

## 8 – BRADLEY BEACH BOROUGH

### PLANNING TEAM AND PARTICIPATION

Name	Title	Participation
Norman Goldfarb	OEM Coordinator	Attended Municipal Workshops #1 and #2, Attended meeting on 2/20/25, Reviewed appendix and provided input.
Robert Pearsall Jr.	OEM Deputy Coordinator	Attended Municipal Workshops #1 and #2, Attended meeting on 2/20/25, Reviewed appendix and provided input.
James C Arnold	Chief of Police	Attended meeting on 2/20/25, Reviewed appendix and provided input.
Jennifer Beahm	Borough Planner	Attended meeting on 2/20/25, Reviewed appendix and provided input.
Ben Matlack	Borough Engineer	Reviewed appendix and provided input.

### COMMUNITY PROFILE

#### Overview

Bradley Beach is an oceanfront Borough in coastal Monmouth County, New Jersey, initially developed as a popular resort town as part of Ocean Township and then Neptune Township. Bradley Beach was incorporated as a Borough in 1893, making it one of the youngest towns along New Jersey’s shore. The Borough is a small but diverse town that describes itself as a family community. The Borough has a total land area of 0.63 square miles, with 4,268 estimated residents (as of 2018-2022 ACS estimates).

Bradley Beach is largely built out with residential and commercial development. Bradley Beach has a thriving downtown corridor along Main Street (State Route 71) which runs north to south along the Borough’s western portion. Main Street features a growing number of retail and dining establishments, in addition to the popular Bradley Brew Project microbrewery. The Borough adopted a Complete and Green Streets policy in 2022, an initiative that intends to provide safe roadways for all users, including pedestrians and bicyclists. Following a road safety audit of Main Street, the Borough installed bicycle-friendly infrastructure including bike racks and sharrows along Main Street.

Bradley Beach is bounded by two retention basin lakes – Fletcher Lake to the north and Sylvan Lake to the south. The topography of Bradley Beach causes most water runoff through the town to roll south toward Sylvan Lake. To the east, Bradley Beach has vegetated dune structures protecting much of the Atlantic Coast connection to the developed Borough.

To promote resilience, provide educational outreach, and bring community awareness to the preferred use of natural resources to mitigate coastal storm events, Bradley Beach constructed a maritime forest along Fletcher Lake in 2013 featuring indigenous coastal ecosystem tree, shrub, and grass species. Recommendations in the 2014 Master Plan Reexamination Report to “increase its sustainability profile by setting forth a Borough wide green initiative” allowed Bradley Beach to achieve a bronze-level certification from Sustainable Jersey.

#### Land Use, Development, & Growth

Bradley Beach is a primarily residential community, although publicly owned land forms a substantial part of the Borough. As a result of the predominance of residential land use, in 2020, urban or developed land accounted for 86 percent of the Borough’s total area. From 2015, the acreage covered by developed land hovered at roughly 355 acres, while wetlands grew by nearly 15 acres, while barren land diminished by 11 acres. However, these changes did not heavily impact the overall land use composition of the Borough.

Land Use Type	Total Acres (2015)	Total Acres (2020)	Percent Change
Agriculture	-	-	-

Land Use Type	Total Acres (2015)	Total Acres (2020)	Percent Change
Barren Land	35.2	24.2	-31%
Forest	-	-	-
Urban	354.6	354.6	>0%
Water	23.4	19.4	-17%
Wetlands	0.1	15.1	15000%

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

### Recent Major Development and Infrastructure from 2020 to Present

301 Main Street, a multi-family, 30-unit building, started construction in 2015 and was recently completed. This area does not experience and hazards.

The historic Beach Cinema Theater was purchased with plans for redevelopment and a reconfiguration to a theater, restaurant, and gathering space. This area does not experience and hazards.

The First United Methodist Church, vacant for over twenty years, was purchased by the Borough. The building is planned to be demolished and subdivide into four single lots. This area does not experience any known hazards.

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

None at this time.

## 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).

Bradley Beach Borough’s total population is estimated to be 4,268. This population is estimated as under 1% (.98%) aged under 5 years and 24.5% over age 65. With nearly a quarter of its population over age 65, the Borough may prioritize an aging population in hazard mitigation plans and preparation. The Borough saw nearly consistent population in the periods between 2013-2017 and 2018-2022, with an estimated .14% population change.

Within Bradley Beach, there is one block group meeting overburden criteria as a *Low-Income* community. This block group is along the Borough’s far northwestern corner. There are no areas of Bradley Beach which meet designation criteria for CDRZ or CEJST identification.

Demographics Summary	
<b>Total Population (2018-2022 ACS 5-year Estimates)</b>	4,268
<b>Population Change since 2017</b>	0.1%
<b>Percent of Population Age &lt; 5</b>	1.0%
<b>Percent of Population &gt; 65</b>	24.5%

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

Bradley Beach previously had a working relationship with the local foodbank before their relocation to Neptune City. They are building a new relationship with the Red Cross after failures in Red Cross coordination during Sandy and COVID-19 events.

## 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
<b>Natural Hazards</b>		
Flooding	Extreme Temperatures	Drought
Hurricane/Tropical Storm/Nor'easter	Tornado	Earthquake
Storm Surge	Winter Storm	Wildfire
Coastal Erosion		
	Wave Action	Dam Failure (N/A), Landslide (N/A)
<b>Human-made Hazards</b>		
	Pandemic	Civil Unrest
	Cyber Attack	Power Failure
	Economic Disruption	
	Terrorism	

### Hazard Ranking Explanation

During risk assessment meetings, Bradley Beach emphasizes that flooding is the primary hazard of concern for their Borough. As a coastal community bounded by Sylvan Lake and Fletcher Lake to the north and south, and the Atlantic Ocean to the east, controlling water flow and mitigating flood risk is of the highest priority.

Other significant hazards related to the Borough's low-lying location along the Atlantic coast include hurricane and tropical storm risks, along with the associated risks of flooding and storm surges. Mitigating these risks before and during storm events is a priority.

Other hazards of lower concern for the Borough include extreme temperatures, winter storms, tornadoes, wave action, wildfires, earthquakes, and drought. The Borough has not experienced measurable effects from these hazards in recent years since the last plan update.

Coastal erosion is another high-priority hazard for the Borough. Erosion caused a sinkhole along Fletcher Lake near the outfall pipe. Recently, Lake Terrace Road collapsed around Fletcher Lake due to a failed bulkhead and coastal erosion; Neptune Township led the repairs to Lake Terrace.

### Significant Hazard Events Since Last Plan Update

Bradley Beach's primary concern in recent years has been flooding, particularly post-rain event flooding in the southern end of town, where water drains toward Sylvan Lake due to the town's topography. Some flooding also occurs along the northern end of the Borough at Fletcher Lake. In September 2023, Fletcher Lake overflowed onto Lake Terrace, flooding the basements of residences along the road.

With its coastal location along the Atlantic shoreline, Bradley Beach also faces hazards such as coastal erosion and sea level rise, as well as local impacts from hurricanes, tropical storms, and nor'easters. The Borough's vegetated dune structures along the Atlantic coast play a major role in minimizing inundation in mainland areas of Bradley Beach.

In August 2022, Bradley Beach's beachfront was closed due to safety concerns after sinkholes caused by breaches in an outflow pipe appeared in the sand one block north of Ocean Park Avenue Beach and at Lake Terrace Beach near the border of Ocean Grove. The Army Corps of Engineers, NJ Department of Environmental Protection, and Bradley Beach Office of Emergency Management and Public Works coordinated to resolve the sinkhole issues.

### Climate Change Impacts on Extent and Magnitude of Hazards

Climate change is expected to significantly impact the risks and hazards faced by Bradley Beach. As a coastal community, Bradley Beach is particularly vulnerable to the effects of sea level rise, which can exacerbate flooding and coastal erosion. Rising sea levels will increase the frequency and severity of tidal flooding, storm surges, and inundation events, putting more properties and infrastructure at risk. The Borough's existing flood mitigation measures, such as vegetated dune structures, may become less effective as sea levels continue to rise, necessitating additional investments in coastal defenses and flood management systems.

Moreover, climate change is likely to lead to more intense and frequent extreme weather events, including hurricanes, tropical storms, and nor'easters. These storms can bring heavy rainfall, strong winds, and storm surges, further increasing the risk of flooding and damage to the Borough's infrastructure. The increased intensity of these storms will also heighten the risk of coastal erosion.

## RISK ASSESSMENT

### National Flood Insurance Program (NFIP) statistics

Bradley Beach Borough	
Initial FIRM	8/01/1979
Effective FIRM	6/15/2022
Number of Policies In-Force:	246
Total Losses:	86
Total Payments:	\$2,810,871.57
Number of RL Properties:	5
Number of Mitigated RL Properties:	0
RL – Total Losses:	11
RL – Total Paid:	\$216,501.73
Number of SRL Properties:	0
Number of Mitigated SRL Properties:	0
SRL – Total Losses:	0
SRL – Total Paid:	\$0

Source: FEMA Policy and Loss Data, August 2024

### Vulnerability of the Built Environment

The Special Flood Hazard Area (SFHA) in the Borough of Bradley Beach is primarily located adjacent to the waterbodies of the Borough: Fletcher and Sylvan Lakes and the Atlantic Ocean. Approximately 17.6 percent of the total area of Bradley Beach lies within the 1% annual chance flood zone as defined by FEMA. An additional 6 percent (5.95%) of the area of the municipality is in the 0.2% annual chance flood zone.

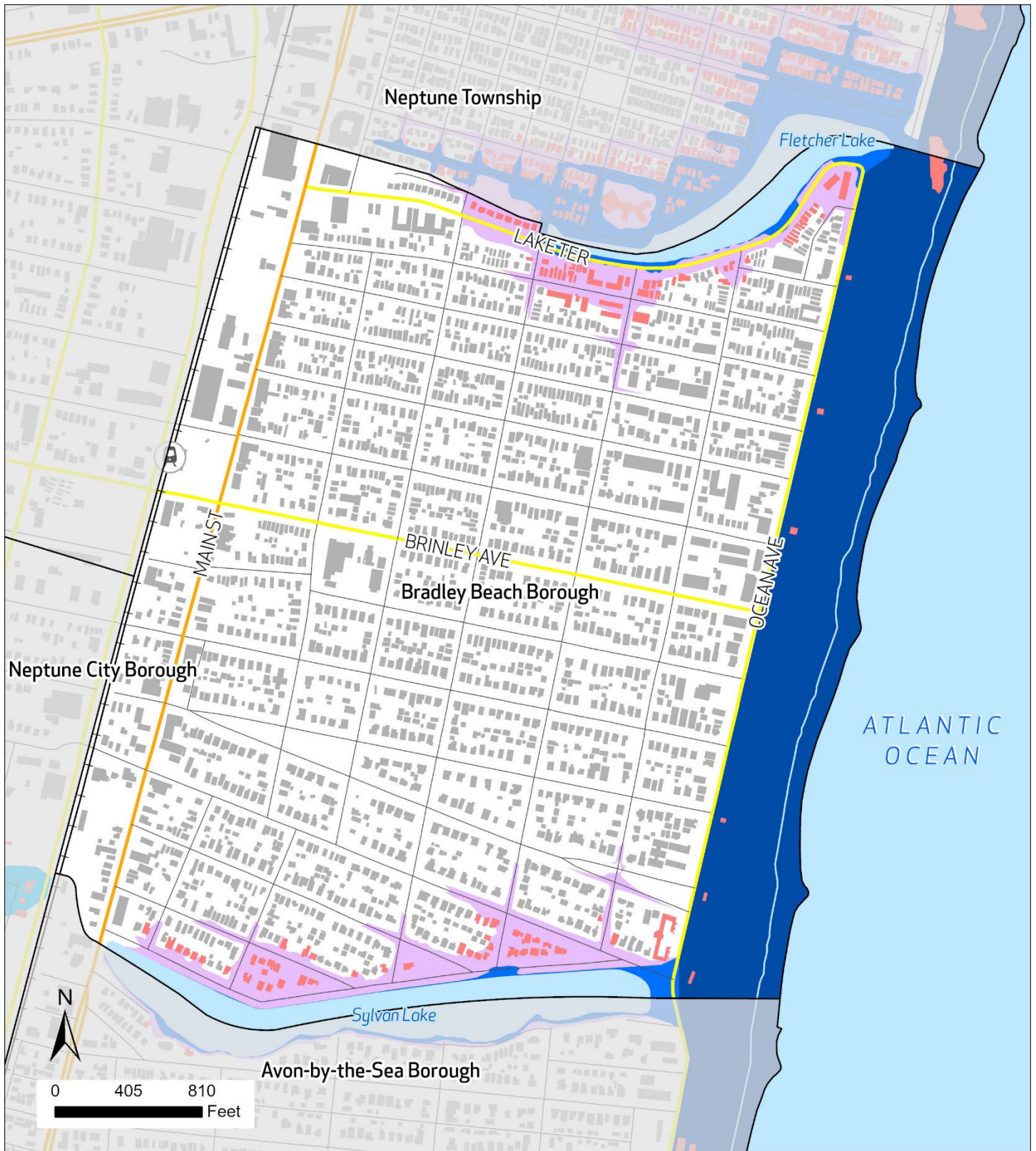
About 74.7 percent of Bradley Beach is considered developed. Of the developed parcels of the town, 0.2 percent fall within the 1% annual chance flood zone and 7.5 percent are within the 0.2% annual chance flood zone. This illustrates that development in the municipality has generally occurred in areas that are less prone to flooding.

	Percentage in the 1% Floodplain	Percentage in the 0.2% Floodplain	5 feet of Sea Level Rise
Developed Parcels	0.2%	7.5%	0.0%
Exposed Land Area	17.6%	5.9%	2.6%

During the planning process, Bradley 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 eight total facilities. Of these facilities, none are within the floodplain or areas projected to be at risk from sea level rise.

	Number in the 1% Floodplain	Number in the 0.2% Floodplain	Number within 5 feet of Sea Level Rise
Community Lifelines and Critical Facilities	-	-	-





# **Flood Risk** Bradley Beach Borough

## **FEMA Flood Zone**

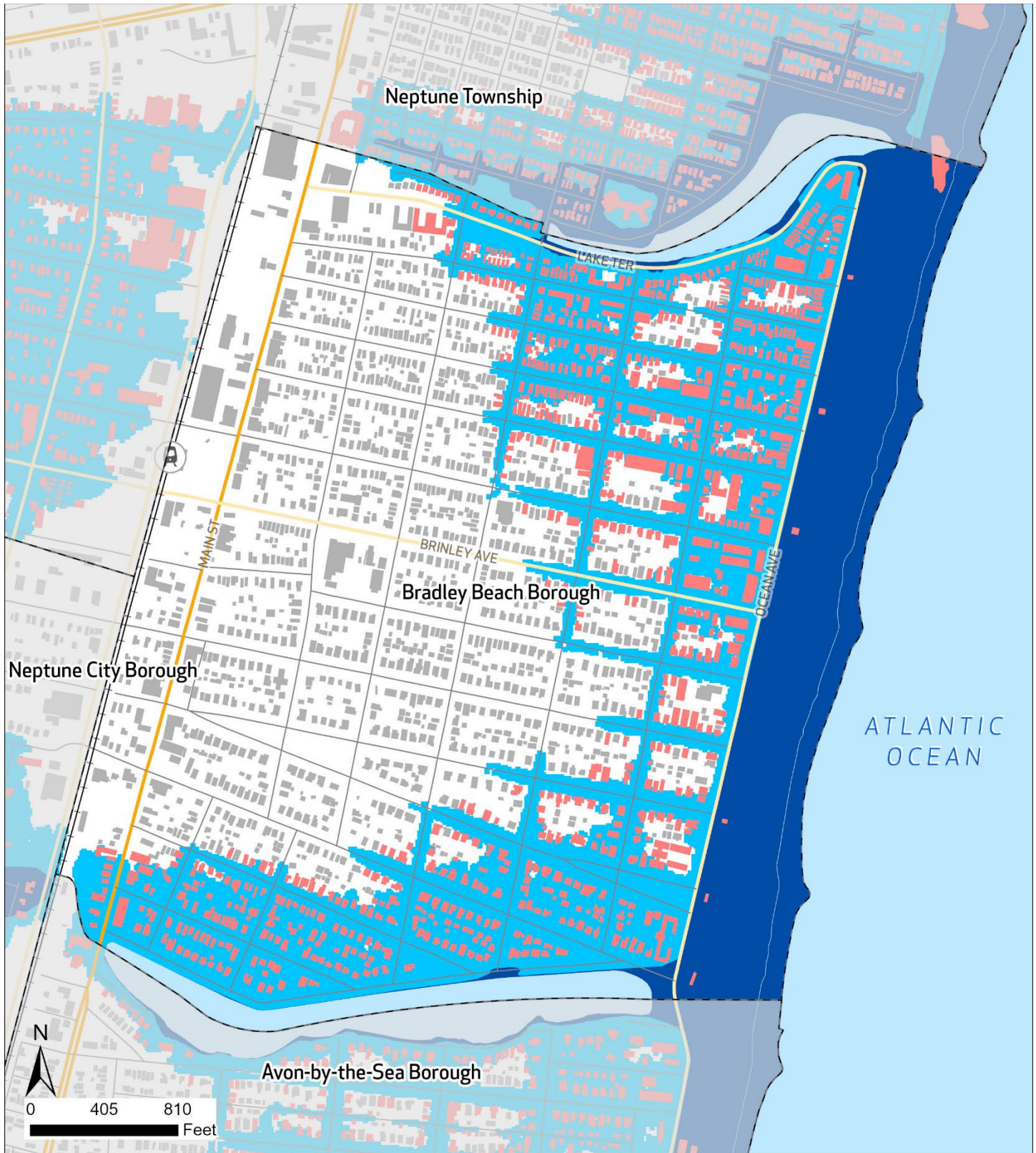
- 0.2% Annual Chance
- AE (1%)
- VE (1%)

- State Routes
- County Routes
- Local Roads
- Rail Lines
- NJ Transit Rail Station

- Municipal Boundaries
- Building Footprints
- Building Footprints within Floodplain
- Water

Source: FEMA NJDEP, NJOIT, NJTransit





# **NJ Inland Design Flood Elevation Bradley Beach Borough**

## **FEMA Flood Zone**

Current Base Flood  
Elevation (1%)

## **NJ Inland Design Flood Elevation**

FEMA BFE (1%) plus 3  
Feet

State Routes

County Routes

Local Roads

Railroad

NJ Transit Rail Station

Municipal Boundaries

Water

Building Footprints

Building Footprints within  
IDFE

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





# Permanent Inundation Under Sea Level Rise (SLR) Scenarios

Bradley Beach Borough

- |   |   |  |
|---|---|--|
|  Area Inundated Under 2 Feet SLR |  Interstate Highways     |  Municipal Boundaries |
|  Area Inundated Under 3 Feet SLR |  State Routes            |  Building Footprint   |
|  Area Inundated Under 5 Feet SLR |  County Routes           |  Water                |
|   |  Local Roads             |  |
|   |  Rail Lines              |  |
|   |  NJ Transit Rail Station |  |

Source: NOAA, NJDEP, NJOIT, NJTransit





# **Wildland Urban Interface (WUI) Classification**

Bradley Beach Borough

- |                                 |                         |                      |
|---------------------------------|-------------------------|----------------------|
| High or Medium Density Housing  | State Routes            | Municipal Boundaries |
| Low or Very Low Density Housing | County Routes           | Building Footprint   |
| No Housing                      | Local Roads             | Water                |
|                                 | Rail Lines              |                      |
|                                 | NJ Transit Rail Station |                      |

Source: USFS, NJDEP, NJOIT, NJTransit

## CAPABILITY ASSESSMENT

### Planning & Regulatory Capabilities

Bradley 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		2018	Has recommendations in support of hazard mitigation
Capital Improvement Plan		X		
Local Emergency Operations Plan/Continuity of Operations Plan	X			EOPs Annex's
Floodplain Development Ordinance	X		2022	Has recommendations to address stormwater management
Floodplain Management Plan	X		2022	Has recommendations to address stormwater management
Stormwater Management Ordinance	X		2020	Has recommendations to address stormwater management
Stormwater Management Plan		X		
Watershed Management Plan		X		
Sheltering Plan	X			Part of EOP
Evacuation Plan	X			Part of EOP
Substantial Damage/Improved Structures Response		X		
Repetitive Loss Plan		X		
Disaster Debris Management Plan	X			County Plan revised as of 2023; Temporary debris area update needed
Tracking elevation certificates and/or Letter of Map Change	X		2022	Tracking elevation certificates of all new developments
Post-Disaster Recovery Plan	X			EOP Damage Assessment Annex
Current/recent redevelopment plans or studies		X		
Community Wildfire Protection Plan		X		
Climate Adaptation Plan		X		
Other Plans that discuss hazard mitigation	X			Part of the Regional Flood Mitigation Group with Neptune City and Neptune Township
Other ordinance and regulation that mitigate the impacts of natural hazards		X		

### Administrative and Technical Capabilities

Bradley Beach Borough has the following Administrative and Technical capabilities:

Position	Yes	No	Explanation
Floodplain Administrator	X		Borough Engineer is the floodplain administrator
Grant Writer	X		Borough Engineer is the grant writer
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		American Red Cross
Organizations that work with socially vulnerable or underserved populations		X	

## Education and Outreach Capabilities

Bradley 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		Bright Arrow is the notification system that sends out a message to people's emails and phones 2258 people signed up for it. Used for weather and safety alerts. Social media, news media, radio.
StormReady	X		"StormReady" recognition and designation through Monmouth County
Firewise USA		X	
Severe Weather Awareness Week		X	
Community Rating System (CRS)	X		Also has website

## Financial Capabilities

Within the last five years, Bradley 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:

- **Community Rating System (CRS) Classification:** 7
- **Sustainable Jersey Participation Status:** Bronze



## MITIGATION STRATEGY

### Overview and Progress Since Last Plan Update

The Borough of Bradley Beach has prioritized the installation of a new outfall pipe and bulkhead at Sylvan Lake as well as replacement of dunes along the entire beachfront. Extend the promenade and bulkhead along Ocean Avenue. Elevate or relocate buildings and infrastructure in flood prone areas. Dredge Sylvan Lake. Acquire and install generators and surveillance cameras to critical structures for continuity of service in Bradley Beach. Additionally, coordination efforts with neighboring municipalities and Monmouth County to address localized flooding is also a priority.

### Completed or Removed Actions

Action	Name	Description	Hazards Addressed	Priority	Responsible Party	Potential Funding	Cost Estimate	Time-line	Action Status	Notes
The Borough has not completed or withdrawn any 2021 mitigation actions at this time.										

### New and Ongoing Actions

Action	Name	Description	Hazards Addressed	Priority	Responsible Party	Potential Funding	Cost Estimate	Time-line	Action Status	Notes
Action 8-1	Install New Outfall Pipes and Bulkhead at Sylvan Lake	Install new outfall pipes and bulkhead around Sylvan Lake as well as replacement of dunes along the entire beachfront.	Flood, Nor'easter, Hurricane and Tropical Storm, Storm Surge	High	Mayor, Council, Borough engineer, and Sylvan Lake Commission	Bonding, FEMA HMA	\$200,000	1 year	Ongoing	<p>A NJDOT Local Transportation Project Fund Grant was received for bulkhead replacement. Project is in conceptional phase. Grant is \$2,442,600 for replacement of a portion of the remaining wood bulkhead from Madison Ave. to Evergreen Ave.</p> <p>This critical infrastructure project will enhance the resilience of shorelines in Bradley Beach and is supported by a grant from the New Jersey Department of Environmental Protection (DEP). This project is to address an urgent need to repair and reconstruct the flume and outfall pipe of this vital waterway shared by communities. An estimated \$4 million dollars will be spent on the project, and this has been partially funded through a 75% state aid grant (DEP), with the remainder shared equally by Bradley Beach and Avon-by-the-Sea.</p>

Action	Name	Description	Hazards Addressed	Priority	Responsible Party	Potential Funding	Cost Estimate	Time-line	Action Status	Notes
Action 8-2	Improve the Borough's Communication and Notification System	The Borough is currently exploring the feasibility of networking with other municipalities in order to establish and implement contingency plans for communications continuity. The Borough has recently implemented several methods of notification to the pub	All Hazards	Low	OEM	Municipal budget	\$300,000	1 year	Ongoing	Bright Arrow is the notification system that sends out a message to people's emails and phones – 2 thousand people signed up for it.  Used for weather and safety alerts. Social media, print media, televisión, radio.
Action 8-3	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 135 flood-prone structures with a particular focus on RL and SRL properties.	Flood, Nor'easter, Hurricane and Tropical Storm, Storm Surge	High	Mayor, Council, and Borough Engineer	FEMA HMA	\$16.2M	5 + years	Ongoing	No recent elevations for RL/SRL Properties.
Action 8-4	Strengthen Training of Emergency Response for Police, Fire, and First Aid	Ongoing training of team members to assist in emergencies in areas such as traffic control, medical assistance, and/or weather-related matters.	All Hazards	Low	Mayor and Emergency Management Coordinator	Municipal budget	\$6,000	1 year	Ongoing	No update
Action 8-5	Dredge Sylvan Lake	Dredge the lake to remove debris and sand thus providing space for water to prevent and mitigate flooding in low lying areas.	Flood, Nor'easter, Hurricane and Tropical Storm, Storm Surge	Low	OEM, Engineering	Municipal budget, USACE	TBD	1 year	Ongoing	Needs to be done – hasn't been done

Action	Name	Description	Hazards Addressed	Priority	Responsible Party	Potential Funding	Cost Estimate	Time-line	Action Status	Notes
Action 8-6	Purchase and Install Generators for Critical Facilities and Shelters	Purchase and maintain generators to continue critical community services during utility interruptions and storm events for Borough Hall, Department of Public Works yard, Fire Department, Elementary School, Library.	All Hazards	Low	OEM, Engineering	FEMA HMA	\$200,000	1 year	Ongoing	Borough hall – has one, needs to update generator Fire House (shelter)- has one, needs upgraded DPW – they have portable generators Library – needs one Elementary School (shelter) – needs one Recreation Center (shelter): needs one
Action 8-7	Target Harden the Municipal Building and Boardwalk with Surveillance Cameras	Purchase and install surveillance cameras at the municipal building and boardwalk.	Terrorism	Low	OEM, Engineering	Homeland Security grants, Municipal budget	\$20,000	1 year	Ongoing	Recommendation to include elementary school to list.
Action 8-8	Clean and Repair Outfall Pipe along Lareine Ave. which leads to Repetitive Flooding for Nearby Properties	Clean and repair 18-inch outfall pipe that flows under Lareine Ave into Fletcher Lake.	Flood, Nor'easter, Hurricane and Tropical Storm, Storm Surge	Low	OEM, Engineering	Municipal budget	\$200,000	1 year	Ongoing	
Action 8-9	Extend the promenade and the bulkhead along Ocean Avenue to provide increased flood protection	South side of town – elevation is lower down there and Sandy damaged this area.	Flood, Nor'easter, Hurricane and Tropical Storm, Storm Surge	High	Bradley Beach	FEMA HMA, Borough budget	\$15 Million	2 years	New	