



BUILDING ECOLOGICAL SOLUTIONS TO COASTAL COMMUNITY HAZARDS (BESCCH)

Township of Middle Getting to Resilience Recommendation Report

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Prepared by Sustainable Jersey
for the Township of Middle
33 Mechanic Street
Cape May Courthouse, NJ 08210



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Section I. Introduction

The “Getting to Resilience - Recommendations Report” provides a series of suggested actions to help strengthen flood resiliency in the Township of Greenwich, New Jersey. The report includes an overview of the Getting to Resilience (GTR) tool, describes Greenwich’s GTR process, and offers recommendations that will help the township advance its flood resiliency goals and objectives.

GTR is designed to help New Jersey coastal municipalities evaluate their level of preparedness for future flood risks and offers recommendations to improve preparedness through integrated planning, hazard mitigation, and adaptation plans and policies. Sustainable Jersey facilitated the GTR process in Middle through the National Fish & Wildlife Foundation (NFWF) grant, a program managed by the NJ Department of Environmental Protection (NJDEP) Office of Coastal and Land Use Planning to provide tools and technical assistance to municipalities for building ecological solutions to coastal community hazards (BESCCH). The GTR has become an important first step towards municipal flood disaster preparedness and resilience in New Jersey.

Getting to Resilience: A Community Planning Evaluation Tool

The Getting to Resilience (GTR) questionnaire was originally developed and piloted by the NJDEP’s Office of Coastal Management in an effort to foster municipal resiliency in the face of flooding, coastal storms, and sea level rise. The questionnaire was designed to be used by municipalities to identify potential vulnerabilities to flooding, and increase preparedness by linking planning, mitigation, and adaptation. The questionnaire was later adapted by the Coastal Training Program of the Jacques Cousteau National Estuarine Research Reserve (JCNERR), converted into a digital format, and placed on an interactive website. JCNERR further amended the GTR by adding linkages to local, state and federal programs that offer credits or points for conducting some of the activities referenced in the questionnaire, including the National Flood Insurance Program’s (NFIP) Community Rating System (CRS) program as well as the Sustainable Jersey municipal certification program. The GTR is available on a publically accessible website (www.prepareyourcommunity.org) in which any municipality can complete and create a report based on the results at any time.

The GTR questions are organized into five sections that focus on the various aspects of municipal resilience. These include:

- Risk & Vulnerability Assessments
- Public Engagement
- Planning Integration
- Disaster Preparedness & Recovery
- Hazard Mitigation Implementation

While the GTR questionnaire can be completed by any local official or citizen, the questions cover a broad spectrum of disciplines and expertise and is best completed through a collaborative approach with these experts. The ideal process starts with the designation of multi-disciplinary team of experts familiar with the municipality’s current plans, policies and programs related to flood management and resiliency, e.g. the master plan, flood prevention ordinance, hazard mitigation plan, etc. The actual process consists of 1-2 meetings where participants collectively answer the GTR questions in the five

resiliency categories. Recommended participants include land use planners, hazard mitigation planners, emergency managers, floodplain managers, natural resource planners, municipal engineers, elected officials, zoning and permitting officials, public works officials, business administrator, and the municipal clerk. By having these key individuals work together, municipal leaders can empower all of the relevant parties to collaborate on implementing recommendations for building long-term flood resilience. In many cases, the simple act of convening these individuals can help to “break down the silos” that often divide what should be interrelated disciplines and fields—a key step needed when working to build long-term community resilience.

Expert facilitation of the GTR is available to municipalities by JCNERR, Sustainable Jersey and other organizations. Facilitated support provides added expertise and assistance in the process, and typically includes a mapping exercise of future flood hazards to help the municipality begin to assess potential vulnerabilities (unless it was recently conducted as part of another assessment.) The facilitated process also provides municipal leaders with a customized set of well-vetted recommendations and resources to make these suggested next steps more actionable (this report).

What is Resilience?

The Middle Township Getting to Resilience process was facilitated by Sustainable Jersey, a nonprofit organization that provides tools, training and financial incentives to support communities in their sustainability efforts.

Sustainable Jersey defines municipal resilience as “the ability of a community to adapt and thrive in the face of extreme events and stresses.” Through its municipal outreach and collaboration with partners across the state, Sustainable Jersey recognized the need for a big picture strategy to chart the path towards municipal resilience, and to provide a shared framework for discussing resiliency with stakeholders, including communities, local and state officials, academic institutions and organizations. The Municipal Resilience Cycle (Figure 1) illustrates five iterative phases municipalities should move through to increase their resiliency. The GTR sits within both Steps 1 and 2 of the Municipal Resilience Cycle, by focusing on emergency preparedness and launching a discussion regarding risk and vulnerability to future flood events.



Figure 1. Municipal Resilience Cycle (Sustainable Jersey, 2014).

Section II. Township of Middle– Background

Middle Township is the 8th largest community (land coverage) in New Jersey located on the Cape May Peninsula in Cape May County. The township encompasses more than 80 square miles of land and is also the county seat for Cape May County. Middle is composed of many smaller historic, unincorporated communities including: Whitesboro, Burleigh, Del Haven, Dias Creek, Goshen, Goshen Landing, Green Creek, Holly Beach, Mayville, Norburys Landing, Nummytown, Pierces, Pierces Point, Reeds Beach, Shellbed Landing, Swain Point, Swainton, Wildwood Gardens and Wildwood Junction. Middle has a year-round population of 18,911 residents according to the 2010 census, with a considerably higher seasonal population that surpasses 60,000 during the summer months. The township has close to 10,000 housing units and over 4,000 campground sites.

Middle Township GTR Municipal Committee and Process Participants

Middle convened a group of municipal representatives and community leaders to participate in the GTR process facilitated by Sustainable Jersey. The meeting was held on August 9th, 2016 at the Middle Township Hall. The meeting attendees are shown in Table 1, below.

Table 1. Middle GTR Participants.

Participant	Title	Affiliation
Constance Mahon	Township Administrator	Township of Middle
Anne Garrison	Grants & Econ Development Coordinator	Township of Middle
Robert Flynn	Supervisor	Middle Public Works
Sal DeSimone	Construction Official / Floodplain Manager	Township of Middle
Sean McDevitt	Emergency Manager	Township of Middle
Jim Watt	Flood Control	NJ DEP
Patricia Griggs	Regional Repetitive Loss Coordinator	FEMA Region II
Jack Heide	Resiliency Manager	Sustainable Jersey

Sustainable Jersey facilitated the GTR process to include the following steps:

- 1) Review of relevant municipal and multi-jurisdictional documents, plans and reports (completed by Sustainable Jersey in advance of meeting with municipal committee), including:
 - Updated Master Plan (2010),
 - Flood Damage Prevention Ordinance (2014),
 - Cape May County Hazard Mitigation Plan (2015),
 - Middle Township Coastal Vulnerability Assessment (2016), and
- 2) Discussion of Middle flood resiliency successes and challenges (August 4th meeting).
- 3) Preparation of flood hazard mapping visualization materials (completed by Sustainable Jersey following meeting with municipal committee).
- 4) Completion of GTR questionnaire (August 9th meeting).
- 5) Compilation of notes, and targeted research into unanswered questions or concerns at the meeting (completed by Sustainable Jersey following in-person meeting).

- 6) Preparation of recommendations report based upon municipal responses to the GTR questionnaire and the discussions generated at the meeting (completed by Sustainable Jersey).

Review of Existing Municipal Flood Resiliency Efforts

Prior to completing the GTR questionnaire, Sustainable Jersey staff asked the members of the Middle municipal committee to reflect on a few open-ended prompts regarding the township's flood resiliency efforts up until that point. A summary of the discussion is provided below.

Middle flood resiliency successes

- Prior to completing the GTR questionnaire, Middle Township participated in a facilitated Coastal Vulnerability Assessment (CVA). The CVA assessed the township's vulnerability to future sea level rise and major storm events. Over 100 community assets were assessed for vulnerability to the given scenarios and the consequences of losing said assets in the future. The CVA process helped inform many of the questions in the GTR questionnaire.
- Middle Township has been working towards building up the beach and dune system located along the Delaware Bay Shore. A number of projects have been completed between various non-profits and federal agencies. Currently these living shoreline projects are sporadically located along the shoreline. The township is working towards filling the gaps and creating a continuous, resilient shoreline.

Middle flood resiliency challenges

- The coastal vulnerability assessment revealed the vulnerability of many township assets to future sea level rise and storm surge. The neighborhoods of Del Haven, Grassy Sound, Pierces Point, Reeds Beach are all highly vulnerable to hurricane storm surge, while Grassy Sound is also moderately vulnerable to sea level rise. The Delaware Bay beaches and wetlands complex are also highly vulnerable to both future sea level rise and hurricane storm surge. See the Middle Township Coastal Vulnerability Assessment for a complete discussion on the vulnerability of neighborhoods, infrastructure and resources within the community to future flood hazards.

Section III. Recommendations for “Getting to Resilience”

This section offers recommended actions, policies and strategies that can help strengthen Greenwich's overall resilience to the risks of future sea level rise and coastal storm events. Recommendations are based upon the township's responses to the GTR questionnaire, a review of Greenwich's municipal documents, and the discussion at the facilitated meeting. The key recommendations include critical next steps towards resiliency either by virtue of their importance, available funding or ease of implementation. Other recommendations are provided for the township's consideration, though are considered equally important for coastal resiliency and complement the broader resiliency planning recommendations in the Middle Township Coastal Vulnerability Assessment.

Key Recommendations

1. *Amend the township's Flood Damage Prevention Ordinance to include New Jersey's required freeboard, or higher, if deemed appropriate.* By updating the flood damage prevention ordinance, municipal officials will create consistency in regulations for building and rebuilding in flood hazards areas. The current freeboard requirement in New Jersey mandates that all new

structures built within a FEMA-designated Special Flood Hazard Areas (SFHA) be built one foot above base flood elevation (BFE). This rule also applies to the rebuilding of substantially damaged structures in the SFHA. Some NJ communities have decided to increase the freeboard to 2 or 3 feet above BFE based upon the flood risks and vulnerabilities in their community. *Communities can also receive CRS points under section 430(b) by completing this activity.*

Resources

- NJ DEP “Best Available Science” model Flood Damage Prevention Ordinance (version D & E), available on the NJDEP Flood Control webpage (<http://www.nj.gov/dep/floodcontrol/modelord.htm>)

2. *Enroll in the NFIP Community Rating System (CRS) program.* The CRS program awards points for emergency preparedness and flood risk reduction activities that are credited towards reduced flood insurance premiums for all floodplain property owners in the participating community. Participation in the CRS program not only increases local resiliency, but can provide substantial savings in flood insurance for publicly owned facilities as well as private residences and businesses across the municipality.

Resources

- Numerous web-based technical guides and manuals are available on the FEMA website, and can be found through a simple search of “FEMA Community Rating System”.
 - For specific questions or technical assistance on NFIP, contact the NJDEP Flood Unit at 609-202-2296.
3. *Review all the automated responses provided in the township’s Getting to Resilience Linkages Report.* Municipal officials should review the entire set of automated responses provided by the online GTR platform, www.prepareyourcommunitynj.org. In particular, focus on recommendations provided for questions to which the GTR committee responded “no” by filtering the entire Linkages Report to show only “Things to Consider”.

Other Resiliency Measures to Consider

The following additional recommendations emerged from the township’s GTR process, and are organized according to the GTR section headings and questions.

A. Risk & Vulnerability Assessments

- *A1. Ensure the municipality’s history of coastal flood hazards and disasters are fully documented, and establish a procedure for documenting future flood impacts.* Local anecdotes and observations of flood events and impacts are an important source of data for disaster response and recovery as well as emergency preparedness and anticipating future risks. While municipal officials may have a sound grasp of local problem areas, a written account of damages suffered during flooding events can help accelerate the process of compiling reimbursement and grant application documentation. The observations could include interviews, reports and images compiled into a single document. *Communities can receive CRS points under section 320 by completing this activity.*

- *A2. Document community assets subject to impacts from future flood hazards in the multi-jurisdictional hazard mitigation plan.* Identifying vulnerable assets in the multi-jurisdictional hazard mitigation plan can encourage regional cooperation in addressing future, projected coastal flood hazards, such as sea level rise and increase coastal storm impacts, while also identifying specific municipal projects worthy of future funding opportunities.

Suggestions

- Middle Township finished a Coastal Vulnerability Assessment in 2016. The results of the assessment, which include the future impacts of sea level rise and major storm events should be integrated into the Middle Annex of the Cape May County Hazard Mitigation Plan.

B. Public Engagement

- *B1. Conduct targeted outreach to residents in the floodplain at least once per year.* Residents should be informed of flood risks in the community, municipal emergency preparedness activities, and their role in protecting families and assets from flood damages on an annual basis. This kind of community engagement effort will support on-going flood resiliency by ensuring floodplain residents know their risks and take responsibility for implementing individual and household level risk reduction strategies.

Suggestions

- Consider circulating an annual, special issue newsletter that provides an easy, go-to resource for local floodplain information, including key contacts, relevant resources, instructions and advice for common situations and informational content on flood hazard risk reduction, emergency preparedness and local hazard mitigation efforts.
- Install high water marks in key community gathering places to catalyze community discussion of flood resiliency and the need for long-term planning.
Communities can receive CRS points under section 330 by completing this activity.

C. Planning Integration

- *C1. Include an objective in the municipal Master Plan to identify and address climate-related risks, vulnerabilities and opportunities in the township.* Experts across New Jersey agree that changes in the global climate translate into a specific set of challenges – and opportunities – for which local officials should plan. By recognizing the role climate change may play in local governance, local officials can build long-term resilience across all municipal policies and programs. The first step in developing these policies is to recognize climate change and resiliency as a desired objective in the master plan.
- *C2. Include future flood hazard scenarios in the municipal master plan with short-term and long-term strategies for protecting these areas.* As the primary planning policy document for the community, the master plan should identify areas in the community that will likely be impacted by future flood hazards, and offer measures to mitigate damages and protect the community’s assets and properties.

Suggestions

- Include maps of projected sea level rise and future storm events in the land use plan and conservation plan elements of the municipal master plan.
- Identify planning policies to mitigate flood damage and protect properties from future flooding, including sea level rise and extreme storm events, in the land use plan element.
- *C3. Cross-reference flood risks and vulnerabilities in relevant sections of the municipal master plan, emergency operations plan and all hazards mitigation plan.* Community flood risks are influenced largely by land use and development patterns that are grounded in local master plan policies. Hazard mitigation plans provide strategies to reduce these risks, but typically are stand-alone documents that rely upon structural mitigation measures, with little regard to land use and policy measures. Integrating flood risks and hazard mitigation into all local policy documents, especially master plans and hazard mitigation plans, ensures a coordinated, complementary approach to mitigation, and avoids potential conflicts from competing goals and interests.

Resource

- *Integrating Hazard Mitigation Into Local Planning, Case Studies and Tools for Community Officials*, FEMA, 2013

D. Hazard Mitigation Implementation

- *E1. Ensure construction and permitting officials have completed training in FEMA's Coastal Construction Manual.* Local permitting officials provide one of the first lines of defense for protecting community officials from risky construction in high hazards areas. FEMA's Coastal Construction Manual and relevant training offerings provides a comprehensive source of information about hazard identification, siting decisions, regulatory requirements, economic implications, and risk management. It also describes design, construction, and maintenance practices that, when followed, will increase the durability of residential buildings in the harsh coastal environment and reduce economic losses associated with coastal natural disasters.

Resource

FEMA P-55, Coastal Construction Manual: Principles and Practices of Planning, Siting, Designing, Constructing, and Maintaining Residential Buildings in Coastal Areas, 4th Edition (2011), FEMA, 2011

- *E2. Identify natural resources that provide protective flood mitigation, such as tidal marshes, and include the management and protection of these resources in the master plan and regulatory documents.* Coastal wetlands can provide beneficial ecosystem services to lessen the impact of coastal flood hazards. In many cases, they serve as a first line of defense limiting the force of waves from coastal storm surges. These systems should be mapped by the municipality, and policy and regulatory requirements should be developed to ensure their protection and long-term management.

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