



SECTION 6. MITIGATION STRATEGY

6.1 INTRODUCTION

This section presents mitigation actions for the Planning Partnership to reduce potential exposure and losses identified as concerns in the risk assessment. The Planning Partnership reviewed the risk assessment to develop the mitigation actions presented herein.

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.

6.2 BACKGROUND AND PAST MITIGATION ACCOMPLISHMENTS

In accordance with federal requirements, a discussion regarding past mitigation activities and an overview of past efforts is provided as a foundation for understanding the mitigation goals, objectives, and activities outlined in this HMP. The Planning Partnership, through previous and ongoing hazard mitigation activities, has demonstrated that it is proactive in protecting its physical assets and citizens against losses from natural and human-caused hazards. Examples of previous and ongoing actions, projects and capabilities include the following:

- Burlington County led the development of a 2019 HMP update and facilitated the 2024 Update, which included the participation of all municipal governments in the Planning Area. The current planning process represents the regulatory five-year local plan update process.
- All municipalities in Burlington County, except the Borough of Fieldsboro, participate in the National Flood Insurance Program (NFIP), which requires the adoption of FEMA floodplain mapping and certain minimum construction standards for building within the floodplain.
- Currently, two municipalities in Burlington County are participating in NFIP Community Rating System (CRS) program and have floodplain management programs that exceed NFIP requirements.
- Many municipalities in Burlington County have adopted regulatory standards regarding land use and zoning that exceed minimum requirements and provide the communities with greater capability to manage development without increasing hazard risk and vulnerability.
- Municipalities have participated on a limited basis in available mitigation grant funding opportunities to implement mitigation projects.
- The County and its municipalities have implemented mitigation actions to protect critical facilities and infrastructure throughout the Planning Area. These actions and others were identified in the County and municipal mitigation strategies in the 2019 HMP.



- NJOEM supports Burlington County communities reducing their risk and increasing their resilience. NJOEM provides a comprehensive program to support local jurisdictions as they assess the risks they face, plan to mitigate them, and fund those plans to implement mitigation projects that reduce risk across the Planning Area.
- In 2020, the County and municipalities worked to mitigate the impacts of the coronavirus pandemic through education of the public, enforcement of local and state social distancing and masking measures, and establishment of best practices to slow the spread of COVID-19.

These past and ongoing activities have contributed to the Planning Partnership’s understanding of its hazard preparedness and future mitigation activity needs, costs, and benefits. These efforts provide an ongoing foundation for the Planning Partnership to use in developing this HMP update.

6.3 GENERAL MITIGATION PLANNING APPROACH

The overall approach used to update the County and local hazard mitigation strategies was based on FEMA and State of New Jersey regulations and guidance for local mitigation plan development, including:

- DMA 2000 implementing regulations, specifically 44 CFR 201.6 (local mitigation planning)
- FEMA Local Mitigation Planning Policy Guide, April 19, 2023
- FEMA Local Mitigation Planning Handbook, May 2023
- FEMA Local Mitigation Plan Review Guide, October 1, 2011
- FEMA Integrating Hazard Mitigation into Local Planning, March 1, 2013
- FEMA Plan Integration: Linking Local Planning Efforts, July 2015
- FEMA Mitigation Planning How-To Guide #3, Identifying Mitigation Actions and Implementing Strategies (FEMA 386-3), February 2013
- FEMA Mitigation Ideas: A Resource for Reducing Risk to Natural Hazards, January 2013

The mitigation strategy update approach included the following steps:

- Problem and solutions identification (see Section 6.4)
- Update of mitigation goals and objectives (see Section 6.5)
- Mitigation strategy development and update (see Section 6.6), including:
 - Review of the 2019 HMP mitigation actions
 - Identification of mitigation techniques
 - 2024 HMP mitigation action plan
 - Mitigation best practices
 - Mitigation strategy evaluation and prioritization
 - Benefit/cost review



6.4 PROBLEM AND SOLUTIONS IDENTIFICATION

A problem and solutions identification exercise was completed by the participating jurisdictions. Participants were asked to fill out at least one problem and solution for each of the hazards of concern for the 2024 HMP update. Jurisdictions were asked to begin the exercise by identifying a problem caused by each of the hazards. Next, a range of potential solutions to that problem were identified. To conclude the discussion of each ranked hazard, participants were asked about anticipated costs, benefits, funding sources, and project feasibility. The results were reviewed and discussed with the contracted consultant and used to help identify capabilities and potential mitigation actions.

6.5 UPDATE OF MITIGATION GOALS AND OBJECTIVES

This section documents the efforts to update the hazard mitigation goals and objectives established to reduce or avoid long-term vulnerabilities to the identified hazards.

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.

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.” Further, FEMA mitigation planning guidance recommends establishing objectives to better tie mitigation goals to specific mitigation strategies (e.g., projects, activities, and initiatives).

The goals established in the 2019 Burlington County HMP were presented to the Steering Committee and Planning Partnership for review at the beginning of the planning process. This review was made with consideration of the hazard events and losses since the 2019 plan, the updated hazard profiles and vulnerability assessment, and the goals and objectives established in the updated 2019 State of New Jersey HMP and proposed in the draft of the 2024 State of New Jersey HMP.

The Steering Committee met on August 22, 2023, to review the 2019 goals and objectives and provided input on updated goals and objectives. These updates were presented to the Planning Partnership during the August 29, 2023, Planning Partnership Kick-Off meeting. As a result of these efforts, Table 6-1 presents the Planning Partnership’s 2019 goals and the 2024 updated goals; Table 6-2 presents the 2019 HMP objectives and the updated 2024 objectives.



Table 6-1. Burlington County 2019 and 2024 Hazard Mitigation Plan Goals

2019 HMP Goals	2024 HMP Update Goals
1. Protect Life	1. Protect Life
2. Protect Property	2. Protect Property
3. Promote a Sustainable Economy	3. Increase public preparedness and awareness
4. Protect the Environment	4. Develop and maintain an understanding of increased risk from climate change impacts to natural hazards
5. Increase Public Awareness	5. Enhance mitigation capabilities to reduce hazard vulnerabilities
6. Support Continuity of Operations	6. Support continuity of operations pre-, during, and post-hazard events
	7. Reduce the risk of natural hazards for socially vulnerable populations

Table 6-2. Burlington County 2019 and 2024 Hazard Mitigation Plan Objectives

2019 HMP Objectives	2024 HMP Update Objectives
1. Promote disaster-resistant development.	1. Promote disaster-resistant development.
2. Build and support local capacity to enable the public to prepare for, respond to, and recover from disasters.	2. Build and support local capacity to enable the public to prepare for, respond to, and recover from disasters.
3. Reduce the possibility of damages to emergency facilities from natural hazards.	3. Reduce the possibility of damages to critical facilities from natural hazards.
4. Reduce the possibility of damage and losses due to natural hazards affecting the county and its municipalities.	4. Reduce the possibility of damage and losses due to natural hazards affecting the county and its municipalities.
5. Educate the public on the risk from natural and man-made hazards and increase their awareness of preparation, mitigation, response, and recovery activities.	5. Educate the public on the risk from natural and man-made hazards and increase their awareness of preparation, mitigation, response, and recovery activities.
6. Increase communications before, during, and after natural hazard events.	6. Increase communications before, during, and after natural hazard events.
7. Retrofit, acquire, or relocate vulnerable property in high hazard areas including those known to be subject to repetitive damages.	7. Retrofit, acquire, or relocate vulnerable property in high hazard areas including those known to be subject to repetitive damages.
8. Utilize the best available information on hazard exposure and vulnerability to support appropriate land use decisions within Burlington County.	8. Utilize the best available information on hazard exposure and vulnerability to support appropriate land use decisions within Burlington County.
9. Increase local government official awareness regarding funding opportunities for mitigation and participating/contributing to future plan updates	9. Increase local government official awareness regarding funding opportunities for mitigation and participating/contributing to future plan updates.
	10. Identify, and provide additional resources to, vulnerable and marginalized populations that have reduced capacity to respond to hazards compared with the general population.
	11. Ensure dam infrastructure is maintained.
	12. Support the identification and access to funding to repair/rehabilitate/replace dams.
	13. Ensure Emergency Action Plans are developed and updated.
	14. Acquire and maintain detailed data regarding critical facilities and lifelines such that these sites can be prioritized and risk-assessed for possible mitigation actions.
	15. Support increased participation in the National Flood Insurance Program and Community Rating System.
	16. Promote sustainable and equitable land development practices that direct future development away from hazard-prone areas.
	17. Encourage and support multi-jurisdictional mitigation projects that leverage funding and support from multiple levels of government and community organizations.
	18. Strengthen inter-jurisdiction and inter-agency communication, coordination, and partnerships to foster hazard mitigation actions and/or projects.
	19. 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.



6.6 MITIGATION STRATEGY DEVELOPMENT AND UPDATE

As required by FEMA, the County and participating municipalities completed a comprehensive evaluation of the mitigation strategies and actions from the 2019 HMP and reported on the status of each. Their update may be found in each jurisdictional annex (see Volume II). In addition, the County and participating municipalities were provided the opportunity to include new strategies or actions to include in the 2024 HMP Update. New actions were prioritized to ensure they are cost-effective, environmentally sound, and technically feasible using the methodology outlined below.

6.6.1 Review of the 2019 HMP Mitigation Action Plans

To evaluate progress on local mitigation actions, the planning consultant met with each participant to discuss the status of the mitigation actions identified in the 2019 plan. For each action, jurisdictions were asked to provide the status of each action (*No Progress, In Progress, Ongoing Capability, Discontinue, or Completed*) and provide review comments on each. Jurisdictions were requested to quantify the extent of progress and provide reasons for the level of progress or why actions were being discontinued. Each jurisdictional annex in Volume II provides a table identifying the jurisdiction's prior mitigation strategy, the status of those actions and initiatives, and their disposition within their updated strategy.

Local mitigation actions identified as *Complete*, and those actions identified as *Discontinued*, were removed from the updated strategies. Local mitigation actions identified as an *Ongoing Capability* were incorporated into the capability assessment of each jurisdictional annex. Those actions identified as *No Progress* or *In Progress* that remain a priority for the jurisdiction, have been carried forward into the updated mitigation strategy. Actions identified as *Ongoing Capabilities* which are fully integrated into the normal operational and administrative framework of the community have been identified within the capabilities section of each annex and removed from the updated mitigation strategy.

At the August 2023 Planning Partnership kick-off meeting and during subsequent local-level planning meetings (phone, email), all participating jurisdictions were requested to identify mitigation activities completed, ongoing, and potential/proposed. As new potential mitigation actions, projects, or initiatives became evident during the plan update process, including as part of the risk assessment update and as identified through the public and stakeholder outreach process detailed in Section 2 (Planning Process), jurisdictions were made aware of these either through direct communication (local meetings, email, phone), at Steering Committee and Planning Partnership meetings, or via their draft jurisdictional annexes.

Throughout the planning process, the planning consultant worked directly with each community (phone, email) to assist with the development and update of their annex and include mitigation strategies, focusing on identifying well-defined, implementable projects with a careful consideration of benefits (risk reduction, losses avoided), costs, and possible funding sources (including mitigation grant programs).



6.6.2 Identification and Analysis of Mitigation Techniques

Concerted efforts were made to assure that municipalities develop updated mitigation strategies that included activities and initiatives covering the range of mitigation action types described in recent FEMA planning guidance (FEMA “Local Mitigation Planning Handbook” May 2023), specifically:

- **Local Plans and Regulations**—These actions include government authorities, policies, or codes that influence the way land and buildings are being developed and built.
- **Structure and Infrastructure Projects**—These actions involve modifying existing structures and infrastructure to protect them from a hazard or remove them from a hazard area. This could apply to public or private structures as well as critical facilities and infrastructure. This could apply to public or private structures as well as critical facilities and infrastructure.
- **Natural Systems Protection**—This type of action can include green infrastructure and low impact development, nature-based solutions, Engineering with Nature and bioengineering to incorporate natural features or processes into the built environment.
- **Education and Awareness Programs**—These types of actions keep residents informed about potential natural disasters. Many of these types of actions are eligible for funding through the FEMA HMA program. These actions may also include participation in national programs, such as the National Flood Insurance Program and Community Rating System, StormReady (NOAA), and Firewise (NFPA) Communities.

Efforts were also made to develop mitigation strategies that cover the range of mitigation action types described in recent CRS guidance (FEMA, 2018):

- **Preventative Measures (PR)**—Government, administrative or regulatory actions, or processes that influence the way land and buildings are developed and built. Examples include planning and zoning, floodplain local laws, capital improvement programs, open space preservation, and storm water management regulations.
- **Property Protection (PP)**—These actions include public activities to reduce hazard losses or 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.
- **Public Information (PI)**—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 educational programs for school-age children and adults.
- **Natural Resource Protection (NR)**—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.



- **Structural Flood Control Projects (SP)**—Actions that involve the construction of structures to reduce the impact of a hazard. Such structures include dams, setback levees, floodwalls, retaining walls, and safe rooms.
- **Emergency Services (ES)**—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.

Protecting Lifeline Facilities

Planning partner mitigation actions that address vulnerable lifeline 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. Further, it must be recognized that the County and jurisdictions have limited authority with regard to mitigation at any level of protection over privately owned lifeline 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 weather, severe winter weather, 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.

6.6.3 2024 HMP Mitigation Action Plan

To help support the selection of an appropriate, risk-based mitigation strategy, each annex provides a summary of hazard vulnerabilities identified during the plan update process, either directly by municipal representatives, through the capability assessment, and through the hazard profiling and vulnerability assessment process.

In October 2023, the Planning Partnership participated in a mitigation strategy development workshop, supplemented by emails and phone calls between jurisdictions and the contract consultant, 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 were intended to provide a detailed description of the problem area, including its impacts on the municipality/jurisdiction; past damages; loss of service; etc. An effort was made to include the street address of the property/project 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 formed a bridge between the hazard risk assessment which quantifies impacts to each community with the development of actionable mitigation strategies.



As discussed in the hazard profiles in Section 4.3, the long-term effects of climate change are anticipated to exacerbate the impacts of weather-related hazards including flood, hurricanes and tropical storm, nor'easter, severe weather, severe winter weather, and wildfire. By way of addressing these climate

To assist with the development of mitigation actions, municipalities were provided with the following:

- 2024 HMP goals and objectives
- 2019 HMP mitigation strategies
- Risk and capability assessment results
- Problem and solutions exercise
- Mitigation catalog
- Stakeholder and public input (e.g., citizen and stakeholder survey results)
- FEMA resources

change-sensitive hazards within their local mitigation strategies and integration actions, communities are working to evaluate and recognize these long-term implications and potential impacts, and to incorporate in planning and capital improvement updates.

A strong effort has been made to better focus local mitigation strategies on clearly defined, readily implementable projects and initiatives that meet the definition or characteristics of mitigation. Broadly defined mitigation actions were eliminated from the updated strategy unless accompanied by discrete

actions, projects, or initiatives. Certain continuous or ongoing strategies that represent programs that are fully integrated into the normal operational and administrative framework of the community have been identified within the capabilities section of each annex and removed from the updated mitigation strategy.

Overall, a comprehensive range of specific mitigation initiatives were considered by each plan participant to pursue in the future to reduce the effects of hazards. Some of these initiatives may be previous actions carried forward for this plan update. These initiatives are dependent upon available funding (grants and local match availability) and may be modified or omitted at any time based on the occurrence of new hazard events and changes in municipal priorities.

Throughout the course of the plan update process, additional regional and county-level mitigation actions were identified by the following processes:

- Review of the results and findings of the updated risk assessment,
- Review of available regional and County plans reports and studies,
- Direct input from County departments and other county and regional agencies, and
- Input received through the public and stakeholder outreach process.

The 2024 Mitigation Action Plan includes the following information for each action:

- **Action Name**—Each action in the action plan has a short action name to allow for quick identification.
- **Action Number**—The action plan assigns a numeric identifier to each action for tracking and progress reporting.
- **Lead Agency**—The action plan identifies the lead agency (and department/bureau if applicable) responsible for implementation of the action.



- **Supporting Agencies**—The action plan identifies any supporting agencies and/or departments (if applicable) that will partner with the lead agency to complete the action or phases of the action.
- **Hazard(s) of Concern**—The action plan includes a list of hazards addressed by the mitigation action.
- **Description of the Problem**—The action plan provides a problem statement for context as to why the action is needed. The problem connects the risk assessment, capability assessment, or both to the mitigation action.
- **Description of the Solution**—The action plan describes the mitigation strategies used within each action and how the action will be implemented, including phases and responsibilities.
- **Estimated Costs**—The action plan lists estimated costs to implement each action.
- **Potential Funding Sources**—The action plan lists options for funding the action, including annual budgets, state grants, and federal funding opportunities.
- **Implementation Timeline**—The action plan provides general project implementation timing.
- **Goals Met**—The action plan lists the HMP goals that the action supports.
- **Benefits**—The action plan discusses the overall benefits resulting from the implemented action.
- **Impact on Socially Vulnerable Populations**—The action plan identifies if and how the action reduces risk for underserved communities and/or socially vulnerable populations.
- **Impact on Future Development**—The action plan identifies if and how the action will reduce risk in areas that are under development pressures.
- **Impact on Critical Facilities/Lifelines**—The action plan identifies if and how the action reduces risk for critical facilities/community lifelines.
- **Impact on Capabilities**—The action plan identifies if and how the action supports or improves hazard mitigation capabilities.
- **Climate Change Considerations**—The action plan identifies if and how the action addresses anticipated changes to hazards as a result of climate change or how the action is able to adapt to changes in risk over time.
- **Mitigation Category**—The action plan categorizes each action by FEMA mitigation category:
 - Local Plans and Regulations (LPR)—These actions include government authorities, policies or codes that influence the way land and buildings are being developed and built.
 - Structure and Infrastructure Project (SIP)—These actions involve modifying existing structures and infrastructure to protect them from a hazard or remove them from a hazard area. This could apply to public or private structures as well as critical facilities and infrastructure. This type of action also involves projects to construct structures to reduce the impact of hazards.
 - Natural Systems Protection (NSP)—These are actions that minimize damage and losses, and also preserve or restore the functions of natural systems.
 - Education and Awareness Programs (EAP)—These are actions to inform and educate citizens, elected officials, and property owners about hazards and potential ways to mitigate them. These



actions may also include participation in national programs, such as StormReady and Firewise Communities.

- **CRS Category**—The action plan categorizes each action by Community Rating System mitigation category:
 - Preventative Measures (PR)—Government, administrative or regulatory actions, or processes that influence the way land and buildings are developed and built. Examples include planning and zoning, floodplain local laws, capital improvement programs, open space preservation, and storm water management regulations.
 - Property Protection (PP)—These actions include public activities to reduce hazard losses or 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.
 - Public Information (PI)—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 educational programs for school-age children and adults.
 - Natural Resource Protection (NR)—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.
 - Structural Flood Control Projects (SP)—Actions that involve the construction of structures to reduce the impact of a hazard. Such structures include dams, setback levees, floodwalls, retaining walls, and safe rooms.
 - Emergency Services (ES)—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.
- **Priority**—The action plan identifies if the action is a low, medium, or high priority for implementation.
- **Alternatives**—The action plan identifies and evaluates three potential alternative approaches to solving the problem, including the impact of a “no action” approach.

6.6.4 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 Planning Area, in compliance with 44 CFR Section 201.6(c)(3)(ii). One catalog was developed for each natural hazard of concern evaluated in this plan (see Appendix F, Mitigation Strategy Supplementary Data). The catalogs present alternatives that are categorized in two ways:



- By who would have responsibility for implementation:
 - Individuals—personal scale
 - Businesses—corporate scale
 - Government—government scale
- By what each of the alternatives would do:
 - Manipulate the hazard
 - Reduce exposure to the hazard
 - Reduce vulnerability to 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 presented in the catalog, as well as other resources made available to all jurisdictions (i.e., FEMA’s Mitigation Ideas). The catalog provides 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 catalog 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 action plan 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, and/or
- The action does not have public or political support.

6.6.5 Mitigation Strategy Evaluation and Prioritization

44 CFR Section 201(c)(3)(iii) requires an action plan describing how the actions identified will be prioritized. FEMA planning guidance (March 2013) identifies a modified STAPLEE (Social, Technical, Administrative, Political, Legal, Economic, and Environmental) mitigation action evaluation methodology that uses a set of 10 evaluation criteria suited to the purposes of hazard mitigation strategy evaluation. This method provides a systematic approach that considers the opportunities and constraints of implementing a particular mitigation action.

Based on this guidance, the Steering Committee has adopted and applied an action evaluation and prioritization methodology which includes an expanded set of 14 criteria to include the consideration of cost-effectiveness, availability of funding, anticipated timeline, and if the action addresses multiple hazards.

The 14 evaluation/prioritization criteria used in the 2024 update process are:



- **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? Developing 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 entity have the authority to implement the action?
- **Fiscal**—Can the action be funded under existing program budgets (i.e., is this initiative 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 the SVI index and other appropriate measures of social vulnerability.
- **Administrative**—Does the entity 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 project align with the entity's capabilities?
- **Hazards of Concern**—Does the action address one or more of the entity's high-ranked hazards?
- **Climate Change**—Does the action incorporate climate change projections? Is the action designed to withstand/address long-term conditions? Is the action consistent with climate resilience goals?
- **Timeline**—Can the action be completed in less than five years (within the HMP planning horizon)?
- **Community Lifelines**—Does this project benefit community lifelines?
- **Other Local Objectives**—Does the action advance other entity objectives, such as capital improvements, economic development, environmental quality, or open-space preservation? Does it support the policies of other plans and programs?

Specifically, for each mitigation action, the jurisdictions were asked to assign a numeric rank (-1, 0, or 1) for each of the 14 evaluation criteria, defined as follows:

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

Further, jurisdictions were asked to provide a summary of the rationale behind the numeric rankings assigned, as applicable. The numerical results were totaled to assist each jurisdiction in selecting mitigation actions for the updated plan.



As step one in the prioritization process, actions that had a numerical value between 0 and 6 were initially prioritized as low; actions with numerical values between 7 and 10 were initially categorized as medium; and actions with numerical values between 11 and 14 were initially categorized as high. As step two, jurisdictions were then asked to consider the benefits and costs, as well as the desired timeline for implementation and project completion timeline when finalizing each action's priority as high/medium/low. These attributes are included in the mitigation strategy table and for FEMA-eligible projects in the mitigation worksheets (see jurisdictional annexes in Volume II).

For the plan update there has been an effort to develop more clearly defined and action-oriented mitigation strategies. These local strategies include projects and initiatives 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 jurisdiction was asked to develop problem statements. With this process, participating jurisdictions were able to develop action-oriented and achievable mitigation strategies.

6.6.6 Benefit/Cost Review

44 CFR Section 201(c)(3)(iii) 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. Stated otherwise, cost-effectiveness is one of the criteria that must be applied during the evaluation and prioritization of all actions comprising the overall mitigation strategy.

The benefit/cost review applied in for the evaluation and prioritization of projects and initiatives in this HMP update process was qualitative; that is, it does not include the level of detail required by FEMA for project grant eligibility under the Hazard Mitigation Grant Program (HMGP), Flood Mitigation Assistance (FMA) and Pre-Disaster Mitigation (PDM) grant programs. For all actions identified in the local strategies, jurisdictions have identified both the costs and benefits associated with project, action, or initiative.

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

When possible, jurisdictions were asked to identify the actual or estimated dollar value for project costs and associated benefits. Having defined costs and benefits allows a direct comparison of benefits versus costs, and a quantitative evaluation of project cost-effectiveness. Often, however, numerical costs and/or benefits have not been identified or may be impossible to quantitatively assess.

For the purposes of this planning process, jurisdictions were tasked with evaluating project cost-effectiveness with both costs and benefits assigned to "High," "Medium," and "Low" ratings. Where quantitative estimates of costs and benefits were available, ratings/ranges were defined as:



- Low = < \$10,000
- Medium = \$10,000 to \$100,000
- High = > \$100,000

Where quantitative estimates of costs and/or benefits were not available, qualitative ratings using the definitions listed in Table 6-3 were used.

Table 6-3. 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.

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 Burlington County actions identified, the Planning Partnership may seek financial assistance under FEMA’s Hazard Mitigation Assistance (HMA) programs. These programs require detailed benefit/cost analysis as part of the application process. The benefit/cost review applied for the prioritization of actions in this update did not include the level of detail required by FEMA for project grant eligibility under HMA 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.