

50 – UNION BEACH BOROUGH

PLANNING TEAM AND PARTICIPATION

Name	Title	Participation
Michael DeRupo	OEM Coordinator	Municipal Meeting, 11/11/2024
Dennis Dayback	Floodplain Administrator	Updated municipal appendix
Tim Davis	Construction Official	Updated municipal appendix

COMMUNITY PROFILE

Overview

With a land area of 1.80 square miles bordering Raritan Bay, portions of the Borough of Union Beach's coastline were formerly zoned for heavy industrial purposes but are now designated for residential and public use. Union Beach offers abundant public space along its waterfront with impressive views of Manhattan, especially at Waterfront Park.

When Superstorm Sandy hit in 2012, more than 85 percent of the homes in Union Beach flooded with at least two feet of water. Union Beach adopted a Master Plan Reexamination Report in July 2015. The report places special emphasis on facilitating recovery from Superstorm Sandy, as well as promoting resiliency to future storm impacts and other potential hazards. To achieve this, the report recommends several changes to the Borough's master plan and development regulations.

In May 2015, Union Beach adopted a Commercial Corridors Resiliency Plan for State Highway 36 and Union Avenue that combines flood protection and commercial revitalization to provide a stronger response to the next major storm event. The overall goal of the plan is to encourage sustainable and resilient commercial development and provide critical amenities and services for recovery after major storm events. It promotes growth in strategic areas to foster long-term recovery by increasing the Borough's tax base and reducing repetitive loss. It also encourages a pedestrian-oriented environment to provide economic viability and develop the community's sense of place.

The municipality is the focus of a U. S. Army Corps of Engineers (USACE) study evaluating potential designs to address coastal flooding. In 2022, the USACE awarded a construction contract for Phase 1 of the Raritan Bay and Sandy Hook Bay, New Jersey Coastal Storm Risk Management Project. In 2023 construction of improvements began, including, replenishing the Borough's beach, and building up dunes.

Union Beach participated in the 2022 Coastal Resilience Design Study undertaken by the Monmouth County Division of Planning. The study, funded by the Department of Defense, focused on evaluating existing conditions at the wetlands along Flat Creek and identifying potential improvements.

Land Use, Development, & Growth

Union Beach is home to substantial publicly owned residential land, as well as several parcels of wetlands; in 2020, urban or developed land made up nearly 57 percent of its total area, while wetlands made up 29 percent. From 2015 to 2020, the Borough experienced only marginal changes; its forests diminished by 14.4 acres while its urban or developed land grew by 13.6 acres. The Borough's agricultural land experienced a marginal increase, while its water and wetlands diminished by 1.3 percent each.

Land Use Type	Total Acres (2015)	Total Acres (2020)	Percent Change
Agriculture	-	-	-
Barren Land	6.9	10.3	49%
Forest	76.7	62.3	-19%
Urban	670.2	683.8	2%
Water	95.1	93.8	-1%

Land Use Type	Total Acres (2015)	Total Acres (2020)	Percent Change
Wetlands	354.4	353.1	>0%

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

Recent Major Development and Infrastructure from 2020 to Present

The Borough Council is working with the County to elevate part of Front St. that is prone to flooding. This street 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

None since 2020.

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 Union Beach has a total population estimated to be 5,751, of which 5.1% is estimated as under age 5 and 11.9% over age 65. The Borough gained an estimated 2.1% in population between the ACS survey periods of 2013-2017 and 2018-2022. Though borough population is relatively evenly distributed, an aging population of nearly twelve percent may focus local 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 is one block group identified within Union Beach that meets criteria for overburden (OBC) according to Low Income community overburden. There are no parts of the Borough which meet the definition of CDRZ or CEJST tracts.

Demographics Summary	
Total Population (2018-2022 ACS 5-year Estimates)	5,751
Population Change since 2017	2.1%
Percent of Population Age < 5	5.1%
Percent of Population > 65	11.9%

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

Hazard Ranking Explanation

- **Power Outages:** These have occurred due to issues with the transformer.
- **Tornados:** The Borough has received only one warning so far.
- **Coastal Erosion:** The Army Corps has conducted significant replenishment efforts.

Significant Hazard Events Since Last Plan Update

There have been multiple flood events caused by high tides. While the damage to homes has been minimal and no properties have been lost since Sandy, roads have been inundated, hindering access. Specific areas affected include:

- **Union Ave and Washington Ave:** Flooding has extended to Shore Road.
- **Herbert St, Chingarora, and Bay Ave:** These streets have also experienced flooding.
- **County Road before the bridge on Union Ave (near Union Ave and Front St):** This area gets flooded, and the Borough Council is collaborating with the county to raise Front St.
- **Brook Ave:** Houses along Brook Ave are raised to mitigate flooding.

Additionally, houses near the shore of the lake opposite the International Flavors and Fragrances (IFF) building near Jersey Ave are RL properties. The solar panels on the IFF premises need to be de-energized before entering the premises. The main International Flavors and Fragrances facility at 36 and Rose Ln poses a Hazmat threat due to the chemicals used in the facility.

Climate Change Impacts on Extent and Magnitude of Hazards

Climate change is expected to significantly impact the risks and hazards faced by the Borough of Union Beach. As sea levels continue to rise, the frequency and severity of coastal flooding will likely increase, exacerbating the existing challenges posed by high tides and storm surges. The Borough's extensive coastline and low-lying areas make it particularly vulnerable to these effects, which could lead to more frequent inundation of roads and properties, as well as increased erosion of coastal areas. The ongoing efforts by the U.S. Army Corps of Engineers to replenish beaches and build up dunes are crucial, but these measures may need to be intensified and expanded to keep pace with the accelerating impacts of climate change.

Additionally, climate change is expected to bring more extreme weather events, such as stronger hurricanes and more intense rainfall, which could further strain the Borough's infrastructure and emergency response capabilities. The increased frequency of such events will likely lead to more power outages, disruptions to transportation, and potential damage to critical facilities. The Borough's efforts to elevate roads, maintain shore protection features, and implement flood control measures will be essential in mitigating these risks, but ongoing adaptation and resilience planning will be necessary to address the evolving challenges posed by climate change.

RISK ASSESSMENT

National Flood Insurance Program (NFIP) statistics

Union Beach Borough	
Initial FIRM Date	5/15/80
Effective FIRM Date	9/25/2009
Number of Policies In-Force:	870
Total Losses:	1556
Total Payments:	\$90,171,594.53
Number of RL Properties:	43
Number of Mitigated RL Properties:	0
RL – Total Losses:	119
RL – Total Paid:	\$4,604,156.90
Number of SRL Properties:	8
Number of Mitigated SRL Properties:	0
SRL – Total Losses:	37
SRL – Total Paid:	\$1,817,078.07

Source: FEMA Policy and Loss Data, August 2024

Vulnerability of the Built Environment

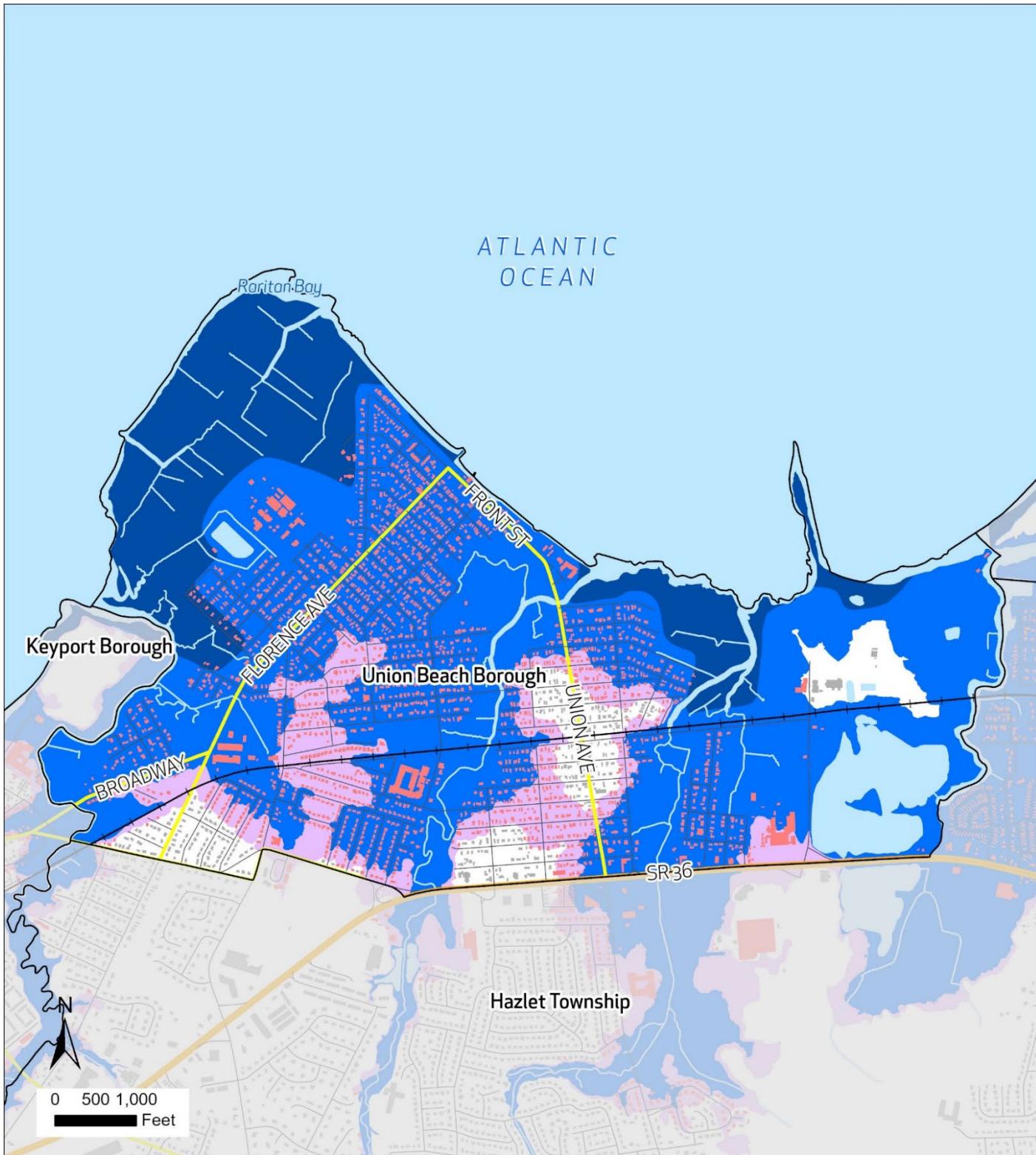
The entire Borough is in the 1% Floodplain, however the dune system protects the ocean side of Union Beach. The Special Flood Hazard Area (SFHA) in the Borough of Union Beach consists of the vast majority of the land area of town. Approximately 81.9 percent of the total area of Union Beach lies within the 1% annual chance flood zone as defined by FEMA. An additional 10.2 percent of the area of the municipality is in the 0.2% annual chance flood zone.

About 52.9 percent of Union Beach is considered developed. Of the developed parcels of the town, 64.3 percent fall within the 1% annual chance flood zone and 13.4 percent are within the 0.2% annual chance flood zone. This illustrates that development the municipality has generally occurred in areas that are less prone to flooding.

	Percentage in the 1% Flood-plain	Percentage in the 0.2% Flood-plain	5 feet of Sea Level Rise
Developed Parcels	64.3%	13.4%	34.6%
Exposed Land Area	81.9%	10.2%	48.3%

During the planning process, Spring Lake 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 14 total facilities. Of these facilities, nine are located within the floodplain. Of those nine, one is also in an area 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
Hazardous Materials	-	1	
Health and Medical	1	-	
Safety and Security	5	1	1
Water Systems	1	-	



Flood Risk

Union Beach Borough

FEMA Flood Zone

- 0.2% Annual Chance
- AE (1%)
- VE (1%)

State Routes

County Routes

Local Roads

Rail Lines

Municipal Boundaries

Building Footprints

Building Footprints within

Floodplain

Water

Source: FEMA NJDEP, NJOIT, NJTransit



NJ Inland Design Flood Elevation

Union Beach Borough

FEMA Flood Zone
 Current Base Flood Elevation (1%)
 FEMA BFE (1%) plus 3 Feet

NJ Inland Design Flood Elevation

State Routes

 County Routes

 Local Roads

Municipal Boundaries

 Water

 Building Footprints

 Building Footprints within IDFE

Source: FEMA, Rutgers University, NJDEP, NJOIT, NJTransit

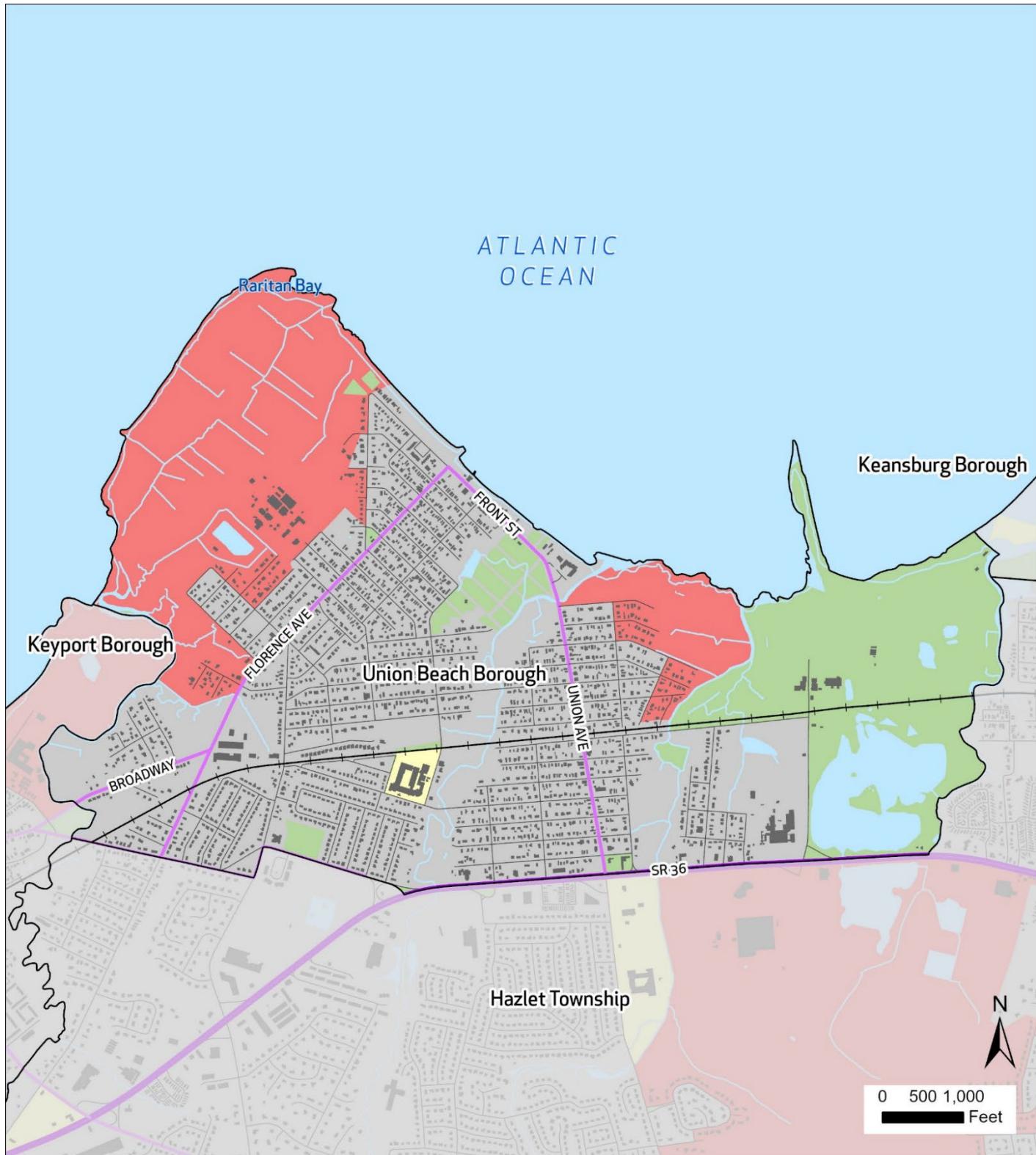


Permanent Inundation Under Sea Level Rise (SLR) Scenarios

Union 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
- Rail Lines
- Municipal Boundaries
- Building Footprint
- Water

Source: NOAA, NJDEP, NJOIT, NJTransit



Wildland Urban Interface (WUI) Classification

Union Beach Borough

- Intermix
- High or Medium Density Housing
- Low or Very Low Density Housing
- No Housing

- State Routes
- County Routes
- Local Roads
- Rail Lines

- Municipal Boundaries
- Building Footprint
- Water

Source: USFS, NJDEP, NJOIT, NJTransit

CAPABILITY ASSESSMENT

Planning & Regulatory Capabilities

Union 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		2015	
Capital Improvement Plan	x		2024	The Borough revises their capital improvement plan annually depending on available funding and need.
Local Emergency Operations Plan/Continuity of Operations Plan	x		2024	
Floodplain Development Ordinance	x		2021	The Borough maintains a Floodplain Damage Prevention Ordinance which regulates all development within the floodplain.
Floodplain Management Plan	x		2021	The Borough maintains a Floodplain Damage Prevention Ordinance which regulates all development within the floodplain.
Stormwater Management Ordinance	x		2024	The Borough maintains a Stormwater Management Control Ordinance establishes a minimum stormwater management requirement for all major developments.
Stormwater Management Plan	x		2024	The Borough maintains a Stormwater Management Control Ordinance establishes a minimum stormwater management requirement for all major developments.
Watershed Management Plan		x		
Sheltering Plan		x		
Evacuation Plan	x			The Borough has evacuation routes mapped and signed throughout the Borough.
Substantial Damage/Improved Structures Response	x			The Borough reviews all SD/SI requirements as part of the Zoning/Floodplain Development applications.
Repetitive Loss Plan		x		
Disaster Debris Management Plan	x		2022	
Tracking elevation certificates and/or Letter of Map Change	x			The Borough tracks and receives EC's for all structures within the Flood Hazard Area as part of the Zoning/Floodplain Development application process.
Post-Disaster Recovery Plan		x		
Current/recent redevelopment plans or studies	x		2016	The Borough adopted a redevelopment plan for the commercial corridor along Union Avenue. One of the sites is currently under construction.
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

Union Beach Borough has the following Administrative and Technical capabilities:

Position	Yes	No	Explanation
Floodplain Administrator	x		
Grant Writer	x		
Staff trained to support mitigation	x		
Existing mutual aid or technical assistance agreements to support hazard mitigation projects		x	
Non-governmental organizations/other partners that work with the municipality on mitigation projects		x	

Position	Yes	No	Explanation
Organizations that work with socially vulnerable or underserved populations		x	

Education and Outreach Capabilities

Union 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		Floodplain Damages Prevention is discussed annually in the Borough's new letter. Floodplain Administrator has office hours weekly and available to discuss Floodplain Management with the public.
StormReady	x		
Firewise USA			
Severe Weather Awareness Week		x	
Community Rating System (CRS)	X		Class 7

Financial Capabilities

Within the last five years, Union 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		
Non-FEMA Federal Funding Programs	x		
Other FEMA resources	x		
NJ Infrastructure Bank	x		
Other state municipal assistance or grant programs	x		
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:

- Union 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:** 7
- **Sustainable Jersey Participation Status:** Registered

MITIGATION STRATEGY

Overview and Progress Since Last Plan Update

Since Superstorm Sandy, the Borough of Union Beach has focused on enhancing flood resilience, improving emergency response capabilities, and upgrading critical infrastructure to mitigate natural hazard risks. Key completed actions include elevating homes to meet updated FEMA standards and raising critical roads that impact response and evacuation. Over the next five years, Union Beach aims to prioritize projects that address emerging climate challenges, such as sea-level rise, by expanding mitigation strategies like updated flood mapping, advancing the Borough's advance warning system, and continuing the Army Corps project for the beach. These efforts will benefit the Borough of Union Beach and its residents for many years to come.

Completed or Removed Actions

Action	Name	Description	Hazards Addressed	Pri- ority	Responsible Party	Potential Funding	Cost Estimate	Time-line	Action Status	Notes
50-1	Elevate Spruce Street, Center Street, and Fifth Street	Raising the elevation of the roadway to decrease the occurrence and severity of flooding in the area.	Flood, Extreme Wind, Nor'easter, Hurricane and Tropical Storm, Storm Surge	N/A	Borough administrator	FEMA Hazard Mitigation Grant, Borough funding	\$684,457	N/A	Completed	Project completed 2017 as part of PW4616.
50-2	Elevate Florence Ave.	Raising the elevation of the roadway to decrease the occurrence and severity of flooding in the area.	Flood, Extreme Wind, Hurricane and Tropical Storm, Storm Surge	N/A	Borough Administrator, Monmouth County	FEMA Hazard Mitigation Grant, Borough funding, County funding	\$300,000	N/A	Completed	This project recently completed by Monmouth County.
50-3	Elevate Park Avenue	Elevate Park Avenue to keep roadway clear from flooding.	Flood, Hurricane and Tropical Storm	N/A	Borough Administra tion	FEMA HMA, Borough funding		N/A	Completed	This project was recently completed by the Borough. Construction cost \$367,430 paid for in part from NJDOT Municipal aid Grant.

New and Ongoing Actions

Action	Name	Description	Hazards Addressed	Priority	Responsible Party	Potential Funding	Cost Estimate	Time-line	Action Status	Notes
50-4	Relocate Harris Garden Fire Company Building (Station 65-4) outside a Flood Zone	Relocate Harris Garden Fire Company Building to a location above the FEMA working FIRM maps.	Flood, Nor'easter, Hurricane and Tropical Storm, Storm Surge	N/A	Borough Administrator	FEMA Hazard Mitigation Grant, Borough funding, CDBG	\$1.5M	N/A	Ongoing	Fire Department to be relocated to the existing fire house on Union Avenue. Existing building to be converted to residential unit.
50-5	Maintenance of Shore Protection Programs	Maintenance of the existing shore protection features.	Flood, Wave Action, Coastal Erosion, Nor'easter, Hurricane and Tropical Storm, Storm Surge	N/A	Borough Engineer, Public Works	FEMA Hazard Mitigation Grant, Borough funding	\$100,000	N/A	Ongoing	The Borough continues to maintain all shore protection features. Inspection is done biannually and after every major storm event.
50-6	Implement the Army Corps of Engineers Shore Protection and Flood Control Plan for Flood Reduction Projects	The Army Corp Plan includes the following recommendations: installation of earthen levees, concrete flood walls, interior levees, primary and secondary drainage outlet structures, tide gate structures, road closure gate, road raising, and three pump stations.	Wave Action, Coastal Erosion, Nor'easter, Hurricane and Tropical Storm, Storm Surge	High	Mayor and Borough Council, USACE, NJDEP	FEMA Hazard Mitigation Grant, Borough funding, Army Corp of Engineers, NOAA	\$275M	1 year	Ongoing	This is a Federal and State project. Phase I completed in 2024. The project included terminal groins, sea grass, beach nourishment
50-7	Acquire, elevate, or relocate buildings and infrastructure in flood prone areas, with a focus on Repetitive Loss (RL) and Severe Repetitive Loss (SRL) properties	Mitigate RL/SRL homes.	Flood, Extreme Wind, Nor'easter, Hurricane and Tropical Storm, Storm Surge	High	Homeowners, with assistance from the Borough	FEMA HMA	\$100M	2 years	Ongoing	The Borough continues to elevate all SD/SI homes located within the flood hazard area.
50-8	Elevate Front Street	Raising the elevation of the roadway to decrease the occurrence and severity of flooding in the	Flood, Extreme Wind, Nor'easter, Hurricane and	High	Union Beach and Monmouth County	FEMA Hazard Mitigation Grant,	\$400,000	1 year	Ongoing	Project is of the highest priority. Since Front Street is a County Road, the Borough continues to work with the County officials on a cooperative

Action	Name	Description	Hazards Addressed	Priority	Responsible Party	Potential Funding	Cost Estimate	Time-line	Action Status	Notes
		area.	Tropical Storm, Storm Surge			Borough funding, County Funding, NJDOT				program to Elevate Front Street in the area of the Union Ave Bridge (County).
50-9	Relocate Department of Public Works Main Building out of Flood Zone	Relocate Department of Public Works main building to a location above the FEMA working FIRM maps.	Flood, Extreme Wind, Hurricane and Tropical Storm, Storm Surge	High	Borough Administrator	FEMA HMA, Borough funding, CDBG- DR	\$1,5M	1 year	Ongoing	Due to the lack of Borough owned property to relocate the DPW facility, the Borough plans to redevelop the existing DPW facility.
50-10	Install Flood Warning Signage	Installation of flood warning signage.	Flood, Extreme Wind, Hurricane and Tropical Storm, Storm Surge	High	Borough OEM	Borough funding	\$5,000	1 year	Ongoing	The Borough maintains a Borough wide flood warning system.
50-11	Stream/Creek Cleaning and Maintenance	Debris and sediment accumulation in receiving waterways and creeks impedes flood flows.	Flood, Extreme Wind, Hurricane and Tropical Storm, Storm Surge		Public Works, County Mosquito Commission	NRCS	\$5,000		Ongoing	The Borough maintains all the creeks and waterways within the Borough limits. However, due to the state all requirements and restrictions it is difficult to maintain the waterways properly.
50-12	Construct a Stone Revetment Wall	Construct a stone revetment wall along the Raritan Bay Waterfront beginning at the point of juncture of the Raritan Bay and Flat Creek and continuing east along the Borough's bay front for approximately 875 linear feet.	Flood, Extreme Wind, Nor'easter, Hurricane and Tropical Storm, Storm Surge	Medium	Borough Administrator	FEMA Hazard Mitigation Grant, Borough funding	\$1,9M	5 + years	Ongoing	With the implementation of Phase 2 and 3 of the Federal and State shore Protection project this project is no longer needed.
50-13	Storm Drain/Inlet Maintenance	Cleaning and maintenance of the existing storm drains and inlets.	Flood, Extreme Wind, Nor'easter, Hurricane and Tropical Storm, Storm Surge		Public Works	Borough funding, FEMA grant funding	\$5,000		Ongoing	The Borough has a quarterly plan to clean and maintains all existing storm drains through out he Borough.
50-14	Update the Borough's Emergency Warning System	Upgrade Borough's existing emergency warning system.	Extreme Temperatures, Flood, Extreme Wind, Lightening, Nor'easter,	Medium	Office of Emergency Management, Police Department	Borough funding	\$700,000	1 year	Ongoing	

Action	Name	Description	Hazards Addressed	Priority	Responsible Party	Potential Funding	Cost Estimate	Time-line	Action Status	Notes
			Hurricane and Tropical Storm, Storm Surge, Winter Storm, Tornado							
50-15	Purchase and Install Generators for Memorial School and Borough Hall	Memorial School and Borough Hall need generators in order to operate as shelters.	All Hazards	High	Borough Administration	FEMA HMA	\$400,000	1 year	Ongoing	A new generator was recently installed at Borough Hall.
50-16	Restore the Marsh Surrounding Flat Creek and Create an Upland Maritime Forest Berm	Restore the marsh surrounding Flat Creek and create an upland maritime forest berm buffering local residences from the marsh. The proposed concept could enhance, but not interfere with any USACE work for Union Beach, and help reduce flooding on Route 36.	Flood, Nor'easter, Hurricane and Tropical Storm, Storm Surge	High	Borough, County	NJCWRP, FEMA HMA, NFWF, Acres for America, NOAA, EPA, NJDOT	TBD	2 years	Ongoing	