

## MAJOR FINDINGS

The maps on the interior pages illustrate that many of Little Egg Harbor Township's community assets lie outside the limits of inundation extents in all three vulnerability scenarios. However, several critical assets, discussed below, are vulnerable to flooding.

**Coastal Marsh System:** The resource most at risk of flood inundation under all scenarios is the municipality's coastal marsh system, most of which is located within the Forsythe National Wildlife Refuge and Great Bay Boulevard Wildlife Refuge. These refuges, which encompass a majority of the town's wetlands complex, serve as the breeding grounds for much of the shellfish, fish, and other seafood harvested from local waters. The wetlands complex provides unseen but considerable flood hazard mitigation, protecting the community against storm surge and attenuating wave action. Little Egg Harbor Township and Tuckerton Borough have a mix of resiliency measures under way in the Forsythe marsh to restore wetland vegetation by depositing a thin soil layer to elevate plant height, replanting beaches, and creating [living shorelines](#).

**Critical Access Routes:** Great Bay Boulevard is a state-designated evacuation route and one of the township's few north-south connectors. Radio Road is a primary access route to and from more than 4,000 dwellings on Myrtle Island and Osborn Island. Portions of both roads currently experience minor flooding during moon tides, and rising sea levels will increase flood frequency, regularly either trapping residents in or excluding them from their homes. Storm surge and/or wave action is likely to increase erosion that could undermine these roadways, creating additional access issues for residents and businesses they serve.

**Community Gathering Facilities:** Key community assets with a moderate likelihood of inundation by 2050 in the event of a 1-percent storm include the Jersey Shore Baptist Chapel (Asset #18), the Living Waters Christian Center Church (Asset #19) and the Little Egg Harbor Township Community Center (Asset #30). The flooding potential for these facilities undermines their potential use as evacuation centers during storm events. The parking lot of Seacrest Village (Asset #29), a private nursing home and rehabilitation center, is likely to be inundated in the event of a 1-percent storm by 2050, which will impede evacuation. Although not expected to be affected by inundation, the township schools (Assets #22, 23, 24, 25, 26, 27) do serve as emergency shelters during storm events. Using these facilities for shelter in the event of more frequent storms by 2050 could conflict with state requirements to provide 180 days of schooling annually.

**Commercial Marinas:** The marinas in Little Egg Harbor Township represent a significant economic and cultural resource. O.U. of necessity these facilities are located at the municipality's immediate coastline and therefore all of them (Assets 5, 8, 9, 10, 11, 20, 21) are at considerable risk of future flood inundation.

## RECOMMENDED ACTIONS

The township has developed detailed emergency response plans; however, the following initiatives should also be considered:

- **Marsh Restoration:**
  - Develop an [assessment and management program](#) to monitor marsh conditions, including shoreline erosion.
  - Consider appropriate restoration applications based on specific wetland conditions, such as thin layer sediment deposition, living shorelines, and filling mosquito ditches in marsh areas, where

appropriate, to restore hydrology and improve marsh health (ex. [Assessing Land/Natural Shoreline, MD, Fire Island, NY](#)).

**Zoning/Land Use:** Consider development of a sea-level rise overlay zone that allows for gradual land use and development intensity changes over time.

## Public Outreach and Education:

- In collaboration with Little Egg Harbor's Green Team Advisory Committee, School District Green Team, Jacques Cousteau National Estuarine Research Reserve develop a [community education and outreach program](#) focused on climate change, stormwater management, and flood mitigation.
- Apply for [Sustainable Jersey & Sustainable Jersey for Schools Small Grants](#) to facilitate the implementation of food mitigation activities.
- Encourage the School District to prepare a [Green Infrastructure Assessment & Plan](#) for stormwater management and flood control and develop curriculum to build environmental awareness through the [Stormwater Management in Your Schoolyard](#) program.
- Participate in FEMA's [High Water Mark Initiative](#), which posts High Water Mark signs in prominent places to raise awareness of flood risk.

**Capital Budget:** Develop a capital improvement plan to systematically evaluate long-term municipal investments and devise strategies to fund and implement innovative adaptation/restoration projects to protect community assets.

## Evacuation Strategy:

- Develop/assess/update an [evacuation plan](#) that prescribes clear evacuation protocols. Consider mandating early evacuation near portions of evacuation routes that will be inundated.
- Install tide gauges, and/or crest stage gauges, to monitor tide heights on an ongoing basis and provide for early and/or automatic warning system when tides approach flood levels.
- Identify emergency shelters located outside areas of projected flood inundation.
- **Stormwater Management:**
  - Develop a storm drainage maintenance plan that includes installation of backflow preventers on storm drain outlets and expansion of drainage system (added drain pipes).
  - Apply green stormwater management techniques to promote groundwater recharge at a residential or municipally-wide scale, and require stormwater infiltration in suitable areas (resource: Rutgers University [Green Infrastructure Guidance Manual](#)).

**Community Transformation:** Pursue strategic relocation strategies including voluntary buyouts, [transfer of development rights](#) and [selling easements](#) triggered by sea level rise rates.

**Technical Assistance:** Seek technical assistance for resiliency planning through the [Ecologically Based Hazard Mitigation Program](#) administered by the New Jersey Department of Environmental Protection.

THE PROJECT HAS BEEN MADE POSSIBLE BY FUNDING PROVIDED BY THE NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION (NOAA) THROUGH RESILIENCY NETWORK GRANT PROGRAM FUNDING. THE NEW JERSEY DEPARTMENT OF ENVIRONMENTAL PROTECTION (NJDEP) THROUGH THE ECOLOGICALLY BASED HAZARD MITIGATION PROGRAM (EBHM) HAS PROVIDED FUNDING FOR THE COMMUNITY ASSETS VULNERABILITY ASSESSMENT AND FLOOD RISK MAPPING.

# LITTLE EGG HARBOR TOWNSHIP COMMUNITY ASSETS VULNERABILITY ASSESSMENT

May 2016

## WHAT IS A COMMUNITY ASSETS VULNERABILITY ASSESSMENT?

Little Egg Harbor Township's Community Assets Vulnerability Assessment was undertaken to explore: **1)** the degree to which the community's built, natural, and social assets will be affected by sea-level rise and flooding; and **2)** the consequences and risk such vulnerabilities pose for the community. The assessment ties to and builds on Little Egg Harbor's [Vulnerability and Exposure Analysis](#) that was completed in February 2015. The chief objective of this assessment is to engage the township's local officials, staff and residents in a discussion about which assets are most in danger of exposure to episodic flooding as well as permanent inundation from sea level rise and the actions the township can take to help minimize that exposure.

## WHY IS THE ASSESSMENT IMPORTANT?

Rising sea levels, more frequent and progressively severe storms, and increasing precipitation, are projected to intensify with climate change over time. These effects will pose growing flood risks that will challenge the viability of coastal communities throughout the country. These issues are particularly pronounced in New Jersey, which is experiencing a faster rate of sea-level rise than the global average while simultaneously undergoing coastal subsidence. Unfortunately, the 100-year floodplain (or 1-percent storm), a minimum regulatory standard adopted as a safeguard against food risk by the Federal Emergency Management Agency (FEMA) and used by many states, including New Jersey, is based on historical data and does not account for future flood hazards. The Community Assets Vulnerability Assessment help to identify and prioritize adaptation strategies as the township determines how it will focus scarce financial and staffing resources to address future risk.

## THE ASSESSMENT PROCESS

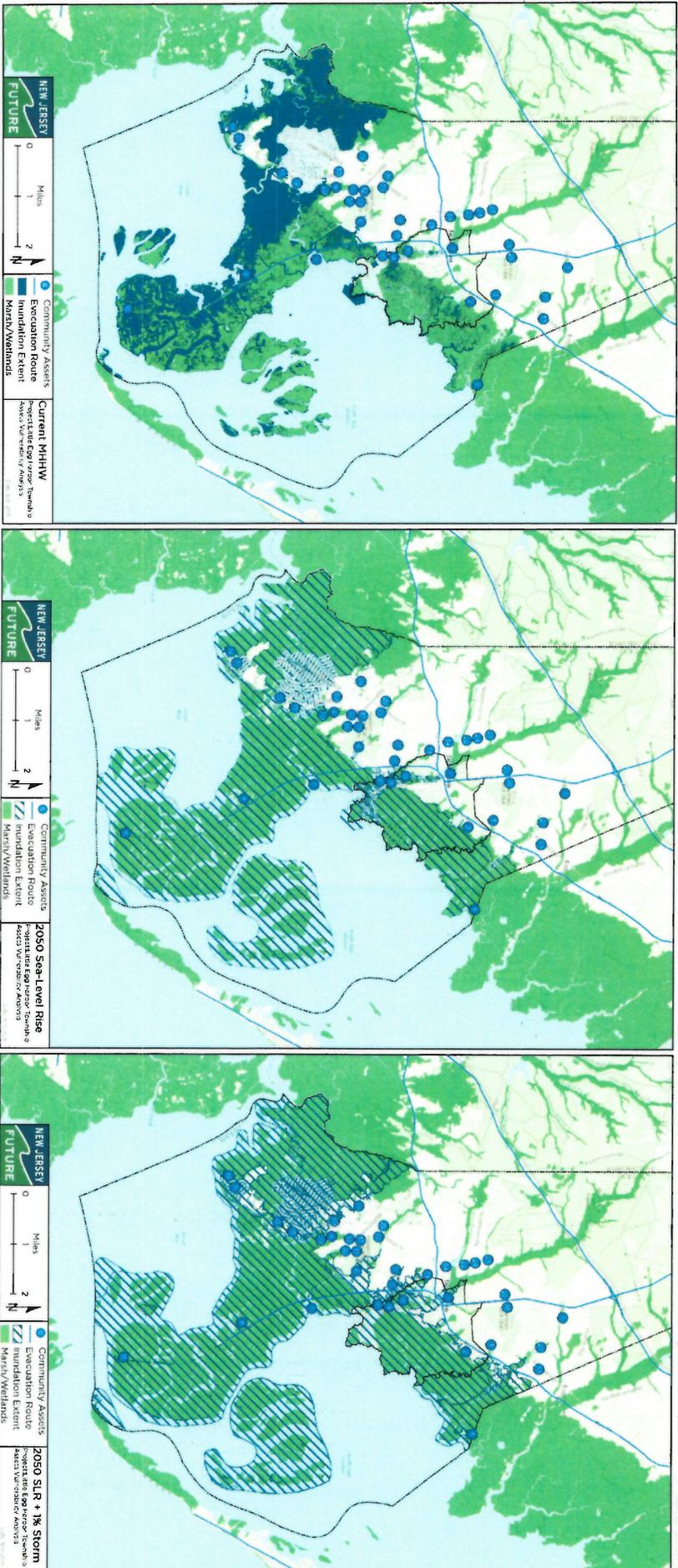
Little Egg Harbor Township convened a diverse working group of municipal representatives and community leaders to participate in the assessment process facilitated by New Jersey Future and Sustainable Jersey. The meetings were held on February 2 and February 26, 2016, at the Little Egg Harbor Township building.

The process began with the creation of a list of the community's critical facilities; community and cultural resources; neighborhoods and commercial areas; and natural resources. The locations of the assets were then plotted on maps that depict areas of inundation under three scenarios: **1)** current-day high-tide conditions; **2)** sea-level rise conditions by 2050; and **3)** a 1-percent storm event added to 2050 sea-level rise conditions (see interior pages). Combining the asset locations with the inundation extent enabled evaluation of the degree to which a given community asset could experience flood damage, measured either by magnitude or frequency of occurrence, and the depth of floodwater during the event.

With the maps in hand, the working group reconvened to consider the community consequences should any of the listed community assets at risk of inundation be permanently damaged and could no longer function. Consequences to the community could include possible injuries and fatalities, property damage, population displacement, public-health impacts, economic impacts, typical operations/daily life interruption, environment degradation, delayed emergency response, exposure to hazardous materials, and strains on the municipal budget. The goal was to prioritize mitigation strategies based on the extent to which the community can continue to function in absence of any particular asset.



# LITTLE EGG HARBOR TOWNSHIP COMMUNITY ASSETS VULNERABILITY ASSESSMENT May 2016



## WHAT THE MAPS SHOW

The Little Egg Harbor Strategic Recovery Planning Report (SRPR), issued in February 2015, evaluated the community's potential flood and inundation risk based on projections of rising sea levels by 2050. This analysis revealed that current nuisance flooding that occurs in township coastal areas during the highest-tide events will become regular occurrences under 2050 sea-level rise projections. This flooding would inundate as much as 31 percent (9,100 acres) of total area of the Township (29,411 acres), flooding 8 percent (1,032) of the community's 13,234 parcels. If a 1-percent storm, the rough equivalent of

Hurricane Sandy when it made landfall, was added to 2050 sea-level rise, 34 percent (9,100 acres) of the total area of the Township would be inundated, flooding 36 percent (4,711) of the total number of parcels in the community. The maps above show the locations of critical community assets and juxtapose those locations against the three inundation scenarios. The townships wetlands and marshes, which buffer storm and wave action, are likely to be inundated permanently and potentially lost as sea levels rise, exposing critical community facilities to flood damage. Many of the townships commercial

marinas and docks (Assets 5, 8, 9, 10, 11, 20, 21) will suffer regular inundation. The Rutgers Marine Field Station (Asset #16), at the tip of the Tuckerton peninsula, will no longer be accessible; Great Bay Boulevard and Radio Road will be compromised as evacuation routes. The township community center (Asset #30) and religious facilities (Assets #18 and #19) that might otherwise be used for shelter during storm events will experience regular flood damage. In addition, by 2050 a 1-percent storm event would entirely inundate residential neighborhoods on Osborn Island and Mystic Island.

## COMMUNITY ASSETS

- 1 Little Egg Harbor Public Works
- 2 Golden Gate Complex
- 3 AT&T Complex
- 4 County MUA Pumping Station
- 5 Parktown Dock
- 6 County Golf Course at Atlantic
- 7 Seaman County Park
- 8 Cape Horn Marina
- 9 Schinps Marina
- 10 Total Marina
- 11 Captain Mike's Marina
- 12 Senior Center
- 13 Osborn Bridge
- 14 Cham Beds
- 15 AC Electric-Moys Farm
- 16 Rutgers Marine Field Station
- 17 St. Theresa's Church
- 18 Jersey Shore Baptist Chapel
- 19 Living Waters Christian Church Center
- 20 Mamo's Marina
- 21 Great Bay Marina
- 22 Pinelands Regional School District
- 23 Pinelands Regional Jr. High School
- 24 Pinelands Regional High School
- 25 RCW Early Education Center
- 26 George Mitchell Elementary School
- 27 Frog Pond Elementary School
- 28 County Branch Library
- 29 Saacrest Village
- 30 Community Center
- 31 Great Bay Reg. Volunteer EMS
- 32 Mystic Island Fire Department
- 33 Parktown Fire Department
- 34 West Tuckerton Fire Department
- 35 U.S. Post Office
- 36 Little Egg Harbor Police Department
- 37 Little Egg Harbor Township Hall

High Potential for Inundation  
 Low Potential for Inundation