11 – BOROUGH OF DEAL

PLANNING TEAM AND PARTICIPATION

Name	Title	Participation
William Hulse	**OEM Coordinator/ Captain of Police**	**Primary Point of Contact, Municipal Meeting #1, Municipal Meeting #2, Review and Input**
Nicholas Dowling	Deputy OEM Coordinator/Detective	Municipal Meeting #2, Review and Input
Samuel Avakian	Borough Engineer	Municipal Meeting #2, Review and Input

COMMUNITY PROFILE

Overview

The Borough of Deal is a beach town that encompasses 1.3 square miles. Deal has a suburban feel, with most of its land area being residential. As a coastal community, approximately 90 percent of Deal's land area lies within the state's CAFRA zone, and during Superstorm Sandy it experienced high winds, heavy rains, and record tidal surge and waves. Following the storm, the Borough prepared a Strategic Recovery Planning Report (2014) that focused on storm impacts and the borough's recovery, and recommended municipal actions intended to promote recovery and reduce vulnerability to future storms.

In 2017, the Borough submitted a Municipal Public Access Plan to NJDEP that provides a vision for public access to tidal waters and the shoreline. The plan includes a public parking element as the Borough continues to develop parking management strategies near its beaches. The plan is currently pending review by NJDEP. The Deal Lake Master Plan (2018) highlights important issues for the watershed area, including NJDEP restrictions and permitting issues, dredge material disposal, storm water management, and storm drain issues, among others.

The borough is part of the Deal Lake Commission, whose mission is to preserve and restore Deal Lake and its tributaries as a healthy and stable ecosystem, as well as controlling lake levels during heavy storms. Deal Lake and Lake Takannassee are part of Monmouth University Urban Coast Institute's Coastal Lakes Observing Network (CLONet), which partners with municipalities and community groups to organize citizen science efforts, workshops and conferences dedicated to understanding the causes of environmental problems facing seaside water bodies.

Land Use, Development, & Growth

Deal is a predominantly residential community and most of its land is developed. From 2015 to 2020, the share of urban or developed land hovered at nearly 95 percent of the Borough's total area. In this period, the area covered by water diminished by nearly 14 acres, while barren land grew by 9.3 acres and developed land increased by roughly 5 acres. However, despite these changes, the overall land use composition of the community remained roughly the same in this period.

Land Use Type	Total Acres (2015)	Total Acres (2020)	Percent Change
Agriculture	-	-	-
Barren Land	22.7	32.0	41%
Forest	1.4	1.4	>0%
Urban	724.2	729.3	1%
Water	18.8	5.0	-73%
Wetlands	3.8	3.2	-16%

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

Recent Major Development and Infrastructure from 2020 to Present

The DSN Beach Club was redeveloped and completed in Deal Borough. The Premium Parking beachfront has been redone. It is a dirt parking lot, so there was no increase in impervious surface, but there are wood barriers to ensure orderly

parking. This lot falls under NJ Inland Design Flood Elevation zone which is FEMA's 1% annual chance floodplain + 3 feet (NJFloodMapper).

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

There are no large-scale developments anticipated besides the redevelopment of the Deal Casino, but that is far away as there are a lot of CAFRA permits needed.

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 Deal has a total estimated population of 645. This population is estimated to be 3.6% under age 5, and 23.7% over age 65. The Borough experienced an estimated growth of 11.4% between the ACS survey periods of 2013-2017 and 2018-2022. Though there is a relatively small population, Deal has nearly one-quarter of its population aged over age 65, and hazard mitigation preparation will require attention toward this large segment of a potentially vulnerable community. Though no recent or upcoming large-scale development is noted by the community, a population growth of over 11% between five-year survey periods also highlights potential local vulnerabilities related to shifts in the built environment and a risk of densification causing additional hazard impacts.

No areas within the Borough of Deal meet designation criteria for CDRZ, CEJST, or OBC identification.

Demographics Summary	
Total Population *(2018-2022 ACS 5-year Estimates)*	645
Population Change since 2017	11.4%
Percent of Population Age < 5	3.6%
Percent of Population > 65	23.7%

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

The Borough has ranked Dam Failure and Landslide as N/A.

Hazard Ranking Explanation

Coastal erosion has changed from medium in the prior HMP update to high concerns due to significant erosion experienced along the Borough's coastline in 2020. Terrorism remains a large concern within the Borough, as Deal has a significant Jewish community. The police department continues to work closely with the synagogues to deter attacks. Flooding continues to be a major issue, as the current drainage system cannot support the large amount of rain from severe storms. This issue is worsened by buildup within the outfall pipes, causing scouring near the ocean outfall. Nor'easters remain a large concern, as roads can become impassable; however, this is common in coastal towns.

Significant Hazard Events Since Last Plan Update

There was significant flooding in Poplar Brook, which floods constantly. Although houses in this area are elevated slightly, the area near Poplar Avenue and Almyr Avenue experiences large backyard flooding. The most prominent flood in the Borough occurs between Poplar Avenue and Lamar Avenue. According to the DEP, this area needs to be cleaned out to mitigate some of the flooding. Severe flooding was observed on August 4th and 6th, 2024.

Climate Change Impacts on Extent and Magnitude of Hazards

Climate change is expected to significantly impact Deal Borough by increasing the frequency and intensity of extreme weather events like hurricanes, nor'easters, and heavy rainfall. This will worsen existing vulnerabilities, particularly in areas prone to flooding and coastal erosion. The current drainage system, already struggling with severe storms, may become even more overwhelmed, leading to more frequent and severe flooding. Rising sea levels will also contribute to coastal erosion, threatening the Borough's coastline and infrastructure.

Additionally, higher temperatures and prolonged heatwaves could increase the risk of wildfires, which may become more frequent and harder to manage. The aging infrastructure, already causing power failures, could be further strained by more severe storms, leading to prolonged outages.

RISK ASSESSMENT

National Flood Insurance Program (NFIP) statistics

Deal Borough	
Initial FIRM	3/05/76
Effective FIRM	6/15/2022
Number of Policies In-Force:	123
Total Losses:	89
Total Payments:	$1,877,391.02
Number of RL Properties:	1

Deal Borough	
Number of Mitigated RL Properties:	0
RL – Total Losses:	6
RL – Total Paid:	$43,075
Number of SRL Properties:	2
Number of Mitigated SRL Properties:	0
SRL – Total Losses:	9
SRL – Total Paid:	$20,885.87

Source: FEMA Policy and Loss Data, August 2024

Vulnerability of the Built Environment

The Special Flood Hazard Area (SFHA) in the Borough of Deal is primarily located adjacent to the waterbodies of the borough: Deal Lake, Poplar Brook, and the Atlantic Ocean. Approximately 8.5 percent of the total area of Deal lies within the 1% annual chance flood zone as defined by FEMA. An additional 0.6 percent of the area of the municipality is in the 0.2% annual chance flood zone.

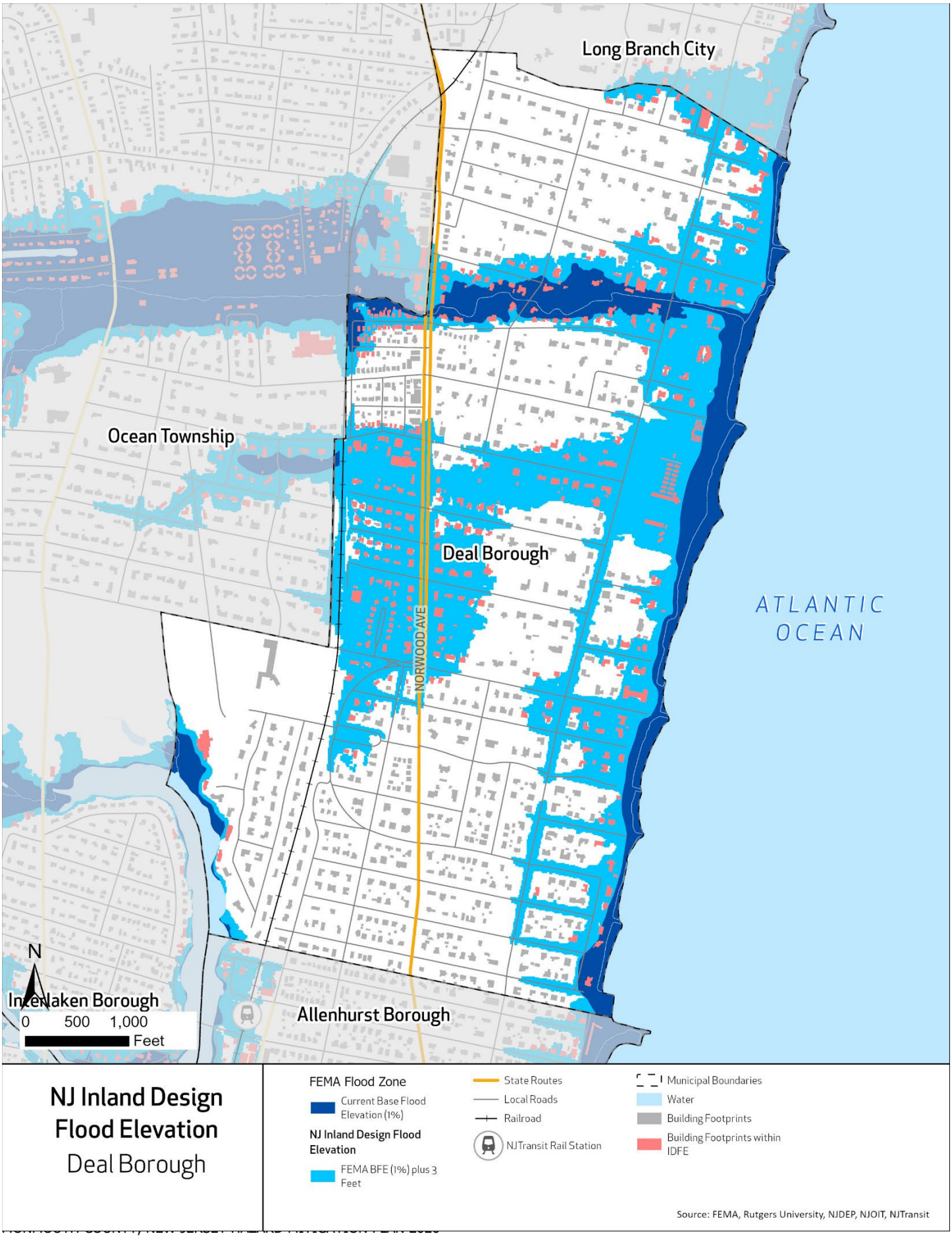
About 89.3 percent of Deal is considered developed. Of the developed parcels of the town, 9.0 percent fall within the 1% annual chance flood zone and 0.1 percent are within the 0.2% annual chance flood zone. This illustrates that the developed area of the municipality is generally in line with overall flood risk.

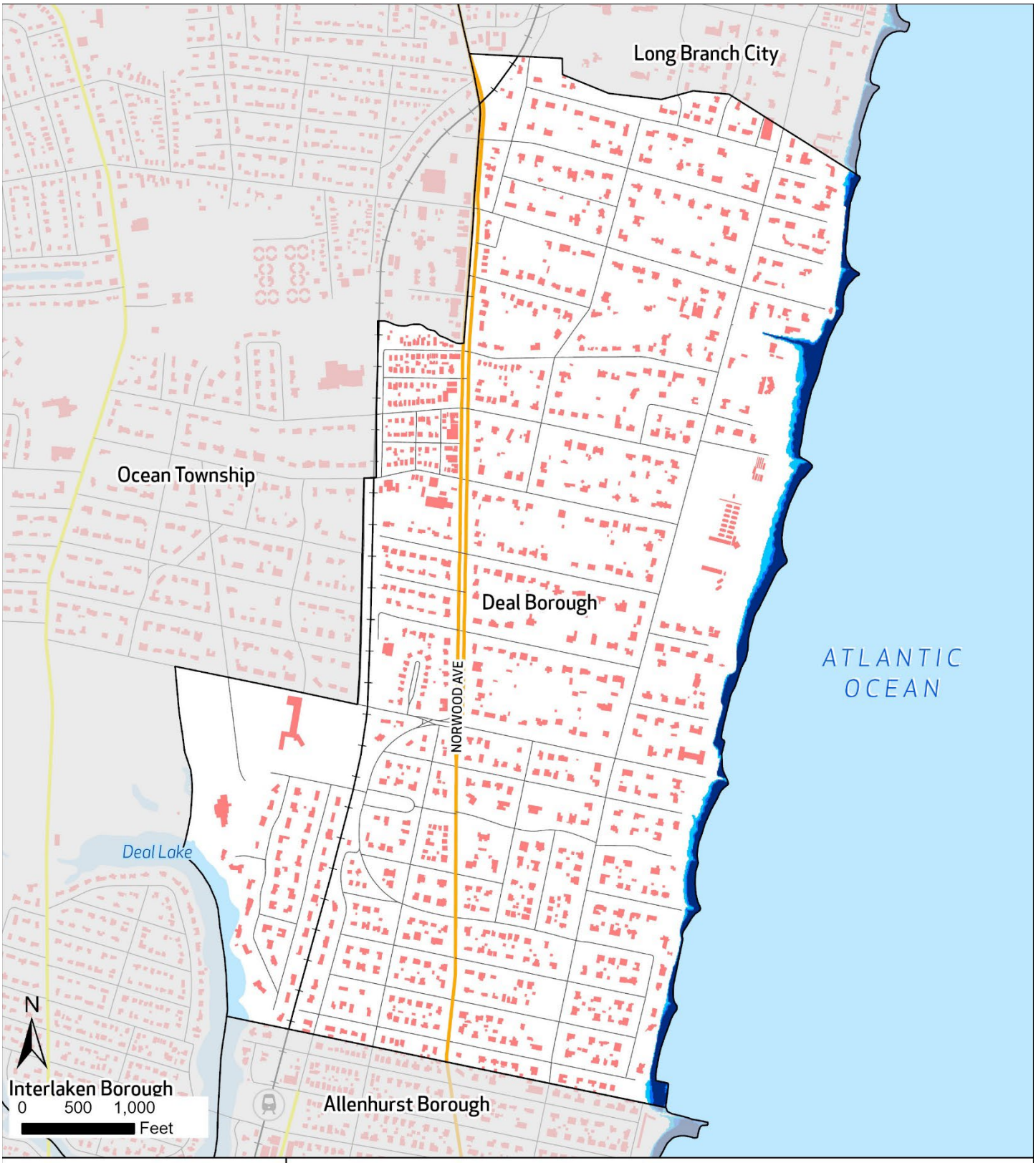
	Percentage in the 1% Floodplain	Percentage in the 0.2% Floodplain	5 feet of Sea Level Rise
Developed Parcels	9.0%	0.1%	3.1%
Exposed Land Area	8.5%	0.6%	2.5%

During the planning process, Deal 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 8 total facilities. Of these facilities, none are within the floodplain or the area projected to be inundated under 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	-	-	-


Long Branch City
Ocean Township
Deal Borough
NORWOOD AVE
ATLANTIC OCEAN
Deal Lake
Allenhurst Borough
N
0 500 1,000
Feet
Flood Risk
Deal Borough
FEMA Flood Zone
0.2% Annual Chance
A (1%)
AE (1%)
VE (1%)
State Routes
Local Roads
Rail Lines
Municipal Boundaries
Building Footprints
Building Footprints within Floodplain
Water
Source: FEMA NJDEP, NJOIT, NJTransit


Long Branch City
Ocean Township
Deal Borough
NORWOOD AVE
ATLANTIC OCEAN
Interlaken Borough
Allenhurst Borough
N
0 500 1,000
Feet
NJ Inland Design Flood Elevation
Deal Borough
FEMA Flood Zone
Current Base Flood Elevation (1%)
NJ Inland Design Flood Elevation
FEMA BFE (1%) plus 3 Feet
State Routes
Local Roads
Railroad
NJTransit Rail Station
Municipal Boundaries
Water
Building Footprints
Building Footprints within IDFE
Source: FEMA, Rutgers University, NJDEP, NJOIT, NJTransit


Long Branch City
Ocean Township
Deal Borough
NORWOOD AVE
ATLANTIC OCEAN
Deal Lake
N
Interlaken Borough
0 500 1,000
Feet
Allenhurst Borough
Permanent Inundation Under Sea Level Rise (SLR) Scenarios
Deal 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


Long Branch City
Ocean Township
Deal Borough
NORWOOD AVE
ATLANTIC OCEAN
Deal Lake
Interlaken Borough
Allenhurst Borough
N
0 500 1,000
Feet
Wildland Urban Interface (WUI) Classification
Deal Borough
High or Medium Density Housing
Low or Very Low Density Housing
No Housing
State Routes
Local Roads
Rail Lines
NJTransit Rail Station
Municipal Boundaries
Building Footprint
Water
Source: USFS, NJDEP, NJOIT, NJTransit

CAPABILITY ASSESSMENT

Planning & Regulatory Capabilities

Deal 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		11-7-2019	Discusses watershed and watershed management/protection
Capital Improvement Plan	X		10-15-2024	Prioritize roads that act as a major travel way in case of an emergency.
Local Emergency Operations Plan/Continuity of Operations Plan	X		1-26-25	
Floodplain Development Ordinance	X		6-30-2024	Restricts high-risk construction, promoting resilient building practices, and preserving natural floodplain functions to reduce flood damage and protect communities.
Floodplain Management Plan	X		6-30-2024	See Above.
Stormwater Management Ordinance	X		6-30-2024	Improving drainage systems, reducing flood risks, and enhancing water quality to protect infrastructure and communities from storm-related impacts.
Stormwater Management Plan	X		6-30-2024	See Above.
Watershed Management Plan		X		
Sheltering Plan	X		1-26-2025	
Evacuation Plan	X		1-26-2025	
Substantial Damage/Improved Structures Response		X		
Repetitive Loss Plan		X		
Disaster Debris Management Plan		X		
Tracking elevation certificates and/or Letter of Map Change	X		1-1-2025	Floodplain Manager reviews applications for conformance.
Post-Disaster Recovery Plan		X		
Current/recent redevelopment plans or studies		X		
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

Deal Borough has the following Administrative and Technical capabilities:

Position	Yes	No	Explanation
Floodplain Administrator	X		Leon S. Avakian Inc.
Grant Writer	X		Leon S. Avakian Inc.
Staff trained to support mitigation	X		Deal OEM
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	
Organizations that work with socially vulnerable or underserved populations		X	

Education and Outreach Capabilities

Deal Borough has the following Education and Outreach capabilities:

Education & Outreach Capability	Yes	No	Explanation
Communicate natural and human-based hazards to the public	X		Nixle
StormReady		X	
Firewise USA		X	
Severe Weather Awareness Week		X	
Community Rating System (CRS)		X	

Financial Capabilities

Within the last five years, Deal 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:

- **Sustainable Jersey Participation Status:** Registered

MITIGATION STRATEGY

Overview and Progress Since Last Update

Since the 2021 plan update, the Borough of Deal has prioritized coastal resilience, stormwater management improvements, and enhanced emergency response capabilities to mitigate the risks posed by flooding and severe weather events. Key efforts have included upgrades to drainage infrastructure, reinforcement of the borough's seawalls, and expanded community preparedness initiatives. Over the next five years, Deal will focus on shoreline stabilization, flood mitigation along critical roadways, and sustainable stormwater solutions to address the growing challenges of climate change. These proactive measures will help protect residents, safeguard infrastructure, and ensure long-term resilience for the community.

Completed or Removed Actions

Action	Name	Description	Hazards Addressed	Priority	Responsible Party	Potential Funding	Cost Estimate	Timeline	Action Status	Notes
-	-	-	-	-	-	-	-	-	-	Deal Borough has no completed or withdrawn actions since the last plan update.

New and Ongoing Actions

Action	Name	Description	Hazards Addressed	Priority	Responsible Party	Potential Funding	Cost Estimate	Timeline	Action Status	Notes
11-1	Widen Outfall Pipes to Mitigate Flooding at Norwood Ave & Alymr Ave	Overflow pipes need to be increased to improve water flow during storms and reduce flooding on roadways and onto private property. Similar issue at Ocean Avenue has already been mitigated, but Norwood Avenue and Alymr Avenue remain in need of mitigation.	Flood, Nor'easter, Hurricane and Tropical Storm	Medium	Borough Administrator or overseeing engineering firm.	FEMA HMA	$2,300,000	2 years	Ongoing	One pipe is partially or totally done, but the remainder of this action is ongoing.
11-2	Acquire, elevate, or relocate buildings and infrastructure in flood prone areas, with a focus on Repetitive Loss (RL) and Severe Repetitive Loss (SRL) properties	Elevation and/or acquisition of flood-prone residential structures, with particular focus on those in our community that are on FEMA's Repetitive Loss List and Severe Repetitive Loss List. New Jersey is committed to continuing the reduction of RL and SRL properties in the State; in turn, they have assigned a high priority to mitigating SRL and RL properties in the State Hazard Mitigation Plan. We are committed to supporting these projects as interested	Flood, Wave Action, Nor'easter, Hurricane and Tropical Storm, Storm Surge, Winter Storm	High	Engineer	FEMA HMA	TBD	3 years	Ongoing	With the Borough having control of high-risk areas and properties, it will allow for full control over the projects that can be done on site. This will allow that no new major construction be proposed.

Action	Name	Description	Hazards Addressed	Priority	Responsible Party	Potential Funding	Cost Estimate	Timeline	Action Status	Notes
		homeowners come forward and will support such homeowners, despite the loss in tax revenue, because we recognize the importance of making our community more disaster-resistant and reducing the financial burden of repetitive flooding in our community.								
11-3	Extend the Outfall at Phillips Avenue	Extend the outfall at Phillips Avenue. As of now, it does not go out far enough, and the pipe becomes clogged from erosion and flooding.	Flood	High	Borough	USACE, NJDEP	1 Million	5 Years	New	Expanding the outfall length will ensure all stormwater reaches the ocean and no scouring will occur on the beach.
11-4	Extend the Outfall at Neptune Avenue	Extend the outfall at Neptune Avenue. As of now, it is falling out into the culvert, and Monmouth Terrace is being flooded.	Flood	High	Borough	FEMA HMA	1 Million	5 Years	New	Expanding the outfall length will ensure all stormwater reaches the ocean and no scouring will occur on the beach.
11-5	Clear Out Alymr Avenue	Clear out Alymr Avenue including the private properties to mitigate backyard flooding. The Borough has permission from NJDEP but needs to obtain permission from the property owners.	Flood	High	Borough and Township of Ocean	Municipal budget	2 Million	5 Years	New	This project would allow the continued flow of stormwater to reach the existing infrastructure.
11-6	Dredge silt and debris from Poplar Brook	Desilt and dredge Poplar Brook to mitigate backyard flooding. As of now, debris causes blockages resulting in the water having nowhere to go.	Flood	High	Borough	USDA, Municipal Budget	$500,000	3 Years	New	Dredging allows for more capacity in the brook. During a storm event, moving the water off of the road and into the body of water.
11-7	Dredge Deal Lake	Remove excess sediment form identified choke points and reduce flood risks during heavy rainfall events. As of now, buildup prevents retention.	Flood	High	Borough	Borough, Deal Lake Commission	$750,000	3 Years	New	Dredging the lake will allow for more capacity in the lake. During a storm event, moving the water off of the road and into the body of water.

Action	Name	Description	Hazards Addressed	Priority	Responsible Party	Potential Funding	Cost Estimate	Timeline	Action Status	Notes
11-8	Begin restoration efforts on the spread of the beach near Deal Casino Beach Club	Strengthen dunes to act as natural barriers in the area and plant native vegetation to stabilize the shoreline.	Flood, Wave Action, Nor'easter, Hurricane and Tropical Storm, Storm Surge, Winter Storm	Mid	Borough	FEMA HMA Municipal Budget	$150,000	2 Years	New	With the Borough having control over the beach club property, it will allow for full control over the projects that can be done on site. This will allow that no new major construction be proposed.
11-9	Brighton Avenue Drainage Swale Improvement	The existing drainage swale located in the rear properties between Brighton Avenue and Parker Avenue causes severe flooding during major storm events. Upgrading the swale to a piped infrastructure will help move the storm water to a recently expanded drainage system that heads to the Brighton Avenue Ocean outfall. This project can also help alleviate drainage problems in the neighboring town of Ocean Township. The work would entail the upsizing of an existing pipe crossing under the North Jersey Coast Line – NJ Transit train tracks.	Flood	High	Borough	Borough/ Grants	$1,500,000	2 Years	New	This project would allow the continued flow of stormwater to reach the existing infrastructure.
11-10	Ocean Outfall Extensions	At numerous locations throughout the Borough, the storm water outfalls terminate at the bulkhead or natural wall. This causes sizable beach erosion following major storm events and smaller scale erosion after the majority of the other storm events. The Borough has been doing a good job with maintaining their beaches but in the event of a major storm	Flood, Wave Action, Nor'easter, Hurricane and Tropical Storm, Storm Surge, Winter Storm	Mid	Borough	Borough/ Gratns	$500,000	3 Years	New	Expanding the outfall length will ensure all stormwater reaches the ocean and no scouring will occur on the beach.

Action	Name	Description	Hazards Addressed	Priority	Responsible Party	Potential Funding	Cost Estimate	Timeline	Action Status	Notes
		event and the department of public works couldn't get to the beach sand grooming, a public safety issue is present. The extension of beach outfalls would help mitigate major beach erosion.								
11-11	Construction of Sand Dunes	The addition of sand dunes at vulnerable points along the Boroughs shoreline would allow for more resilience during a hurricane or major tidal event. The existing dunes will continue to be maintained under the DEP Permit, however, additional dunes will be considered.	Coastal Erosion, Wave Action, Nor'easter, Hurricane and Tropical Storm	Mid	Borough	Borough/ Grants	$100,000	2 Years	New	Sand dunes act as the first line of defense in a severe tidal event. Creating more dunes will allow for more time for response.
11-12	Infrastructure Studies and Improvements	The Borough would like to conduct infrastructure flood studies due to infiltration and inflow during fast major storm events. Repairs, lining, and testing will need to be done to determine the origin of stormwater into the Boroughs sanitary infrastructure. Sewer backups and water damage has been experienced during major flooding events due to the lack of pumping capacity at the pump station.	Flood, Wave Action, Nor'easter, Hurricane and Tropical Storm, Storm Surge, Winter Storm	Mid	Borough	Borough/ Grants	$350,000	5 Years	New	The reason for this action is to find and prioritize the needs to be addressed in high-risk areas of town. Addressing the problem areas will allow for better assistance in the case of an emergency.