



NEW JERSEY
**STATEWIDE FLOOD
RESILIENCE INITIATIVES**



INTERAGENCY COUNCIL ON
**CLIMATE
RESILIENCE**

2025

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ACKNOWLEDGMENTS

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- Board of Public Utilities (BPU)
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- Department of Children and Families (DCF)
- Department of Community Affairs (DCA)
- Department of Corrections (DOC)
- Department of Education (DOE)
- Department of Environmental Protection (DEP)
- Department of Health (DOH)
- Department of Human Services (Human Services)
- Department of Labor and Workforce Development (DOL)
- Department of Law and Public Safety (LPS)
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- New Jersey Transit (NJ Transit)
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- Pinelands Commission (Pinelands)
- Port Authority NY NJ (PANYNJ)
- New Jersey Sports & Exposition Authority (NJSEA)
- New Jersey Turnpike Authority (Turnpike Authority)



August 21, 2025

Fellow New Jerseyans,

I am pleased to present the 2025 Statewide Flood Resilience Initiatives Report, a compilation of ongoing New Jersey state agency commitments to safeguarding our communities from the worsening impacts of flooding.

Flooding is one of the most immediate and damaging impacts of climate change facing our state, threatening lives, property, business, and natural resources. In recent months, we have witnessed firsthand the devastating consequences of severe flooding. Both serious flash floods and sunny-day nuisance flood events are occurring even in the absence of a severe storm, and the frequency and intensity of these events is expected to increase in the coming decades. The strategies in this report serve to not only reduce our vulnerability to the flooding events of today, but to ensure we are resilient to the flooding conditions of tomorrow.

New Jersey has taken a comprehensive approach towards flood resilience, from advancing data and research efforts, to providing technical assistance to communities, to incentivizing flood-smart investments and infrastructure. This report highlights many of those initiatives, all of which are grounded in the best-available science and are tailored to the unique needs of New Jersey's diverse communities.

The success of the state's climate resilience efforts relies on cross-agency coordination and collaboration, facilitated largely by the Interagency Council on Climate Resilience. Comprising 26 state departments and agencies, the Interagency Council has been instrumental in developing and implementing the vision of the Climate Change Resilience Strategy. I am deeply grateful to the Interagency Council's senior leadership and support staff who continue to lead the charge on this important work.

This report is a celebration of the progress we have made, but it is far from the end of those efforts. Today, New Jersey stands at a pivotal moment, with an opportunity to reshape the way we plan, build, and govern to create a healthier, more equitable, and more sustainable future for all. I look forward to continuing to work with the Interagency Council on Climate Resilience—and with our partners and communities across the state—to take bold and decisive action toward a more climate-resilient New Jersey.

Sincerely,

A handwritten signature in blue ink that reads "Nicholas Angarone".

Nicholas Angarone
New Jersey Chief Resilience Officer

NEW JERSEY

STATEWIDE FLOOD RESILIENCE INITIATIVES

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INTRODUCTION



New Jersey’s environment, economy, communities, and infrastructure all face risk from flooding, and climate-change is increasing the extent, frequency, and intensity of flood events. Throughout the State, changes in flooding from climate change are already visible. Sea levels here are rising faster than in other parts of the world, extreme rainfall events are becoming more frequent and more intense, and both coastal and inland flooding risks are projected to increase significantly. With a dense population, extensive coastline, and critical infrastructure positioned along state waterways, the State faces heightened vulnerability to the impacts of flooding. While New Jersey remains committed to reducing emissions to minimize future climate change, the threat of flooding is already so severe, the State must take decisive action to adapt.

Purpose and Authority

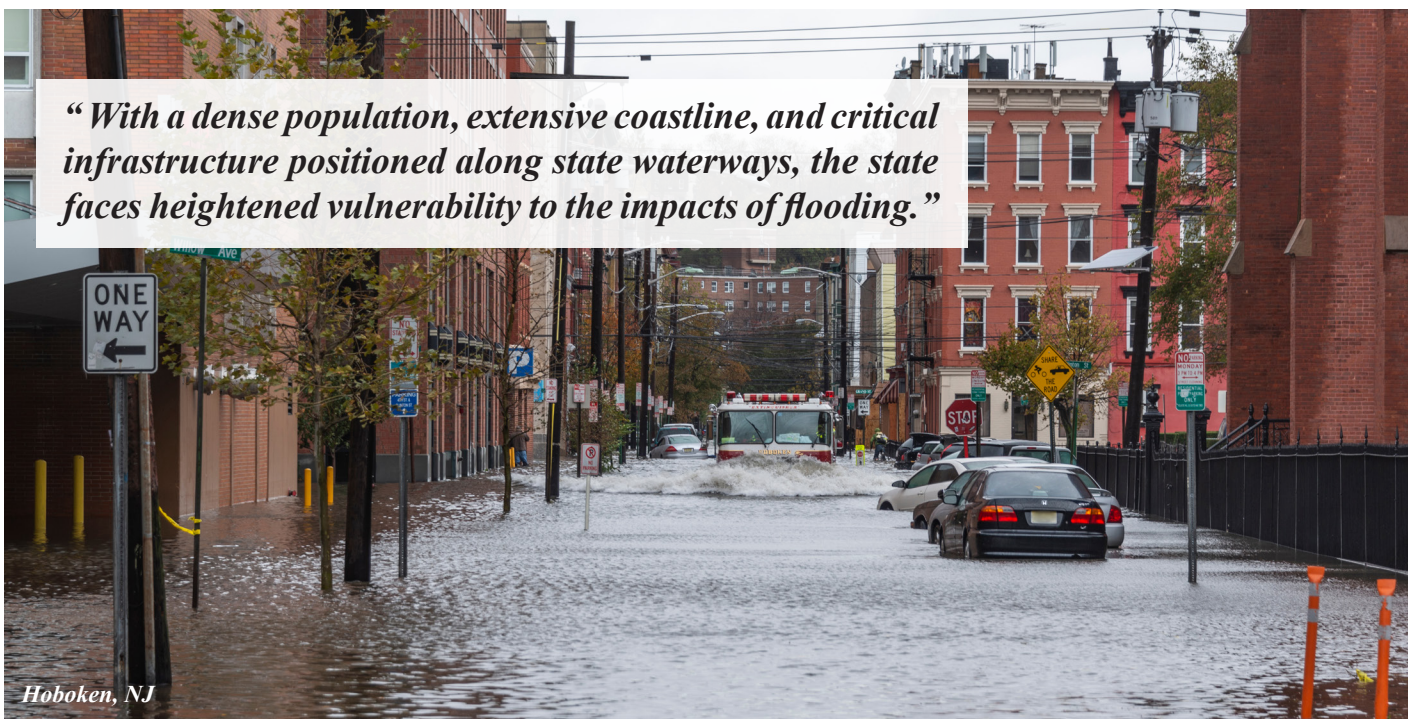
To address the State’s mounting impacts from climate-change, New Jersey has taken steps to improve research and decision-making capability to reduce both current and future risks. In 2019, Governor Murphy signed [Executive Order No. 89](#) (EO 89), which directed state government to take proactive and coordinated efforts towards climate resilience. To inform those efforts, EO 89 called for the development of a Scientific Report on Climate Change utilizing the best available science and data specific to New Jersey and considering a wide range of climate change related hazards, and established the [Interagency Council on Climate Resilience](#) (Interagency Council).

The Scientific Report on Climate Change

The New Jersey Department of Environmental Protection (DEP) released the first State-led assessment summarizing current and projected climate conditions in New Jersey, as the 2020 [New Jersey Scientific Report on Climate Change](#) (Scientific Report). The impacts identified, particularly regarding flood-risk for the state, are wide-ranging and have both direct and indirect implications, including threats to public health and individual and community well-being. The Scientific Report underscored a clear upward trend in precipitation and flood risk: projected increases in annual precipitation, along with more frequent and intense rainfall, are expected to drive widespread localized flooding across the state. Coastal flooding risks are made more urgent by sea-level rise, raising both tidal and storm-related flood threats. These combined trends mean that flooding will increasingly threaten areas far beyond the immediate coastline, impacting riverine communities, low-lying inland neighborhoods, and urban areas whose drainage systems are already prone to overflow.

Since this initial document, DEP has continued to work with the scientific community to ensure policy reflects the best available information. In November 2021, New Jersey worked with universities to study extreme rainfall, releasing reports that show storms already release 2.5% to 10% higher precipitation than what older historical data suggested. These studies also indicate that by century’s

“With a dense population, extensive coastline, and critical infrastructure positioned along state waterways, the state faces heightened vulnerability to the impacts of flooding.”



Hoboken, NJ

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end, extreme storms, including the 100-year storm event, are expected to bring 20% to 25% more rainfall in one event, greatly heightening the potential for flash flooding. The State is also working with Rutgers University to update the [2019 Science and Technical Advisory Panel \(STAP\)](#) report providing New-Jersey specific sea-level rise projections based on updated best-available science in the coming months.

This research emphasizes that climate-change induced flooding is no longer theoretical – it is here and will continue to intensify, affecting more people, property, and infrastructure throughout New Jersey with each passing decade. Proactive planning and decision-making today, as illustrated in this document’s *Statewide Flood Resilience Initiatives*, are essential to reduce future damages and safeguard New Jersey’s communities, economies, and environments.

New Jersey Interagency Council on Climate Resilience

In addition to calls for updated, best-available research, EO 89 also established the Interagency Council to enhance coordination on the state’s resilience efforts, as well as the position of Chief Resilience Officer of the State of New Jersey to lead development and implementation of the [Statewide Climate Change Resilience Strategy](#) (Resilience Strategy).

The Interagency Council, now encompassing 26 state departments and agencies and the Governor’s Office, is charged with coordinating the efforts of the Executive Branch to develop and implement consistent, statewide resilience policy. To facilitate this, the Interagency Council establishes both short- and long-term action plans by which Executive Branch departments and agencies work individually and collectively to accomplish.

The Statewide Climate Change Resilience Strategy

The inaugural Resilience Strategy was released in October 2021, describing six priority topic areas and a total of 127 actions that provide a policy framework to guide state agency actions to address climate resilience. These priority areas, listed below and highlighted on the next page, help establish resilience goals for the State and its agencies:

- Priority 1: Build Resilient and Healthy Communities
- Priority 2: Strengthen the Resilience of New Jersey’s Ecosystems
- Priority 3: Promote Coordinated Governance
- Priority 4: Invest in Information and Increase Public Understanding
- Priority 5: Promote Climate-Informed Investment and Innovative Financing
- Priority 6: Coastal Resilience Plan

Dover, NJ

THE GREAT SEAL OF THE STATE OF NEW JERSEY
LIBERTY AND PROSPERITY 1776

NEW JERSEY'S SIX CLIMATE RESILIENCE PRIORITIES

- Build Resilient and Healthy Communities
- Strengthen the Resilience of New Jersey's Ecosystems
- Promote Coordinated Governance
- Invest in Information and Increase Public Understanding
- Promote Climate-Informed Investments and Innovative Financing
- Coastal Resilience Plan



Each activity has been categorized into one of three tiers based on its correlation with flood risk:

1. *Spotlighted Initiatives* include ongoing programs and recurring projects that have a significant impact on reducing flood risk across the state. These activities establish the foundational assistance and policy for the state’s flood risk approach.
2. *Primary Activities* encompass state initiatives that may not have been created to focus on flooding but provide a significant impact.
3. *Supporting State Agency Actions* includes projects and initiatives where flooding is a consideration or component, but is not the primary focus of the program.

Jersey City, NJ

A [Resilience Action Plan \(RAP\) focused on Extreme Heat](#) was released in July 2024, which identifies state actions to keep New Jersey residents and communities safe from extreme temperatures, based on the six priority areas. Since the inaugural Resilience Strategy, the Interagency Council has released multiple implementation update reports, [available on the Council’s website](#), highlighting ongoing and planned efforts by state agencies to address the impacts of climate change across the state.

Statewide Flood Initiatives Report

This newest report – *New Jersey Statewide Flood Resilience Initiatives* – highlights both ongoing programs and individual projects led by state agencies aimed at reducing flood risk. It also includes actions where state agencies partner with non-state entities to increase awareness of or minimize flooding, as well as some state programs that have expanded their mission to include flood risk or increased their focus on flooding as a result of work by the Interagency Council.

The Interagency Council is committed to working together to build climate resilience into Executive Branch policies, programs, and regulations. State agencies have a duty to protect state residents, as well as the resources and communities which they serve, to the best of their ability. This report highlights programs and projects state agencies have undertaken to reduce the state’s risk of damage and destruction from floods.

Reading this Report

The identified programs and initiatives are organized to align with the priorities outlined in the foundational policy framework of the Resilience Strategy. Activities in this report address planning and regulations to build more appropriately for future floods, including elevation, acquisition, and floodproofing to address current risk; awareness, training, and outreach efforts; and financing programs that increase capacity to address flooding at every level. Actions that focus specifically on coastal areas, coastal flooding, and addressing sea-level rise, in alignment with New Jersey’s Coastal Resilience Plan, are included in Priority 6 of this report.

Why Flooding, Why Now?

Flooding has long been a natural hazard experienced in New Jersey, shaped by the state’s diverse geography and climate. New Jersey’s extensive network of more than 18,000 miles of rivers and streams, coupled with 1,800 miles of coastline, places it among the highest-risk states for flooding. And the risk is growing; scientific research clearly shows that both the frequency and intensity of flood events are increasing as a direct consequence of climate change. This escalation is exacerbated by New Jersey’s dense population centers and extensive development, where impervious surfaces such as roads, parking lots, and rooftops prevent natural absorption of rainfall, significantly amplifying runoff and cascading

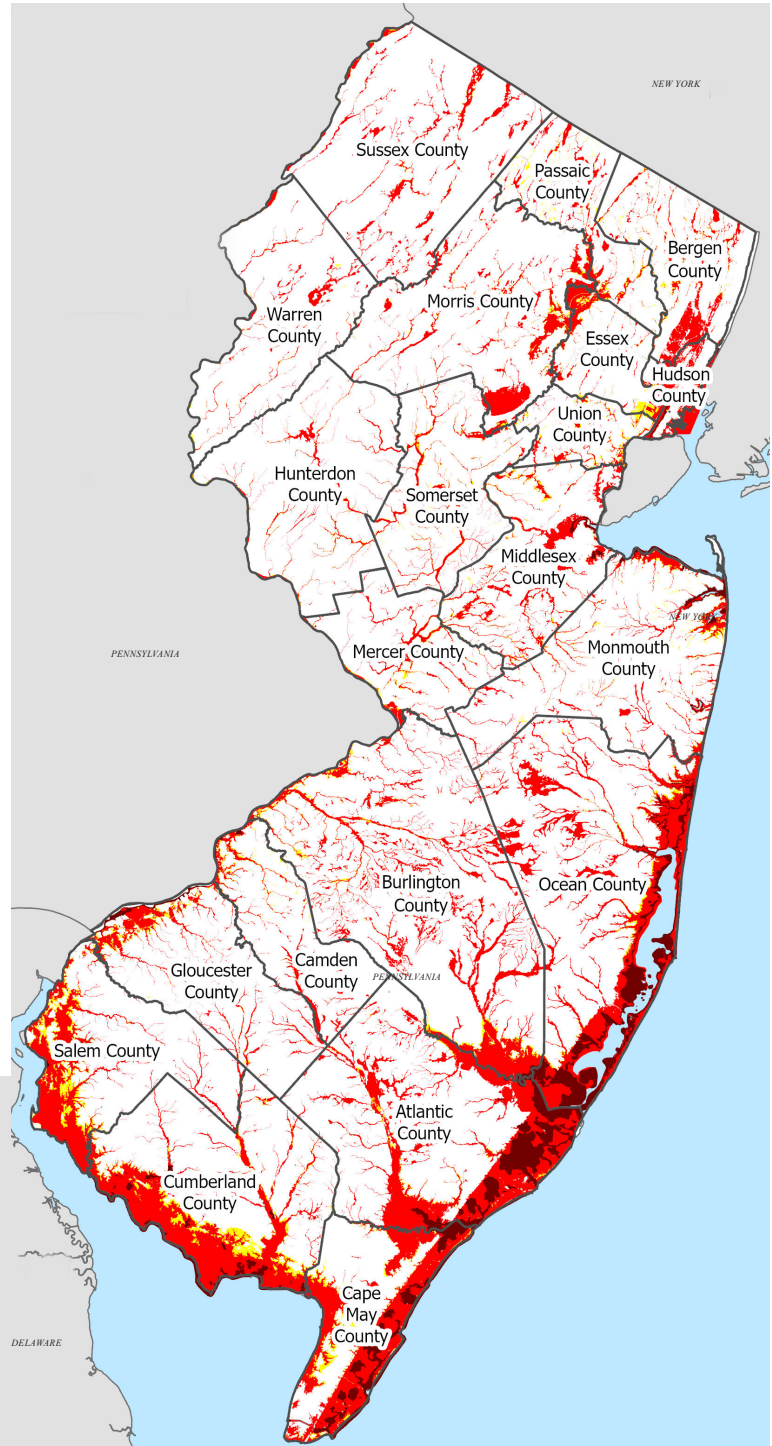
STATEWIDE FLOOD RESILIENCE INITIATIVES

flood severity. As a result, flood events that at one time may have been infrequent are now occurring with alarming regularity and more devastating impacts.

According to historic flood hazard mapping by the Federal Emergency Management Agency (FEMA), properties valued at approximately \$277.7 billion in market value lie within the designated 1% annual chance floodplain, commonly referred to as the 100-year floodplain. This federally recognized zone highlights areas that have a high probability of flooding in any given year, and traditionally represents the focus for floodplain management and insurance requirements. It is important to recognize that FEMA flood mapping primarily relies on historical flood data and past precipitation patterns, and as a result do not fully incorporate the latest scientific research to capture emerging risks from rapid rainfall accumulation, urban stormwater runoff, or future climate-induced changes in precipitation patterns. Consequently, numerous properties and infrastructure located outside the 100-year floodplain remain vulnerable to damaging floods, often without the benefit of flood insurance or adequate flood mitigation measures. Many areas now at heightened risk, due to more intense storms, rising sea levels, and urban development, may not be reflected on current flood maps, leaving communities vulnerable and underprepared.

The nature of flooding in New Jersey has evolved to include rapid-onset flash flooding for intense, short-duration rainfall that can swell rivers and streams within minutes; chronic tidal flooding that inundates streets during high-tides even on clear days, and prolonged, heavy rainfall events that exceed the capacity of existing stormwater infrastructure that were designed for the most common storms of the

past. As the atmosphere holds more water, the design storm for critical infrastructure no longer represents the likely volume of water that will fall in a rainstorm. These conditions create complex and persistent challenges for communities across the state. Communities across the state continue to grapple with recent damage to homes, businesses, and community lifelines, all occurring in the absence of a named hurricane, nor'easter, or major storm system traditionally associated with such widespread destruction.



State of New Jersey Floodplain

- Zones A; AE; AH; AO
(1% Annual Chance)
- Zone VE - Coastal High Hazard Area
(1% Annual Chance)
- Zone X
(0.2% Annual Chance)
- County Boundaries

New Jersey experiences three main types of flooding: Riverine (Fluvial), Rainfall and Runoff (Pluvial), and Coastal. Sea-level rise as a result of climate change increases the threats associated with all types of flooding in coastal areas, as discussed below.

Riverine (Fluvial)

Riverine flooding occurs when a river or stream exceeds its natural or engineered capacity, causing water to overflow its banks and inundate adjacent low-lying areas. This typically results from prolonged or intense rainfall, rapid snowmelt, or a combination of these factors raising water levels beyond flood stage. Flash flooding is a subset of riverine flooding characterized by a sudden, high-velocity rise in water levels occurring within minutes or a few hours after heavy rainfall, failure of a levee or dam, or the sudden release of water caused by debris or ice jams. Flash floods associated with rivers and streams pose acute threats to life and property due to their rapid onset and force. Historically, riverine floods have been the most common flood events across New Jersey. Detailed flood risk maps produced by the New Jersey Department of Environmental Protection (DEP) and FEMA identify vulnerable areas along these river corridors statewide.



Fluvial flooding along the Raritan River during the remnants of Hurricane Ida

Rainfall and Runoff (Pluvial)

Pluvial flooding results when intense rainfall exceeds the capacity of urban drainage and stormwater management systems, causing water to accumulate on the surface and create flooding independent of nearby rivers or coastal waters. This type of flooding can vary in speed, with some events causing rapid water flow over streets and other surfaces, while others may lead to prolonged ponding in low-lying areas. Notably, pluvial floods can—and often do—occur outside of FEMA-identified floodplains, posing risks in areas not traditionally (and historically) considered flood prone. Flash floods are also frequently pluvial in nature, arising from sudden, extreme rainfall overwhelming drainage infrastructure and causing dangerous flooding within a short timeframe. As heavy rainfall events grow more frequent and intense in New Jersey, pluvial flooding has become an increasingly significant hazard for both urban and rural communities.



Pluvial flooding overwhelming stormwater systems

Coastal

Coastal flooding in New Jersey primarily arises from high tides, storm surges, and extreme coastal storms such as nor'easters, hurricanes, and tropical storms. Two distinct forms of coastal flooding present significant risks: storm surge and tidal flooding. Storm surge is the rapid, often violent elevation of water above normal tide levels driven by strong winds and low atmospheric pressure during storms. This surge causes tremendous force, capable of causing catastrophic damage to infrastructure, property, and natural habitats.

In contrast, tidal flooding, sometimes called “nuisance” or “sunny day” flooding, occurs when high-tides alone raise water levels enough to inundate low-lying areas, often with slower onset and receding times measured in hours or even days. This tidal flooding is becoming increasingly common in New Jersey’s coastal communities due to rising baseline sea levels, exacerbating chronic flood risks and complicating emergency response and recovery efforts.



Coastal flooding in Ocean County

Climate Change is Making Flooding Worse Across New Jersey

Climate change is significantly worsening flooding conditions throughout New Jersey by altering the state's precipitation patterns, raising sea levels, and increasing the frequency and severity of extreme weather events. These changes intensify the range of flooding New Jersey faces – from riverine (fluvial) and rainfall-driven (pluvial) floods to coastal inundation exacerbated by rising seas – creating complex and overlapping risks for communities statewide.

Change in Precipitation

One of the clearest manifestations of climate change in New Jersey is the increase in heavy precipitation events. The 2020 Scientific Report found that the state's average annual precipitation is projected to increase between 4% and 11% by 2050, with the Northeast experiencing some of the highest increases nationally (NJDEP, 2020). More importantly, the intensity and frequency of extreme rainfall events – such as the 100-year, 24-hour storms – are expected to rise dramatically, with some northern counties projected to see increases in extreme rainfall of up to 45-50% by the end of the century (NJDEP, 2021). This leads to more frequent pluvial flooding, where drainage systems become overwhelmed and surface water accumulates rapidly, more often affecting areas outside of FEMA-mapped floodplains. Flash floods, a particularly dangerous form of pluvial and fluvial flooding, can occur within minutes during more intense storms, creating immediate risk to life and property.

Riverine flooding remains a significant hazard across New Jersey and its 18,000 miles of rivers and streams. Climate change increases riverine flooding risk not only through heavier rainfall but also because higher sea levels impede the natural drainage of rivers into tidal waters, causing water to back up upstream. This “backwater effect” results in longer-lasting and more severe riverine floods, farther and farther inland from the coast. Historic floodplains mapped by FEMA reflect past conditions, but climate-driven changes are expanding the extent and severity of river flooding beyond mapped boundaries.

Coastal Flooding is Increasing

Superstorm Sandy was the costliest disaster in Garden State history and resulted in the loss of 38 lives, 346,000 homes damaged or destroyed, and \$30 billion in economic damage. When the remnants of Hurricane Ida dropped over eight inches of rain across central New Jersey, it caused \$8-10 billion of property damage. Research indicates that warmer ocean temperatures allow coastal storms to hold more energy, resulting in higher winds, and consequently higher storm surges.

Beyond these catastrophic storms, residents in communities across the state began to see increased “sunny day” flooding from higher tide elevations and damaging flood events, such as those in July 2025. Coastal flooding in New Jersey is being amplified by sea-level rise, one of the most visible and well-documented effects of climate change in the region. Since the early 1900s, sea levels along the New Jersey coast have risen approximately 18 inches—more

Climate Change is Significantly Worsening Flooding Conditions throughout New Jersey

1,640



affordable units in the state are subject to coastal flooding at least annually, **the highest share of at-risk affordable housing in the country.**

62,000+



residential properties (over \$27 billion in value) are at risk of chronic flooding and/or inundation due to sea-level rise.

45 - 50%



is the projected increase in extreme rainfall events – such as the 100-year, 24-hour storms – that some northern counties will experience by the end of the century.

18



inches is how high sea levels along the New Jersey Coast have risen since the early 1900s, **more than twice the global average.**

than twice the global average (Rutgers University, 2023). Projections indicate an additional rise of 13 to 18 inches or more by 2050, with at least 17% possibility of exceeding 4 feet by 2100 (NOAA, 2023). This rising baseline elevates the frequency and severity of coastal tidal flooding, and exacerbates storm surge impacts during nor’easters, hurricanes, and tropical storms. As sea levels rise, low-lying coastal communities across the state face chronic inundation, infrastructure damage, saltwater intrusion into freshwater systems, and increasing economic losses. Additionally, rising sea levels worsen riverine flooding by impeding drainage where rivers discharge into tidal waters, effectively backing up floodwaters and increasing flood durations upstream. The interplay of sea-level rise with heavy rainfall events also exacerbates pluvial flooding by reducing the ability of stormwater to drain effectively into rivers and coastal waters. Collectively, sea-level rise compounds the severity and complexity of flood hazards throughout New Jersey, making integrated, future-focused flood management essential.

Confluence of Flooding and Other Climate-Related Threats

Other hazards that are anticipated to worsen due to climate change, such as drought and wildfire, can also increase flood risk. Ideally, during a rainfall event, some of the initial water is absorbed by the soil and vegetation where the rain lands. However, after a drought or wildfire, the land is unable to absorb this runoff, causing creeks and drainage areas to flood much earlier and with higher magnitude than normal. In recently burned areas, heavy rainfall can also mobilize sediments and cause a much more destructive debris flow. As droughts and wildfires become more severe and/or more frequent, the way communities experience floods may change.

Understanding the Stakes: How Floods Impact New Jersey

Housing At-Risk

Throughout New Jersey, residential properties, particularly along the coast, are already at risk of total loss due to repetitive (and increasing) flooding and rising sea levels. By 2045, an estimated 62,000+ residential properties (over \$27 billion in value) are at risk of chronic flooding and/or inundation due to sea-level rise. Estimates increase by 2100 to 251,000 residential properties and a potential \$107 billion in loss (UCS, 2018). Frequent tidal flooding risk for coastal residential properties has more than doubled in recent years; in 2019, this raised projections for the number of New Jersey homes at risk by about 110%. There are

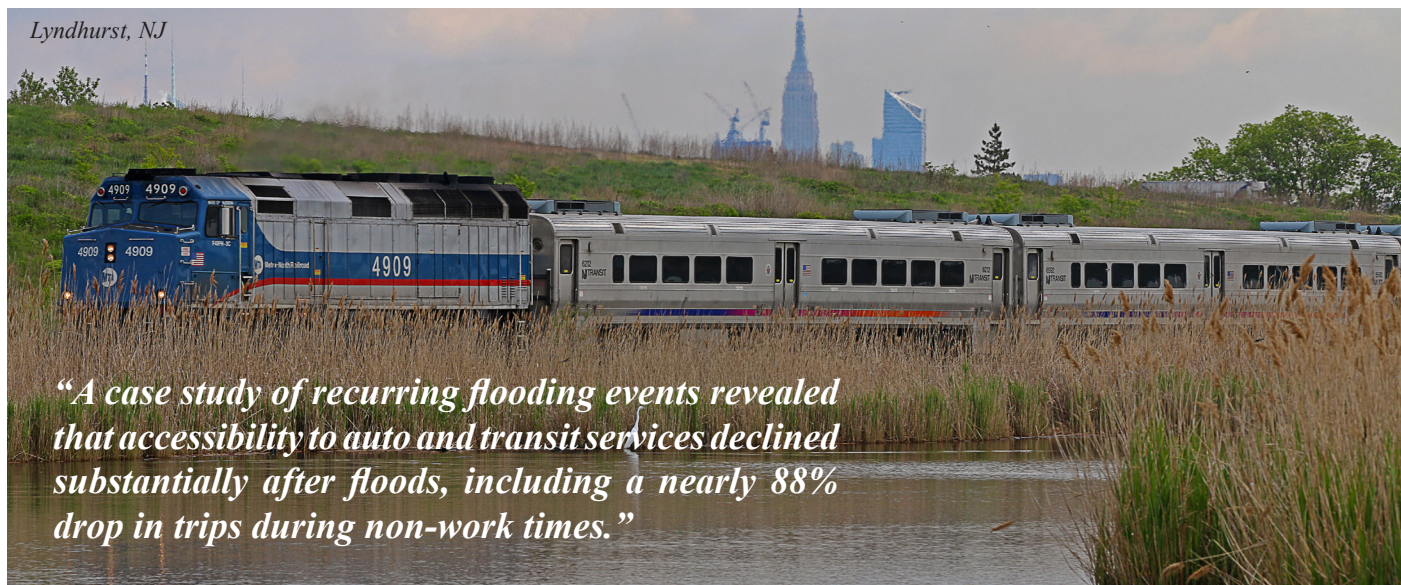
KNOW THE FLOOD RISKS

- It takes as little as six inches of moving water to knock an adult off their feet.
- 18 inches of water can carry a typical vehicle into deeper, more dangerous floodwaters.
- Three feet of water can collapse a home’s foundation
- Flash flooding can occur with minimal warning.

now 27,000 more residential buildings (worth \$15 billion) that are likely to flood at least once annually (Hess, et. al., 2019). These property losses will deplete value and tax base from New Jersey communities and residents. As insurance costs rise and insurance companies withdraw coverage from climate-impacted regions, homeownership becomes even less affordable, and, with post-disaster financial impacts, particularly in flooded homes outside of Special Flood Hazard Areas (SFHAs), resulting increases in foreclosure rates can further strip equity from New Jerseyans.

Flooding poses a significant and growing threat to housing stability across New Jersey. Damage caused by floodwaters extends beyond immediate physical destruction of housing stock, as homes suffer structural impairments and damage to interior systems and personal belongings. After floodwaters recede, persistent property issues such as mold growth and indoor air quality remain a serious concern. Research in New Jersey and nationally links post-flood mold exposure to respiratory problems like asthma, allergies, and other chronic health conditions, placing ongoing burden on impacted households’ well-being and finances (Rutgers, 2015 , CDC, 2024).

Financially, flooding exacerbates vulnerabilities for many New Jersey homeowners, especially in low-to moderate-income brackets. Flood-related damages can lead to costly repairs and displacement, with many households lacking sufficient savings or flood insurance coverage to manage recovery expenses. A significant portion of New Jersey residents are asset-limited, income-constrained, and employed (ALICE), making them particularly vulnerable



to financial shocks from flooding (United Way of Northern New Jersey, 2025). Without adequate insurance or emergency funds, these families are at a greater risk of falling behind on mortgage payments, increasing the likelihood of foreclosure and destabilizing homeownership gains (Katz, L. 2021). Already, flooding events are the primary driver of post-disaster foreclosure; particularly when flooding occurs outside of FEMA’s SFHAs, where flood insurance is not mandatory. Damaged properties outside of SFHAs experience foreclosure increases, averaging nearly 52% more than similarly damaged properties within SFHAs (FirstStreet, 2025; Kaufman, L, 2025). As with other vulnerability impacts, flooding may hit vulnerable populations hardest with regards to housing; affordable housing in the state is particularly vulnerable to flooding, and, as of 2020, one estimate reported that 1,640 affordable units in the state are subject to coastal flooding at least annually (WHYY, 2020), the highest share of at-risk affordable housing in the country. By 2050, the number of at-risk affordable units more than quadruples to 6,825 units (nearly 4% of total affordable housing stock).

The financial strain of flooding also compounds credit health challenges. Delayed or denied insurance claims, coupled with costs of temporary housing and home repairs, can degrade credit scores and restrict access to loans, limiting New Jerseyans’ ability to rebuild or relocate to safer areas (U.S. GAO, 2021). Furthermore, lingering damage can reduce property values, complicating efforts to sell or refinance homes, and deepening known economic inequalities in vulnerable communities (NLIHC, 2021).

These housing impacts, borne individually, will also impact the shared vitality of New Jersey communities. Residential properties at risk of sea-level rise by 2011 contribute more than \$107 billion dollars in tax revenue annually (UCS, 2018). According to the linked methodology, New Jersey is second in the United States for the largest possible hit to municipal property tax due to climate change-induced weather events.

Transportation Networks and Mobility

Transportation networks across New Jersey – including highways, commuter rail, light rail lines, ferry services, and critical transit hubs – are increasingly vulnerable to flood driven disruptions. These infrastructure networks were engineered based on historical climate patterns, and intensifying conditions brought on by climate change are exceeding their current capacity for flood resilience. Sea-level rise, extreme rainfall, and storm surges are now more likely to overwhelm drainage systems, inundating crucial transit corridors and leading to extensive operational failures (NJTransit, 2025a).

Flooding also dramatically undermines mobility equity. A case study of recurring flooding events revealed that accessibility to auto and transit services declined substantially after floods, including a nearly 88% drop in trips during non-work times. Areas with higher social vulnerability, including lower-income households, limited-English populations, and people with disabilities were most severely impacted (Zeng,L., Chen, D., Miller, J., et.al., 2024).

Historic storms have demonstrated these threats: Hurricane Irene (2011) caused major flooding of Assunpink Creek at the Trenton Train Station, suspending service along Amtrak’s Northeast Corridor and SEPTA’s Trenton Line, causing NJTransit around \$10 million in lost revenue and infrastructure damage. Superstorm Sandy (2012) brought even more catastrophic infrastructure impacts: rail yards were washed out, Hoboken Terminal and the Meadowlands Maintenance Complex were flooded, substations were compromised, and Hudson-Bergen Light Rail lines sustained washouts and signal failure (NJ Transit, 2025b).

Recent flash flooding continues to disrupt travel and mobility unpredictably. Intense storms in July 2025 caused flooded-road closures that stranded vehicles and stalled emergency response in communities like Plainfield, where two individuals tragically lost their lives after their vehicle was swept away on a roadway. Similarly, more severe rainfall events across the state have incapacitated urban traffic flow and transit on the ground and affected air travel, including flight disruptions at Newark Liberty Airport.

Water and Wastewater Systems

The easiest way to minimize flood exposure is to build facilities and infrastructure outside the floodplain. But for wastewater treatment plants, drinking water utilities, and even some energy facilities, access to a waterbody is critical, allowing for intake or discharge of water. But this proximity creates exposure. There are approximately 388 drinking water utilities in New Jersey, and 155 wastewater systems. There is no comprehensive assessment of the vulnerability of these systems to flooding; each utility assesses and addresses flooding individually. In 2012, the Passaic Valley Sewage Authority (PVSA) experienced firsthand what happens when a flood exceeds anticipated conditions. PVSA suffered catastrophic damage from flooding, compounded by a power outage, which resulted in millions of gallons of untreated sewage discharging directly into Newark Bay. They were not the only system that discharged raw sewage during that storm, and the facility has since increased its resilience, but still serves as an example of what happens when a flood overtakes a treatment plant.

Even without a treatment plant going offline, untreated sewage is a real concern for flood events. Particularly, in some communities where the pipes that carry wastewater are interconnected with the stormwater management system. In these systems, referred to as combined sewer

overflow systems (CSOs), wastewater and stormwater flow in the same pipe to be treated at a wastewater treatment plant. When rainfall is heavy, the combined wastewater and stormwater flow may exceed the capacity of the pipe and escape through overflow outlets in the system, bypassing the treatment plant and flowing into local waterbodies. New Jersey has 132 CSOs (EPA, 2025), several of which experienced overflows during Hurricane Sandy.

Drinking water systems also face threats from floods. These utilities may have damaged equipment and/or be taken offline from a flood. Additionally, individuals and utilities that rely on wells need to be careful when operating after an event; well water can become contaminated in floods.

Flooding And Mental Health

Flooding can exact a mental health toll on residents, both during a flood event and long after floodwaters recede. In New Jersey, residents whose homes suffered structural damage during Superstorm Sandy (2012) continue to experience elevated levels of psychological distress; 27% reported moderate- to severe- distress, and 14% exhibited symptoms of post-traumatic stress disorder (PTSD) even two and a half years after the storm (Rutgers, 2015). Displacement after a flood intensifies this mental health burden; Monmouth University research found that residents still waiting to return to their pre-Sandy homes were nearly four times as likely to show serious distress as those who had resettled, and economic instability further compounded mental health challenges (Monmouth University, 2014a, Monmouth University, 2014b).

Broader research nationally confirms that flooding places people at risk for sustained mental health challenges. Systematic reviews link flood exposure to increases in post-traumatic stress, depression, and anxiety (Miller, Fitch, et.al., 2025) while longitudinal studies highlight flood-related stress persisting for years, especially when compounded by secondary stressors such as displacement, loss of property, and delays in recovery (Stanke, C., Murray, V., et.al., 2012).

Environment

Flooding in New Jersey not only threatens human communities but also exerts significant pressure on the state’s diverse ecological systems. These impacts of flooding to New Jersey’s environments include disruption to coastal and inland habitats, ecosystems, and water resources. These impacts are cyclical; natural systems

STATEWIDE FLOOD RESILIENCE INITIATIVES

like wetlands, forests, floodplains, and urban green spaces themselves help reduce the frequency and severity of disasters including floods (Kouskey & Burley, 2025), Nature.org, 2020).

Increased frequency and intensity of flood events disrupt critical habitats, including tidal marshes, freshwater wetlands, and riverine ecosystems, which support a wide variety of native plants and wildlife. These habitats serve essential natural functions such as water filtration, carbon sequestration, and providing breeding grounds for fish, birds, and other wildlife. However, ongoing and intensified flooding can alter salinity levels, cause soil erosion, and degrade water quality, threatening the survival of sensitive species in New Jersey and reducing the state’s overall biodiversity (NJDEP, 2020, NJDEP, NJFW, 2023).

Coastal and estuarine environments in New Jersey, including the economically important salt marshes along the Atlantic Coast and Delaware Bay, are particularly vulnerable to impacts from floods. Rising sea levels combined with more frequent storm surges increase saltwater intrusion into freshwater wetlands, changing and disrupting natural systems and habitats (NOAA, 2021). Additionally, inland flood events can introduce pollutants from urban and agricultural runoff into New Jersey’s waterways, adversely impacting water quality and aquatic ecosystems. Excess nutrients and contaminants carried by floodwaters contribute to pollution, algal blooms, and hypoxic (low oxygen) zones, threatening aquatic populations, often species critical to the food chain (Maslo, B., Kerwin, K., et.al., 2023). These layered effects of altered hydrology, habitat fragmentation, and water quality degradation place additional strain on ecosystems already struggling to adapt to a changing climate.

Flooding also degrades New Jersey’s vital water resources, including aquifers, reservoirs, and drinking water supplies. Intense flooding can overwhelm stormwater and wastewater infrastructure, leading to surface and groundwater contamination from nutrients, sediments, pathogens, and hazardous materials. This contamination risk can compromise the safety and reliability of drinking water for millions of residents statewide. Floods can also disrupt reservoir management and water treatment processes, challenging water utilities’ ability to maintain consistent quality (AmericanRivers.org, 2025, NJDEP 2025a, NJ Water Science Center, USGS, 2023).

Social Vulnerability – Equity

Vulnerable populations across the state, particularly in low-income neighborhoods and communities of color, face disproportionately higher risk of flood exposure and hardship - often due to historic discriminatory housing policies including “redlining,” where non-White neighborhoods designated as “undesirable” for real estate investment in the 1930s coincide with elevated flood exposure today. According to the National Low Income Housing Coalition (NLIHC) and a 2021 Redfin study of FirstStreet flood risk data, more than \$107 billion worth of homes located in formerly redlined neighborhoods across 38 major metro areas in the U.S. face high flood risk – 25% more than homes in areas deemed “desirable” for lending. These areas facing increased hardship and flood exposure are disproportionately home to people of color (UCS, 2018).

These historical disparities translate into contemporary losses and slower recovery from flood events. Infrastructure in disinvested communities is often under-resourced, leaving these areas more exposed to flooding. As localized flooding events have surged more than 300% in recent years, historical redlining practices and a lack of infrastructure investment in these communities have placed low-income populations and communities of color in low-lying, floodprone areas that flood more frequently and more severely (U.S. Water Alliance, 2020).

This disparity remains when floodwaters have receded. Residents in these communities are less likely to have access to comprehensive insurance, financial reserves, or equitable federal aid, which delays rebuilding and deepens economic impacts of flooding (Wilson, B., Tate, E., & Emrich, C., 2021). Studies have shown that flood adaptation programs tend to deliver notably lower benefits in low-income and non-white neighborhoods compared to wealthier or predominately white areas. Low- and moderate-income families, often captured with the United Way’s framework of “ALICE” designation (Asset-Limited, Income-Constrained, Employed), are particularly vulnerable after flood disasters, as they typically lack the financial reserves, access to insurance benefits, and flexibility to recover swiftly, meaning that even minor flood events can push these families into long-term economic instability (United Way of Northern New Jersey, 2025).

“Coastal and estuarine environments in New Jersey, including the economically important salt marshes along the Atlantic Coast and Delaware Bay, are particularly vulnerable to impacts from floods.”



Salt marshes near Cape May, NJ

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PRIORITY 1:
**BUILD RESILIENT
AND HEALTHY
COMMUNITIES**





INTRODUCTION

Building resilient and healthy communities in the face of increasing flood risks requires a coordinated, forward-thinking approach that encompasses planning, infrastructure, regulation, and public health. As climate change intensifies the frequency and severity of flooding, New Jersey must continue to evolve its strategies, ensuring that land use decisions, infrastructure investments, and regulatory frameworks are informed by the latest science and tailored to local needs.

New Jersey sees building resilient and healthy communities as a key component in strengthening its capacity to withstand and recover from flooding. The efforts detailed in this priority area include enhancing technical assistance for communities, modernizing regulations, and investing in both physical infrastructure and community well-being. They work together to reduce vulnerability, promote sustainability, and safeguard the health and safety of residents across the state.

FLOOD-RELATED STRATEGIES IN THIS PRIORITY

- Integrate Resilience into Local and Regional Planning
- Increase Technical Assistance Programs to Address Community Resilience
- Modify Regulatory Programs to Address Climate Change Impacts and Encourage Adaptation Over Time
- Decrease Vulnerability of Existing Infrastructure and Development
- Incentivize Sustainable Growth and Redevelopment that Incorporates Resilience and Investment in Safer Areas



Flooding during the remnants of Hurricane Ida, New Brunswick, NJ



INTEGRATE RESILIENCE INTO LOCAL AND REGIONAL PLANNING

While State and federal standards dictate how buildings should be constructed in flood prone areas, local governments decide what type and how much development occurs in areas with flood risk. Land use is controlled by local governments through planning and zoning, and there is a long-standing requirement that towns consider floodplains when updating their zoning.

Given the amount of existing planning initiatives at state, county, and local levels within New Jersey, and given the widespread impacts New Jersey is already seeing from climate change, it is important that every planning process is a “resilience planning” process. As a first step, State agencies are updating their own state-level plans, where such authority permits, to include climate change. But State plans are only one type of planning that guides investment and development across the state. In January 2021, Governor Murphy signed legislation that modifies the Municipal Land Use Law to require that updates to land use elements of local master plans include a climate change-related hazard vulnerability assessment. This amendment has the potential to accelerate local flood resilience actions by incorporating climate science into local planning efforts.

Approximately 10 percent of the state’s population lives within federally designated floodplains. These properties have an estimated 25 percent chance of flooding during a 30-year mortgage cycle. As such, the need for integrating resilience into local and regional planning is imperative. Collectively, the efforts described below help build New Jersey’s resilience to flooding by encouraging more local resilience planning and strategy development across the state.

“Given the amount of existing planning initiatives...within New Jersey, and... the widespread impacts New Jersey is already seeing from climate change, it is important that every planning process is a ‘resilience planning’ process.”



Newark, NJ

SPOTLIGHTED INITIATIVES

State Hazard Mitigation Plan Update & Local Guidance (OEM)

The New Jersey Office of Emergency Management (OEM) sets the standards for local hazard mitigation plans across the state. In 2024, the State legislature codified requirements for county hazard mitigation plans, as well as the State hazard mitigation plan, to assess and address hazards related to climate change.

OEM has consistently required county and local hazard mitigation plans to consider current and future flood risks, plan for long-term maintenance and operation of public infrastructure, and address both physical and economic risks in its local planning standards.

Through the review of hazard mitigation plans, the State also works with counties, municipalities, and other stakeholders to identify flood resilience projects and opportunities to elevate, acquire, or protect communities across the state.

STATE OF NEW JERSEY 2024 ALL-HAZARD PLAN

17 COORDINATION OF LOCAL PLANNING

UPDATES TO BETTER STANDARDIZE MULTI-JURISDICTIONAL ALL-HAZARD PLANS

This section has been reviewed and updated to provide an overview of the present processes utilized by the State (primarily New Jersey Office of Emergency Management) to support and promote mitigation planning at the county and local level and develop processes to help local jurisdictions obtain funding and technical assistance for mitigation planning. This State Hazard Mitigation Plan Update is intended to report on progress in this area and provide a clear, streamlined procedure for developing and supporting local planning. This section provides a description of the process used by the NJOEM to support:

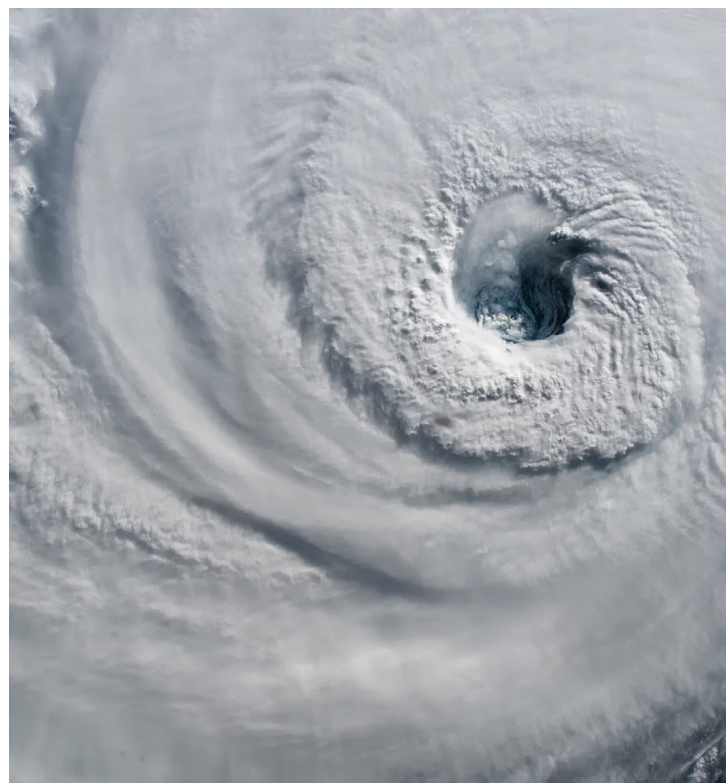
- The development of local multi-jurisdictional mitigation plans through funding and technical assistance
- The development of mitigation projects through funding and technical assistance
- The process of plan integration into the Hazard Mitigation Plan (HMP)
- The development of knowledgeable floodplain administrators at the local level
- The support of local OEM and other officials through funding and technical assistance
- The support for integration of local HMPs into local land use policies and procedures
- The update and adoption of previously approved HMPs.

Local Hazard Mitigation Plan Status, reported as of April 2023

| Hazard Mitigation Plan | Counties | # of Local Jurisdictions | Approval Date | Expiration |
|------------------------|----------|---|-------------------|-------------------|
| Atlantic County | 3 | 23 | January 26, 2022 | January 25, 2027 |
| Bergen County | 3 | 70 | June 7, 2021 | June 6, 2026 |
| Burlington County | 3 | 40 | April 22, 2020 | April 21, 2025 |
| Camden County | 2 | 34 | March 7, 2022 | March 6, 2027 |
| Cape May County | 2 | 16 | June 18, 2021 | June 17, 2026 |
| Cumberland County | 2 | 14 | October 25, 2022 | October 24, 2027 |
| Essex County | 3 | 22 | June 4, 2020 | June 3, 2025 |
| Gloster County | 2 | 24 | August 26, 2022 | August 25, 2027 |
| Hudson County | 3 | 17 total with MUA | August 26, 2020 | August 25, 2025 |
| Hunterdon County | 2 | 26 | February 16, 2022 | February 15, 2027 |
| Mercer County | 2 | 12 | December 10, 2021 | December 9, 2026 |
| Mid Sussex County | 2 | 25 | January 27, 2022 | January 26, 2027 |
| Monmouth County | 3 | 53 | February 12, 2021 | February 11, 2026 |
| Morris County | 3 | 39 | January 8, 2021 | January 7, 2026 |
| Ocean County | 2 | 33 | July 14, 2020 | July 13, 2025 |
| Passaic County | 3 | 16 | January 8, 2021 | January 7, 2026 |
| Salem County* | 2 | 15 | January 6, 2017 | January 5, 2022 |
| Somerset County | 3 | 23 total with special purpose districts | May 3, 2020 | May 2, 2025 |
| Sussex County | 2 | 24 | August 6, 2021 | August 5, 2026 |
| Union County | 3 | 21 | December 15, 2021 | December 14, 2026 |
| Warren County | 2 | 22 | January 10, 2022 | January 9, 2027 |

*Plan is currently expired, though work is underway to update the plan. A draft of the plan was still under development in summer 2023.

2024 State of New Jersey Hazard Mitigation Plan



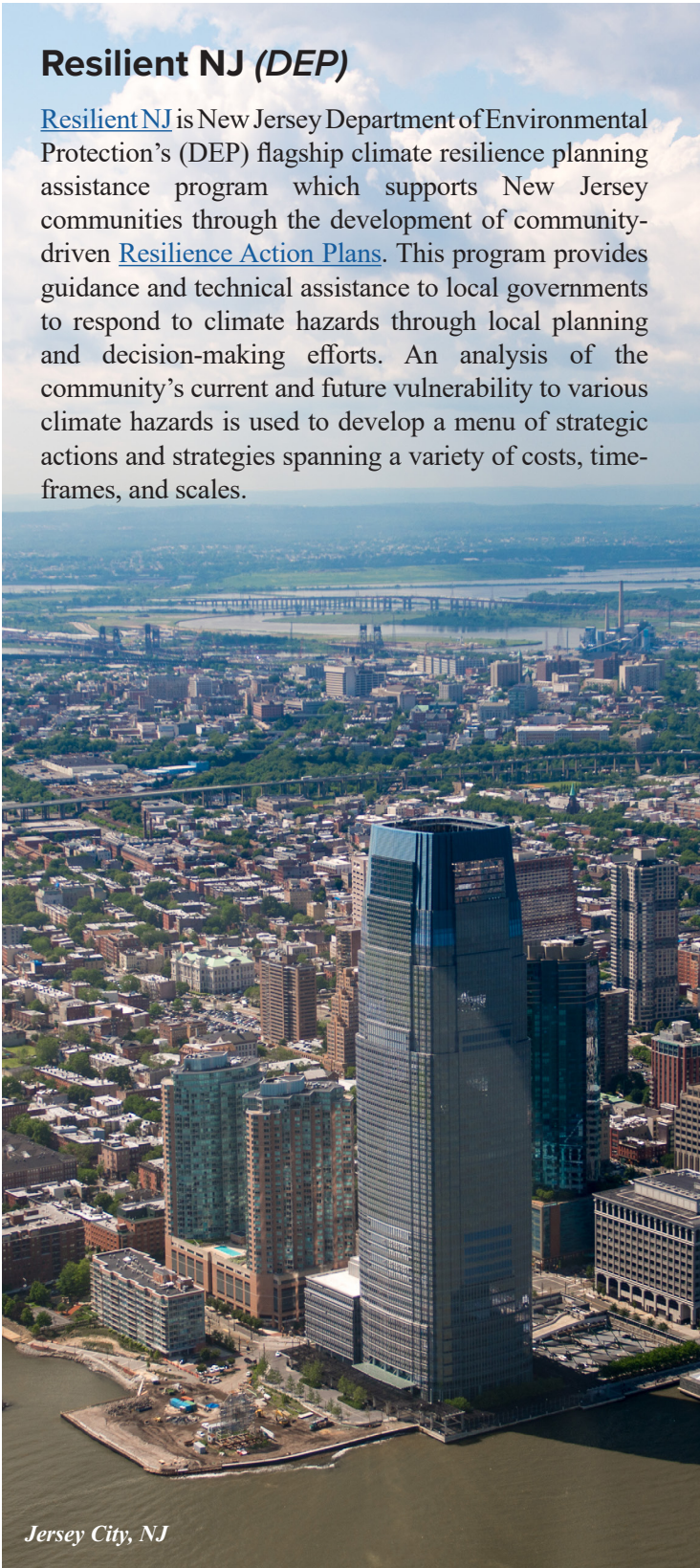
Climate Change Related Hazard Vulnerability Assessment Guidance (DOS)

To support municipalities develop a local resilience strategy consistent with the State Planning Commission's Plan Endorsement criteria, the Office of Planning Advocacy (OPA) developed municipal climate resilience planning guidance that promotes compliance with the 2001 amendments to the Municipal Land Use Law that require the development and adoption of a climate change-related hazard vulnerability assessment (CCRHVA) as part of updates to the land use elements of local master plans.

SPOTLIGHTED INITIATIVES (CONT.)

Resilient NJ (DEP)

[Resilient NJ](#) is New Jersey Department of Environmental Protection’s (DEP) flagship climate resilience planning assistance program which supports New Jersey communities through the development of community-driven [Resilience Action Plans](#). This program provides guidance and technical assistance to local governments to respond to climate hazards through local planning and decision-making efforts. An analysis of the community’s current and future vulnerability to various climate hazards is used to develop a menu of strategic actions and strategies spanning a variety of costs, time-frames, and scales.



Jersey City, NJ

SINCE 2020, RESILIENT NJ HAS SUPPORTED:



43 municipalities through the technical assistance program



\$26.3M in [awarded federal funding](#) for participating communities for project implementation



RESILIENT NJ ALSO PROVIDES TOOLS SUPPORTING MUNICIPALITIES OUTSIDE OF PARTICIPATION IN THE DIRECT ASSISTANCE PROGRAM, INCLUDING:



[Local Planning for Climate Change Toolkit](#): a guide for communities to understand how they can proactively plan for the changing climate and build resilience into local governance.

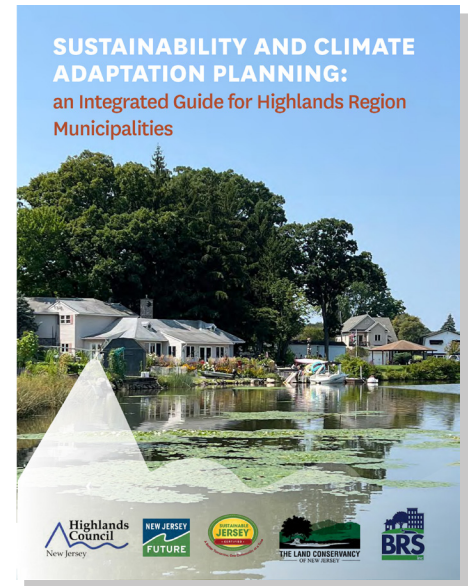


[Climate Resilience Funding Directory](#): a gateway to discovering funding opportunities to enhance community climate resilience.

SPOTLIGHTED INITIATIVES (CONT.)

Municipal Planning Guidance for the Highlands Region (*Highlands*)

In November 2024, the New Jersey Highlands Council (Highlands) released “[Sustainability and Climate Adaptation Planning: An Integrated Guide for Highlands Region Municipalities](#).” This comprehensive document helps municipalities in integrating climate adaptation and environmental sustainability into their municipal master plans. It includes guidance on conducting a climate change-related hazard vulnerability assessment and preparing a sustainability reexamination report as part of the land use plan element in alignment with the New Jersey Municipal Land Use Law. This guidance also provides a model scope of work that Highlands municipalities can use to apply for grant funding from the Highlands Council to support climate adaptation planning.



Climate Resilience Design Guidelines Update (*PANYNJ*)

To ensure that climate resilience is considered in every relevant project undertaken by the Port Authority of New York and New Jersey (PANYNJ), PANYNJ has developed [Climate Resilience Design Guidelines](#). These standards go beyond code requirements and national standards and represent a risk-informed approach to building infrastructure for the long term. PANYNJ is updating the Climate Resilience Design Guidelines to reflect the latest science on sea-level rise, stormwater flooding, and risk management.



Port of Newark-Elizabeth Marine Terminal

PRIMARY ACTIVITIES

Evaluate the Vulnerability of Landfills to Sea-Level Rise & Fluvial Flooding (DEP)

DEP evaluates the vulnerability of landfills to climate risks, including sea-level rise, fluvial flooding, and extreme precipitation. When floodwater enters a landfill, it can lead to negative impacts such as compromised containment systems and the mobilization of hazardous materials into nearby waterways and communities. As part of ongoing efforts, DEP assesses the potential impacts to surrounding communities and develops regulatory reforms and technical guidance for local communities to ensure waste management facilities are properly operating or adhere to post-closure conditions.



Delaware River

Land Use Capability Zone Map Update to Include 500-Year Floodplain (Highlands)

In April 2024, Highlands updated the [Land Use Capability Zone \(LUCZ\) Map](#) and its accompanying technical report, a foundational tool guiding the implementation of the [Highlands Regional Master Plan](#). Originally adopted in 2008, the LUCZ Map provides a policy framework for protecting the Highlands Region's critical resources, including forests, wetlands, stream corridors, steep slopes, and critical habitats. The 2024 update incorporates the latest scientific data, including the latest land use/land cover data from DEP and flood hazard data from the Federal Emergency Management Agency (FEMA) up to and including the 500-year floodplain, reflecting the heightened importance of addressing climate change impacts. By integrating these updated datasets, the revised LUCZ Map strengthens the region's ability to mitigate climate-related risks, such as flooding, while supporting sustainable land use planning. These improvements ensure that the LUCZ Map remains an effective tool for protecting the region's natural resources and promoting climate resilience.

SUPPORTING STATE AGENCY ACTIONS

- **Regional Stormwater Management Planning (Highlands)**

Highlands partnered with Rutgers University to assess stormwater management in 24 municipalities using a watershed-scale approach. This assessment included projected changes to future precipitation and evaluated the feasibility of increasing green infrastructure within each town.

- **Climate Change-Related Hazard Vulnerability Assessment Funding (DEP)**

In 2021, New Jersey modified its Municipal Land Use Law to require a climate change-related hazard vulnerability assessment in the land use element of municipal master plans. DEP is funding Rutgers University and The College of New Jersey to provide technical assistance to towns to incorporate this assessment in their master plan updates.

- **Resilience Integrated Designs for the Greenway Project (DEP)**

DEP is partnering with local governments, non-government organization partners, and State agencies including NJ Transit and NJ Economic Development Authority (NJEDA) to build a nine-mile [greenway](#) along an abandoned rail line stretching from Jersey City to Montclair. Using higher standards for flood exposure and stormwater management, this project works to reduce future flood potential within the adjacent communities.

**INCREASE TECHNICAL ASSISTANCE PROGRAMS TO ADDRESS
 COMMUNITY RESILIENCE**



At all levels of government, great effort is exerted to lessen the likelihood of, and prepare for, flooding. To address the varying levels of capacity of local governments, the State provides technical assistance to help strengthen communities' efforts and capabilities around flooding preparedness. By empowering and expanding the reach of counties and municipalities, the state as a whole is better prepared to address flooding. Increasing resilience across all of New Jersey's communities, not only to the increased risk of flooding but to all climate change impacts, can only be accomplished by significantly increasing capacity at the local level through State government leadership, guidance, and support. During the development of the NJ Climate Change Resilience Strategy, stakeholders ranked guidance and funding as two key investments the State could make to support local resilience efforts. Further, a core objective of the Strategy is that every municipality have opportunities to increase its resilience, regardless of capacity, size, location, or wealth.

Toms River, NJ



**SPOTLIGHTED
 INITIATIVE**

**Community Assistance Program
 and Community Assistance Visits
 (DEP)**

The Community Assistance Program, funded by a grant from FEMA, supports state efforts to help local officials effectively manage their floodplains in compliance with the [National Flood Insurance Program \(NFIP\)](#). Community Assistance Visits (CAVs) involve DEP acting as a liaison between FEMA and local officials to conduct in-person reviews of floodplain management. Each fiscal year, the DEP, with FEMA's grant support, initiates and conducts new CAVs, ensures community compliance with NFIP requirements, and closes out CAVs from previous years once communities demonstrate proper floodplain management. These programs are essential for enhancing community resilience to flood risks and ensuring affordable flood insurance remains available for residents.



Lambertville, NJ

RELATED STATE AGENCY EFFORTS

- **Regional Cooperative Extension Engineers (DEP)**

Funded by the Ready to be Resilient funding initiative, DEP offers technical assistance with stormwater planning, design, and implementation through a partnership with the Rutgers Cooperative Extension Water Resources program. For three years, engineers under the direction of the Water Resource Program Extension Specialist will help communities better position themselves for funding opportunities, begin to evaluate lasting solutions such as stormwater utilities, and support Municipal Separate Storm Sewer and Combined Sewer Overflow Long-term Control Plan compliance.

- **Resilience & Adaptation Planning Program (DCA)**

This ongoing program, managed by the New Jersey Department of Community Affairs (DCA), partners with communities to provide specialized planning services designed to help municipalities and local government authorities address climate adaptation and resilience through a suite of targeted municipal plans. These plans will allow municipalities to better direct funding towards risk reduction in the future.

- **Post-Disaster Emergency Contracts Support Services Desk (Treasury)**

The Department of the Treasury (Treasury) supports local and county governments with flood-related emergency contracts in the event a disaster response exceeds their resources. Examples of these requests include post-disaster debris removal, dumpsters, heavy equipment, lighting, and fuel.



MODIFY REGULATORY PROGRAMS TO ADDRESS CLIMATE CHANGE IMPACTS AND ENCOURAGE ADAPTATION OVER TIME

Regulatory updates are key to increasing the state’s resilience to flooding. New Jersey has robust state-wide regulatory programs that govern the siting, design, and construction of buildings and infrastructure. These laws, such as the Wetlands Act of 1970, the Coastal Area Facility Review Act (CAFRA), the Flood Hazard Area (FHA) Control Act, and the State Uniform Construction Code (UCC) Act were created by decades of legislative action, and grant authority to State agencies to address various threats to public safety, welfare, and environmental resources. Several of these statutes regulate activities that will be directly impacted by climate change. However, the original legislation was not developed with an understanding of climate change, and therefore the existing rules and regulations are often insufficient to address the state’s resilience needs. As a result, and in combination with decades of dense development patterns, historical manipulation of rivers and floodplains, and natural topography, New Jersey remains one of the most vulnerable states in the nation to damage from sea-level rise, storm surge, more frequent and intense precipitation, erosion, and other climate impacts.

Regulations informed by current data serve as a pathway to improved stormwater and wastewater infrastructure, protection against sediment and soil erosion and expanded floodplain management. In 2020, Governor Murphy signed Executive Order 100 directing DEP to make sweeping regulatory reforms, branded as [New Jersey’s Protecting Against Climate Threats \(NJ PACT\)](#), to reduce emissions and adapt to climate change. The NJ PACT rule-making effort the first in the state to actively modify existing land use regulations to incorporate climate change.

**SPOTLIGHTED
 INITIATIVE**

**NJ Inland Flood Protection Rule
 (DEP)**

In response to a pattern of increasingly intense rainfall events (including the remnants of Hurricane Ida), DEP adopted the [Inland Flood Protection Rule](#) on June 2, 2023 as part of the New Jersey Protecting Against Climate Threats (NJ PACT) Initiative. The Inland Flood Protection Rule uses updated historical precipitation data and climate-informed projections to form the basis of its flood hazard and stormwater regulatory standards. These updated standards increase protection of the built environment from flooding and ensure that new investments are better positioned to withstand present and future conditions over their useful life at modest marginal cost.



New building elevation requirements protect new development from increasing flood levels.

Belvidere, NJ

SPOTLIGHTED INITIATIVES (CONT.)

Improve Stormwater Management and Infrastructure (DEP)

Flooding in New Jersey is worsening, in part, due to outdated and poorly maintained stormwater infrastructure that cannot handle increasing precipitation due to climate change. While DEP has updated regulations to reflect future precipitation trends, lasting solutions require major upgrades to existing systems, especially combined sewer overflows (CSOs), to withstand increased rainfall and sea-level rise. Much of the state's water infrastructure has aged beyond its useful life, and climate change will further strain these systems. Municipalities must plan replacements with climate resilience in mind and funding remains a key challenge.

To support municipalities to meet the challenges of today, and tomorrow, DEP is providing funding, tools, and project implementation:



GRANTS

\$7M

awarded to mitigate localized flooding and improve water quality

\$19M

released through the Tier A MS4 Assistance Grant program to assist municipalities with upgrades to their stormwater programs

TOOLS



[NJ-WET](#), an interactive tool created to assist MS4 permittees in the development and implementation of their Watershed Improvement Plans.



WatershedNJ is a web-based application under development by DEP and Rutgers University to provide readily accessible information about watershed health, impairments, and opportunities for restoration. Version 1.0 website will be released in 2025.



IMPLEMENTATION

Through [Building a Climate Ready NJ](#), DEP and Rutgers are implementing neighborhood-scale green infrastructure projects in Paterson, Newark, and Perth Amboy.



Perth Amboy, NJ

PRIMARY ACTIVITIES

Improve Stormwater and Wastewater Infrastructure at State Level and Provide Grant Funding for Green Infrastructure and Infrastructure Retrofits (DEP)

Flooding in New Jersey is worsening due to outdated and poorly maintained stormwater infrastructure that cannot handle increasing precipitation due to climate change. While DEP has updated regulations to reflect future precipitation trends, lasting solutions require major upgrades to existing systems, especially combined sewer overflows (CSOs), to withstand increased rainfall and sea-level rise. Much of the state’s water infrastructure has aged beyond its useful life, and climate change will further strain these systems. Municipalities must plan replacements with climate resilience in mind.

Funding remains a key challenge. The Clean Stormwater and Flood Reduction Act allows local governments to create stormwater utilities funded by fair, proportionate fees. DEP supports this with technical assistance for feasibility studies, prioritizing overburdened and CSO



Mullica River, New Jersey Pine Barrens

communities. DEP has also launched a \$7 million grant program for green infrastructure and retrofits, with future phases offering technical support.

Through Building a Climate Ready NJ, DEP and Rutgers are implementing neighborhood-scale green infrastructure projects in Paterson, Newark, and Perth Amboy.

SUPPORTING STATE AGENCY ACTIONS

- **Soil Erosion & Sediment Control Act (NJDA)**

The New Jersey Department of Agriculture (NJDA) is updating its Soil Erosion and Sediment Control Act rules for non-agricultural construction activities that disturb 5,000 square feet or more of land to more closely align with recent revisions to DEP’s Stormwater Management Rule. This update seeks to eliminate regulatory conflicts, enhance consistency, and improve overall compliance.

- **Pinelands Comprehensive Management Plan Environmental Standards (Pinelands)**

All development within the Pinelands must be consistent with the minimum environmental standards of the [Pinelands Comprehensive Management Plan](#) (CMP). In December 2021, the Pinelands Commission (Pinelands) adopted changes to the stormwater management rules in the Pinelands CMP to reduce the volume of stormwater runoff, lower the potential for localized flooding, and help to maintain water levels in the Kirkwood-Cohansey aquifer. It is anticipated that all Pinelands municipalities will have adopted a model ordinance by the early spring 2025 implementing the 2023 DEP amendments consistent with the CMP.

- **Encourage & Expand Community Rating System Participation (DEP)**

DEP supports local communities to [improve their community rating class](#) in the NFIP, providing greater discounts on their residents’ flood insurance policies. This action reduces flood vulnerability in the State through improved floodplain management activities as well as expansion of participation in the NFIP through reduced premiums, helping homeowners to recover more quickly following a flood event.



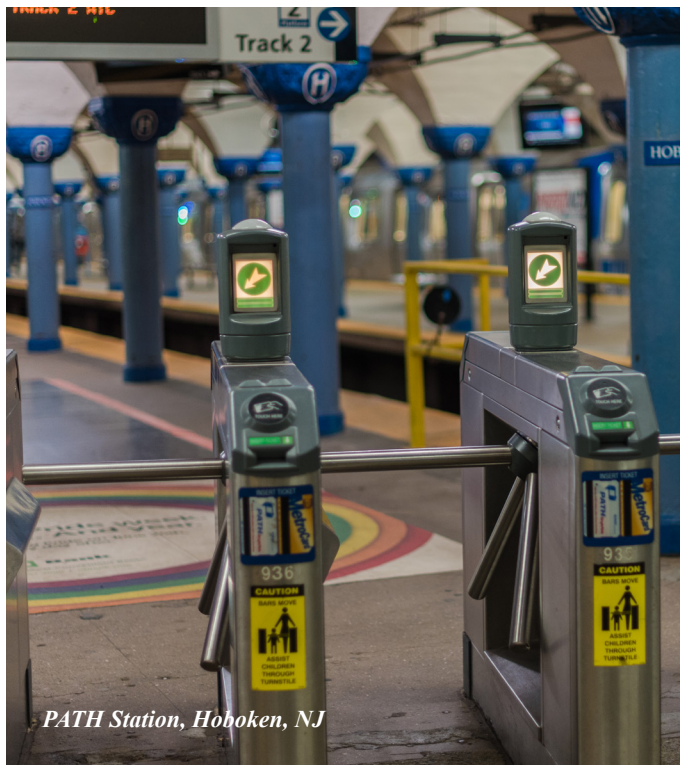
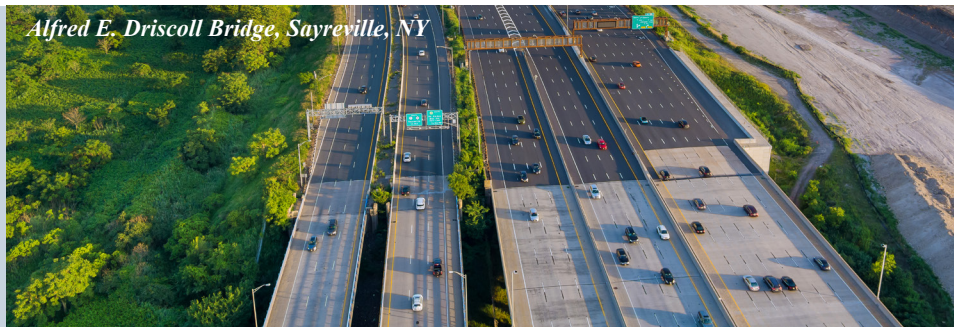
DECREASE VULNERABILITY OF EXISTING INFRASTRUCTURE AND DEVELOPMENT

Just as it is important to ensure new development and redevelopment is designed to withstand the conditions of tomorrow, the state must also retrofit existing infrastructure and development to manage climate impacts. Both inland and coastal flooding can overwhelm stormwater drainage systems and result in damage to buildings and infrastructure, road closures, and overall disruption to daily activities. Additionally, recurrent flooding and saltwater exposure from high tides and storm events can result in the general deterioration and corrosion of infrastructure not designed to withstand these conditions. Damage and service disruptions of public utilities, transportation networks, emergency response, medical care and government services resulting from natural hazard events can lead to significant, long term adverse socioeconomic impacts.

Strengthening existing infrastructure and development makes the state as a whole safer from flooding. Government agencies are implementing infrastructure projects across the state with goals like preparing for sea-level rise, reinforcing existing natural resilience solutions, assisting those who experience repeat flooding, and protecting against storm surge and stormwater.

SPOTLIGHTED INITIATIVES

Alfred E. Driscoll Bridge, Sayreville, NY



PATH Station, Hoboken, NJ

Climate Risk Assessment of PANYNJ Facilities (PANYNJ)

The PANYNJ [Climate Risk Assessment \(CRA\)](#) is an asset-scale, multi-stressor exercise to identify key risks, develop corresponding risk mitigation measures, and prioritize cost-beneficial mitigations for investment. The CRA evaluates risks to sea-level rise, coastal storm surge, and stormwater flooding from present-day to 2100. The CRA covers all PANYNJ facilities: ports, bridges, tunnels, the Port Authority Trans-Hudson (PATH) system, and airports. The CRA will enable the identification of critical risks and develop corresponding mitigation measures, resulting in selective integration of priority risk reduction projects into the PANYNJ capital plan, ultimately reducing the vulnerability of PANYNJ assets to climate risks including flooding.

SPOTLIGHTED INITIATIVES (CONT.)

**Flood Exposure Visualization Tool
 (Turnpike Authority)**

Through its collaboration with State transportation agencies and engagement with the DEP, the New Jersey Turnpike Authority (Turnpike Authority) has been incorporating flood hazard design requirements as documented in recent regulation changes into ongoing capital improvements. To better plan these improvements, the Turnpike Authority developed a Flood Exposure Visualization (FLEX) tool which identifies potential flood exposure and maximum flood depths exclusive to individual Turnpike Authority assets including roads, bridges, culverts, buildings, and stormwater management devices. The tool supports baseline screening efforts to help inform project design and prioritization by accounting for future climate conditions. The exposure assessment included the new set of inland and coastal flood hazard analyses for the 10% annual exceedance probability (AEP) (10-year events) and 1% AEP (100-year events). The exposure assessment considers these flood hazard events under current conditions and three planning horizons: 2050, 2070, and 2100. This work allows the Turnpike Authority to incorporate climate impacts into asset management. This tool is strictly used as an internal agency guide and is not indicative of any active impact to the Turnpike Authority’s assets.

**Flood Vulnerability Pilot Projects
 (Turnpike Authority)**

The Turnpike Authority has completed vulnerability pilots at five locations across the Turnpike and Garden State Parkway, critical regional transportation routes, to determine whether assets are vulnerable to flooding and if so, under which risk scenarios. The results are intended to inform resilience-related efforts including the consideration of present and future flood risk in asset design, the development of emergency response plans, and the prioritization of asset inspection, maintenance, and adaptation interventions.

**Incorporating Resilience into Project
 Delivery Process (NJDOT)**

The NJDOT follows a multi-step project delivery process to effectively and efficiently manage its transportation projects. When developing and designing projects,



the NJDOT consults its various transportation asset management systems to identify roadway and structure improvements that could be incorporated into the design to address flooding concerns. Further, some management systems, such as the Drainage and Bridge Management systems, can spur the creation of projects to alleviate flooding. Example projects include screening sections of Route 46 in Passaic County and designing a project to raise a problematic section of Route 40 in Atlantic City. NJDOT also provides funds to local governments, aiding towns such as Toms River in elevating streets to reduce nuisance flooding.

The Bridge Management System, which also tracks scour issues, contributes to infrastructure resilience. One example of implementation is a construction project on Route 23 that addresses bridge scour concerns in Morris and Passaic Counties. The Bridge Management System aids NJDOT in managing 25 state-owned and operated dams. A project in Preliminary Engineering aims to redesign a dam spillway along Route 47 in Cape May County for improved flood management.

**Climate Vulnerability Screening
 Standard Operating Procedure (NJ
 Transit)**

In 2025, NJ Transit finalized its inaugural Climate Vulnerability Screening (CVS) Standard Operating Procedure, an internal process document that equips the agency to identify climate vulnerabilities. This CVS tool serves as an initial screening embedded within the capital planning process, providing a standardized approach to identifying climate vulnerabilities within NJ Transit’s network during early-stage planning. This screening tool ensures that resources are prioritized efficiently, identifying assets and facilities most vulnerable to climate change, before exploring more advanced studies or interventions.

SPOTLIGHTED INITIATIVES (CONT.)



Homeowner & Rental Assistance, Recovery, & Repair Programs for Restoration & Elevation of Storm-Damaged Properties (DCA)

The Homeowner Assistance and Recovery Program (HARP), Small Rental Repair Program (SRRP), and Resilient Multifamily Housing Program are [Hurricane Ida recovery programs](#). These grants help repair, rehabilitate, and/or elevate storm-damaged homes, targeting high-risk flood areas as defined by FEMA and DEP to raise these buildings at least three feet above base flood elevation in order to reduce future flood risk. This action helps to ensure storm-damaged communities rebuild stronger and more resilient.

Atlantic City Resilience Program (DCA)

Through its [Atlantic City Resilience Program](#), which has implemented a suite of coastal resilience projects to mitigate flood risk, the DCA strengthens stormwater infrastructure, and protect public assets. Completed efforts include the replacement and stabilization of bulkheads in the Lower Chelsea and Gardner's Basin areas, dredging to improve stormwater drainage, inspection and replacement of stormwater check valves, and dry floodproofing of critical public buildings such as City Hall and the All Wars Memorial Building. Ongoing work includes the construction of new bulkheads in the Chelsea and Ducktown neighborhoods to address continued vulnerability to flooding. These projects collectively enhance Atlantic City's long-term resilience.



SPOTLIGHTED INITIATIVES (CONT.)

Blue Acres (DEP)

Since its inception in 1995, DEP’s [Blue Acres program](#) has worked to better protect public safety and the environment through voluntary buyouts, relocating New Jersey families out of areas subject to repeated flooding, eliminating the flood risk facing these homes. Acquired properties are cleared and permanently preserved as open space, increasing local flood storage and reducing flood risk.



1,200

homes acquired over the past thirty years of the program.



440

acres of open space for flood storage, which can absorb over 100M gallons of floodwater.

DURING THE 2024 CALENDAR YEAR:

22

Blue Acres properties were acquired.

27

voluntary buyout offers were accepted.

29

homes were demolished and converted to open space.



\$24.5M

was allocated in 2024 through the [Garden State Preservation Trust](#) (GSPT) for buyout implementation along with \$900,000 in administrative funding. This was the largest single funding allocation in the program’s history. This funding is critical to meeting the unprecedented demand for buyouts due to increasing flood and storm events.

Housing Elevation in Areas of Significant Flood or Storm Surge Risk (DCA)

DCA has helped elevate homes in areas of significant flood or storm surge risk, thus mitigating the potential damage caused by future floods and storms. This work began after Hurricane Sandy and continues to the present day. Since Superstorm Sandy, DCA has elevated or rebuilt more than 6,200 single-family homes above Base Flood Elevation using the US Department of Housing and Urban Development (HUD) CDBG-DR and FEMA FMA funds. Hundreds of additional properties are in various stages of elevation or reconstruction through CDBG-DR, FEMA FMA, SWIFT, and HMGP programs, advancing the State’s long-term commitment to resilient housing and flood risk reduction.



Passaic River near Newark, NJ

SPOTLIGHTED INITIATIVES (CONT.)

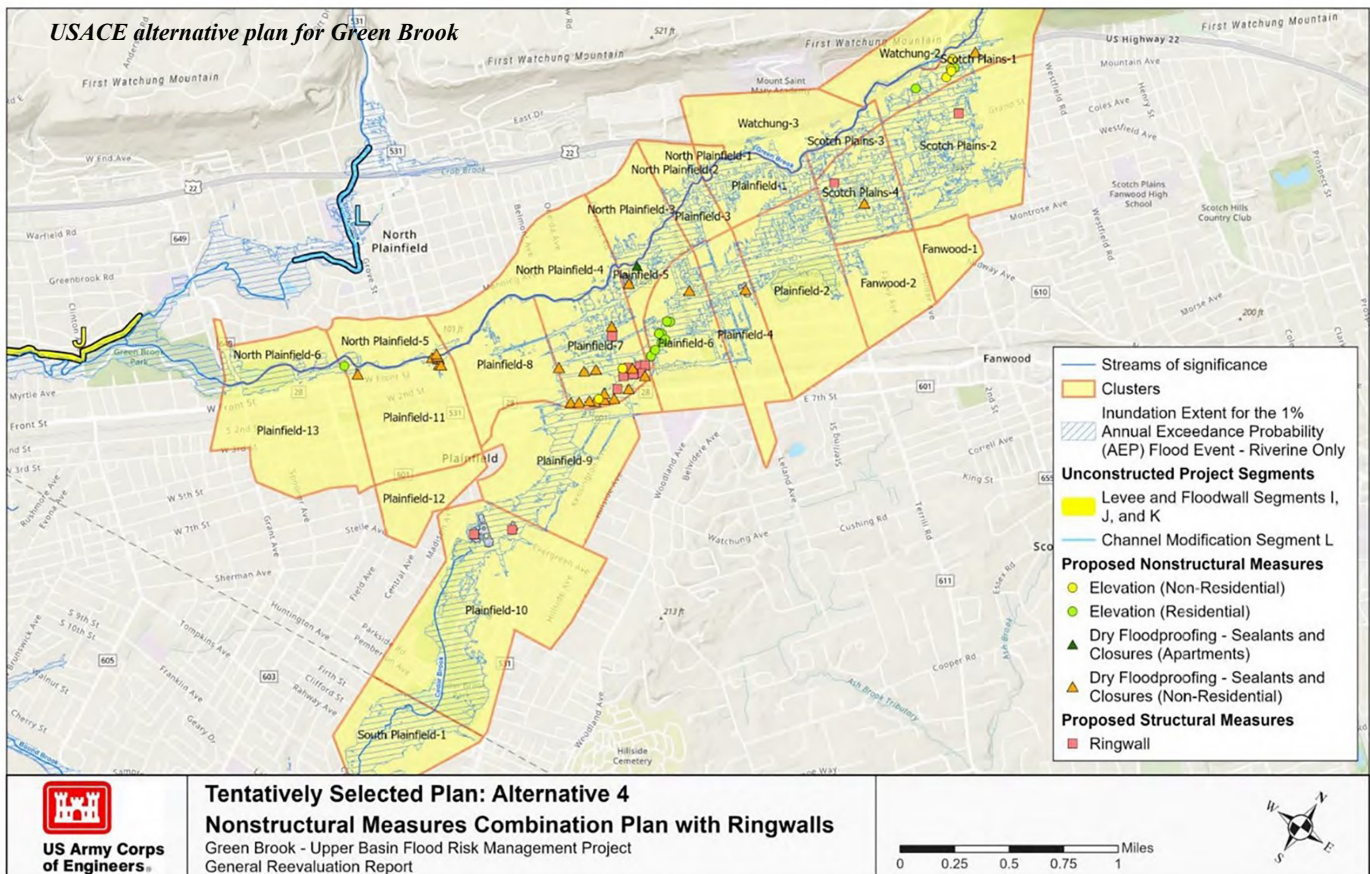
Green Brook Flood Protection (DEP)

The U.S. Army Corps of Engineers (USACE), in partnership with DEP, is conducting a General Reevaluation Study to reevaluate the feasibility of implementing flood risk management measures within the Green Brook Upper Basin in the municipalities of Plainfield, North Plainfield, Scotch Plains, Watchung. This part of an ongoing effort since 1986 to address flood risk in this region. While a nonstructural alternative was suggested by US Army Corps of Engineers (USACE) in November 2024 for the upper basin, concerns from the Green Brook Flood Control Commission and local communities indicate that life-safety benefits are not adequately considered in the current study approach and this alternative will leave most of the flood issues unresolved. DEP supports exploring a combination of structural and nonstructural solutions to ensure comprehensive flood protection. Field investigations and community engagement subsequent to the July 14th storm have shown, in some locations, flood elevations similar to those during Tropical Storm Ida in 2021. DEP is committed to collaborating with USACE to reassess the Upper Basin GRR and develop a robust, long-term flood protection plan for these communities.



Resilient Communities Program (DCA)

This competitive program provides funding for infrastructure projects that will help Hurricane Ida impacted communities become more resilient to current and future natural hazards including flooding. While a wide range of resilience actions are eligible under Resilient Communities, flood mitigation and prevention has been by far the most popular use of funds for program applicants. For more details on Resilient Communities, please consult [New Jersey's Hurricane Ida Action Plan](#).



PRIMARY ACTIVITIES

Storm & Flood Resilience Mitigation Activities funded by the American Rescue Plan Act (DCA)

DCA oversees more than \$500 million dollars in storm and flood resilience programs funded by the American Rescue Plan Act (ARPA) either by granting funds to other State agencies to implement programs or managing grants directly with municipalities carrying out the work. Some of these projects include funding for preventing the overflow of municipal combined sewers, installing flood-resistant auxiliary generators in hospitals, re-lining pipes vulnerable to groundwater intrusion, boardwalk and bulkhead renovations intended to resist wave action and storm surge.

Building Floodplain Data and State Asset Damage Assessments (DEP)

DEP is developing a flood mapping project to consider the updated mapping of floodplains that consider climate change. The project includes flood mapping, a floodplain data inventory, potential methodologies for state floodplain mapping, and recommendations based on consultation with stakeholders and subject matter experts.

Additionally, to support the State Floodplain Administrator’s (SFA) responsibility for floodplain management on State properties, and to bring substantial damaged (SD) structures into compliance with current requirements after a flood event, the SFA is developing a State Asset Damage Assessment Protocol. The SFA office has also developed a Substantial Damage Management Plan that defines roles and responsibilities, establishes communication protocols, identifies training needs and provides guidance on the SD determinations for State owned buildings. The NJ SD Plan is scheduled to be completed in 2025.

Turnpike Authority Resilience Program (Turnpike Authority)

The Turnpike Authority is implementing a resilience program to better understand the impacts of flood hazards – including storm surge, inland riverine flooding, and stormwater flooding – on its assets and assess how climate change will exacerbate these hazards. The program will



integrate resilience into the Turnpike Authority’s decision making processes (planning, design, construction, and maintenance) and provide guidance and criteria to adapt its operations, systems, and assets to prepare for changing conditions and shocks. This will ensure that the investments made today will offer a safe and equitable transportation future for all.

STATEWIDE FLOOD RESILIENCE INITIATIVES

PRIMARY ACTIVITIES (CONT.)

Flood Product Library (PANYNJ)

The Flood Product Library is a tool to assist PANYNJ design teams, line departments, and facilities to quickly identify potential flood resilience solutions. It contains information for nearly 200 flood control devices, searchable by over a dozen key attributes and characteristics. PANYNJ continually updates the Flood Product Library with the latest flood resilience technologies.

Flood Resilience Projects at Sea Girt National Guard Training Center (DMAVA)

The Department for Military and Veteran Affairs (DMAVA) has undertaken several projects at the Sea Girt National Guard Training Center (NGTC) to reduce the flood risk facing the building complex. In 2023 and 2024, four buildings near waterbodies were demolished with the sites restored to pre-disturbance conditions. These actions increased pervious surface and included the construction of a berm to improve flood protection. Additionally, as part of the Freshwater Wetland and Coastal Habitat Enhancement Plan at Sea Girt NGTC, annual surveys are conducted at the on-site restored wetland, where invasive species are



Port Newark

removed and native vegetation is replanted to maintain the wetland's function as a natural flood buffer. And finally, invasive Asiatic sand sedge is removed each year from the beach and dunes to preserve native dune grass, ensuring the dunes remain stable and resilient against storm surges and high winds. Together, these efforts strengthen the site's ecological integrity and flood resilience.

NJ Transit Sustainability Plan (NJ Transit)

NJ Transit's first-ever [Sustainability Plan](#) was released in April 2024, establishing the agency's commitment to policy and strategy development that reflects best practices in sustainability and resilience in the transit industry. This document describes an investment framework for the agency to reduce flood vulnerability across its system.



NJ Transit 2024 Sustainability Plan

Flood Modeling for Critical Transit Facilities (NJ Transit)

NJ Transit created preliminary flood models for four (4) critical facilities across the transit network to reflect both riverine and coastal flood conditions for the 1% and 0.2% annual chance storm events through 2100. Data from these and subsequent models form the basis for NJ Transit's forthcoming Standards and Practices documentation for implementation in all future capital projects.

Securing Federal Funding for Capital Resilience Projects (NJ Transit)

In 2024, NJ Transit secured \$115.8 million in federal funds to advance capital resilience projects, including two new Resiliency Assessments and the Wood-ridge Maintenance of Way replacement facility. The agency will build on this success by pursuing additional funding opportunities to reduce flood risk and vulnerabilities.


SUPPORTING STATE AGENCY ACTIONS

- **Raritan River Bridge Project (NJ Transit)**

This project includes construction of a lift bridge which allows for decommissioning of the existing 100-year-old-plus bridge, eliminating one of the most vulnerable points on NJ Transit's North Jersey Coast Line. The new bridge has been elevated to 2.5 feet freeboard above the FEMA-designated Base Flood Elevation for determination of the Design Flood Elevation (DFE).

- **Flood Repairs for Warren Residential Community Home Site (LPS)**

In July 2023, the Warren Residential Community Home (WRCH), a home for at-risk youth, experienced significant flooding due to a torrential rainstorm. Temporary repairs were completed by partners at the New Jersey Department of Transportation (NJDOT) in 2023. In 2024, the Juvenile Justice Commission of the Department of Law and Public Safety (LPS) developed a more permanent solution for cleaning and jetting the pond overflow drain, reducing the overall future risk to the WRCH from flooding.



“In 2024, the Juvenile Justice Commission developed a more permanent solution for cleaning and jetting the pond overflow drain reducing the overall future risk to flooding.”

Warren County, NJ



INCENTIVIZE SUSTAINABLE GROWTH AND REDEVELOPMENT THAT INCORPORATES RESILIENCE AND INVESTMENT IN SAFER AREAS

While New Jersey cannot stop flooding, it can plan the state's growth and redevelopment to be safer and smarter. Programs have been created to promote development in areas of low flooding risk, incentivize development that incorporates floodproofing, acquire properties to convert into permeable surfaces, and make accessible data around flood prone areas. A multipronged approach that combines making new development smarter, impervious surfaces greener, and the public more informed on flood risk lets the state approach resilient development more comprehensively.

SPOTLIGHTED INITIATIVES



Morris Goodkind Bridge



Home Elevation in Highlands, NJ

Flood Risk Mitigation & Preparedness Initiatives for Housing Developments (NJHMFA)

The New Jersey Housing and Mortgage Finance Agency (NJHMFA) is enhancing its focus on mitigating flood risks in housing developments through innovative protocols and requirements. A newly introduced Site Assessment Plan requirement for all tax credit projects evaluates flood vulnerabilities, identifying areas at risk of inundation and other water-related hazards. To further bolster preparedness, NJHMFA now mandates developers applying for competitive 9% Low Income Housing Tax Credit awards to implement Site Resilience selections, incorporating solutions like floodproofing infrastructure, implementing stormwater management systems, and elevating critical utilities. Additionally, an Emergency Management Plan is required to ensure residents' safety during flood events, emphasizing disaster preparedness and swift response strategies. These measures reflect NJHMFA's commitment to protecting New Jersey communities from the growing threat of flooding while fostering resilient and sustainable housing.

SPOTLIGHTED INITIATIVES (CONT.)

Smart Move Program (DCA)

The Smart Move Program is a housing development pilot program that works with eligible developers to create high quality, energy-efficient, resilient, and affordable single-family housing in lower risk areas within or near disaster-impacted communities.

Once the homes are constructed, the program will provide a path to homeownership for Hurricane Ida-impacted residents. Smart Move will prioritize buyout program participants who sold their high-risk properties through the Blue Acres buyout program and income-qualified, first-time homebuyers, offering affordable housing and down payment assistance to income-qualified buyers. For further details on Smart Move, please consult [New Jersey’s Hurricane Ida Action Plan](#).



PRIMARY ACTIVITIES

Climate Change in Preliminary State Development & Redevelopment Plan (DOS)

The [State Development and Redevelopment Plan \(State Plan\)](#) is a guiding document for land use in New Jersey. Last adopted in 2001, the plan provides best practices related to land use, transportation, housing, environmental protection and enhancement, economic development, provision of public infrastructure, historic preservation and more. In December 2024, the State Planning Commission released the [Preliminary State Plan](#) initiating a major update that includes new goals addressing climate change and equity. The plan notes that flooding is becoming more intense and frequent as a result of climate change and seeks to guide development and growth into safer areas of the state.



NJ Smart Growth Explorer *Beta* (DOS)

In alignment with the State Plan Update, the Office of Planning Advocacy (OPA) at the New Jersey Department of State (DOS) worked with Rowan University’s Geospatial Research Lab to develop the [NJ Smart Growth Explorer *Beta*](#). The Explorer provides a digitally accessible visualization for residents and decision-makers to understand factors of development, redevelopment, and environmental sensitivities across New Jersey’s 564 municipalities. The Smart Growth Explorer contains several data layers intending to show flood risk including those that incorporate climate change.

STATEWIDE FLOOD RESILIENCE INITIATIVES

PRIMARY ACTIVITIES (CONT.)

Garden State Commercial Property Assessed Clean Energy Program (NJEDA)

The Garden State [Commercial Property Assessed Clean Energy](#) (C-PACE) Program will provide a new form of financing for renewable energy, energy efficiency, water conservation, and certain types of resilience-related improvements for New Jersey. The Program works by enabling eligible commercial, industrial, agricultural, and certain multi-family residential real property owners to access financing to undertake these kinds of

improvements on their properties and repay the financing through the payment of an additional assessment to their municipality, similar to their real property tax. The C-PACE provides financing for hurricane resistant construction improvements, flood resistance construction improvements, stormwater management systems, energy storage, and microgrids, as well as energy efficiency improvements.

“The program will provide a new form of financing for renewable energy, energy efficiency, water conservation, and certain types of resiliency-related improvements.”



SUPPORTING STATE AGENCY ACTIONS

- **Resilience Guidelines in Brownfield Development Area Program (DEP)**

In October 2023, DEP relaunched the Brownfield Development Area program which incorporates climate resilience elements, such as green infrastructure and flood mitigation.

- **Brownfields Planning and Assessment Services (NJEDA)**

NJEDA offers no-cost [Brownfields Planning and Assessment Services](#) to both public and private organizations which can be used to support flood mitigation projects.

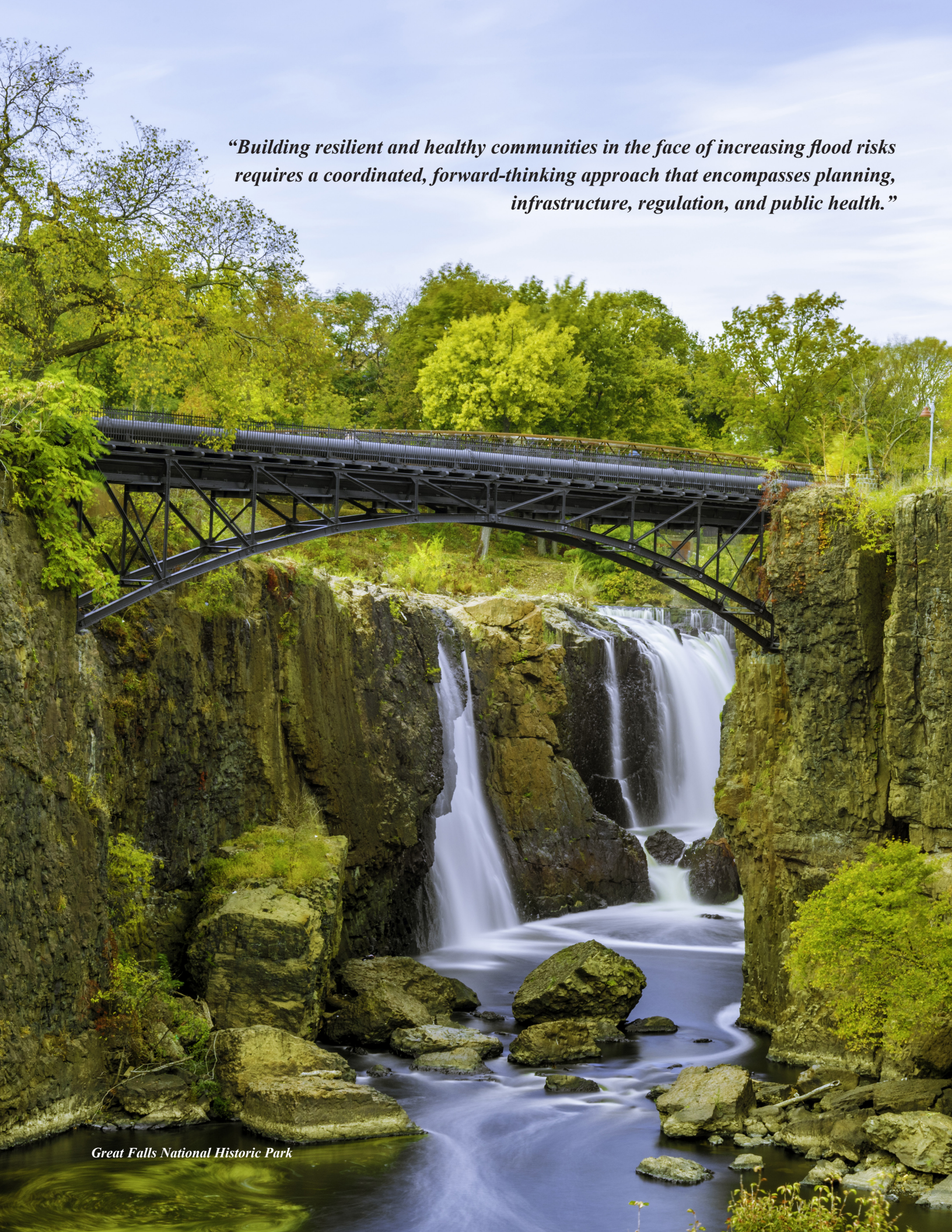
- **DEP Administrative Guidance for Green, Sustainable, and Resilient Remediation (DEP)**

DEP released [Green, Sustainable, and Resilient Remediation Administrative Guidance](#) to include recommendations for reducing stormwater runoff and flooding in remediation projects.

- **Distribution Warehousing and Goods Movement Guidelines (DOS)**

In October 2022, DOS released [guidelines for siting warehouses](#) that directly speak to taking flooding considerations in account when designing and/or approving new warehouse installations.

“Building resilient and healthy communities in the face of increasing flood risks requires a coordinated, forward-thinking approach that encompasses planning, infrastructure, regulation, and public health.”





PRIORITY 2:

**STRENGTHEN THE
RESILIENCE OF
NEW JERSEY'S
ECOSYSTEMS**



INTRODUCTION

Not only are New Jersey's ecosystems central to its identity as the Garden State and quality of life, but they are also enjoyed and treasured by citizens and visitors alike. The intricate network of forests, wetlands, riparian corridors, and natural lands provide numerous benefits. These systems reduce the impact of flooding on buildings, infrastructure, and people by reducing the volume of water that flows over land during a storm event, as well as slowing down the timing of the concentration of the flood, potentially reducing its extent or depth.

All natural lands provide some flood reduction benefit, but the highest flood reduction benefits come from the land adjacent to streams, rivers, and coastal waterbodies. These areas, referred to as floodplains, allow the rain to settle in flat, low-lying terrain while it seeps underground, where

it nourishes plants and provides drinking water for homes and businesses. These areas, when left undeveloped, allow floods to be beneficial, not destructive, to communities.

However, floodplains are often developed, resulting in two major impacts. Foremost, the roads and structures built in floodplains are vulnerable to future floods. Secondly, the water that can no longer seep into the ground now joins other runoff collecting along the impervious surfaces in the developed area. This changes both the timing and volume of the water that spills into the creeks and rivers.

To be flood resilient, New Jersey must ensure that its ecosystems are healthy, functioning, and resilient themselves.

FLOOD-RELATED STRATEGIES IN THIS PRIORITY

- Promote Resource Conservation and Natural Lands Management to Strengthen Ecological Resilience
- Deploy Natural and Nature-based Solutions for Resilience

“To be flood resilient, New Jersey must ensure that its ecosystems are healthy, functioning, and resilient themselves.”





PROMOTE RESOURCE CONSERVATION AND NATURAL LANDS MANAGEMENT TO STRENGTHEN ECOLOGICAL RESILIENCE

Supporting the health and diversity of ecosystems through conservation and management of natural lands ensures that as the climate changes, ecosystems continue to provide valuable services like water filtration, flood attenuation, food production, and carbon sequestration. The ongoing efforts at New Jersey's Department of Environmental Protection (DEP), Department of Agriculture (NJDA), NJ Sports & Exposition Authority (NJSEA), Pinelands Commission (Pinelands), and Highlands Council (Highlands) to manage natural lands within their purviews reduces the risk communities throughout the state face from flooding. In addition, these agencies have taken additional actions to strengthen the regulations, plans, and decision-support tools to help improve the flood resilience value of the State's management programs.

Natural Lands in New Jersey

40% is covered by
traditional forests.



70% of the state's population's
source of water comes from
surface water and aquifers
in the Highlands region.



17% is covered by coastal
and freshwater
wetlands.



**Source: State of New Jersey 2024 All-Hazard Mitigation Plan*



Swartswood State Park

PRIMARY ACTIVITIES:

Protection of Highlands Open Waters and Riparian Areas (*Highlands*)

Highlands takes a regional approach to safeguard the 88 municipalities which make up the New Jersey Highlands from excessive development and environmental degradation. In 2024, the Council updated the Land Use Capability Zone Map incorporating the latest scientific data to enhance climate resilience and guide resource protection for forests, wetlands, and flood-prone areas.



Highlands Region

Pinelands Land Protection Enhancements (*Pinelands*)

In 2024, Pinelands assessed areas designated for growth that are vulnerable to flood hazards and coastal inundation. The assessment found that the areas of the Pinelands with the most climate-related hazard risk are generally outside of the growth-oriented management areas and have limited development potential. To address the remaining high-risk areas within growth-oriented management areas, the Commission updated its land acquisition target areas and is considering additional wetlands protection standards.



Pinelands Region

Meadowlands Wetlands Monitoring (*NJSEA*)

Marshes absorb floodwaters, protecting nearby communities from increased inundation. As sea-levels rise, marshes are vulnerable to becoming open water. NJSEA has been monitoring marsh elevations using surface elevation tables for over 15 years to investigate how the District's wetlands are or are not keeping up with current rates of sea-level rise. The most recent data indicates the District's wetlands are generally well adapted to keeping up with current rates of rising sea levels. If marshes are able to naturally keep up with sea-levels, their flood reduction benefits will remain. If sea-levels out pace the marshes, communities in the meadowlands face increased flood risk from coastal events.



New Jersey Meadowlands

SUPPORTING STATE AGENCY ACTIONS

- A foundational principle of [Outside Together!](#) A Statewide Comprehensive Outdoor Recreation Plan, approved in 2024, is enhancing climate resilience and sustainability through acquisition and development of open and green space (*DEP*)
- The State's [Natural and Working Lands Strategy](#), focused on increasing carbon sequestration and reducing greenhouse gas emissions in and on wetlands, forests, and agricultural lands, included sea-level rise and flood potential in the development of the strategy. (*NJDA, DEP*)
- Together with public and nonprofit partners, as of December 2024 the [Green Acres Program](#) has directly protected more than 725,000 acres of open space and parkland and has funded 1,256 local and nonprofit park development and stewardship projects in communities around the state. (*DEP*)



DEPLOY NATURAL AND NATURE-BASED SOLUTIONS FOR RESILIENCE

Natural and nature-based solutions are resilience interventions that utilize natural ecological processes to reduce negative environmental impacts. Some common examples include green infrastructure vegetation that absorbs precipitation or living shorelines that protect against coastal erosion. A survey of stakeholders during the development of this Climate Change Resilience Strategy revealed that participants want to see State agencies increase the use of nature-based measures more than any other type of action. Agencies support green infrastructure in two primary ways: by investing in nature-based solutions and green infrastructure on State-owned property, and by offering funding, technical assistance, and guidance to expand installations on public, local, and private lands.

PRIMARY ACTIVITIES:

Funding for the Trees for Schools Program (DEP)

In July 2025, nearly \$4.5 million in grants were awarded to fund the planting of trees at 40 public schools, colleges, and universities across the state through the [Trees for Schools](#) program. The program is funded through the Regional Greenhouse Gas Initiative, a multi-state, market-based program that establishes a regional cap on carbon dioxide emissions from fossil fuel power plants. The tree planting projects will increase shade coverage to mitigate the effects of rising temperatures due to climate change, beautify school campuses, mitigate and filter stormwater runoff, and reduce the state's carbon footprint. More than half of the projects are located in overburdened communities, where excessive paving and limited tree cover can cause temperatures to increase, a phenomenon known as the urban heat island effect. Grant awardees will participate in workshops and design projects, with the goal of planting more than 4,500 trees in Spring 2026. The grants range from \$10,000 to \$250,000 and cover costs associated with planning, site preparation, tree purchases, planting, watering, monitoring, and maintenance over a three-year period.



SUPPORTING STATE AGENCY ACTIONS

- **Green Infrastructure in the Greenway Project (DEP)**

In the City of Newark, the Greenway Project uses green infrastructure to manage stormwater and is designed with future precipitation projections to reduce future flood risk along the corridor.

- **Map of Permitted Nature-Based Solutions (DEP)**

DEP is developing a map to show the location of permitted living shoreline and nature-based solution projects throughout the state.

“In the City of Newark, the Greenway Project is designed using green infrastructure to manage stormwater and is design with future precipitation projections to reduce future flood risk along the corridor.”



Newark, NJ

An aerial photograph of the New Jersey State House in Trenton, NJ, featuring a prominent golden dome. The scene is captured at dusk, with a soft, hazy sky transitioning from light blue to a pale orange. The dome is the central focus, showing its intricate architectural details, including a smaller golden dome on top and a classical columnar structure. The surrounding cityscape is visible in the background, with various buildings and streets. A semi-transparent yellow rectangular box is overlaid on the left side of the image, containing the text.

PRIORITY 3:
**PROMOTE
COORDINATED
GOVERNANCE**

New Jersey State House, Trenton, NJ



INTRODUCTION

Floodwaters do not respect political boundaries or agency missions. When the rain falls or a coastal storm rolls in, individuals and communities look to the State for help and support. Most flood victims are not interested in what section of the New Jersey Administrative Code drives decision-making at the agency; they want to know how they can get their life back on track as quickly as possible.

Without a concerted effort to coordinate flood preparedness, mitigation, and response, New Jersey’s agencies risk being unprepared, disorganized, or having inconsistent and conflicting approaches to complicated

problems. The ongoing work of the Interagency Council on Climate Resilience (IAC) is to continue, through proactive partnerships, work towards a coordinated, whole-of-government approach to flood resilience.

For State agencies, this cooperative approach to governance includes working with other State agencies and non-State entities to efficiently and effectively reduce flood risk across the state, improving underlying data and science, and increasing public awareness of current and future flood risk.

FLOOD-RELATED STRATEGIES IN THIS PRIORITY

- Ensure Continuing Efforts by the Interagency Council on Climate Resilience to Lead a Coordinated, Whole-of-Government Approach to Resilience



“Most flood victims ... want to know how they can get their life back on track as quickly as possible.”

Mount Holly, NJ



ENSURE CONTINUING EFFORTS BY THE INTERAGENCY COUNCIL TO LEAD A COORDINATED, WHOLE-OF-GOVERNMENT APPROACH TO RESILIENCE

The IAC was established to coordinate State activities to reduce risk from climate impacts and build climate resilience across New Jersey. The strategy *Ensure Continuing Efforts by the Interagency Council on Climate Resilience to Lead a Coordinated, Whole-of-Government Approach to Resilience* includes actions to both strengthen interagency coordination on climate issues and promote resilience action within individual agencies. Many agencies already have existing programs to address current and future flood risk, which are detailed throughout this report. This strategy highlights three multi agency bodies that each play a role in determining State investment decisions and policy priorities. These groups provide an opportunity for agencies to work together on climate-informed decision-making.

While State agencies have individual missions, as a collective State government creates a community. Research shows that a community is more resilient when it has strong relationships, where individuals know who to call when there is an issue or concern. In government, that social cohesion is built through intentional coordination.

THE INTERAGENCY COUNCIL ON CLIMATE RESILIENCE



26 member agencies on the IAC.



5 reports have been published by the IAC since the release of the Climate Change Resilience Strategy in 2021.



6 workgroups have been established since 2022.

PRIMARY ACTIVITIES:

Interagency Council on Climate Resilience (*All Agencies*)

The IAC has continued to meet monthly since Executive Order 89 was signed. Staff at State agencies frequently attend meetings, conferences, and events that foster relationships, transparency, and opportunities for feedback on State programs and priorities. [Interagency collaboration and accomplishments are captured in IAC reports](#) including the IAC Annual Report (2024) and the Two-Year Anniversary Accomplishments Report (2023).

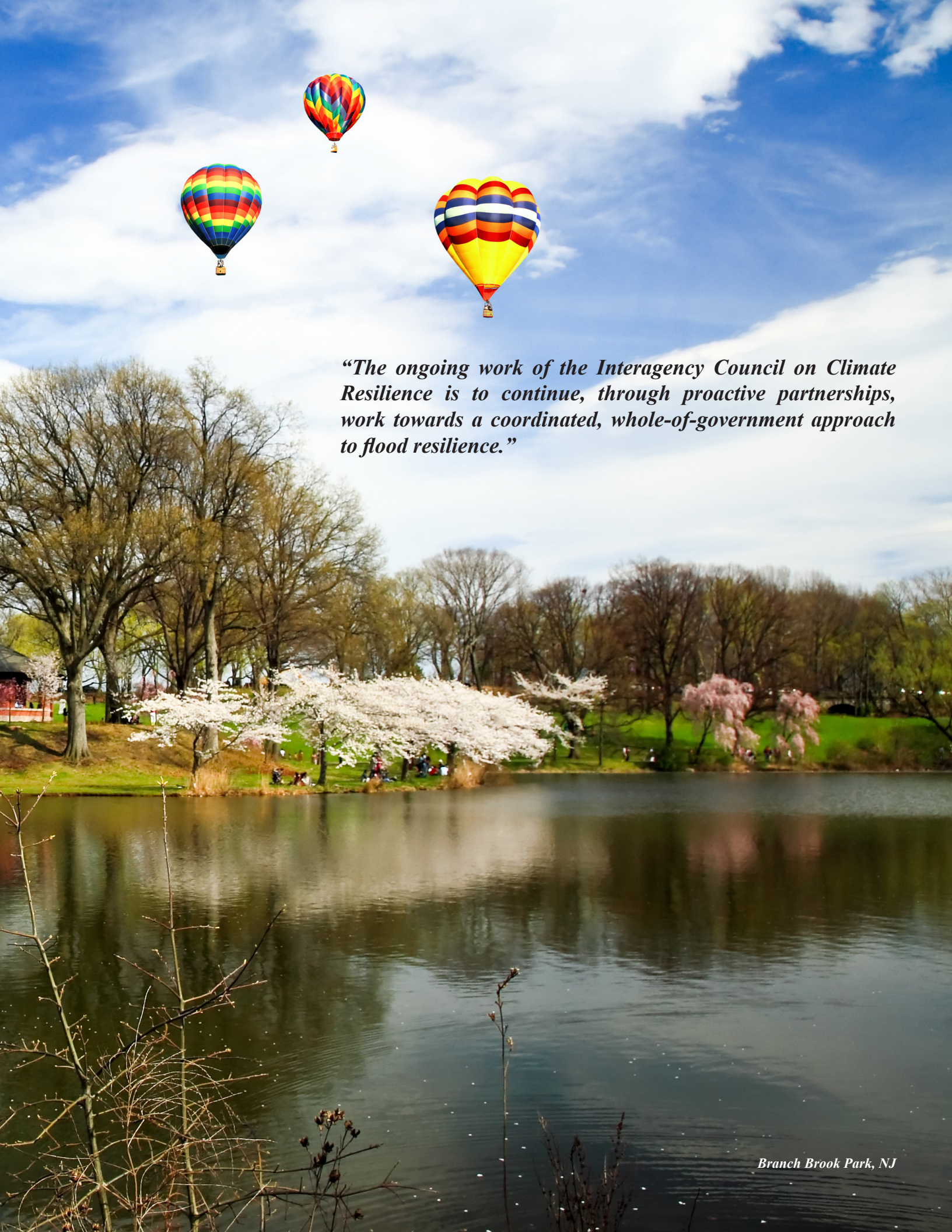
State Hazard Mitigation Team (*OEM, DCA, DEP*)

The New Jersey State Hazard Mitigation Team (SHMT) was established in 1994 by Executive Order 115 to facilitate interagency coordination for hazard mitigation planning and project efforts. In October 2023, Governor Phil Murphy signed Executive Order 344, updating the leadership of the SHMT to better reflect present-day mitigation efforts and programs across the agencies and provide increased public insight into State use of Federal Emergency Management Agency (FEMA)

funds. Members of the SHMT, including the New Jersey Office of Emergency Management (OEM), Department of Community Affairs (DCA), and Department of Environmental Protection (DEP), coordinate on initiatives to reduce flood risk before, during, and after an event.

State Planning Commission (*DOS, DCA, BPU, NJDOT, DEP*)

The [New Jersey State Planning Commission](#) consists of 17 members representing State government, local government, and the public. Local government and public members are appointed by the Governor and approved by the Legislature for three year terms. State agency members include the Department of State (DOS), DCA, the Board of Public Utilities (BPU), the Department of Transportation (NJDOT), and DEP. The full Commission generally meets monthly, and approved meeting summaries of Commission meetings are posted online. The meeting of the State Planning Commission enables relationship building across agencies that reduces the risk of flooding throughout the state and makes development decisions with the potential to impact risk.



“The ongoing work of the Interagency Council on Climate Resilience is to continue, through proactive partnerships, work towards a coordinated, whole-of-government approach to flood resilience.”



**PRIORITY 4:
INVEST IN INFORMATION
AND INCREASE PUBLIC
UNDERSTANDING**



INTRODUCTION

Flooding is one of the most immediate and damaging impacts of climate change facing New Jersey, threatening residents, businesses, infrastructure, and natural resources across the state.

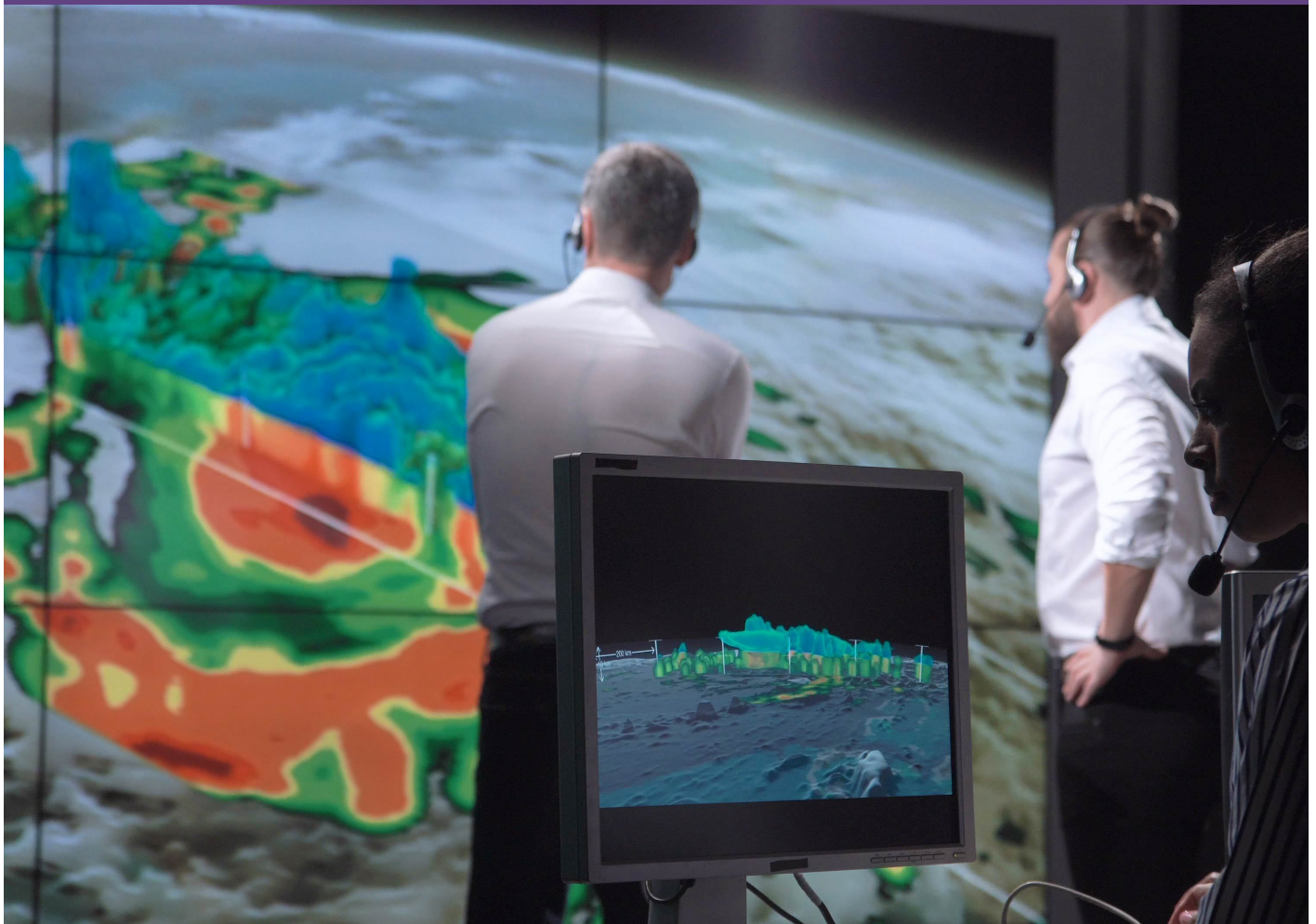
Flash flooding can claim lives and destroy property within hours of the first raindrop. Rapid changes in storm intensity or track undermines the predictability people rely on to make informed decisions about traveling and activities. Acceleration of rising sea-levels and changes in long-term

projections challenges property owners' understanding of future risk. The risk landscape continues to change, and public awareness and understanding of flood risk is paramount to protecting New Jersey from future losses.

To meet the underlying objectives within this priority area, the IAC has worked across agencies and with non-State partners to invest in science, outreach, and information campaigns to build awareness at the individual, community, and agency level.

FLOOD-RELATED STRATEGIES IN THIS PRIORITY

- Expand Public Communication Efforts on Climate Change and Impacts on New Jersey
- Expand Climate Change Education and Training Opportunities
- Integrate Climate Change Vulnerability and Impacts into State Assessments
- Build a Collaborative Research Agenda to Guide Future Climate Resilience Research





**EXPAND PUBLIC COMMUNICATION EFFORTS ON CLIMATE CHANGE
 AND IMPACTS ON NEW JERSEY**

Flooding can have catastrophic impacts on unprepared communities. That’s why the Interagency Council on Climate Resilience (IAC) and its member agencies prioritize helping New Jerseyans understand their flood risk, protect their properties, and stay safe through the use of digital tools, community science, and multilingual outreach.

**SPOTLIGHTED
 INITIATIVES**



**Climate Change Outreach Campaign
 (DEP)**

New Jersey Department of Environmental Protection (DEP) launched an outreach campaign to illustrate portions of the climate science behind New Jersey State climate policies and the worsening impacts of climate change. The messages, taken directly from the New Jersey Scientific Report on Climate Change, focused on three different climate change impacts, including sea-level rise and flooding.

Over 13 million impressions were made through radio PSAs, billboards, and social media through Facebook, Instagram, and X (formerly Twitter) ads during the summer of 2024. There was a 4,000% increase in visitors to the DEP climate change homepage, from 500 to 20,000 visitors per month. All materials were translated into Spanish, with 15% of the amount spent on advertisements going towards those in Spanish.

A DEP informational exhibit spotlighting climate change impacts like sea-level rise is on display at Island Beach State Park. It will soon be available at 18 additional state parks, and even more are in the works.

DEP is also working to highlight communities’ resilience efforts through promotional videos on social media. Those featured in 2024 were the City of Lambertville and Stafford Township, and for Flood Safety Week 2025, the City of Hoboken.

CLIMATE CHANGE
 Caused by several centuries of human activities, it has made the Earth less habitable due to:

- Rising Temperatures
- Extreme Weather
- Ecosystem Impacts

But we’re not focused on the fear, we’re focused on the fight. And our state has the people, plans and power to make a difference.

NJ has a plan. See it now.

climatechange.nj.gov

RISING TEMPS & TIDES

New Jersey’s sea-level rise is about twice the global average. Climate change is causing sea levels to rise as melting ice adds water to the ocean and, as the ocean warms, the water expands. Coastal communities are flooding, beaches are vanishing and ecosystems – even cities and towns – are threatened.

2050 sea level vs **2030 sea level**

PROTECT THE SEA

- Walk, bike, use mass transit or drive less often.
- Support policies to reduce greenhouse gas emissions.
- Insulate your home to lower heating and cooling costs.
- Turn off lights when you leave a room.
- Reduce, reuse, recycle!

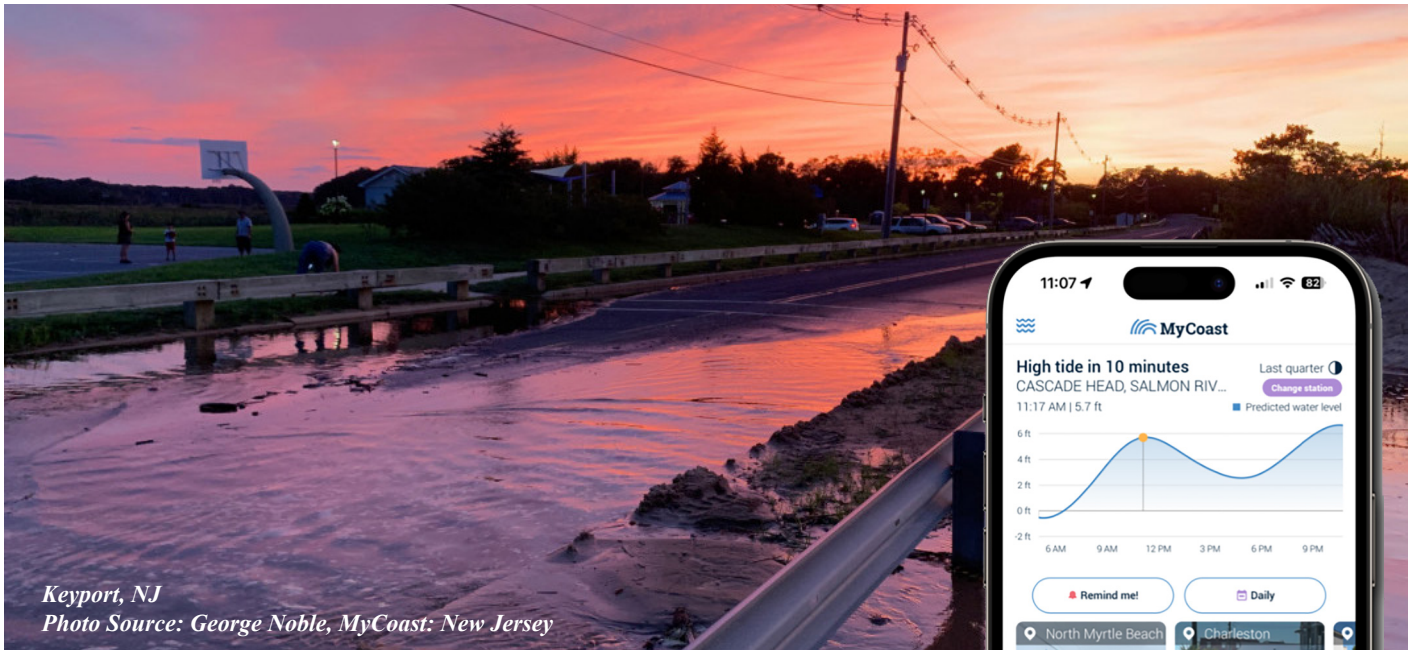
ARE YOU CLIMATE CHANGE READY?

Climate impacts will affect your life – don’t be caught unprepared. Learn tools and tips today to become more climate resilient.

TAKE THE QUIZ

*Materials from DEP’s
 Climate Change Outreach Campaign*

SPOTLIGHTED INITIATIVES (CONT.)



*Keyport, NJ
 Photo Source: George Noble, MyCoast: New Jersey*

MyCoast: New Jersey (DEP)

[MyCoast: New Jersey](#) is a portal used to collect and analyze photos of coastal events and places. Photos are linked to data about weather and tides to create reports that help stakeholders like government agencies, business owners, and residents to understand coastal change and make informed decisions. The public can add pictures of coastal events, DEP’s servers retrieve weather and tidal information to add context to the photo, and then coastal leaders and groups can use the photo and data to make better informed decisions.

**NJ Flood Disclosure Law
 (DCA, DEP, LPS)**

Homebuyers and renters are now better equipped to make informed decisions when it comes to flood risks. As of March 20, 2024, sellers of real property and landlords must disclose their knowledge of a property’s flood history, flood risk, and location within a flood zone or area. The Sellers’ Property Condition Disclosure Statement now includes a flood risk addendum with specific questions on flooding. Landlords must provide prospective tenants with a flood risk notice based on a model form published by the Department of Community Affairs (DCA). DEP maintains a [webpage](#) with information about the law and a tool to help individuals identify their property’s flood zone. This law, enforced by the Department of Law and Public Safety (LPS), was one of the priority actions identified during the 2019 Resilient Strategy and is now considered one of the strongest in the country.





EXPAND CLIMATE CHANGE EDUCATION AND TRAINING OPPORTUNITIES

Training and education for flood risk across the state targets three primary audiences: students, who learn about flood risk and best practices through mandated curriculum standards; local floodplain managers who review development permits in floodprone areas; and practitioners who work in the public and private sector. In 2020, New Jersey became the first state in the nation to incorporate [K-12 climate change education](#) across content areas in its State academic standards

The primary program for education and training on flood risk is a multi-day course sponsored by DEP, funded through the New Jersey Office of Emergency Management (OEM) by a FEMA grant and delivered in partnership with the NJ Association of State Floodplain Managers. This program, detailed below, ran from 2018 to 2025, but has been discontinued after a change in federal funding priorities.

SPOTLIGHTED INITIATIVE

National Flood Insurance Program (NFIP) Review Course (DEP)

Each of the 554 municipalities that participate in the NFIP are required to have a dedicated local floodplain manager that reviews development permits within the Special Flood Hazard Area. There is no mandated training or certification for this position.

Since 2017, DEP, with grant funding from FEMA and in collaboration with the New Jersey Association of Floodplain Managers has offered free training to New Jersey municipal, county, and State officials as well as the general public in order to improve their knowledge of floodplain management and compliance and obtain their Certified Floodplain Manager (CFM) certification.

*NFIP Review Course in
Gloucester County*



PRIMARY ACTIVITIES

Climate Change Education Grants Program (DOE)

In both FY24 and FY25, the NJ Department of Education (DOE) made grants available to school districts and institutions of higher education to advance K-12 climate change education throughout New Jersey (both rounds of grants can support activities taking place in calendar year 2025). Grants to school districts supported development and implementation of climate change curricular units that culminate with student-led community resilience projects; grants to institutions of higher education were used to establish centers for free professional development, technical assistance, and networking opportunities to support school districts in their climate change education efforts. Eight of the FY24 school district projects focused on mitigating flooding and coastal erosion across the state.



NJ Education, Climate Awareness, Training, and Engagement (DEP)

The NJ Education, Climate Awareness, Training, and Engagement (EduCATE) program is designed to foster enduring capacity within each of the construction, planning, and design activities of the [Building a Climate Ready NJ](#) initiative. The EduCATE initiative will provide broad education, workforce development, trainings, and entrepreneurship. Coordinated by the Rutgers University’s Department of Marine & Coastal Sciences, these programs will be conducted primarily by regional institutions to ensure that the benefits of the proposed projects reach beyond typical decision-makers and professional audiences. EduCATE partners include the Jacques Cousteau National Estuarine Research Reserve, Barnegat Bay Partnership, Partnership for the Delaware Estuary, NY/NJ Harbor & Estuary Program, and the Rutgers 4-H Youth Development Program.

EduCATE Partners



SUPPORTING STATE AGENCY ACTIONS

- **Climate Change Resource Library for Educators (DEP)**
DEP has built a new [database of curated resources](#) for New Jersey early grade educators seeking to develop lesson plans on flood risk.
- **Youth Inclusion Program (DEP)**
DEP’s [Youth Inclusion Initiative](#) emphasizes community projects, such as rain gardens, which improve local flood resilience and awareness.



INTEGRATE CLIMATE CHANGE VULNERABILITY AND IMPACTS INTO STATE ASSESSMENTS

New Jersey is integrating climate vulnerability into State assessments to boost flood resilience. Strategies include gathering data for key structures, collaborating across agencies to pinpoint risks, and evaluating public health, cultural sites, and ecosystems. Together, these efforts guide smarter planning to protect communities from future flooding impacts.

SPOTLIGHTED INITIATIVE



Data Driven Hazard Mitigation Planning (OEM)

OEM, in collaboration with Rutgers University, is gathering high-resolution LiDAR elevation data for coastal floodplains to improve flood risk estimates. Combined with building footprint and property data, this enhanced dataset will strengthen the State's hazard mitigation plan and deepen climate impact analysis when it comes to State-owned and other assets.



PRIMARY ACTIVITIES

Planning for Flooding in Historic Preservation (DEP)

The Historic Preservation Office completed their five-year plan, the 2023-2028 [New Jersey Comprehensive Statewide Historic Preservation Plan](#), in December 2022. Within the plan, staff and stakeholders identified a goal (Disaster Planning and Resilience) to guide historic preservationists to better understand historic properties in flood hazard areas and the respective risks facing those properties. This action represents a first step towards a systemic assessment of the vulnerability of cultural and historic resources to climate change-related hazards, including flooding.

Assess Vulnerability of State Parks & Cultural Resources to Flooding (DEP)

DEP manages over 1,600 public assets—including buildings, trails, and campgrounds—that are increasingly vulnerable to flooding from more frequent and severe storms driven by climate change. With millions of annual visitors, especially during summer months, the program must adapt infrastructure by redesigning facilities or relocating them to more flood-resilient areas. A necessary first step towards this goal is to conduct an assessment of the vulnerability of State Parks, Forests, and Historic Sites. These efforts aim to protect both public safety and recreational access while modeling climate-smart practices.



BUILD A COLLABORATIVE RESEARCH AGENDA TO GUIDE FUTURE CLIMATE RESILIENCE RESEARCH

New Jersey works closely with the scientific community to ensure New Jersey’s flood resilience strategies are grounded in the latest science and tailored to evolving climate risks. The primary work to advance this strategy is updating the State’s climate projections using best available science and tools.

SPOTLIGHTED INITIATIVES



Long Beach Island, NJ

Downscaling Global Data for Updated New Jersey Climate Model Projections (DEP)

DEP updated statewide annual temperature and precipitation projections using relevant climate models consistent with the [IPCC Sixth Assessment Report](#) and future emissions scenarios called Shared Socioeconomic Pathways (SSPs), which reflect a range of global emissions scenarios. These projections, developed in 2024 using ClimateNA and AdaptWest data, incorporate downscaled average annual temperature and precipitation trends to the county level to better assess future flood risks. The updated models help align State planning with the most current science on how climate change, particularly increased rainfall and storm intensity, will drive flooding across New Jersey.

Updating Climate Projections & Downscaling Climate Models (DEP)

Climate projections such as sea-level rise and extreme precipitation projections are regularly updated using the latest scientific findings. State-of-the-art global climate models are downscaled to provide data tailored to New Jersey’s specific regions and risks. These climate projections and models enable planners and engineers to design infrastructure that withstands future flood threats, and inform hazard mitigation plans with more accurate and locally relevant data. Other key benefits of these projections and models are that they enhance public health protection by preparing for more frequent and severe storm events, and they build long-term resilience by aligning decisions with up-to-date climate science.



“These climate projections and models enable planners and engineers to design infrastructure that withstands future flood threats, and inform hazard mitigation plans with more accurate and locally relevant data.”



PRIORITY 5:

**PROMOTE CLIMATE-
INFORMED INVESTMENTS
AND INNOVATIVE
FINANCING**

1.976



INTRODUCTION

No flood resilience strategy can be effective without the ability to implement it. The many actions described throughout the *Statewide Flood Resilience Initiatives* report will require public investment, whether through policy changes, infrastructure projects, or research studies.

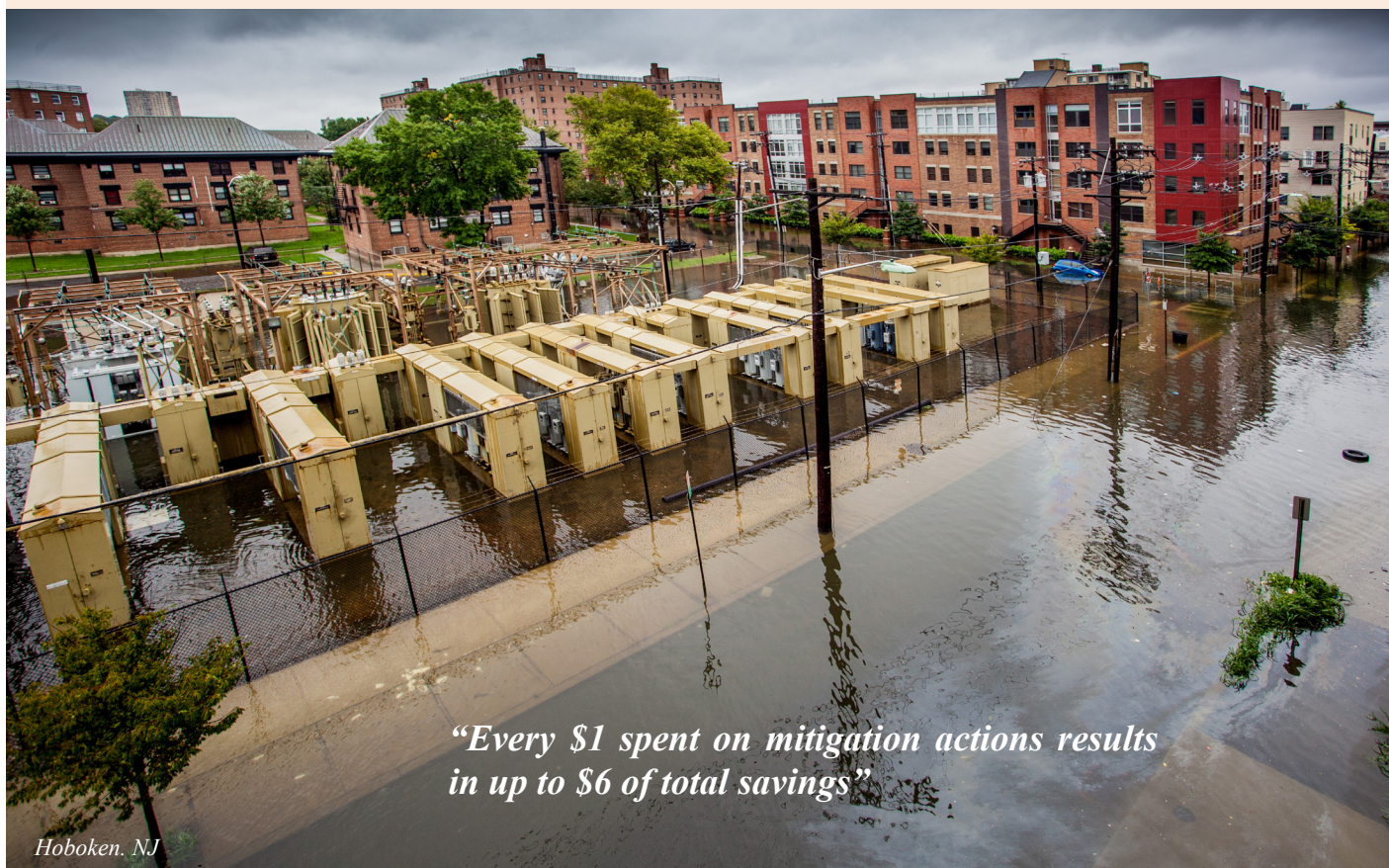
Climate resilience offers a unique opportunity to invest in the future of our communities and infrastructure. While any investment in resilience carries a cost, avoiding those investments results in far greater financial risks to people, businesses, and governments. In contrast, investments in hazard mitigation and resilience provide large returns on investments. For example, every \$1 spent on mitigation actions results in up to \$6 of total savings. Realizing both

that these benefit-cost ratios highly favor action, and that climate change may add risk to their operations, many private companies have begun integrating climate change into their decision-making. Governments around the world are similarly moving toward integration of climate change into financial planning and decision-making.

Since the release of the Statewide Climate Change Resilience Strategy (Resilience Strategy), the State has made advancements in its financial resilience strategies to make climate-informed investments, integrate equity into resilience investments, and continue to expand the money available for resilience projects.

FLOOD-RELATED STRATEGIES IN THIS PRIORITY

- Integrate Climate Change into Existing State Investments and Funding Decisions
- Expand the Availability of Financing for Resilience Investments from Public and Private Sources
- Ensure Equity and Transparency in Resilience Investments



“Every \$1 spent on mitigation actions results in up to \$6 of total savings”

Hoboken, NJ



INTEGRATE CLIMATE CHANGE INTO EXISTING STATE INVESTMENTS AND FUNDING DECISIONS

New Jersey agencies that are responsible for publicly owned infrastructure are on the front lines of needing to finance resilience investments. Integrating climate change into State investments helps New Jersey better prepare for increasing flood risks. It ensures public spending supports infrastructure and communities that can withstand future precipitation and sea-level rise conditions, reducing damage, recovery costs, and long-term risk.

In addition to integrating climate consideration into capital planning, State agencies have supported investment in several ways, including requiring grant applicants to demonstrate flood risk awareness and mitigation efforts. By integrating resilience expectations into public funding decisions, the State is incentivizing action and reducing its own financial exposure. In addition to requiring considerations in some programs, other State programs are rewarding resilience efforts through loan forgiveness.

SPOTLIGHTED INITIATIVE

NEW JERSEY WATER BANK **Resilience Requirements**

| <i>Did you assess...</i> | <i>Justify project alternatives that enhance long-term resilience:</i> |
|--|--|
| <input checked="" type="checkbox"/> Flood exposure | |
| <input checked="" type="checkbox"/> Sea-level rise | |
| <input checked="" type="checkbox"/> Extreme precipitation risk | |

Resilience Requirements Supplemental Guide & Checklist for Water Bank Applicants (DEP)

To strengthen flood resilience, the New Jersey Department of Environmental Protection (DEP) released guidance in 2023 and a supplemental checklist in 2024 to help New Jersey Water Bank (NJWB) applicants evaluate and design water infrastructure projects that can withstand climate-driven flooding.

These resources require applicants to assess flood exposure, sea-level rise, and extreme precipitation risks and justify project alternatives that enhance long-term resilience. The NJWB has also updated its application system to integrate these flood-focused resilience standards into project reviews.

PRIMARY ACTIVITIES:

Prioritizing Clean Water Projects that Reduce Risk (IBANK, DEP)

For State Fiscal Year 2025, NJWB, part of the New Jersey Infrastructure Bank (IBANK), prioritized projects that address flooding by awarding extra ranking points to clean and drinking water projects with significant climate resilience components. It also reserved additional principal forgiveness for clean water projects that improve stormwater management and reduce localized flooding, especially those using green infrastructure and nature-based solutions in overburdened communities. Project prioritization for climate resilience water projects is aiding the State in making informed investments in resilient infrastructure.

Principal Forgiveness for Stormwater Management (IBANK, DEP)

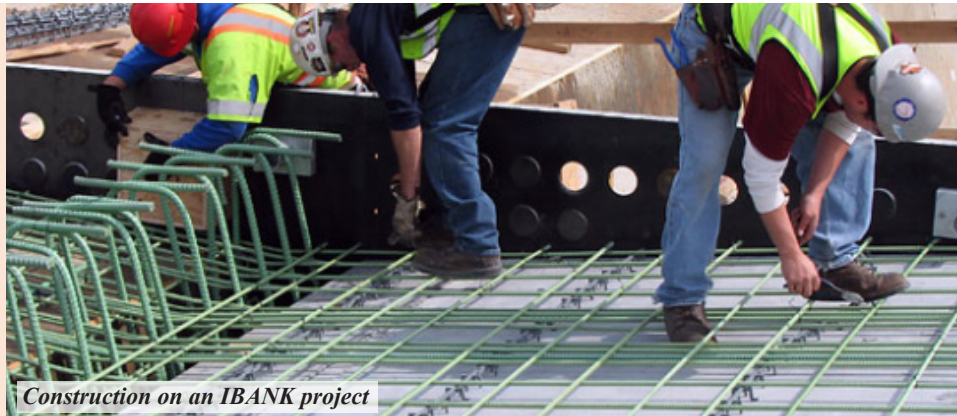
The NJWB provides low-interest loans and financial assistance for a wide range of water infrastructure projects including stormwater management improvements, combined sewer overflow (CSO) controls, green infrastructure, and other climate resilience projects while reducing flooding. The program's Project Priority List contains over 20 projects, estimated at over \$200 million, that meet the proposed eligibility requirements for principal forgiveness. The DEP State Fiscal Year 2025 [Intended Use Plan](#) details the project eligibility parameters and process to award the funds to finance priority stormwater management construction projects.

**EXPAND THE AVAILABILITY OF FINANCING FOR RESILIENCE INVESTMENTS
 FROM PUBLIC AND PRIVATE SECTORS**



In addition to financing investment in State infrastructure through capital programs within the New Jersey Turnpike Authority (Turnpike Authority), Department of Transportation (NJDOT), and Port Authority of NY & NJ (PANYNJ), the State is looking to support local, county, and private property owners as they reduce flood risk. New Jersey’s legislature has increased funding for both coastal engineering projects and Blue Acres in recent years, but the bulk of the effort to expand financing for resilience has focused on increasing access to low-cost loans as well as offering technical support to those seeking to apply for federal grants. New Jersey Office of Emergency Management (OEM), DEP, and Department of Community Affairs (DCA) work directly with communities and property owners to understand resilience needs and identify potential projects to address those needs. Where appropriate, these agencies support federal grant applications to mitigate infrastructure, elevate and acquire floodprone homes, and reduce future risk of damage.

**SPOTLIGHTED
 INITIATIVES**

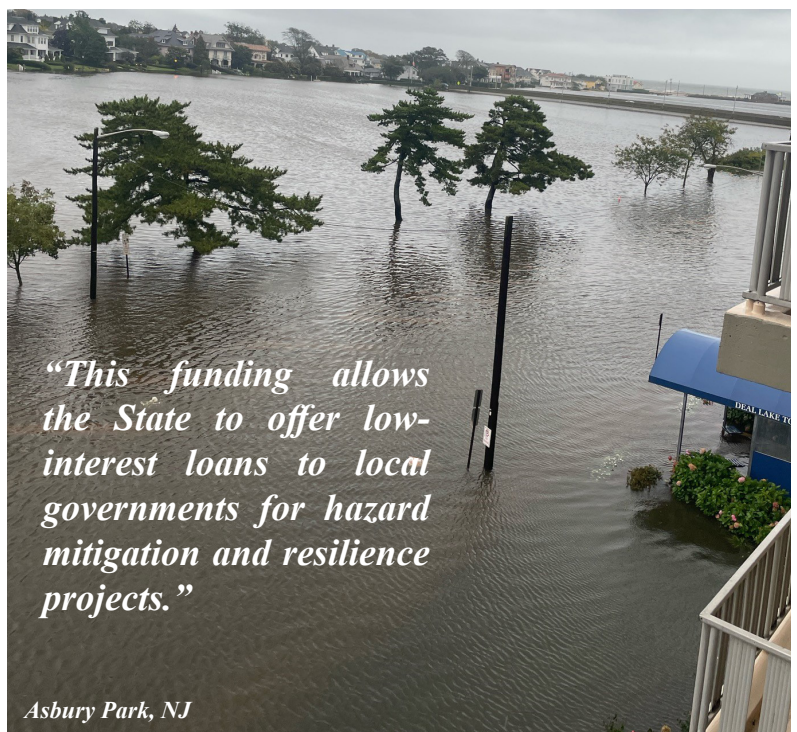


Construction on an IBANK project

NJ CHAMP: A Revolving Loan Fund for Flood Mitigation (IBANK, OEM)

In September 2024, New Jersey was awarded a \$15 million federal grant through the Federal Fiscal Year 2024 Safeguarding Tomorrow Through Ongoing Risk Mitigation (STORM) Revolving Loan Fund program to support the [New Jersey Community Hazard Assistance Mitigation Program \(NJ CHAMP\)](#).

This funding allows the State to offer low-interest loans to local governments for hazard mitigation and resilience projects, particularly those focused on flood reduction. Once the State receives the \$15 million Federal Fiscal Year 2024 funds from Federal Emergency Management Agency (FEMA), NJ CHAMP will have approximately \$21 million in available funds. These loans can also cover the local cost-share required for projects receiving hazard mitigation funding from FEMA and are issued at a flat interest rate of 1% on only the drawn loan amounts.



“This funding allows the State to offer low-interest loans to local governments for hazard mitigation and resilience projects.”

Asbury Park, NJ

SPOTLIGHTED INITIATIVES (CONT.)

Climate Resilience Funding
Directory (DEP)

In November 2024, DEP released the [Resilient NJ Climate Resilience Funding Directory](#) to support local and regional resilience planning efforts throughout New Jersey by helping stakeholders to access, apply for, and secure funding from a variety of sources to implement resilience projects. This easy-to-navigate directory covers a wide range of funding opportunities for individuals, communities, State agencies, and regional partners interested in pursuing resilience projects under a variety of topics critical to fostering climate resilience, including flood risk reduction, infrastructure, and nature-based solutions.

Climate Resilience Funding Directory
Find Your Opportunity

Search funding sources by activity or project type to discover relevant funding opportunities.

a) Climate Resilience Priority
b) Applicant Type

c) Activity Phase
d) Cost Share

NJ Climate Resilience Priorities:

- Build Resilient and Healthy Communities
- Strengthen the Resilience of New Jersey's Ecosystems
- Promote Coordinated Governance
- Invest in Information and Increase Public Understanding
- Promote Climate-Informed Investments and Innovative Financing
- Coastal Resilience Plan

Applicant Type(s): Activity Phase(s): Cost Share:

SUPPORTING STATE AGENCY ACTIONS

- **Ida/Henri Business Assistance Grant Program (NJEDA)**

The NJEDA [awarded \\$15 million in grants](#) to New Jersey small businesses and nonprofits affected by the remnants of Hurricanes Ida and Henri in 2021.

- **Community Collaborative Initiative (DEP)**

The DEP used \$20 million in American Rescue Plan funding to provide technical assistance and grants to local entities to enhance stormwater management and resilience. This includes assistance through the [Community Collaborative Initiative](#) (CCI), which partners with urban communities to align community, economic, and natural resource needs, promoting quality of life, revitalization, and equitable economic development in overburdened communities. CCI engages communities as partners, fostering regional collaboration, and supporting equitable projects that address climate impacts. By connecting communities with experts and resources, CCI addresses the amplified effects of climate change due to historical disinvestment.

- **Conservation Cost Share Program (NJDA)**

Actively seeking funding mechanisms to reinvigorate the Conservation Cost Share Program (CCSP), an existing cost share program that has been inactive since the early 2000s due to lack of funding.



ENSURE EQUITY AND TRANSPARENCY IN RESILIENCE INVESTMENTS



Every homeowner and business owner in New Jersey deserves the opportunity to reduce flood risk to their property, as long as the selected measures will not increase the risk to others. However, not everyone has equal access to the resources required to increase resilience. State agencies have updated programs to ensure disadvantaged populations across the state are not left disproportionately vulnerable to flooding.

These initiatives are not a comprehensive detailing of State agencies work to protect vulnerable populations, but are key programs to improving equitable distribution of flood resilience investment across the state.



Camden, NJ

PRIMARY ACTIVITIES:

Affordability Scoring Methodology for the Water Bank (DEP)

To equitably distribute financial assistance and support the most disadvantaged communities in New Jersey, the NJWB has implemented a tiered system for affordability scores. The tiered structure ensures that communities facing the highest economic challenges receive the most beneficial financial assistance. The NJWB has developed tiered affordability funding packages to provide additional financial assistance to the most disadvantaged communities.

Co-designing Natural & Nature-based Flood Resilience Projects in Disadvantaged & Overburdened Communities (DEP)

As part of the Building a Climate Ready NJ initiative, DEP, in collaboration with regional partners, will identify and prioritize natural and nature-based projects in existing plans (e.g., Resilient NJ and the [Coastal Ecological Restoration and Adaptation Plan Tool](#)) for technical design assistance based on several factors including, but not

limited to, projects that are located in disadvantaged and overburdened communities, advantageous to ecosystem and community resilience, and provide risk reduction and co-benefits. New Jersey Sea Grant Consortium will lead a comprehensive engagement effort to further select 18-20 of the identified projects and co-design them preparation for future funding applications.

Stormwater Utilities Technical Assistance (DEP)

The Clean Stormwater and Flood Reduction Act allows local governments to create stormwater utilities funded by fair, proportionate fees. In 2022, DEP funded a technical assistance program for the formation of Stormwater Utilities (SWUs), engaging the services of qualified consultants on behalf of the selected entities to provide individualized services to assess the feasibility of SWU creation in accordance with the Department's SWU guidance. This program allocated \$2,000,000 to support 15 entities, including 13 towns interested in SWUs for their individual towns, and 5 entities interested in investigating the feasibility of forming two regional SWUs.



PRIORITY 6:
COASTAL
RESILIENCE
PLAN



INTRODUCTION

The coastal areas of New Jersey provide immeasurable value as places of residence, tourist destinations, cultural and historic assets, ecological resources, and economic centers within the state. While climate change will impact all of New Jersey, the challenges are especially acute in the diverse areas of the coastal zone. In addition to the climate impacts seen statewide, the threats of sea-level rise and increasing coastal storms are making coastal communities more vulnerable and the response more complex. Uncoordinated development throughout the coastal zone has resulted in both dense development, frequently in at-risk low-lying areas, and sprawling development separated from critical infrastructure. These development patterns

have put buildings, infrastructure, and people at risk and have resulted in loss of life and damage to property from coastal storms' erosion and flooding. Science strongly indicates that these issues will only be exacerbated by climate change in the coming decades.

This section of the *Statewide Flood Resilience Initiatives* report focuses on actions and targeted strategies State agencies are taking to improve the effectiveness, equity, and sustainability of coastal resilience planning and projects. These actions and strategies address the unique coastal hazards of sea-level rise, tidal flooding, storm surge, and coastal erosion.

FLOOD-RELATED STRATEGIES IN THIS PRIORITY

- Incentivize and Support Community Resilience Planning
- Update Coastal Management Regulations and Policies to Reflect Sea-Level Rise and Other Climate Change Projections
- Sustain and Strengthen Tidal Marshes to Provide Ecological and Community Resilience
- Manage Shoreline Stabilization with Nature-based Features
- Manage Coastal Beaches and Dunes to Reduce Erosion and Storm Damage
- Reduce Flood Risk to Existing Buildings and Infrastructure
- Support and Incentivize Movement to Safer Area



Atlantic City, NJ



INCENTIVIZE AND SUPPORT COMMUNITY RESILIENCE PLANNING

All coastal communities share the compounding impact of sea-level rise and flooding but the solutions needed to increase community resilience to coastal hazards are unique to local aspects such as topography, development patterns, infrastructure, the heritage and culture of a town, and socioeconomic factors. This strategy includes actions State agencies are taking to empower and incentivize coastal counties and municipalities to build resilience at the local level, regardless of capacity, size, location, or wealth.

**SPOTLIGHTED
INITIATIVE**

Building a Climate Ready NJ (DEP)

This is a statewide [initiative](#) led by the New Jersey Department of Environmental Protection (DEP) focused on helping communities—particularly in the state’s 16 coastal counties—prepare for and adapt to hazards including increasing flood risks driven by climate change. Funded by a \$72.5 million grant from National Oceanic and Atmospheric Administration’s (NOAA’s) Climate Resilience Regional Challenge, the program supports community-led planning, development of flood resilience projects, implementation of restoration-based projects, and an educate, climate awareness, training, and engagement (EduCATE) initiative. The initiative prioritizes overburdened communities that are most vulnerable to flooding, ensuring that resilience efforts are equitable and inclusive. By combining technical assistance, public engagement, and workforce development, Building a Climate Ready NJ aims to build long-term capacity for flood adaptation across the state.

PROJECT HIGHLIGHTS

\$72.5M in total funding

432 municipalities in the project area spanning 16 counties

203 municipalities identified as disadvantaged and overburdened communities

15 NJ-based partners leading this work

Belmar, NJ

PRIMARY ACTIVITY:

Resilience Designs for Liberty State Park (DEP)

Resilience planning has been a design pillar throughout the [Liberty State Park Revitalization Program](#). This started with a flood resilience assessment that considered future sea level rise. With the assessment findings in mind, flood resilience design elements were incorporated into the plans, including: “living with water” so that historic/already built features can withstand flooding and incorporating native and resilient plant communities into the landscaping design.



SUPPORTING STATE AGENCY ACTIONS:



- **Living Shoreline at A15 Kayak Launch (DEP)**

A living shoreline is getting constructed at the A15 kayak launch to protect Long Beach State Park from storm surge and wave action and any resulting flooding.



- **Beach Erosion Protection (DEP)**

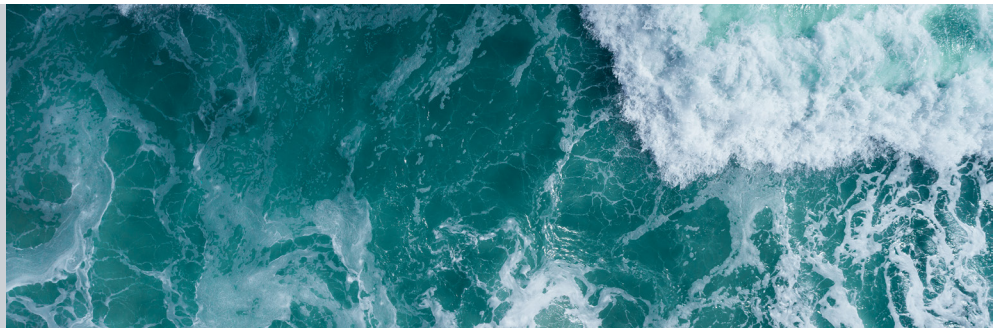
At Island Beach State Park, staff are planting dune grass and installing dune fencing to protect against erosion caused by increasing sea levels.



UPDATE COASTAL MANAGEMENT REGULATIONS AND POLICIES TO REFLECT SEA-LEVEL RISE AND OTHER CLIMATE CHANGE PROJECTIONS

The demand to develop and redevelop in New Jersey's coastal areas is not anticipated to diminish; for many, the coast is a distinct lifestyle. Development demands must be balanced with efforts to reduce the vulnerability of coastal communities, infrastructure, and ecosystems from flooding and severe storms. To effectively address increasing climate risk and protect natural environments, life, and property, anticipated climate change impacts must be better understood, and climate change considerations, including sea-level rise and its consequences like sunny day flooding, must be incorporated into the regulations and policies that govern New Jersey's coastal area. These activities detailed below include updates to reflect the level of risk that will occur in the coastal zone.

SPOTLIGHTED INITIATIVES

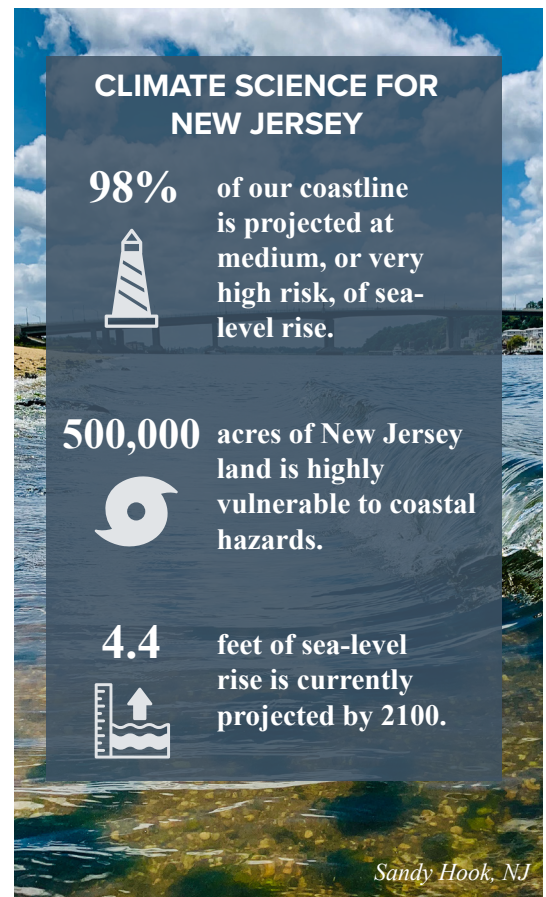


Resilient Environments and Landscapes Rules (DEP)

The [Resilient Environments and Landscapes \(REAL\)](#) reforms use the best available climate science specific to New Jersey in order to modernize the State's coastal flood safety and land resource protection rules, which were originally developed before modern flood and water quality protections were established. The REAL reforms will better protect lives, property, and infrastructure, while preserving the economic vitality of coastal communities as sea-level rises and storms and flooding become more intense with a changing climate. There are several important aspects to the REAL proposed rules, which, among other things, require the coastal zone flood-elevation for new and substantially improved buildings and infrastructure be built 4 feet above the Federal Emergency Management Agency (FEMA) base flood elevation. It also amends State regulations to align with the National Flood Insurance Program, encourage nature-based solutions, and improve DEP's permitting process.

This rule update protects life and property from the damage of future coastal flooding by requiring resilient design and construction in zones that will be inundated in the future. The rules also ensure that developers choose a design that will be resilient to flooding for years to come, so that homeowners and renters do not inherit construction built for only yesterday's flood, when we know tomorrow's will be worse.

The REAL rules will not impact flood insurance mapping or require people to obtain flood insurance. Federal flood insurance rates are set by FEMA's Flood Insurance Rate Maps. Only FEMA can amend or alter these maps.



SPOTLIGHTED INITIATIVES (CONT.)

Science & Technical Advisory Panel Report Update (DEP)



In 2016, Rutgers University convened a panel of scientists to identify and evaluate the latest science on sea-level rise projections and coastal storms to inform coastal decision-making. This panel, the New Jersey Science and Technical Advisory Panel (STAP), was re-convened in 2019 on behalf of DEP to update its findings based on new climate science and data. The [2019 STAP report](#) formed the scientific basis for critical DEP efforts and decisions, including the REAL rule reforms.

In 2024, DEP again called for a re-convening of the STAP to re-evaluate and update its findings on sea-level rise, future storms, and flood hazards to support risk-informed planning and decision-making efforts in New Jersey. The updated STAP report is expected to be released in 2025.

PRIMARY ACTIVITY

Account for Sea-Level Rise in Supplemental Environmental Projects (DEP)

[Supplemental Environmental Projects](#) (SEPs) are environmentally beneficial projects agreed to as part of a settlement agreement between the government and those that have violated New Jersey environmental rules and regulations. When evaluating a SEP proposal, DEP considers whether the proposed location may be subject to future sea-level rise inundation and whether, and to what extent, that would impact the project’s long-term viability.



Wildwood, NJ



SUSTAIN AND STRENGTHEN TIDAL MARSHES TO PROVIDE ECOLOGICAL AND COMMUNITY RESILIENCE

The initial Coastal Resilience Plan for New Jersey identified that tidal wetlands provide more than \$1.24 billion per year in ecosystem services. Wetlands, marshes, coastal forests, estuaries, and maritime dunes each provide specific ecosystem services and work together to provide resilience to New Jersey's shoreline through habitat health, increased protection, and economic opportunities. For example, tidal wetlands improve water quality by filtering coastal waters, making them prime fishing and swimming areas. A loss of marsh would result in a sharp decline in crab, fish, and bird populations, leading to a collapse of the recreational and commercial fishing industries and ecotourism.

State agencies continue to advance individual projects and ongoing programs to protect the state's tidal wetlands and support other levels of governments, property owners, and conservation organizations in making climate-informed decisions to restore, enhance, and protect these critical natural resources.

SPOTLIGHTED INITIATIVE

Regional Sediment Management Framework (NJDOT, DEP)

The New Jersey Department of Transportation funded, led and published [A Framework for Managing Sediment in the Back Backs of New Jersey](#) (NJDOT 2024) with the support of the [NJ Coastal Management Program](#) and many other state and federal agencies, non-governmental organizations, and academia, which addressed the challenges and recommended actions around the beneficial use of dredged material. Many of the actions are already being implemented and even since the time of this report, great strides have been made in cooperative approaches for the utilization of sediment in ecological restoration projects.

PRIMARY ACTIVITIES:

Coastal Management Program Wetland Enhancement Strategy for Sea-Level Rise Adaptation (DEP)

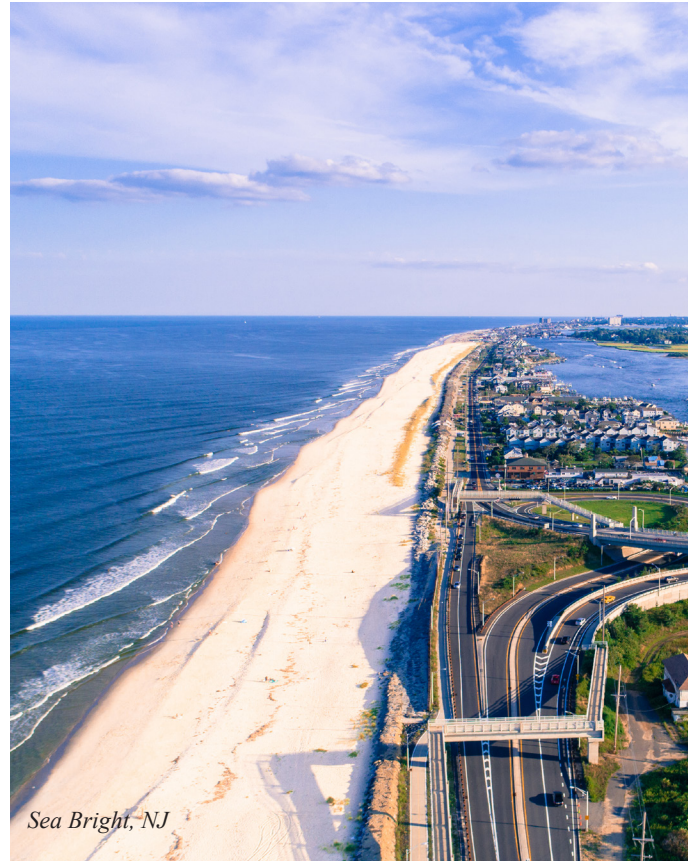
The Coastal Management Program Wetland Enhancement Strategy will identify regulatory and/or programmatic changes to facilitate inland migration of coastal wetlands in response to sea-level rise. The current (2021-2025) strategy is looking at sea-level rise adaptation for coastal wetlands. The 2026-2030 [strategy](#) is under development. The research team will assess migration pathways and barriers and develop a web-based tool, integrated into NJResTOrS and NJ Adapt, to assess vertical sediment accretion and horizontal marsh erosion.

Beneficial Use of Dredged Material (NJDOT, DEP)

The NJDOT is leading the effort toward 100% beneficial use of dredged material and has developed strong partnerships with the DEP, the U.S. Fish and Wildlife Service, and key stakeholders such as the Nature Conservancy and the American Littoral Society. These partnerships have implemented strategic ecological and resilient coastal improvements to address marsh subsidence, shoreline protection, and extreme weather impacts, all while advancing the strongest state channel dredging construction program in the nation. To date, over 1 million cubic yards of material was placed at projects such as Abbott’s Meadow, Fortescue Creek, and Dredged Hole 18, and an additional 50 acres will be used this fall at Stout’s Creek marsh.

Coastal Ecosystem Restoration & Resilience – Sawmill Creek Wildlife Management Area (NJSEA)

The Sawmill Creek Marsh, which includes the Sawmill Creek Wildlife Management Area, is being restored by the NJ Sports & Exposition Authority (NJSEA). This is a five-



year project which is part of Building a Climate Ready NJ initiative. NJSEA will build on over 20 years of experience restoring the ecological habitats of the Meadowlands to create a diverse coastal ecosystem with strengthened shorelines, revegetated high and low marshes, and upland islands. The improvements at Sawmill Creek Marsh will enhance the area’s ability to absorb storm surges and filter water, provide expanded wildlife habitat, offer improved access to natural areas and waterways, and reduce the risk of flooding for nearby communities like Kearny and infrastructure like the New Jersey Turnpike Authority and Seacaucus Greenway.

SUPPORTING STATE AGENCY ACTIONS

- **Natural Climate Solutions Grant Program (DEP)**

The [Natural Climate Solutions Grant Program](#) provides funds for eligible projects that create, restore, or enhance New Jersey’s natural carbon sinks, including salt marshes, seagrass beds, forests, urban parks and woodlands, and street trees. These ecosystems act as natural buffers, absorbing storm surges, stabilizing shorelines, and reducing erosion, thereby protecting coastal communities from flooding.



MANAGE SHORELINE STABILIZATION WITH NATURE-BASED FEATURES

Where appropriate, New Jersey promotes natural and nature-based (NNB) solutions for shoreline stabilization. The Coastal Resilience Plan identifies the value of NNB solutions in protecting upland structures and providing ecological benefits. However, identifying appropriate locations for these projects can be difficult due to permitting and policy challenges, feasibility, and planning for future environmental conditions. The State continues to seek ways to enhance NNB practitioners' ability to identify communities with shoreline stabilization needs and select appropriate sites for NNB projects.

SPOTLIGHTED INITIATIVE

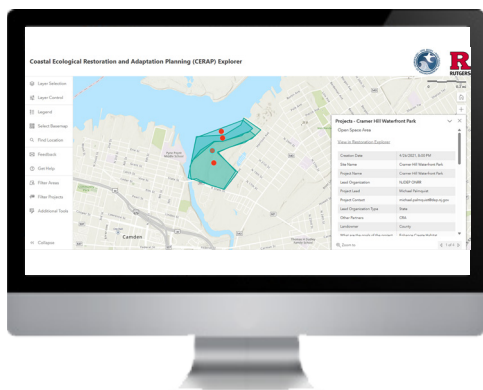


Dunes system along the Jersey Shore

NJ Restoration Tool Organization Suite (DEP)

The New Jersey Restoration Tool Organization Suite (NJResTOrS) is a web-based tool developed by Rutgers University that supports DEP's Coastal Ecological Restoration and Adaptation Plan (CERAP). It helps planners and stakeholders identify and prioritize vulnerable coastal areas for restoration by mapping eight key "Issues of Concern," such as shoreline erosion, storm damage, and social vulnerability, enabling identification of areas vulnerable to flooding and storm damage.

By mapping key risk factors, including shoreline erosion, storm surge exposure, and social vulnerability, NJResTOrS guides ecological restoration efforts that enhance natural flood defenses such as wetlands, dunes, and living shorelines. These nature-based solutions absorb stormwater, reduce wave energy, and restore the land's ability to buffer against extreme weather.



CERAP Explorer

Specific tools in the NJResTOrS suite include:

- [CERAP Explorer](#): Interact with a map displaying shoreline restoration projects and project areas.
- [Wetlands Assessment Tool for Condition & Health \(WATCH\)](#): Evaluate the condition and trajectory of a tidal wetland site to inform decision-making, restoration project prioritization, and the selection of restoration tactics.
- [The Living Shoreline Feasibility Model \(LSFM\)](#): Determine the viability of a living shoreline in a certain location by filling out a form with physical, biological, site access, and community resources metrics.

MANAGE COASTAL BEACHES AND DUNES TO REDUCE
EROSION AND STORM DAMAGE

New Jersey's barrier island beach and dune ecosystems, including the beach, dune, and integral back bay wetlands and marsh islands, are critical to the social, ecological, and economic fabric of the state. The beach and dune systems are the first line of defense against ocean waves and storm surge for vulnerable residences, businesses, infrastructure, and habitats not only located on the barrier island but on the mainland as well. New Jersey's beach and dune systems protect billions of dollars of coastal development and the multi-billion-dollar tourism and coastal recreational industries that rely on beaches and back bays for recreation and intact ecosystems. Beaches and dunes are some of New Jersey's most valuable natural resources, yet most of them sustain repetitive erosion from coastal storms and often do not receive sand replenishment for years at a time. These impacts are only expected to increase due to sea-level rise and the increased intensity of coastal storms, putting the communities, economy, and ecosystems at greater risk to flooding.

SPOTLIGHTED INITIATIVE

Beach Nourishment (USACE, DEP)

After Hurricane Sandy, the United States Army Corp of Engineers (USACE) estimated that beach and dune restoration projects in New York and New Jersey saved \$1.3 billion in avoided damages. In New Jersey, the restoration and maintenance of beaches is a shared effort between the State, federal, and local governments, and to a lesser extent, non-governmental organizations, but is administered by DEP with monies from the Shore Protection Fund. This involves designing and reconstructing eroded dunes and beaches by adding sediment and other protective structures. Since Hurricane Sandy, New Jersey has spent over \$1.2 billion rebuilding the barrier island beach and dune system along the Atlantic Ocean coastline using funding from federal aid programs and the Shore Protection Fund's \$25 million annual State appropriation.

The DEP will continue the work closely with the USACE to improve the efficacy and adaptability of engineered beach and dune designs, accounting for erosion and deposition rates, identification of new sand sources to supply nourishment projects, and increase the ability of engineered beach and dune designs to adapt to changing conditions.





REDUCE FLOOD RISK TO EXISTING BUILDINGS AND INFRASTRUCTURE

New Jersey is the most densely populated state in the United States, with 80 percent of the population residing in the coastal zone. Development patterns have resulted in a high density of buildings and infrastructure in vulnerable coastal areas which are subject to routine flooding from high tides, tropical storms and hurricanes, and winter storms like nor'easters. As sea-level rise continues, the buildings and infrastructure along New Jersey's coast will be exposed to more frequent and intense flooding events. Plans to address current and future climate change conditions must address the existing critical buildings and infrastructure that are at risk now and in the future. If existing buildings and infrastructure are not adapted for future climate change conditions, every day functions will increasingly be interrupted leading to impacts on every aspect of life.

SPOTLIGHTED INITIATIVES

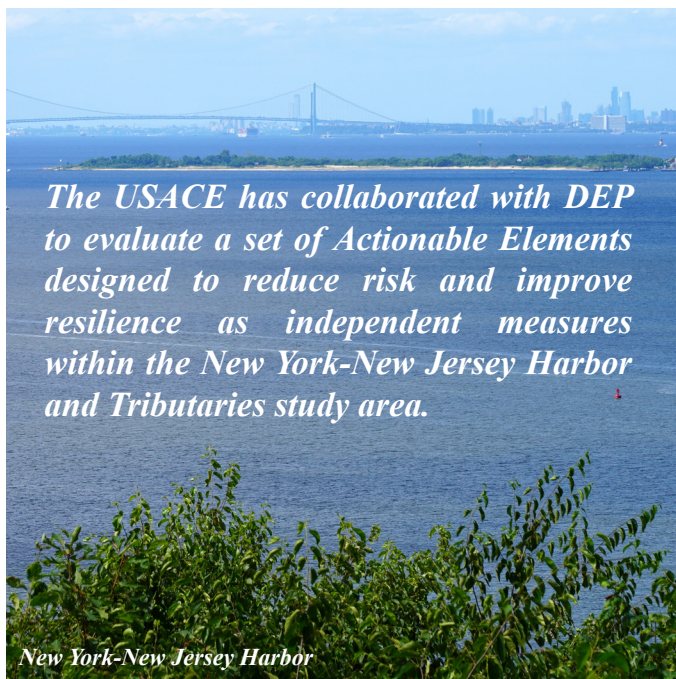


Camden, NJ

NY-NJ Harbor and Tributary Study (USACE, DEP)

Coastal storms have severely impacted the North Atlantic Coast of the United States, including the New York-New Jersey Harbor region. In response to these storms, the USACE is investigating measures to manage future flood risk in ways that support the long-term resilience and sustainability of the coastal ecosystem and surrounding communities, and reduce the economic costs and risks associated with flood and storm events. In support of this goal, the USACE completed the North Atlantic Coast Comprehensive Study, which identified nine high-risk, focus areas on the north Atlantic Coast for further in-depth analysis into potential coastal storm risk management measures. One of the nine areas identified was the New York-New Jersey Harbor and Tributaries study area.

USACE has collaborated with the New York State Department of Environmental Conservation (NYSDEC), New York State Department of State (NYS DOS), DEP, and New York City Department of Environmental Protection (NYCDEP) to evaluate a set of Actionable Elements as an interim response to the [New York-New Jersey Harbor and Tributaries Study](#) (HATS). These elements are designed to reduce risk and improve resilience as independent measures within the Study Area. They can serve as interim



The USACE has collaborated with DEP to evaluate a set of Actionable Elements designed to reduce risk and improve resilience as independent measures within the New York-New Jersey Harbor and Tributaries study area.

New York-New Jersey Harbor

coastal storm risk management tools while the broader analysis, documented in the Draft Integrated Feasibility Report and Tier 1 Environmental Impact Statement (September 2022), continues—pending available funding.

SPOTLIGHTED INITIATIVES (CONT.)

Rebuild By Design (RBD) Projects (DEP)

Meadowlands



The [RBD Meadowlands project](#) focuses on a 5,000+-acre area on the Hackensack River consisting of Carlstadt, Little Ferry, Moonachie, South Hackensack, and Teterboro. The project aims to protect critical infrastructure, businesses, residences, and ecological resources, and increase awareness of resilience and water management in the region.

The major project components being designed and constructed include a new 50 cubic foot per second (cfs) pump station and force main on Losen Slote in Lower Ferry and a new 500 cfs pump station with channel improvements on East Riser Ditch in Carlstadt and Moonachie. If funding allows, project components also include a new park and numerous green infrastructure-type improvements that are being designed for municipality owned buildings within the project area. This project is currently under construction.

Hudson River



The [RBD Hudson River project](#), also known as the “Resist, Delay, Store, Discharge” project, is a comprehensive urban flood risk reduction strategy that will deploy various techniques to overcome flooding challenges in Hoboken, the southern portion of Weehawken, and the northern portion of Jersey City. Each component of the project will use different methods, such as programmed hard infrastructure and soft landscape for coastal defense (Resist); policy recommendations, guidelines, and urban infrastructure to slow rainwater runoff (Delay); develop interconnected green and gray infrastructure to store and direct excess rainwater (Store); and water pumps and alternative routes to support drainage (Discharge).

Back Bay Study (USACE, DEP)

In response to the Disaster Relief Appropriations Act of 2013, USACE completed the North Atlantic Coast Comprehensive Study, which identified the [New Jersey Back Bays \(NJBB\)](#) as 1 of 9 high risk focus areas requiring further study. The Philadelphia District has overseen the execution of the NJBB feasibility study in partnership with the DEP to develop a plan that reduces storm impacts to the bay shoreline of the study area that accounts for current storms, future storms and anticipated levels of sea level change.

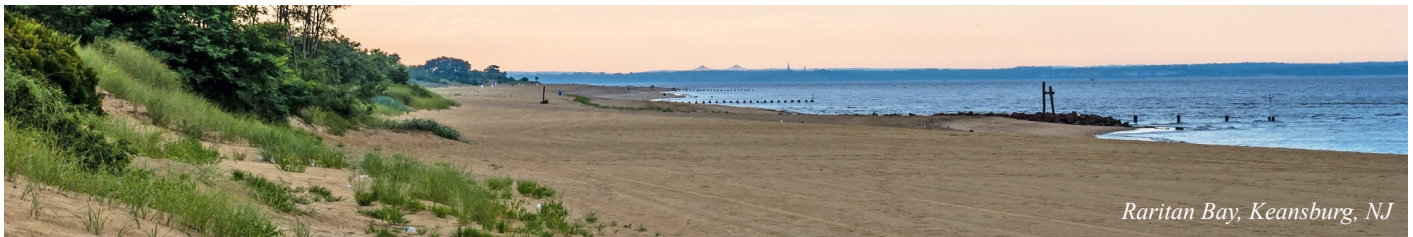


SPOTLIGHTED INITIATIVES (CONT.)

The original draft feasibility report in 2021 called for the creation of two large inlet storm surge gates at Manasquan and Barnegat Inlets along with two cross bay barriers adjacent to Atlantic City and Ocean City and the raising of structures. Based on feedback received during the comment phase, the NJBB USACE Team realized such measures would take significantly more time to study prior to implementation.

Subsequently, in consultation with USACE leadership, the NJBB team pivoted to implementing early actionable items, which comprised of a reduced scope as seen below:

- Elevation of approximately 1,700 structures
- Floodproofing ~280 Critical Infrastructure Elements (Police, Fire, Ambulance, Hospital, Pharmacy)
- Creation of Nature Based Solutions along two Potential Sites



Raritan Bay, Keansburg, NJ

Shore Protection (USACE, DEP)

DEP is responsible for the operation and maintenance of three Coastal Storm Risk Reduction Projects along the Raritan Bay in Monmouth County. These projects all serve to reduce flood damage during coastal storm events. DEP partners with the USACE to conduct studies, design and plan, construct protective structures, and replenish beaches and dunes.

The Port Monmouth Hurricane and Storm Damage Reduction Project is a vital component of the comprehensive flood risk management plan for the region. It aims to mitigate the impact of future hurricanes and storm surges through the design and construction of a tide gate, pump stations, floodwalls, levees, and road raising.

The Union Beach project occupies approximately a 1.8 square mile area along the Raritan Bay. The low-lying area was devastated by Superstorm Sandy and is experiencing progressively worsening flooding. The project is partially constructed, with terminal groins, dune crossovers, an outfall extension, and beach and dune nourishment. Subsequent phases are currently under design and will contain additional flood control structures.

Finally, there is an ongoing Coastal Storm Risk Management Feasibility Study occurring in Middletown (Belford), Keansburg, Keyport, Old Bridge (Laurence

Harbor), and Aberdeen (Cliffwood Beach) to develop a plan to reduce storm risk and flood damage. Flood risk mitigation will likely include both hard and soft structures, and nature-based solutions. Currently in early stages, the study will ultimately select a plan and move into an engineering and design phase.

SUPPORTING STATE AGENCY ACTIONS

- **Money Island Restoration and Stabilization (DEP, NJDOT)**

The Money Island restoration project in Downe Township is one example where, following voluntary post-Sandy buyouts by Blue Acres, DEP removed concrete from shoreline adjacent to Nantuxent Creek, the DOT provided maintenance-dredging of the creek and beneficially used the material, and DEP installed 5 nearshore breakwaters and created a 1,000-plus feet of grassy dune. This collaborative project protected the beach, dune, and nearshore breakwaters from wave energy and storm surge, while adding beneficial habitat to the region.

SUPPORT AND INCENTIVIZE MOVEMENT TO SAFER AREA



With climate change resulting in more severe and frequent flooding, as this report has discussed throughout, it is increasingly critical to guide and support residents in relocating to areas less vulnerable to these impacts. The prospect of relocating due to climate-induced hazards presents significant emotional, financial, and logistical challenges for individuals and communities and requires consideration of both community ties and long-term safety. The State seeks to support those relocating to areas less prone to flooding hazards, and in determining best practices, it examines local experiences, equity considerations, and property value impacts. These efforts are essential to fostering safer, more resilient communities and ensuring that buyout programs are integrated into a comprehensive climate adaptation framework.

PRIMARY ACTIVITY:

Better Buyouts (DEP)

[Better Buyouts](#) is a Rutgers University-Regional Plan Association (RPA) collaborative research effort with DEP to inform development of an updated policy framework for the Blue Acres program. This project investigated flood buyouts in New Jersey through three research tasks focusing on local experiences with buyouts, equity indicators related to successful buyouts, and buyouts' impact on property value. Each task delivered a separate report that presented results and offered insights that could enhance the program and its processes. The research undertaking also included a Rutgers Eagleton survey to examine public attitudes toward coastal fiscal problems and solutions, including buyouts.

The insights derived and the task-specific research findings were well-aligned with New Jersey's existing Climate Change Resilience Strategy (CCRS) and the DEP's [Strategic Climate Action Plan](#). The research recommendations identify distinct actions that support the expansion and enhancement of the Blue Acres buyout program including the need to incentivize local buyout planning, address socioeconomic and equity concerns within the buyout process, and support post-buyout land use opportunities. These actions as well as some changes that have already been identified by DEP, will set a course to improve the efficacy of the State led buyout program and will serve to better integrate it into New Jersey's increasingly holistic approach to climate resilience planning.



Blue Acres Project Site



NEW JERSEY

STATEWIDE FLOOD RESILIENCE INITIATIVES

2025

