in streams and ditches. The 2014 Draft Monmouth County Multi-Jurisdictional All Hazards Mitigation plan recommends the removal of debris and sediment accumulation in waterways and creeks which impede flood flows because the maintenance of these waterways is crucial to ensure proper drainage and protect the health and safety of the Borough residents. Of particular concern is a stream parallel to the west side of Brookside Drive. During heavy rains the stream backs up onto residential properties and occasionally floods Rumson Road. The stream should be cleared and the downstream drainage system should be further investigated for potential rehabilitation.

Drainage and Road Improvements

The intersection of Holly Tree Lane and Navesink Avenue and the south end of Club Way experience regular nuisance flooding due to heavy rainfall and high tides. This often causes the areas to become impassable and can delay emergency response times. It is recommended that the Borough rehabilitate and upgrade the existing drainage systems to increase capacity and decrease flooding. The roads shall also be reconstructed, possibly to a higher elevation, to provide proper slope and drainage.

PUBLIC INFORMATION

Map Information

The Borough is in the process of developing a GIS program that will contain flood zones, flood elevations, evacuation routes, building footprints, critical facilities, shelters, etc. These portions of the GIS program should be made available to the public through

the Borough website or by visiting Borough Hall where staff members can help explain the various maps and hazards.

Outreach Projects

The Floodplain Management Plan Committee can set up a booth at local events. Additionally, information on flood hazards and mitigation activities can be mailed out annually as newsletters or with tax bills. The Borough website could contain a section devoted to floodplain management and hazard mitigation.

Library

The Monmouth County Library System contains current FEMA publications on flooding. The Borough should encourage the Oceanic Library to do the same so Borough residents have a readily available source of information.

Technical Assistance

The Borough building and construction department can make available pamphlets and booklets concerning flood preparation, NFIP, elevation requirements, flood venting, etc.

Environmental Education

To increase environmental awareness and knowledge of flood risks, the Borough should coordinate with the Rumson Fair Haven Environmental Awareness Club and other local organizations to raise awareness within the community.

Senior Citizen Database

The Borough has many senior citizens who may need additional assistance during natural disasters. The Borough should maintain a database of all senior citizens so that those in need of assistance can be contacted prior to or during a storm. The Borough should reach out to the Senior Citizen Club and also create a registration portal on the Borough website.

VIII. ACTION PLAN

The previous chapter presented a wide range of possible floodplain management activities to address the goals established by the Floodplain Management Plan Steering Committee. This chapter 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 Rumson:

PREVENTATIVE MEASURES

Action Item	Priority	Responsible Party	Deadline	Budget	Funding Source
Prepare a 5-year Capital Improvement Plan	High	Borough Staff and T&M Associates	July 2015	\$30,000	NJDCA Grant (secured)
Prepare a Hazard Mitigation Plan	High	Borough Staff and T&M Associates	July 2015	\$24,000	NJDCA Grant (secured)
Create an automated and expedited system for zoning and construction permit administration	High	Borough Staff and T&M Associates	July 2015	\$25,000	NJDCA Grant (secured)
Develop a Geographic Information System (GIS) Program	High	Borough Staff and T&M Associates	July 2015	\$50,000	NJDCA Grant (secured)
Update Zoning Ordinances related to flooding, grading and stormwater management	High	Borough Staff and T&M Associates	August 2015	Borough Staff Time	Borough General Funds
Join the Community Rating System (CRS) Program	Medium	Borough Staff	October 2015	Borough Staff Time	Borough General Funds
Join the Building Code Effectiveness Grading Schedule (BCEGS) Program	Low	Borough Staff	October 2016	Borough Staff Time	Borough General Funds
Enforce the Borough Stormwater Management Plan & Ordinance	Ongoing	Planning, Zoning, Code Enforcement & Construction Departments	Ongoing	Borough Staff Time	Borough General Funds
Maintain and clean the Borough drainage system, streams and ditches	Ongoing	Department of Public Works	Ongoing	Borough Staff Time	Borough General Funds
Tree Trimming Program	Ongoing	Department of Public Works	Ongoing	Borough Staff Time	Borough General Funds

PROPERTY PROTECTION

Action Item	Priority	Responsible Party	Deadline	Budget	Funding Source
Update the Borough's Flood Damage Prevention Ordinance	High	Borough Staff	August 2015	Borough Staff Time	Borough General Funds

NATURAL RESOURCE PROTECTION

Action Item	Priority	Responsible Party	Deadline	Budget	Funding Source
Update the Borough Ordinance to prohibit the dumping of waste in streams and waterways	Low	Zoning Department	December 2015	Borough Staff Time	Borough General Funds
Continue to enforce NJDEP and soil erosion and sediment control standards for all development	Ongoing	Planning, Zoning, Code Enforcement & Construction Departments	Ongoing	Borough Staff Time	Borough General Funds

EMERGENCY SERVICES

Action Item	Priority	Responsible Party	Deadline	Budget	Funding Source
Prepare an updated Emergency Operations Plan	High	Borough Staff and T&M Associates	July 2015	\$26,000	NJDCA Grant (secured)
Prepare a Debris Management Plan	High	Borough Staff and T&M Associates	July 2015	\$20,000	NJDCA Grant (secured)
Install reinforced steel, rubber gasket-lined storm doors at the DPW garage and the Main and Grant Avenue sanitary sewer pump stations	High	Department of Public Works/Contractor	August 2015	\$300,000	FEMA 406 Funds (secured)
Install emergency backup generators at the Riverside Drive, Club Way, Thornton Way and Navesink Avenue sanitary sewer pump stations	High	Borough Staff/Contractor	August 2015	\$220,000	HMGP Grant (secured)
Install a SCADA system	High	Borough Staff/Contractor	August 2015	\$130,000	Possible HMGP Grant

Install an emergency generator at the Oceanic Hook and Ladder Fire House	High	Borough Staff/Contractor	August 2016	\$55,000	Possible HMGP Grant, Fire Department Funds, Borough Funds
Install a quick connection system for a portable generator with a manual switch gear at Borough Hall	Medium	Borough Staff/Contractor	August 2016	\$10,000	Possible HMGP Grant, Borough Funds
Remove and replace two underground fuel storage tanks with a new aboveground fuel storage tank at the DPW Yard	Medium	Borough Staff/Contractor	August 2017	\$220,000	Possible HMGP Grant, Borough Funds
Develop Bingham Hall Comfort Station	Medium	Borough Staff/Contractor	August 2017	\$95,000	Possible HMGP Grant, Borough Funds
Install an emergency generator at Rumson Fair Haven Regional High School	Low	Borough Staff/Contractor	August 2017	\$55,000	Possible HMGP Grant
Check for fallen trees and blocked storm drains	Ongoing	Department of Public Works	Ongoing	Borough Staff Time	Borough General Funds
Maintain the Borough's various hazard warning systems and educate the public on these systems	Ongoing	Borough Staff	Ongoing	Borough Staff Time	Borough General Funds

STRUCTURAL PROJECTS

Action Item	Priority	Responsible Party	Deadline	Budget	Funding Source
Install a new elevated bulkhead at the western terminus of Washington Avenue	Medium	Borough Staff/Contractor	August 2016	\$75,000	Possible HMGP Grant, Borough Funds
Shrewsbury Drive & Avenue of Two Rivers intersection roadway, drainage and bulkhead improvements	Medium	Borough Staff/Contractor	August 2017	\$462,000	Possible HMGP & NJDOT Grants, Borough Funds

Install 225 feet of new bulkhead adjacent to the municipal boat ramp and replace the existing bulkhead on the northwest side of the ramp	Low	Borough Staff/Contractor	August 2018	\$734,000	Possible HMGP Grant, Borough Funds
Roadway and drainage improvements at the intersection of Holly Tree Lane and Navesink Avenue	Low	Borough Staff/Contractor	August 2020	\$100,000	Possible HMGP Grant, Borough Funds
Roadway and drainage improvements at the southern end of Club Way	Low	Borough Staff/Contractor	August 2020	\$100,000	Possible HMGP Grant, Borough Funds
Storm drain and channel maintenance	Ongoing	Borough Staff	Ongoing	Borough Staff Time	Borough General Funds

PUBLIC INFORMATION

Action Item	Priority	Responsible Party	Deadline	Budget	Funding Source
Implement the GIS program and make available to the public	High	Borough Staff and T&M Associates	July 2015	Borough Staff Time	Borough General Funds
Conduct outreach projects such as mailing newsletters and creating a section on the Borough website devoted to floodplain management and hazard mitigation	Low	Borough Staff	December 2015 & Ongoing	Borough Staff Time	Borough General Funds
Gather and maintain documents at Borough Hall for public distribution regarding flood preparation, NFIP, elevation requirements, etc.	Low	Borough Staff and T&M Associates	December 2015 & Ongoing	Borough Staff Time	Borough General Funds
Create a Senior Citizen Database for use prior to and during storms	Low	Borough Staff	August 2016	Borough Staff Time	Borough General Funds

ORDINANCE RECOMMENDATIONS

As indicated in the Action Plan, revising the Borough's current ordinances is critical to ensuring recovery and resiliency and mitigating the effects and impacts of future hazards.

Chapter XVII of the Borough Ordinance contains the Flood Damage Prevention Ordinance. 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. It is recommended that this ordinance be revised to incorporate the newly created Preliminary FIRM flood maps, which are considered to be the best available data at this time. The Borough is taking a conservative approach to building elevation requirements by requiring that the lowest finished floor be at least one foot above the Preliminary FIRM flood elevation. Instead of adopting solely the new Preliminary FIRM flood elevations, the base flood elevation shall be the greater of the 2009 Effective FIRM, the 2012 ABFE or the 2014 Preliminary FIRM. This will require many areas to rebuild to higher elevations that are closer to the flood levels experienced during Superstorm Sandy. Although this is a more restrictive method, many local residents, builders, architects and engineers support building homes to these higher elevations. Other minor recommendations, such as requiring elevation certificates, are also proposed.

In an effort to encourage residents to rebuild to higher elevations and avoid costly and time consuming variance applications, it is recommended that the Schedule of Zoning District Regulations be revised to allow unroofed porches, landings, stoops and stairs to extend up to five feet beyond the side and rear setback lines in a residential zone.

A major concern of the Steering Committee members was the grading and stormwater runoff associated with new development, especially for those properties being raised above the base flood elevation. Various changes are therefore proposed to Section 22-7.27, Soil Removal and Fill, of the Development Regulations. Additional oversight and approvals will be required to ensure that there will be no negative impacts to neighboring properties as a result of new construction. Additional regulations are also proposed for Section 22-7.25, Fences and Walls, to limit the impacts of large retaining walls that are sometimes constructed when a house is elevated.

Recommended ordinance revisions can be found in Appendix P.

IX. PLAN IMPLEMENTATION & MAINTENANCE

This Plan was introduced to the Borough Planning Board on April 13, 2015 and then adopted on May 5, 2015. The Plan will also be adopted by the Borough Council by a formal Resolution on May 12, 2015.

This floodplain management plan is intended to be a dynamic document, adapting to changes in flood hazards and the needs of the Borough of Rumson. 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 Rumson 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: Steering Committee Meeting Outlines



**Floodplain Management Plan
Steering Committee Meeting Outline & Notes
November 13, 2014**

1. Overview of the Post Sandy Planning Assistance Grant and the proposed Floodplain Management Plan
2. T&M Associates and the Borough recently prepared Action Worksheets for the Borough as part of the Monmouth County Hazard Mitigation Plan. The actions include various activities to increase the Borough's storm resiliency. They include preventative and protective measures, as well as planning activities. All 21 worksheets were reviewed as possible activities for the Floodplain Management Plan, and the Committee was asked for input on additional activities. It was recommended to maintain a database of all senior citizens within the Borough so Police could be notified of their locations during emergencies. A portal could be created on the Borough website for seniors to register. The Senior Citizen Club could also be utilized.
3. There was a discussion on the Borough potentially raising bulkheads to the 100-year storm. It was asked what the bulkhead elevation requirements are for private development. This issue must be further researched.
4. The Borough's existing Flood Damage Prevention Ordinance was reviewed.
 - a) The Ordinance currently references the Advisory Base Flood Elevation (ABFE) maps dated December 12, 2012. The lowest floor of any new or substantially improved construction must be at or above the ABFE elevation. Mr. Neff recommended that the ordinance be updated to reflect the current Preliminary FIRM maps and the Effective FIRM maps in the future. The Borough is opposed to this and wants to keep the more conservative ABFE maps. T&M will prepare a map showing the difference between the two maps (elevations and zone boundaries) for the next meeting.
 - b) The timeframe for Substantial Damage and Substantial Improvement must be further researched and clarified. Is the 50% damage/improvement all at once or over a certain time period?
 - c) The Ordinance shall specify in Section 17-4.3.c that Elevation Certificates are required for all new construction or substantial improvement.
 - d) Section 17-6.1.d.4 shall be revised to require flood elevation data for all subdivisions and proposed development, not only those over 50 lots or 5 acres.



**Floodplain Management Plan
Steering Committee Meeting Outline & Notes
December 18, 2014**

1. Discussion on building to ABFE Maps or Preliminary FIRM Maps
 - a) NJ FHA Control Act requires lowest floor to be one foot above design flood elevation
 - b) Recommend 2 foot freeboard requirement
 - c) Borough would like to use most conservative data

2. Flood Damage Prevention Ordinance revisions
 - a) Possibly update map reference and add freeboard requirement
 - b) Minor revisions discussed at last meeting
 - c) Impacts to grading and drainage from lifting a house.
 - d) Need to make revisions to Grading Plan, retaining wall and porch/stair requirements.

3. Discussion of Known Flood Hazards
 - a) Source of water
 - b) Depth of flooding
 - c) Velocities
 - d) Warning time

4. Areas of Localized Minor Flooding
 - a) Ditches, depressions, drainage system backups, etc.

5. Areas Outside of Mapped Flood Zones with Historical Flooding
 - a) Southern portion of Wardell Avenue

6. Impact of Flooding on the Community's Economy
 - a) Commercial, Residential & Borough

7. Impact to Public Health Following Floods
 - a) Mold, demolition debris, asbestos removal, etc.



**Floodplain Management Plan
Steering Committee Meeting Outline & Notes
January 22, 2015**

1. Flood Zones and Elevations
 - a) The ABFE maps locate 344 properties in a V Zone, compared to 106 properties in the current Preliminary FIRM maps. Construction in a V Zone requires a pile or column foundation with breakaway walls and that the bottom of the lowest horizontal structural member be at least one foot above the base flood elevation (specifics depend on building category as defined in ASCE 24 – Flood Resistant Design and Construction). The Borough would like to establish their Base Flood Elevation as the higher, more conservative elevation of the ABFE elevation or the Preliminary FIRM elevation. One foot of freeboard shall be required where the two elevations are equal. The flood zones will be based on the Preliminary FIRM maps, not the ABFE maps.
 - b) Garages may be constructed below the flood elevation in accordance with the requirements contained in NJAC 7:13-11.5(n) (see attached). There is no difference between the requirements for attached and detached garages.

2. Grading Plan Requirements & Retaining Walls
 - a) The Committee discussed more restrictive requirements for Grading Plans in an effort to limit drainage issues.
 - b) The Committee discussed the many retaining walls being constructed as a result of elevating homes. They would like to establish a height limit of 4 feet along property lines.

3. Front Porch Requirements
 - a) It was discussed that many residents are required to get variance approval for porches when lifting a house and this is the only reason they need to come before the Zoning Board. The Borough would like to encourage front porches and landings instead of just a straight set of stairs up to the first floor of a house that has been lifted. The ordinance should be revised accordingly.

4. Set Goals
 - a) The Committee discussed the goals they would like to achieve with the new Plan.

5. Possible Activities
 - a) Further discussion of the proposed activities and any new activities.



**Floodplain Management Plan
Steering Committee Meeting Outline & Notes
February 19, 2015**

1. Review the drafted Flood Hazard Assessment and Problem Assessment sections of the Plan for accuracy.
2. Review of the Goals and all projects listed as Possible Floodplain Management Activities. Committee was asked for any additional projects they would like included.
3. Establish High, Medium and Low priority levels for the proposed activities.
4. Develop a proposed Action Plan. Determine which activities to include, priority, responsible party, proposed deadlines and budgets, and possible funding sources.

Appendix B: Public Meetings Information



- ▶ [HOME](#)
- ▶ [PUBLIC NOTICES](#)
- ▶ [MAYOR & COUNCIL](#)
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Floodplain Management Plan and Ordinance Public Outreach

As part of the Borough's Post Sandy Planning Assistance Grant awarded by NJDCA, the Borough is in the process of preparing a new Floodplain Management Plan and Ordinance.

The Borough will also be discussing the Monmouth County Hazardous Mitigation Plan for the County.

Monday, November 3, 2014 at 4:00pm in the Charles S. Callman Courtroom.

[Go Back](#)

Borough Hall Office Hours:
Monday - Friday, 8:30 AM - 4:30 PM
Phone: (732) 842-3300

80 East River Road
Rumson, New Jersey 07760

AGENDA
REGULAR MEETING
BOROUGH COUNCIL
BOROUGH OF RUMSON
November 3, 2014
4:00 p.m.

Pledge of Allegiance.

Roll call.

Statement of Mayor regarding compliance with the notice requirements of the Open Public Meetings Act.

Approval of the minutes of the Previous Meeting.

COMMUNICATIONS:

None.

COMMITTEE REPORTS:

UNFINISHED BUSINESS:

None.

NEW BUSINESS:

1. Resolution 2014-1103-145 Authorizing the Insertion of a Special Item of Revenue in the 2014 Borough Budget for the Post Sandy Planning Assistant Phase II Grant.

2. Resolution 2014-1103-146 Authorizing the Appointment of Grace P. Maggiulli, Jr. as a Full-time Dispatcher/Class II Special Officer Effective January 1, 2015.

CONSENT AGENDA:

1. Resolution 2014-1103-147 Authorizing the Refund of Unused Fees for Police Traffic Control Services to Visiting Nurse Association of Central Jersey.

2. Resolution 2014-1103-148 Authorizing the Refund of Unused Fees for Police Security Services to Campership of Monmouth County.

3. Resolution 2014-1103-149 Authorizing the Refund of Unused Fees for Police Traffic Control Services to Delaware Valley Utility Contractors, Inc.

4. Resolution 2014-1103-150 Authorizing the Refund of Unused Fees for Police Traffic Control Services to Monmouth County Historical Association.

5. Resolution 2014-1103-151 Authorizing the Refund of Unused Fees for Police Security Services to David Long and Krista Valentino.

6. Resolution 2014-1103-152 Authorizing the Refund of Unused Fees for Police Security Services to Kristine Sheftel.

ANNOUNCEMENTS BY THE MAYOR.

CONSIDERATION OF BILLS & CLAIMS (RESOLUTION).

COMMENTS FROM THE COUNCIL.

COMMENTS FROM THE PUBLIC.

The Mayor and Council are soliciting comments on the following:

1. Monmouth County Hazard Mitigation Plan

2. NJ DCA Post Sandy Planning Assistance Grant Phase 2 and specifically the Flood Plain Management Plan and Borough Flood Plain Ordinance

ADJOURNMENT.

REGULAR MEETING
BOROUGH COUNCIL
BOROUGH OF RUMSON
November 3, 2014

A regular meeting of the Borough Council of the Borough of Rumson was held in the Charles S. Callman Courtroom of Borough Hall on November 3, 2014 and was called to order by Mayor John E. Ekdahl at 4:00 p.m.

Pledge of Allegiance.

Present: Mayor Ekdahl, Councilwoman Atwell, Councilmen Broderick, Day, Hemphill, Rubin and Shanley.

Absent: None.

Thomas S. Rogers, Municipal Clerk/Administrator, was present.

Martin M. Barger, Borough Attorney, was present.

Thomas Neff of T & M Associates was present.

The Mayor declared a quorum present and announced that the notice requirements of the Open Public Meetings Act had been met by the posting and mailing of a schedule of all regular and work meetings of the Borough Council for the year 2014 to the *Asbury Park Press* and the *Two River Times*.

On motion by Councilman Rubin, seconded by Councilman Day, the minutes of the previous meeting were approved as written, copies having been forwarded to all Council members. All in favor.

COMMUNICATIONS:

None.

COMMITTEE REPORTS:

None.

UNFINISHED BUSINESS:

None.

NEW BUSINESS:

RESOLUTION 2014-1103-145 AUTHORIZING THE INSERTION OF A SPECIAL ITEM OF REVENUE IN THE 2014 BOROUGH BUDGET FOR THE POST SANDY PLANNING ASSISTANT PHASE II GRANT:

2014-1103-145

Councilman Hemphill offered the following resolution and moved its adoption:

RESOLUTION PROVIDING FOR THE INSERTION OF A SPECIAL
ITEM OF REVENUE IN THE BUDGET OF THE BOROUGH OF
RUMSON PURSUANT TO N.J.S.A. 40A:4-87
(CHAPTER 159, P.L. 1948)

WHEREAS, N.J.S.A. 40A:4-87 provides that the Director of the Division of Local Finance may approve the insertion of any special item of revenue in the budget of any county or municipality when such item shall have been made available by law and the amount thereof was not determined at the time of adoption of the budget; and

WHEREAS, said Director may also approve the insertion of any item of appropriation for an equal amount;

NOW, THEREFORE, BE IT RESOLVED that the Borough of Rumson hereby requests the Director of the Division of Local Finance approve the insertion of an item of revenue in the budget of the year 2014 in the sum of \$255,000.00, which item is now available as a revenue from the State of New Jersey, Department of Community Affairs, Local Planning Services, Post Sandy Planning Assistance Grant Phase II pursuant to the provisions of statute; and

BE IT FURTHER RESOLVED that a like sum of \$255,000.00 be and same is hereby appropriated under the caption of Post Sandy Planning Assistance Grant Phase II.

Resolution seconded by Councilman Broderick and carried on the following roll call vote:

In the affirmative: Atwell, Broderick, Day, Hemphill, Rubin and Shanley.

In the negative: None.

Absent: None.

RESOLUTION 2014-1103-146 AUTHORIZING THE APPOINTMENT OF GRACE P. MAGGIULLI AS A FULL-TIME DISPATCHER/CLASS II SPECIAL OFFICER EFFECTIVE JANUARY 1, 2015:

2014-1103-146

Councilman Rubin offered the following resolution and moved its adoption:

RESOLUTION

WHEREAS, the Borough of Rumson through its Police Department has the need for a full-time Police Dispatcher/Class II Special Police Officer; and

WHEREAS, Grace P. Maggiulli has experience as a part-time Dispatcher with the Boroughs of Rumson and Little Silver; and

WHEREAS, Police Chief Scott Paterson and the Police Committee have recommended that Ms. Maggiulli be appointed as a full-time Police Dispatcher/Class II Special Police Officer; and

WHEREAS, the Police Chief and Police Committee have recommended that Ms. Maggiulli attend the Special Law Enforcement Officer Class II Course in January;

NOW, THEREFORE, BE IT RESOLVED by the Mayor and Council of the Borough of Rumson that Grace P. Maggiulli be appointed as a full-time Police Dispatcher/Class II Special Police Officer at an annual salary of \$26,000.00 effective January 1, 2015; and

BE IT FURTHER RESOLVED that a certified copy of this Resolution be forwarded to the Chief Financial Officer and the Payroll Clerk.

Resolution seconded by Councilwoman Atwell and carried on the following roll call vote:

In the affirmative: Atwell, Broderick, Day, Hemphill, Rubin and Shanley.

In the negative: None.

Absent: None.

CONSENT AGENDA:

RESOLUTION 2014-1103-147 AUTHORIZING THE REFUND OF UNUSED FEES FOR POLICE TRAFFIC CONTROL SERVICES TO VISITING NURSE ASSOCIATION OF CENTRAL JERSEY:

2014-1103-147

RESOLUTION TO AUTHORIZE REFUND TO
VISITING NURSE ASSOCIATION OF CENTRAL JERSEY

WHEREAS, Visiting Nurse Association of Central Jersey, 176 Riverside Avenue, Red Bank, NJ 07701, posted \$1,044.00 for eighteen (18) hours of Police Traffic Control Services on October 12 and 18, 2014; and

WHEREAS, Rumson Police Officers provided only five (5) of the requested eighteen (18) hours; and

WHEREAS, Police Chief Scott Paterson has confirmed that only five (5) hours were provided by Rumson Officers; and

WHEREAS, Karen M. Rafiqi, of the Visiting Nurse Association, has requested a refund of \$754.00; and

WHEREAS, Helen L. Graves, Chief Financial Officer, has confirmed receipt of \$1,044.00 from Visiting Nurse Association of Central Jersey and recommends a refund be made to Visiting Nurse Association of Central Jersey in the amount of \$754.00;

NOW, THEREFORE, BE IT RESOLVED by the Mayor and Council of the Borough of Rumson that Visiting Nurse Association of Central Jersey be refunded \$754.00; and

BE IT FURTHER RESOLVED that a certified copy of this Resolution be forwarded to the Chief Financial Officer.

RESOLUTION 2014-1103-148 AUTHORIZING THE REFUND OF UNUSED FEES FOR POLICE SECURITY SERVICES TO CAMPERSHIP OF MONMOUTH COUNTY:

2014-1103-148

RESOLUTION TO AUTHORIZE REFUND TO
CAMPERSHIP OF MONMOUTH COUNTY

WHEREAS, Campership of Monmouth County, PO Box 341, Rumson, NJ 07760, posted \$200.00 for Police Security Services; and

WHEREAS, Police Sergeant Robert Boyer has confirmed that no Rumson Officers provided the requested services; and

WHEREAS, Helen L. Graves, Chief Financial Officer, has confirmed receipt of \$200.00 from Campership of Monmouth County and recommends a refund be made to Campership of Monmouth County in the amount of \$200.00;

NOW, THEREFORE, BE IT RESOLVED by the Mayor and Council of the Borough of Rumson that Campership of Monmouth County, PO Box 341, Rumson, NJ 07760 be refunded \$200.00; and

BE IT FURTHER RESOLVED that a certified copy of this Resolution be forwarded to the Chief Financial Officer.

RESOLUTION 2014-1103-149 AUTHORIZING THE REFUND OF UNUSED FEES FOR POLICE TRAFFIC CONTROL SERVICES TO DELAWARE VALLEY UTILITY CONTRACTORS, INC.:

2014-1103-149

RESOLUTION TO AUTHORIZE REFUND TO
DELAWARE VALLEY UTILITY CONTRACTORS, INC.

WHEREAS, Delaware Valley Utility Contractors, Inc., 225 Warren Street, Reading, PA 19601 posted \$1,044.00 for 18 hours Police Traffic Control Services; and

WHEREAS, only 13 hours were provided by Rumson Police Officers; and

WHEREAS, Police Sergeant Robert Boyer has confirmed that only 13 hours were provided by Rumson Officers; and

WHEREAS, Helen L. Graves, Chief Financial Officer, has confirmed receipt of \$1,044.00 from Delaware Valley Utility Contractors, Inc., and recommends a refund be made to Delaware Valley Utility Contractors, Inc. in the amount of \$290.00;

NOW, THEREFORE, BE IT RESOLVED by the Mayor and Council of the Borough of Rumson that Delaware Valley Utility Contractors, Inc., 225 Warren Street, Reading, PA 19601 be refunded \$290.00; and

BE IT FURTHER RESOLVED that a certified copy of this Resolution be forwarded to the Chief Financial Officer.

RESOLUTION 2014-1103-150 AUTHORIZING THE REFUND OF UNUSED FEES FOR POLICE TRAFFIC CONTROL SERVICES TO MONMOUTH COUNTY HISTORICAL ASSOCIATION:

2014-1103-150

RESOLUTION TO AUTHORIZE REFUND TO
MONMOUTH COUNTY HISTORICAL ASSOCIATION

WHEREAS, Monmouth County Historical Association, 70 Court Street, Freehold, NJ 07728, posted \$464.00 for eight (8) hours of Police Traffic Control Services; and

WHEREAS, Rumson Police Officers only provided four (4) of the requested eight (8) hours; and

WHEREAS, Police Sergeant Robert Boyer has confirmed that only four (4) hours were provided by Rumson Officers; and

WHEREAS, Helen L. Graves, Chief Financial Officer, has confirmed receipt of \$464.00 from Monmouth County Historical Association and recommends a refund be made to Monmouth County Historical Association in the amount of \$232.00;

NOW, THEREFORE, BE IT RESOLVED by the Mayor and Council of the Borough of Rumson that Monmouth County Historical Association, 70 Court Street, Freehold, NJ 07728 be refunded \$232.00; and

BE IT FURTHER RESOLVED that a certified copy of this Resolution be forwarded to the Chief Financial Officer.

RESOLUTION 2014-1103-151 AUTHORIZING THE REFUND OF UNUSED FEES FOR POLICE SECURITY SERVICES TO DAVID LONG AND KRISTA VALENTINO:

2014-1103-151

RESOLUTION TO AUTHORIZE REFUND TO
DAVID LONG AND KRISTA VALENTINO

WHEREAS, David Long and Krista Valentino, 49 Buena Vista Ave, Rumson, NJ 07760, posted \$250.00 for Police Security Services; and

WHEREAS, Police Sergeant Robert Boyer has confirmed that no Rumson Officers provided the requested services; and

WHEREAS, Helen L. Graves, Chief Financial Officer, has confirmed receipt of \$250.00 from David Long and Krista Valentino and recommends a refund be made to David Long and Krista Valentino in the amount of \$250.00;

NOW, THEREFORE, BE IT RESOLVED by the Mayor and Council of the Borough of Rumson that David Long and Krista Valentino, 49 Buena Vista Ave, Rumson, NJ 07760 be refunded \$250.00; and

BE IT FURTHER RESOLVED that a certified copy of this Resolution be forwarded to the Chief Financial Officer.

RESOLUTION 2014-1103-152 AUTHORIZING THE REFUND OF UNUSED FEES FOR POLICE SECURITY SERVICES TO KRISTINE SHEFTEL:

2014-1103-152

RESOLUTION TO AUTHORIZE REFUND TO
KRISTINE SHEFTEL

WHEREAS, Kristine Sheftel, 34 Navesink Ave, Rumson, NJ 07760, posted \$250.00 for Police Security Services; and

WHEREAS, Police Sergeant Robert Boyer has confirmed that no Rumson Officers provided the requested services; and

WHEREAS, Helen L. Graves, Chief Financial Officer, has confirmed receipt of \$250.00 from Kristine Sheftel and recommends a refund be made to Kristine Sheftel in the amount of \$250.00;

NOW, THEREFORE, BE IT RESOLVED by the Mayor and Council of the Borough of Rumson that Kristine Sheftel, 34 Navesink Ave, Rumson, NJ 07760 be refunded \$250.00; and

BE IT FURTHER RESOLVED that a certified copy of this Resolution be forwarded to the Chief Financial Officer.

The above six (6) Resolutions on the Consent Agenda were moved for adoption by Councilman Rubin. Motion seconded by Councilman Hemphill and carried on the following roll call vote:

In the affirmative: Atwell, Broderick, Day, Hemphill, Rubin and Shanley.

In the negative: None.

Absent: None.

ANNOUNCEMENTS BY THE MAYOR:

Mayor Ekdahl made the following Announcements:

1. There will be a Veterans' Day Ceremony held in Victory Park on Tuesday, November 11th at 11:00 a.m. At that time, the names of the Veterans that have been added to the Veterans Monument will be announced. We hope that you will join us.
2. Borough Hall will be open on Veterans' Day, Tuesday, November 11th this year. There will be garbage pickup and the Recycling Center will be open on November 11th.

Thank you for your cooperation.

CONSIDERATION OF BILLS AND CLAIMS (RESOLUTION):

Councilman Hemphill offered the following resolution and moved its adoption:

\$	10.80	NJ Dept Health/Sr Services
\$	89.00	Red Bank Veterinary Hospital
<hr/>		
\$	99.80	Animal Control Account
<hr/>		
\$	21,000.00	Fiore Paving Company
<hr/>		

\$	21,000.00	Capital Account
\$	110.25	Jeffrey R Surenian & Assoc LLC
\$	110.25	COAH Trust Fund
\$	330.70	Stephen Barrett
\$	200.00	Campership of Monmouth Cty Inc
\$	139.00	Career Development Institute
\$	15,597.00	Conner Strong & Buckelew
\$	2,382,793.34	Monmouth County Treasurer
\$	150,878.71	Monmouth County Treasurer (LIB)
\$	127,694.76	Monmouth County Treasurer (OS)
\$	290.00	Delaware Valley Utility
\$	68.50	Direct Energy Business
\$	1,525.20	Edwards Tire Co Inc
\$	9,458.50	First Priority Emergency
\$	53.64	Robert E Halligan
\$	236.11	Industrial Chem Lab & Services
\$	250.00	Jean's Canvas Products
\$	775.00	Kerrigan Electric Inc
\$	250.00	David Long & Krista Valentino
\$	20.00	Mazza & Sons Inc
\$	767.43	Mid-Atlantic Truck Centre Inc
\$	829.44	Monmouth County Tax Admin
\$	30.00	Monmouth County Police Academy
\$	550.00	Monmouth Fabricating LLC
\$	232.00	Monmouth County
\$	105.05	Naylor's Auto Parts
\$	9,068.80	New Jersey American Water
\$	377.97	NJ Natural Gas Co
\$	220.00	NJ State League of Municipalities
\$	83,131.15	State of NJ Pensions/Active
\$	40,930.37	State of NJ Pensions/Retiree
\$	10,836.00	Realty Data Systems LLC
\$	1,145.56	Republic Services of NJ LLC
\$	1,845.41	Reussille Law Firm LLC
\$	108.05	Thomas S Rogers
\$	2,814,327.83	Rumson Elementary School Dist
\$	2,276,174.41	RFH Regional High School
\$	2,102.26	Seaboard Welding Supply Inc
\$	250.00	Kristine Sheftel
\$	250.00	State Shorthand Reporting Serv
\$	811.57	Staples Advantage
\$	2,002.22	Trico Equipment Services LLC
\$	372.17	Trius Inc
\$	31.50	Up-Tite Fasteners Inc
\$	754.00	VNA of Central Jersey
\$	198.90	George Wall Lincoln
\$	7,938,012.55	Current Fund
\$	494.90	John Deere Landscaping
\$	200.00	Garrett Littman
\$	160.00	William O'Brien
\$	88.82	Sarah Orsay
\$	30.00	Edward Osmulski
\$	220.00	Bennett Todd Pelino
\$	120.00	Ethan Peters
\$	375.00	Courtney Setteducate
\$	290.00	Sickles Market
\$	1,978.72	Recreation Account
\$	1,000.00	Vision Landscape & Design

\$	1,000.00	Trust Account
\$	7,938,012.55	Current Fund Appropriations
\$	99.80	Animal Control Fund Expenses
\$	21,000.00	Capital Fund Disbursements
\$	1,978.72	Recreation Disbursements
\$	1,110.25	Trust Fund – Other Expenses
<hr/>		
\$	7,962,201.32	Total Of All Funds

Resolution seconded by Councilman Broderick I and carried on the following roll call vote:

In the affirmative: Atwell, Broderick, Day, Hemphill, Rubin and Shanley.

In the negative: None.

Absent: None.

COMMENTS FROM THE COUNCIL:

The Mayor afforded the members of the Council an opportunity to be heard at this time and no one responded.

COMMENTS FROM THE PUBLIC:

The Mayor afforded the members of the public an opportunity to be heard at this time on any matters regarding the meeting or general Borough matters and no one responded.

Monmouth County Hazard Mitigation Plan:

The Municipal Clerk/Administrator explained that as part of the Monmouth County Hazard Mitigation Plan the Borough was required to make a meeting available to the public to comment on the Monmouth County countywide Plan that was developed over the past two years. He reported that the prior plan had expired and, as part of FEMA’s program, the County municipalities were required to hold public hearings at which time residents of Monmouth County and, more specifically the residents of the Borough of Rumson for this meeting, could attend to comment on the County’s Draft Plan.

NJ DCA Post Sandy Planning Assistance Grant Phase 2 and specifically the Flood Plain Management Plan and Borough Flood Plain Ordinance:

The Municipal Clerk/Administrator explained that the New Jersey Department of Community Affairs (NJ DCA) had awarded the Borough of Rumson a very large grant to review different planning segments within the Borough. He reported that part of that Plan was to analyze the Borough’s Flood Plain Ordinances and Flood Plain Management Plan as part of the grant process. The Municipal Clerk/Administrator advised that the committee that was formed from members of the Planning and Zoning Boards and Borough Council would meet to review those items, but prior to meeting the Borough was required to solicit information and concerns regarding our current plans—specifically how the Borough allows the residents to build, required home elevations and heights, different areas in which we allow residents to build homes—so that when the committee does meet they will have the necessary feedback to discuss the ideas that have come out of the public comments.

The public was afforded an opportunity to be heard at this time on the two above matters and the following resident responded:

Richard Jones of 37 Navesink Avenue asked if this meeting would be the only chance that the public would have to comment.

Thomas Neff of T & M Associates stated that there would be another public hearing prior to the Plan being adopted and that it would take the Borough a few months to complete the whole process. He added that the County has given the Borough a thirty-day window for the Hazard Mitigation Plan that ends on November 17, 2014.

Mr. Jones asked how the Borough was going to spend the NJ DCA grant money on a longer term project.

The Municipal Clerk/Administrator reported that the grant was specifically for planning and was very descriptive on how the money was to be spent; it did not include any road improvements, bulkheads, berms, concrete, soil or the like, but its purpose was specifically for the planning process. He added that the total grant amount for this segment was \$50,000 and was to analyze what the Borough currently had and if our Borough Ordinances were up-to-date and met the latest FEMA and DEP requirements.

Mr. Jones stated that he thanked the Municipal Clerk/Administrator for his diligence in securing the grant money. He stated that he hadn't had much time to review the Hazard Mitigation Plan, but after reading Section 126 regarding the Natural Hazards Survey he wanted to ask if any of the grant money would be dedicated for mapping areas in the Borough that have had chronic problems with flooding, especially areas that have been beyond the stormwater capacity or no longer have an outlet because of grade changes and whatnot.

The Municipal Clerk/Administrator stated for those who were not familiar, that part of the plan was for the County to interview Monmouth County residents, and 14% of the surveyed residents in the completed survey highlighted stormwater as being a concern. He asked Mr. Jones if his point was that this should be part of the Borough's process as we move forward.

Mr. Jones stated that he wanted to know if some of the money could be directed at identifying and possibly correcting drainage problems in other areas of the Borough.

The Municipal Clerk/Administrator reported that the total of the overall grant was about \$275,000 divided up for a wide variety of different areas including: Emergency Planning, Master Planning, GIS Mapping, CRS Program (Community Rating System) for a Resilience Program for flood insurance, as well as other areas. He added that every category had to do with flooding in some respect—it may not always be stormwater, it may be storm related events rather than just a drainage issue. The Municipal Clerk/Administrator stated that with part of the grant money that was awarded as part of the GIS Program we would begin mapping all of the Borough's storm drains, keeping track of where they were located and where the outfall pipes were to enable us to develop a better maintenance plan to be able to address some of those issues. He added that every category had something to do with stormwater and we would be looking at those different areas to try to figure out a way to better address stormwater in the Borough on a whole.

Mr. Jones stated that the main change that he would recommend was to somehow get wider mapping area information to the engineers so that they could make better decisions about site planning for new construction—how the lot gets developed in areas with poor drainage or no outlet for drainage and how the lot development would impact the neighboring properties and drainage in the area. He added that presently engineers were required to do mapping only 50 feet beyond the property boundary.

Mr. Neff asked Mr. Jones if he was referring to actually surveying the stormwater system borough-wide so we could analyze the Borough system as a whole anytime there was development done.

Mr. Jones stated that the money wouldn't go far enough to do the whole Borough, but perhaps the areas that have a chronic problem could be identified as needing more care and control.

Mr. Neff stated that it was not something we would be able to do with this grant now, but it was something that could be put in the County's plan as one of our ideas for the future.

The Municipal Clerk/Administrator stated that it was a good idea and that we would make note and pass it on to the County; that was the purpose of this hearing to get just such input.

Mr. Jones thanked the Mayor and Council and Municipal Clerk/Administrator.

Mayor Ekdahl thanked Mr. Jones for his comments.

ADJOURNMENT:

On motion by Councilman Broderick, seconded by Councilman Rubin, the meeting adjourned at 4:14 p.m. All in favor.

Respectfully submitted,

Thomas S. Rogers, R.M.C.
Municipal Clerk/Administrator

PUBLIC NOTICE
PUBLIC HEARING TO BE HELD ON THE ADOPTION OF THE 2015
REEXAMINATION REPORT OF THE MASTER PLAN AND FLOODPLAIN
MANAGEMENT PLAN

BOROUGH OF RUMSON PLANNING BOARD

TAKE NOTICE that on April 13, 2015 at 7:30 p.m., the Planning Board of the Borough of Rumson will conduct a public hearing in the Borough of Rumson Borough Hall building located at 80 East River Road in Rumson Borough on the adoption of the 2015 Reexamination Report of the Master Plan with adoption of Amendments to the Master Plan, and adoption of a Floodplain Management Plan as an element of the Borough of Rumson's Master Plan. The 2015 Reexamination Report of the Master Plan includes amendments to the goals and objectives of the Master Plan that are designed to mitigate, reduce or prevent impacts to the community from natural disasters. The Floodplain Management Plan identifies and assesses flood hazards within the Borough and provides a set of actions designed to minimize flooding and mitigate the impacts of future flooding. The Floodplain Management Plan also evaluates options for wetland restoration and maintenance to mitigate potential storm surge. The recommendations from the Floodplain Management Plan include proposed amendments to the Borough's current Floodplain Development Protection Ordinance.

The documents amending the Master Plan that are the subject of the public hearing will be on file and available for public review and inspection in the Planning Board office during regular business hours, Monday through Friday, except holidays, 8:00 am to 4:00 pm, beginning on April 1, 2015.

The Planning Board may take official action at this meeting. Any interested party may appear at the public hearing to participate and offer comments on the proposed amendments.

Fred Andre
Planning Board Secretary
Borough of Rumson

**AGENDA
PLANNING BOARD
BOROUGH OF RUMSON
April 13, 2015
7:30 P.M.**

Pledge of Allegiance

Roll Call

Statement of compliance with the notice requirements of the Open Public Meetings Act.

Approval of the minutes for the January 5, 2015 and March 2, 2015 meetings.

1. Introduction

**Community Resiliency Plan/Master Plan Amendments
Floodplain Management Plan**

2. Executive Session (if necessary).

3. Adjournment.

cc to:

Mrs. Patricia Murphy
State Shorthand Reporting Service

**AGENDA
PLANNING BOARD
BOROUGH OF RUMSON
May 4, 2015
7:30 P.M.**

Pledge of Allegiance

Roll Call

Statement of compliance with the notice requirements of the Open Public Meetings Act.

Approval of the minutes for the April 13, 2015 meeting.

1. Resolution

Adoption of the 2015 Master Plan Reexamination Report and Master Plan Amendments and 2015 Flood Plain Management Plan Element.

2. Executive Session (if necessary).

3. Adjournment.

cc to:

Mrs. Patricia Murphy
State Shorthand Reporting Service

Appendix C: Sample Letter to Outside Agencies



YOUR GOALS. OUR MISSION.

November 26, 2014

US Army Corps of Engineers
New York District
26 Federal Plaza
Room 2113
New York, NY 10278

To Whom it May Concern;

The Borough of Rumson 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 in Rumson, 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 January of 2014.

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 Rumson. We would appreciate any information from your organization regarding flood hazards in the Borough of Rumson 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 Rumson and to establish goals and objectives to make Rumson more resilient to flooding events in the future.

Please contact Christine Bell, Staff Planner, T&M Associates at 732-671-6400 or cbell@tandmassociates.com on or before December 15, 2014 if you have any comments, suggestions, input, or would like to set up a meeting to discuss the floodplain management plan in greater detail.

Sincerely,

T & M Associates

Christine Bell, AICP, CFM

Coordination with Outside Agencies

Agency/Organization	Contact	Letter Sent On	Agency/Organization Response & Notes
Borough of Little Silver	Robert C. Neff, Jr.	11/26/2014	
Borough of Fair Haven	Benjamin Lucarelli	11/26/2014	Responded by email on 11/26/14 - will forward to Administrator for follow-up
Borough of Sea Bright	Dina Long	11/26/2014	
Monmouth County Planning Department - CRS User Group	Joe Barris	11/26/2014	Responded by email on 11/26/14 - sent us County draft HMP
Monmouth County Office of Emergency Management	Margaret Murnane Brooks	11/26/2014	Responded by email on 12/3 - will assist in any way possible
Borough of Rumson Police Department	Scott A. Paterson	11/26/2014	
Rumson Fire Company	Kevin McCarthy	11/26/2014	Responded by email 2/1/14 - will be chief in 2016
Oceanic Hook and Ladder Fire Company		11/26/2014	
Rumson First Aid Squad	Mary Nichols	11/26/2014	
Historic Preservation Commission	Charles Shay	11/26/2014	
Environmental Commission	Stephen Barrett	11/26/2014	
Recreation Commission	Sarah Orsay	11/26/2014	
Freehold Soil Conservation District	Ines Zimmerman	11/26/2014	
North Jersey Transportation Planning Authority	Zenobia Fields	11/26/2014	
Natural Resources Conservation Service	David Lamm	11/26/2014	Responded by email on 12/1/14 - may be able to provide review and comment on the study as it progresses
NJ Coastal Management Program		11/26/2014	
FEMA Region II	Howard Wolf	11/26/2014	Responded with a phone call on 12/4/14 - needed to further explain purpose of proposed Plan
US Army Corps of Engineers - New York District		11/26/2014	
American Red Cross - Jersey Coast Chapter		11/26/2014	
Clean Ocean Action	Cindy Zipf	11/26/2014	
American Littoral Society	Helen Henderson	11/26/2014	Responded with a phone call on 2/12/15 - 30 min phone conversation, followed with email information on stormwater regulations
Jacques Cousteau Reserve	Christopher Huch	11/26/2014	Responded by email on 12/1/15 - provided GIS maps and information. Met in person on 1/22/15 at CRS user group to discuss plan.
Shore Builders Association of Central Jersey	Gina Woolley	11/26/2014	
Comcast Cable	Lawrence Fary	11/26/2014	
New Jersey American Water	Paul Richards	11/26/2014	
JCP&L	William Uellner	11/26/2014	
New Jersey Department of Environmental Protection	John H. Moyle	11/26/2014	
New Jersey Department of Environmental Protection	Joseph Ruggeri	11/26/2014	
Middletown Township	Stephanie Murray	1/28/2015	
Borough of Monmouth Beach	Susan Howard	1/28/2015	

Appendix D: Effective FIRM Maps

NOTES TO USERS

This map is for use in administering the National Flood Insurance Program. It does not necessarily identify areas subject to flooding, particularly from local drainage sources of small size. The community map repository should be consulted for possible updated or additional flood hazard information.

To obtain more detailed information in areas where **Base Flood Elevations (BFEs)** and/or **floodways** have been determined, users are encouraged to consult the Flood Profiles and Floodway Data and/or Summary of Stillwater Elevations tables contained within the Flood Insurance Study (FIS) report that accompanies this FIRM. Users should be aware that BFEs shown on the FIRM represent rounded whole-foot elevations. These BFEs are intended for flood insurance rating purposes only and should not be used as the sole source of flood elevation information. Accordingly, flood elevation data presented in the FIS report should be utilized in conjunction with the FIRM for purposes of construction and/or floodplain management.

Coastal Base Flood Elevations shown on this map apply only landward of 17 North American Vertical Datum of 1988 (NAVD 88). Users of this FIRM should be aware that coastal flood elevations are also provided in the Summary of Stillwater Elevations tables in the Flood Insurance Study report for this jurisdiction. Elevations shown in the Summary of Stillwater Elevations tables should be used for construction and/or floodplain management purposes when they are higher than the elevations shown on this FIRM.

Boundaries of the **floodways** were computed at cross sections and interpolated between cross sections. The floodways were based on hydraulic considerations with regard to requirements of the National Flood Insurance Program. Floodway widths and other pertinent floodway data are provided in the Flood Insurance Study report for this jurisdiction.

Certain areas not in Special Flood Hazard Areas may be protected by **flood control structures**. Refer to Section 2.4 "Flood Protection Measures" of the Flood Insurance Study report for information on flood control structures for this jurisdiction.

The projection used in the preparation of this map was New Jersey State Plane FIPSZONE 2900. The horizontal datum was NAD 83, GRS80 spheroid. Differences in datum, spheroid, projection or State Plane zones used in the production of FIRMs for adjacent jurisdictions may result in slight positional differences in map features across jurisdiction boundaries. These differences do not affect the accuracy of this FIRM.

Flood elevations on this map are referenced to the North American Vertical Datum of 1988. These flood elevations must be compared to structure and ground elevations referenced to the same vertical datum. For information regarding conversion between the National Geodetic Vertical Datum of 1929 and the North American Vertical Datum of 1988, visit the National Geodetic Survey website at <http://www.ngs.noaa.gov> or contact the National Geodetic Survey at the following address:

NGS Information Services
 NOAA, NWS512
 National Geodetic Survey
 SSMC-3, #9202
 1315 East-West Highway
 Silver Spring, Maryland 20910-3282
 (301) 713-3242

To obtain current elevation, description, and/or location information for **bench marks** shown on this map, please contact the Information Services Branch of the National Geodetic Survey at (301) 713-3242, or visit its website at <http://www.ngs.noaa.gov>.

Base map information shown on this FIRM was provided in digital format by the State of New Jersey Office of Information Technology. This information was derived from digital orthophotos produced at a scale of 1:2400 with a 1-foot pixel resolution from photography dated April 2002.

Based on updated topographic information, this map reflects more detailed and up-to-date **stream channel configurations and floodplain delineations** than those shown on the previous FIRM for this jurisdiction. As a result, the Flood Profiles and Floodway Data tables in the Flood Insurance Study Report (which contains authoritative hydraulic data) may reflect stream channel distances that differ from what is shown on this map. Also, the need to floodplain relationships for unverified streams may differ from what is shown on previous maps.

Corporate limits shown on this map are based on the best data available at the time of publication. Because changes due to annexations or de-annexations may have occurred after this map was published, map users should contact appropriate community officials to verify current corporate limit locations.

Please refer to the separately printed **Map Index** for an overview map of the county showing the layout of map panels, community map repository addresses, and a Listing of Communities table containing National Flood Insurance Program dates for each community as well as a listing of the panels on which each community is located.

Contact the **FEMA Map Service Center** at 1-800-358-9616 for information on available products associated with this FIRM. Available products may include previously issued Letters of Map Change, a Flood Insurance Study report, and/or digital versions of this map. The FEMA Map Service Center may also be reached by Fax at 1-800-358-9620 and its website at <http://mssc.fema.gov>.

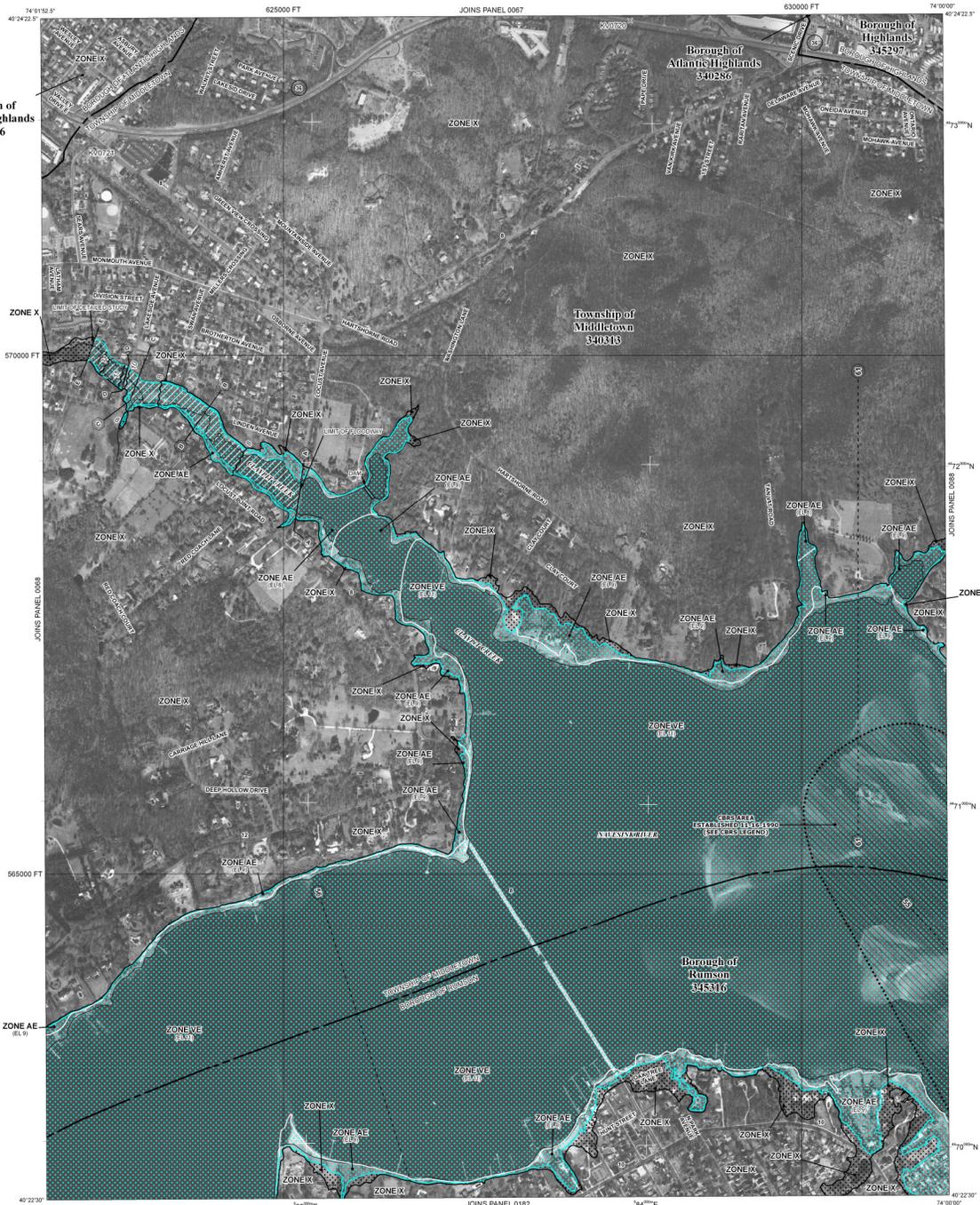
If you have **questions about this map** or questions concerning the National Flood Insurance Program in general, please call 1-877-FEMA-MAP (1-877-336-6271) or visit the FEMA website at <http://www.fema.gov>.

COASTAL BARRIER RESOURCES SYSTEM (CBRS) LEGEND

11-16-1990 CBRS Area
 FLOOD INSURANCE NOT AVAILABLE FOR STRUCTURES NEVLY BUILT OR SUBSTANTIALLY IMPROVED ON OR AFTER NOVEMBER 16, 1990. IN DESIGNATED CBRS AREAS.

11-16-1991 Otherwise Protected Area (OPA)
 FLOOD INSURANCE NOT AVAILABLE FOR STRUCTURES NEVLY BUILT OR SUBSTANTIALLY IMPROVED ON OR AFTER NOVEMBER 16, 1991. IN DESIGNATED OPAs WITHIN THE CBRS.

Boundaries of the John H. Chafee Coastal Barrier Resources System (CBRS) shown on this FIRM were transferred from the official CBRS source maps for this area and are depicted on this FIRM for informational purposes only. The official CBRS maps are enacted by Congress via the Coastal Barrier Resources Act, as amended, and maintained by the U.S. Fish and Wildlife Service (FWS). The official CBRS maps used to determine whether or not an area is located within the CBRS are available for download at <http://www.fws.gov>. For an official determination of whether or not an area is located within the CBRS, or for any questions regarding the CBRS, please contact the FWS field office for this area at (609) 446-9310.



LEGEND

SPECIAL FLOOD HAZARD AREAS SUBJECT TO INUNDATION BY THE 1% ANNUAL CHANCE FLOOD

The 1% annual flood (100-year flood), also known as the base flood, is the flood that has a 1% chance of being equal or exceeded in any given year. The Special Flood Hazard Area is the area subject to flooding by the 1% annual chance flood. Areas of Special Flood Hazard include Zone A, AE, AH, AO, AR, AR9, V, and VE. The Base Flood Elevation is the water-surface elevation of the 1% annual chance flood.

ZONE A No Base Flood Elevations determined.

ZONE AE Base Flood Elevations determined.

ZONE AH Flood depths of 1 to 3 feet (usually areas of ponds); Base Flood Elevations determined.

ZONE AO Flood depths of 1 to 3 feet (usually sheet flow or sloping terrain); average depth determined. For areas of alluvial fan flooding, velocities also determined.

ZONE AR Special Flood Hazard Area formerly protected from the 1% annual chance flood by a flood control system that was subsequently determined. Zone AR indicates that the former flood control system is being restored to provide protection from the 1% annual chance flood.

ZONE AR9 Area to be protected from 1% annual chance flood by a Federal flood protection system under construction; no Base Flood Elevations determined.

ZONE VE Coastal flood zone with velocity hazard (wave action); no Base Flood Elevations determined.

ZONE VE Coastal flood zone with velocity hazard (wave action); Base Flood Elevations determined.

FLOODWAY AREAS IN ZONE AE

The floodway is the channel of a stream plus any adjacent floodplain areas that must be kept free of encroachment so that the 1% annual chance flood can be carried without substantial increases in flood heights.

OTHER FLOOD AREAS

ZONE X Areas of 0.2% annual chance flood; areas of 1% annual chance flood with average depths of less than 1 foot or shallower depths where less than 1 square mile, and areas protected by levees from 1% annual chance flood.

OTHER AREAS

Areas determined to be outside the 0.2% annual chance floodplain. Areas in which flood hazards are undetermined, but possible.

COASTAL BARRIER RESOURCES SYSTEM (CBRS) AREAS

OTHERWISE PROTECTED AREAS (OPAs)

CBRS areas and OPAs are normally located within or adjacent to Special Flood Hazard Areas.

- 1% annual chance floodplain boundary
- 0.2% annual chance floodplain boundary
- Floodway boundary
- Zone boundary
- CBRS and OPA boundary
- Boundary dividing Special Flood Hazard Area Zones and boundary dividing Special Flood Hazard Areas of different Base Flood Elevations, flood depths or flood velocities.
- Base Flood Elevation line and value, elevation in feet
- Base Flood Elevation value where uniform within zone elevation in feet

(EL 987)

1' referenced to the North American Vertical Datum of 1988

- Transect line
- Geographic coordinates referenced to the North American Datum of 1983 (NAD 83), Western Hemisphere
- 1000-meter Universal Transverse Mercator grid values, zone 18N
- 5000-foot grid ticks: New Jersey State Plane coordinate system (FIPSZONE 2900), Transverse Mercator projection
- Bench mark (see explanation in Notes to Users section of this FIRM panel)
- River Mile

MAP REPOSITORY
 Refer to listing of Map Repositories on Map Index.

EFFECTIVE DATE OF COUNTY-WIDE FLOOD INSURANCE RATE MAP
 September 25, 2009

EFFECTIVE DATE(S) OF REVISION(S) TO THIS PANEL

For community map revision history prior to countywide mapping, refer to the Community Map History table located in the Flood Insurance Study report for this jurisdiction.

To determine if flood insurance is available in a community, contact your insurance agent or call the National Flood Insurance Program at 1-800-338-6262.

MAP SCALE 1" = 500'

0 250 500 1000 FEET
 0 150 300 METERS

NFIP PANEL 0069F

FIRM
 FLOOD INSURANCE RATE MAP
 MONMOUTH COUNTY,
 NEW JERSEY
 (ALL JURISDICTIONS)

PANEL 69 OF 457
 (SEE MAP INDEX FOR FIRM PANEL LAYOUT)

COUNTIES	COMMUNITIES	NUMBER	PANEL	SUFFIX
MONMOUTH COUNTY	ATLANTIC HIGHLANDS	0069	0069	F
	HIGHLAND, BOROUGH OF	04027	0069	F
	MIDDLETOWN TOWNSHIP	04028	0069	F
	RAMPTON TOWNSHIP	04029	0069	F

NOTE
 THIS MAP INCLUDES BOUNDARIES OF THE COASTAL BARRIER RESOURCES SYSTEM ESTABLISHED UNDER THE COASTAL BARRIER RESOURCES ACT, AS AMENDED, AND MAINTAINED BY THE U.S. FISH AND WILDLIFE SERVICE.

Notice to User: The Map Number shown below should be used when placing map orders. The Community Number shown above should be used on insurance applications for the subject community.

MAP NUMBER
 34025C0069F

EFFECTIVE DATE
 SEPTEMBER 25, 2009

Federal Emergency Management Agency

NOTES TO USERS

This map is for use in administering the National Flood Insurance Program. It does not necessarily identify areas subject to flooding, particularly from local drainage sources of small size. The community map repository should be consulted for possible updated or additional flood hazard information.

To obtain more detailed information in areas where **Base Flood Elevations (BFEs)** and/or **floodways** have been determined, users are encouraged to consult the Flood Profiles and Floodway Data and/or Summary of Stillwater Elevations tables contained within the Flood Insurance Study (FIS) report that accompanies this FIRM. Users should be aware that BFEs shown on the FIRM represent rounded whole-foot elevations. These BFEs are intended for flood insurance rating purposes only and should not be used as the sole source of flood elevation information. Accordingly, flood elevation data presented in the FIS report should be utilized in conjunction with the FIRM for purposes of construction and/or floodplain management.

Coastal Base Flood Elevations shown on this map apply only landward of 1/8 mile from the National Tidal Datum of 1988 (NAD 83). Users of this FIRM should be aware that coastal flood elevations are also provided in the Summary of Stillwater Elevations tables in the Flood Insurance Study report for this jurisdiction. Elevations shown in the Summary of Stillwater Elevations tables should be used for construction and/or floodplain management purposes when they are higher than the elevations shown on this FIRM.

Boundaries of the **floodways** were computed at cross sections and interpolated between cross sections. The floodways were based on hydraulic considerations with regard to requirements of the National Flood Insurance Program. Floodway widths and other pertinent floodway data are provided in the Flood Insurance Study report for this jurisdiction.

Certain areas not in Special Flood Hazard Areas may be protected by **flood control structures**. Refer to Section 2.4 "Flood Protection Measures" of the Flood Insurance Study report for information on flood control structures for this jurisdiction.

The projection used in the preparation of this map was New Jersey State Plane FIPS/ZONE 2900. The horizontal datum was NAD 83, GRS80 spheroid. Differences in datum, spheroid, projection or State Plane zones used in the production of FIRMs for adjacent jurisdictions may result in slight positional differences in map features across jurisdiction boundaries. These differences do not affect the accuracy of this FIRM.

Flood elevations on this map are referenced to the North American Vertical Datum of 1988. These flood elevations must be compared to structure and ground elevations referenced to the same vertical datum. For information regarding conversion between the National Geodetic Vertical Datum of 1929 and the North American Vertical Datum of 1988, visit the National Geodetic Survey website at <http://www.ngs.noaa.gov> or contact the National Geodetic Survey at the following address:

NGS Information Services
 NOAA, NWS/312
 National Geodetic Survey
 SSMC-3, #9202
 1315 East-West Highway
 Silver Spring, Maryland 20910-3282
 (301) 713-3242

To obtain current elevation, description, and/or location information for **bench marks** shown on this map, please contact the Information Services Branch of the National Geodetic Survey at (301) 713-3242, or visit its website at <http://www.ngs.noaa.gov>.

Base map information shown on this FIRM was provided in digital format by the State of New Jersey Office of Information Technology. This information was derived from digital orthophotos produced at a scale of 1:2400 with a 1-foot pixel resolution from photography dated April 2002.

Based on updated topographic information, this map reflects more detailed and up-to-date **stream channel configurations and floodplain delineations** than those shown on the previous FIRM for this jurisdiction. As a result, the Flood Profiles and Floodway Data tables in the Flood Insurance Study Report (which contains authoritative hydraulic data) may reflect stream channel distances that differ from what is shown on this map. Also, the need to floodplain relationships for unreviewed streams may differ from what is shown on previous maps.

Corporate limits shown on this map are based on the best data available at the time of publication. Because changes due to annexations or de-annexations may have occurred after this map was published, map users should contact appropriate community officials to verify current corporate limit locations.

Please refer to the separately printed **Map Index** for an overview map of the county showing the layout of map panels, community map repository addresses, and a Listing of Communities table containing National Flood Insurance Program rates for each community as well as a listing of the panels on which each community is located.

Contact the **FEMA Map Service Center** at 1-800-358-9616 for information on available products associated with this FIRM. Available products may include previously issued Letters of Map Change, a Flood Insurance Study report, and/or digital versions of this map. The FEMA Map Service Center may also be reached by Fax at 1-800-358-9620 and its website at <http://mmsc.fema.gov>.

If you have **questions about this map** or questions concerning the National Flood Insurance Program in general, please call 1-877-FEMA-Map (1-877-336-2627) or visit the FEMA website at <http://www.fema.gov>.

COASTAL BARRIER RESOURCES SYSTEM (CBRS) LEGEND

11-16-1990 CBRS Area
 FLOOD INSURANCE NOT AVAILABLE FOR STRUCTURES NEWLY BUILT OR SUBSTANTIALLY IMPROVED ON OR AFTER NOVEMBER 16, 1990, IN DESIGNATED CBRS AREAS.

11-16-1991 Otherwise Protected Area (OPA)
 FLOOD INSURANCE NOT AVAILABLE FOR STRUCTURES NEWLY BUILT OR SUBSTANTIALLY IMPROVED ON OR AFTER NOVEMBER 16, 1991, IN DESIGNATED OPAs WITHIN THE CBRS.

Boundaries of the John H. Chafee Coastal Barrier Resources System (CBRS) shown on this FIRM were transferred from the official CBRS source maps for this area and are depicted on this FIRM for informational purposes only. The official CBRS maps are enacted by Congress via the Coastal Barrier Resources Act, as amended, and maintained by the U.S. Fish and Wildlife Service (FWS). The official CBRS maps used to determine whether or not an area is located within the CBRS are available for download at <http://www.fws.gov>. For an official determination of whether or not an area is located within the CBRS, or for any questions regarding the CBRS, please contact the FWS field office for this area at (609) 646-9310.

LEGEND

SPECIAL FLOOD HAZARD AREAS SUBJECT TO INUNDATION BY THE 1% ANNUAL CHANCE FLOOD

The 1% annual flood (100-year flood), also known as the base flood, is the flood that has a 1% chance of being equal or exceeded in any given year. The Special Flood Hazard Area is the area subject to flooding by the 1% annual chance flood. Areas of Special Flood Hazard include Zone A, AE, AH, AO, AR, AVS, V, and VE. The Base Flood Elevation is the water-surface elevation of the 1% annual chance flood.

ZONE A No Base Flood Elevations determined.
ZONE AE Base Flood Elevations determined.
ZONE AH Flood depths of 1 to 3 feet (usually areas of ponds); Base Flood Elevations determined.
ZONE AO Flood depths of 1 to 3 feet (usually sheet flow or sloping terrain); average depths determined. For areas of alluvial fan flooding, velocities also determined.
ZONE AR Special Flood Hazard Area formerly protected from the 1% annual chance flood by a flood control system that was subsequently determined. Zone AR indicates that the former flood control system is being restored to provide protection from the 1% annual chance flood.
ZONE ARB Areas to be protected from 1% annual chance flood by a Federal flood protection system under construction; no Base Flood Elevations determined.
ZONE AV Coastal flood zone with velocity hazard (wave action); no Base Flood Elevations determined.
ZONE VE Coastal flood zone with velocity hazard (wave action); Base Flood Elevations determined.

FLOODWAY AREAS IN ZONE AE

The floodway is the channel of a stream plus any adjacent floodplain areas that must be kept free of encroachment so that the 1% annual chance flood can be carried without substantial increases in flood heights.

OTHER FLOOD AREAS

ZONE X Areas of 0.2% annual chance flood; areas of 1% annual chance flood with average depths of less than 1 foot or with drainage areas less than 1 square mile; and areas protected by levees from 1% annual chance flood.

OTHER AREAS

ZONE D Areas determined to be outside the 0.2% annual chance floodplain.
ZONE D Areas in which flood hazards are undetermined, but possible.
COASTAL BARRIER RESOURCES SYSTEM (CBRS) AREAS
OTHERWISE PROTECTED AREAS (OPAs)
 CBRS areas and OPAs are normally located within or adjacent to Special Flood Hazard Areas.

1% annual chance floodplain boundary
 Floodway boundary
 Zone D boundary
 CBRS and OPA boundary
 Boundary dividing Special Flood Hazard Area Zones and boundary dividing Special Flood Hazard Areas of different Base Flood Elevations, flood depths or flood velocities.
 Base Flood Elevation line and value, elevation in feet*
 Base Flood Elevation value where uniform within zone elevation in feet*
 (EL 987)

* Referenced to the North American Vertical Datum of 1988
 Cross section line
 Transect line
 Geographic coordinates referenced to the North American Datum of 1983 (NAD 83), Western Hemisphere
 1000-meter Universal Transverse Mercator grid values, zone 18N
 5000-foot grid ticks: New Jersey State Plane coordinate system (FIPS/ZONE 2900), Transverse Mercator projection
 6000000 FT
 Bench mark (see explanation in Notes to Users section of this FIRM panel)
 River Mile
 M1.5

MAP REPOSITORY
 Refer to listing of Map Repositories on Map Index.
EFFECTIVE DATE OF COUNTY/WIDE FLOOD INSURANCE RATE MAP
 September 25, 2009
EFFECTIVE DATE(S) OF REVISION(S) TO THIS PANEL

For community map revision history prior to countywide mapping, refer to the Community Map History table located in the Flood Insurance Study report for this jurisdiction.
 To determine if flood insurance is available in this community, contact your Insurance agent or call the National Flood Insurance Program at 1-800-338-6363.

MAP SCALE 1" = 500'
 0 500 1000 FEET
 0 150 300 METERS



NFIP PANEL 0088F

FIRM FLOOD INSURANCE RATE MAP

MONMOUTH COUNTY, NEW JERSEY (ALL JURISDICTIONS)

PANEL 86 OF 457
 (SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS			
COMMUNITY	NUMBER	PANEL	SUFFIX
HIGHLANDS, BOROUGH OF	345207	0088	F
MIDDLETOWN, TOWNSHIP OF	340313	0088	F
RUMSON, BOROUGH OF	345316	0088	F
SUN BRIGHT, BOROUGH OF	345317	0088	F

NOTE:
 THIS MAP INCLUDES BOUNDARIES OF THE COASTAL BARRIER RESOURCES SYSTEM AS ESTABLISHED BY THE COASTAL BARRIER RESOURCES ACT OF 1982 AND/OR SUBSEQUENT REVISIONS. LEGISLATION.

Notice to User: The Map Number shown below should be used when placing map orders. The Community Number shown above should be used on insurance applications for the subject community.

MAP NUMBER 34025C0088F
EFFECTIVE DATE SEPTEMBER 25, 2009

Federal Emergency Management Agency

NOTES TO USERS

This map is for use in administering the National Flood Insurance Program. It does not necessarily identify areas subject to flooding, particularly from local drainage sources of small size. The community map repository should be consulted for possible updated or additional flood hazard information.

To obtain more detailed information in areas where **Base Flood Elevations (BFEs)** and/or **floodways** have been determined, users are encouraged to consult the Flood Profiles and Floodway Data and/or Summary of Stillwater Elevations tables contained within the Flood Insurance Study (FIS) report that accompanies this FIRM. Users should be aware that BFEs shown on the FIRM represent rounded whole-foot elevations. These BFEs are intended for flood insurance rating purposes only and should not be used as the sole source of flood elevation information. Accordingly, flood elevation data presented in the FIS report should be utilized in conjunction with the FIRM for purposes of construction and/or floodplain management.

Coastal Base Flood Elevations shown on this map apply only landward of 17 North American Vertical Datum of 1988 (NAVD 88). Users of this FIRM should be aware that coastal flood elevations are also provided in the Summary of Stillwater Elevations tables in the Flood Insurance Study report for this jurisdiction. Elevations shown in the Summary of Stillwater Elevations tables should be used for construction and/or floodplain management purposes when they are higher than the elevations shown on this FIRM.

Boundaries of the **floodways** were computed at cross sections and interpolated between cross sections. The floodways were based on hydraulic considerations with regard to requirements of the National Flood Insurance Program. Floodway widths and other pertinent floodway data are provided in the Flood Insurance Study report for this jurisdiction.

Certain areas not in Special Flood Hazard Areas may be protected by **flood control structures**. Refer to Section 2.4 "Flood Protection Measures" of the Flood Insurance Study report for information on flood control structures for this jurisdiction.

The projection used in the preparation of this map was New Jersey State Plane FIPSZONE 2900. The **horizontal datum** was NAD 83, GRS80 spheroid. Differences in datum, spheroid, projection or State Plane zones used in the production of FIRMs for adjacent jurisdictions may result in slight positional differences in map features across jurisdiction boundaries. These differences do not affect the accuracy of this FIRM.

Flood elevations on this map are referenced to the North American Vertical Datum of 1988. These flood elevations must be compared to structure and ground elevations referenced to the same **vertical datum**. For information regarding conversion between the National Geodetic Vertical Datum of 1929 and the North American Vertical Datum of 1988, visit the National Geodetic Survey website at <http://www.ngs.noaa.gov> or contact the National Geodetic Survey at the following address:

NGS Information Services
 NOAA, NWS512
 National Geodetic Survey
 SSMC-3, #9202
 1215 East-West Highway
 Silver Spring, Maryland 20910-3282
 (301) 713-3242

To obtain current elevation, description, and/or location information for **bench marks** shown on this map, please contact the Information Services Branch of the National Geodetic Survey at (301) 713-3242, or visit its website at <http://www.ngs.noaa.gov>.

Base map information shown on this FIRM was provided in digital format by the State of New Jersey Office of Information Technology. This information was derived from digital orthophotos produced at a scale of 1:2400 with a 1-foot pixel resolution from photography dated April 2002.

Based on updated topographic information, this map reflects more detailed and up-to-date **stream channel configurations and floodplain delineations** than those shown on the previous FIRM for this jurisdiction. As a result, the Flood Profiles and Floodway Data tables in the Flood Insurance Study Report (which contains authoritative hydraulic data) may reflect stream channel distances that differ from what is shown on this map. Also, the need to floodplain relationships for unreviewed streams may differ from what is shown on previous maps.

Corporate limits shown on this map are based on the best data available at the time of publication. Because changes due to annexations or de-annexations may have occurred after this map was published, map users should contact appropriate community officials to verify current corporate limit locations.

Please refer to the separately printed **Map Index** for an overview map of the county showing the layout of map panels; community map repository addresses; and a Listing of Communities table containing National Flood Insurance Program rates for each community as well as a listing of the panels on which each community is located.

Contact the **FEMA Map Service Center** at 1-800-358-6616 for information on available products associated with this FIRM. Available products may include previously issued Letters of Map Change, a Flood Insurance Study report, and/or digital versions of this map. The FEMA Map Service Center may also be reached by Fax at 1-800-358-6620 and its website at <http://msc.fema.gov>.

If you have **questions about this map** or questions concerning the National Flood Insurance Program in general, please call 1-877-FEMA-MAP (1-877-336-6271) or visit the FEMA website at <http://www.fema.gov>.



LEGEND

SPECIAL FLOOD HAZARD AREAS SUBJECT TO INUNDATION BY THE 1% ANNUAL CHANCE FLOOD

The 1% annual flood (100-year flood), also known as the base flood, is the flood that has a 1% chance of being equal or exceeded in any given year. The Special Flood Hazard Area is the area subject to flooding by the 1% annual chance flood. Areas of Special Flood Hazard include Zone A, AE, AH, AO, AR, AR1, V, and VE. The Base Flood Elevation is the water-surface elevation of the 1% annual chance flood.

ZONE A No Base Flood Elevations determined.

ZONE AE Base Flood Elevations determined.

ZONE AH Flood depths of 1 to 3 feet (usually areas of ponds); Base Flood Elevations determined.

ZONE AO Flood depths of 1 to 3 feet (usually sheet flow on sloping terrain); average depths determined. For areas of alluvial fan flooding, velocities also determined.

ZONE AR Special Flood Hazard Area formerly protected from the 1% annual chance flood by a flood control system that was subsequently determined. Zone AR indicates that the former flood control system is being restored by protection from the 1% annual chance flood.

ZONE AR1 Area to be protected from 1% annual chance flood by a Federal flood protection system under construction; no Base Flood Elevations determined.

ZONE VE Coastal flood zone with velocity hazard (wave action); no Base Flood Elevations determined.

ZONE VE Coastal flood zone with velocity hazard (wave action); Base Flood Elevations determined.

FLOODWAY AREAS IN ZONE AE

The floodway is the channel of a stream plus any adjacent floodplain areas that must be kept free of encroachments so that the 1% annual chance flood can be carried without substantial increases in flood heights.

OTHER FLOOD AREAS

ZONE X Areas of 0.2% annual chance flood; areas of 1% annual chance flood with average depths of less than 1 foot to drainage areas less than 1 square mile; and areas protected by levees from 1% annual chance flood.

OTHER AREAS

Areas determined to be outside the 0.2% annual chance floodplain.

Areas in which flood hazards are undetermined, but possible.

COASTAL BARRIER RESOURCES SYSTEM (CBRS) AREAS

OTHERWISE PROTECTED AREAS (OPAs)

CBRS areas and OPAs are normally located within or adjacent to Special Flood Hazard Areas.

- 1% annual chance floodplain boundary
- 0.2% annual chance floodplain boundary
- Floodway boundary
- Zone A boundary
- CBRS and OPA boundary
- Boundary dividing Special Flood Hazard Area Zones and boundary dividing Special Flood Hazard Areas of different Base Flood Elevations, flood depths or flood velocities.
- Base Flood Elevation line and value, elevation in feet
- Base Flood Elevation value uniform within zone, elevation in feet

1' referenced to the North American Vertical Datum of 1988

- Transect line
- Geographic coordinates referenced to the North American Datum of 1983 (NAD 83), Western Hemisphere
- 1000-meter Universal Transverse Mercator grid values, zone 18N
- 5000-foot grid ticks: New Jersey State Plane coordinate system (FIPSZONE 2900), Transverse Mercator projection
- Bench mark (see explanation in Notes to Users section of this FIRM panel)
- River Mile

MAP REPOSITORY
 Refer to listing of Map Repositories on Map Index.

EFFECTIVE DATE OF COUNTYWIDE FLOOD INSURANCE RATE MAP
 September 25, 2009

EFFECTIVE DATE(S) OF REVISION(S) TO THIS PANEL

For community map revision history prior to countywide mapping, refer to the Community Map History table located in the Flood Insurance Study report for this jurisdiction.

To determine if flood insurance is available in this community, contact your Insurance agent or call the National Flood Insurance Program at 1-800-338-6363.

MAP SCALE 1" = 500'
 250 0 500 1000 FEET
 150 0 150 300 METERS

NFIP PANEL 0182F

FIRM
 FLOOD INSURANCE RATE MAP
 MONMOUTH COUNTY,
 NEW JERSEY
 (ALL JURISDICTIONS)

PANEL 182 OF 457
 (SEE MAP INDEX FOR FIRM PANEL LAYOUT)

COMMUNITY	NUMBER	PANEL	SUFFIX
FAIR HAVEN, BOROUGH OF	34020	0182	F
LITTLE SILVER, BOROUGH OF	34030	0182	F
RUMSON, BOROUGH OF	34050	0182	F

Notice to User: The Map Number shown below should be used when placing map orders. The Community Number shown above should be used on insurance applications for the subject community.

MAP NUMBER
 34025C0182F

EFFECTIVE DATE
 SEPTEMBER 25, 2009

Federal Emergency Management Agency

Borough of Little Silver 340305

NOTES TO USERS

This map is for use in administering the National Flood Insurance Program. It does not necessarily identify areas subject to flooding, particularly from local drainage sources of small size. The community map repository should be consulted for possible updated or additional flood hazard information.

To obtain more detailed information in areas where **Base Flood Elevations (BFEs)** and/or **floodways** have been determined, users are encouraged to consult the Flood Profiles and Floodway Data and/or Summary of Stillwater Elevations tables contained within the Flood Insurance Study (FIS) report that accompanies this FIRM. Users should be aware that BFEs shown on the FIRM represent rounded whole-foot elevations. These BFEs are intended for flood insurance rating purposes only and should not be used as the sole source of flood elevation information. Accordingly, flood elevation data presented in the FIS report should be utilized in conjunction with the FIRM for purposes of construction and/or floodplain management.

Coastal Base Flood Elevations shown on this map apply only landward of 0.7 North American Vertical Datum of 1988 (NAVD 88). Users of this FIRM should be aware that coastal flood elevations are also provided in the Summary of Stillwater Elevations tables in the Flood Insurance Study report for this jurisdiction. Elevations shown in the Summary of Stillwater Elevations tables should be used for construction and/or floodplain management purposes when they are higher than the elevations shown on this FIRM.

Boundaries of the **floodways** were computed at cross sections and interpolated between cross sections. The floodways were based on hydraulic considerations with regard to requirements of the National Flood Insurance Program. Floodway widths and other pertinent floodway data are provided in the Flood Insurance Study report for this jurisdiction.

Certain areas not in Special Flood Hazard Areas may be protected by **flood control structures**. Refer to Section 2.4 "Flood Protection Measures" of the Flood Insurance Study report for information on flood control structures for this jurisdiction.

The projection used in the preparation of this map was New Jersey State Plane FIPSZONE 2900. The horizontal datum was NAD 83, GRS80 spheroid. Differences in datum, spheroid, projection or State Plane zones used in the production of FIRMs for adjacent jurisdictions may result in slight positional differences in map features across jurisdiction boundaries. These differences do not affect the accuracy of this FIRM.

Flood elevations on this map are referenced to the North American Vertical Datum of 1988. These flood elevations must be compared to structure and ground elevations referenced to the same vertical datum. For information regarding conversion between the National Geodetic Vertical Datum of 1929 and the North American Vertical Datum of 1988, visit the National Geodetic Survey website at <http://www.ngs.noaa.gov> or contact the National Geodetic Survey at the following address:

NGS Information Services
 NOAA, NWS512
 National Geodetic Survey
 SSMC-3, #9202
 1315 East-West Highway
 Silver Spring, Maryland 20910-3282
 (301) 713-3242

To obtain current elevation, description, and/or location information for **bench marks** shown on this map, please contact the Information Services Branch of the National Geodetic Survey at (301) 713-3242, or visit its website at <http://www.ngs.noaa.gov>.

Base map information shown on this FIRM was provided in digital format by the State of New Jersey Office of Information Technology. This information was derived from digital orthophotos produced at a scale of 1:2400 with a 1-foot pixel resolution from photography dated April 2002.

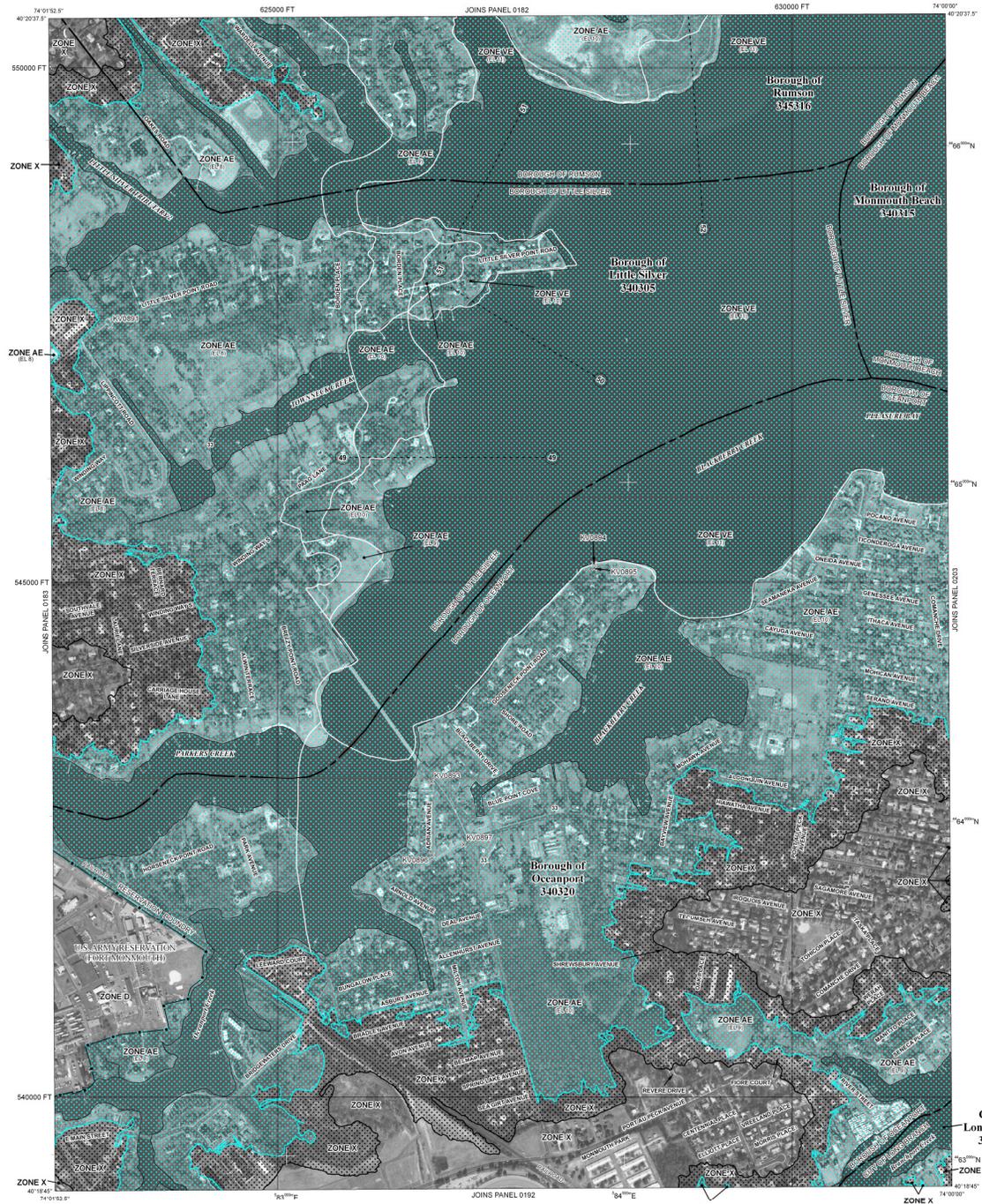
Based on updated topographic information, this map reflects more detailed and up-to-date **stream channel configurations and floodplain delineations** than those shown on the previous FIRM for this jurisdiction. As a result, the Flood Profiles and Floodway Data tables in the Flood Insurance Study Report (which contains authoritative hydraulic data) may reflect stream channel distances that differ from what is shown on this map. Also, the need to floodplain relationships for unreviewed streams may differ from what is shown on previous maps.

Corporate limits shown on this map are based on the best data available at the time of publication. Because changes due to annexations or de-annexations may have occurred after this map was published, map users should contact appropriate community officials to verify current corporate limit locations.

Please refer to the separately printed **Map Index** for an overview map of the county showing the layout of map panels, community map repository addresses, and a Listing of Communities table containing National Flood Insurance Program dates for each community as well as a listing of the panels on which each community is located.

Contact the **FEMA Map Service Center** at 1-800-358-9616 for information on available products associated with this FIRM. Available products may include previously issued Letters of Map Change, a Flood Insurance Study report, and/or digital versions of this map. The FEMA Map Service Center may also be reached by Fax at 1-800-358-9620 and its website at <http://msc.fema.gov>.

If you have **questions about this map** or questions concerning the National Flood Insurance Program in general, please call 1-877-FEMA-MAP (1-877-336-2627) or visit the FEMA website at <http://www.fema.gov>.



LEGEND

SPECIAL FLOOD HAZARD AREAS SUBJECT TO INUNDATION BY THE 1% ANNUAL CHANCE FLOOD

The 1% annual flood (100-year flood), also known as the base flood, is the flood that has a 1% chance of being equal or exceeded in any given year. The Special Flood Hazard Area is the area subject to flooding by the 1% annual chance flood. Areas of Special Flood Hazard include Zone A, AE, AH, AO, AR, AR1, V, and VE. The Base Flood Elevation is the water-surface elevation of the 1% annual chance flood.

ZONE A No Base Flood Elevations determined.

ZONE AE Base Flood Elevations determined.

ZONE AH Flood depths of 1 to 3 feet (usually areas of ponds); Base Flood Elevations determined.

ZONE AO Flood depths of 1 to 3 feet (usually sheet flow on sloping terrain); average depth determined. (Areas of shallow fan flooding, velocities also determined.)

ZONE AR Special Flood Hazard Area formerly protected from the 1% annual chance flood by a flood control system that was subsequently determined. Zone AR indicates that the former flood control system is being restored to provide protection from the 1% annual chance flood.

ZONE AR1 Areas to be protected from 1% annual chance flood by a Federal flood protection system under construction; no Base Flood Elevations determined.

ZONE V Coastal flood zone with velocity hazard (wave action); no Base Flood Elevations determined.

ZONE VE Coastal flood zone with velocity hazard (wave action); Base Flood Elevations determined.

FLOODWAY AREAS IN ZONE AE

The floodway is the channel of a stream plus any adjacent floodplain areas that must be kept free of encroachment so that the 1% annual chance flood can be carried without substantial increases in flood heights.

OTHER FLOOD AREAS

ZONE X Areas of 0.2% annual chance flood; areas of 1% annual chance flood with average depths of less than 1 foot or with drainage areas less than 1 square mile, and areas protected by levees from 1% annual chance flood.

OTHER AREAS

ZONE D Areas determined to be outside the 0.2% annual chance floodplain. Areas in which flood hazards are undetermined, but possible.

COASTAL BARRIER RESOURCES SYSTEM (CBRS) AREAS

OTHERWISE PROTECTED AREAS (OPAs)

CBRS areas and OPAs are normally located within or adjacent to Special Flood Hazard Areas.

1% annual chance floodplain boundary
 0.2% annual chance floodplain boundary
 Floodway boundary
 Zone D boundary
 CBRS and OPA boundary
 Boundary dividing Special Flood Hazard Area Zones and boundary dividing Special Flood Hazard Areas of different Base Flood Elevations, flood depths or flood velocities.
 Base Flood Elevation line and value, elevation in feet*
 Base Flood Elevation value where uniform within zone, elevation in feet

* Referenced to the North American Vertical Datum of 1988

Transect line
 Geographic coordinates referenced to the North American Datum of 1983 (NAD 83), Western Hemisphere
 1000-meter Universal Transverse Mercator grid values, zone 18N
 5000-foot grid ticks: New Jersey State Plane coordinate system (FIPSZONE 2900), Transverse Mercator projection

Bench mark (see explanation in Notes to Users section of this FIRM panel)
 River Mile

MAP REPOSITORY
 Refer to listing of Map Repositories on Map Index.
 EFFECTIVE DATE OF COUNTY-WIDE FLOOD INSURANCE RATE MAP
 September 25, 2009
 EFFECTIVE DATE(S) OF REVISION(S) TO THIS PANEL

For community map revision history prior to countywide mapping, refer to the Community Map History table located in the Flood Insurance Study report for this jurisdiction.
 To determine if flood insurance is available in this community, contact your insurance agent or call the National Flood Insurance Program at 1-800-338-6262.

MAP SCALE 1" = 500'
 250 0 500 1000 FEET
 150 0 150 300 METERS

NFIP PANEL 0184F

FIRM
 FLOOD INSURANCE RATE MAP
 MONMOUTH COUNTY,
 NEW JERSEY
 (ALL JURISDICTIONS)

PANEL 184 OF 457
 (SEE MAP INDEX FOR FIRM PANEL LAYOUT)

COMMUNITY	NUMBER	PANEL	SUFFIX
LITTLE SILVER BOROUGH OF	340031	0184	F
LONG BRANCH CITY OF	340032	0184	F
MONMOUTH BEACH BOROUGH OF	340033	0184	F
OCEANPORT CITY OF	340034	0184	F
RUMSON BOROUGH OF	340035	0184	F

Notice to User: This Map Number shown below should be used when placing map orders. The Community Number shown above should be used on insurance applications for the subject community.

MAP NUMBER
34025C0184F
 EFFECTIVE DATE
SEPTEMBER 25, 2009
 Federal Emergency Management Agency

NOTES TO USERS

This map is for use in administering the National Flood Insurance Program. It does not necessarily identify all areas subject to flooding, particularly from local drainage sources of small size. The community map repository should be consulted for possible updated or additional flood hazard information.

To obtain more detailed information in areas where **Base Flood Elevations (BFEs)** and/or **floodways** have been determined, users are encouraged to consult the Flood Profiles and Floodway Data and/or Summary of Stillwater Elevations tables contained within the Flood Insurance Study (FIS) report that accompanies this FIRM. Users should be aware that BFEs shown on the FIRM represent rounded whole-foot elevations. These BFEs are intended for flood insurance rating purposes only and should not be used as the sole source of flood elevation information. Accordingly, flood elevation data presented in the FIS report should be utilized in conjunction with the FIRM for purposes of construction and/or floodplain management.

Coastal Base Flood Elevations shown on this map apply only landward of 0.7 North American Vertical Datum of 1988 (NAVD 88). Users of this FIRM should be aware that coastal flood elevations are also provided in the Summary of Stillwater Elevations tables in the Flood Insurance Study report for this jurisdiction. Elevations shown in the Summary of Stillwater Elevations tables should be used for construction and/or floodplain management purposes when they are higher than the elevations shown on this FIRM.

Boundaries of the **floodways** were computed at cross sections and interpolated between cross sections. The floodways were based on hydraulic considerations with regard to requirements of the National Flood Insurance Program. Floodway widths and other pertinent floodway data are provided in the Flood Insurance Study report for this jurisdiction.

Certain areas not in Special Flood Hazard Areas may be protected by **flood control structures**. Refer to Section 2.4 "Flood Protection Measures" of the Flood Insurance Study report for information on flood control structures for this jurisdiction.

The projection used in the preparation of this map was New Jersey State Plane FIPSZONE 2900. The **horizontal datum** was NAD 83, GRS80 spheroid. Differences in datum, spheroid, projection or State Plane zones used in the production of FIRMs for adjacent jurisdictions may result in slight positional differences in map features across jurisdiction boundaries. These differences do not affect the accuracy of the FIRM.

Flood elevations on this map are referenced to the North American Vertical Datum of 1988. These flood elevations must be compared to structure and ground elevations referenced to the same vertical datum. For information regarding conversion between the National Geodetic Vertical Datum of 1929 and the North American Vertical Datum of 1988, visit the National Geodetic Survey website at <http://www.ngs.noaa.gov> or contact the National Geodetic Survey at the following address:

NGS Information Services
 NOAA, NVD512
 National Geodetic Survey
 SSMC-3, #6202
 1315 East-West Highway
 Silver Spring, Maryland 20910-3282
 (301) 713-3242

To obtain current elevation, description, and/or location information for **bench marks** shown on this map, please contact the Information Services Branch of the National Geodetic Survey at (301) 713-3242, or visit its website at <http://www.ngs.noaa.gov>.

Base map information shown on this FIRM was provided in digital format by the State of New Jersey Office of Information Technology. This information was derived from digital orthophotos produced at a scale of 1:2400 with a 1-foot pixel resolution from photography dated April 2002.

Based on updated topographic information, this map reflects more detailed and up-to-date **stream channel configurations and floodplain delineations** than those shown on the previous FIRM for this jurisdiction. As a result, the Flood Profiles and Floodway Data tables in the Flood Insurance Study Report (which contains authoritative hydraulic data) may reflect stream channel distances that differ from what is shown on this map. Also, the need to floodplain relationships for unreviewed streams may differ from what is shown on previous maps.

Corporate limits shown on this map are based on the best data available at the time of publication. Because changes due to annexations or de-annexations may have occurred after this map was published, map users should contact appropriate community officials to verify current corporate limit locations.

Please refer to the separately printed **Map Index** for an overview map of the county showing the layout of map panels, community map repository addresses, and a Listing of Communities table containing National Flood Insurance Program dates for each Community as well as a listing of the panels on which each community is located.

Contact the **FEMA Map Service Center** at 1-800-358-9616 for information on available products associated with this FIRM. Available products may include previously issued Letters of Map Change, a Flood Insurance Study report, and/or digital versions of this map. The FEMA Map Service Center may also be reached by Fax at 1-800-358-9620 and its website at <http://masc.fema.gov>.

If you have **questions about this map** or questions concerning the National Flood Insurance Program in general, please call 1-877-FEMA-Map (1-877-336-2627) or visit the FEMA website at <http://www.fema.gov>.

COASTAL BARRIER RESOURCES SYSTEM (CBRS) LEGEND

11-16-1990 CBRS Area
 FLOOD INSURANCE NOT AVAILABLE FOR STRUCTURES NEWLY BUILT OR SUBSTANTIALLY IMPROVED ON OR AFTER NOVEMBER 16, 1990, IN DESIGNATED CBRS AREAS.

11-16-1991 Otherwise Protected Area (OPA)
 FLOOD INSURANCE NOT AVAILABLE FOR STRUCTURES NEWLY BUILT OR SUBSTANTIALLY IMPROVED ON OR AFTER NOVEMBER 16, 1991, IN DESIGNATED OPAs WITHIN THE CBRS.

Boundaries of the John H. Clarke Coastal Barrier Resources System (CBRS) shown on this FIRM were transferred from the official CBRS source maps for this area and are depicted on this FIRM for informational purposes only. The official CBRS maps are enacted by Congress via the Coastal Barrier Resources Act, as amended, and maintained by the U.S. Fish and Wildlife Service (FWS). The official CBRS maps used to determine whether or not an area is located within the CBRS are available for download at <http://www.fws.gov>. For an official determination of whether or not an area is located within the CBRS, or for any questions regarding the CBRS, please contact the FWS field office for this area at (609) 646-9310.



LEGEND

SPECIAL FLOOD HAZARD AREAS SUBJECT TO INUNDATION BY THE 1% ANNUAL CHANCE FLOOD

The 1% annual flood (100-year flood), also known as the base flood, is the flood that has a 1% chance of being equal or exceeded in any given year. The Special Flood Hazard Area is the area subject to flooding by the 1% annual chance flood. Areas of Special Flood Hazard include Zones A, AE, AH, AO, AR, AR1, V, and VE. The Base Flood Elevation is the water-surface elevation of the 1% annual chance flood.

ZONE A No Base Flood Elevations determined.

ZONE AE Base Flood Elevations determined.

ZONE AH Flood depths of 1 to 3 feet (usually areas of ponds); Base Flood Elevations determined.

ZONE AO Flood depths of 1 to 3 feet (usually sheet flow on sloping terrain); average depths determined. For areas of alluvial fan flooding, velocities also determined.

ZONE AR Special Flood Hazard Area formerly protected from the 1% annual chance flood by a flood control system that was subsequently determined. Zone AR indicates that the former flood control system is being restored to provide protection from the 1% annual chance flood.

ZONE AR1 Area to be protected from 1% annual chance flood by a Federal flood protection system under construction; no Base Flood Elevations determined.

ZONE VE Coastal flood zone with velocity hazard (wave action); no Base Flood Elevations determined.

ZONE VE Coastal flood zone with velocity hazard (wave action); Base Flood Elevations determined.

FLOODWAY AREAS IN ZONE AE

The floodway is the channel of a stream plus any adjacent floodplain areas that must be kept free of encroachment to not the 1% annual chance flood can be carried without substantial increases in flood heights.

OTHER FLOOD AREAS

ZONE X Areas of 0.2% annual chance flood; areas of 1% annual chance flood with average depths of less than 1 foot in which flood depths are less than 1.5 feet; and areas protected by levees from 1% annual chance flood.

OTHER AREAS

Areas determined to be outside the 0.2% annual chance floodplain. Areas in which flood hazards are undetermined, but possible.

COASTAL BARRIER RESOURCES SYSTEM (CBRS) AREAS

OTHERWISE PROTECTED AREAS (OPAs)

CBRS areas and OPAs are normally located within or adjacent to Special Flood Hazard Areas.

- 1% annual chance floodplain boundary
- 0.2% annual chance floodplain boundary
- Floodway boundary
- Zone boundary
- Zone O boundary
- CBRS and OPA boundary
- Boundary dividing Special Flood Hazard Area Zones and boundary dividing Special Flood Hazard Areas of different Base Flood Elevations, flood depths or flood velocities.
- Base Flood Elevation line and value, elevation in feet
- Base Flood Elevation value where uniform within zone, elevation in feet

* Referenced to the North American Vertical Datum of 1988

○ Cross section line

— Transsect line

Geographic coordinates referenced to the North American Datum of 1983 (NAD 83), Western Hemisphere

87°07'45", 32°22'30"

76°10" W

1000-meter Universal Transverse Mercator grid values, zone 18N

5000-foot grid ticks: New Jersey State Plane coordinate system (FIPSZONE 2900), Transverse Mercator projection

Bench mark (see explanation in Notes to Users section of this FIRM panel)

• M 1.5 River Mile

MAP REPOSITORY

Refer to listing of Map Repositories on Map Index.

EFFECTIVE DATE OF COUNTYWIDE FLOOD INSURANCE RATE MAP

September 25, 2009

EFFECTIVE DATE(S) OF REVISION(S) TO THIS PANEL

For community map revision history prior to countywide mapping, refer to the Community Map History table located in the Flood Insurance Study report for this jurisdiction.

To determine if flood insurance is available in this community, contact your insurance agent or call the National Flood Insurance Program at 1-800-338-6262.

MAP SCALE 1" = 500'

250 0 500 1000 FEET
 150 0 150 300 METERS

NFIP NATIONAL FLOOD INSURANCE PROGRAM

PANEL 0201F

FIRM

FLOOD INSURANCE RATE MAP

MONMOUTH COUNTY, NEW JERSEY (ALL JURISDICTIONS)

PANEL 201 OF 457
 (SEE MAP INDEX FOR FIRM PANEL LAYOUT)

COUNTY	COMMUNITY	PANEL NUMBER	SHEET #
MONMOUTH COUNTY	MONMOUTH BEACH BOROUGH	34031H	0001 #
MONMOUTH COUNTY	SEA BRIGHT BOROUGH	34031H	0001 #

NOTE - THIS MAP INCLUDES BORROWERS OF THE COASTAL BARRIER RESOURCES SYSTEM ACT OF 1982 AND/OR SUBSEQUENT ENACTED LEGISLATION.

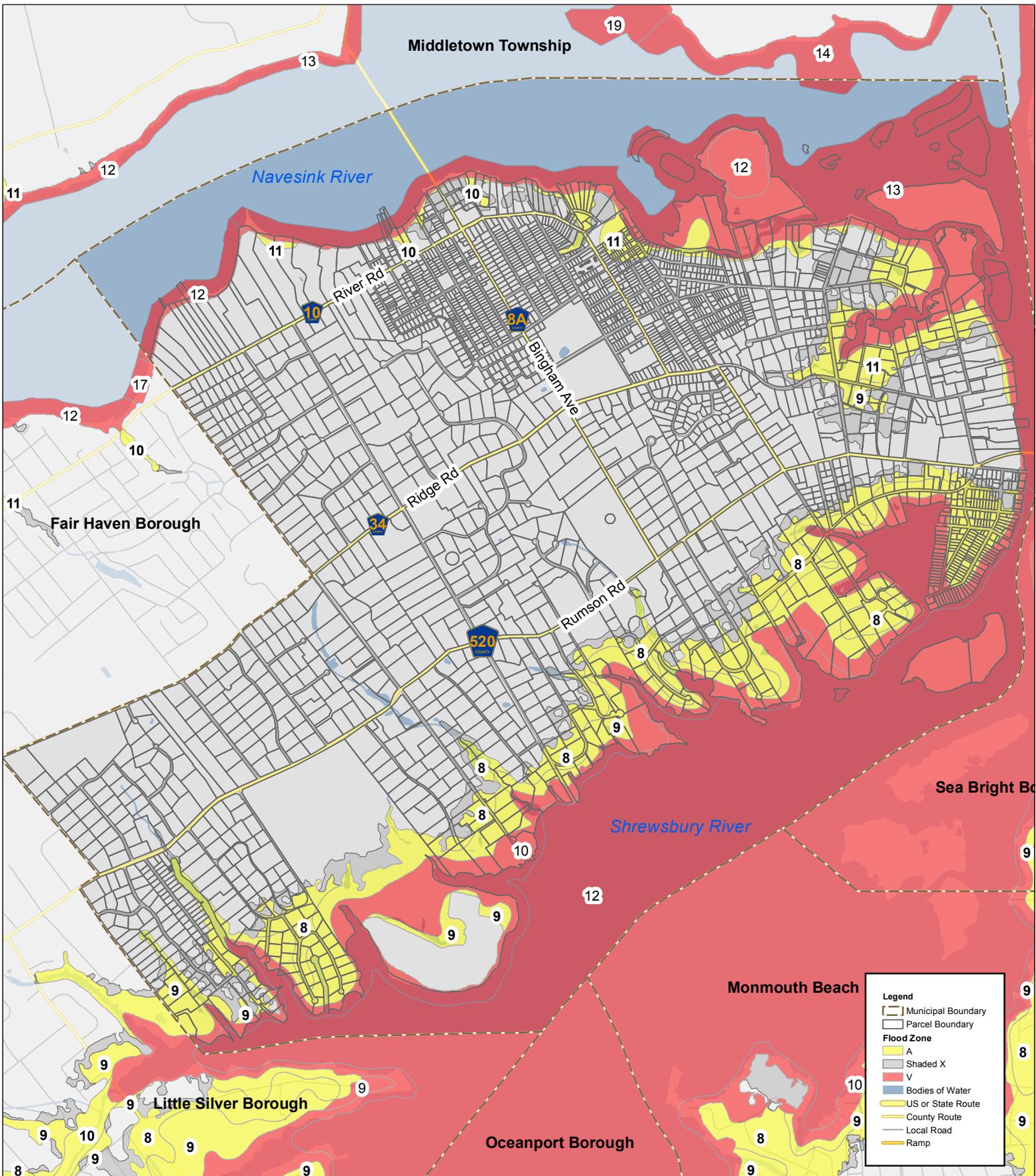
Notice to User: The Map Number shown below should be used when placing map orders. The Community Number shown above should be used on insurance applications for the subject community.

MAP NUMBER 34025C0201F

EFFECTIVE DATE SEPTEMBER 25, 2009

Federal Emergency Management Agency

Appendix E: Advisory Base Flood Map



Legend

- Municipal Boundary
- Parcel Boundary
- Flood Zone**
- A
- Shaded X
- V
- Bodies of Water
- US or State Route
- County Route
- Local Road
- Ramp



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

0 0.1 0.2 0.4 0.6 0.8 Miles

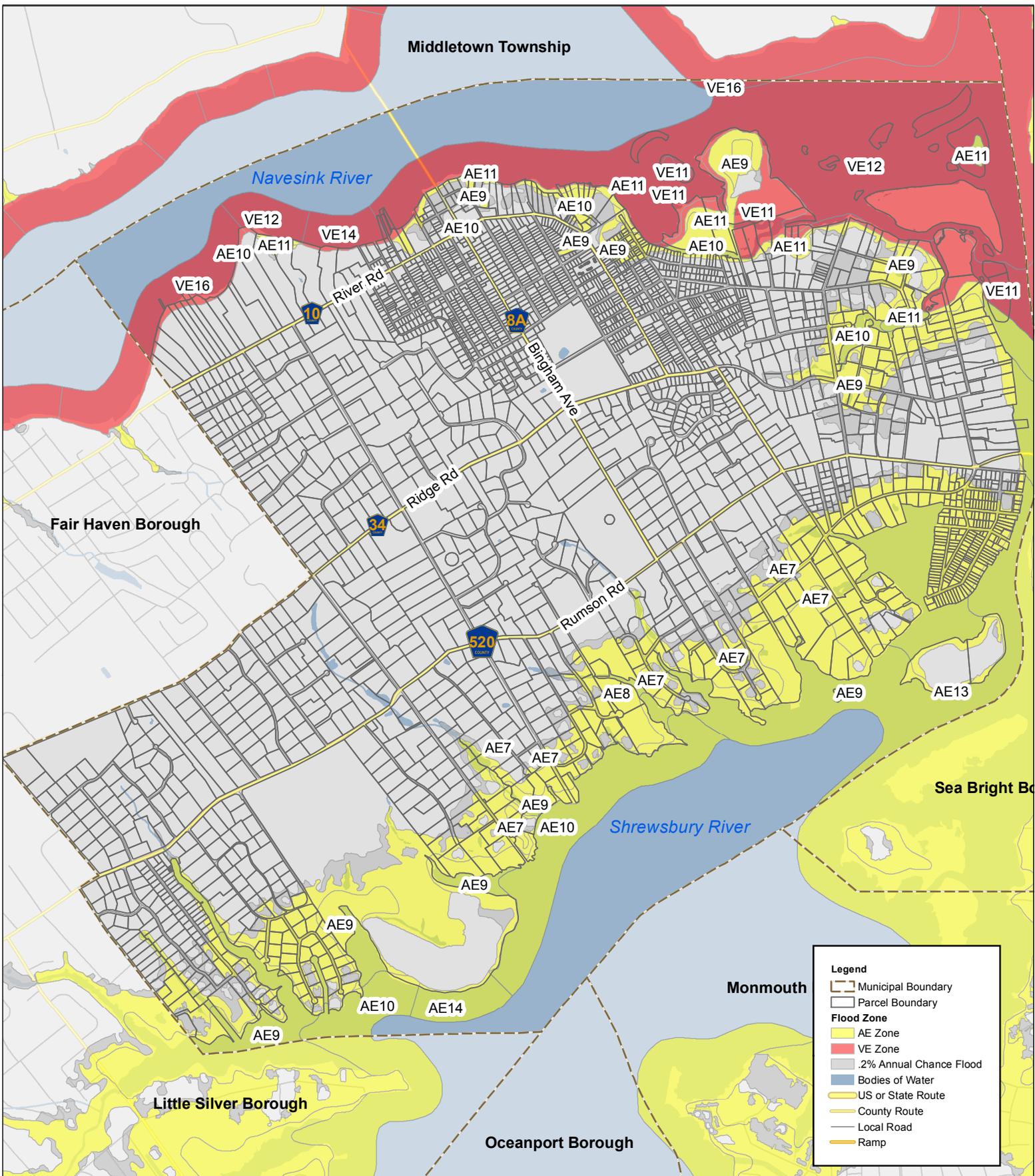
Prepared by: CLB, 2/19/2015
 Source: FEMA; NJDEP; NJDOT; NJGIN; Monmouth County
 H:\RMSN\01697\GIS\Projects\Advisory Flood Maps.mxd

**Advisory Base Flood Map
 Borough of Rumson
 Monmouth County, New Jersey
 Issued: Dec. 12, 2012**



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 F: Preliminary FIRM Map



Legend

- Municipal Boundary
- Parcel Boundary
- Flood Zone**
- AE Zone
- VE Zone
- .2% Annual Chance Flood
- Bodies of Water
- US or State Route
- County Route
- Local Road
- Ramp



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

0 0.1 0.2 0.4 0.6 0.8 Miles

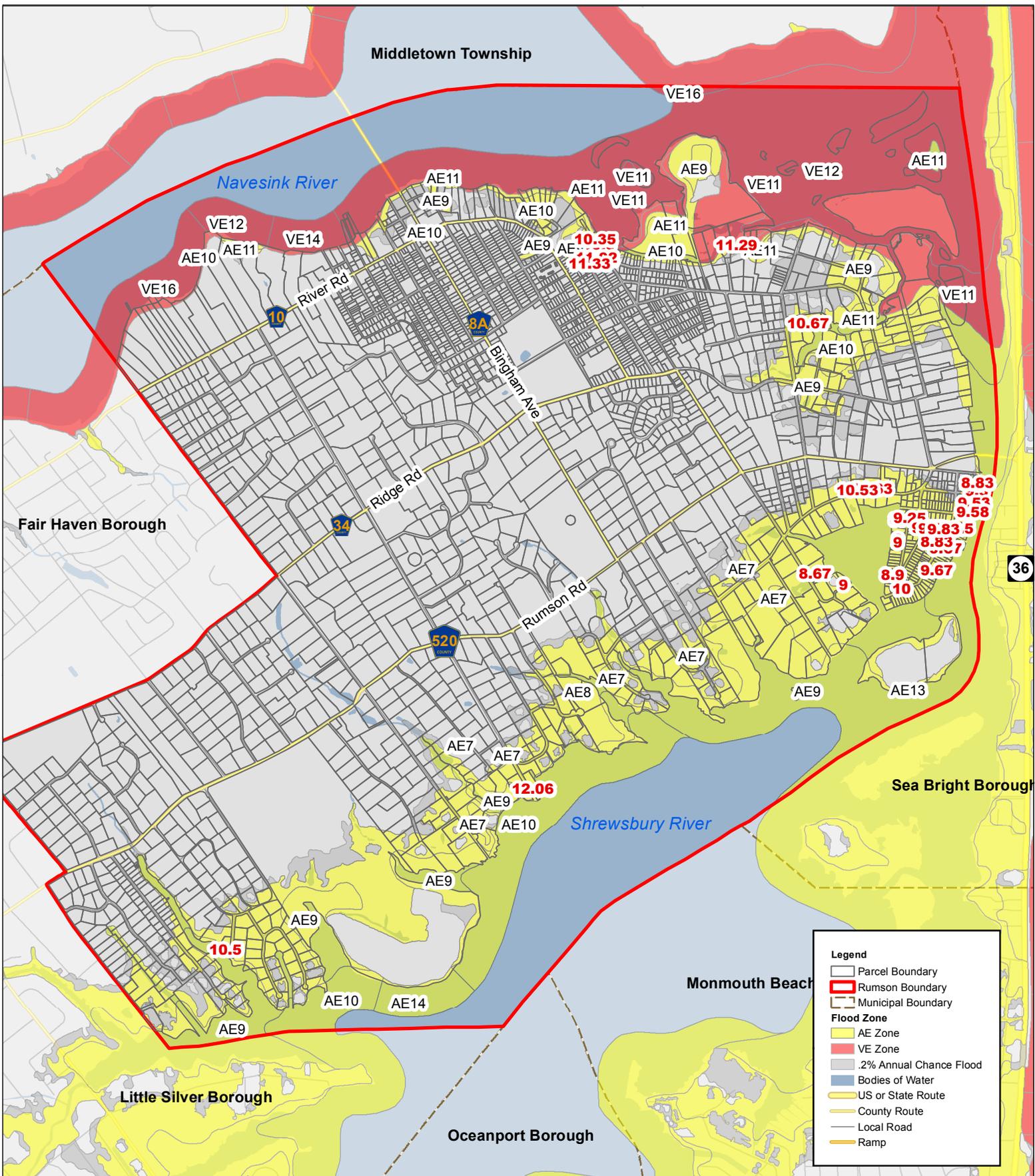
Prepared by: CLB, 2/19/2015
 Source: FEMA; NJDEP; NJDOT; NJGIN; Monmouth County
 H:\RMSN\01697\GIS\Projects\PFIRMS.mxd

Preliminary FIRM
Borough of Rumson
Monmouth County, New Jersey
Issued: Jan. 31, 2014



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: Superstorm Sandy Surge Elevation Maps



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

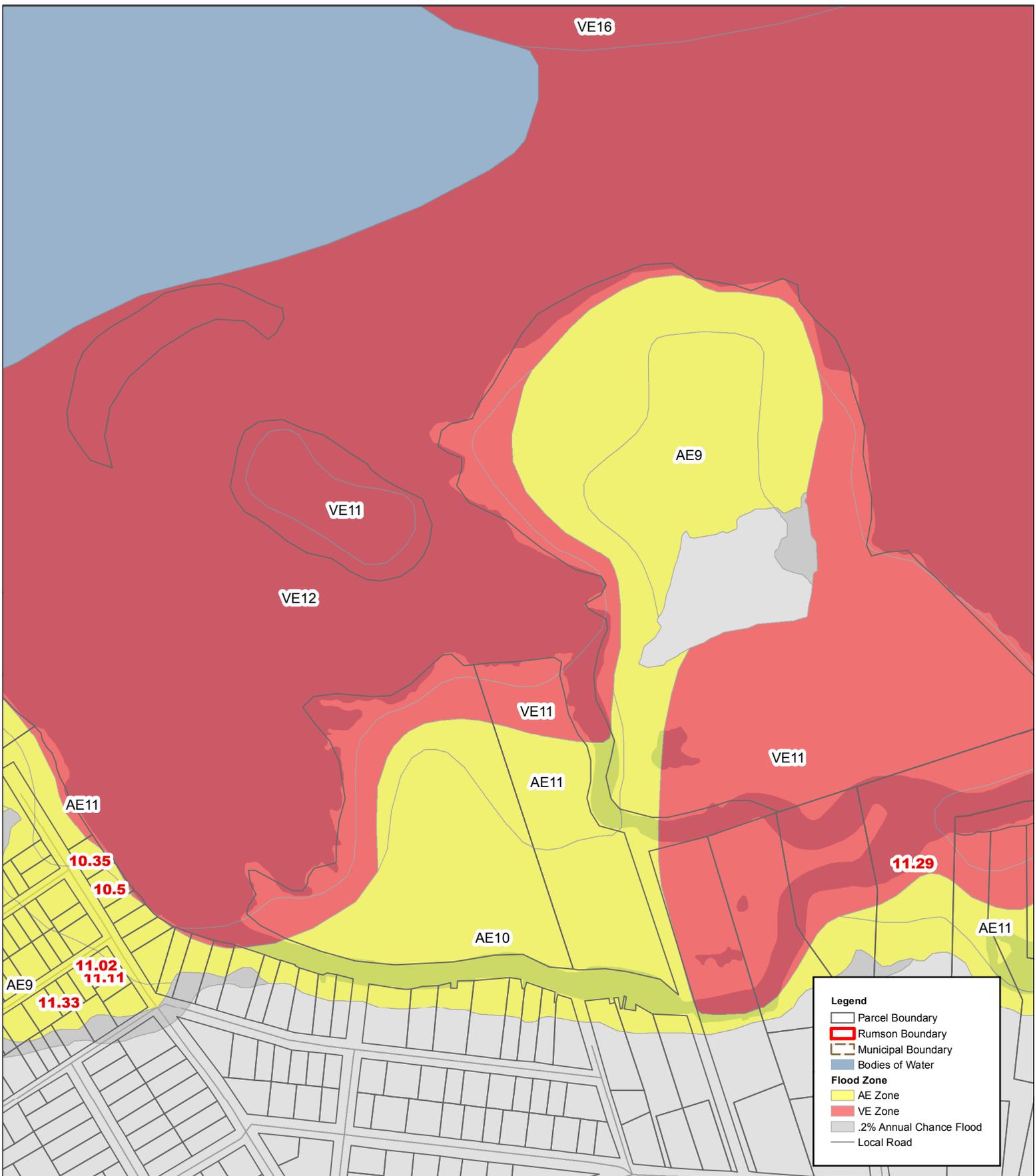
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Prepared by: CLB, 2/24/2015
 Source: FEMA; NJDEP; NJDOT; NJGIN; Monmouth County
 H:\RMSN\01697\GIS\Projects\Sandy Elevations.mxd

Sandy Flood Water Elevations Borough of Rumson Monmouth 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.



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

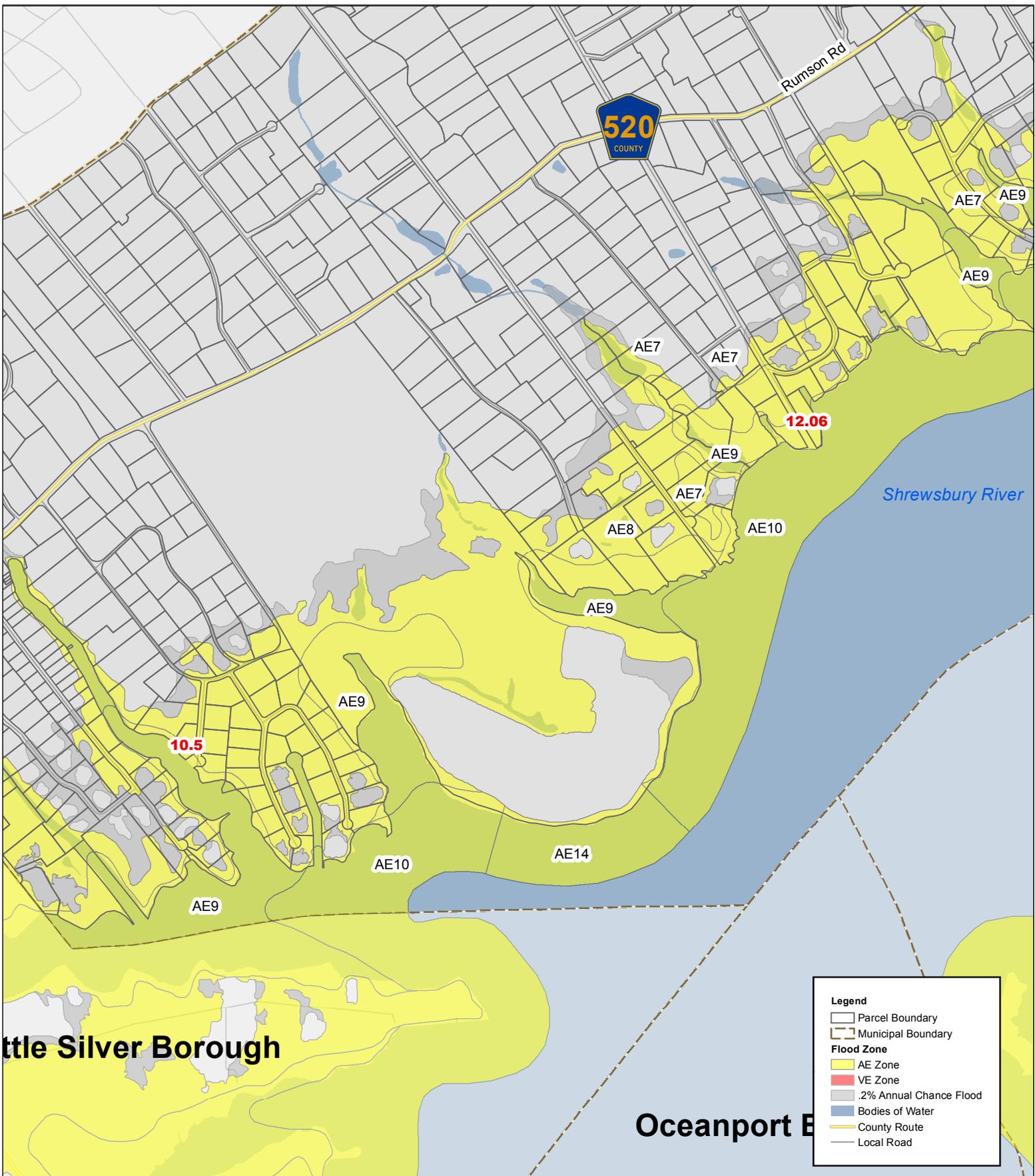
0 0.02 0.04 0.08 0.12 0.16 Miles

Prepared by: CLB, 2/11/2015
 Source: FEMA; NJDEP; NJDOT; NJGIN; Monmouth County
 H:\RMSN\01697\GIS\Projects\Sandy Elevations_north.mxd

Sandy Flood Water Elevations - North Borough of Rumson Monmouth 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.



Little Silver Borough

Oceanport B

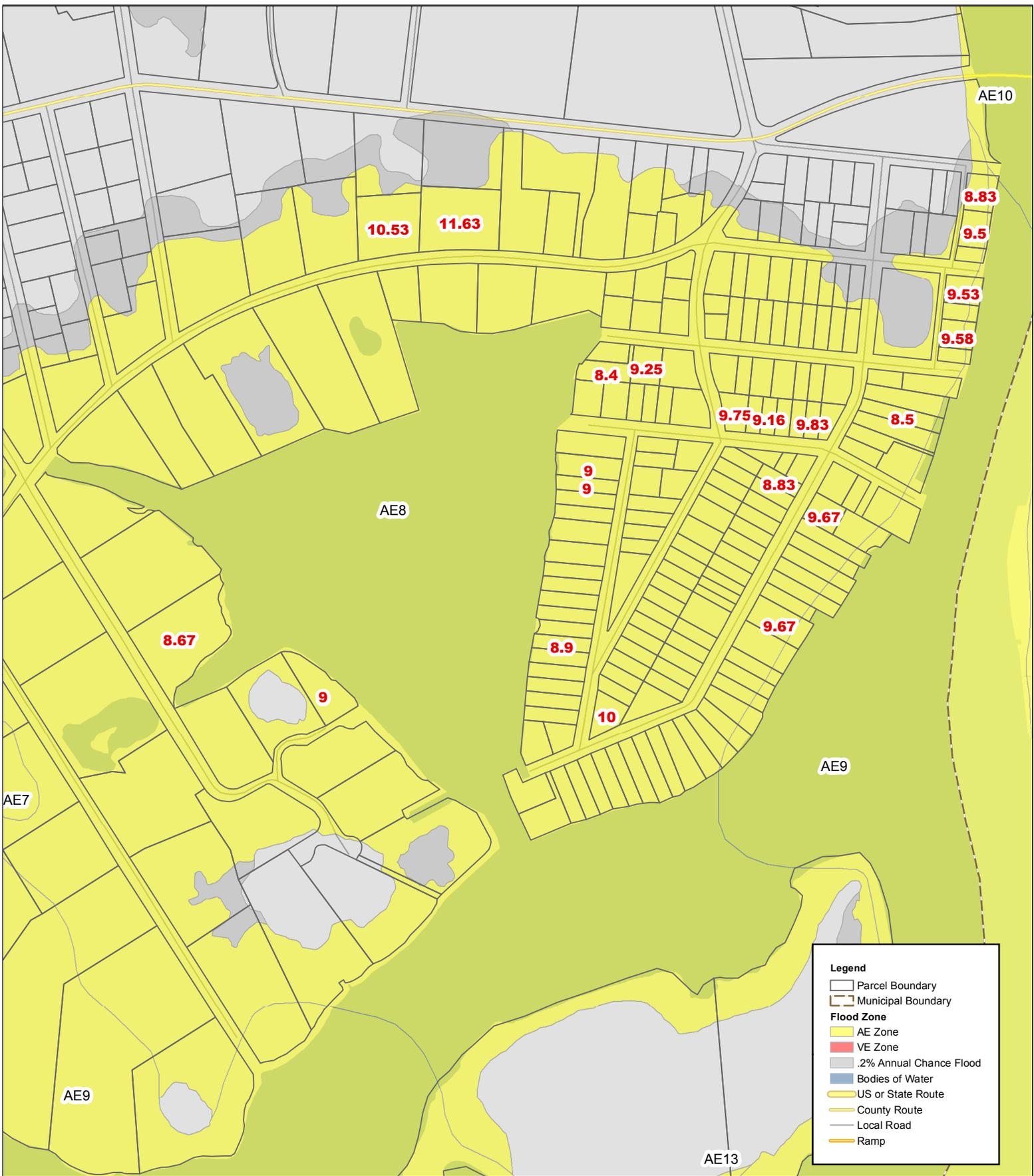
T&M Associates
 11 Tindall Road
 Middletown, NJ 07748-2792
 Phone: 732-671-6400
 Fax: 732-671-7365

Prepared by: CLB, 2/11/2015
 Source: FEMA; NJDEP; NJDOT; NJGIN; Monmouth County
 H:\RMSN\01697\GIS\Projects\Sandy Elevations_SW.mxd

**Sandy Flood Water Elevations - Southwest
 Borough of Rumson
 Monmouth 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.



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

**Sandy Flood Water Elevations - West Park Neighborhood
 Borough of Rumson
 Monmouth County, New Jersey**

Prepared by: CLB, 2/24/2015
 Source: FEMA; NJDEP; NJDOT; NJGIN; Monmouth County
 H:\RMSN\01697\GIS\Projects\Sandy Elevations_west park.mxd



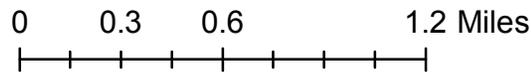
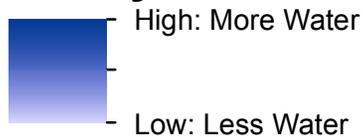
NOTE: This map was developed using New Jersey Department of Environmental Protection Geographic Information System digital data, but this secondary product has not been verified by NJDEP and is not State-authorized.

Sandy Storm Surge Rumson Borough

Legend

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

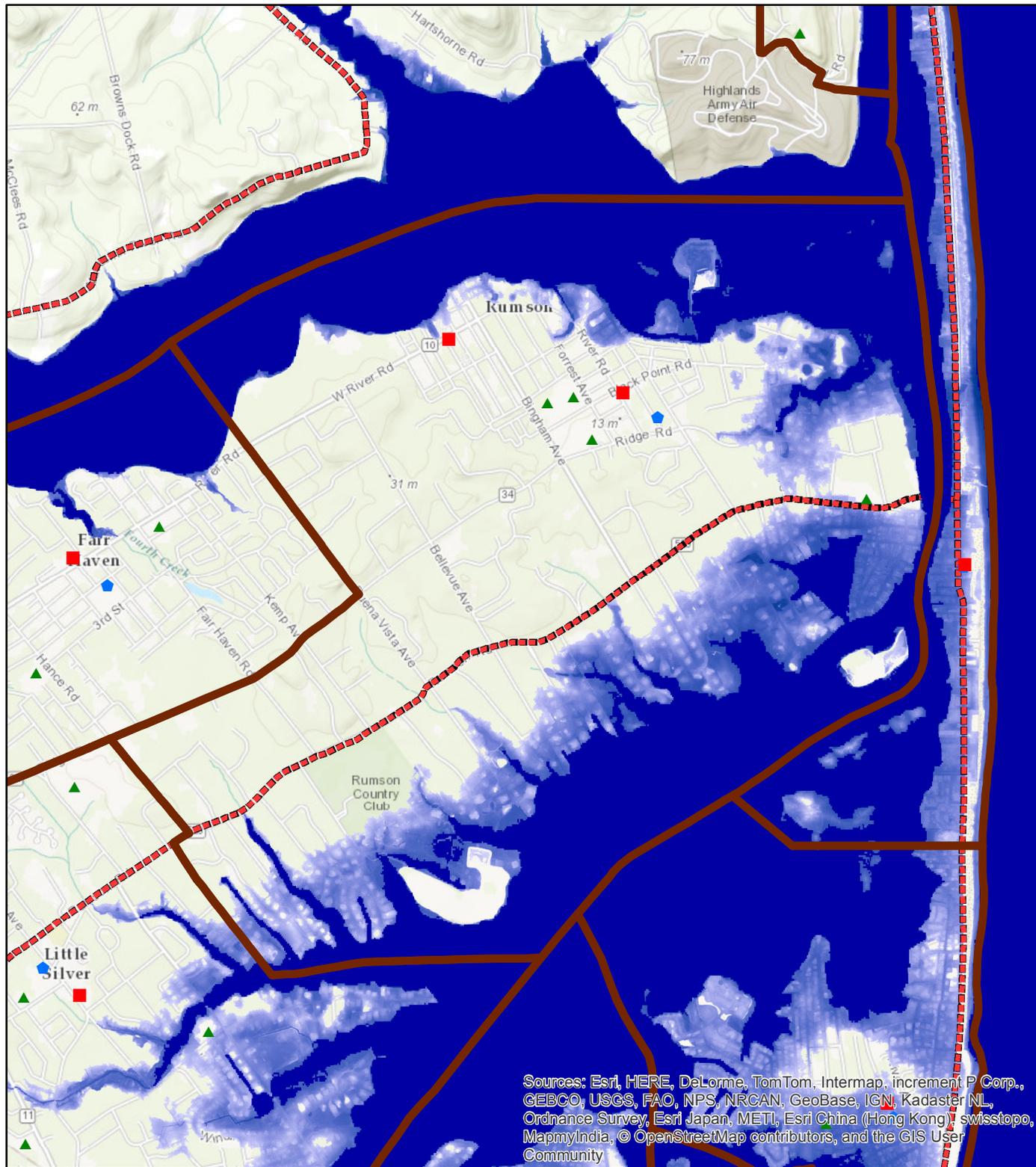
Sandy Storm Surge



Year 2010 Population: 7122

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 H: Repetitive Loss Areas Map

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Map is not public information.

Appendix I: Critical Facilities Map

Critical Facilities

Borough of Rumson

Critical Facilities

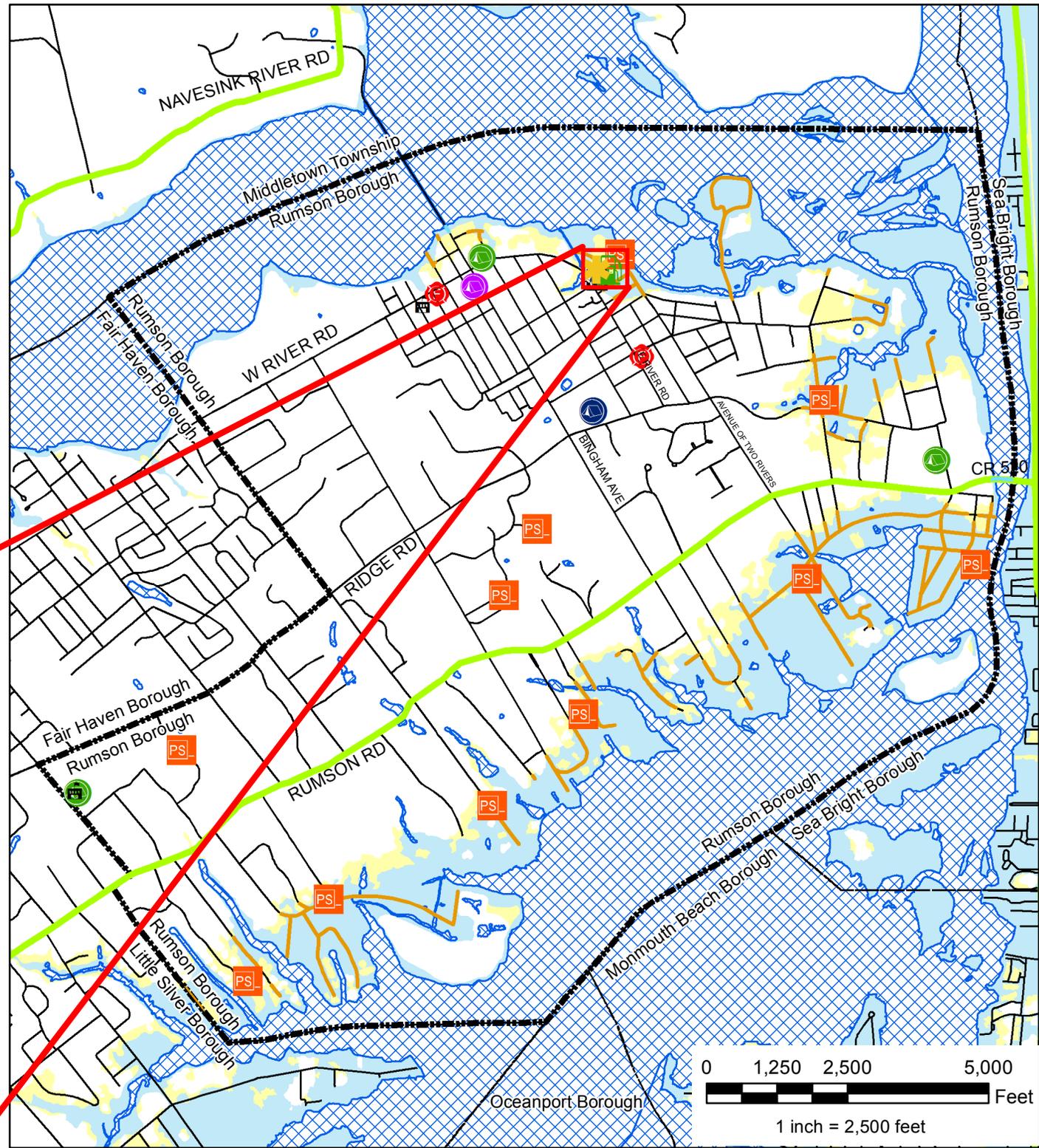
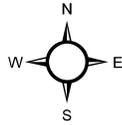
-  Emergency Medical Center
-  Firehouse
-  Shelter
-  Comfort Station
-  Alternate Shelter/Transfer Center
-  City Facilities
-  Daycare
-  Fuel Storage Station
-  Police Station
-  Pump Station

Flooded Roads

-  Local Road
-  County Road
-  Evacuation Routes
-  Open Water

2014 Preliminary Floodplain

-  100-yr
-  500-yr



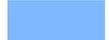
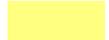
Appendix J: SLOSH Maps

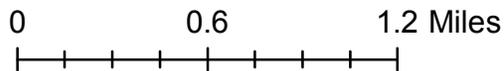
Category 1 SLOSH Model Rumson Borough

Legend

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

Category 1 SLOSH

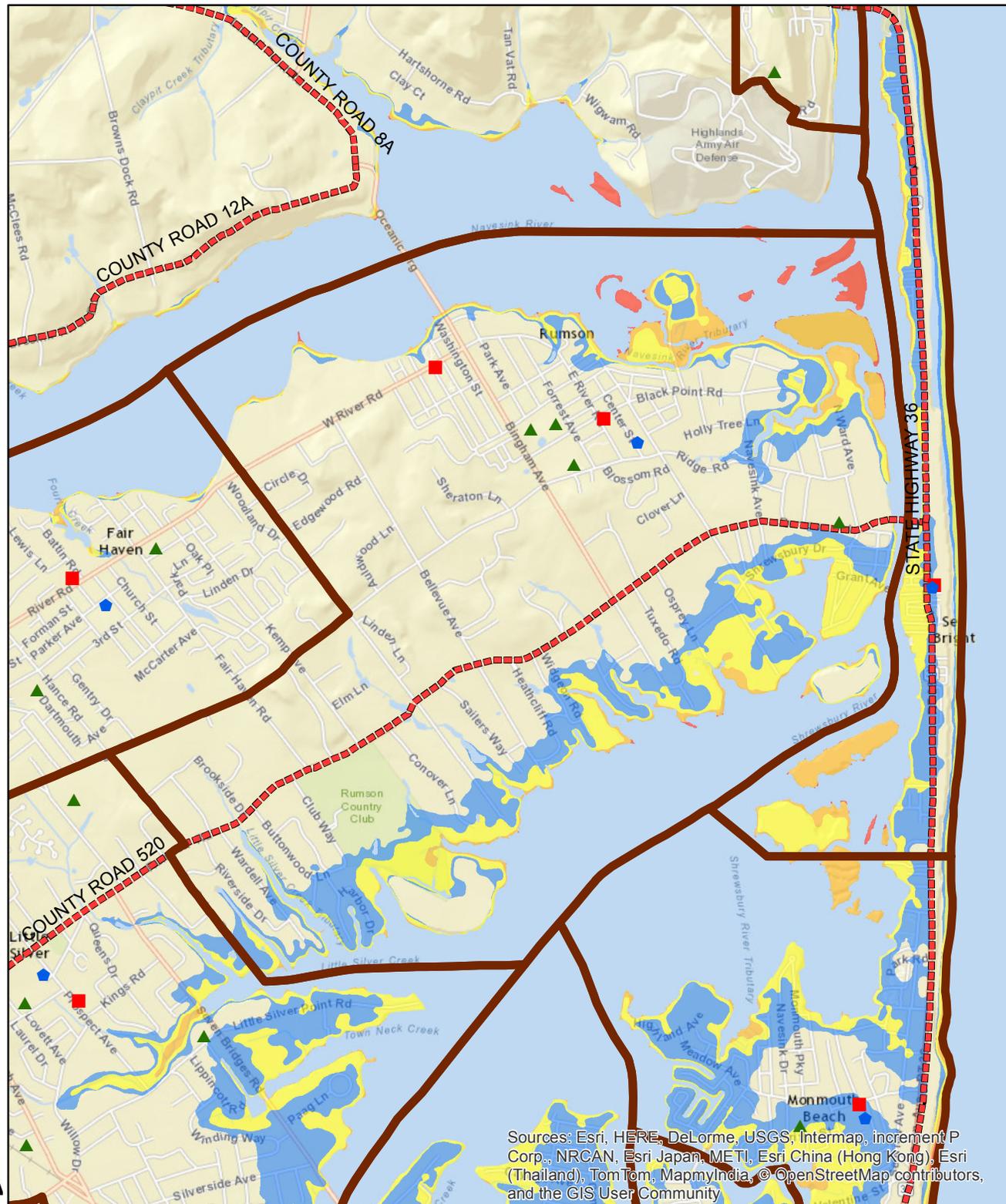
-  0 - 3 Feet Above Ground Level
-  3 - 6
-  6 - 9
-  > 9



Year 2010 Population: 7122

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

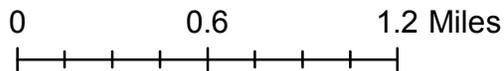
Category 2 SLOSH Model Rumson Borough

Legend

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

Category 2 SLOSH

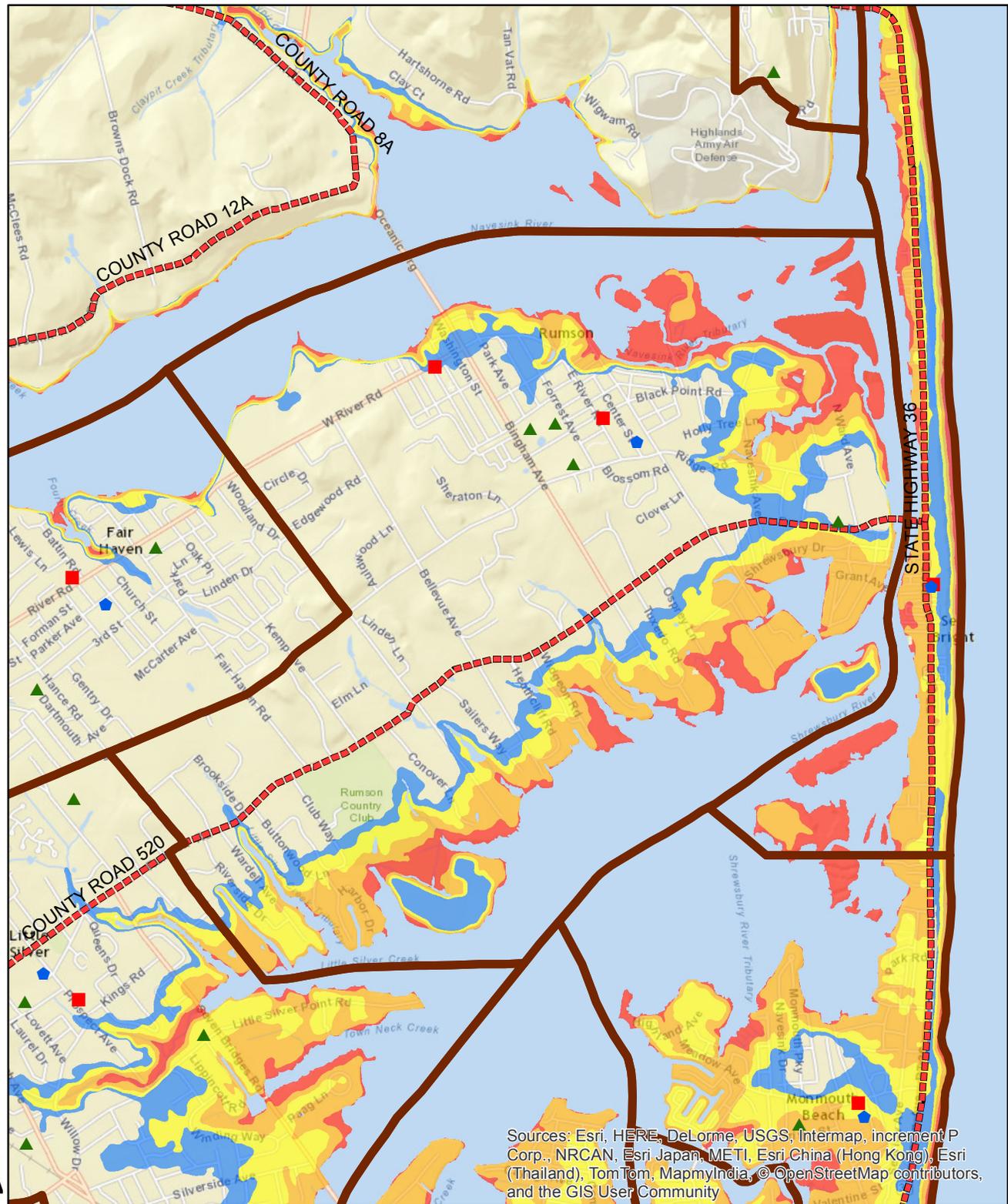
-  0 - 3 Feet Above Ground Level
-  3 - 6
-  6 - 9
-  > 9



Year 2010 Population: 7122

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

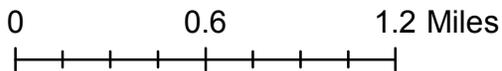
Category 3 SLOSH Model Rumson Borough

Legend

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

Category 3 SLOSH

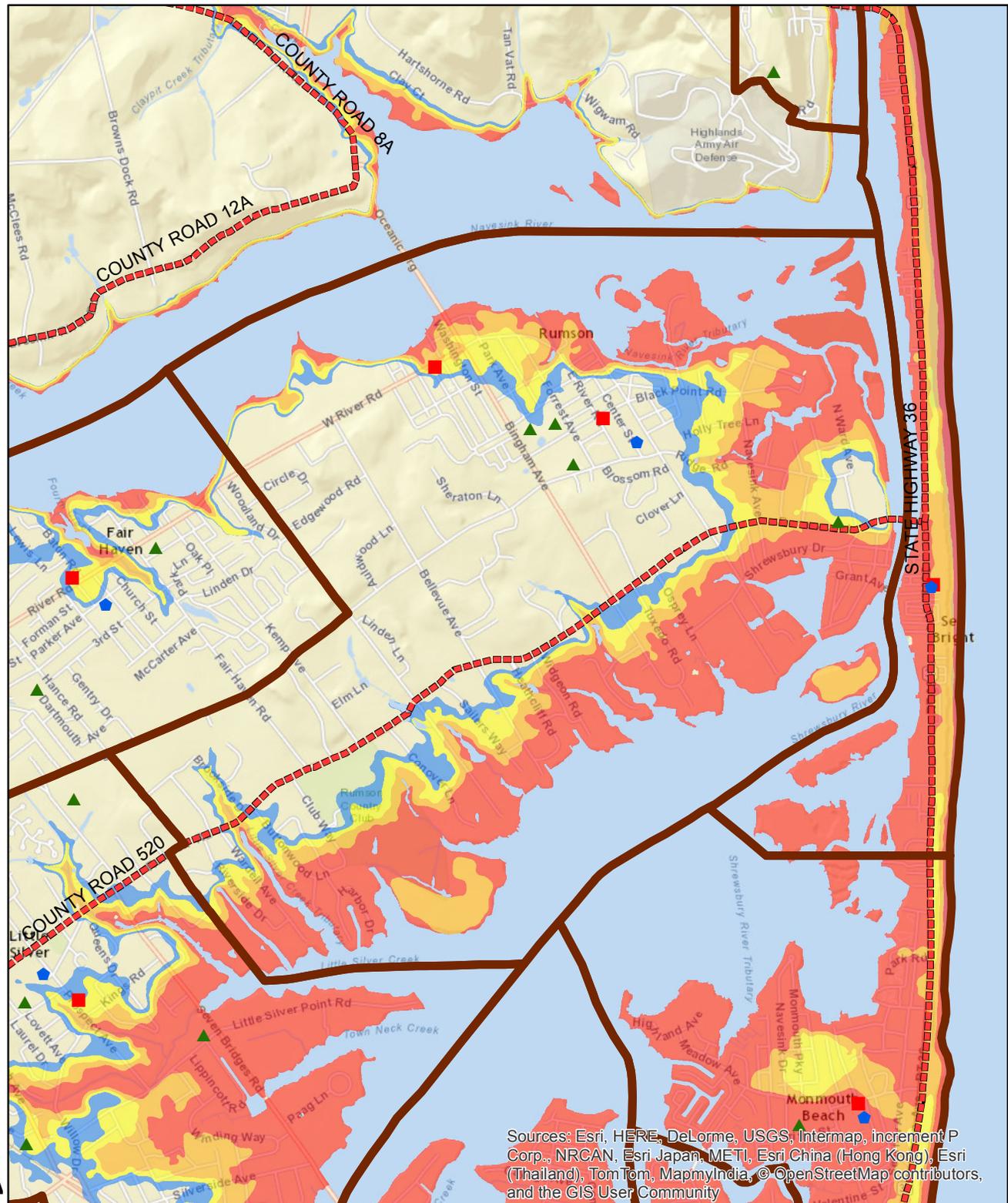
-  0 - 3 Feet Above Ground Level
-  3 - 6
-  6 - 9
-  > 9



Year 2010 Population: 7122

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



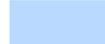
Sources: Esri, HERE, DeLorme, USGS, Intermap, increment P Corp., NRCAN, Esri Japan, METI, Esri China (Hong Kong), Esri (Thailand), TomTom, MapmyIndia, © OpenStreetMap contributors, and the GIS User Community

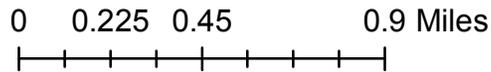
Appendix K: Sea Level Rise Maps

1 foot of Sea Level Rise

Rumson Borough

Legend

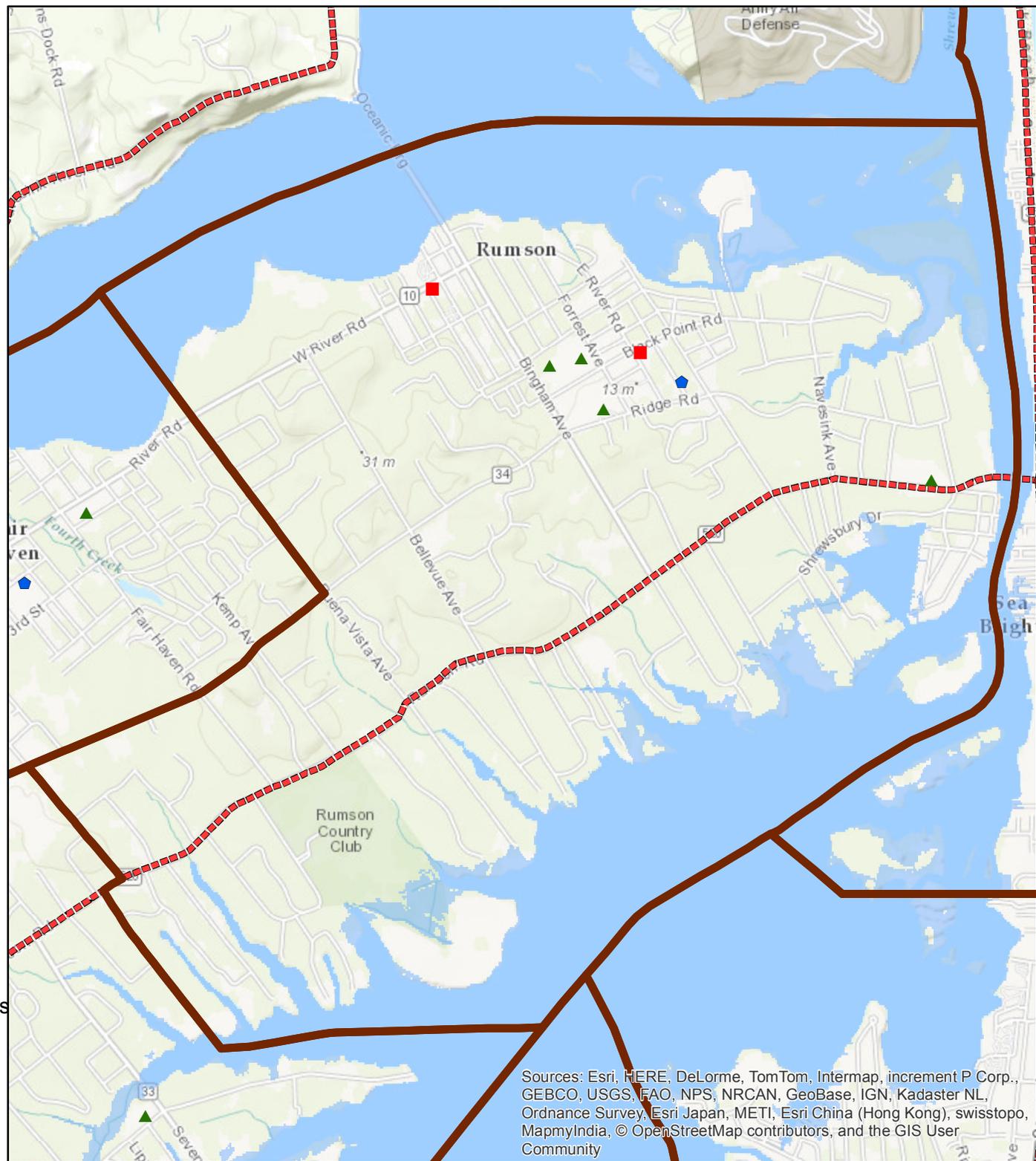
-  Municipality
-  Schools
-  Fire Stations
-  Law Enforcement
-  Assisted Living
-  Hospitals
-  Evacuation Routes
-  1ft SLR



Year 2010 Population: 7122

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

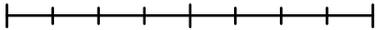
2 feet of Sea Level Rise

Rumson Borough

Legend

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

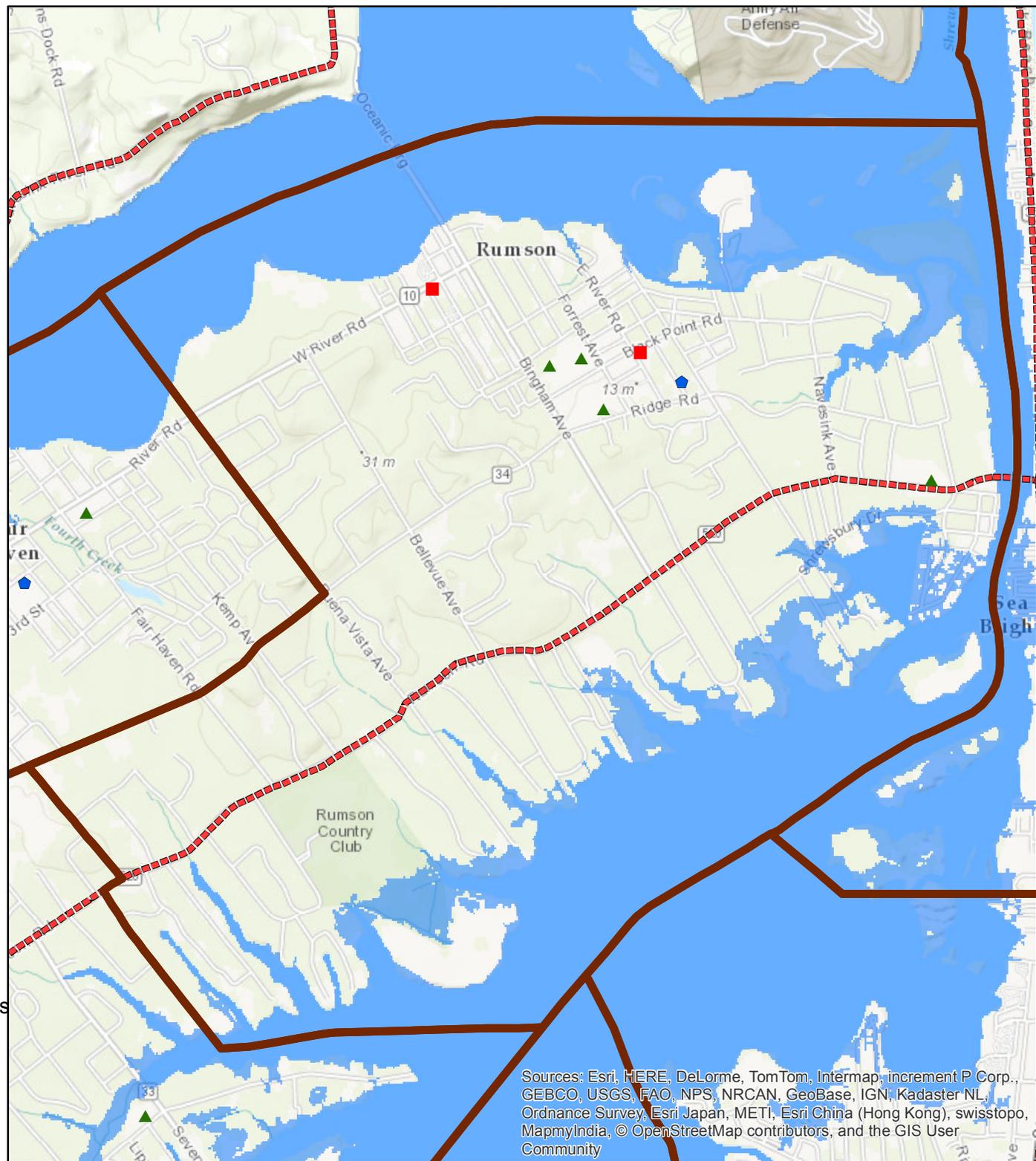
0 0.225 0.45 0.9 Miles



Year 2010 Population: 7122

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



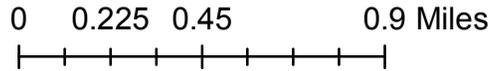
Sources: Esri, HERE, DeLorme, TomTom, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), swisstopo, MapmyIndia, © OpenStreetMap contributors, and the GIS User Community

3 feet of Sea Level Rise

Rumson Borough

Legend

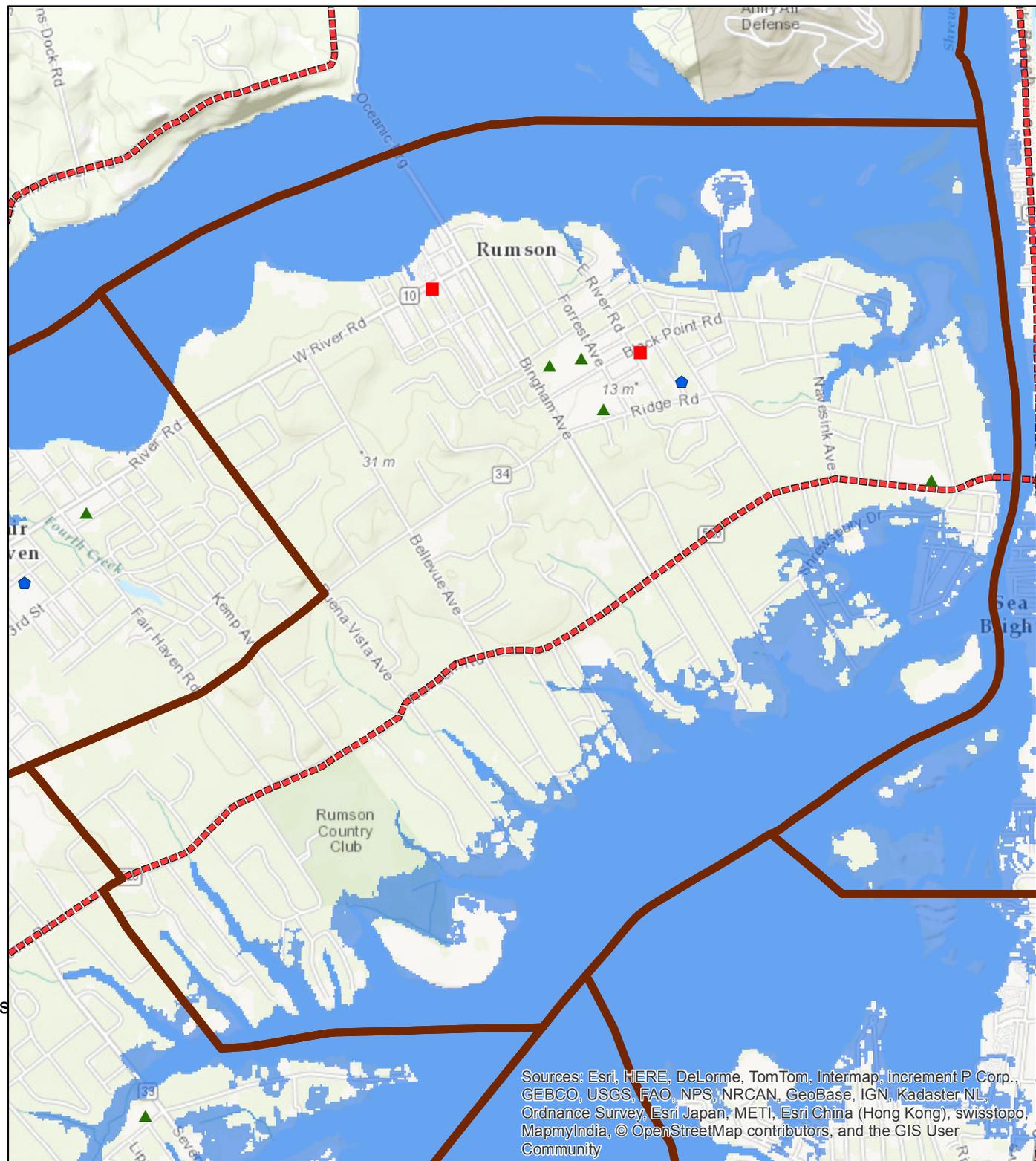
-  Municipality
-  Schools
-  Fire Stations
-  Law Enforcement
-  Assisted Living
-  Hospitals
-  Evacuation Routes
-  3ft SLR



Year 2010 Population: 7122

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 L: Marsh Retreat Maps

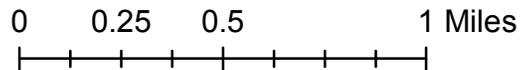
Marsh Retreat at 1 foot of Sea Level Rise Rumson Borough

Legend

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

Marsh Retreat at 1ft SLR

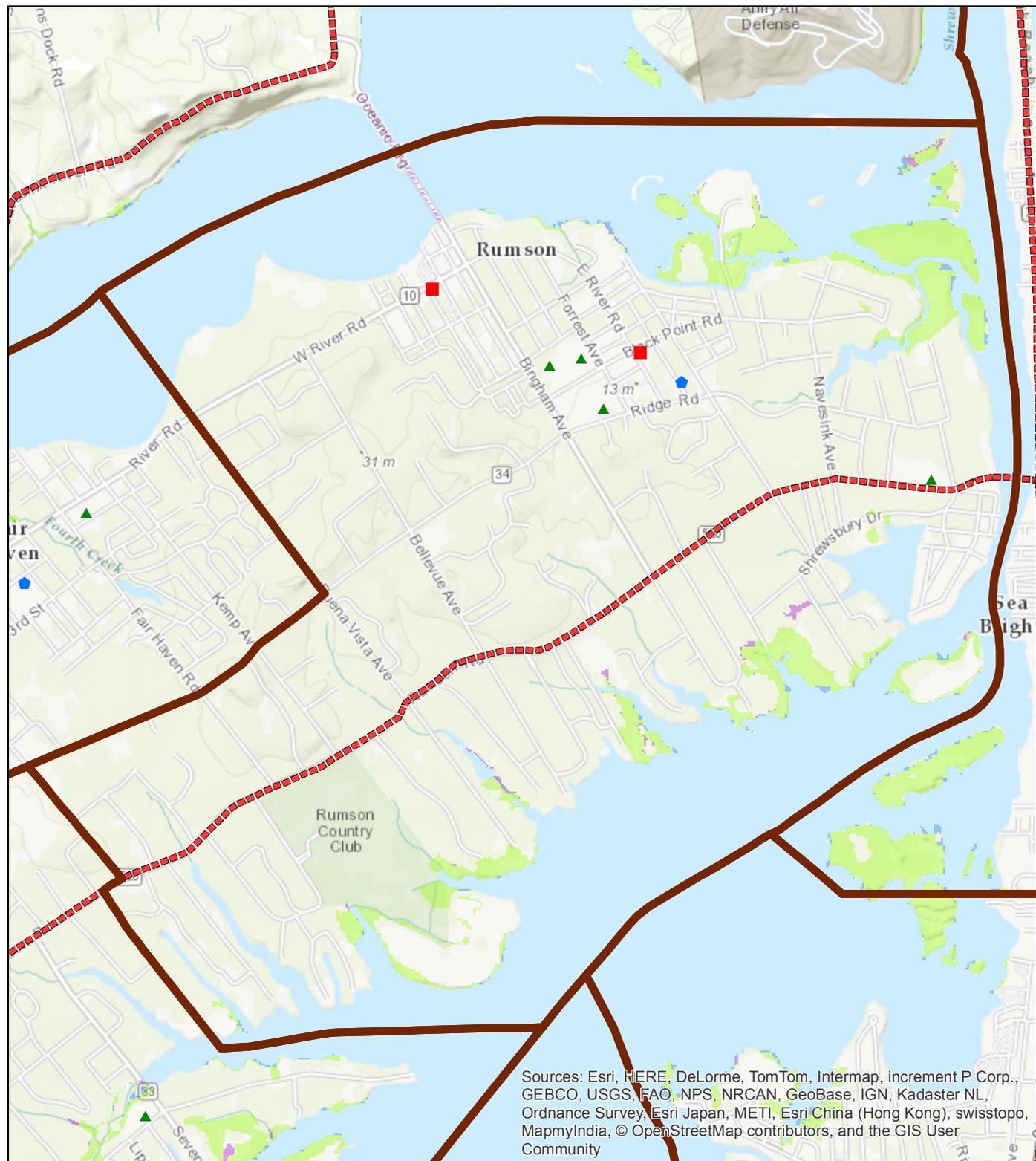
-  Unimpeded Marsh Retreat Zone
-  Impeded Marsh Retreat Zone
-  Marsh Conversion: Unconsolidated Shore
-  Marsh Conversion: Open Water
-  Unchanged Tidal Marsh



Year 2010 Population: 7122

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

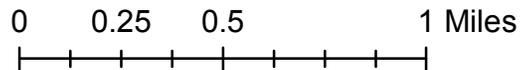
Marsh Retreat at 2 feet of Sea Level Rise Rumson Borough

Legend

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

Marsh Retreat at 2ft SLR

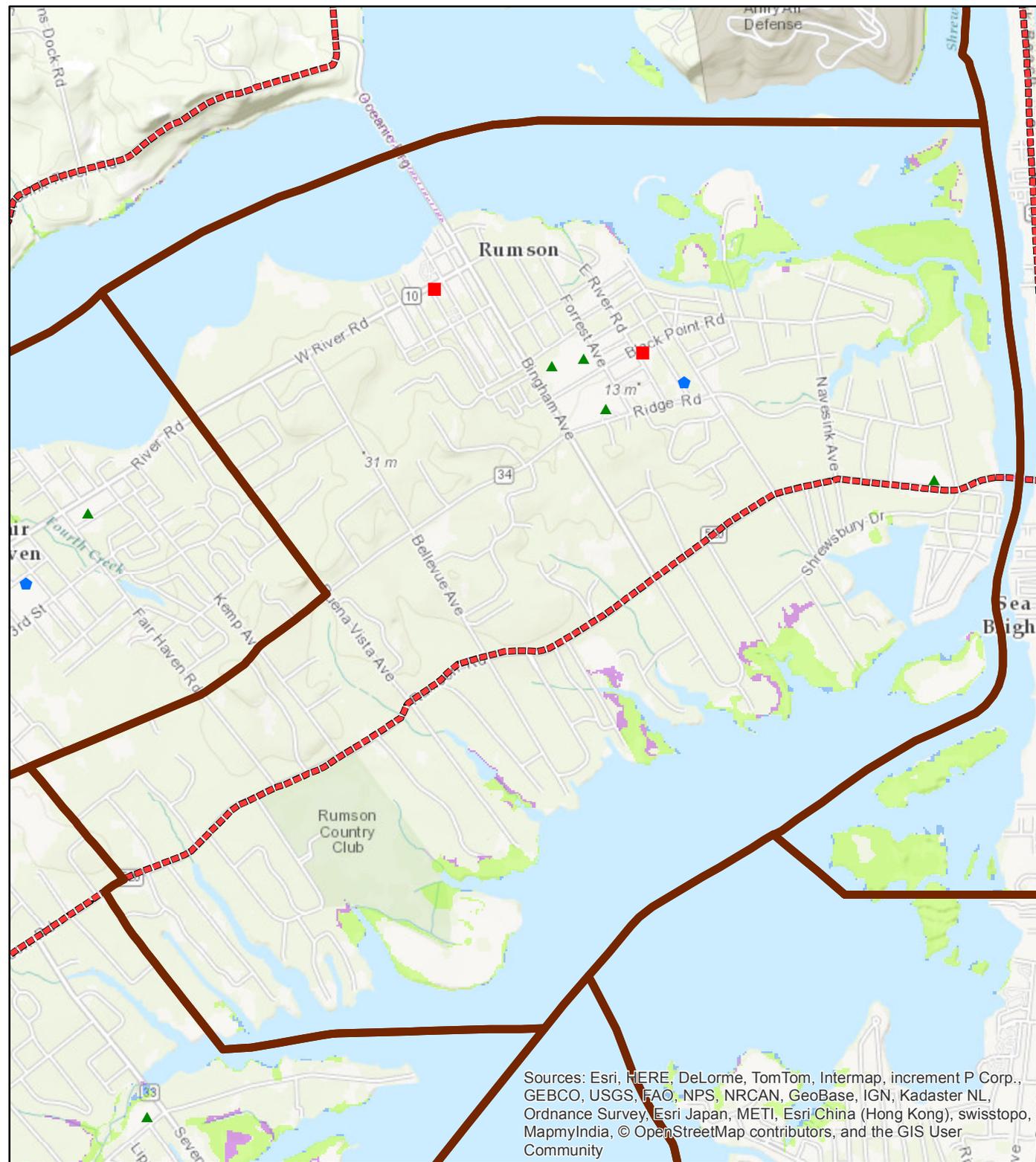
-  Unimpeded Marsh Retreat Zone
-  Impeded Marsh Retreat Zone
-  Marsh Conversion: Unconsolidated Shore
-  Marsh Conversion: Open Water
-  Unchanged Tidal Marsh



Year 2010 Population: 7122

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

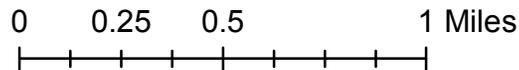
Marsh Retreat at 3 feet of Sea Level Rise Rumson Borough

Legend

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

Marsh Retreat at 3ft SLR

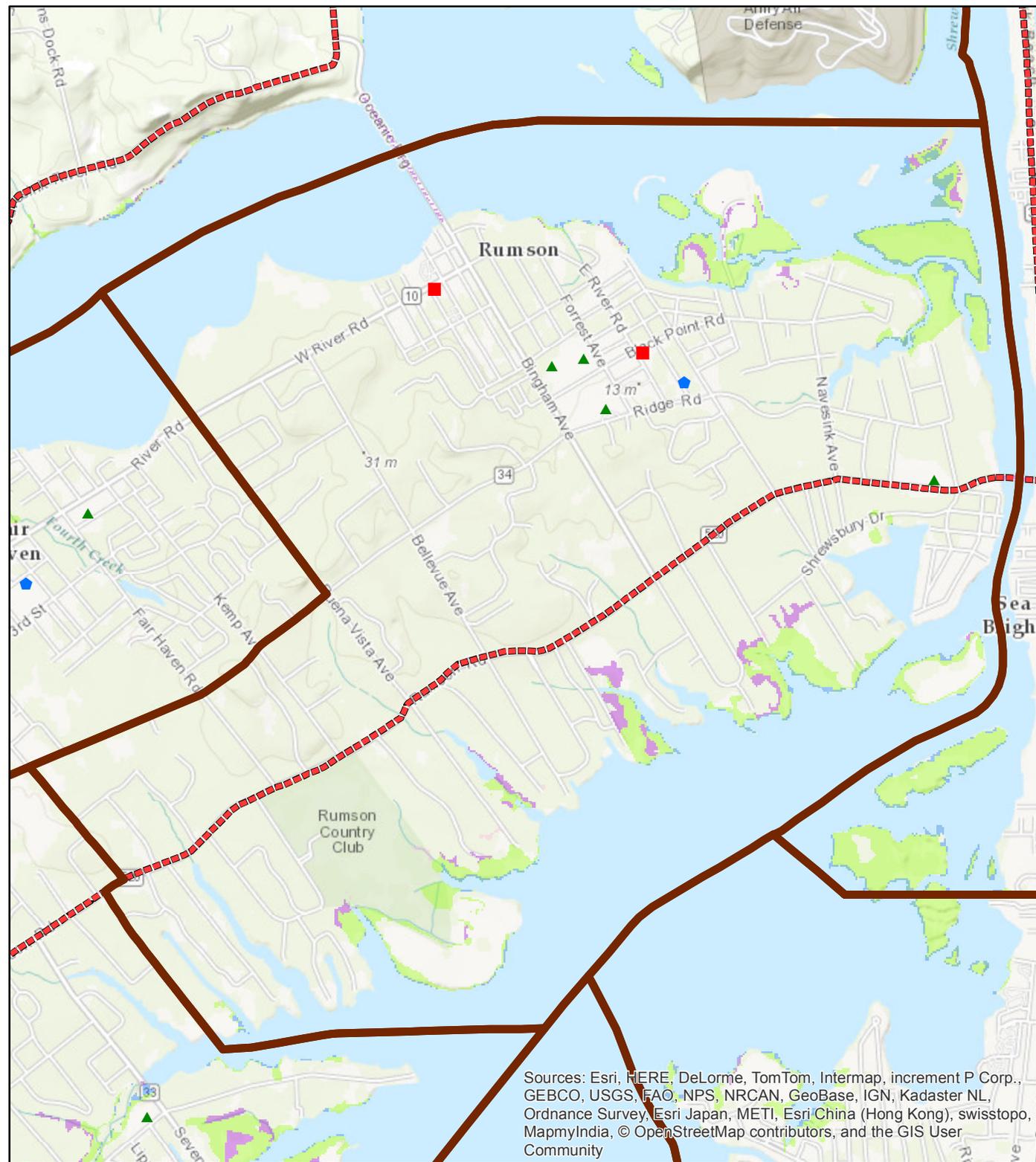
-  Unimpeded Marsh Retreat Zone
-  Impeded Marsh Retreat Zone
-  Marsh Conversion: Unconsolidated Shore
-  Marsh Conversion: Open Water
-  Unchanged Tidal Marsh



Year 2010 Population: 7122

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 M: NFIP Claim Areas Map

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Map is not public information.

**Appendix N: Flood Prone Structures and
Areas of Mitigation Interest Maps**

Rumson Flood Prone Structures and Areas of Mitigation Interest

Repetitive Loss

- Repetitive Loss
- Severe Repetitive Loss

Areas of Mitigation Interest

w/ Community Action Number

- At Risk Essential Facilities
- ◆ Coastal Structures
- Other Flood Risk Areas

Critical Facilities

- ★ Emergency Medical Center
- 🚒 Firehouse
- 🏠 Shelter
- 🚉 Comfort Station
- 🏠 Alternate Shelter/Transfer Center
- 🏢 City Facilities
- 🏠 Daycare
- 🚰 Fuel Storage Station
- 🚓 Police Station
- 🏢 Pump Station
- 🔧 Flood Valve

Evacuation Routes

Roads

Floodprone Structures

- Located within 100-yr Flood Zone
- Potentially Impacted by Nearby Flooding

Buildings

Contours - 2 ft

- Contour
- Index Contour

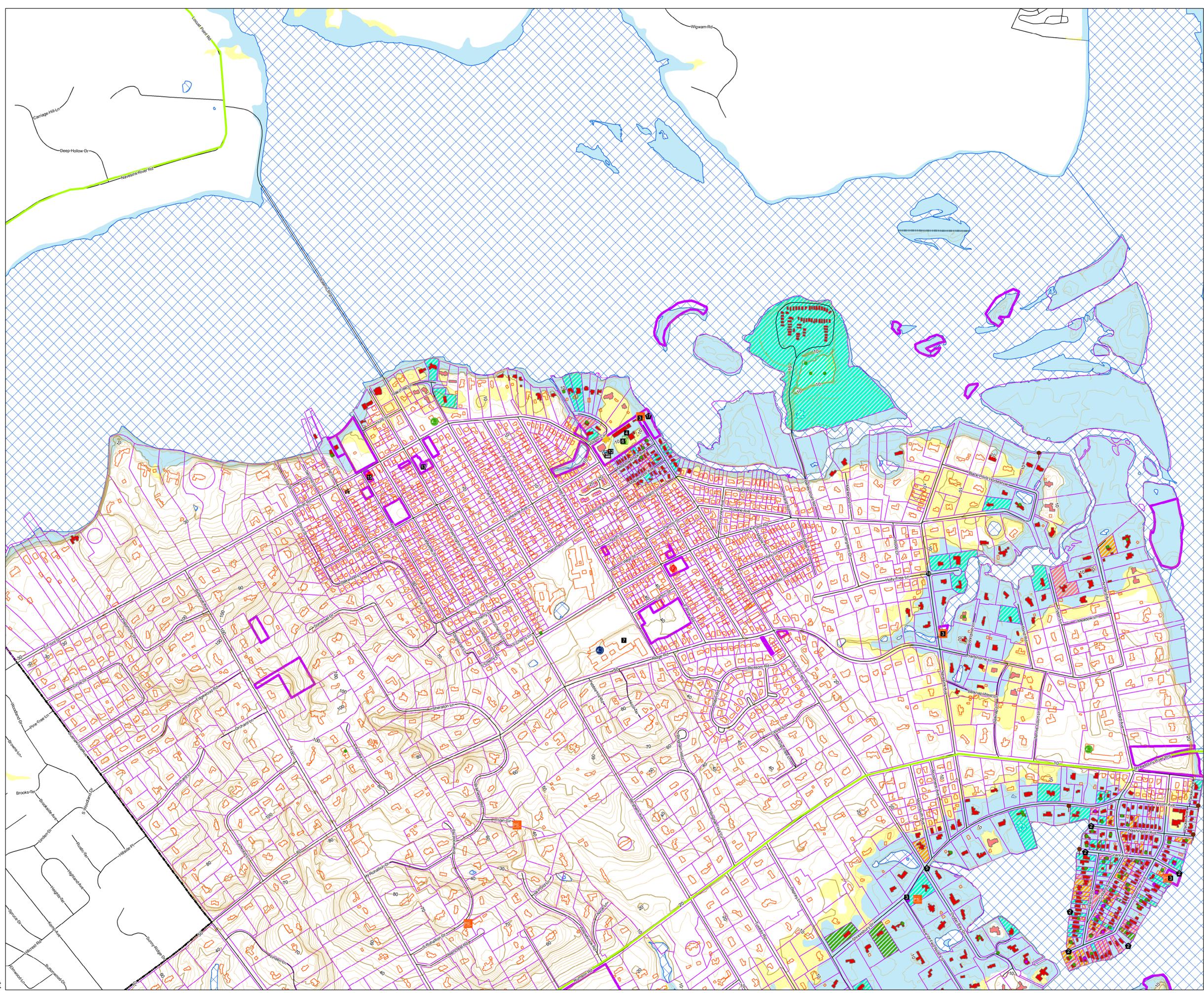
Parcels

- ▭ Parcel Outline
- ▭ Borough Owned
- ▨ Other Mitigated Parcels
- ▨ Demolished
- ▨ Elevated
- ▨ Elevated as Part of Grant

Open Water

2014 Preliminary Floodplain

- 100-yr
- 500-yr



Rumson Flood Prone Structures and Areas of Mitigation Interest

Repetitive Loss

- Repetitive Loss
- Severe Repetitive Loss

Areas of Mitigation Interest w/ Community Action Number

- At Risk Essential Facilities
- Coastal Structures
- Other Flood Risk Areas

Critical Facilities

- ✳ Emergency Medical Center
- 🚒 Firehouse
- 🏠 Shelter
- 🚗 Comfort Station
- 🏠 Alternate Shelter/Transfer Center
- 🏢 City Facilities
- 🏠 Daycare
- 🛢 Fuel Storage Station
- 🚓 Police Station
- 🏢 Pump Station
- 🔧 Flood Valve

Evacuation Routes

Roads

Floodprone Structures

- Located within 100-yr Flood Zone
- Potentially Impacted by Nearby Flooding

Buildings

Contours - 2 ft

- Contour
- Index Contour

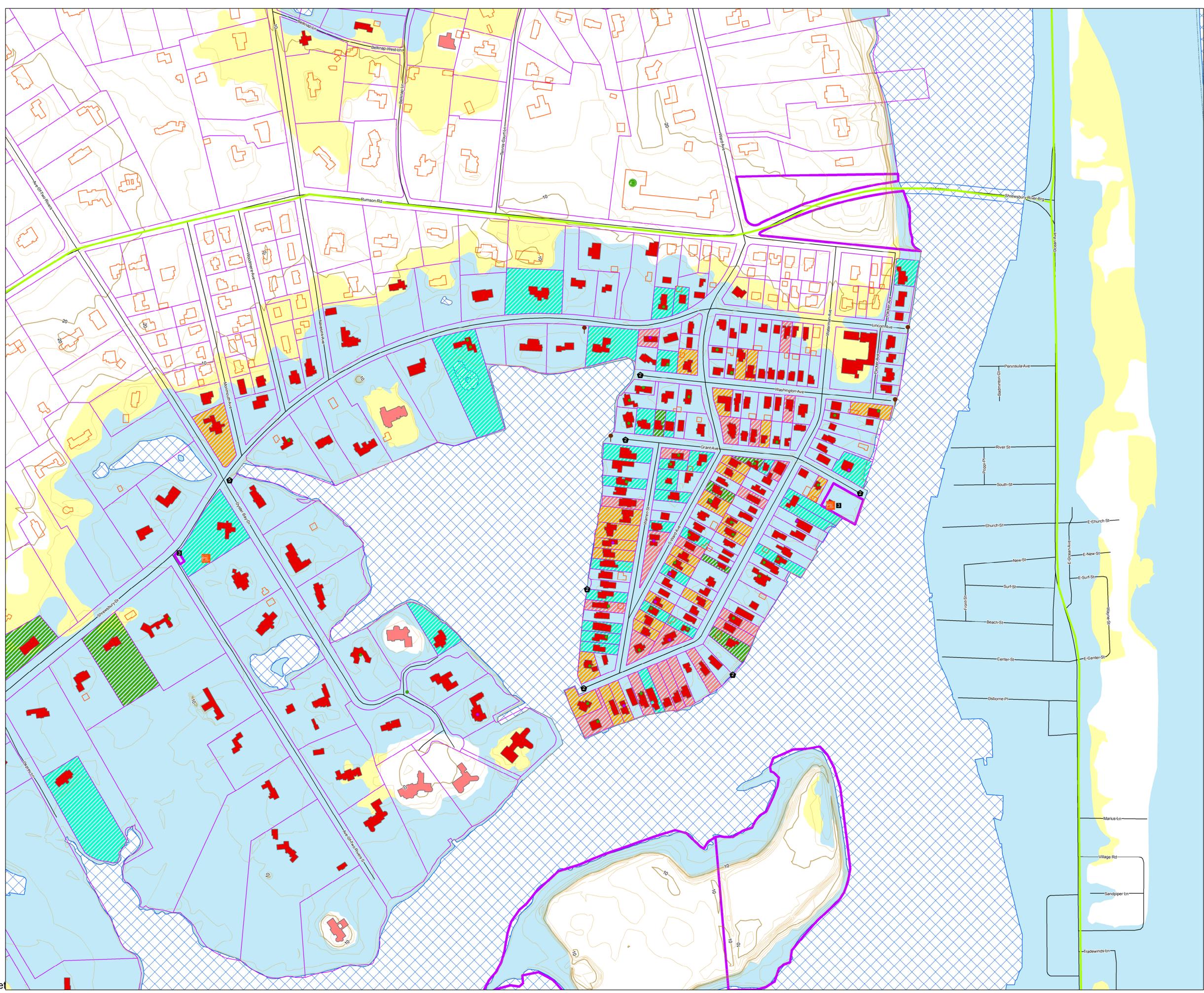
Parcels

- ▭ Parcel Outline
- ▭ Borough Owned
- ▨ Other Mitigated Parcels
- ▨ Demolished
- ▨ Elevated
- ▨ Elevated as Part of Grant

Open Water

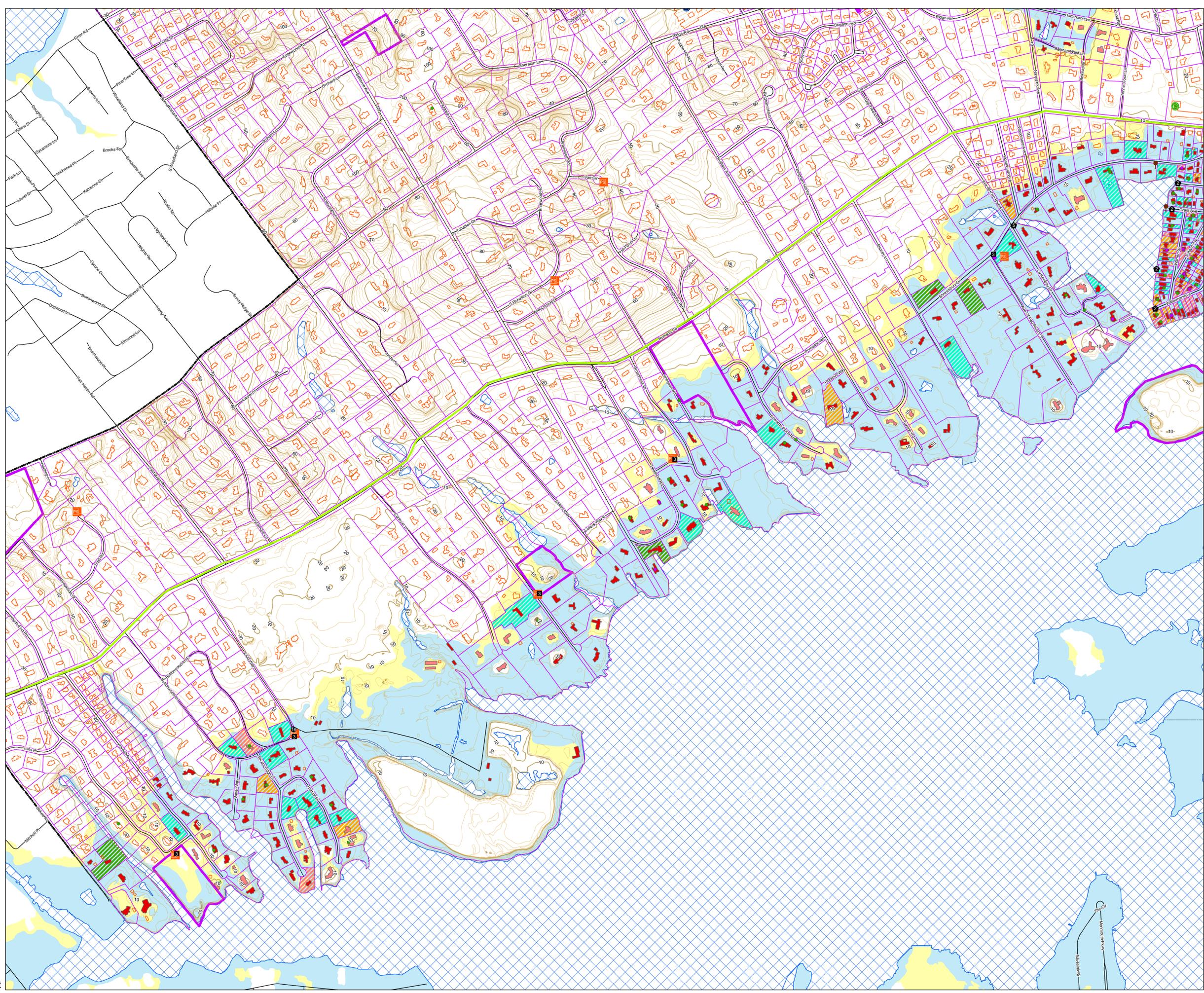
2014 Preliminary Floodplain

- 100-yr
- 500-yr

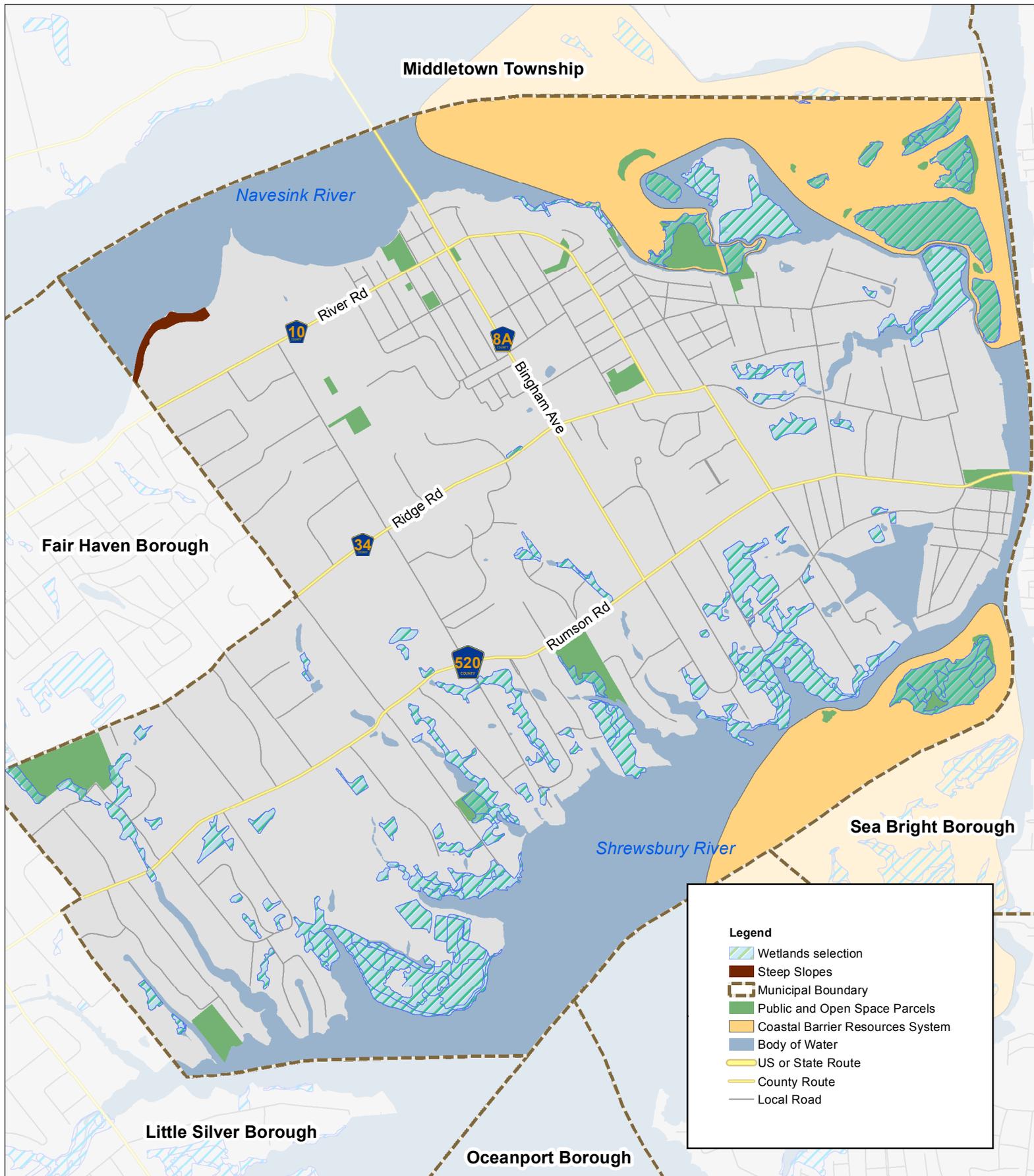


Rumson Flood Prone Structures and Areas of Mitigation Interest

- Repetitive Loss**
- Repetitive Loss
 - Severe Repetitive Loss
- Areas of Mitigation Interest**
- w/ Community Action Number
- At Risk Essential Facilities
 - Coastal Structures
 - Other Flood Risk Areas
- Critical Facilities**
- ✳ Emergency Medical Center
 - 🚒 Firehouse
 - 🏠 Shelter
 - 🚗 Comfort Station
 - 🚗 Alternate Shelter/Transfer Center
 - 🏢 City Facilities
 - 🏠 Daycare
 - 🚰 Fuel Storage Station
 - 🚓 Police Station
 - 🏠 Pump Station
 - 📍 Flood Valve
- Evacuation Routes**
- Roads**
- Floodprone Structures**
- Located within 100-yr Flood Zone
 - Potentially Impacted by Nearby Flooding
- Buildings**
- Contours - 2 ft**
- Contour
 - Index Contour
- Parcels**
- ▭ Parcel Outline
 - ▭ Borough Owned
 - ▨ Other Mitigated Parcels
 - ▨ Demolished
 - ▨ Elevated
 - ▨ Elevated as Part of Grant
- Open Water**
- ▭ 100-yr
 - ▭ 500-yr
- 2014 Preliminary Floodplain**
- ▭ 100-yr
 - ▭ 500-yr

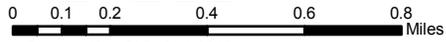


Appendix O: Natural Features Map



**Natural Features
Borough of Rumson
Monmouth County, New Jersey**

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



Prepared by: CLB, 2/11/2015
 Source: FEMA; NJDEP; NJDOT; NJGIN; Monmouth County
 H:\RMSN\01697\GIS\Projects\Natural Functions.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 P: Draft Ordinance Revisions

CHAPTER XVII FLOOD DAMAGE PREVENTION ORDINANCE

17-1 STATUTORY AUTHORIZATION, FINDINGS OF FACT, PURPOSE AND OBJECTIVES.

17-1.1 Statutory Authorization.

The Legislature of the State of New Jersey has in N.J.S.A. 40:48-1et seq., delegated the responsibility to local governmental units to adopt regulations designed to promote public health, safety, and general welfare of its citizenry. Therefore, the Borough Council of the Borough of Rumson, in the County of Monmouth, State of New Jersey does ordain as follows. (Ord. No. 09-012G, §1)

17-1.2 Findings of Fact.

a. The flood hazard areas of the Borough of Rumson are subject to periodic inundation which results in 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.

b. These flood losses are caused by the cumulative effect of obstructions in areas of special flood hazards which increase flood heights and velocities, and when inadequately anchored, damage uses in other areas. Uses that are inadequately floodproofed, elevated or otherwise protected from flood damage also contribute to the flood loss.
(Ord. No. 09-012G, §1)

17-1.3 Statement of Purpose.

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

- a. To protect human life and health;
- b. To minimize expenditure of public money for costly flood control projects;
- c. To minimize the need for rescue and relief efforts associated with flooding and generally undertaken at the expense of the general public;
- d. To minimize prolonged business interruptions;
- e. To 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;
- f. To help maintain a stable tax base by providing for the sound use and development of areas of special flood hazard so as to minimize future flood blight areas;
- g. To ensure that potential buyers are notified that property is in an area of special flood hazard; and

h. To ensure that those who occupy the areas of special flood hazard assume responsibility for their actions.
(Ord. No. 09-012G, §1)

17-1.4 Methods of Reducing Flood Losses.

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

- a. 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;
 - b. Requiring that uses vulnerable to floods including facilities which serve such uses, be protected against flood damage at the time of initial construction;
 - c. Controlling the alteration of natural flood plains, stream channels, and natural protective barriers, which help accommodate or channel flood waters;
 - d. Controlling filling, grading, dredging, and other development which may increase flood damage; and,
 - e. Preventing or regulating the construction of flood barriers which will unnaturally divert flood waters or which may increase flood hazards in other areas.
- (Ord. No. 09-012G, §1)

17-2 DEFINITIONS.

Unless specifically defined below, words or phrases used in this chapter shall be interpreted so as to give them the meaning they have in common usage and to give this chapter its most reasonable application.

Advisory base flood elevation (ABFE) shall mean those elevations promulgated by the Federal Office of Emergency Management on December 12, 2012 ~~which more accurately reflect the true one (1%) percent annual change of flood hazard elevations as a result of a large storm event.~~

Appeal shall mean a request for a review of the Borough Construction Official's interpretation of any provision of this chapter or a request for a variance.

Area of shallow flooding shall mean a designated AO, AH, or VO zone on a community's Digital Flood Insurance Rate Map (DFIRM) with a one (1%) percent annual or greater chance of flooding to an average depth of from one (1) to three (3) feet where a clearly defined channel does not exist, where the path of flooding is unpredictable, and where velocity flow may be evident. Such flooding is characterized by ponding or sheet flow.

Area of special flood hazard shall mean the land in the flood plain within a community subject to a one (1%) percent or greater chance of flooding in any given year.

Areas of special flood related erosion hazard shall mean the land within a community which is most likely to be subject to severe flood related erosion losses. After a detailed evaluation of the

special flood related erosion hazard area will be designated a Zone E on the Digital Flood Insurance Rate Map.

Base flood shall mean the flood having a one (1%) percent chance of being equaled or exceeded in any given year as identified within the documents referenced in subsection 17-3.2. The Base Flood Elevation ~~used to determine lowest floor elevations~~ shall be the greater of the base flood elevation indicated in the Flood Insurance Study prepared by FEMA; DFIRM prepared by FEMA; ~~or~~ the Advisory Base Flood Elevation Map prepared by FEMA, dated December 12, 2012; or the Preliminary DFIRM prepared by FEMA, dated January 31, 2014.

Basement shall mean any area of the building having its floor subgrade (below ground level) on all sides.

Breakaway wall shall mean a wall that is not part of the structural support of the building and is intended through its design and construction to collapse under specific lateral loading forces without causing damage to the elevated portion of the building or supporting foundation system.

Coastal high hazard area shall mean an area of special flood hazard extending from offshore to the inland limit of a primary frontal dune along an open coast and any other area subject to high velocity wave action from storms or seismic sources including V, VE and Coastal A Zones.

Development shall mean any manmade change to improved or unimproved real estate, including but not limited to buildings or other structures, mining, dredging, filling, grading, paving, excavation or drilling operations, or storage of equipment or materials located within the area of special flood hazard.

Digital Flood Insurance Rate Map (DFIRM) shall mean the official map on which the Federal Insurance Administration has delineated both the areas of special flood hazards and the risk premium zones applicable to the community.

Elevated building shall mean a nonbasement building (i) Built in the case of a building in a coastal high hazard area to have the bottom of the lowest horizontal structural member of the elevated floor, elevated above the ground level by means of piling, columns (posts and piers), or shear walls parallel to the flow of the water, and (ii) Adequately anchored so as not to impair the structural integrity of the building during a flood of up to the magnitude of the base flood. In an area of special flood hazard “elevated building” shall also include a building elevated by means of fill or solid foundation perimeter walls with openings sufficient to facilitate the unimpeded movement of flood waters. In areas of coastal high hazard “elevated building” shall also include a building otherwise meeting the definition of “elevated building” even though the lower area is enclosed by means of breakaway walls.

Erosion shall mean the process of the gradual wearing away of landmasses.

Flood or flooding shall mean a general and temporary condition of partial or complete inundation of normally dry land areas from:

- a. The overflow of inland or tidal waters and/or
- b. The unusual and rapid accumulation or runoff of surface waters from any source.

Flood Insurance Study (FIS) shall mean the official report in which the Federal Insurance Administration has provided flood profiles, as well as the Digital Flood Insurance Rate Map(s) and the water surface elevation of the base flood.

Flood plain management regulations shall mean zoning ordinances, subdivision regulations, building codes, health regulations, special purpose ordinances (such as a flood plain ordinance, grading ordinance and erosion control ordinance) and other applications of police power. The term describes such State or local regulations, in any combination thereof, which provide standards for the purpose of flood damage prevention and reduction.

Highest adjacent grade shall mean the highest natural elevation of the ground surface prior to construction next to the proposed walls of a structure.

Historic Structure shall mean any structure that is:

- a. Listed individually in the National Register of Historic Places (a listing maintained by the Department of Interior) or preliminarily determined by the Secretary of the Interior as meeting the requirements for individual listing on the National Register;
- b. Certified or preliminarily determined by the Secretary of the Interior as contributing to the historical significance of a registered historic district or a district preliminarily determined by the Secretary to qualify as a registered historic district;
- c. Individually listed on a State inventory of historic places in states with historic preservation programs which have been approved by the Secretary of the Interior; or
- d. Individually listed on a local inventory of historic places in communities with historic preservation programs that have been certified either:
 1. By an approved State program as determined by the Secretary of the Interior; or
 2. Directly by the Secretary of the Interior in states without approved programs.

Lowest floor shall mean the lowest floor of the lowest enclosed area (including basement). An unfinished or flood resistant enclosure, usable solely for the parking of vehicles, building access or storage in an area other than a basement is not considered a building's lowest floor provided that such enclosure is not built so to render the structure in violation of other applicable non-elevation design requirements.

Manufactured home shall mean a structure, transportable in one (1) or more sections, which is built on a permanent chassis and is designed for use with or without a permanent foundation when attached to the required utilities. The term "manufactured home" shall not include a "recreational vehicle."

Manufactured home park or *manufactured home subdivision* shall mean a parcel (or contiguous parcels) of land divided into two (2) or more manufactured home lots for rent or sale.

New construction shall mean structures for which the "start of construction" commenced on or after the effective date of a floodplain regulation adopted by a community and includes any subsequent improvements to such structures.

New manufactured home park or subdivision shall mean a manufactured home park or subdivision for which the construction of facilities for servicing the lots on which the manufactured homes are to be affixed (including at a minimum, the installation of utilities, the construction of streets, and either final site grading or the pouring of concrete pads) is completed on or after the effective date of the flood plain management regulations adopted by the municipality.

Primary frontal dune shall mean a continuous or nearly continuous mound or ridge of sand with relatively steep seaward and landward slopes immediately landward and adjacent to the beach and subject to erosion and overtopping from high tides and waves from coastal storms. The inland limit of the primary frontal dune occurs at the point where there is a distinct change from the relatively steep slope to a relatively mild slope.

Recreational vehicle shall mean a vehicle which is (a) built on a single chassis; (b) four hundred (400) square feet or less when measured at the longest horizontal projections; (c) designed to be self-propelled or permanently towable by a light duty truck; and (d) designed primarily not for use as a permanent dwelling but as temporary living quarters for recreational, camping, travel, or seasonal use.

Sand dunes shall mean naturally occurring accumulations of sand in ridges or mounds landward of the beach.

Start of construction shall mean for other than new construction or substantial improvements under the Coastal Barrier Resources Act (P.L. No. 97-348) includes substantial improvements and means the date the building permit was issued, provided the actual start of construction, repair, reconstruction, rehabilitation, addition, placement, or other improvement was within one hundred eighty (180) days of the permit date. The actual start shall mean either the first placement of permanent construction of a structure on a site, such as the pouring of slabs or footings, the installation of piles, the construction of columns, or any work beyond the stage of excavation, or the placement of a manufactured home on a foundation.

Permanent construction does not include land preparation, such as clearing, grading and filling, nor does it include the installation of streets and/or walkways; nor does it include excavation for a basement, footings, piers or foundations or the erection of temporary forms; nor does it include the installation on the property of accessory buildings, such as garages or sheds not occupied as dwelling units or not as part of the main structure. For a substantial improvement, the actual start of construction shall mean the first alteration of any wall, ceiling, floor, or other structural part of a building, whether or not that alteration affects the external dimensions of the building.

Structure shall mean a walled and roofed building, a manufactured home, or a gas or liquid storage tank that is principally above ground.

Substantial damage shall mean damage of any origin sustained by a structure whereby the cost of restoring the structure to its before damaged condition would equal or exceed fifty (50%) percent of the market value of the structure before the damage occurred.

Substantial improvement shall mean any reconstruction, rehabilitation, addition, or other improvement of a structure, the cost of which equals or exceeds fifty (50%) percent of the market value of the structure before the "start of construction" of the improvement. This term

includes structures which have incurred “substantial damage,” regardless of the actual repair work performed. The term does not, however, include either:

a. Any project for improvement of a structure to correct existing violations of State or local health, sanitary or safety code specifications which have been identified by the local code enforcement officer and which are the minimum necessary to assure safe living conditions; or

b. Any alteration of “an historic structure,” provided that the alteration will not preclude the structure's continued designation as “an historic structure.”

Variance shall mean a grant of relief from the requirements of this chapter which permits construction in a manner that would otherwise be prohibited by this chapter.

(Ord. No. 09-012G, §1; Ord. No. 12-015G; Ord. No. 13-002G)

17-3 GENERAL PROVISIONS.

17-3.1 Lands to Which This Chapter Applies.

This chapter shall apply to all areas of special flood hazards within the jurisdiction of the Borough of Rumson, Monmouth County, New Jersey. (Ord. No. 09-012G, §1)

17-3.2 Basis for Establishing the Areas of Special Flood Hazard.

The areas of special flood hazard for the Borough of Rumson, Community No. 345316, are identified and defined on the following documents prepared by the Federal Emergency Management Agency:

a. A scientific and engineering report “Flood Insurance Study, Monmouth County, New Jersey (All Jurisdictions)” dated September 25, 2009.

~~1. A scientific and engineering report “Flood Insurance Study, Monmouth County, New Jersey (All Jurisdictions)” dated September 25, 2009.~~

~~b.~~ 2. Digital Flood Insurance Rate Map for Monmouth County, New Jersey (All Jurisdictions) as shown on Index and panel numbers 34025C0068F, 34025C0069F, 34025C0088F, 34025C0181F, 34025C0182F, 34025C0184F, 34025C0201F, 34025C0203F; whose effective date is September 25, 2009.

~~c.~~ b. Advisory Base Flood Elevation Map, prepared by FEMA, dated December 12, 2012.

~~d.~~ A scientific and engineering report Preliminary “Flood Insurance Study, Monmouth County, New Jersey (All Jurisdictions)” dated January 14, 2014.

~~e.~~ Preliminary Digital Flood Insurance Rate Map for Monmouth County, New Jersey (All Jurisdictions) as shown on Index and panel numbers 34025C0068G, 34025C0069G, 34025C0088G, 34025C0181G, 34025C0182G, 34025C0184G, 34025C0201G, 34025C0203G; whose date is January 31, 2014.

For purposes of this Chapter, flood hazard boundaries, including coastal high hazard areas, shall be as identified and defined on the Preliminary Digital Flood Insurance Rate Maps dated January 31, 2014.

The above documents and designations are hereby adopted and declared to be a part of this chapter. The Flood Insurance ~~Study~~ Studies and maps are on file at Borough Hall, 80 East River Road, Rumson, New Jersey, 07760-1526.

(Ord. No. 09-012G, §1; Ord. No. 12-015G; Ord. No. 13-002G)

17-3.3 Penalties for Noncompliance.

No structure or land shall hereafter be constructed, located, extended, converted, or altered without full compliance with the terms of this chapter and other applicable regulations. Violation of the provisions of this chapter by failure to comply with any of its requirements (including violations of conditions and safeguards established in connection with conditions) shall constitute a misdemeanor. Any person(s), firm(s) or corporation(s) who violates or neglects to comply with any provisions of this section or any rule or regulation promulgated pursuant thereto, shall be subject to the penalty as stated in Chapter III, Section 3-1. Nothing herein contained shall prevent the Borough of Rumson from taking such other lawful action as is necessary to prevent or remedy any violation. (Ord. No. 09-012G, §1)

17-3.4 Abrogation and Greater Restrictions.

This chapter is not intended to repeal, abrogate, or impair any existing easements, covenants, or deed restrictions. However, where this chapter and other ordinance, easement, covenant, or deed restriction conflict or overlap, whichever imposes the more stringent restrictions shall prevail. (Ord. No. 09-012G, §1)

17-3.5 Interpretation.

In the interpretation and application of this chapter, all provisions shall be:

- a. Considered as minimum requirements;
- b. Liberally construed in favor of the Governing Body; and,
- c. Deemed neither to limit nor repeal any other powers granted under State statutes.

(Ord. No. 09-012G, §1)

17-3.6 Warning and Disclaimer of Liability.

The degree of flood protection required by this chapter is considered reasonable for regulatory purposes and is based on scientific and engineering considerations. Larger floods can and will occur on rare occasions. Flood heights may be increased by manmade or natural causes. This chapter does not imply that land outside the area of special flood hazards or uses permitted within such areas will be free from flooding or flood damages. This chapter shall not create liability on the part of the Borough of Rumson, any officer or employee thereof or the Federal Insurance Administration, for any flood damages that result from reliance on this chapter or any administrative decision lawfully made thereunder. (Ord. No. 09-012G, §1)

17-4 ADMINISTRATION.

17-4.1 Establishment of Development Permit.

A development permit shall be obtained before construction or development begins within any area of special flood hazard established in subsection 17-3.2. Application for a development permit shall be made on forms furnished by the Construction Official and may include, but not be limited to: plans in duplicate drawn to scale showing the nature, location, dimensions, and elevations of the area in question; existing or proposed structures, fill, storage of materials, drainage facilities; and the location of the foregoing.

Specifically, the following information is required:

- a. Elevation in relation to mean sea level, of the lowest floor (including basement) of all structures;
 - b. The ~~advisory~~ base flood elevation made applicable to the subject property by this chapter, with homeowners affidavit.
 - c. Elevation in relation to mean sea level to which any structure has been floodproofed.
 - d. Certification by a registered professional engineer or architect that the floodproofing methods for any nonresidential structure meet the floodproofing criteria in subsection 17-6.2.b; and,
 - e. Description of the extent to which any watercourse will be altered or relocated as a result of proposed development.
- (Ord. No. 09-012G § 1; Ord. No. 13-002G)

17-4.2 Designation of the Local Administrator.

The Construction Official is hereby appointed to administer and implement this chapter by granting or denying development permit applications in accordance with its provisions. (Ord. No. 09-012G, §1)

17-4.3 Duties and Responsibilities of the Local Administrator.

Duties of the Construction Official shall include, but not be limited to:

- a. *Permit Review.*
 1. Review all development permits to determine that the permit requirements of this chapter have been satisfied.
 2. Review all development permits to determine that all necessary permits have been obtained from those Federal, State or local governmental agencies from which prior approval is required.

3. Review all development permits to determine if the proposed development is located in the floodway.

4. Review all development permits in the coastal high hazard area of the area of special flood hazard to determine if the proposed development alters sand dunes so as to increase potential flood damage.

5. Review plans for walls to be used to enclose space below the ~~greater of the advisory base flood elevation or the base flood level~~ in accordance with subsection 17-6.3b.4.

b. *Use of Other Base Flood and Floodway Data.* When base flood elevation, ~~advisory base flood elevation and/or~~ and floodway data has not been provided in accordance with subsection 17-3.2, Basis for Establishing the Areas of Special Flood Hazard, the Construction Official shall obtain, review, and reasonably utilize any ~~advisory base flood elevation~~, base flood elevation and floodway data available from a Federal, State or other source, in order to administer subsection 17-6.2. Specific Standards, paragraph a., Residential Construction, and paragraph b., Nonresidential Construction.

c. *Information to Be Obtained and Maintained.*

1. Obtain and record an Elevation Certificate indicating the actual elevation (in relation to mean sea level) of the lowest floor (including basement) of all new or substantially improved structures, and whether or not the structure contains a basement.

2. For all new or substantially improved floodproofed structures:

(a) Verify and record an Elevation Certificate indicating the actual elevation (in relation to mean sea level); and

(b) Maintain the floodproofing certifications required in subsection 17-4.1d.

3. In coastal high hazard areas, certification shall be obtained from a registered professional engineer or architect that the provisions of subsection 17-6.3 paragraph b.1. and b.2. are met.

4. Maintain for public inspection all records pertaining to the provisions of this chapter.

d. *Alteration of Watercourses.*

1. Notify adjacent communities and the New Jersey Department of Environmental Protection, Flood Control Section and the Land Use Regulation Program prior to any alteration or relocation of a watercourse, and submit evidence of such notification to the Federal Insurance Administration.

2. Require that maintenance is provided within the altered or relocated portion of said watercourse so the flood carrying capacity is not diminished.

e. *Interpretation of FIRM Boundaries.* Make interpretations where needed, as to the exact location of the boundaries of the areas of special flood hazards (for example, where there appears to be a conflict between a mapped boundary and actual field conditions). The person contesting the location of the boundary shall be given a reasonable opportunity to appeal the interpretation as provided in Section 17-5.

(Ord. No. 09-012G § 1; Ord. No. 13-002G)

17-5 VARIANCE PROCEDURE.

17-5.1 Appeal Board.

a. The ~~Construction Board of Appeals~~ Zoning Board of Adjustments as established by the Borough of Rumson shall hear and decide appeals and requests for variances from the requirements of this chapter.

b. The ~~Construction Board of Appeals~~ Zoning Board of Adjustments shall hear and decide appeals when it is alleged there is an error in any requirement, decision, or determination made by the Construction Official in the enforcement or administration of this chapter.

c. Those aggrieved by the decision of the ~~Construction Board of Appeals~~ Zoning Board of Adjustments, or any taxpayer, may appeal such decision to the Superior Court of New Jersey, as provided in N.J. Court Rules, 1982, R4:69.

d. In passing upon such applications, the ~~Construction Board of Appeals~~ Zoning Board of Adjustments, shall consider all technical evaluations, all relevant factors, standards specified in other sections of this chapter, and:

1. The danger that materials may be swept onto other lands to the injury of others;
2. The danger to life and property due to flooding or erosion damage;
3. The susceptibility of the proposed facility and its contents to flood damage and the effect of such damage on the individual owner;
4. The importance of the services provided by the proposed facility to the community;
5. The necessity to the facility of a waterfront location, where applicable;
6. The availability of alternative locations for the proposed use which are not subject to flooding or erosion damage;
7. The compatibility of the proposed use with existing and anticipated development;
8. The relationship of the proposed use to the comprehensive plan and flood plain management program of that area;
9. The safety of access to the property in times of flood for ordinary and emergency vehicles;
10. The expected heights, velocity, duration, rate of rise, and sediment transport of the flood waters and the effects of wave action, if applicable, expected at the site; and,
11. The costs of providing governmental services during and after flood conditions, including maintenance and repair of public utilities and facilities such as sewer, gas, electrical, and water systems, and streets and bridges.

e. Upon consideration of the factors of subsection 17-5.1d. and the purposes of this chapter, the ~~Construction Board of Appeals~~ Zoning Board of Adjustments may attach such conditions to the granting of variances as it deems necessary to further the purposes of this chapter.

f. The Construction Official shall maintain the records of all appeal actions, including technical information, and report any variances to the Federal Insurance Administration upon request.

(Ord. No. 09-012G, §1)

17-5.2 Conditions for Variances.

a. Generally, variances may be issued for new construction and substantial improvements to be erected on a lot of one-half (1/2) acre or less in size contiguous to and surrounded by lots with existing structures constructed below the base flood elevation level, ~~or advisory base flood level~~, providing items (1.-11.) in subsection 17-5.1d. have been fully considered. As the lot size increases beyond the one-half (1/2) acre, the technical justification required for issuing the variance increases.

b. Variances may be issued for the repair or rehabilitation of historic structures upon a determination that the proposed repair or rehabilitation will not preclude the structure's continued designation as a historic structure and the variance is the minimum necessary to preserve the historic character and design of the structure.

c. Variances shall not be issued within any designated floodway if any increase in flood levels during the base flood discharge would result.

d. Variances shall only be issued upon a determination that the variance is the minimum necessary, considering the flood hazard, to afford relief.

e. Variances shall only be issued upon:

1. A showing of good and sufficient cause;

2. A determination that failure to grant the variance would result in exceptional hardship to the applicant; and,

3. A determination that the granting of a variance will not result in increased flood heights, additional threats to public safety, extraordinary public expense, create nuisances, cause fraud on or victimization of the public as identified in subsection 17-5.1d., or conflict with existing local laws or ordinances.

f. Any applicant to whom a variance is granted shall be given written notice that the structure will be permitted to be built with a lowest floor elevation below the base flood elevation ~~or advisory base flood elevation~~ and that the cost of flood insurance will be commensurate with the increased risk resulting from the reduced lowest floor elevation.

(Ord. No. 09-012G § 1; Ord. No. 13-002G)

17-6 PROVISIONS FOR FLOOD HAZARD REDUCTION.

17-6.1 General Standards.

In all areas of special flood hazards the following standards are required:

a. *Anchoring.*

1. All new construction and substantial improvements shall be anchored to prevent flotation, collapse, or lateral movement of the structure.

2. All manufactured homes shall be anchored to resist flotation, collapse or lateral movement. Methods of anchoring may include, but are not to be limited to, use of over-the-top or frame ties to ground anchors. This requirement is in addition to applicable State and local anchoring requirements for resisting wind forces.

b. *Construction Material and Methods.*

1. All new construction and substantial improvements shall be constructed with materials and utility equipment resistant to flood damage.

2. All new construction and substantial improvements shall be constructed using methods and practices that minimize flood damage.

c. *Utilities.*

1. All new and replacement water supply systems shall be designed to minimize or eliminate infiltration of flood waters into the system;

2. New and replacement sanitary sewage systems shall be designed to minimize or eliminate infiltration of flood waters into the systems and discharge from the systems into flood waters;

3. On-site waste disposal systems shall be located to avoid impairment to them or contamination from them during flooding; and

4. Electrical, heating, ventilation, plumbing and air conditioning equipment and other service facilities shall be designed and/or located so as to prevent water from entering or accumulating within the components during conditions of flooding.

d. *Subdivision Proposals.*

1. All subdivision proposals shall be consistent with the need to minimize flood damage;

2. All subdivision proposals shall have public utilities and facilities such as sewer, gas, electrical, and water systems located and constructed to minimize flood damage;

3. All subdivision proposals shall have adequate drainage provided to reduce exposure to flood damage; and,

4. ~~Advisory base flood elevation and base~~ Base flood elevation data shall be provided for all subdivision proposals and other proposed development located in a special flood hazard area, which contain at least fifty (50) lots or five (5) acres (whichever is less).

e. *Enclosure Openings.* For all new construction and substantial improvements, having fully enclosed areas below the lowest floor that are usable solely for parking of vehicles, building access

or storage in an area other than a basement and which are subject to flooding shall be designed to automatically equalize hydrostatic flood forces on exterior walls by allowing for the entry and exit of floodwaters. Designs for meeting this requirement must either be certified by a registered professional engineer or architect or must meet or exceed the following minimum criteria: A minimum of two (2) openings having a total net area of not less than one (1) square inch for every square foot of enclosed area subject to flooding shall be provided. The bottom of all openings shall be no higher than one (1) foot above grade. Openings may be equipped with screens, louvers, or other coverings or devices provided that they permit the automatic entry and exit of floodwaters. (Ord. No. 09-012G, §1; Ord. No. 13-002G)

17-6.2 Specific Standards.

In all areas of special flood hazards where base flood elevation data ~~or advisory base flood elevation data~~ has been provided as set forth in subsection 17-3.2, Basis for Establishing the Areas of Special Flood Hazard, or in subsection 17-4.3b., Use of Other Base Flood and Floodway Data, the following standards are required:

a. The Base Flood Elevation used to determine the lowest floor elevation of a structure shall be the greater of the base flood elevation indicated in:

1. A scientific and engineering report "Flood Insurance Study, Monmouth County, New Jersey (All Jurisdictions)" dated September 25, 2009.

2. Digital Flood Insurance Rate Map for Monmouth County, New Jersey (All Jurisdictions) as shown on Index and panel numbers 34025C0068F, 340250069F, 34025C0088F, 34025C0181F, 34025C0182F, 34025C0184F, 34025C0201F, 34025C0203F; whose effective date is September 25, 2009.

3. Advisory Base Flood Elevation Map, prepared by FEMA, dated December 12, 2012.

4. A scientific and engineering report Preliminary "Flood Insurance Study, Monmouth County, New Jersey (All Jurisdictions)" dated January 14, 2014.

5. Preliminary Digital Flood Insurance Rate Map for Monmouth County, New Jersey (All Jurisdictions) as shown on Index and panel numbers 34025C0068G, 34025C0069G, 34025C0088G, 34025C0181G, 34025C0182G, 34025C0184G, 34025C0201G, 34025C0203G; whose date is January 31, 2014.

b. *Residential Construction.* New construction and substantial improvement of any residential structure shall have the lowest floor, including basement together with the attendant utilities and sanitary facilities elevated to or above the ~~greater of the base flood elevation or the advisory base flood elevation;~~ In those areas where the base flood elevation of the Advisory Base Flood Elevation Map dated December 12, 2012 is equal to the Preliminary DFIRM Map dated January 31, 2014, the lowest floor, including basement together with the attendant utilities and sanitary facilities, shall be elevated at least one foot above the base flood elevation; and

Within any AO zone on the Borough of Rumson's FIRM or Preliminary DFIRM ~~the Advisory Base Flood Elevation~~ Map that all new construction and substantial improvement of any residential structure shall have the lowest floor, including basement, elevated above the highest adjacent grade at least as high as the depth number specified in feet (at least two (2) feet if no depth number is

specified). And, require adequate drainage paths around structures on slopes to guide floodwaters around and away from proposed structures.

c. *Nonresidential Construction.* In an area of special flood hazard, all new construction and substantial improvement of any commercial, industrial or other nonresidential structure shall:

1. ~~Either~~ Have the lowest floor, including basement, together with the attendant utilities and sanitary facilities, elevated to or above the level of the ~~greater of the~~ base flood elevation ~~or the advisory base flood elevation; and.~~ In those areas where the base flood elevation of the Advisory Base Flood Elevation Map dated December 12, 2012 is equal to the Preliminary DFIRM Map dated January 31, 2014, the lowest floor, including basement together with the attendant utilities and sanitary facilities, shall be elevated at least one foot above the base flood elevation; and

2. Within any AO zone on the municipality's FIRM or Preliminary DFIRM Map ~~the Advisory Base Flood Elevation Data~~ that all new construction and substantial improvement of any commercial, industrial or other nonresidential structure shall ~~either~~ have the lowest floor, including basement, elevated above the highest adjacent grade at least as high as the depth number specified in feet (at least two (2) feet if no depth number is specified). And, require adequate drainage paths around structures on slopes to guide floodwaters around and away from proposed structures;

or

1. Be floodproofed so that below ~~the greater of the base flood elevation level or the ABFE level,~~ the structure is watertight with walls substantially impermeable to the passage of water;

2. Have structural components capable of resisting hydrostatic and hydrodynamic loads and effects of buoyancy; and,

3. Be certified by a registered professional engineer or architect that the design and methods of construction are in accordance with accepted standards of practice for meeting the applicable provisions of this subsection. Such certification shall be provided to the official as set forth in subsection 17-4.3c.2.

d. *Manufactured Homes.*

1. Manufactured homes shall be anchored in accordance with subsection 17-4.3.a.2.

2. All manufactured homes to be placed or substantially improved within an area of special flood hazard shall be elevated on a permanent foundation such that the top of the lowest floor is at or above ~~the greater of the base flood elevation or the advisory base flood elevation.~~
(Ord. No. 09-012G § 1; Ord. No. 12-015G; Ord. No. 13-002G)

17-6.3 Coastal High Hazard Area.

Coastal high hazard areas (V or VE and Coastal A Zones) are located within the areas of special flood hazard established in subsection 17-3.2. These areas have special flood hazards associated with high velocity waters from tidal surges and hurricane wave wash; therefore, the following provisions shall apply:

a. *Location of Structures.*

1. All buildings or structures shall be located landward of the reach of the mean high tide.

2. The placement of manufactured homes shall be prohibited, except in an existing manufactured home park or manufactured home subdivision.

b. *Construction Methods.*

1. Elevation. All new construction and substantial improvements shall be elevated on piling or columns so that the bottom of the lowest horizontal structural member of the lowest floor (excluding the piling or columns) is elevated to or above ~~the greater of~~ the base flood elevation ~~or the ABFE base flood level~~, with all space below the lowest floor's supporting member open so as not to impede the flow of water, except for breakaway walls as provided for in paragraph b.4 of this subsection. In those areas where the base flood elevation of the Advisory Base Flood Elevation Map dated December 12, 2012 is equal to the Preliminary DFIRM Map dated January 31, 2014, the bottom of the lowest horizontal structural member of the lowest floor shall be elevated at least one foot above the base flood elevation.

2. Structural Support.

(a) All new construction and substantial improvements shall be securely anchored on piling or columns.

(b) The pile or column foundation and structure attached thereto shall be anchored to resist flotation, collapse or lateral movement due to the effects of wind and water loading values each of which shall have a one (1%) percent chance of being equaled or exceeded in any given year (one hundred- (100) year mean recurrence interval).

(c) There shall be no fill used for structural support.

3. Certification. A registered professional engineer or architect shall develop or review the structural design specifications and plans for the construction and shall certify that the design and methods of construction to be used are in accordance with accepted standards of practice for compliance with the provisions of paragraphs b.1 and b.2 (a) and (b) of this subsection.

4. Space Below the Lowest Floor.

(a) Any alteration, repair, reconstruction or improvement to a structure started after the enactment of this chapter shall not enclose the space below the lowest floor unless breakaway walls, open wood lattice-work or insect screening are used as provided for in this section.

(b) Breakaway walls, open wood lattice-work or insect screening shall be allowed below the base flood elevation provided that they 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 supporting foundation system. Breakaway walls shall be designed for a safe loading resistance of not less than ten (10) and no more than twenty (20) pounds per square foot. Use of breakaway walls which exceed a design safe loading of twenty (20) pounds per square foot (either by design or when so required by local or

State codes) may be permitted only if a registered professional engineer or architect certifies that the designs proposed meet the following conditions:

(1) Breakaway wall collapse shall result from a water load less than that which would occur during the base flood: and

(2) The elevated portion of the building and supporting foundation system shall not be subject to collapse, displacement or other structural damage due to the effects of wind and water load acting simultaneously on all building components (structural and nonstructural). Water loading values used shall be those associated with the base flood. Wind loading values used shall be those required by applicable State or local building standards.

(c) If breakaway walls are utilized, such enclosed space shall be used solely for parking of vehicles, building access, or storage and not for human habitation.

(d) Prior to construction, plans for any breakaway wall must be submitted to the construction official for approval.

c. *Sand Dunes.* There shall be no alteration of sand dunes which would increase potential flood damage.

(Ord. No. 09-012G § 1; Ord. No. 13-002G)

17-7 PENALTY CLAUSE.

Any person(s), firm(s) or corporation(s) who violates or neglects to comply with any provisions of this chapter or any rule or regulation promulgated pursuant thereto, shall be subject to the penalty as stated in Chapter III, Section 3-1. (Ord. No. 09-012G, §1)

17-8 EFFECT.

This chapter is a revision of Chapter XVII of the “Revised General Ordinances of the Borough of Rumson, New Jersey,” as the same were in effect in October, 1987 and shall supersede said Chapter XVII as the same was in effect in October 1987, to the extent that they are inconsistent herewith is hereby repealed.

22-7.8 Accessory Buildings and Structures.

Accessory buildings and structures shall conform to this subsection and, when not in conflict with specific provisions of this subsection, to the general requirements set forth in Schedule 5-1, Schedule of Zoning District Regulations.

- a. Accessory structures which are not subject to general yard requirements include:
 1. Any accessory structure subject to specific requirements set forth in Section 22-7.
 2. Bulkheads, piers and docks.
 - ~~3. Retaining walls less than four (4') feet high.~~
 34. Walls other than retaining walls, including decorative, screening, and landscaping walls, less than four (4') feet high.
 45. Residential accessory lighting, conforming to performance standards in subsections 22-7.22d, 12 and 13.
 56. Fountains, sculpture, and decorative ponds, less than four (4') feet high.
- b. *Location of Accessory Buildings.*
 1. An accessory building attached to a principal building shall comply in all respects with the zoning requirements for the principal building.
 2. Detached accessory buildings shall not be located in a front yard.
 3. Detached accessory buildings shall comply with Schedule 5-1, Zoning District Regulations, except that storage sheds less than ten (10') feet high with a floor area of less than one hundred (100) square feet may be located not less than five (5') feet from any side rear lot line.
- c. No detached accessory building, in any residential zone, shall be less than five (5') feet from a principal building.
- d. No accessory building shall be constructed before the principal building.
- e. Accessory buildings must be located on the same lot as the principal use to which they are accessory.
- f. Residential accessory pools and any associated accessory building shall not be located in any front yard nor between any principal dwelling and a street and shall maintain a minimum setback to any property line as follows:
 1. To the pool and any associated accessory building: ten (10') feet in the R4, R5, R6, GB, NB and POB Zones and twenty-five (25') feet in all other zones; or
 2. To aprons, decks, walks, fences and other accessory structures associated with the pool, the same setback required for other accessory structures by Schedule 5-1, Schedule of Zoning District Regulations; or

3. For lots bordering on a river or other navigable waterway, also see subsection 22-7.32.

g. Limitation on Accessory Buildings.

1. The aggregate ground floor area of all accessory buildings on a lot may not exceed the following percentage of the ground floor area of the principal dwelling (or, for nonresidential uses, of the total of all principal buildings);

<i>Zone</i>	<i>Percent</i>
R1, R2, R3	30%
R4, R5, R6 and Residential Uses in POB, NB, and GB Zones	40%
POB, NB, GB	50%

2. Any single accessory building with ground-floor area equal to or greater than the following maximums must, notwithstanding any other provision of this chapter, conform to the minimum yard requirements for principal buildings:

<i>Zone</i>	<i>Maximum</i>
R1, R2, R3	1400 s.f.
R4, R5, R6 and Residential Uses in POB, NB, and GB Zones	500 s.f.
POB, NB, GB	200 s.f.

3. In the R1 and R2 Zones, the second floor of an accessory building may not have usable floor area greater than one-half (1/2) of the ground floor area. In all other zones, no useable floor area may exist above the ground floor.

4. Accessory buildings may not have cellars or basements.

5. Accessory buildings may not have heat.

h. No accessory building shall be used for residential purposes by any person or persons, including members of the family or the occupants of the principal building or domestic servants or others employed on the premises. No portion of any accessory building attached to a principal building by a connecting link may be used as living space. Any building element which connects portions of a building containing principal and accessory uses and is less than fifteen (15') feet wide or has a length to width ratio greater than 4:1 or has a height to width ratio greater than 3:2 will be considered a connecting link.

The terms "residential purposes" and "living space" used in this subsection are to be broadly construed as including all normal residential use, excluding only accessory uses such as storage, utilities, mechanical equipment, parking, workshops, property maintenance activities, garden

support facilities, animal facilities, weather shelters, and minimal sanitary facilities supporting outdoor activities.

i. Within a residential zone district, an entry driveway or a walkway may cross any yard area except that within the R-1, R-2, and R-3 Zone Districts, no driveway shall be within five (5') feet of a side yard line or within fifteen (15') feet of a rear yard line. Within a nonresidential zone district, entry driveways and walkways may cross any yard area; however, other than crossing yards, driveways shall adhere to the yard requirements for accessory structures. Walkways in a nonresidential zone may be located in a yard area but they shall not encroach into any required buffer.

j. A roofed, open sided or unroofed porch, deck, patio or similar structure attached to, or within five (5') feet of the principal building shall conform to the yard requirements as established in subsection 22-7.7f, otherwise, it shall adhere to the yard requirements for an accessory structure.

k. Maximum height of light fixtures accessory to single-family or two-family residential uses, shall not exceed nine (9') feet, in the R-1 and R-2 Zone Districts, nor six (6') feet in any other Zone District. Residential light fixtures shall conform to all standards established in this chapter including but not limited to, subsections 22-9.2 and 22-9.3.

(Ord. 5/19/05, § 8; Ord. 10/19/06, § 2; Ord. No. 08-015D, §1; Ord. No. 12-013D)

22-7.25 Fences and Walls.

a. Fences and walls hereafter erected, replaced, or substantially reconstructed and hedgerows in any zone district shall be regulated as follows:

1. Fences, hedgerows and walls shall adhere to the height standards found in Schedule 7.2 entitled, "Height Restrictions; Hedgerows, Fences and Walls."

2. Height of fences shall be measured from the ground at the fence line to the highest element of the fence excluding any decorative post cap. Except in minimum clear sight areas, decorative post caps may exceed the permitted height of the highest element of the fence by one-sixth (1/6th) of the permitted height.

3. Height of walls shall be measured to the top of the wall from the ground elevation at the face of the wall, except if the face of the wall is within two (2') feet of a property line, the height shall be measured from the lower of the ground elevation at the face of the wall or the ground elevation on the adjoining property. Except in clear sight areas, measurements for walls shall exclude decorative wall elements similar to post caps on fences, which may exceed the permitted height of the highest element of the wall by up to one-sixth (1/6th) the permitted height.

4. In any business zone, open wire fences not exceeding eight (8') feet in height may be erected in the rear or side yard areas and behind the building setback line in accordance with a site plan approved by the Municipal Agency.

5. On park, recreation or school properties, open wire fences not exceeding eight (8') feet in height may be erected in the rear or side yard areas and behind the building setback line.

6. Fences or walls exceeding the maximum height allowed are permitted if they are specifically required or approved by the Municipal Agency or required by another provision of this chapter or other municipal and State regulations.

b. All fences, walls and hedgerows must be erected or installed within the property lines, and no fences, walls and hedgerows shall be erected so as to encroach upon a public right-of-way. ~~The centerline of fences or the face of retaining walls may be located within two (2') feet of a property line or must be at least fifteen (15') feet from property lines~~ shall be located in compliance with the accessory structure setback requirements found in Schedule 5-1, except: when approved by the Municipal Agency, or within buffers, around refuse areas or when used for dog runs, garden enclosures or similar normal residential accessory uses. Back-to-back fences are permitted at the property line. Hedgerows shall be located so that foliage, at full maturity, shall not extend into the public right-of-way.

c. Barbed wire, razor wire, canvas or cloth fence and fencing construction are prohibited in all zones. Metal fences greater than four (4') feet in height shall have a flat top; use of pointed posts or pickets is prohibited.

d. All supporting members of a fence shall be located on the inside of the fence, and if erected along or adjacent to a property line, the supporting members of the fence shall face the principal portion of the tract of land of the property upon which the fence is erected.

e. The width of supporting members, columns or pillars for an open fence cannot exceed either two (2') feet or one-tenth (1/10) of the length of open fencing between support members, whichever is less.

f. *Entrances to Private Driveways.*

1. Remotely controlled security gates are allowed on private drives and driveways, but such gates shall not impede fire or emergency access. Security gate systems shall be set back to provide a queuing area of at least thirty (30') feet clear of the curblineline or sidewalk. Security gate systems must be "power loss fail-safe." In the event of power loss, the gate must open or be easily opened manually. In the event that the Borough adopts by ordinance a standard for remote operation of security gates by public safety personnel, all security gate systems must be brought into compliance with such standard within one (1) year of adoption and thereafter maintained and operated only in compliance with such standard.

2. Height of decorative driveway entrance structures may exceed the maximum permitted fence height by one-sixth (1/6th) of the permitted height. Columns or pillars as a component of any ornamental entrance structure may have a width and depth up to of thirty-six (36") inches. Non-open fence and walls may be utilized as an element of a decorative driveway entrance structure for a maximum on each side of the driveway equal to the permitted maximum fence height. No decorative driveway entrance shall impede fire or emergency access.

g. Tennis court fences, baseball and softball backstops and spectator protective fencing are exempt from the requirements of this section provided they are not located within any required yard area. Located outside of any required yard area, they are subject to the height limitations of the particular zone district.

h. Fences which are painted shall be painted in only one (1) color, harmonious with the surrounding area. Multicolored fences are prohibited.

i. Fences shall be erected in a manner so as to permit the flow of natural drainage and shall not cause surface water to be blocked or dammed to create ponding.

j. No hedges or screen plantings over three (3') feet in height shall be permitted in the water setback in an area equal to fifty (50%) percent of the building setback to the bulkhead or high-water line, or fifty (50') feet, whichever is the lesser distance. This section shall not be construed to prohibit the planting of shade or ornamental trees either individually or in small groupings. The height of fences within the required river setback shall be in accordance with subsection 22-7.25, Schedule 7-2.

Schedule 7-2
Maximum Height Restrictions
Hedgerows, Fences, ~~and Walls~~ and Retaining Walls
(Subsection 22-7.25)

	<i>Within Clear Sight Area</i>	<i>R-1, R-2, R-3 Zone Districts Outside of Clear Sight Area</i>	<i>All Other Zone Districts Outside of Clear Sight Area</i>
Hedgerows	30"	Not regulated if in compliance with subsection 22-7.25	Not regulated if in compliance with subsection 22-7.25
Open and Picket Fences	30"	6' (72") anywhere except 48" in "required river setback" per subsection 22-7.32b,2	48" in required front yard or between principal structure and street 48" in required river setback per subsection 22-7.32b,2 48" in required secondary front yard or between principal structure and secondary front yard street frontage (see subsection 22-7.4) 6' (72") elsewhere
Walls and Other fences (not open or picket)	30"	36" in required front yard or between principal structure and street 36" in required river setback per subsection 22-7.32b,2 48" in required secondary front yard or between principal structure and secondary front yard street frontage (see subsection 22-7.4) 6' (72") elsewhere	
<u>Retaining Walls</u>	<u>30"</u>	<u>36" in required front yard or between principal structure and street</u> <u>36" in required river setback per subsection 22-7.32b,2</u> <u>36" between the side accessory structure setback line and the side principal structure setback line</u> <u>36" between the rear accessory structure setback line and the rear principal structure setback line</u> <u>6' (72") within the principal structure setback lines</u>	

22-7.27 Soil Removal and Fill.

a. Borough approval shall be required for any grading or regrading of a property in accordance with the following schedule:

Criteria to Require Borough Approval

	<i>R1 and R2 Zone Districts</i>	<i>All Other Zone Districts</i>
Removing soil from a property	Any removal	Any removal
Fill with soil from outside a property	<u>50</u> 100 cubic yards or more	<u>25</u> 50 cubic yards or more
Soil disturbance	<u>5,000</u> 10,000 square feet or more	<u>2,000</u> 3,000 square feet or more
Height (maximum change in elevation, <u>including retaining walls</u>)	2' or more	1' or more

b. Approval of a site plan or subdivision by the Municipal Agency which shows soil removal, importation or grading or approval of a grading plan by the Construction Official, who may seek the advice of the Borough Engineer, shall constitute Borough approval. Borough approval is for the purpose of minimizing impacts not anticipated by this chapter to adjacent property or Borough infrastructure. It is not for the purpose of confirming that the proposed grading is appropriate for meeting the property owner’s objectives.

c. Unless otherwise permitted by the Municipal Agency, the Construction Official or his designee, a grading plan and/or accompanying information must conform to the following minimum standards:

1. Existing and proposed grading information for the entire site, not just the limits of disturbance, must be shown.
2. Show grading information on adjacent lots which clearly identifies drainage patterns. A minimum of fifty (50') feet on adjacent lots is required for properties located in the R-1, R-2, and R-3 Zones. A minimum of twenty (20') feet is required in all other zones. If the property is flat or if the drainage patterns are poorly defined, additional information may be required.
3. Provide gutter and centerline elevations on all abutting roads at fifty (50') foot intervals. If the lot frontage is one hundred (100') feet or less, a minimum of three (3) elevations must be provided along the frontage; one (1) at each property line and one (1) in the center.
4. Existing grading information must be taken from field surveys or identifiable aerial mapping of appropriate resolution (0.5 feet; 6 inches). Existing grading information taken from Borough or County aerials is not acceptable.
5. The source of the existing grading information must be identified.

6. Show the location of all streams, bodies of water, regulated wetlands, or similar environmental features.

7. If the project is subject to the Tree Protection Ordinance, the grading plan must show the locations of all existing trees and street trees referred to in subsections 16-1.4a of the Tree Protection Ordinance. If street trees are not present, the plan shall reflect locations of proposed street trees at a fifty (50') foot interval to be located within ten (10') feet of the road edge and not between the curb and sidewalk, or in a location approved by the Tree Conservation Officer or the Rumson Shade Tree Commission.

8. Show the locations of all existing and proposed principal and accessory structures.

9. Show all existing and proposed subsurface drainage related elements, including, but not limited to, pipes, inlets, blind drains, wet wells, sump pump discharges, down spout/leader drains, dry well, etc.

10. Show all existing and proposed improvements (principal and accessory) and grading changes with sufficient horizontal and vertical information to identify the limits of grading.

11. Show all proposed soil erosion and sediment control measures, as well as a proposed sequence of construction.

12. Include the name and address of the property owner, and, if known, provide the name and address of the contractor, the name and address of the person responsible for the site grading, and a twenty-four (24) hour emergency contact telephone number.

13. Include the name and the qualifications of the person preparing the plan. The plan shall be prepared by a Professional Engineer, Land Surveyor, Landscape Architect or Architect licensed in the State of New Jersey.

14. Soil boring logs or soil pit profiles showing the seasonal high water table based on mottling data must be provided for any application involving the construction of a new home, construction of a substantial addition (resulting in a twenty-five (25%) percent or greater increase in floor area) and/or the construction of a stormwater management facility or recharge system. A minimum of one soil boring log or soil pit profile shall be provided within the building footprint. A minimum of one soil boring log or soil pit profile shall also be provided at the location of all proposed infiltration or recharge systems located greater than 50 feet from the building footprint.

15. The grading plan, along with necessary supporting documentation, shall demonstrate compliance with the Borough's Stormwater Management and Control Ordinance where applicable.

d. Wherever grading is to occur, necessary soil erosion prevention and protection measures in accordance with the Standards for Soil Erosion and Sediment Control in New Jersey and consistent with industry best practices should be implemented to ensure work is undertaken with minimum impacts to the existing infrastructure and surrounding properties. As a minimum, a silt fence or barrier of equivalent or better protection must be installed around the limit of disturbance whenever there is a potential to impact an adjacent property or public infrastructure.

e. Grading or other disturbance of property shall be accomplished in accord with approved plans, good industry practice and in a manner to avoid damage to any property including public infrastructure and to protect the health and safety of the public. The applicant shall be responsible for addressing negative impacts to neighboring properties as related to grading or other property disturbance to the satisfaction of the Construction Official.

f. The Construction Official may seek advice from other Borough Officials to determine how best to address an erosion problem.

g. At the completion of all construction activity when a grading plan was required or when requested by the Construction Official and prior to the issuance of a certificate of occupancy, an as-built grading plan shall be submitted for review by the Construction Official or other Borough Officials as necessary. The as-built grading plan shall include, but not be limited to show the full extent of the subject improvements, building corners elevations, finished floor elevations, garage floor elevations, ground spot elements, one (1') foot interval contours, curbs, sidewalks, patios, decks, driveways, and any other relevant information.

h. Any property that is elevated above existing grades shall not impede the free flow of stormwater runoff from adjacent properties.

22-7.39 Basements/Cellars.

The bottom of the floor slab of a basement or cellar shall be a minimum of two (2') feet above the seasonal high water table based on mottling data prior to the construction of a new basement and/or cellar. The bottom of any proposed sump pit shall also be located a minimum of two (2') feet above the seasonal high water table. Soil boring logs and/or soil pit profiles shall be provided to document the seasonal high water elevation to the satisfaction of the Zoning Officer, Construction Official and/or Borough Engineer. The soil borings and/or soil pits shall be located within the footprint of the principal structure.

**BOROUGH OF RUMSON—SCHEDULE 5-1
SCHEDULE OF ZONING DISTRICT REGULATIONS**

ZONE DISTRICT	INTERIOR LOTS		CORNER LOTS		MINIMUM YARD REQUIREMENTS (FEET) (4)								Interior Lot Shape Rqmnts Minimum Diameter Feet (8)	Corner Lot Shape Rqmnts Minimum Diameter Feet (8)	Maximum Building Height (10) * *	Minimum Gross Residential Ground Floor Area Square Feet (1) (2)			Minimum Gross Non-Residential Floor Area Square Feet	Maximum Lot and Building Coverage (5) (9) (19) ** **	Maximum Floor Area Ratio (9) *** ***
	Minimum Lot Area	Minimum Lot Width and Frontage (Feet) (12)	Minimum Lot Area	Minimum Lot Width and Frontage (Feet) (12)	Principal				Accessory Building		Accessory (4) Structure										
					Front (18) ₂ (20)	One Side Yard (7), (16) (20)	Total of Two Side Yards (16)	Rear Yard (20)	Side Yard (17)	Rear Yard (17)	Side Yard (6)	Rear Yard (6)									
																1 Story	1 1/2 Story	2 Story			
RESIDENTIAL																					
R-1 SINGLE FAMILY	1.5 AC.	200	1.5 AC	250	100	40	80 (7)	50	15	15	15	15	115	115		2400	1800	1400	N/A		
R-2 SINGLE FAMILY	1.0 AC.	150	1.0 AC	200	75	25	50 (7)	40	15	15	15	15	100	100		2000	1400	1200	N/A		
R-3 SINGLE FAMILY	.75 AC.	125	35000 S.F.	165	60	20	40 (7)	40	15	15	15	15	85	85		1500	1200	1000	N/A		
R-4 SINGLE FAMILY	10000 S.F.	75	12500 S.F.	100	35	7 (11)	18 (7)	40 (13)	5	5	5	5	50	50		900	800	600	N/A		
R-5 SINGLE FAMILY	6000 S.F.	50	8000 S.F.	75	35	6 (11)	16 (7)	35 (14)	5	5	5	5	34	33		800	700	600	N/A		
R-6 SINGLE FAMILY	5000 S.F.	50	7000 S.F.	70	30	6 (11)	16 (7)	35 (15)	5	5	5	5	34	33		800	700	600	N/A		
BUSINESS																					
POB PROFESSIONAL OFFICE BUILDING	12000 S.F. (3)	100	12000 S.F. (3)	100	25	10	20	35	5	5	5	5	55	55		800	700	600 (3)	600 (3)		
NB NEIGHBORHOOD BUSINESS	12000 S.F. (3)	100	12000 S.F. (3)	100	25	10	20	30	5	5	5	5	65	65		800	700	600 (3)	600 (3)		
GB GENERAL BUSINESS	12000 S.F. (3)	100	12000 S.F. (3)	100	20	10	20	30	5	5	5	5	60	60		800	700	600 (3)	600 (3)		
POS PUBLIC FACILITIES AND OPEN SPACE	---	---	---	---	---	---	---	---	---	---	---	---	---	---		---	---	---	---		

NOTES:

- (1) Ten percent of any habitable area over an attached garage in an R-1, R-2, or R-3 zone shall be considered as ground floor area for the purpose of computing minimum area. Where compliance with the required minimum gross residential ground floor area would violate the maximum coverage limits established by Tables 5-4 and 5-5, then the maximum permitted coverage limits shall be controlling and the required minimum gross residential ground floor area shall be the same as the maximum permitted coverage.

- (2) For that type of residence known as a split level, the required square footage shall be computed by including the ground floor area enclosed by the outside faces of all exterior walls, excluding porches not fully enclosed, but including the area of an attached garage and the rooms over the garage. The required square footage for split level residences shall be equal to the minimum gross floor area required for one story houses in the respective zones in which they are situated.
- (3) The minimum lot area and the minimum gross floor area of the ground floor of any principal building used for residential purposes in POB, or GB zones shall be the same as in the R-5 zone. The minimum lot area and the minimum gross floor area of the ground floor of any principal building used for residential purposes in the NB zone shall be the same as the R-4 zone. The minimum gross floor area of the ground floor of any other principal building in the POB, NB, or GB zones shall be 600 square feet.
- (4) Any specific minimum yard requirements for particular accessory structures or accessory buildings contained in Section 22-7 shall apply if in conflict with the general minimum yard requirements in this schedule.
- (5) Exclusions from lot coverage for permitted single-family dwellings:
 - a. Walkways constructed on grade.
 - b. That portion of unroofed patios and terraces which does not exceed 30% of the principal building ground floor area.
 - c. In the R-1, R-2 and R-3 zones, that portion of unroofed porches and decks which does not exceed 30% of the principal building ground floor area.
 - d. In the R-4, R-5 and R-6 zones, and for permitted single-family dwellings in the POB, GB, NB zones, that portion of unroofed porches and decks which does not exceed 20% of the principal building ground floor area.
 - e. Entry steps, and unroofed stoops and landings, in areas of special flood hazards as set forth in subsection 17-3.2, Basis for Establishing Areas of Special Flood Hazard, or in subsection 17-4.3b., Use of Other Base Flood Data.
- (6) The required side and rear yard setbacks and other requirements for residential recreation facilities and residential sports facilities (which includes tennis and paddle tennis courts) are set forth in subsections 22-7.28 and 22-7.33 and Schedule 7-1.
- (7) Where the lot width exceeds the minimum prescribed for the zone district, the combined total side yard setback shall be increased 1.5 feet for each full 5 feet by which lot width exceeds the minimum. One side yard shall be increased by at least 1/3 of the additional setback distance required. In the case of a corner lot or a lot with frontage on more than one street, the lot width along the yard line located at the front of the lot shall be used to calculate the required side yard setback. The front of the lot shall be determined in accordance with subsection 22-7.7c. Thereafter any subsequent construction shall be arranged to orient the front of the principal building to the designated front of the lot.
- (8) Each lot shall be able to contain within it the shape of a circle tangent to the front yard setback line and located within the required minimum side and rear yard lines. The diameter of the circle shall be as prescribed for the zone district.
- (9) That portion of a roofed, open-sided porch facing a front yard, which does not exceed 10% of the principal building ground floor area, may be excluded from the calculation of the maximum lot and building coverage for a single-family residential dwelling. The porch may be screened and include porch railing and/or balustrade and, below the floor level, porch lattice or other enclosure around the foundation, but it shall not otherwise be enclosed. Any subsequent enclosing of the porch, which results in exceeding the maximum lot and/or building coverage permitted, shall require approval of a variance pursuant to N.J.S.A. 40:55D-70c. Any subsequent enclosing of the porch, which results in exceeding the maximum floor area permitted, shall require approval of a variance pursuant to N.J.S.A. 40:55D-70d.
- (10) No building shall exceed two stories plus a habitable attic or basement.
- (11) In the R-4, R-5 and R-6 districts, the minimum side yards shall not be placed adjacent to one another, or, alternatively the distance between principal structures on the adjacent lots must be equal to the minimum required combined side yard.
- (12) Lots bordering a river or navigable waterway are subject to the provisions of subsection 22-7.32.
- (13) In the R-4 zone, the minimum rear yard required shall be at least 30% of the lot depth, rounded up to the full foot, or 40 feet, whichever is greater, but not to exceed 50 feet.
- (14) In the R-5 zone, the minimum rear yard required shall be at least 30% of the lot depth, rounded up to the full foot, or 35 feet, whichever is greater, but not to exceed 50 feet.
- (15) In the R-6 zone, the minimum rear yard required shall be at least 35% of the lot depth, rounded up to the full foot, or 35 feet, whichever is greater, but not to exceed 50 feet.
 * See Schedule 5-2
 **See Schedule 5-4 & 5-5
 ***See Schedule 5-3A and 5-3B
- (16) If floor area exceeds eighty-five (85%) percent of the maximum permitted, the minimum side yard shall be the greater of: 1) The minimum yard requirement shown in Schedule 5-1 plus two (2') feet or 2) The minimum yard requirement determined from Note 7, where applicable.
- (17) The minimum rear yard and side yard setback in the R-4, R-5 and R-6 Zone Districts for accessory buildings and structures should be increased one (1) additional foot for each foot of accessory building height in excess of fifteen (15') feet.
- (18) Roofed, open sided, one-story porches may be permitted to extend up to five (5') feet beyond the front yard setback in the R-4, R-5 and R-6 Zone Districts.
- (19) One-half (1/2) of the area of the eaves, for eaves less than 24 inches in width, may be excluded from lot coverage and building coverage for single-family dwellings. For eaves larger than twenty-four (24") inches in width, half (1/2) of the first twenty-four (24") inches of the eaves may be excluded from both lot coverage and building coverage.
- (20) Within all areas of special flood hazards as set forth in subsection 17-3.2, Basis for Establishing Areas of Special Flood Hazard, or in subsection 17-4.3b., Use of Other Base Flood Data, unroofed porches, landings, stoops and stairs may be permitted to extend up to ten (10') feet beyond the front set back line and up to five (5') feet beyond the side and rear setback lines of a Residential Zone, but in no event shall be located closer than five (5') feet to a side or rear property line.