35 – MONMOUTH BEACH BOROUGH

PLANNING TEAM AND PARTICIPATION

Name	Title	Participation
Kevin Keeshan	**OEM Coordinator**	**Municipal Meeting #1, Municipal Workshop #2**
Edward Junquet	OEM Coordinator	Municipal Meeting #1, Municipal Workshop #2
Bailey Crochet	OEM Coordinator	Municipal Meeting #1, Municipal Workshop #2
Julie Nastasi	Engineer	Municipal Workshop #2
David Stickle	Mayor	Municipal Workshop #2

COMMUNITY PROFILE

Overview

The Borough of Monmouth Beach makes up the southernmost portion of the Sandy Hook Peninsula and barrier island, encompassing approximately 1.10 square miles. Located between the Atlantic Ocean to the east and the Shrewsbury River to the west, about 10 percent of all residences are considered waterfront property.

In 2017 the Borough adopted a Master Plan Reexamination Report and Plan Amendment that emphasizes recovery from Superstorm Sandy and promotes resiliency to future storm impacts, sea level rise, and other natural hazards. Further demonstrating its dedication to these goals, Monmouth Beach was accepted into the FEMA's CRS program in 2017.

In 2018, a lot and impervious coverage study was conducted for the Borough. The study was recommended in the borough's Floodplain Management Plan to determine if the current impervious coverage conditions and regulations are negatively impacting drainage throughout the Borough. Based on the findings of the study, Borough Commissioners can determine which ordinances should be updated. To further protect its coastal resources, Monmouth Beach passed an ordinance in 2018 banning businesses from distributing plastic straws, plastic bags, and polystyrene containers.

Land Use, Development, & Growth

Monmouth Beach is a predominantly residential community and 43 percent of its land is developed. Water constitutes 48 percent of its area. From 2015 to 2020, the community underwent marginal land use changes; its barren land diminished by 15 acres, while its wetlands and urban or developed land grew by 14 acres and 4 acres respectively.

Land Use Type	Total Acres (2015)	Total Acres (2020)	Percent Change
Agriculture	-	-	-
Barren Land	50.9	35.7	-30%
Forest	0.8	0.8	>0%
Urban	539.0	543.2	1%
Water	607.8	604.9	>0%
Wetlands	63.7	77.5	22%

Source: NJDEP Land Use/Land Cover data, 2015-2020

Recent Major Development and Infrastructure from 2020 to Present

Most new development in Monmouth Beach consists of rehabilitating its older housing stock or infill development within established neighborhoods. The borough's coastline has been shaped by the currents, tides, and winds of the Atlantic Ocean, the Shrewsbury River, and other adjacent water bodies. The protective seawall that runs along Highway 36 was breached during Superstorm Sandy, bringing sand and rock onto the roadway, and damaging approximately 237 homes and 6 local businesses. Repairs to the seawall and beach replenishment projects were completed in 2020.

Other recent Monmouth Beach rebuilding and resiliency projects include rebuilding municipal facilities and improving drainage. The raising and restoration of Borough Hall was completed in 2018. The historic building was restored, raised

three feet above the base flood elevation, and accessibility features were incorporated. It falls under the FEMA 1% and 0.2% annual chance floodplain and NJ Inland Design Flood Elevation which is FEMA's 1% annual chance floodplain + 3 feet (NJFloodMapper).

Known or Anticipated Major Development and Infrastructure in the Next Five (5) Years

The overall goals of Monmouth Beach's Master Plan are to "maintain the shore and resort character of its residential and commercial areas while ensuring the preservation of the riverine and coastal environment Neptune which historically were responsible for the charm and character of the Borough."

The lots at 63 Riverdale Avenue was subdivided for three developments. This address falls under the FEMA 1% and 0.2% annual chance floodplain and NJ Inland Design Flood Elevation which is FEMA's 1% annual chance floodplain + 3 feet (NJFloodMapper).

Demographics & Vulnerable Populations

This plan analyzed census-derived data on population trends and population age distributions to help illustrate potential vulnerability within the borough. A population increase or decrease can illustrate potential hazard vulnerability through development pressures on the built environment, or through physical and social impacts of marked population loss. A community with a large share of population under age five may indicate vulnerabilities in hazard response, resource allocation, and evacuation – FEMA identifies that the pediatric population is disproportionately affected during disasters and requires special consideration in categories of anatomy and physiology, psychological, and education vulnerabilities (FEMA, 2022, NLM, 2022). Individuals over age 65 are a growing share of the country's population and often represent the greatest share of deaths from extreme weather events and other natural disasters. A larger share of population over 65 may indicate local vulnerabilities to hazard events both before and after a disaster occurs – these populations may have mobility needs, uneven access to resources, and limited social networks that makes pre-disaster engagement challenging (FEMA, 2023).

The Borough of Monmouth Beach has a total population estimated at 3,199. The Borough saw a moderate population decline in the periods between 2013-2017 and 2018-2022 ACS surveys, with an estimated -1.5% population loss. Of Monmouth Beach's current population, an estimated 2.4% are under age 5, and 30.4% are over age 65. With an aging population making up over thirty percent of their total community, Monmouth Beach may focus hazard mitigation efforts on those with robust messaging and engagement for older residents, evacuation plans inclusive of populations with mobility issues, and resilient networks for resource accessibility post-disaster.

There are no areas of the Borough which have been identified by CDRZ, CEJST, or OBC designation criteria.

Demographics Summary	
Total Population *(2018-2022 ACS 5-year Estimates)*	3,199
Population Change since 2017	-1.5%
Percent of Population Age < 5	2.4%
Percent of Population > 65	30.4%

Source: 2018-2022 ACS 5-Year Estimates, 2013-2017 ACS 5-Year Estimates

HAZARD IDENTIFICATION

One of the first steps in developing a risk assessment is for participating municipalities to review and prioritize the hazards that can affect them. This was done based on how often a hazard has occurred, how significant effects have been in the past, the difficulty and cost of recovering from such events. Jurisdictions ranked the list of hazards as either high, medium, low, or no concern. The following include the Borough's hazard ranking. The full risk assessment for each hazard is located in Section 4.0.

Hazard Ranking

High	Medium	Low
	Natural Hazards	
Hurricane/ Tropical Storm	Extreme Wind	Extreme Temperatures
Nor'easter	Tornado	Lightning
Coastal Erosion	Winter Storm	Drought
Flood	Storm Surge	Earthquake
	Wave Action	Wildfire
	Human-made Hazards	
	Cyber Attack	Civil Unrest
	Economic Disruption	
	Pandemic	
	Power Failure	
	Terrorism	

Hazard Ranking Explanation

Coastal erosion has increased from a medium level of concern to a high level. The entire beachfront in the Borough is subject to erosion. When Superstorm Sandy hit, the ocean breached in two places. Since then, the seawall has been rebuilt and elevated. In 2019, the Borough increased its height from the southern end up through the bathing pavilion. This goes the entire length from Riverdale and Ocean Ave to the north end of the club and is mostly continuous through the whole town. The Borough did not do anything to the seawall at Cottage Road, however.

Power failure has increased from a low to a medium level of concern. It is an ongoing problem, and the system is fragile. Utility poles are above ground and become worn. Typically, replacement does not occur preventatively; it only happens once broken.

Significant Hazard Events Since Last Plan Update

While the Borough has not experienced significant hazard events since the last plan update, nuisance flooding regularly occurs with high tides on a full moon, nor'easters, and hurricanes. The nuisance flooding occurs everywhere in the floodplain, especially on Riverdale Avenue, Griffin Street, Patten Avenue, River Avenue, Sailors Way, Seaview Way, Mann Court, and Anderson Street. It happens over twenty times per year and tends to come from the Manahasset creek.

Climate Change Impacts on Extent and Magnitude of Hazards

Climate change is anticipated to significantly influence the extent and magnitude of risks and hazards in Monmouth Beach Borough. As global temperatures rise, the frequency and intensity of extreme weather events such as hurricanes, nor'easters, and storm surges are projected to increase. This will likely exacerbate coastal erosion, which is already a concern for the Borough, and result in more frequent and severe flooding, particularly in low-lying areas and those within the 1% and 0.2% annual chance flood zones. The rising sea levels may further compound these issues, increasing the vulnerability of critical infrastructure and residential properties located in flood-prone areas.

Additionally, climate change may also elevate the risk of extreme temperatures and droughts, which can strain local resources and infrastructure. The Borough's aging population, which makes up over 30% of its residents, may face increased health risks during extreme heat events and have greater difficulty evacuating during emergencies.

RISK ASSESSMENT

National Flood Insurance Program (NFIP) statistics

Monmouth Beach Borough	
Initial FIRM Date	5/16/1977
Effective FIRM Date	6/15/2022
Number of Policies In-Force:	1564

Monmouth Beach Borough	
Total Losses:	1729
Total Payments:	$109,385,092.43
Number of RL Properties:	104
Number of Mitigated RL Properties:	0
RL – Total Losses:	321
RL – Total Paid:	$15,204,333.93
Number of SRL Properties:	26
Number of Mitigated SRL Properties:	0
SRL – Total Losses:	140
SRL – Total Paid:	$11,628,889.06

Source: FEMA Policy and Loss Data, August 2024

Vulnerability of the Built Environment

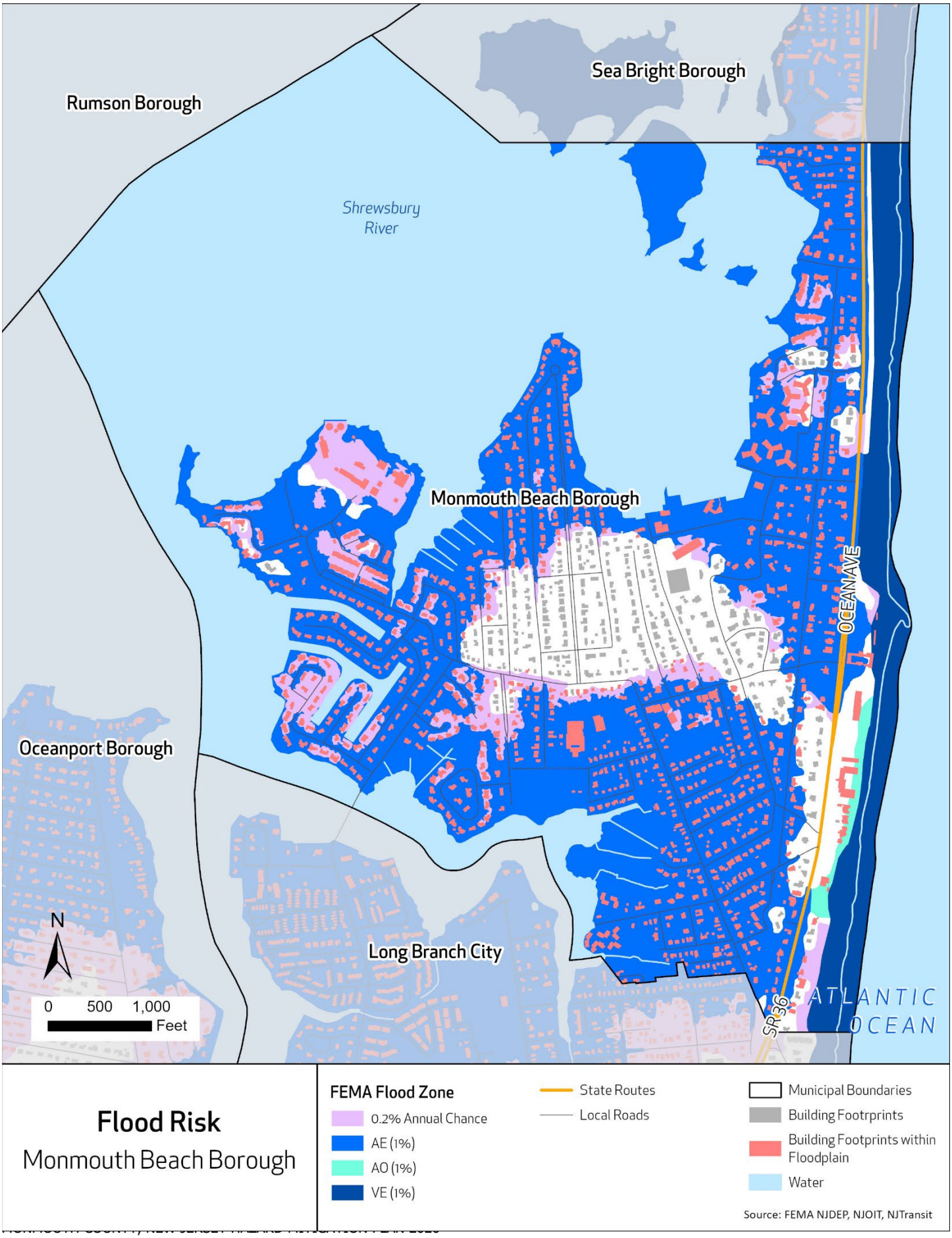
The Borough of Monmouth Beach is surrounded by water on both sides, the Shrewsbury River to the east and the Atlantic Ocean to the West. The Special Flood Hazard Area (SFHA) consists of the majority of the borough. Approximately 64.7 percent of the total area of Monmouth Beach lies within the 1% annual chance flood zone as defined by FEMA. An additional 5.1 percent of the area of the municipality is in the 0.2% annual chance flood zone.

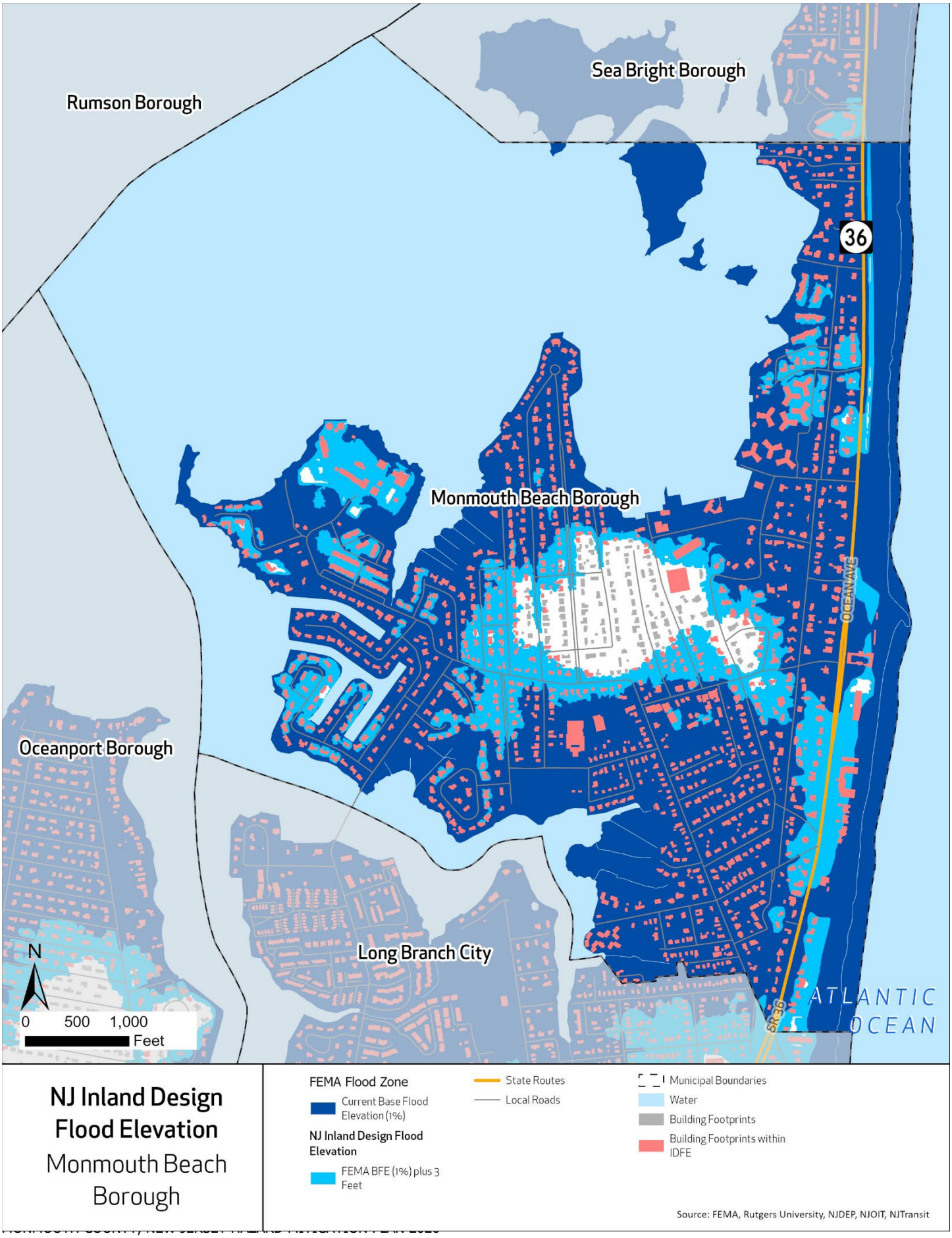
About 90.7 percent of Monmouth Beach is considered developed. Of the developed parcels of the town, 68.2 percent fall within the 1% annual chance flood zone and 8.8 percent are within the 0.2% annual chance flood zone. This illustrates that the developed area of the municipality is generally in line with overall flood risk.

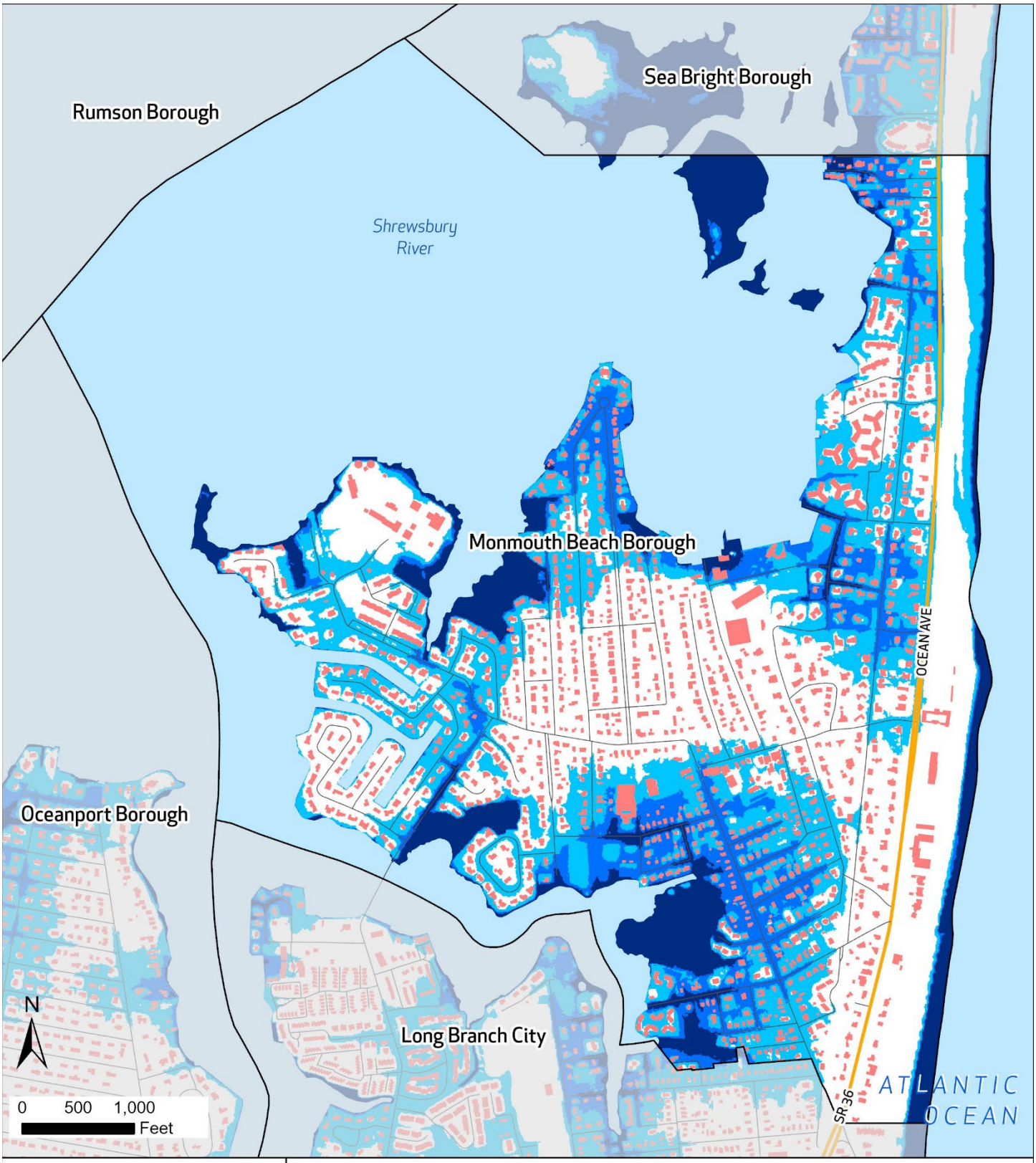
	Percentage in the 1% Floodplain	Percentage in the 0.2% Floodplain	5 feet of Sea Level Rise
Developed Parcels	68.2%	8.8%	64.6%
Exposed Land Area	64.7%	5.1%	74.9%

During the planning process, Monmouth Beach identified critical facilities which function as community lifelines. These facilities provide the most fundamental services in the community that, when stabilized, enable all other aspects of society to function. The municipality identified 10 total facilities. Of these facilities, seven area within the floodplain. Of those seven, two are also in areas projected to be inundated under sea level rise.

Community Lifeline Type	Number in the 1% Floodplain	Number in the 0.2% Floodplain	Number within 5 feet of Sea Level Rise
Energy	1	-	1
Health and Medical	1	-	-
Safety and Security	4	-	1
Water Systems	-	1	-


Sea Bright Borough
Rumson Borough
Shrewsbury River
Monmouth Beach Borough
OCEAN AVE
Oceanport Borough
Long Branch City
SR 36
ATLANTIC OCEAN
N
0 500 1,000
Feet
Flood Risk
Monmouth Beach Borough
FEMA Flood Zone
0.2% Annual Chance
AE (1%)
AO (1%)
VE (1%)
State Routes
Local Roads
Municipal Boundaries
Building Footprints
Building Footprints within Floodplain
Water
Source: FEMA NJDEP, NJOIT, NJTransit


Sea Bright Borough
Rumson Borough
36
Monmouth Beach Borough
OCEAN AVE
Oceanport Borough
Long Branch City
N
0 500 1,000
Feet
SR36
ATLANTIC OCEAN
NJ Inland Design Flood Elevation
Monmouth Beach Borough
FEMA Flood Zone
Current Base Flood Elevation (1%)
NJ Inland Design Flood Elevation
FEMA BFE (1%) plus 3 Feet
State Routes
Local Roads
Municipal Boundaries
Water
Building Footprints
Building Footprints within IDFE
Source: FEMA, Rutgers University, NJDEP, NJOIT, NJTransit


Rumson Borough
Sea Bright Borough
Shrewsbury River
Monmouth Beach Borough
OCEAN AVE
Oceanport Borough
Long Branch City
SR 36
ATLANTIC OCEAN
N
0 500 1,000
Feet
Permanent Inundation Under Sea Level Rise (SLR) Scenarios
Monmouth Beach Borough
Area Inundated Under 2 Feet SLR
Area Inundated Under 3 Feet SLR
Area Inundated Under 5 Feet SLR
Interstate Highways
State Routes
County Routes
Local Roads
Municipal Boundaries
Building Footprint
Water
Source: NOAA, NJDEP, NJOIT, NJTransit


Rumson Borough
Sea Bright Borough
Shrewsbury River
Monmouth Beach Borough
OCEAN AVE
Oceanport Borough
Long Branch City
N
0 500 1,000
Feet
Wildland Urban Interface (WUI) Classification
Monmouth Beach Borough
High or Medium Density Housing
Low or Very Low Density Housing
No Housing
State Routes
Local Roads
Municipal Boundaries
Building Footprint
Water
Source: USFS, NJDEP, NJOIT, NJTransit

CAPABILITY ASSESSMENT

Planning & Regulatory Capabilities

Monmouth Beach Borough has the following additional Planning & Regulatory capabilities:

Plan and Regulation	Yes	No	Date of last update	How does this capability support hazard mitigation?
Master Plan	X		1978, with a 2017 Master Plan Reexamination Report	
Capital Improvement Plan		X		
Local Emergency Operations Plan/Continuity of Operations Plan	X		2019	
Floodplain Development Ordinance	X		2022	Freeboard =3’
Floodplain Management Plan	X		2017	
Stormwater Management Ordinance	X		2024	Model ordinance
Stormwater Management Plan	X			
Watershed Management Plan		X		
Sheltering Plan	X			
Evacuation Plan	X			
Substantial Damage/Improved Structures Response	X			Inspection Program and all construction is managed with a Floodplain Development Permit and Inspection Process, in conjunction with the UCC permit inspections.
Repetitive Loss Plan		X		
Disaster Debris Management Plan	X			
Tracking elevation certificates and/or Letter of Map Change	X			Construction Official- Forerunner
Post-Disaster Recovery Plan		X		
Current/recent redevelopment plans or studies	X			2017 Master Plan Reexamination Report; 2018 Lot and Impervious Coverage Study; Most development (construction) is remodeling/reconstruction of single-family homes throughout the Borough, many of which are in the Special Flood Hazard Area.
Community Wildfire Protection Plan		X		
Climate Adaptation Plan		X		
Other Plans that discusses hazard mitigation		X		
Other ordinance and regulation that mitigate the impacts of natural hazards		X		

Administrative and Technical Capabilities

Monmouth Beach Borough has the following Administrative and Technical capabilities:

Position	Yes	No	Explanation
Floodplain Administrator	X		Construction Official, who is a part-time municipal employee and is a CFM. (There are additional CFMs within Engineering Consulting Firm.)
Grant Writer	X		Consultant
Staff trained to support mitigation	X		OEM, Police, Borough Administrator
Existing mutual aid or technical assistance agreements to support hazard mitigation projects	X		
Non-governmental organizations/other partners		X	

Position	Yes	No	Explanation
that work with the municipality on mitigation projects			
Organizations that work with socially vulnerable or underserved populations		X	

Education and Outreach Capabilities

Monmouth Beach Borough has the following Education and Outreach capabilities:

Education & Outreach Capability	Yes	No	Explanation
Communicate natural and human-based hazards to the public	X		Code Red, social media, email blast, website
StormReady		X	
Firewise USA		X	
Severe Weather Awareness Week	X		
Community Rating System (CRS)		X	

Financial Capabilities

Within the last five years, Monmouth Beach Borough has used the following financial capabilities to implement hazard mitigation activities:

Financial Capability	Yes	No	Explanation
FEMA BRIC		X	
FEMA FMA		X	
FEMA Public Assistance		X	
FEMA HMGP	X		Fire Department
Non-FEMA Federal Funding Programs		X	
Other FEMA resources		X	
NJ Infrastructure Bank		X	
Other state municipal assistance or grant programs	X		NJDOT MA Drainage project
Evaluation process on the prioritization of risk reduction projects against other local activities		X	
Other ongoing efforts to build additional financial capabilities		X	

Additional Capability Assessment Information:

- Monmouth Beach is a Forerunner community. Forerunner has dynamic tools to better manage flood risk and increase resilience by enforcing floodplain compliance and increasing disaster response by documenting damages in the field and providing timely information to residents. Forerunner's public features give residents access to relevant property-level flood risk details that help inform key decisions and minimize the number of assistance requests. Forerunner is also designed to make CRS participation easier for the Borough.
- **Community Rating System (CRS) Classification:** 8
- **Sustainable Jersey Participation Status:** Bronze

MITIGATION STRATEGY

Overview and Progress Since Last Plan Update

Since the last plan update, our mitigation strategy has prioritized enhancing resilience to sea level rise and tidal flooding, as well as strengthening defenses against emerging threats like cyber terrorism. Over the next five years, we will focus on investing in infrastructure improvements to address coastal flooding, implementing floodplain management initiatives, and advancing Artificial Intelligence alternatives and cybersecurity measures to protect critical systems. Our approach is to continually fortify against current vulnerabilities and proactively preparing for future risks.

Completed or Removed Actions

Action	Name	Description	Hazards Addressed	Pri-ority	Responsible Party	Potential Funding	Cost Estimate	Time-line	Action Status	Notes
35-1	Elevate Existing Retaining Wall & Floodproof Pump Station at Shorelands Park	The existing sunken retaining wall needs to be elevated to a height of 15 feet to protect the park and its existing amenities from flood-related damage.	Flood, Extreme Wind, Nor'easter, Hurricane and Tropical Storm, Storm Surge	N/A	N/A	N/A	$1.4M	N/A	Withdrawn	This action is being withdrawn because the cost estimate is too high for the area it would protect.
35-2	Purchase and Install Permanent Roof for Salt Shed	Permanent roof for the Borough's salt shed, which stores the salt for DPW's salt trucks.	Extreme Wind, Nor'easter, Hurricane and Tropical Storm	N/A	N/A	N/A	$100,000	N/A	Withdrawn	This action is withdrawn because the Borough receives salt from the County and salt shed has been removed.
35-3	Develop an Action Plan to Address Economic Collapse	Plan, develop, and maintain a borough-wide action plan to address the public safety response in the event of an economic collapse. The plan should be all inclusive to safeguard and protect all critical facilities.	All Hazards	N/A	N/A	N/A	$70,000	N/A	Withdrawn	This action is withdrawn due to a low commercial amount.
35-4	Elevate Evacuation Roadways	Elevate the following roadways (listed in order of importance): (1) Patton Ave, (2) Riverdale, (3) Meadow Ave, and (4) North Rd.	Flood, Nor'easter, Hurricane and Tropical Storm, Storm Surge	N/A	N/A	N/A	$12.5M	N/A	Completed	
35-5	Develop a Civil Unrest Response Plan and Preparation	Improve ability to respond to a civil unrest event by purchasing shields, helmets and riot gear.	Terrorism	N/A	N/A	N/A	$70,000	N/A	Completed	This gear was purchased in 2020 using the municipal budget.

Action	Name	Description	Hazards Addressed	Pri-ority	Responsible Party	Potential Funding	Cost Estimate	Time-line	Action Status	Notes
35-6	Develop an Action plan to Address Pandemic Event Action	Emergency Response to address pandemic event.	All Hazards	N/A	N/A	Homeland Security Grants, Borough Funding	$70,000	N/A	Completed	The Borough follows CDC guidelines; this action is complete.
35-7	Develop an Action plan to Address Power Failure	Action plan to address and respond to power failure events and install a generator at Monmouth Beach Elementary School	All Hazards	N/A	N/A	Homeland Security Grants, Borough Funding	$300,000	N/A	Completed	This action was completed. The Borough is currently working with JCP&L to upgrade its infrastructure. There was/is no cost to the town.
35-8	Develop a Terrorism Response Plan	Emergency Response to Terroristic Threat	Terrorism	N/A	N/A	Homeland Security Grants, Borough Funding		N/A	Completed	The Borough has an emergency action plan for one school with grades pre-kindergarten through eight.

New and Ongoing Actions

Action	Name	Description	Hazards Addressed	Pri-ority	Responsible Party	Potential Funding	Cost Estimate	Time-line	Action Status	Notes
35-9	Conduct Improvements to Drainage Infrastructure at Shorelands Park	Drainage Improvements to mitigate storm-related flooding.	Flood, Extreme Wind, Nor'easter, Hurricane and Tropical Storm, Storm Surge	Low	Borough Engineer, DPW	Municipal budget, Monmouth County	$2M	2 years	Ongoing	The improvements are in the design stage with bids and construction scheduled for later in 2025
35-10	Acquire, elevate, or relocate buildings and infrastructure in flood prone areas, with a focus on Repetitive Loss (RL) and Severe Repetitive Loss (SRL) properties	Elevate or acquire approximately 1,891 residential structures to new FEMA FIRM maps, specifically RL/SRL properties.	Flood, Extreme Wind, Nor'easter, Hurricane and Tropical Storm, Storm Surge	High	Homeowners and/or Borough Administrator	FEMA HMA	$1.5M	3 years	Ongoing	Flood risks are reduced by this action.
35-11	Elevate Four Municipal Structures	Elevate the Police Station, Cultural Center, First Aid, and Fire House to new FEMA FIRM maps.	Flood, Extreme Wind, Nor'easter, Hurricane and Tropical Storm, Storm Surge	High	Borough Administrator	FEMA Hazard Mitigation Grant, Borough funding,	$10M+	3years	Ongoing	The Borough still intends to elevate the Police Station. The Cultural Center is state-owned historic property. The First Aid center was rehabilitated but not elevated or floodproofed. A FEMA grant was

Action	Name	Description	Hazards Addressed	Pri-ority	Responsible Party	Potential Funding	Cost Estimate	Time-line	Action Status	Notes
						Army Core of Engineers				applied to for both the Cultural and First Aid Centers but was denied. The Firehouse was elevated using $2,600,000 in FEMA funds.
35-12	Install Stormwater Improvements in Low-laying Areas	Install stormwater improvements such as inlets, manholes, and piping for low lying areas such as Seaview Ave, River Ave, Sailors Way and Central Road, including a new outfall at the bulkhead of Central Road, as well as Griffin Street, Tocci Ave, Gull Point Road and Spaulding Place.	Flood, Extreme Wind, Nor'easter, Hurricane and Tropical Storm, Storm Surge	High	Borough Administrator	Municipal budget. FEMA	$5M	3 years	Ongoing	
35-13	Replace and Elevate DPW Generator	Replace and elevate generator at DPW at least 10ft.	All Hazards	Medi um	Borough DPW	FEMA HMA	$300,000	1 year	Ongoing	
35-14	Purchase Drones for Research & Recovery Attempts	Drone replacement and drone training for officers.	All Hazards	Medi um	OEM	Homeland Security grants	$60,000	2 years	Ongoing	Current Drone is outdated technology and most new officers need to attend training and obtain licenses.
35-15	Install Surveillance Cameras at Critical Facilities	Install security cameras at Griffin Park, Shorelands Park, Bathing Room, and Recycling Center for surveillance of human-based hazards (terrorism, vandalism) and natural hazards (flood, water levels).	All Hazards	Medi um	Borough Administration	Homeland Security grants	$150,000	1 year	Ongoing	The Borough is taking bids. There is local funding in CIP. The Borough is coordination a potential program with County surveillance.
35-16	Develop a Severe Storm Response Plan	Improve capability to respond to severe storm events by purchasing a new inflatable boat.	Winter Storm; Nor'easter; Hurricanes	Medi um	Borough Administrator	Borough funding	$100,000	1 year	Ongoing	The Borough has purchased a new salt spreader truck.

Action	Name	Description	Hazards Addressed	Pri-ority	Responsible Party	Potential Funding	Cost Estimate	Time-line	Action Status	Notes
35-17	Develop a Cyber Attack Response	Update emergency response plans to address, mitigate, and recover from a potential cyber-attack affecting the operation of borough activities.	Terrorism	Low	Borough Administration , OEM, Police	Homeland Security Grants, Borough Funding	$1M	1 year	Ongoing	
35-18	Install Living Breakwaters	Install a series of Living Breakwaters that would be positioned in the Shrewsbury River.	Flood, Nor'easter, Hurricane and Tropical Storm, Storm Surge, Wave Action	High	Oceanport, Rumson, Monmouth Beach, Long Branch	FEMA HMA	See Notes	2 years	New	Rip-Rap and Armor Stone: $35.9M Oyster Rings: $5.4M ExoForms: $3M Oyster Castles: $1.5M