

SECTION 6: MITIGATION STRATEGIES

This section presents mitigation actions for Broome 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 mitigation accomplishments
- (2) 2007 Hazard Mitigation Strategy Update
- (3) General mitigation planning approach
- (4) Plan mitigation goals and objectives and an explanation of the updated Goals and Objectives process
- (5) Identification, analysis, and prioritization guidelines for potential mitigation actions

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

In accordance with DMA 2000 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 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.

All jurisdictions participating in this Plan participate in the NFIP, which requires the adoption of FEMA floodplain mapping and certain minimum construction standards for building within the floodplain.

A summary of progress of mitigation actions included in the 2007 Broome County Hazard Mitigation Plan is provided below (Table 6-1). In the case of projects that were not completed an explanation of obstacles has been provided. Projects that have not been commenced and those that are partially complete have been included in the mitigation strategies in Volume II of this plan as appropriate.

Table 6-1. Summary of Progress of Mitigation Actions for Broome County

| Project Type | Project Description | Project Status |
|------------------------------|--|----------------|
| County-Wide Projects | | |
| Road and structure repair | Mitigation projects/activities that have been completed in Broome County include flood mitigation projects on many road and structure components, including mitigation as well as repair. | Complete |
| Stone scour repair | At structures (bridges and culverts) where stone scour protection exists, we have repaired any dislocated stone, but also added drilling and pinning with rebar to keep the rock in place during the next event. | Complete |
| Erosion and scour protection | At structures where no rock existed prior to the flooding and where erosion occurred, the County has added drilled and pinned extra-heavy rock as a repair and as future protection against erosion and scour. | Complete |
| Wingwall protection | Where scour and erosion has created plunge pool at outlets – which threaten to undermine culverts or wingwalls, we have repaired these with dumped rock (riprap) or in some cases extra-heavy stone to | Complete |



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| Project Type | Project Description | Project Status |
|--|--|----------------|
| | minimize chances of future damage. | |
| Wingwall repair | Where structure integrity is compromised due to scour and embankment loss behind wingwalls, extra-large stone repairs with drilling and pinning have been completed to protect the structure against future flooding. | Complete |
| Stream bank stabilization | In areas of significant embankment loss, we have put in armored slope protection, or constructed rock walls to provide permanent stabilization instead of simple earthen slopes which could potentially fail during another flood event. | Complete |
| Mapping | Flood stage maps acquired for GIS. | Complete |
| Mapping | Secure updates of topographic mapping by LIDAR. | Complete |
| Mapping | Completed stormwater outfall mapping for all MS4 municipalities. | Complete |
| Mapping | Participated in the Floodplain Remapping process with FEMA and NYSDEC by assisting and organizing outreach efforts to affected residents and municipal representatives. Maps were put on hold while FEMA updates its methodology. Will continue to assist when the process is resumed. | Ongoing |
| Municipal Project Action Status | | |
| | See municipal Annexes in Section 9 of this plan. | |

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

GENERAL MITIGATION PLANNING APPROACH

The general mitigation planning approach used to develop this plan is based on the FEMA publication, *Developing the Mitigation Plan: Identifying Mitigation Actions and Implementing Strategies* (FEMA 386-3) and input provided by NYSOEM. The FEMA document and NYSOEM 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 tying to these 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, alternative 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 discussed under each hazard description in the following sections. However, based on community-specific needs and goals and available funding and costs,

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

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.

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. Broome County's mission statement is broad in scope, and provides a direction for the Plan.

The mission statement for the Broome County Plan is as follows:

Through partnerships and careful planning, identify and reduce the vulnerability to natural hazards in order to protect the general health, safety, welfare, quality of life, environment, and economy of the residents, businesses, institutions, and communities within Broome County.

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." The Planning Committee developed 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.

The Planning Committee identified six goals through a facilitated exercise, working from a catalog of goal statements created through 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 and represent global visions. Goals help define the benefits that the Plan is trying to achieve. The success of the Plan, once implemented, should be measured by the degree to which its goals have been met (that is, by the actual benefits in terms of hazard mitigation).

Broome County goals are compatible with the needs and goals expressed in other available community planning documents as well as the NYS HMP. The planning documents reviewed to develop Broome County's goals and ensure they are reasonably in-line with goals established in other related planning documents and mechanisms include:

- New York State Hazard Mitigation Plan
- 2007 Broome County Hazard Mitigation Plan
- Municipal Comprehensive Plans of participants

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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.

Objectives were then developed and/or selected by the Planning Committee through its 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 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.

The Planning Committee selected objectives that would meet multiple goals, as listed below. The objectives 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.

Through a facilitated workshop, the planning committee reviewed the 2007 Hazard Mitigation Plan goals and created a crosswalk to indicate how the original goals would be incorporated into the new goal hierarchy as shown below (Table 6-2).

Table 6-2. 2006 Hazard Mitigation Plan Goals and Objectives Crosswalk

| 2007 Goals and Objectives | 2012 Goals and Objectives | Comments |
|--|--|------------|
| Goal 1: Protect Life and Property | Goal 1: Protect Life, Property, and Economy | |
| Objective 1-1: Implement mitigation activities that will assist in protecting lives and property by making homes, businesses, infrastructure, and critical facilities more resistant to hazards. | Objective 1-1: <i>Work with all levels of government to implement publicly led mitigation projects</i> that will assist in protecting lives and property by making homes, businesses, infrastructure, and critical facilities more resistant to hazards. | |
| Objective 1-2: Encourage property owners to take preventive actions in areas that are especially vulnerable to hazards. | Objective 1-2: <i>Educate and encourage private</i> property owners to take preventive <i>mitigation</i> actions in areas that are especially vulnerable to hazards. | |
| Objective 1-3: Better characterize flood hazard events by conducting additional hazard studies, improved flood hazard mapping and creating flood and dam inundation models. | Objective 1-3: Better characterize flood hazard events by conducting additional hazard studies, improved flood hazard mapping and creating flood and dam inundation models. | No change. |

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| 2007 Goals and Objectives | 2012 Goals and Objectives | Comments |
|--|---|-------------------|
| Objective 1-4: Review existing local laws and ordinances, building codes, safety inspection procedures, and applicable rules to help ensure that they employ the most recent and generally accepted standards for the protection of buildings and environmental resources. | Objective 1-4: Review existing local laws and ordinances, building codes, safety inspection procedures, and applicable rules to help ensure that they employ the <i>best practices</i> for the protection of buildings and environmental resources. | No change. |
| Objective 1-5: Ensure that public and private facilities and infrastructure meet established building codes and immediately enforce the codes to address any identified deficiencies. | Objective 1-5: Ensure that public and private facilities and infrastructure meet established building codes and <i>rigorously</i> enforce the codes to address any identified deficiencies. | |
| Objective 1-6: Incorporate hazard considerations into land-use planning and natural resource management. | | Deleted. |
| Objective 1-7: Encourage homeowners, renters, and businesses to purchase insurance coverage for damages caused by hazards. | Objective 1-6: Encourage homeowners, renters, and businesses to purchase insurance coverage for damages caused by hazards. | No change. |
| Objective 1-8: Integrate the recommendations of this plan into existing local and county programs. | Objective 1-7: Fully integrate the recommendations of this plan into existing local and county <i>laws, plans, ordinances, natural resource management activities and programs</i> . | |
| Objective 1-9: Implement mitigation activities that encourage environmental stewardship and protection of the environment. | Objective 1-8: Implement mitigation activities that encourage environmental stewardship and protection of the environment. | No change. |
| Objective 1-10: Minimize new development within hazard prone areas. | Objective 1-9: Minimize new development within hazard prone areas. | No change. |
| | <i>Objective 1-10: Incorporate hazard mitigation planning into post disaster recovery projects and operations.</i> | Added. |
| | <i>Objective 1-11: Mitigate impacts of natural hazards to businesses, communities and local economies.</i> | |
| Goal 2: Increase Public Awareness | Goal 2: Increase Public Awareness | No change. |

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| 2007 Goals and Objectives | 2012 Goals and Objectives | Comments |
|---|--|------------------|
| Objective 2-1: Develop and implement additional education and outreach programs to increase public awareness of the risks associated with hazards and to educate the public on specific, individual preparedness activities. | Objective 2-1: Develop and implement additional education and outreach programs to increase public awareness of the risks associated with hazards and to educate the public on specific, individual preparedness activities. <i>Specifically target residents, businesses, realtors, insurance agents, and mortgage lenders.</i> | |
| Objective 2-2: Provide information on tools, partnership opportunities, funding resources, and current government initiatives to assist in implementing mitigation activities. | Objective 2-2: <i>Provide information to government officials, school districts and non-profits</i> on tools, partnership opportunities, funding resources, and current government initiatives to assist in implementing mitigation activities. | |
| Objective 2-3: Implement mitigation activities that enhance the technological capabilities of the jurisdictions and agencies in the County to better profile and assess exposure of hazards. | Objective 2-3: Implement mitigation activities that enhance the technological capabilities of the jurisdictions and agencies in the County to better profile and assess exposure of hazards. | No change. |
| Objective 2-4: Provide comprehensive information online to local emergency service providers, municipalities, the media and the public during and immediately following disaster and hazard events regarding emergency traffic routes, road closures, shelter locations, traffic restrictions, etc. | Objective 2-4: Provide comprehensive information online to local emergency service providers, municipalities, the media and the public during and immediately following disaster and hazard events regarding emergency traffic routes, road closures, shelter locations, traffic restrictions, etc. | No change. |
| | <i>Objective 2-5: Increase awareness of residents and businesses of existing public warning systems.</i> | Added. |
| | <i>Objective 2-6: Educate residents and businesses on the meaning of "State of Emergency" declarations.</i> | Added. |
| Goal 3: Encourage Partnerships | Goal 3: Encourage Partnerships | No change |
| Objective 3-1: Strengthen inter-jurisdiction and inter-agency communication, coordination, and partnerships to foster hazard mitigation strategies and/or projects designed to benefit multiple jurisdictions. | Objective 3-1: Strengthen inter-jurisdiction and inter-agency communication, coordination, and partnerships to foster hazard mitigation strategies and/or projects designed to benefit multiple jurisdictions. | No change. |

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| 2007 Goals and Objectives | 2012 Goals and Objectives | Comments |
|---|---|------------|
| Objective 3-2: Identify and implement ways to engage public agencies with individual citizens, non-profit organizations, business, and industry to implement mitigation activities more effectively. | Objective 3-2: Identify and implement ways to engage public agencies with individual citizens, non-profit organizations, business, and industry to implement mitigation activities more effectively. | No change. |
| Objective 3-3: Encourage shared services in acquiring maintaining and providing emergency services and equipment. | Objective 3-3: Encourage shared services in acquiring maintaining and providing emergency services and equipment and planning and executing mitigation projects. | |
| Goal 4: Provide for Emergency Services | Goal 4: Provide for Enhanced Emergency Services | |
| Objective 4-1: Encourage the establishment of policies at the local level to help ensure the prioritization and implementation of mitigation strategies and/or projects designed to benefit essential facilities, services, and infrastructure. | Objective 4-1: Encourage the establishment of policies at the local level to help ensure the prioritization and implementation of mitigation strategies and/or projects designed to benefit essential facilities, services, and infrastructure. | No change. |
| Objective 4-2: Where appropriate, coordinate and integrate hazard mitigation activities with existing local emergency operations plans. | Objective 4-2: Where appropriate, coordinate and integrate hazard mitigation activities with existing local emergency operations plans. | No change. |
| Objective 4-3: Identify the need for, and acquire, any special emergency services, training, and equipment to enhance response capabilities for specific hazards. | Objective 4-3: Identify the need for, and acquire, any special emergency services, training, and equipment to enhance response capabilities for specific hazards. | No change. |
| Objective 4-4: Review and improve, if necessary, emergency traffic routes; communicate such routes to the public and communities. | Objective 4-4: Review and improve, if necessary, emergency traffic routes; communicate such routes to the public and communities. | No change. |
| Objective 4-5: Ensure continuity of governmental operations, emergency services, and essential facilities at the County and local level during and immediately after disaster and hazard events. | Objective 4-5: Ensure continuity of governmental operations, emergency services, and essential facilities at the County and local level during and immediately after disaster and hazard events. | No change. |
| None. | <i>Objective 4-6: Improve communications to residents and businesses during and after disasters.</i> | Added. |
| None. | <i>Objective 4-7: Improve warnings prior to disasters.</i> | Added. |
| None. | <i>Objective 4-8: Encourage NIMS training for all appropriate personnel including elected officials.</i> | Added. |

*Changes or additions are noted in *italics*.

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. It identifies reviews and analyzes local and state programs, polices, regulations, funding and practices currently in place that may either facilitate or hinder mitigation.

During this plan update process, Broome County and all participating municipalities were surveyed to provide an updated assessment of their mitigation capabilities. The capability assessments are presented in Section 9, Volume II of this Plan. By completing this assessment, Broome 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

County and municipal capabilities in the areas of planning and regulatory, administrative and technical, and fiscal may be found in Tables E1, E2 and E3, respectively, in their jurisdictional annexes in Section 9.

Planning and regulatory programs available to promote and support mitigation and risk reduction in the County and how this plan integrates with these planning and regulatory mechanisms may be found in Section 3 under “Coordination with Existing Plans and Programs” and “Integration of Different Data and Plans into Mitigation Plan” and Section 7, “Integration of Mitigation Plan through Existing Programs..

Identification, Prioritization, Analysis, and Implementation of Mitigation Actions

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

Strengths, Weaknesses, Opportunities and Obstacles (SWOO)

On November 20, 2012, a Strengths, Weaknesses, Opportunities, and Obstacles (SWOO) session was held with the Planning Committee and stakeholders. 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 Broome 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 the Planning Committee in 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).

In order to incorporate comprehensive stakeholder input, the Planning Committee elicited input from a wide range of stakeholders listed in table 6-3 below.

Table 6-3. Agencies/Stakeholders

| Agency/Stakeholder |
|--|
| Christopher Ryan, Medical Director-Health Department |
| Beth Lucas, Senior Planner-Planning |
| David Downs, Mayor-Whitney Point |

| Agency/Stakeholder |
|---|
| Frank Evangelisti, Chief Planner |
| Chris Coddington, Dir. Div. of Environ Health-Health Department |
| Richard Blackley, Executive Director-Susquehanna Regional EMS Council |
| William Loller, UHS Hospitals Adm Manager-UHS |
| Dee Golazeski, DCPW Codes and Ord-Town of Union |
| Joel Kie, |
| Ron Lake, Engineer-Village of Endicott |
| Kent Rapp, Engineer-Village of Endicott |
| John Mastronardi, Project Engineer-T/O Conklin & Kirkwood |
| Michael Ponticello, Disaster Prep. Coord.-Broome County |
| Brett Chellis, OES Director-Broome County |
| Dan Thomas, Fire Chief |
| Scott Russell, Code Enforcement-Town of Kirkwood |
| Dan Scheffield, B.C. Public Works-Broome County |
| Sue Brown, B.C. Public Works-Broome County |
| Ray Serowik, EMS Coordinator-Broome County Emergency Services |
| Robert Jones, Code Officer-Town of Conklin |
| Ray Coolbaugh, Comm of Public Works-Town of Kirkwood |
| John Finch, Water Treatment Plant Oper-Town of Kirkwood |

The Planning Committee then generated a comprehensive catalog 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 Broome County Plan;
- Create catalogs of mitigation actions to be used as a tool by the Planning Committee in selection of mitigation actions.

Catalogs of Mitigation Actions

Based on information gathered during the SWOO session, catalogs of mitigation actions were created that list initiatives that could manipulate the hazard, reduce exposure to the hazard, reduce vulnerability to the hazard, and increase the Planning Committee’s ability to respond to or be prepared for a hazard (Appendix D). These catalogs are separated by responsibility for implementation (i.e., who would most likely implement the initiative: personal property owners, private sector business, or government). The hazards addressed by the catalogs were deemed to be those to which the planning area is most vulnerable based on the risk assessment.

The catalogs are not meant to be exhaustive or site-specific but rather to inspire thought and provide members of the Planning Committee 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 Partners. The Planning Committee was not bound to these actions. They could have added to the catalogs if an action was not included. Actions in the catalogs that were not selected by the Partners in their jurisdictional annexes were not selected 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

This plan update process was focused on improving the County and local mitigation strategies, and so addressed the updating of mitigation strategies from the outset of the planning process.

All municipalities were provided a survey (“Municipal Information Worksheet”) to assist in identifying local vulnerabilities, and mitigation activities completed, ongoing and potential/proposed. Further, the county and each municipality were provided with a worksheet to help identify progress on their local mitigation strategy, and whether they wished to carry the actions forward in the plan update.

In addition, each municipality was provided with a Capability Assessment survey form to assist in identifying their local mitigation capabilities (see previous section).

Throughout the planning process, the County and municipalities were encouraged to carefully consider their natural hazard risks and vulnerabilities, and to identify appropriate projects or initiatives to mitigate those risks. As new additional 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, communities were made aware of these either through direct communication (local support meetings, email, phone) or via their draft municipal annexes.

As ongoing or uncompleted activities from the 2007 plan, or potential new initiatives were identified, municipalities were provided with “Project Capture Worksheets” to facilitate the gathering of additional information on each potential project, including additional project description, estimated cost, potential benefits, responsible agency/department, and timeline.

All proposed mitigation actions were identified in relation to the goals and objectives presented above. The mitigation actions include 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.

- 6. Structural Projects:** 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.

Mitigation Actions

The mitigation actions are the key element of the natural hazards mitigation plan. It is through the implementation of these actions that Broome County and the participating jurisdictions can strive to become disaster-resistant through sustainable 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 grant eligible—grant eligibility was not the 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 Broome County and each participating jurisdiction. These actions are summarized in Section 9, Volume II of this Plan. The consultant, in addition, provided a list of generic initiatives to support good practices to reduce vulnerability to a variety of hazards. These actions have been included to support and supplement the municipal action in the mitigation strategies.

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 Broome County Planning Committee, along with their contract consultant, 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 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 should be 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 6 of this Plan.

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 County 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 6-4:

Table 6-4. Cost and Benefit Definitions

| 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 (for example, 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 many of the County initiatives identified, Broome 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 model process. The Planning Committee 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 Committee reserves the right to define “benefits” according to parameters that meet its needs and the goals and objectives of this plan.

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.

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 Broome 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)

The annexes in Section 9, Volume II of this Plan 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. As Broome 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 NYSOEM, FEMA and other Federal, State and County agencies to secure funds.

In general, mitigation actions ranked as high priorities will be addressed first. However, medium or even low priority mitigation actions will be considered for concurrent implementation. Therefore, the ranking levels should be considered as a first-cut, preliminary ranking and will evolve based on input from

Broome County departments and representatives, the public, NYSOEM, and FEMA as the Plan is implemented.

Jurisdictional Annexes

A major change in the format of this plan update was the incorporation of jurisdictional annexes. Each jurisdiction participating in this update (both counties and all municipalities) has assisted in the authoring of their own annex or chapter to this plan, included in Section 9. 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 the municipality, it was input directly into their draft annex. To help support the selection of an appropriate, risk-based mitigation strategy, each annex provided 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.

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.

Specific mitigation actions included in the draft municipal annexes included:

- Those being carried forward from the 2007 plan;
- 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.

Each draft jurisdictional annex was 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.