



16. MITIGATION STRATEGY

This chapter presents mitigation strategies for Cape May County to reduce potential vulnerability and losses identified in the risk assessment portion of this plan. The Steering Committee reviewed the risk assessment and capability assessment to identify and develop this mitigation strategy.

Hazard mitigation reduces the potential impacts of, and costs associated with, emergency and disaster-related events.

FEMA defines **Mitigation Actions** as specific actions that help to achieve the mitigation goals and objectives. These actions can include activities such as revisions to land-use planning, training and education, and structural and nonstructural safety measures. They address a range of impacts, including impacts on the population, property, the economy, and the environment.

16.1 PAST MITIGATION ACCOMPLISHMENTS

The County, through previous and ongoing hazard mitigation activities, has demonstrated that it is proactive in protecting its physical assets and citizens against losses from natural hazards. Examples of previous and ongoing actions and projects include the following:

- The County facilitated the development of the original Cape May County HMP. The current planning process represents the regulatory five-year plan update process, which includes the participation of 17 jurisdictions in the County, along with key County and regional stakeholders.
- All municipalities participating in this HMP update participate in the National Flood Insurance Program (NFIP), which requires the adoption of FEMA floodplain mapping and certain minimum standards for building within the floodplain.
- Reports, plans, and studies relating to or including information on natural hazards or natural hazard policies affecting Cape May County have been reviewed and incorporated into this plan update as appropriate, as discussed in Chapter 2 and the list of references.

16.2 REVIEW AND UPDATE OF MITIGATION GOALS AND OBJECTIVES

This section documents the process of updating hazard mitigation goals and objectives for reducing or avoiding long-term vulnerabilities to identified hazards. For the purposes of this plan, goals and objectives are defined as follows:

“The hazard mitigation strategy shall include a description of mitigation goals to reduce or avoid long-term vulnerabilities to the identified hazards.”

44 CFR 201.6(c)(3)(i)

- **Goals** are general guidelines that explain what is to be achieved. They are usually broad, long-term, policy-type statements and represent global visions. Goals help define the benefits that the plan is trying to achieve. The success of the plan, once implemented, should be measured by the degree to which its goals have been met (that is, by the actual benefits in terms of hazard mitigation).
- **Objectives** are short-term aims that form a strategy or course of action to meet a goal. Unlike goals, objectives are stand-alone measurements of the effectiveness of a mitigation action. The objectives also are used to help establish priorities. Broadly defined mitigation objectives were eliminated from the updated strategy unless accompanied by discrete actions.



The Steering Committee reviewed the 2021 goals and objectives and made revisions for the 2025 update based on the following considerations:

- Hazard events and losses since the 2021 plan
- The updated hazard profiles and risk assessment
- The goals and objectives established in the New Jersey State 2024 HMP
- The Planning Partnership's interests in integrating this plan with other planning mechanisms, including Cape May County and local risk management plans
- Direct input from the Steering Committee, stakeholders, and the public on how the County and jurisdictions need to move forward to best manage their hazard risk
- Discussions and research on existing authorities, policies, programs, resources
- Support for mitigation through the protection of natural systems

As a result of this review process, the goals and objectives for the 2025 update were updated to the following. *Italicized font indicates changes or additions:*

- Goal 1—Strategically protect life and property.
 - Objective 1.1—Protect critical facilities and infrastructure.
 - Objective 1.2—Address repetitive and severe repetitive loss properties.
 - Objective 1.3—Encourage the establishment of policies to help ensure the prioritization and implementation of mitigation actions and/or projects designed to benefit essential facilities, services, and infrastructure.
 - Objective 1.4—Place a high priority on addressing issues (physical or otherwise) that may jeopardize timely and effective evacuation.
 - Objective 1.5—Identify and implement measures that enhance the capabilities of the County to better profile and assess exposure to natural and man-made hazards and develop appropriate risk reduction strategies.
 - Objective 1.6—Better characterize flood/stormwater hazard events by conducting additional hazard studies and identify inadequate stormwater facilities and poorly drained areas.
 - Objective 1.7—Develop, maintain, strengthen and promote enforcement of ordinances, regulations, plans and other mechanisms that facilitate hazard mitigation.
 - Objective 1.8—Integrate the recommendations of this plan into existing local programs.
 - Objective 1.9—Ensure that development is done according to modern, appropriate, and equitable standards, including the consideration of natural hazard risk in land use planning and building design approval process.
 - Objective 1.10—Identify and pursue funding opportunities to address sea-level rise.
 - Objective 1.11—Identify and pursue funding opportunities to develop and implement local and county mitigation activities.
 - Objective 1.12—Incorporate future risk (including increased water levels and subsidence) into the mitigation planning process and mitigation project selection.
 - *Objective 1.13—Encourage the establishment of policies to help ensure the prioritization and implementation of mitigation actions and/or projects designed to benefit socially vulnerable populations and underserved communities.*
- Goal 2—Promote public awareness, education, and preparedness of hazards and their risks.



- Objective 2.1—Develop and implement programs to better understand the public’s level of individual and household preparedness and existing risk to natural and man-made hazards.
- Objective 2.2—Develop and implement additional education and outreach programs to increase public awareness of hazard areas and the risks associated with hazards, and to educate the public on specific, individual preparedness activities.
- Objective 2.3—Promote awareness among homeowners, renters, and businesses about obtaining insurance coverage available for natural hazards (i.e., flooding).
- Objective 2.4—Encourage property owners to take preventive actions in areas that are especially vulnerable to hazards, including providing incentives to mitigate.
- Objective 2.5—Provide information on tools, partnership opportunities, funding resources, and current government initiatives to assist in implementing mitigation activities.
- Objective 2.6—Enhance public outreach and flood awareness to support public safety and Community Rating System projects.
- *Objective 2.7—Identify and provide additional resources to vulnerable and marginalized populations that have reduced capacity to respond to hazards compared with the general population.*
- Goal 3—Promote resiliency, preparedness, and continuity of operations between government, businesses, and community groups and organizations.
 - Objective 3.1—Promote the development of government, business, and non-profit continuity plans.
 - Objective 3.2—Encourage the establishment of policies to help ensure the prioritization and implementation of mitigation actions and/or projects designed to benefit essential facilities, services, and infrastructure.
 - Objective 3.3—Ensure continuity of governmental operations, emergency services, essential and critical facilities at the local level during and immediately after disaster and hazard events.
 - Objective 3.4—Develop and maintain adequate services and utilities to serve the County’s population, businesses, non-profit organizations and economy.
- Goal 4—Enhance disaster preparedness, response and recovery.
 - Objective 4.1—Reduce general public dependency on disaster response and recovery support services.
 - Objective 4.2—Place a high priority on addressing issues (physical or otherwise) that may jeopardize timely and effective evacuation.
 - Objective 4.3—Improve early detection, warning and emergency communication procedures and systems.
 - Objective 4.4—Maintain and update County and Local Emergency Management Plans to accommodate changes in the municipalities’ development patterns and vulnerability to natural and man-made hazard risk.
 - Objective 4.5—Where appropriate, coordinate and integrate hazard mitigation actions with existing local emergency operations plans.
 - Objective 4.6—Identify the need for, and acquire, any special emergency services, training, equipment, facilities and infrastructure to enhance response capabilities across all hazards and shared among municipalities.
 - Objective 4.7—Ensure continuity of governmental operations, emergency services, and critical facilities at the local level during and immediately after disaster and hazard events.



- Objective 4.8—Maintain and expand shared services in acquiring, maintaining and providing emergency services and equipment.
- Objective 4.9—Encourage the establishment of policies to help ensure the prioritization and implementation of mitigation actions and/or projects designed to benefit essential facilities, services, and infrastructure.
- Objective 4.10—Review and improve, if necessary, emergency traffic routes; communicate such routes to the public and communities.
- Objective 4.11—Elevate evacuation routes and systemically important roadways to reduce dangers posed by inundation.
- Goal 5—Protect open space, the environment, and natural resources through short- and long-term actions focused on preservation and sustainability.
 - Objective 5.1—Identify, protect, and preserve environmentally sensitive and critical areas.
 - Objective 5.2—Protect and restore natural lands and features that serve to mitigate future losses (including beaches, dunes, wetlands, floodplains, stream corridors, marine tidal marshes, and the back bay areas). Such lands should be clearly mapped and identified for protection.
 - Objective 5.3—Continue to preserve, protect and acquire open space, particularly in existing high hazard areas and those anticipated to become high hazard areas in the future. Include hazard considerations into the prioritization schema for land acquisition.
 - Objective 5.4—Incorporate coastal hazard considerations into land-use planning and natural resource management.
 - Objective 5.5—Promote sustainable and equitable land development practices that direct future development away from vulnerable areas.
 - Objective 5.6—Maintain National Historic Landmark status of municipalities within the County through preservation of historic and architecturally significant sites with consideration of future hazard risk.
 - Objective 5.7—Strengthen the County's Open Spaces program to support acquisitions of vulnerable areas in the floodplain.
- Goal 6—Promote partnerships with government agencies, businesses, and non-profit organizations.
 - Objective 6.1—Maintain and expand shared services in acquiring maintaining and providing emergency services and equipment.
 - Objective 6.2—Strengthen inter-jurisdiction and inter-agency communication, coordination, and partnerships to foster hazard mitigation actions and/or projects.
 - Objective 6.3—Identify and implement ways to engage public agencies with individual citizens, non-profit organizations, business, and industry to implement mitigation actions more effectively.
 - Objective 6.4—Encourage and support multi-jurisdictional mitigation projects that leverage funding and support from multiple levels of government and community organizations.
- Goal 7—Address long-term vulnerabilities from hazardous dams.
 - *Objective 7.1—Ensure dam infrastructure is maintained.*
 - *Objective 7.2—Support the identification of and access to funding for the repair or replacement of dams.*
 - *Objective 7.3—Ensure emergency action plans are developed and updated.*



16.3 MITIGATION STRATEGY DEVELOPMENT AND UPDATE

16.3.1 Update of County and Local Jurisdiction Mitigation Strategies

Review of Previous Actions

To evaluate progress on local mitigation actions, each planning partner was provided with a Mitigation Action Plan Review Worksheet, pre-populated with the actions identified for their jurisdiction in the prior (2021) plan. The Planning Partners were asked to indicate the status of each action (“No Progress,” “In Progress,” “Ongoing,” “Completed,” “Discontinued”). They were requested to provide comments to quantify the extent of progress and provide reasons for the level of progress or why actions were discontinued. This information is included in the jurisdictional annexes. At the kickoff and during subsequent local level planning meetings, all participating jurisdictions were further surveyed to identify completed mitigation actions, in-progress actions, or ongoing capabilities.

Mitigation actions identified as “Complete” or “Discontinued” have been removed from the Planning Partners’ updated mitigation strategies. Actions identified as “No Progress” or “In Progress” have been carried forward in their local updated mitigation strategies. Planning partners were asked to provide further details on these projects to help better define the projects, identify benefits and costs, and improve implementation.

Certain continuous or ongoing actions (Ongoing Capabilities) from the previous plan that represent programs that are now fully integrated into the normal operational and administrative framework of the community are identified in the capabilities assessment of each annex and removed from the updated mitigation strategy (marked as “Discontinued”).

Identifying New Actions

Planning Partners were made aware of potential new mitigation actions as such actions became evident during the plan update process. Additional mitigation actions were identified by the following processes:

- Review of the results and findings of the updated risk assessment
- Review of available local, regional, and County plans, reports, and studies
- Input received through the public and stakeholder outreach process
- Direct input from County departments and other regional agencies, including:
 - Cape May County Emergency Management
 - Cape May County Public Works and Engineering
 - South Jersey Transportation Planning Organization
 - Cape May County Health Department
 - Cape May County Planning Department
 - Cape May County Brewing Company
 - National Weather Service
 - Cumberland County
 - Atlantic County
 - Middle Township
 - Cape May County MUA



- Cape May County Mosquito Control
- Cape May MAC
- Lomax Consulting Group
- Heist Insurance

Developing the Overall Strategy

Beginning in December 2024, members of the Steering Committee and contract consultants worked directly with each jurisdiction (by phone, email, or virtual meetings) to update its annex with well-defined, implementable projects that meet the definition or characteristics of mitigation. Mitigation actions were selected with a careful consideration of benefits (risk reduction, losses avoided), costs, and possible funding sources (including mitigation grant programs).

Three annex support meetings were held for Planning Partners to assist in the development of additional actions, foster collaboration between neighboring jurisdictions for mitigation actions, discuss actions that involve cooperation between the County and jurisdictions, and identify steps needed to complete the jurisdictional annexes.

Addressing Known Vulnerabilities

To help support the selection of an appropriate risk-based mitigation strategy, each annex includes a summary of hazard vulnerabilities. These were identified during the plan update process by planning partner representatives, through review of available plans and reports, or through the hazard profiling and risk assessment process.

A mitigation strategy workshop was conducted on March 25, 2025, for all participating jurisdictions to support the development of focused problem statements based on the impacts of natural hazards in the County and their communities. These problem statements provide a detailed description of a problem area, including its impacts on the jurisdiction, past damage, loss of service, etc. An effort was made to include the street address of the problem location, adjacent streets, water bodies, and well-known structures as well as a brief description of existing conditions (topography, terrain, hydrology) of the site. These problem statements form a bridge between the hazard risk assessment, which quantifies impacts on each community, and the development of actionable mitigation strategies.

Incorporating a Range of Action Types

Concerted efforts were made to ensure that Planning Partners develop updated mitigation strategies that cover the range of mitigation action types described in recent FEMA planning guidance (FEMA 2021):

- **Education Outreach**—Sustained programs to educate residents and community leaders about risks, vulnerabilities, and mitigation opportunities
- **Natural Systems Protection**—Actions that minimize damage and losses through preservation or restoration of natural systems
- **Planning and Regulations**—Policies or codes that influence the way land is developed and buildings are constructed
- **Structure and Infrastructure**—Actions modifying existing structures or infrastructure to remove them from a vulnerable area, or construction of new structures to protect existing development

Efforts were also made to develop mitigation strategies that cover the range of mitigation action types described in recent CRS guidance (FEMA 2017):



- **Preventive Activities**—Activities to keep flood problems from getting worse. The use and development of flood-prone areas is limited through planning, land acquisition, or regulation. They are usually administered by building, zoning, planning, and/or code enforcement offices. Examples include planning and zoning, local floodplain laws, capital improvement programs, open space preservation, and stormwater management regulations.
- **Property Protection**—Activities undertaken by property owners on a building-by-building or parcel basis. Examples include acquisition, elevation, relocation, structural retrofits, storm shutters, and shatter-resistant glass.
- **Natural Resource Protection**—Activities to preserve or restore natural areas or the natural functions of floodplain and watershed areas. They are implemented by a variety of agencies, primarily parks, recreation, or conservation agencies or organizations. These actions include sediment and erosion control, stream corridor restoration, watershed management, forest and vegetation management, and wetland restoration and preservation.
- **Emergency Services**—Measures taken during an emergency to minimize its impact. These measures are usually the responsibility of city or county emergency management staff and the owners or operators of major critical facilities. Services include warning systems, emergency response services, and the protection of essential facilities.
- **Structural Projects**—Projects to keep flood waters away from an area with a levee, reservoir, or other flood control measure. They are usually designed by engineers and managed or maintained by public works staff. Such structures include dams, setback levees, floodwalls, retaining walls, and safe rooms.
- **Public Information**—Activities to advise property owners, potential property owners, and visitors about hazards, ways to protect people and property from the hazards, and the natural and beneficial functions of local floodplains. They are usually implemented by a public information office. Such actions include outreach projects, real estate disclosure, hazard information centers, and educational programs for school-age children and adults.

Protecting Critical Facilities

Planning partner mitigation actions that address vulnerable critical facilities have been proposed in consideration of protection against 500-year events or worst-case scenarios. However, in the case of projects funded through federal mitigation programs, the level of protection may be influenced by cost-effectiveness as determined through a formal benefit-cost analysis. In the case of “self-funded” projects, local jurisdiction discretion must be recognized. It is recognized that the County and jurisdictions have limited authority with regard to mitigation at any level of protection over privately owned critical facilities.

Accounting for Climate Change

As discussed in the hazard profiles in this HMP, the long-term effects of climate change are anticipated to exacerbate the impacts of weather-related hazards (e.g., flood, severe storm, severe winter storm, and wildfire). Communities are working to evaluate and recognize these long-term implications and to incorporate their mitigation strategies into planning and capital improvement updates.

16.3.2 Mitigation Best Practices

Catalogs of hazard mitigation best practices were developed that present a broad range of alternatives to be considered for use in the mitigation strategies, in compliance with federal requirements (44 CFR Section 201.6(c)(3)(ii)). One catalog was developed for each hazard of concern evaluated in this plan. The catalogs present alternatives that are categorized based on two considerations:



- Who would have responsibility for implementation:
 - Individuals—personal scale
 - Businesses—corporate scale
 - Government—government scale
- What the alternatives would do:
 - Manipulate the hazard
 - Reduce vulnerability to the hazard
 - Reduce impacts from the hazard
 - Build local capacity to respond to or be prepared for the hazard

The alternatives presented include actions that will mitigate current risk from hazards and actions that will help reduce risk from changes in the impacts of these hazards resulting from climate change. Hazard mitigation actions recommended in this plan were selected from among the alternatives in the catalogs. The catalogs provide a baseline of mitigation alternatives that are backed by a planning process, are consistent with the established goals and objectives, and are within the capabilities of the Planning Partners to implement. Some of these actions may not be feasible based on the selection criteria identified for this plan. The purpose of the catalogs was to provide a list of what could be considered to reduce risk from natural hazards within the planning area. Actions in the catalog that are not included for the partnership's mitigation strategy were not selected for one or more of the following reasons:

- The action is not feasible
- The action is already being implemented
- There is an apparently more cost-effective alternative
- The action does not have public or political support

The catalogs are included in Appendix C.

16.3.3 Mitigation Strategy Evaluation and Prioritization

Federal code establishes standards for prioritizing, implementing, and administering hazard mitigation strategies (44 CFR Section 201.c.3.iii). For this plan update, each mitigation strategy was prioritized based on the following criteria:

- Life Safety—How effective will the action be at protecting lives and preventing injuries? Will the proposed action adversely affect one segment of the population?
- Property Protection—How significant will the action be at eliminating or reducing damage to structures and infrastructure? For example: development in the floodplain or high-risk areas?
- Cost-Effectiveness—Are the costs to implement the action commensurate with the benefits achieved?
- Political—Is there overall public support for the action? Is there the political will to support it? Is the action at odds with development pressures?
- Legal—Does the jurisdiction have the authority to implement the action?
- Fiscal—Can the action be funded under existing program budgets (i.e., is this action currently budgeted for)? Or would it require a new budget authorization or funding from another source such as grants?
- Environmental—What are the potential environmental impacts of the action? Will it comply with environmental regulations? Are there co-benefits of this action?



- **Social Vulnerability**—Does the action benefit socially vulnerable populations and underserved communities? Additional considerations can include appropriate numerical measures of social vulnerability.
- **Administrative**—Does the jurisdiction have the personnel and administrative capabilities to implement the action and maintain it or will outside help be necessary? Does the scale and scope of the action align with the jurisdiction's capabilities?
- **Hazards of Concern**—Does the action address one or more of the jurisdiction's high-ranked hazards?
- **Climate Change**—Does the action incorporate climate change projections? Is the action designed to withstand/address long-term conditions?
- **Timeline**—Can the action be completed in less than five years?
- **Community Lifelines**—Does this action benefit community lifelines?
- **Other Local Objectives**—Does the action advance other local objectives, such as capital improvements, economic development, environmental quality, or open space preservation? Does it support the policies of other plans and programs?

Participating jurisdictions used these criteria to prioritize their identified mitigation actions. For each mitigation action, the jurisdictions assigned a numeric score for each of the 14 evaluation criteria:

- 1 = Highly effective or feasible
- 0 = Neutral
- -1 = Ineffective or not feasible

The numerical results were totaled and then used by each jurisdiction to help prioritize the action or strategy as *low*, *medium*, or *high*. Actions that had a numerical value between 0 and 6 were categorized as *low priority*; actions with numerical values between 7 and 10 were categorized as *medium priority*; and actions with numerical values between 11 and 14 were categorized as *high priority*.

Some jurisdictions are carrying forward mitigation actions from prior mitigation strategies that were prioritized using a different approach. Mitigation actions in the 2021 Cape May County HMP were "qualitatively evaluated against the mitigation goals and objectives and other evaluation criteria. They were then prioritized into three categories: high, medium, and low." Jurisdictions carrying forward prior actions were encouraged to re-evaluate their priority, particularly if conditions that would affect the prioritization criteria had changed.

For the plan update there has been an effort to develop more clearly defined and action-oriented mitigation strategies. These local strategies include actions that are seen by the community as the most effective approaches to advance their local mitigation goals and objectives within their capabilities. In addition, each planning partner was asked to develop problem statements. With active support from NJOEM planning staff, the partners were able to develop action-oriented and achievable mitigation strategies. For that reason, many of the actions in the updated mitigation strategy were ranked as *high* or *medium* priority, as reflective of the community's clear intent to implement them, available resources notwithstanding. In general, actions that would have had *low* priority rankings were appropriately screened out during the local action evaluation process.

16.3.4 Benefit/Cost Review

Prioritization of a mitigation strategy must emphasize the extent to which benefits are maximized according to a benefit/cost review of the proposed actions (44 CFR Section 201.6.c.3iii). Jurisdictions identified the associated costs and benefits of each action as follows:



- **Costs** presented include the total project estimation. This can include administrative, construction (engineering, design, and permitting), and maintenance costs.
- **Benefits** are the savings from losses avoided attributed to project implementation. These can include life safety, structure and infrastructure damages, loss of service or function, and economic and environmental damage and losses.

For many actions, costs or benefits cannot be quantified at the mitigation strategy level of development. In this case, jurisdictions were asked to evaluate project cost-effectiveness using qualitative *high*, *medium*, and *low* ratings based on the definitions in Table 16-1.

Table 16-1 Qualitative Cost and Benefit Ratings

Costs	
High	Existing funding levels are not adequate to cover the costs of the proposed project, and implementation would require an increase in revenue through an alternative source (e.g., bonds, grants, and fee increases).
Medium	The project could be implemented with existing funding but would require a re-apportionment of the budget or a budget amendment, or the cost of the project would have to be spread over multiple years.
Low	The project could be funded under the existing budget. The project is part of or can be part of an existing, ongoing program.
Benefits	
High	Project will have an immediate impact on the reduction of risk exposure to life and property.
Medium	Project will have a long-term impact on the reduction of risk exposure to life and property or will provide an immediate reduction in the risk exposure to property.
Low	Long-term benefits of the project are difficult to quantify in the short-term.

When possible, jurisdictions were asked to identify the actual or estimated dollar costs and associated benefits. Where estimates of costs and benefits were available, the ratings were defined follows:

Low <= \$10,000

Medium = \$10,000 to \$100,000

High >= \$100,000

Using this approach, projects with positive benefit versus cost ratios (such as high over high, high over medium, medium over low, etc.) are considered cost-effective. For some of the actions identified, the Planning Partnership may seek financial assistance under FEMA's HMA programs, which require detailed benefit/cost analysis as part of the application process. The benefit/cost review used to prioritize mitigation strategy actions in this update did not include the level of detail required under these grant programs. These analyses will be performed when funding applications are prepared, using FEMA's Benefit-Cost Analysis model.

The Planning Partnership is committed to implementing mitigation strategies with benefits that exceed costs. For projects not seeking financial assistance from grant programs that require this sort of analysis, the Planning Partnership reserves the right to define benefits according to parameters that meet its needs and the goals and objectives of this plan.