



SOMERSET COUNTY

HAZARD MITIGATION PLAN

SOMERSET COUNTY MULTI-JURISDICTIONAL HAZARD MITIGATION PLAN

FINAL PLAN UPDATE
JULY 2019

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Section 6: MITIGATION STRATEGIES

*Prepared by the Somerset County
Mitigation Planning Committee*



SECTION 6: MITIGATION STRATEGIES

This section presents mitigation actions for Somerset County to reduce potential exposure and losses identified as concerns in the Risk Assessment portion of this plan. The Planning Committee reviewed the Risk Assessment to identify and develop these mitigation actions, which are presented herein.

This section includes:

- (1) Background and Past Accomplishments
- (2) General Mitigation Planning Approach
- (3) Guiding Principle, Mitigation Goals and Objectives
- (4) Capability Assessment

Hazard mitigation reduces the potential impacts of, and costs associated with, emergency and disaster-related events. Mitigation actions address a range of impacts, including impacts on the population, property, the economy, and the environment.

Mitigation actions can include activities such as: revisions to land-use planning, training and education, and structural and nonstructural safety measures.

BACKGROUND AND PAST ACCOMPLISHMENTS

Although DMA 2000 does not require a discussion regarding past mitigation activities, an overview of past efforts is provided as a foundation for understanding the mitigation goals, objectives, and activities outlined in this Plan. The County, through previous and ongoing hazard mitigation activities, has demonstrated that it is pro-active in protecting its physical assets and citizens against losses from natural hazards. Examples of previous and ongoing actions and projects include:

- All of Somerset County's 21 municipalities participating in this Plan participate in the NFIP¹, which requires the adoption of FEMA floodplain mapping and certain minimum construction standards for building within the floodplain.
- Six jurisdictions participating in this Plan participate in the NFIP's CRS Program². All six have earned Class 6, 7, or 8 in the program and receive 10 to 20 percent discounts on flood insurance premiums for their policyholders in SFHAs, and 5 to 10 percent discounts on premiums for policyholders outside of mapped SFHAs, specifically: the Township of Bedminster (CRS Classification 6), Township of Bernards (7), Township of Franklin (6), Borough of North Plainfield (8), and the Township of Warren (8).
 - The County's CRS Communities are actively engaged in their program participation and work over time to earn credit points for applicable activities. Since this hazard mitigation plan was last updated in 2014, Bernards moved up from a Class 8 to a Class 7; Franklin moved up from a Class 7 to a Class 6; and Warren moved up from a Class 9 to a Class 8.
- The County adopted its current Land Development Review Resolution in 2011 in accordance with N.J.S.A. 40:26-1 to 40:26-6.13.
 - Chapter VI: Stormwater Management requires the provision of stormwater measures for all major development projects in accordance with N.J.A.C. 7:8.
- The County adopted its current six year 2018-2023 Capital Improvements Plan in accordance with N.J.S.A. 40:4-43 et. seq., which includes structural projects addressing the reduction of flooding.

¹ <https://www.fema.gov/cis/NJ.html> , March 2018

² https://www.fema.gov/media-library-data/1503240360683-30b35cc754f462fe2c15d857519a71ec/20_crs_508_oct2017.pdf

- The Somerset County Emergency Operations Plan was approved by the State in August 2016 and is routinely updated. Regular meetings of the County’s Local Emergency Planning Committee are held. Recertification of the Plan in July 2020 is anticipated.
- An ES 14-Infrastructure Restoration and Long Term Recovery Plan was created to provide guidance regarding County emergency response actions and to coordinate and support long term recovery operations. This plan also addresses the use of public and private local, State and Federal resources for long-term community recovery following a catastrophic disaster or other significant emergency event for which a county-level response is needed to help reduce or eliminate risks.

The updated Somerset County Wastewater Service Areas Map was adopted in 2013 in accordance with the 2008 Water Quality Management Planning Rules.

- The New Jersey Department of Environmental Protection adopted new Water Quality Management Planning (WQMP) Rules (N.J.A.C. 7:15) on October 7, 2016, which became effective on November 7, 2016. Completion of the Countywide Wastewater Management Plan is being accomplished in phases in accordance with the new rules. Work is currently underway by the County Planning Division in collaboration with municipalities, sewerage authorities and other stakeholders to complete the required wastewater treatment facility capacity analysis, nitrate dilution analysis, and identify potential strategies for addressing any capacity deficiencies that may exist or occur in the future. Municipal-specific Septic Management Plans must also be included as part of the Countywide WMP and are underway.
- County completed testing and ongoing evaluations of the COOP/COG (mitigation action SC5) from 2008 plan.
- Properties have been acquired in the County to create open space in floodplains to reduce flood vulnerability of residential structures. Structure elevation projects have been implemented in the Townships of Branchburg and Green Brook. The Borough of Manville is completing the acquisition of 15 residential properties. Following tropical storm Floyd, the Borough of Manville was the site of numerous structure buy-outs.
- The County is continuing its program to obtain, record, and maintain historical hazard event impact information such as high watermarks, road closures, wild fires and requests for assistance. Following the April 2007 flooding, Somerset County began keeping georeferenced flood high watermarks. These marks were surveyed using GPS RTK observations and or conventional differential leveling and then this information was incorporated into to a GIS dataset and mapped. The dataset and map will serve as a centralized record of flood high watermarks to which data from future flooding events can be added and used for analyzing trends.
- Somerset County has a robust Public Information system to disseminate information prior, during and after hazard events. County residents can subscribe to the Somerset County Public Safety Advisory Alert Service to receive e-mails via Everbridge Nixle. For more information, see <https://www.co.somerset.nj.us/about/emergency-alerts>.
- The County has been actively updating its 2014 All-Hazards Mitigation Plan on an annual basis, convening the Hazard Mitigation Committee and preparing annual progress reports to support CRS communities. Implementation of mitigation projects and actions are encouraged and monitored. The County continues to enhance the Plan in order to reduce hazard vulnerability at the county and municipal levels.
- The County has obtained an updated digital elevation model (DEM) from the State, which was used to develop more accurate flood modeling for the mitigation plan update.
- The County continues to encourage the use of higher regulatory standards in local floodplain management plans, zoning ordinances and building codes.

- Inadequate drainage systems on County roads are continuously being identified and addressed to minimize road inundation.
- The County fully supports implementation of the Green Brook Flood Control System. The components of this system that are located within Somerset County have been completed. The County continues to support completion of the remaining portions of the project that are located outside the County. The Somerset County Engineering Division assists in operating and managing the portions of the flood control system located within Somerset County. The Green Brook Flood Control Project addresses flooding in the Green Brook Basin and consists of a system of levees, floodwalls, dams, channel improvements, bridge raisings, closure structures, and non-structural measures.
- Most of the FEMA FIRM panels in Somerset County became effective in September 2007. However, certain panels, and the FEMA FIS for the County, were updated and became effective in November 2016. The 2016 updates reflect a revised flood hazard analysis and mapping for 14 miles of the Millstone River, from the Weston Causeway to approximately 200 feet downstream of Lincoln Highway / State Route 27 in the Townships of Franklin, Hillsborough, and Montgomery; and in the Boroughs of Manville, Millstone, and Rocky Hill. Additional modifications include: updated 2012 ortho-photography base map, updated 2012 USGS topographic map, incorporation of validated Letters of Map Change (LOMCs), and the New Jersey Flood Hazard Area Design Flood (NJFHADF^[1]). Other changes to map products since 2007 reflect the completion of the US Army Corps of Engineers Green Brook Flood Risk Management Project, where LOMRs in Bound Brook, South Bound Brook, and Bridgewater address the updated hydrology and hydraulic changes resulting from completion of the flood control project elements along Green Brook and the Raritan River, which were designed to provide flood relief for the Borough of Bound Brook.
- The County continues to improve and fund the Somerset County Flood Information System (SCFIS). In order to provide effective flood warnings to Somerset County officials and citizens, in 1990 the SCFIS was created, in cooperation with the United States Geological Survey (USGS) and the National Weather Service (NWS). The SCFIS facilities include a network of stream and precipitation gages, a central office that receives data from the gages, the National Weather Service, and other sources, and a communications network with links to emergency management (EM) offices, public works facilities, and emergency responders. Data generated by the gages is also used by NWS in their forecasts and warning efforts. During storm events, the SCFIS disseminates information about river levels and NWS bulletins and forecasts, to a wide variety of local officials and emergency responders. A describing this system is available at the following link: <https://nj.usgs.gov/publications/FS/fs-090-98/>
- Somerset County has published a tax-parcel based map application on its Maps & Apps webpage: <http://somerset.maps.arcgis.com/home/index.html> . This on-line Tax Parcel Viewer allows users to search by street address or parcel ID# to see whether a property is impacted by a specific FEMA FIRM flood zone type. This easy-to-use application streams the most current adopted GIS-based FEMA FIRM information directly from a web service provided by FEMA and is available to the general public.
- Following Hurricane Floyd, Somerset County developed inundation mapping to aid emergency managers during large storm events by assisting personnel in determining which areas might be flooded. These maps are designed to be used by emergency personnel to indicate which portion of the population should be warned or evacuated before and during a flood event. These maps show flood extent for certain inundation levels and are available for different inundation levels in 2 foot

^[1] NJFHADF is equal to the 1-percent-annual chance flood plus an additional 25% in flow.

increments showing buildings, roads, railroads, rivers, and streams. The inundation levels are tied to stream gage forecast points. When the NWS issues a crest forecast, emergency managers are able to see which areas can be expected to flood.

- The Borough of Bound Brook is in the process of preparing a grant application for the relocation of two firehouses.
- The County of Somerset has implemented a reverse 911 call system that is used to provide warnings related to hazard events. Residents can sign up for text alerts by texting the keyword SCNJALERTS to 888777. These alerts pertain to road closures; flood watches and warnings concerning other severe weather issues; and county program delays and closings. The County developed Flood Resiliency Framework and Energy Resiliency Framework documents as part of the HMP update process, and will include them in the updated plan. These were made available to members of the MPC for review during the HMP Update process. They are intended to help build awareness of the factors influencing flood and energy resilience in the County, and identify potential actions and strategies that can be undertaken by various public and private entities to improve resiliency and reduce hazard risks and vulnerabilities.

These past and ongoing activities have contributed to the County's understanding of its hazard preparedness and future mitigation activity needs, costs, and benefits; and provide a foundation for the Planning Committee to use in developing this HMP.

GENERAL MITIGATION PLANNING APPROACH

The general mitigation planning approach used to prepare this plan is based on the FEMA publication, Developing the Mitigation Plan: Identifying Mitigation Actions and Implementing Strategies (FEMA 386-3) and guidance provided by NJOEM. The FEMA document and NJOEM guidance include four steps, which were used to support mitigation planning. These steps are summarized below and presented in more detail in the following sections.

- **Develop mitigation goals and objectives:** Mitigation goals were developed using the hazard characteristics, inventory, and findings of the risk assessment, and through the results of the public outreach program. By reviewing these outputs and other municipal policy documents, objectives associated with the overarching goals were identified and characterized into similar themes.
- **Identify and prioritize mitigation actions:** Based on the risk assessment outputs, the mitigation goals and objectives, existing literature and resources, and input from the participating entities, new and/or modified mitigation actions were identified. The potential mitigation actions were qualitatively evaluated against the mitigation goals and objectives and other evaluation criteria. They were then prioritized into three categories: high, medium, and low.
- **Prepare an implementation strategy:** High priority mitigation actions are recommended for first consideration for implementation as resources become available, as discussed under each hazard description in the following sections. However, based on community-specific needs and goals and available funding and costs, some low or medium priority mitigation actions may also be addressed or could be addressed before some of the high priority actions.
- **Document the mitigation planning process:** The mitigation planning process is documented throughout this Plan.

FEMA defines Goals as general guidelines that explain what should be achieved. Goals are usually broad, long-term, policy statements, and represent a global vision.

FEMA defines Objectives as strategies or implementation steps to attain mitigation goals. Unlike goals, objectives are specific and measurable, where feasible.

FEMA defines Mitigation Actions as specific actions that help to achieve the mitigation goals and objectives.

Guiding Principle, Mitigation Goals and Objectives

This section presents the guiding principle for this Plan, and mitigation goals and objectives identified to reduce or avoid long-term vulnerabilities to the identified hazards.

Mission Statement

Per FEMA guidance (386-1), a mission statement or guiding principle describes the overall duty and purpose of the planning process, and serves to identify the principle message of the plan. It focuses or constrains the range of goals and objectives identified. This is not a goal because it does not describe outcomes. Somerset County’s mission statement is broad in scope, and provides a direction for the Plan.

The Somerset County Hazard Mitigation Project Management Team (PMT) and Steering Committee reviewed the mission statement from the 2008 Somerset County Plan, which was retained in verbatim in the 2014 plan update. Initial refinements were made in 2017 by these groups, and the draft refined mission statement was distributed to the Mitigation Planning Committee (MPC) for review and comment. MPC response comments were evaluated by the PMT and Steering Committee, and appropriate changes were incorporated into this final mission statement for the 2019 Plan Update³:

Through partnerships, education, careful planning and implementation, identify and reduce vulnerability to natural hazards in order to protect the health, safety, quality of life, environment and economy of the communities within Somerset County.

Goals

According to CFR 201.6(c)(3)(i): “The hazard mitigation strategy shall include a description of mitigation goals to reduce or avoid long-term vulnerabilities to the identified hazards.” The PMT, Steering and Planning Committees developed updated mitigation goals and objectives based on the risk assessment results, discussions, research, and input from amongst the committee, existing authorities, polices, programs, resources, stakeholders and the public for inclusion in the 2019 plan.

In 2008, the Planning Committee initially identified five goals through a facilitated exercise, working from a catalog of goal statements created through a review of similar plans and FEMA planning guidance. Once the goals were established, objectives that meet multiple goals were selected through a similar facilitated exercise. For the purposes of this Plan, goals are defined as follows:

Goals are general guidelines that explain what is to be achieved. They are usually broad, long-term, policy-type statements of what the participating jurisdictions hope to achieve over time through implementation of the plan, and represent global visions. Goals help define the benefits that the Plan is trying to achieve. They are based on the findings of the risk assessment, and apply to each jurisdiction adopting the plan (and its updates). 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).

Goals were developed by taking into consideration both state and jurisdictional goals for mitigation. The goals or actions in the County HMP are broadly aligned with the goals of the State Hazard Mitigation Plan. None of the goals or actions in the County HMP contradicts those of the State Hazard Mitigation Plan. In fact, the Somerset County Multi-Jurisdictional Hazard Mitigation Plan goals are in support of furthering the State’s goals in many ways.

³ The words “education” and “implementation” were added as part of this most recent plan update

New Jersey State Hazard Mitigation Plan Goals

As outlined in the New Jersey State Hazard Mitigation Plan (2014), the State's goals are:

1. Protect life
2. Protect property and ensure continuity of operations
3. Increase public preparedness
4. Develop and maintain an understanding of risks from natural hazards
5. Enhance the capability of NJOEM to continuously make New Jersey less vulnerable to hazards
6. Continue to enhance and strengthen local mitigation capabilities.

In addition to the stated mitigation goals and strategies, New Jersey has documented in its 2014 HMP that it will use the following approach:

- a) Recognize flooding as the major disaster threat facing the state and use acquisition between a voluntary seller and a public agency as the primary means to accomplish all of the goals and objectives (with additional Repetitive Loss Strategy information below).
- b) Offer, as a secondary means of accomplishing the State's goals, assistance in the elevation of homes where or when acquisition is not an option.
- c) Work with both county and municipal governments that have an approved local mitigation plan and those whose plans are nearing completion to develop sound and beneficial projects to alleviate the impacts of all natural disasters, including but not limited to flooding.
- d) Undertake cooperative, focused efforts to address energy and retail fuel resiliency, and continuity of operations.
- e) Pursue coordinated funding efforts.

State Repetitive Loss Strategy: New Jersey's strategy to reduce the number of repetitive loss and severe repetitive loss properties is as follows:

- Use available state financial resources to acquire, demolish and use such properties for permanent state-owned open space.
- Provide matching Green Acres acquisition funds to county and local governments to purchase flood prone properties.
- Provide "Payments in Lieu of Taxes" to municipalities when repetitive and severe repetitive loss properties are acquired by the state and the lands are set aside for permanent open space.
- Award repetitive and severe repetitive loss property acquisition and elevation projects specific points in project ranking scoring.
- Require that all county and municipal hazard mitigation plans include strategies to ensure actions to reduce the number of these properties.
- Develop and disseminate information on FEMA's Repetitive Flood Claim and Severe Repetitive Loss programs.

Somerset County Multi-Jurisdictional Hazard Mitigation Plan Goals

As part of the County HMP update process, the 2008 Plan goals were reevaluated by each participating jurisdiction. The following are the revised plan mitigation goals based on those included in the 2014 plan, which were reviewed and refined by the PMT and Steering Committee, then distributed to the MPC for review and comment during 2017. MPC comments were evaluated by the PMT and Steering Committee and used to shape the final goals that are listed below for inclusion in the 2019 Plan Update:

- Protect Life
- Protect Property

- Promote a Sustainable Economy
- Protect the Environment
- Increase Public Awareness
- Create Resilient Communities (new goal added during most recent plan update)

Somerset County's updated HMP goals are compatible with the needs and goals expressed in other available community planning documents as well as the NJ HMP. Each goal has a number of corresponding objectives that further define the specific actions or implementation steps. Achievement of these goals will define the effectiveness of a mitigation strategy. The goals also are used to help establish priorities.

The original objectives included in the 2008 plan and 2014 plan update were developed and/or selected by the Steering and Planning Committees through their knowledge of the local area, review of past efforts, findings of the risk assessment, qualitative evaluations, and identification of mitigation options. The objectives are used to 1) measure the success of the Plan once implemented, and 2) to help prioritize identified mitigation actions. For the purposes of this Plan, objectives are defined as follows:

Objectives

Objectives are short-term aims which, when combined, form a strategy or course of action to meet a goal. Unlike goals, objectives are specific and measurable.

As part of the 2014 plan update process, the Steering Committee reviewed the 2008 objectives and agreed to retain the original format of multi-goal objectives rather than reformatting to a goal-objective hierarchy as suggested in the 2008 plan FEMA review crosswalk as this format is suited to their planning process approach. Further the committee retained the objectives as originally stated as providing an excellent structure to build the updated plan.

As part of this 2019 plan update, the 2014 plan objectives were reviewed and refined by the PMT and Steering Committee. Objectives were refined, and were then distributed to the MPC for review and comment. MPC comments were evaluated by the PMT and Steering Committee, and used in the preparation of the final objectives for inclusion in the 2019 Plan Update. These objectives are provided in Table 6-1, and are not listed in order of priority. They serve as a stand-alone measurement of a mitigation action, rather than as a subset of a goal. Achievement of the objectives will be a measure of the effectiveness of a mitigation strategy. The objectives also are used to help establish priorities.

Table 6-1. Somerset County Hazard Mitigation Plan Objectives

Obj. #	Objective Statement	Protect Life	Protect Property	Promote a Sustainable Economy	Protect the Environment	Increase Public Awareness	Create Resilient Communities
O-1	Make the County and its municipalities more resilient and reduce hazard risks by identifying and monitoring changing systems and identifying and implementing sustainable adaptation strategies.	x	x	x	x	x	x
O-2	Identify risk-reduction, response, and recovery strategies that address the needs of vulnerable population groups such as the very young children, the elderly, persons with disabilities, low-income and others with communication, mobility, financial and other constraints.	x	x	x		x	x
O-3	Establish and maintain partnerships between the local government, business, and public sectors to pool resources and expertise, leverage investments and ensure effective implementation of cost-effective actions that reduce the level of risk to hazards for which there is exposure.	x	x	x		x	x
O-4	Retrofit, acquire, or relocate vulnerable property in high hazard areas including those known to be subject to repetitive damages.	x	x	x	x		x
O-5	Educate the public on the risk from natural and man-made hazards, changing weather trends and climate projections; and increase their awareness of the importance of preparation, mitigation, response, and recovery activities.	x	x	x	x	x	x
O-6	Eliminate or minimize disruption of local government operations caused by natural hazards by enhancing the resilience of identified critical infrastructure and critical facilities, institutions and services.	x	x	x		x	x

SECTION 6: MITIGATION STRATEGY

Obj. #	Objective Statement	Protect Life	Protect Property	Promote a Sustainable Economy	Protect the Environment	Increase Public Awareness	Create Resilient Communities
O-7	Ensure continuity of government operations, emergency services, and essential facilities at the local level during and immediately after hazard events.	x	x	x		x	x
O-8	Utilize the best available information and data on hazard exposure, vulnerability and climate to support appropriate land use decisions; prevent policies and investments that will increase vulnerabilities and risks; and support implementation strategies that yield multiple benefits and will have the largest positive impact in terms of strengthening community resilience.	x	x	x	x	x	x
O-9	Strengthen codes to increase the resilience of new construction to the impacts of both natural and man-made hazards.	x	x	x	x	x	x
O-10	Reinforce the relationship between environmental stewardship and natural hazard risk reduction by pursuing mitigation actions that will preserve or restore the environment's natural abilities to absorb the impacts of natural and man-made hazards.			x	x	x	x
O-11	Establish/enhance the capability to recognize an impending threat from natural or man-made hazards and the ability to coordinate and disseminate warning of that threat to the citizens of Somerset County.	x	x	x		x	x
O-12	Leverage and utilize incentive based programs including but not limited to: the Community Rating System, Firewise, and Storm Ready, to promote the pro-active mitigation of natural hazards in Somerset County.	x	x	x	x	x	x
O-13	Foster sustained communications and civic engagement before, during, and after natural hazard events.	x	x	x		x	x

Capability Assessment

According to FEMA 386-3, a capability assessment is an inventory of a community's missions, programs and policies; and an analysis of its capacity to carry them out. This assessment is an integral part of the planning process. The assessment process enables identification, review and analysis of local and state programs, policies, regulations, funding and practices currently in place that may either facilitate or hinder mitigation.

A capability assessment was prepared by Somerset County and each participating jurisdiction. The capability assessments are presented in Section 9, Volume II of this Plan. By completing this assessment, Somerset County and each jurisdiction learned how or whether they would be able to implement certain mitigation actions by determining the following:

- Types of mitigation actions that may be prohibited by law;
- Limitations that may exist on undertaking actions; and
- The range of local and/or state administrative, programmatic, regulatory, financial and technical resources available to assist in implementing their mitigation actions.
- Action is currently outside the scope of capabilities (funding)
- The jurisdiction is not vulnerable to the hazard
- Action is already being implemented

As part of the HMP Update process, Somerset County and each participating jurisdiction evaluated their prior Capability Assessment, and updated their assessment accordingly to reflect current conditions. Jurisdictional Annexes include each entity's latest assessment of their respective capabilities.

IDENTIFICATION, PRIORITIZATION, ANALYSIS, AND IMPLEMENTATION OF MITIGATION ACTIONS

This subsection discusses the identification, prioritization, analysis and implementation of mitigation actions for Somerset County.

Each jurisdiction that participated in the 2014 Plan developed a unique mitigation strategy – an action plan describing how their mitigation actions would be implemented, prioritized, administered, and incorporated into the community’s existing planning mechanisms. Each jurisdiction developed an action plan unique to their community and its specific vulnerabilities and capabilities.

As part of the HMP update process, participants were required to provide updated mitigation strategies. This was done using a two-step process.

1. First, each participating jurisdiction provided updates regarding the status and relevance of each action previously included in the 2014 Plan, along with a determination of which measures would be carried forward, with or without changes, for inclusion in the updated 2019 Plan mitigation strategies, and which would be omitted. They also described changes in local priorities since the last plan was approved. Documentation of this step can be found in each jurisdictional annex (Section 9).
2. Next, each participating jurisdiction considered whether updated risk information or other local preferences warranted the addition of new mitigation measures to their local mitigation strategies. Documentation of this step can also be found in each jurisdictional annex (Section 9).

Information in the balance of this section is presented in two parts.

- **Part One** provides a summary of activities undertaken during the last plan update to develop mitigation strategies.
- **Part Two** describes how each jurisdiction evaluated their prior strategies, summarized the status and relevance of each initiative over the last five-year plan maintenance cycle, and then built upon this assessment to update its mitigation strategy for this 2019 Plan Update.

Part One - Summary of Activities Undertaken During the Last Plan Update

Strengths, Weaknesses, Opportunities and Obstacles (SWOO)

On May 8, 2013, a Strengths, Weaknesses, Opportunities, and Obstacles (SWOO) session was held with the MPC. The purpose of this session was to review information garnered from the risk assessment and the public involvement strategy to identify strengths, weaknesses, opportunities and obstacles in hazard mitigation within Somerset County through a facilitated brainstorming session on risks, vulnerabilities, and capabilities. All information shared during this session was recorded and used to prepare catalogs of mitigation alternatives to be used by MPC members for preparing their individual jurisdictional annexes. Many of the strategies (such as community outreach) identified in the catalogs could be applied to multiple hazards. This Plan identifies strategies for multiple hazards for the County and each jurisdictional annex for participating jurisdictions (Section 9).

Table 6-2. Agencies/Stakeholders

Agency/Stakeholder
Somerset County Engineering
Borough of Manville Engineering/Administration
Somerset County OEM
Somerset County Youth Services
NJ Water Supply Authority
Bedminster Township OEM
Branchburg Township DPW
Branchburg Township Administrator
Branchburg Deputy Director
Borough of Rocky Hill Engineering
Borough of Millstone, Engineering
Montgomery Police Department
Franklin Township Engineering
Borough of Watchung Engineering
Hillsborough Township Engineering
Warren Township Engineering
Borough of North Plainfield DPW
Borough of Peapack-Gladstone OEM

The MPC generated a mitigation catalog which includes a comprehensive list of mitigation actions (see Appendix D) to be considered that met the following objectives:

- Use information obtained from the public involvement strategy;
- Use information provided in the risk assessment;
- Seek mitigation actions consistent with the goals and objectives for the Somerset County HMP;
- Create a catalog of mitigation actions to be used as a tool by the MPC for selecting mitigation actions.

Catalog of Mitigation Actions

Based on information gathered during the SWOO session, a catalog of mitigation actions was created listing initiatives that could manipulate the hazard, reduce exposure to the hazard, reduce vulnerability to the hazard, and to increase the ability to respond to or be prepared for a hazard (Appendix D). In addition, the catalog indicates responsibility for implementation (i.e., who would most likely implement the initiative: personal property owners, private sector business, or government). Based on the risk assessment, the hazards included in the catalog are deemed to be those to which the planning area is most vulnerable. The catalog is not meant to be exhaustive or site-specific but rather to inspire thought and provide members of the MPC a baseline of initiatives backed by a planning process, consistent with the goals and objectives of the planning area, and within the capabilities of the Participants. The MPC was not bound to these actions. They had the opportunity to add further actions subsequent to the SWOO workshop. Actions in the catalog were omitted by the partners from their jurisdictional annexes based on the following:

- Action is currently outside the scope of capabilities (funding)
- The jurisdiction is not vulnerable to the hazard
- Action is already being implemented

All proposed mitigation actions were identified in relation to the goals and objectives presented above. The mitigation actions included a range of options in line with the six types of mitigation actions described in FEMA guidance (FEMA 386-3), including:

1. **Prevention:** Government, administrative or regulatory actions or processes that influence the way land and buildings are developed and built. These actions also include public activities to reduce hazard losses. Examples include planning and zoning, floodplain local laws, capital improvement programs, open space preservation, and storm water management regulations.
2. **Property Protection:** Actions that involve (1) modification of existing buildings or structures to protect them from a hazard or (2) removal of the structures from the hazard area. Examples include acquisition, elevation, relocation, structural retrofits, storm shutters, and shatter-resistant glass.
3. **Public Education and Awareness:** Actions to inform and educate citizens, elected officials, and property owners about hazards and potential ways to mitigate them. Such actions include outreach projects, real estate disclosure, hazard information centers, and school-age and adult education programs.
4. **Natural Resource Protection:** Actions that minimize hazard loss and also preserve or restore the functions of natural systems. These actions include sediment and erosion control, stream corridor restoration, watershed management, forest and vegetation management, and wetland restoration and preservation.
5. **Emergency Services:** Actions that protect people and property, during and immediately following, a disaster or hazard event. Services include warning systems, emergency response services, and the protection of essential facilities.

Mitigation Actions

Mitigation actions are a key element of the HMP. It is through the implementation of these actions that Somerset County and the participating jurisdictions can *strive to become*

disaster-resistant through hazard mitigation. For the purposes of this Plan, mitigation actions are defined as follows:

Mitigation actions are activities designed to reduce or eliminate losses resulting from natural hazards.

Although one of the driving influences for preparing this Plan was grant funding eligibility, its purpose is more than just access to federal funding. It was important to the Planning Committee to look at mitigation actions that will work through all phases of emergency management. Some of the actions outlined in this Plan may not be grant eligible since grant eligibility was not the primary focus of the selection. Rather, the focus was the actions' effectiveness in achieving the goals of the Plan and whether they are within the County or each jurisdiction's capabilities.

A series of mitigation actions were identified by Somerset County and each participating jurisdiction. These actions are summarized in the County and Jurisdictional Annexes, located in Section 9, Volume II of this Plan. Along with the hazards mitigated, goals and objectives met, lead agency, estimated cost, potential funding sources and the proposed timeline are identified. The parameters for the timeline are as follows:

- Short Term = To be completed in 1 to 5 years
- Long Term = To be completed in greater than 5 years
- Ongoing = Currently being funded and implemented under existing programs.

Prioritization

Section 201.c.3.iii of 44 CFR requires an action plan describing how the actions identified will be prioritized. The Project Management Team (PMT), along with their contract consultant (AECOM), developed a prioritization methodology for the Plan that meets the needs of the County and participating jurisdictions while at the same time meeting the requirements of Section 201.6 of 44 CFR. The mitigation actions identified in Volume II of this plan were prioritized according to the criteria defined below.

- **High Priority:** A project that meets multiple plan goals and objectives, benefits exceed cost, has funding secured under existing programs or authorizations, or is grant-eligible, and can be completed in 1 to 5 years (short-term project) once project is funded.
- **Medium Priority:** A project that meets at least one plan goal and objective, benefits exceed costs, funding has not been secured and would require a special funding authorization under existing programs, grant eligibility is questionable, and can be completed in 1 to 5 years once project is funded.
- **Low Priority:** A project that will mitigate the risk of a hazard, benefits exceed costs, funding has not been secured, and project is not grant-eligible and/or timeline for completion is considered long-term (5 to 10 years).

It is noted that these priority definitions are considered to be dynamic and can change from one category to another based on changes to a parameter such as availability of funding. For example, a project might be assigned a medium priority because of the uncertainty of a funding source. This priority could be changed to high once a funding source has been identified such as a grant. The prioritization schedule for this Plan will be reviewed and updated as needed annually through the plan maintenance strategy described in Section 7 of this Plan.

The MPC reviewed the prioritization process and determined that this provided an acceptable method to prioritize the projects. In addition, specific guidance was provided by FEMA during the jurisdictional annex workshops to provide an understanding of how the resources, funding and costs factor into

prioritizing projects. Therefore the STAPLEE method was not utilized in the update of the plan but instead the general philosophy was employed in conjunction with the review of the mitigation strategy.

Benefit/Cost Review

Section 201.6.c.3iii of 44CFR requires the prioritization of the action plan to emphasize the extent to which benefits are maximized according to a cost/benefit review of the proposed projects and their associated costs. The PMT was asked to weigh the estimated benefits of a project versus the estimated costs to establish a parameter to be used in the prioritization of a project, utilizing the same parameters used by each of the participating jurisdictions as outlined in Volume II of this Plan.

This benefit/cost review was qualitative; that is, it did not include the level of detail required by FEMA for project grant eligibility under the Hazard Mitigation Grant Program (HMGP) and Pre-Disaster Mitigation (PDM) grant program. This qualitative approach was used because projects may not be implemented for up to 10 years, and the associated costs and benefits could change dramatically in that time. Each project was assessed by assigning subjective ratings (high, medium, and low) to its costs and benefits, described in Table 6-2.

Table 6-3. Project Assessment

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.

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-beneficial and are prioritized accordingly. For some of the County initiatives identified, Somerset County may seek financial assistance under FEMA's HMGP or PDM programs. Both of these programs require detailed benefit/cost analysis as part of the application process. These analyses will be performed when funding applications are prepared, using the FEMA BCA model process. The MPC 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 MPC reserves the right to define "benefits" according to parameters that meet its needs and the goals and objectives of this plan.

The annexes presented in Section 9, Volume II present the results of applying the prioritization methodology presented to the set of mitigation actions identified by Somerset County and each participating jurisdiction, and includes the following prioritization parameters:

- Number of objectives met by the initiative
- Benefits of the project (high, medium, or low)

- Cost of the project (high, medium, or low)
- Do the benefits equal or exceed the costs?
- Is the project grant-eligible?
- Can the project be funded under existing programs and budgets?
- Priority (high, medium, or low)

Part Two - Summary of Activities Undertaken During the 2019 Plan Update

As part of the 2019 Plan Update, each jurisdiction was required to provide an updated mitigation strategy. This was done using a two-step process.

1. First, each participating jurisdiction provided updates regarding the status and relevance of each action previously included in the 2014 Plan, along with a determination of which measures would be carried forward to the updated 2019 Plan mitigation strategies with or without changes; and which would be omitted. They also described changes in local priorities since the last plan was approved. Documentation of this step can be found in each jurisdictional annex (Section 9).
2. Next, each participating jurisdiction considered whether updated risk information or other local preferences warranted the addition of new mitigation measures to their local mitigation strategies. Documentation of this step can also be found in each jurisdictional annex (Section 9).

[Planning Committee Meeting – January 31, 2018](#)

To jumpstart the process of updating local mitigation strategies, the Somerset County Planning Division, in collaboration with the Somerset County Emergency Management Office, hosted a Planning Committee Meeting for Municipal Hazard Mitigation Coordinators and their representatives on January 31, 2018. At this meeting, the County presented several draft components of the updated Multi-jurisdictional Hazard Mitigation Plan to provide participating jurisdictions with updated information they would need to make sound, informed decisions regarding their locally identified mitigation strategies moving forward. Information was presented regarding:

- Updated risk assessment (Risk Assessment Interim Deliverable document) and key changes since 2014
- Updated mitigation strategy options
- Overall plan mission, goals and objectives and updates since 2014
- New mitigation strategy update tools:
 - Energy Resiliency Framework
 - Flood Resiliency Framework

[Municipal Assistance Sessions – April 10, 2018 and April 12, 2018](#)

After the January informational meeting and the release of a subset of report deliverables, the Somerset County Planning Division, in collaboration with the Somerset County Emergency Management Office, hosted one-on-one meetings for municipal hazard mitigation officers (HMOs) and Hazard Mitigation (HM) Committee members to obtain direct assistance for compiling the worksheet information necessary for updating local Mitigation Strategies. The working sessions were held on April 10, 2018 and April 12, 2018 in the Somerset County Administration Building Engineering Conference Room at 20 Grove Street in Somerville. Jurisdictions were asked to sign up for one of four available time slots on each date (2:00-3:30, 3:45-4:45, 5:00-6:30; or 6:45-7:45). The agenda for each time slot was the same; however, time slots of both 60 and 90 minutes were made available to better accommodate the schedules of the local representatives, as well their perceived degree of need for additional guidance time at this juncture. During each interactive working session, jurisdictions were provided with guidance and an overview of how to document their evaluation of the 2014 Plan mitigation initiatives (status, and relevance for potential inclusion in the 2019 Plan Update as *initiatives carrying forward*); as well as how to document their evaluation and inclusion of initiatives that weren't previously identified, to be added to the 2019 Plan Update as *new initiatives*.

The County invited the HMOs and their HM Committees from all 21 of its municipalities, as well as participating jurisdictions of the SRVSA and the NPBOE, to these working sessions. Representatives from 12 municipalities, the SRVSA, the NPBOE, and the County ultimately attended. At each working session, jurisdictions were reminded that their hazard mitigation strategies represent the heart of the overall hazard mitigation plan. They were provided information on how to develop or update a local mitigation strategy. Each working session presented attendees with a chance to begin to:

- Develop actions to reduce risk and make your community more disaster-resilient;
- Develop cost-effective actions that save the community money in the long run;
- Build a strategy for the successful implementation of the community’s mitigation action plan;
- Coordinate with other local officials, planners and stakeholders on potential hazard mitigation ideas and projects;
- Use worksheets, examples and other tools to help you and your community build a mitigation strategy that makes a connection between natural hazard risk, action and implementation;
- Communicate directly with consultant staff to better understand how to develop an effective and worthwhile Hazard Mitigation Plan.

The working sessions were intended to be strictly informational. Municipal HM Committees did not develop their strategies at the working session but, rather, developed them later in coordination with their respective Municipal HMP Committee members based on the information provided. The consultant and County OEM staff were available throughout the process to answer questions and provide feedback, even outside of the working sessions.

Municipal HM Committees evaluated a range of mitigation actions to address their greatest vulnerabilities and key risk findings. Municipal HM Committee members often referred to developing mitigation strategies for what they considered their “highest hazards” – those of greatest concern due to high average annual damages and/or isolated key risk findings where the level of risk was deemed to be unacceptable. Mitigation actions were not considered for hazards that were not identified for a given community. “Lesser hazards” – those of least concern due to low average annual damages and/or risk findings where the identified risk was deemed to be acceptable – were typically addressed via less quantifiable measures, often via education and awareness programs.

[Mitigation Strategy Roundtable – April 26, 2018](#)

The Somerset County Planning Division, in collaboration with the Somerset County Emergency Management Office, invited all Planning and Steering Committee members to an interactive roundtable program aimed at showing how the updated risk assessment, new climate information, and draft Flood and Energy Resiliency Toolkits can be used for identifying projects and initiatives appropriate for inclusion in updated municipal mitigation strategies. The Roundtable was held at the Somerset County Office of Emergency Management at 402 Roycefield Road in Hillsborough.

Discussions at the Roundtable occurred in three parts, as follows:

- Part 1 – Overview of Materials and Resources. Worksheets 4 and 6 were explained, and attendees were pointed in the direction of the resources available, including the Draft Updated Risk Assessment Interim Deliverable, the Draft Flood Resiliency Framework and Draft Flood Resiliency Toolkit, and State and Federal Funding Resources for mitigation.
- Part 2 – Questions. Attendees broke into two groups – one group of Steering Committee representatives, and a second group comprised of representatives from municipalities and the NPBOE. Roundtable questions for discussion included:
 - What are some examples of initiatives included in your 2014 project/action lists that have now become capabilities?

- What are some examples of projects/actions that were included in your 2014 that will and will not be carried forward?
- What are some examples of new projects/actions that can be added to your updated list of initiatives?
- What are some real-life mitigation strategy implementation success stories in your community?
- Do you have any suggestions related to “county-wide” or “county-lead” projects that you would like to recommend for consideration?
- Part 3 – Mitigation Strategy Development Discussions. Each of the two breakout roundtables was asked to share how they envisioned using the resources discussed in Part 1 to consider new mitigation actions and initiatives for their jurisdiction. Then, time was allotted for attendees to begin preparing a draft action worksheet for one of their tentative initiatives, and participants discussed amongst themselves similarities, differences, questions, etc. Attendees benefited greatly from the sharing of ideas during this time of the Roundtable.

Jurisdictional Annexes

The annexes present the County’s and each participating jurisdiction’s mitigation action implementation strategy including:

- Mitigation actions for individual and multiple hazards
- Mitigation objectives supported by each action. Goals are not listed because all objectives meet multiple goals.
- Implementation priority
- Potential funding sources for the mitigation action (grant programs, current operating budgets or funding, or the agency or jurisdiction that will supply the funding; additional potential funding resources are identified)
- Estimated budget for the mitigation action (financial requirements for new funding or indication that the action is addressed under current operating budgets)
- Time estimated to implement and complete the mitigation action
- Existing policies, programs, and resources to support implementation of the mitigation action (additional policies, programs, and resources identified)

Specific mitigation actions were identified to prevent future losses; however, current funding is not identified for all of these actions at present. Somerset County has limited resources to take on new responsibilities or projects. The implementation of these mitigation actions is dependent on the approval of the local elected governing body and the ability of the community to obtain funding from local or outside sources. Where such actions are high priorities, the community will work together with NJOEM, FEMA and other Federal, State and County agencies to secure funds.

Each jurisdiction participating in this update (Somerset County, all 21 municipalities, the SRVSA, and the NPBOE) has assisted in the authoring of their own annex or chapter to this plan by providing feedback in the form of various worksheet responses. Annexes are included in Section 9 of this Plan. One of the key elements of each annex is the updated jurisdictional mitigation strategy.

As data, information and other input was compiled and received from each municipality, it was input directly into their respective draft annexes. To help support the selection of appropriate, risk-based mitigation strategies, each annex includes a summary of hazard vulnerabilities identified during the plan update process, either directly by municipal representatives, through review of available county and local plans and reports, and through the hazard profiling and vulnerability assessment process.

During the 2014 Plan Update, annexes were pre-populated with both specific mitigation actions identified during the course of the plan update, as well as general (“common”) initiatives developed during the planning process and included for municipal consideration. This information was updated by the jurisdictions as part of the 2019 Plan Update. Many pre-populated initiatives from the 2014 Plan were either completed and represent current capabilities of the jurisdiction (and subsequently removed from the 2019 Plan Update as existing capabilities); others were still ongoing goals not yet attained and were thus carried forward in some cases as true mitigation initiatives.

Specific mitigation actions included in the draft municipal annexes included:

- The subset of initiatives being carried forward from the 2014 Plan;
- New mitigation actions added as part the 2019 Plan Update, such as:
 - Those specifically identified by the jurisdiction during the course of the planning process;
 - Those identified in other relevant county and local plans and reports (e.g. Stream Corridor Management Plans, Highway Management Plans, Capital Plans, local engineering studies, etc.);
 - Those identified during the public and stakeholder outreach process (see Section 3);
 - Those identified by local flood commissions, and as part of the Irene/Lee HMGP program in the County; and,
 - Those that became evident through the updated hazard profiling and risk/vulnerability assessment effort.

During the last plan update, jurisdictional annexes were also pre-populated with a suite of “general” or “common” mitigation initiatives for their consideration and inclusion as appropriate. Throughout the plan update process, and in consideration of federal and state mitigation guidance, the Steering Committee recognized that all municipalities would benefit from the inclusion of certain mitigation initiatives. These include initiatives to address vulnerable public and private properties, including RL and SRL properties; initiatives to support continued and enhanced participation in the NFIP; improved public education and awareness programs; initiatives to build greater local mitigation capabilities; and a commitment to implement and maintain the plan. All municipalities were asked to thoroughly review these “general” initiatives, and include, amend or delete them as they found appropriate for their jurisdiction.

In general, mitigation actions ranked as high priorities will be addressed first. However, medium or even low priority mitigation actions can be considered for concurrent implementation. Therefore, the ranking levels should be considered as a first-cut, preliminary ranking and will evolve over time during the plan maintenance phase based on input from the MPC, Somerset County departments and representatives, municipal government departments and representatives, the public, municipal government departments and representatives, NJOEM, and FEMA as the Plan is implemented.

Area-Wide Collaborative Actions

During the five year plan maintenance period of the 2014 Hazard Mitigation Plan (March 2014 through March 2019), the County and municipalities have collaborated on numerous projects including, but not limited to, the following:

- Improved communication before, during, and after flood events by instituting Nixle e-mail and text emergency notification systems.
- Participation in CRS.
- Focus on acquiring property in hazard (flood) prone areas to reduce vulnerability to natural hazards.
- Providing back-up power for critical facilities.

- Improving emergency response and using new technology as it becomes available.
- Capturing and recording historical data from hazard events to be used to justify the feasibility of mitigation projects.
- Developing post disaster action plans.
- Adding a Tax Parcel Viewer Map Application to the County website for use by the general public to view FEMA FIRM information relative to individual properties.
- Implemented roadway drainage improvements.
- Provided residential and neighborhood hazard mitigation recommendations and strategies via the updated County Master Plan- Housing Element adopted November 2017.