

SECTION 4 – MITIGATION STRATEGY

Mitigation Strategy

<i>Requirement §201.4(c)(3): [To be effective, the plan must include a] Mitigation Strategy that provides the State’s blueprint for reducing the losses identified in the risk assessment.</i>
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INTRODUCTION

According to §201.4(c)(3) the State of Maine Hazard Mitigation Plan includes a mitigation strategy that provides the State of Maine with a blueprint for reducing the losses identified in the risk assessment. The strategy includes goals, objectives and actions that are based on the risk assessment and are consistent with goals from other state and local plans and policies. The goals, objectives and actions contained in this section are aimed at achieving long-term hazard protection. The State has also assessed its own as well as its local jurisdictions’ capabilities to staff programs or projects and fund measures to achieve the goals of the plan. The State has identified funding from federal, local, and private sources to complement its own limited resources.

This section includes the following four subsections as follows:

- State Capability Assessment (page 4-2)
- Local Capability Assessment (page 4-15)
- Goals, Objectives and Strategic Measures (page 4-19)
- Funding Sources (page 4-37)

Hazard Mitigation Goals

<i>Requirement §201.4(c)(3)(i): (The State mitigation strategy shall include a) description of State goals to guide the selection of activities to mitigate and reduced potential losses.</i>

<i>Requirement §201.4(d): The) plan must be reviewed and revised to reflect changes in development, progress in statewide mitigation efforts, and changes in priorities...</i>
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Elements	A. Does the new or updated plan provide a description of State mitigation goals that guide the selection of mitigation activities?
	B. Does the updated plan demonstrate that the goals were assessed and either remain valid or have been revised?

See pages 4-19 through 4-37 for the State’s hazard mitigation goals, objectives and actions, including changes from the 2007 plan.

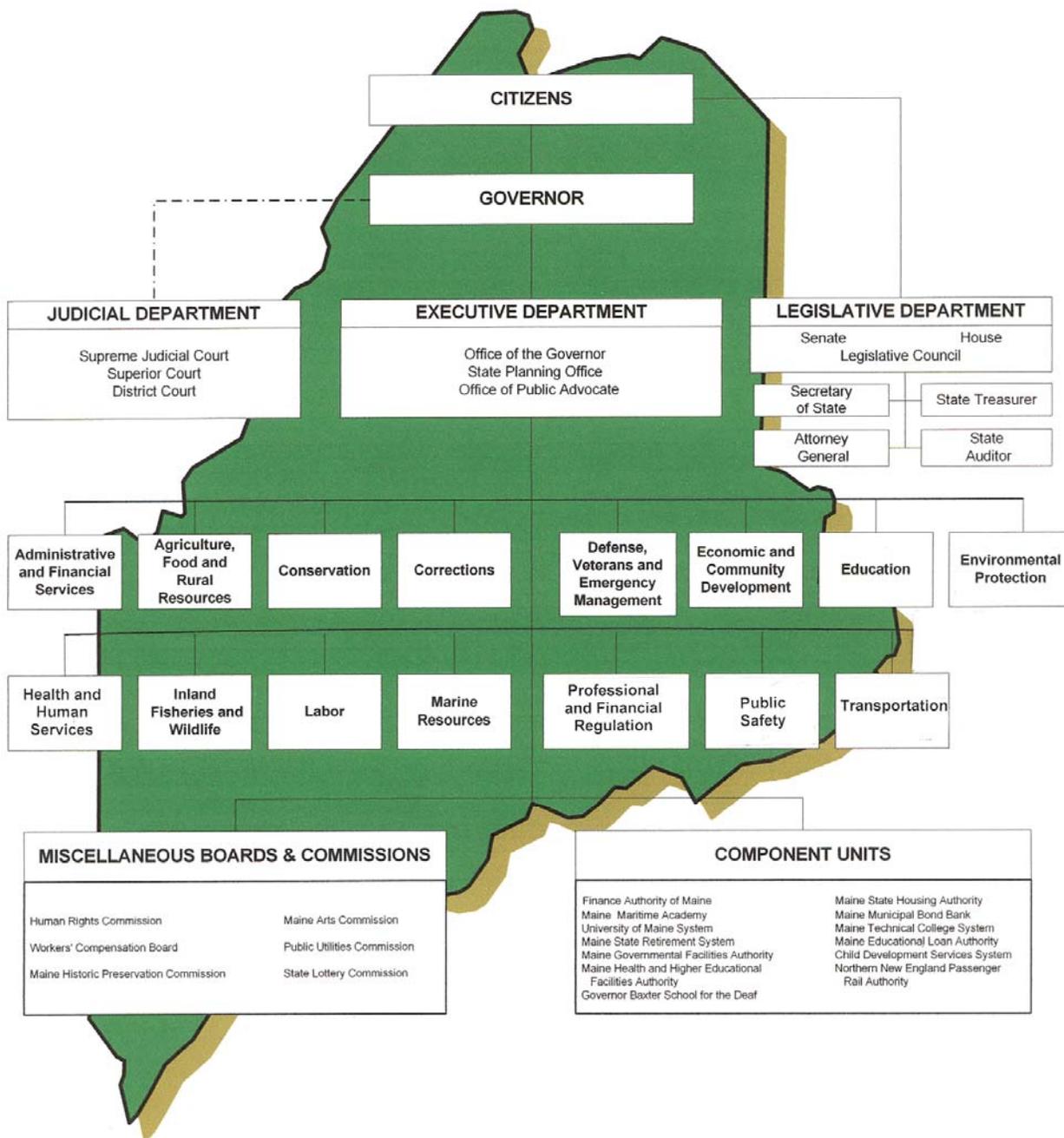
Note: red type with cross-outs indicates deletions; blue, underlined type indicates additions.

STATE CAPABILITY ASSESSMENT	
<i>Requirement §201.4(c)(3)(ii). [The State mitigation strategy shall include a] discussion of the State’s pre- and post-disaster hazard management policies, programs, and capabilities to mitigate the hazards in the area, including: an evaluation of State laws, regulations, policies and programs related to hazard mitigation as well as development in hazard-prone areas; and a discussion of State funding capabilities for hazard mitigation projects.</i>	
Elements	<i>A. Does the new or updated plan include an evaluation of the State’s pre-disaster hazard management policies, programs and capabilities?</i>
	<i>B. Does the new or updated plan include an evaluation of the State’s post-disaster hazard management policies, programs and capabilities?</i>
	<i>C. Does the new or updated plan include an evaluation of the State’s policies related to development in hazard prone areas?</i>
	<i>D. Does the new or updated plan include a discussion of State funding capabilities for hazard mitigation projects?</i>
	<i>E. Does the new or updated plan address any hazard management capabilities of the State that have changed since approval of the previous plan?</i>

A.,B. Evaluation of State’s Pre-disaster and Post-disaster Hazard Mitigation Policies, Programs and Capabilities

The chart on the following page illustrates the organizational format of the government of the State of Maine. It is provided to give the reader a broad concept of the various departments and their reporting structures. Pages 4-4 through 4-8 include a summary and evaluation of the State’s pre-disaster and post-disaster hazard mitigation policies, programs and capabilities.

ORGANIZATION CHART OF MAINE STATE GOVERNMENT AS OF APRIL 15, 2010



The table which follows describes in summary the current capabilities of the State of Maine by Hazard category and whether these programs are pre-disaster or post-disaster mitigation activities.

State Mitigation Capabilities by Hazard Matrix

HAZARD	TYPICAL DAMAGES or LOSSES	AGENCY TASKED	PROGRAMS	PRE- OR POST-DISASTER
Flooding	All Structures	State Planning Office	Maine Floodplain Management Program Community Assistance Program Map Modernization Program	Pre-disaster
Flooding	Local Roads State Roads	Dept of Transportation	Maine Local Roads Center Capital Improvement Projects	Pre-disaster Pre-disaster
Flooding	New Public Property	Office of Community Development	Economic Development Infrastructure Grants Public Facilities Grant Program	Pre-disaster
Flooding	Environment	Dept of Environmental Protection	Erosion & Sedimentation Control, Natural Resources Protection Act, Shoreland Zoning & Stormwater Program	Pre-disaster
Flooding	Structures/Roads	Maine Emergency Management Agency	Dam Safety Law (37-B, Chapter 24)	Pre-disaster
Flooding	Evacuations & Mass Care	American Red Cross	Disaster Shelter Management Program	Post-disaster
Flooding	Environment	Maine Geologic Survey	Beach mapping program	Pre-disaster
Flooding	Environment	Maine Geologic Survey	Coastal bluffs mapping program	Pre-disaster
Flooding	Environment	Maine Geologic Survey	Landslide hazard mapping program	Pre-disaster
Flooding	Environment	Maine Geologic Survey	Beach erosion	Pre-disaster
Flooding	Environment	Maine Geologic Survey	Tsunami potential	Pre-disaster
Wildfires	Timberland	Maine Forest Service	Forest Protection Division	Post-disaster
Wildfires	Timberland	Maine Forest Service	Forest Health and Monitoring	Pre-disaster
Wildfires	Residential Structures	Maine Forest Service	Cooperator Assistance Program Federal Excess Property Program Volunteer Fire Assistance Program	Post-disaster
All-Hazards	All Types	Maine Emergency Management Agency	Emergency Mgmt Performance Grants Pre-Disaster Mitigation Grants Public Education & Information	Pre-disaster
All-Hazards	All types	Maine Emergency Management Agency	Hazard Mitigation Program Grants	Post-disaster
All-Hazards	Life & Safety	Emergency Services Comm Bureau	Enhanced 911	Post-disaster
All-Hazards	Public Property	Bureau of General Services	Inventories all State Owned Property Maintains construction plans and costs	Post-disaster
All-Hazards	Public Property	Bureau of General Services	Insurance on State Owned Property	Post-disaster

In general terms, the goals of the State Hazard Mitigation Plan are to motivate and assist state, county and local government elected and appointed officials, and public and private agencies to mitigate against the effects of natural hazards.

As observed in the previous table, there are a number of fairly effective mitigation programs in place to deal with the impacts of flooding, and wildland fires. Additionally, hurricane pre-disaster mitigation and coastal landslide hazard mitigation are handled directly by the Floodplain Management Program via floodplain management ordinance development standards for coastal construction and the adoption of the FEMA Coastal Construction Manual (FEMA 55). There has been and continues to be a concerted effort to deal with these hazard events. Conversely, there is little mitigation effort in terms of dealing with the impacts of severe winter storms, erosion, severe summer storms, drought and earthquakes. These are dealt with in the all-hazard mitigation programs and efforts shown in the table above.

Through the development of the State Hazard Mitigation Plan, the State of Maine seeks to review and assess the State's financial, legal and programmatic ability to initiate and complete the mitigation efforts which will reduce the impacts of its identified natural disaster hazard events. This assessment of state capabilities is defined by the natural disaster hazard events expected to have the greatest impact on the State of Maine.

Flooding. In Maine, the greatest amount of damage from flooding events occurs to the roadway system, both state and municipal roads, bridges, culverts and ditches. This is followed in severity and probability with damage to homes and businesses located along the shores of rivers, lakes and the coastal waters. Currently, there are four major state programs that work to mitigate the effects of flooding.

1. **Road repair and local technical assistance.** The Maine Department of Transportation MaineDOT is responsible for the repair, maintenance and upgrade work to State-owned highways. When funds are available, the MaineDOT upgrades and/or elevates road surfaces to reduce the possibility of flood damage to roads. The MaineDOT also maintains the Maine Local Roads Center which provides technical assistance to municipalities for completing the same actions. There is seldom sufficient funding, both at the state and municipal level, to complete all the road work that is necessary.

Maine has made significant progress since completion of the 2007 State Hazard Mitigation Plan in the area of helping communities mitigate flood damages to roads, bridges, ditches and culverts. The Maine Emergency Management Agency has partnered with the Local Roads Center to sponsor a series of ongoing workshops throughout the State on the use of geo-synthetics to mitigate flood damages to local transportation systems by stabilizing banks, fill, rip-rap, road surfaces and other structures.

2. **Floodplain Management Program.** The State Planning Office's Floodplain Management Program provides technical assistance, model floodplain ordinances to municipalities, training for local officials and professional groups (e.g. professional land surveyors, insurance agents and lenders), and manages the National Flood Insurance Program (NFIP) within the State. The effort to enact floodplain ordinances in every Maine community has had the greatest effect of loss reduction on real property in the State. The requirement for every municipality to have a floodplain ordinance is not mandatory. However, 93% of the communities in Maine have enacted a floodplain management ordinance. Some communities were never given a map.

Maine is also pro-active with the NFIP Community Rating System (CRS) that recognizes communities with good performance in floodplain management. Based on a point system for activities that enhance flood mitigation and floodplain management beyond the minimum NFIP regulations, communities may improve their standing in the NFIP which results in lower flood insurance premiums. Maine has more communities in the CRS than any other New England state with 22 communities currently enrolled in the CRS Program. The 22 communities represent more than one third of the state's flood insurance policy base.

The 2007 State Hazard Mitigation Plan recognized that Maine's flood hazard mitigation efforts were somewhat limited by the aging Flood Insurance Rate Maps. Within the past five years or so, progress has been made:

- Hurricane Surge Inundation Maps have been completed by the Army Corps of Engineers, and MEMA has distributed copies to all affected municipalities;

- FEMA's Map Modernization (Risk Mapping) Program has produced a number of new, digital flood plain maps that are much more detailed and easier to use than the earlier FIRMS. Digitized maps for Oxford County became final on July 7, 2007. Preliminary digital maps have been prepared for Kennebec, Cumberland and York Counties.
- LIDAR-based topographical mapping was prepared by a consortium of agencies including NOAA and the Army Corps of Engineers for York and Cumberland Counties. The LIDAR mapping was used to develop better coastal flood modeling. The Maine Geological Survey is planning to undertake LIDAR mapping for the rest of Maine's coast.

On the downside, LIDAR based mapping is limited to an area within a few hundred feet of the coast, and some of the models are now being challenged by several communities as being too conservative. Many communities are still struggling with aging FIRMS. FEMA did not complete its Map Modernization Program for Maine within the initial timeframe envisioned by Congress (2009).

3. **MEMA Mitigation grants program.** The third state program is the planning and hazard mitigation grant programs managed by the Maine Emergency Management Agency (MEMA). MEMA is responsible for the maintenance of the State Emergency Operations Plan (EOP) and State Hazard Mitigation Plan (HMP) which helps State agencies to prepare and respond to natural disaster hazard events. MEMA also manages the State portion of FEMA's Hazard Mitigation Grant Program and the Pre-Disaster Mitigation Program. However, due to insufficient agency staffing, more technical assistance is needed by county and municipal governments in order for these local officials to have a better awareness and understanding of hazard mitigation policies, plans and programs. In addition, completion of 16 county hazard mitigation plans, six local plans and one University of Maine System plan have made it clear that hazard mitigation needs far exceed available resources. These plans have collectively identified over \$180 million in hazard mitigation needs. A number of counties have begun or are completing the updating of their hazard mitigation plans. In most cases, the projects identified in these plans have not been completed.
4. **DEP Programs.** The last set of state programs that effectively deals with flooding are the Department of Environmental Protection's (DEP) Stormwater Management, Shoreland Zoning and Dam Licensing statutes, regulations and programs. These programs and regulations deal with the man-made causes of stormwater capability reduction and waterbody retention. The Stormwater Management Law does not apply to small projects, including the construction of single family dwellings. The Shoreland Zoning Program now requires that significant coastal landslide hazard areas be included in a Resource Protection District in which development is prohibited.

Winter Storms. The second greatest amount of damage caused by a natural disaster hazard event is severe winter storms. Winter storm damages typically involve downed overhead utility lines, flooding from ice jams and melt off, and debris in the roads (since flooding has been covered in the preceding section, it will not be reviewed in this section). Currently, there is one major State program that works to mitigate the effects of severe winter storms.

The MaineDOT is responsible for snow and debris removal on all State highway roads. MaineDOT garages are well placed around the state to complete this task in a timely manner. MaineDOT also provides technical assistance to municipalities for the road debris clearance with the Maine Local Roads Center. At times, the MDOT will even assist with the actual debris

clearance on select local roads. However, in many cases, a bad winter storm can overwhelm the financial and equipment capabilities of many municipalities.

Hurricanes. Historically, hurricanes in Maine have always been a Level 1, and excluding the flooding, have not caused significant destruction. However, the damaging effects of hurricane storm surge and flooding have caused major damage in Maine in the past. As such, State programs that work to mitigate the effects of flooding have already been described in a preceding section. There are no mitigation programs in the State of Maine dedicated solely to lessening the impacts of hurricanes. Unfortunately, in many instances, the storm surge inundation flood areas are much greater than the 100 year FIRM flood areas and it is these areas that are not regulated by the current state and local floodplain management programs in Maine. However, completion and distribution to municipalities of the hurricane surge inundation maps provides new information to local officials to help them better regulate development in areas that could be impacted by hurricanes. This is the first step in educating the public about the potential impacts of hurricanes on the Maine coast.

Erosion/. Some inland areas and about half of the Maine coast, including many of its beaches, are slowly eroding, but erosion generally goes unnoticed until a home or other structure is threatened or destroyed. The biggest losses are to individual properties, although there have been instances of damage to public roads. Eroding bluffs can be “armored” by the use of sea walls, rocks, riprap or other engineered solutions, but there is no State program to support such efforts. Many individuals cannot afford to pay for the protection needed to save their properties. Unfortunately, federal rules governing the HMGP and PDM-C programs are such that municipal applications aimed at helping individuals protect their properties are not competitive.

Landslides. Coastal landslides can occur in areas of chronic bluff erosion in areas with mud banks that exceed 20 feet in height. The only mitigation program in the State that deals with landslides is the shoreland zoning program which prohibits development near areas where the landslide hazard is great. As discussed under “Erosion,” immediately above, there are no mitigation programs for homeowners already located in a landslide hazard area.

Wildfire. Although Wildfires normally do not cause a great deal of destruction in Maine, they have a terrible potential, as evidenced in the forest fires of 1947. Forest fires could cause a huge loss of residential structures in the State due to the very high percentage of Maine homes located in the wildland-urban interface and the general lack of pre-disaster mitigation efforts. Land use planning and regulation and building codes in Maine do not deal at all with the wildland-urban interface issues. Mitigation efforts in the State are limited to the Maine Forest Service which performs forest health and monitoring, oversees forest firefighting efforts, and provides financial and equipment grants to local fire departments. Within the past five years or so, the Maine Forest Service has initiated a community assessment program aimed at helping communities and rural homeowners at the wildland/urban interface better protect their properties from the threat of wildfire. The assessment is a voluntary program that relies on public education to reach its intended audience.

Severe Summer Storms. The types of severe summer storms in Maine include thunderstorms and tornadoes. Tornadoes are rare and due to the low population density have not been a major concern. Thunderstorms have caused damages to structures, mostly from overturned trees. Lightning has caused injuries and deaths, mostly from individuals being struck. There are no mitigation programs in the State of Maine dedicated solely to lessening the impacts of severe summer storms, excluding that of all-hazards emergency management planning and emergency response agencies (see page 4-4).

Drought. Maine is not a “dry” state in terms of climate, however there have been periodic periods of drought conditions. The impacts of Maine droughts are higher instances of dry water wells, poor performance of annual agricultural products, and greater opportunities for forest fires. There are no mitigation programs in the State of Maine dedicated solely to lessening the impacts of drought.

Earthquake. The recent magnitude 4.3 earthquake in Bar Harbor demonstrates that earthquakes of this size can cause damage (see photo at beginning of Earthquake portion of Section 3). Although the statistical estimate for return time of a magnitude 6.0 earthquake in Maine is approximately 363 years, little monitoring and research have been done to substantiate this estimate. Although earthquake probability in Maine is relatively low compared to other areas of the country, the risk to property is moderate to high because of inadequately designed and aging structures. Continued instrumental earthquake monitoring in New England is funded entirely by the federal government, with some in-kind contribution by State agencies. There are no mitigation programs in the State of Maine dedicated solely to lessening the impacts of earthquakes, excluding that of all-hazards emergency management planning and emergency response agencies.

C. Evaluation of State’s Policies related to Development in Hazard Prone Areas

The table on the next page contains an evaluation of the State’s policies related to development in hazard prone areas.

**Maine Hazard Mitigation Strategy
State Mitigation Capability Assessment Matrix**

State Department, Agency, Authority, Board, Commission, Division	Mitigation-related Programs, Plans, Policies, Regulations, Funding or Practices	Effect on Loss Reduction (X) State Mitigation Initiatives			General Description of Effect on Mitigation Initiatives
		Provides Funding	Supports Implementation	Conflicts with	
Governor's Office Executive Department	-Executive Order dated March 4, 1968, precluding the uneconomic, hazardous, or unnecessary use of flood plains in connection with State facilities.		X		Essentially Prohibits new State facilities from being located in flood plains.
American Red Cross Disaster Services	- Disaster Shelter Management Program		X		Maintains statewide database of 535 disaster relief shelters. Provides for safety and pre-event identification of mass care facilities including feeding, family and volunteer reception centers.
Administrative and Financial Services Bureau of General Services Risk Management Division	- Insurance on State-owned property		X		Provides insurance advice to the State government and administers all State insurance and self-funded plans and programs. Helps to reduce the cost of loss to State-owned property.
Administrative and Financial Services Bureau of General Services Professional Services Div.	- Inventories all State-owned property - Maintains construction plans and costs		X		Provides technical and fiscal oversight/approval to construction and repair of buildings and public works. Ensures that State facilities are built to code.
Administrative and Financial Services Chief Information Officer	- Sets standards for the use of information technology in State government		X		Guides the use of information technology, such as the State Internet system. Supports mitigation efforts through better distribution of information.
Agriculture, Food and Rural Resources Animal Health & Industry Div	- Enforcement of Permit Regulations - Prompt diagnosis of disease - Surveillance testing programs - Accreditation of Veterinarians		X		Controls animal disease through regulation, education and enforcement. Reduces the impact and severity of animal-borne diseases.
Agriculture, Food and Rural Resources Plant Industry Division	- Authority to quarantine plant pests. - Enforcement of permit regulations		X		Controls plant disease through regulation, education and enforcement. Reduces the impact and severity of plant infestations.
Agriculture, Food and Rural Resources Agricultural, Natural, and Rural Resources Office	- Pesticide Control Program - Animal Welfare Program - Integrated Pest Management		X		Oversees the use of pesticides and the health and safety of agricultural animals in the prevention of blight, infestation and disease.

State Department, Agency, Authority, Board, Commission, Division	Mitigation-related Programs, Plans, Policies, Regulations, Funding or Practices	Effect on Loss Reduction (X) State Mitigation Initiatives			General Description of Effect on Mitigation Initiatives
		Provides Funding	Supports Implementation	Conflicts with	
Conservation Bureau of Geology and Natural Areas	- Inventories, maps, assess, and interprets Maine's geology. - Invasive Species Awareness and Prevention Plan		X		Through the study of Maine's geology, the program evaluates Maine's likelihood of damaging earthquakes, landslides, and coastal erosion. Identifies, reviews and builds strategies to reduce impact of invasive species.
Conservation Land Use Regulation Commission	- Planning and zoning authority for unorganized areas of Maine, encompassing 10.4 million acres		X		By regulating development in the unorganized areas, the program ensures that development is either directed away from hazard areas or that proposed activities in hazard areas meet applicable development standards.
Conservation Maine Forest Service	- Forest Protection Division		X		Oversees the pre-suppression, suppression and investigation of Maine forest fires. Provides trained and equipped Forest Rangers.
Conservation Maine Forest Service	- Forest Health and Monitoring		X		Pest management and damage prevention for Maine's forest resources.
Conservation Maine Forest Service	- Cooperator Assistance Program - Federal Excess Property Program - Volunteer Fire Assistance Program	X	X		Provides grant funds, training and equipment to communities for forest fire protection suppression.
Defense, Veterans and Emergency Management Maine Emergency Management Agency	- Dam Safety Law (37-B, Chapter 24) - State Emergency Operations Center - Emergency Management Education - Disaster Preparedness Information		X		Coordinates the protection of Maine citizens from All-Hazards emergencies; coordinates disaster mitigation, preparedness, response and recovery actions; and assists county and local governments in protecting life and property.
Defense, Veterans and Emergency Management Maine Emergency Management Agency	- Emergency Management Performance Grants	X			Oversees and manages the Federal funding of the Emergency Management program in Maine. Provides personnel for planning and mitigation efforts at the state and county level.
Defense, Veterans and Emergency Management Maine Emergency Management Agency	- Hazard Mitigation Grant Program - Pre-Disaster Mitigation Grants	X			Oversees and manages federal funding of hazard mitigation, local and state plans and local mitigation programs and construction projects.
Defense, Veterans and Emergency Management Maine National Guard	- Disaster Recovery manpower pool		X		Provides a quick manpower and equipment resource for the Governor to reduce the severity and duration of disaster events.

State Department, Agency, Authority, Board, Commission, Division	Mitigation-related Programs, Plans, Policies, Regulations, Funding or Practices	Effect on Loss Reduction (X) State Mitigation Initiatives			General Description of Effect on Mitigation Initiatives
		Provides Funding	Supports Implementation	Conflicts with	
Economic & Community Development Department Office of Community Development	- Economic Development Infrastructure Grant Program - Public Facilities Grant Program	X			Includes public projects for flood and drainage improvements and for the construction of fire stations, homeless shelters, piers and dams. Projects must meet flood protection standards.
Environmental Protection State Statutes	- Erosion & Sedimentation Control - Hydropower & Dams - Natural Resources Protection Act - Shoreland Zoning - Stormwater Program		X		Enforces standards on damages from Erosion. Licensing of hydropower projects for flood control. Regulates development in wetland areas. Regulates development in the shoreland zone. Regulates development that affects stormwater.
Environmental Protection Dept of Water Quality	- Watershed Protection Grants	X			Provides education grants to local schools for educating students about watershed protection.
Marine Resources Bureau of Resource Management	- Public Health Program		X		Identifies pollution sources that may be corrected in order to increase the amount of shellfish producing areas open to harvesting. Biotoxin sampling is conducted to monitor the occurrence of PSP or "red tide" and close shellfish harvest areas as necessary to protect public health.
Public Safety Emergency Services Communication Bureau	- Enhanced 911		X		Saves lives by giving the public the ability to dial for immediate help for all emergencies. Provides for automatic caller location information, critical to speeding up the dispatch of emergency services.
Public Safety Fire Marshal's Office	- Licensing and Inspections Program		X		Enforces fire safety- related building codes to reduce loss of life due to fires.
State Planning Office Floodplain Management Program	- Maine Floodplain Management Program		X		Provides technical information, FIRM maps and model ordinances to Maine communities. Provides information about flooding and the NFIP. Provides training on reading and using flood maps, ordinance interpretation, and floodplain management. Provides interagency reviews of proposals in the floodplain for state and federal agencies. Reviews local ordinances for compliance with the NFIP standards.
State Planning Office Land Use Office	- Land Use Planning - Community Planning & Investment Program (CPIP)	X	X		Provides technical and financial assistance to municipalities, advises the legislature, coordinates with other State agencies, and advocates for sound land use planning. Administers the CPIP, covering the topic areas of community planning, growth management and smart growth.

State Department, Agency, Authority, Board, Commission, Division	Mitigation-related Programs, Plans, Policies, Regulations, Funding or Practices	Effect on Loss Reduction (X) State Mitigation Initiatives			General Description of Effect on Mitigation Initiatives
		Provides Funding	Supports Implementation	Conflicts with	
State Planning Office Code Enforcement Training and Certification Office	- Municipal Code Enforcement Training Program	X	X		Trained, testing and certifying in all land use codes, including building, shoreland zoning, and floodplain management.
State Planning Office Maine Coastal Program	- Coastal Zone Management Program		X		Provides technical assistance to municipalities, advises the legislature, coordinates with other state agencies, and advocates for sound land use planning in Maine coastal areas.
Transportation Bureau of Planning Community Services Division	- Maine Local Roads Center		X		Provides training, technical assistance, and information to municipalities for constructing, maintaining, and managing local roads & bridges.
Transportation Environmental Office	- Natural Resources Mitigation Program		X		Directs and coordinates compensatory mitigation for impacts to wetland resources caused by State transportation projects.

D. Summary State Funding Capabilities for Hazard Mitigation Projects

Because the State of Maine has a small population (2009 estimate of 1,318,301), it does not have significant state, county and local government staffs or budgets dedicated to hazard mitigation. There are no State-funded grants for local floodplain projects. There are only three State personnel working in the Local Roads Center, providing technical assistance to communities. There are no State personnel who deal with hurricane, earthquake, drought or severe summer storm mitigation. There does appear to be sufficient staffing for the annual spread of wildfires, however, there is a severe shortage of trained and equipped state and local manpower for a wildfire disaster of the 1947 magnitude. Many of these existing programs are already funded in part by federal sources.

E. Hazard Management Capabilities of the State that have Changed Since 2007

There have been a number of improvements in the State's hazard management capabilities since publication of the 2007 Plan. Some of these improvements were a direct result of dealing with six disaster declarations during that short time period. These included:

- Having a draft strategy ready before any Joint Field Office opened;
- Streamlining the joint Public Assistance and Mitigation briefings;
- Revising and streamlining the state HMGP application to make it easier for towns to apply and for state and FEMA to review;
- Revising and streamlining grant workshops for applicants;
- Using the FEMA 406 Program to a far greater extent than it did just a few years ago to implement hazard mitigation projects at less cost to the towns;
- Partnering with the Local Roads Center to sponsor a series of ongoing workshops throughout the State on the use of geo-synthetics to mitigate flood damages to local transportation systems by stabilizing banks, fill, rip-rap, road surfaces and other structures.

Other changes that were not related to specific disaster events included:

- One MEMA staff person was trained on the HAZUS program through a NOAA grant;
- Brochures on earthquake hazard were developed;
- As noted on page 3-40, updated hurricane storm surge maps were developed by the Army Corps of Engineers; these have been distributed to the coastal counties;
- As noted on page 4-7 Shoreland Zoning regulations were strengthened to protect against landslide hazard;
- State adopted International Building Codes effective December 2010; now all state code officers will need to be retrained and recertified before they can inspect using the new standards;
- FEMA's Map Modernization (Risk Mapping) Program has produced a number of new, digital flood plain maps that are much more detailed and easier to use than the earlier FIRMS. Digitized maps for Oxford County became final on July 7, 2007. Preliminary digital maps have been prepared for Kennebec, Cumberland and York Counties;
- LIDAR-based topographical mapping was undertaken by a consortium of agencies including NOAA and the Army Corps of Engineers for York and Cumberland Counties. LIDAR mapping was used to develop better coastal flood modeling. Maine Geological Survey is planning to undertake LIDAR mapping for the rest of Maine's coast;

- Coastal bluff erosion and landslide maps were completed for virtually the entire Maine coast as well as some inland areas;
- The Maine Geological Survey is studying the potential impacts on Maine from tsunamis;
- County Emergency Management officials are far more knowledgeable about hazard mitigation planning and implementation than they were just a few years ago, and are committed to helping their counties deal with mitigation issues;
- More county directors have been heavily involved in post disaster work.

LOCAL CAPABILITY ASSESSMENT	
<i>Requirement §201.4(c)(3)(ii): [The State mitigation strategy shall include a] general description and analysis of the effectiveness of local mitigation policies, programs, and capabilities.</i>	
Elements	<i>A. Does the new or updated plan present a general description of the local mitigation policies, programs, and capabilities?</i>
	<i>B. Does the new or updated plan present a general analysis of the effectiveness of local mitigation policies, programs and capabilities?</i>

A., B. General Description and Analysis of Local Mitigation Policies, Programs and Capabilities

Since 2003, the Maine Emergency Management Agency has worked with the County Emergency Management Agencies on the development of their County multi-jurisdictional Hazard Mitigation Plans. Based on the knowledge and experience gained throughout the course of this effort, this section describes and analyzes the effectiveness of existing local mitigation capabilities and the expected effectiveness of the general trend of future local mitigation activities.

In many of Maine’s smaller, rural communities, there are few if any regulations other than the municipal shoreland zoning ordinance and a floodplain management ordinance. This is because Maine has a history and culture that is steeped in independence, a distrust of big government, a belief in personal responsibility, respect for the property of others, and a tradition of neighbor helping neighbor in times of need. These small town values, rather than government mandates, govern much of life throughout rural Maine. Many of Maine’s smaller towns do not have the staff or money to undertake much in the way of hazard mitigation. That being said, there a number of very positive trends:

- There has been huge increase in the use of modern technology; many of Maine’s smallest towns now have computers and digital cameras, and are conversant with technologies such as email, the use of web sites and teleconferencing, all of which tend to reduce time and distance factors;
- The use of modern technology has led to greater documentation and mapping capabilities;
- There are increasing instances of local communities responding effectively with a high level of sophistication to emergency needs.

The following paragraphs contain an analysis by hazard category.

Flooding. Some Maine communities have taken advantage of the Maine Department of Transportation’s MaineDOT Maine Local Roads Center and have acquired technical assistance and training on maintenance and upgrades to local roads, especially in terms of stormwater management. MEMA has partnered with the Local Roads Center to sponsor a series of workshops for local officials on the use of geo-synthetics to mitigate damages from future flooding/storm events. MEMA expects that in the future, more communities will use geo-synthetics to reduce repetitive losses to local roads, bridges, culverts and ditches. After education, road maintenance and upgrades are usually the second largest municipal budget item.

Most Maine communities (93%) have received technical assistance and guidance from the State Planning Office’s Floodplain Management Program, have floodplain ordinances and are

members of the National Flood Insurance Program (NFIP). In addition, the 22 communities in the CRS Program represents more than one third of the flood insurance policy base. This represents a higher level of floodplain management than the federal minimums. This program has probably had the greatest effect on loss reduction on real property in the State. FEMA's Map Modernization (Risk Mapping) Program will allow more municipalities to better manage their floodplains, especially where local flood insurance rate maps are based on LIDAR topographic mapping. Many Maine communities did not receive an updated map within the time frame originally envisioned by Congress (2009). Moreover, there are still a number of smaller communities in Maine that have not ever received a Flood Insurance Rate Map. Most of LURC's jurisdiction is not mapped but they participate by virtue of LURC's permit review process.

Some municipalities have received hazard mitigation grants for structural mitigation projects, usually road upgrades. Over time, those communities that have participated have eliminated their road washout problems. One such community is the town of Searsmont, which has received several mitigation grants and has effectively protected all of its local roads from flooding damage. In Franklin County, many of the projects identified in their 2005 plan have been implemented, primarily with the help of FEMA PA funds. Unfortunately, the mitigation needs documented in the 16 County plans, six local plans, and one University of Maine System Plan, far outweigh available funding. The approved mitigation plans listed on page 2-2 of this Plan include roughly 1,500 mitigation projects. Assuming an average of about \$100,000 per project (some are less, but some are a lot more), the total need is about \$150 million. Over the past five years, Maine received about \$1.5 million annually in HMGP funding. Even if no new projects were added to the list, it would take about 100 years to address all of the previously identified needs!

Every municipality in the State of Maine is required to have a State-certified Code Enforcement Officer (CEO). Most municipalities also have a local comprehensive plan and a set of land use ordinances. The CEO enforces not only the local ordinances but provides advice and a second set of eyes for state environmental permit programs in stormwater management and shoreland zoning. However, State law does not make local comprehensive plans and ordinances mandatory and many smaller towns do not have these mitigation tools.

Winter Storms. The biggest impact to many municipal budgets from winter storms is the expense of unplanned debris removal and extra snow and ice removal costs. In many cases, a bad winter storm can overwhelm the financial and equipment capabilities of many smaller municipalities. Many communities will spread calcium chloride on roads prior to a storm to help reduce the amount of icing and some communities will cut back trees within the municipal road easement. However, a majority of communities do not have the resources to accomplish these pre-disaster mitigation activities.

Hurricanes. Coastal Maine communities are typically the only ones to experience most hurricane damages and much of this is from storm surge flooding. Based on a review of the Storm Surge Inundation Maps, there are more areas that are subject to flooding than what are shown on the FIRM maps. Unfortunately, Maine communities have used the FIRM maps for their floodplain ordinances, but a full blown Category 1 hurricane could exceed the 1% return frequency and consequently cause flooding beyond the National Flood Insurance Program's 1% or regulatory "100-year flood event.

While higher category storms are more frequent in other parts of the country, one of the natural mitigating factors for hurricanes in Maine is the fact that Maine's coastal waters are colder and cannot support higher category hurricanes. As the flooding history in Maine continues to cover more time and as the ocean's temperatures continue to rise there may be

an increase in the more severe hurricanes. Major structures have been built on the coast recently that were outside the FIRM Special Flood Hazard Areas, but have been shown to be possibly endangered by the storm surge flooding from even a Category 1 Hurricane. MEMA has sent a digital copy of the hurricane surge inundation maps to every affected community along Maine's coast.

Erosion. The Maine Geological Survey (MGS) has completed coastal bluff erosion maps for Maine's coast. The covered area extends from York County in Southern Maine to Washington County (Maine's eastern-most county). The information provided on these maps is available on the MGS web site, and copies of the maps have been provided to the affected municipalities. Many communities are beginning to use this information to mitigate the impacts of erosion and sedimentation.

The Maine Department of Environmental Protection has incorporated MGS Coastal Bluffs Maps into its Shoreland Zoning rules. There is now a requirement that municipal shoreland zoning ordinances include greater setbacks for development near unstable bluff areas.

Landslides. MGS has prepared a parallel set of Landslide Hazard Maps that details historical and potential landslide areas along the coast.

MGS is also mapping landslides in non-coastal areas. A pilot project in 2006 developed the method of identifying historical landslide areas and also established methods of terrain analysis for landslide susceptibility. About one third of the state has geological sediments that make the land potentially vulnerable to landslides. In addition to earth materials, slopes, regional geomorphology and ground and surface water affect landslide hazards.

Wildfire. Forest fires have the potential for causing a huge loss of residential structures in Maine communities, due to the very high percentage of Maine homes located in the wildland-urban interface. A major wildfire that destroys trees and ground cover in a previously forested river basin could result in increased runoff from storms, thereby increasing downstream flooding potential. Land use planning and regulation and building codes in Maine seldom deal with the wildland-urban interface issues. Mitigation efforts at the local level are limited to the forest firefighting efforts of local volunteer or municipal fire departments.

The Maine Forest Service has initiated a community assessment program for communities with a history of wildfire. The program, which is voluntary, is aimed at educating local officials and homeowners about inexpensive steps (such as the removal of overhanging tree limbs) they can take to protect their structures. Local officials in a number of communities have formally agreed to take the steps recommended in their community assessments.

Summer Storms. A number of communities, including larger cities such as Portland and Lewiston, have enacted local stormwater regulations that mirror those of the Department of Environmental Protection. Tornadoes are too rare and lightning affects too few people (an occasional home fire somewhere in the State). Thunderstorms can cause localized power outages and leave storm debris in the roads, but these will only take a few hours to repair and clean up. Occasionally a severe summer storm will result in a road washout which may take several weeks to repair.

Drought. Maine communities are impacted by drought by the increase in possibility of forest fires, dry wells and poor crops. Forest fires and poor crops were discussed in other paragraphs of this section. Individuals and public water suppliers typically deal with dry wells through their own investment in new wells. There are no mitigation programs at the local level in Maine dedicated solely to lessening the impacts of drought.

Earthquake. The recent magnitude 4.3 earthquake in Bar Harbor demonstrates that earthquakes of this size can cause damage (see photo at beginning of Earthquake portion of Section 3). Although the statistical estimate for return time of a magnitude 6.0 earthquake in Maine is approximately 363 years, little monitoring and research have been done to substantiate this estimate. Although earthquake probability in Maine is relatively low compared to other areas of the country, the risk to property is moderate to high because of inadequately designed and aging structures. Continued instrumental earthquake monitoring in New England is funded entirely by the federal government, with some in-kind contribution by State agencies. There are no mitigation programs at the local level in Maine dedicated solely to lessening the impacts of earthquakes, excluding that of all-hazards emergency management planning and emergency response agencies.

**General Summary
Local Mitigation Capabilities by Hazard Matrix**

HAZARD	TYPICAL DAMAGES or LOSSES	ACTIVITY TASKED	PROGRAMS	PRE- OR POST-DISASTER
Flooding	All Structures	Code Enforcement Officer or Municipal Planning Board	Floodplain Ordinance	Pre-disaster
Flooding	Local Roads	Road Commissioner or Public Works Director	Maine Local Roads Center Municipal Capital Improvement Projects	Pre-disaster Pre-disaster
Flooding	Environment	Code Enforcement Officer	Municipal land use ordinances Erosion & sedimentation control, Natural Resources Protection Act, Shoreland Zoning & Stormwater Program Wildland Firefighting Program	Pre-disaster
Winter Storms	Roads	Road Commissioner or Public Works Director	Winter Road Maintenance program.	Post-disaster
Hurricanes	Environment	Code Enforcement Officer	Shoreland Zoning & Stormwater Program	Pre-disaster
Wildfires	Residential Structures	Municipal/Volunteer Fire Department	Wildland Firefighting program	Post-disaster
Erosion/ Landslides	All structures	Maine Geological Survey	Costal bluffs and coastal landslide hazard maps Inland landslide hazard mapping	Pre-disaster
All-Hazards	All Types	Municipal Emergency Management Director	Public education & information	Pre-disaster
All-Hazards	All types	Municipal Elected Officials	Hazard Mitigation Program Grants	Post-disaster

MITIGATION ACTIONS

Requirement §201.4(c)(3)(iii): (State plans shall include an) identification, evaluation, and prioritization of cost-effective, environmentally sound, and technically feasible mitigation actions and activities the State is considering and an explanation of how each activity contributes to the overall mitigation strategy. This section should be linked to local plans, where specific local actions and projects are identified.

Requirement §201.4(d): (The) Plan must be reviewed and revised to reflect changes in development, progress in statewide mitigation efforts, and changes in priorities...

Elements	<i>A. Does the new or updated plan identify cost-effective, environmentally sound, and technically feasible mitigation actions and activities the State is considering?</i>
	<i>B. Does the new or updated plan evaluate these actions and activities?</i>
	<i>C. Does the new or updated plan prioritize these actions and activities?</i>
	<i>D. Does the new or updated plan explain how each activity contributes to the overall State mitigation strategy?</i>
	<i>E. Does the mitigation strategy in the new or updated section reflect actions and projects identified in local plans?</i>

A. IDENTIFICATION OF GOALS, OBJECTIVES AND STRATEGIC MEASURES (ACTIONS)

The actions set forth on the following pages relate to the role that the Maine Emergency Management Agency has assumed relative to mitigation:

- The provision of technical assistance and training;
- The preparation of plans and updates;
- Support for improved information including better hazard-related maps; and
- Support for county and municipal hazard mitigation projects.

Note: All of these actions have been evaluated relative to environmental soundness, technical feasibility and cost effectiveness. Those that require additional funding beyond day-to-day agency operations will be further evaluated, using these criteria, prior to funding.

KEY TO ABBREVIATIONS

Abbreviations used in the following table include the following:

\$F	Federal funds
\$S	State funds
\$C	County funds
\$L	Local funds
DEP	Maine Department of Environmental Protection
DOC	Maine Department of Conservation
FEMA	Federal Emergency Management Agency
MEMA	Maine Emergency Management Agency
MFS	Maine Forest Service
MGS	Maine Geological Survey
SPO	Maine State Planning Office

GOALS/OBJECTIVES AND STRATEGIC MEASURES (ACTIONS)

ADMINISTRATION

Goals: Enhance the State hazard mitigation capabilities.

Objectives	Actions	Resources	Agency	Time Frame	Results of Action	Status Report 2010
1. 406 Program. Utilize the 406 program to the maximum extent possible to implement mitigation projects.	A. Education. Immediately following a disaster, use workshops to inform officials of 406 program requirements.	Existing Staff \$ F, S,	MEMA	Short Range	Education of local officials on opportunities for implementation of mitigation projects	2007-2010, MEMA has included information on the 406 program in all briefings and workshops
	B. Project identification. Use county and local mitigation plans as a basis for identifying infrastructure improvements that might be funded under the 406 program.	Existing Staff \$ S	MEMA	Short Range	Maximum completion of hazard mitigation projects	Since Patriot's Day Disaster in 2007 MEMA and County Directors have advised towns to seek 406 funding for projects already listed in the plans
2. Long-range planning. Continue long-range hazard mitigation planning efforts.	A. Plan integration. Integrate county hazard mitigation plans into an overall State plan and establish overall, statewide hazard mitigation priorities.	Consultant \$ F, S	MEMA	Long Range	Integration of multi-jurisdictional plans	It will be at least 2013 before county plans are incorporated into statewide hazard mitigation priorities
	B. County plan updates. Provide leadership and guidance to county EMA offices and local officials as county multi-jurisdictional plans are updated, giving priority attention to counties with the most serious hazard mitigation issues.	Existing Staff \$ F, S, C, L	MEMA	Long Range	More effective county-wide, multi-jurisdictional plan updates	2009 - MEMA developed plan guidance including recommended strategies and a standardized format for easier reviews and cross referencing

Objectives	Actions	Resources	Agency	Time Frame	Results of Action	Status Report 2010
	C. Standardization. Work with county EMA officials to standardize the format and presentation of updated county hazard mitigation plans.	Existing Staff \$ S, C, L	MEMA	Long Range	More effective county-wide, multi-jurisdictional plan updates	2010 - MEMA developed a guide for plan updates
	D. State plan. Maintain and update a State Hazard Mitigation Plan.	Existing Staff \$ F, S	MEMA	Long Range	Better protection of Maine residents	MEMA is committed to updating the State Plan every three years, but recommends it be every five years
3. Mitigation awareness. Build county and municipal officials' and residents' awareness of mitigation and proven, cost-effective mitigation measures and the need for mitigation.	A. Website. Continue to use MEMA's website to post the State's Hazard Mitigation Plan as well as articles and other educational materials dealing with hazard mitigation, and to post notice of meetings, workshops and training exercises.	Webpage \$ S	MEMA	Long Range	Provision of mitigation information to local officials and the general public	2007-2010 MEMA uses its website to post the State Mitigation Plan and related materials
	B. Community outreach <ul style="list-style-type: none"> Continue the highly successful annual Maine Preparedness Conference (400 attendees in 2009; 600 attendees in 2010). Continue to revise, update, and make available materials aimed at educating local officials and the public about hazard mitigation. 	Existing Staff \$ F, S	MEMA	Short range	Provision of mitigation to local officials and the general public	MEMA held the Maine Preparedness Conference in 2009 and 2010. Other outreach efforts are ongoing
	C. Workshops. Continue to hold mitigation workshops for local officials, interested engineering firms and others, focusing on parts of the State with the most serious hazard mitigation issues.	Existing Staff \$ F, S, L	MEMA	Long Range	Provision of mitigation information where it is most needed	2007-2010 MEMA held workshops on a continuing basis
	D. Open houses. Continue to sponsor and participate in open houses, workshops and similar events aimed at increasing public awareness of hazard mitigation.	Existing Staff \$ S	MEMA	Long Range	Greater awareness of mitigation issues	MEMA held open house in 2009; now superseded by Maine Preparedness Conference

Objectives	Actions	Resources	Agency	Time Frame	Results of Action	Status Report 2010
	E. Early warning systems. Within the limits of available funding, support improvements to the State's early warning capabilities, such as river gauges and NOAA alerting systems, giving priority to areas with the most serious hazard issues.	\$ F, S, L	MEMA	Long Range	More time and data for emergency managers for effective decision-making	2009-2010 new river gauges funded through HMPG for Mousam, Kennebec, Kenduskeag and Penobscot Rivers
4. Technical assistance. Continue to provide technical assistance to and coordinate with local jurisdictions on state, county and municipal level mitigation efforts.	A. Additional staff. Hire additional staff to improve the agency's hazard mitigation capabilities.	\$ F, S	MEMA	Short Range	More effective hazard mitigation program	2009-2010 training for one staff employee who replaced one retiree
	B. Prioritization. Develop agency priorities so that MEMA staff resources can be directed to the most important tasks and the areas of the State with the greatest need, within the limits of maintaining a manageable workload.	Existing Staff \$ S	MEMA	Short Range	Targeting of mitigation technical assistance to public officials for effective mitigation decision-making	2009-2010 prioritized county plans for technical assistance. Maine Preparedness Conference more effective than open houses
5. Better coordination. Better coordinate the mitigation and data collection efforts of State agencies.	A. Mitigation Committee. Meet periodically with the Mitigation Review Committee consisting of MEMA and key State agency leaders to review state programs for opportunities to combine capabilities and resources on mitigation strategies.	Existing Staff \$ S	MEMA, State Agencies	Long Range	Cost-effective hazard mitigation with every public dollar	2007-2010 met at least 3times/year on ongoing basis
	B. Leveraging Partnerships <ul style="list-style-type: none"> • Continue holding Maine Preparedness Conferences undertaken with Maine Municipal Association and Associated General Contractors. • Continue disaster-response partnerships with Associated General Contractors, Walmart, Poland Springs and other businesses. • Continue to meet annually in March with the River Flow Advisory Commission to assess flooding potential (the Commission includes 	Existing Staff \$ S	MEMA	Long Range	Pooling of resources for maximum effectiveness; better preparedness for disaster response	2008 – Ongoing; have held conferences, done outreach, signed contracts, and/ or had presence at the meetings or conferences of "old" and "new" state partners

Objectives	Actions	Resources	Agency	Time Frame	Results of Action	Status Report 2010
	MEMA, local EMAs and dam owners) <ul style="list-style-type: none"> Continue to work with MaineDEP and other agencies to monitor the impacts of climate change including changes in precipitation and sea level rise. 					
	C. Hazard additions to State GIS system. Add hazard occurrence information to the State's GIS system.	Existing Staff \$ S	MEMA, Maine OGIS	Long Range	Greater availability of hazard occurrence data	Has not been implemented; lack of staff
	D. Potential losses. Collect vulnerability and potential loss data to estimate losses for State-owned and operated buildings, infrastructure and critical facilities associated with the most likely hazard events.	Consultant \$ S, L	MEMA	Long Range	Better data for hazard mitigation assessment and decision making	MEMA has begun this process
6. State projects. Develop a process for better review and evaluation of State-funded or managed projects for compliance with good mitigation practices and standards	A. Best practices manual. Develop a Best Management Practices (BMP) Manual (similar to DEP's Erosion Control BMP Manual) for the review and evaluation of State-funded or managed projects for compliance with good mitigation practices and standards.	Consultant \$ S	MEMA, State Agencies	Long Range	Provision of ideas and technical know-how to public officials and the private sector on methods to incorporate hazard mitigation into their projects	Not done – lack of staff time
	B. Administration plan. Revise the hazard mitigation prioritization criteria in the Administration Plan to include communities at highest risk, with consideration for repetitive loss and most intense development pressures.	Existing Staff \$ S	MEMA	Long Range	Simplification of the process for choosing Hazard Mitigation Projects	2010 re-writing current Plan to be Hazard Mitigation Assistance Plan; other priorities set forth in state and county hazard mitigation plans

FLOODING:

Goals: Reduce loss of life, injury and property damage in Maine caused by flooding.

Objectives	Actions	Resources	Agency	Time Frame	Results of Action	Status Report 2010
<p>1. Outreach. Help local officials develop more effective ways of mitigating flood damages to local roads, bridges, culverts and ditches.</p>	<p>A. Workshops on geo-synthetics. Continue to sponsor workshops through the Local Roads Center on the use of geo-synthetics to better mitigate flood damages to local roads, bridges, culverts and ditches.</p>	Existing Staff \$ F, S	MDOT Local Roads Center/ MEMA	Ongoing	Better approaches to mitigating flood damages	Workshops were held throughout the State - 2009
<p>2. Improved mapping. Support efforts to improve flood plain mapping. (see also summer storms/hurricanes)</p>	<p>A. Map Modernization. Support FEMA's Risk Mapping Program including:</p> <ul style="list-style-type: none"> • Preparation of a flood insurance rate map (FIRM) for every community in Maine; • Preparation of LIDAR-based mapping to the maximum extent possible 	Existing Staff \$ F	SPO, State Agencies	Ongoing	Better floodplain management	2010 – York, Cumberland and Oxford County maps digitized; 13 counties remain; FEMA \$ support has fallen short in completing FIRMS for every community
	<p>B. Coastal LIDAR maps. As time and resources permit, use LIDAR-based maps to prepare detailed maps of potential storm flooding and extreme tidal flooding events for coastal communities.</p>	\$ F, S	DOC/ MGS	Ongoing	Better prediction of infrastructure and evacuation routes subject to frequent coastal flooding	2010 – Data gathering flights have begun along coastline from NY to Calais, ME; report due in summer 2011
<p>3. Sea level rise. Continue to monitor sea level rise and its implications for Maine.</p>	<p>A. Monitoring. Continue to track changes in sea level and evaluate future projections and:</p> <ul style="list-style-type: none"> • Recommend priorities to FEMA for updating inundation maps (e.g., FIRMS, hurricane surge: tidal rise scenarios) giving priority to the areas most vulnerable to storm surge flooding and hurricane surge inundation; • Provide information to municipalities, utilities and the public on the implications of sea level rise. 	Existing Staff \$ F, S	DOC/ MGS	Ongoing	Improved geographic information on flooding vulnerability created by rising floodplains and tides	DOC continues to monitor sea level rise; information provided to towns and public on a consistent basis; DOC is also studying tsunami potential

Objectives	Actions	Resources	Agency	Time Frame	Results of Action	Status Report 2010
<p>4. Watershed management. Minimize increased downstream flooding caused by runoff from upstream development.</p>	<p>A. Monitoring. In developing areas of the State, monitor the extent to which upstream development may or may not be contributing to the potential for increased, downstream flooding.</p>	<p>Existing Staff \$ F, S, L</p>	<p>DEP</p>	<p>Long Range</p>	<p>Development of information on how the dynamics of watershed development adversely impact downstream properties</p>	<p>FEMA was involved in developing info for Mousam River watershed in Southern Maine - 2007</p>
<p>5. Dams. Improve State management of dams.</p>	<p>A. GIS mapping. Refine GIS mapping of high hazard and significant hazard dam locations at the time of inspections and through Emergency Action Plan revisions.</p>	<p>Existing Staff \$ S</p>	<p>MEMA</p>	<p>Long Range</p>	<p>Assessment of downriver flooding vulnerabilities from dam failures (breaches) for better land use and emergency planning</p>	<p>Not done; may be possible with new staff</p>
<p>6. County plan updates. Provide guidance to county EMAs and others involved in updating county hazard mitigation plans.</p>	<p>A. Strategy guidance. As county plans are updated, encourage consideration of consistent flood strategies including, but not limited to:</p> <ul style="list-style-type: none"> • Developing early warning systems • Monitoring ice and river flow conditions, where applicable • Monitoring preparation of Emergency Action Plans (EAPs) for dams, and participation in EAP drills • Encouraging municipalities to incorporate updated flood hazard information such as coastal surge/SLOSH maps, and hurricane inundation maps into their ordinances • Maintaining lists of people with disabilities who would be adversely impacted by flooding • Developing and circulating lists of emergency shelters 	<p>Existing Staff \$ F, S, C, L</p>	<p>MEMA</p>	<p>Medium Range</p>	<p>Development of more effective county plans</p>	<p>2009 - MEMA developed plan guidance including recommended strategies and a standardized format for easier reviews and cross referencing</p>

Objectives	Actions	Resources	Agency	Time Frame	Results of Action	Status Report 2010
	<ul style="list-style-type: none"> • Participating in hazard mitigation grant programs, particularly the 406 program, where applicable • Developing plans to upgrade roads, culverts, ditches and drainage systems to make roads and structures safe from flooding 					
7. Repetitive loss properties. Take steps to reduce repetitive loss properties	A. Priority for assistance. Give priority to repetitive loss properties, as long as it is cost beneficial.	Existing Staff \$ F, S	MEMA	Ongoing	Reduction of repetitive loss properties	2009 MEMA developed guidance including recommended strategies

WINTER STORMS

Goals: Reduce loss of life, injury and property damage in Maine caused by winter storms.

Objectives	Actions	Resources	Agency	Time Frame	Results of Action	Status Report 2010
<p>1. County plan updates. Provide guidance to county EMAs and others involved in updating county hazard mitigation plans.</p>	<p>A. Strategy guidance. As county plans are updated, encourage consideration of consistent winter storm strategies including, but not limited to:</p> <ul style="list-style-type: none"> • Developing early warning systems • Developing public education service announcements • Encouraging homeowners to keep driveways open for emergency vehicles • Maintaining lists of people with disabilities who would be adversely impacted by winter storms • Developing and circulating lists of emergency shelters • Developing plans for alternative transportation • Participating in hazard mitigation grant programs, particularly the 406 program, where applicable • Installing back-up power at all emergency facilities 	<p>Existing Staff \$ F, S, C, L</p>	<p>MEMA And Counties</p>	<p>Medium Range</p>	<p>Development of more effective county plans</p>	<p>2009 - MEMA developed plan guidance including recommended strategies and a standardized format for easier reviews and cross referencing</p>

SUMMER STORMS/HURRICANES

Goals: Reduce loss of life, injury and property damage in Maine caused by summer storms and hurricanes.

Objectives	Actions	Resources	Agency	Time Frame	Results of Action	Status Report 2010
1. Coastal storm surge flooding/hurricane surge inundation. Provide for better management of coastal storm surge flooding and hurricane surge inundation.	A. State Floodplain Management Program. Develop recommendations for the use of hurricane surge inundation maps in: <ul style="list-style-type: none"> Local ordinances Public education and awareness efforts 	Maps and model ordinances \$ S	SPO/ MEMA	Long Range	Better regulation of development in all flood zones	Not yet implemented
	B. DEP Project Review. Consider developing regulations for development in areas subject to hurricane surge inundation.	Existing Staff \$ S	DEP	Long Range	Better management of areas subject to hurricane inundation	Review Council to meet Nov 17-18, 2010; 2010 DEP representative added to Review Council
2. County plan updates. Provide guidance to county EMAs and others involved in updating county hazard mitigation plans.	A. Strategy guidance. As county plans are updated, encourage consideration of consistent summer storm/hurricane strategies including, but not limited to: <ul style="list-style-type: none"> Developing early warning systems Developing public education service announcements Maintaining lists of people with disabilities who would be adversely impacted by summer storms/hurricanes Developing and circulating lists of emergency shelters Developing plans for alternative transportation Participating in hazard mitigation grant programs, particularly the 406 program, where applicable Installing back-up power at all emergency facilities Developing plans to upgrade roads, culverts, ditches and drainage systems to make roads safe from hurricanes 	Existing Staff \$F, S, C, L	MEMA	Medium Range	Development of more effective county plans	2009 - MEMA developed plan guidance including recommended strategies and a standardized format for easier reviews and cross referencing

EROSION/LANDSLIDES

Goals: Reduce property damage in Maine caused by erosion and landslides.

Objectives	Actions	Resources	Agency	Time Frame	Results of Action	Status Report 2010
1. Coastal bluff and landslide areas. Develop information on vulnerable coastal bluffs and landslide areas.	A. Coastal Bluff and Landslide Mapping. Complete mapping of bluff and landslide areas along the remainder of the Maine coast for a uniform and state-wide GIS coverage.	MEMA \$ S	DOC/ MGS	Short Range	Use of maps for setbacks for new development in shoreland areas in coastal municipalities	Mapping is about 95% completed
2. Landslide assessment. Provide information for local regulation of high hazard landslide areas in interior Maine.	A. Inland Landslide Mapping. Map inland landslide risk areas.	\$ F, S	DOC/ MGS	Medium Range	Better management of high hazard landslide areas	Ongoing; mapping has been done for Wells, Cumberland, Greenbush and Bangor
	B. Policy Development. Write model language for avoiding unsound development in landslide-prone areas.	State Rules	DEP	Medium Range	Reduced exposure of development and infrastructure to future landslides	Now included in shoreland zoning ordinances
3. Beach monitoring. Enhance decision-making by providing better information on beaches and coastal sand dunes and their vulnerability to erosion.	A. Coastal Beach Mapping. Update geological boundaries of the coastal sand dune system in GIS and release the update via web products. Provide DEP with digital data.	Maine Coastal Program \$ F	DOC/ MGS	Short Range	Increased community resiliency, Enhanced storm protection through natural dunes, Expedited permitting	2010 – Data gathering flights have begun along coastline from NY to Calais, ME; report due in summer 2011

Objectives	Actions	Resources	Agency	Time Frame	Results of Action	Status Report 2010
	<p>B. Analysis. Calculate beach erosion rates and map erosion hazard areas for short- and long-term processes and sea level rise.</p>	<p>Maine Coastal Program \$F</p>	<p>DOC/ MGS</p>	<p>Short Range</p>	<p>Increased community resiliency, Enhanced storm protection through natural dunes, Expedited permitting</p>	<p>Beach erosion documented, but updates are unfunded</p>
	<p>C. Maine Beach Monitoring Project. Continue to monitor the change in beach profiles and dune edge along the southern and mid-coast regions.</p>	<p>Sea Grant \$ F, S, L</p>	<p>DOC/ MGS</p>	<p>Ongoing</p>	<p>Documentation of erosion trends for beach management and planning</p>	<p>Beach monitoring funds have lapsed</p>

WILDFIRES

Goals: Reduce loss of life, injury and property damage in Maine caused by wildfires.

Objectives	Actions	Resources	Agency	Time Frame	Results of Action	Status Report 2010
<p>1. Urban/Wild land interface. Provide for better management of the urban/ wild land interface.</p>	<p>A. Community assessments. Continue to offer community assessments in high fire incident areas, and continue to educate homeowners on steps they can take to reduce the risk of fire to their properties.</p>	<p>Existing Staff, \$ F, S</p>	<p>SPO and MFS</p>	<p>Long Range</p>	<p>Reduction of the possibility of residential losses due to wild fires</p>	<p>The Maine Forest Service continues to implement its fire-wise community program</p>
<p>1. County plan updates. Provide guidance to county EMAs and others involved in updating county hazard mitigation plans.</p>	<p>A. Strategy guidance. As county plans are updated, encourage consideration of consistent strategies for wildfires including, but not limited to:</p> <ul style="list-style-type: none"> • Developing public education service announcements • Maintaining access to gated roads • Maintaining lists of special needs people who would be adversely impacted by wildfires • Developing and circulating lists of emergency shelters • Participating in hazard mitigation grant programs, particularly the 406 program, where applicable • Installing back-up power at all emergency facilities 	<p>Existing Staff \$ F, S, C, L</p>	<p>MEMA</p>	<p>Medium Range</p>	<p>Development of more effective county plans</p>	<p>2009 - MEMA developed plan guidance including recommended strategies and a standardized format for easier reviews and cross referencing</p>

DROUGHT

Goals: Reduce loss of life, injury and property damage in Maine caused by drought

Objectives	Actions	Resources	Agency	Time Frame	Results of Action	Status Report 2010
1. Management. Continue to provide for management of drought	A. Monitoring. Continue to monitor drought conditions on an as-needed basis.	Existing Staff \$ S, L	Drought Task Force	As needed	Guidance to Governor and State on what to do in the event of another drought	There have been no droughts since 2003. The River flow Advisory Commission becomes the Drought Task Force as necessary
	B. Action Plan. Advise the Governor, as needed, on emergency actions the Governor can take to lessen the impacts of drought.	Existing Staff \$ S	Drought Task Force	As needed	Guidance to Governor and State on what to do in the event of another drought	There have been no droughts since 2003. The River flow Advisory Commission becomes the Drought Task Force as necessary

EARTHQUAKE

Goals: Reduce loss of life, injury and property damage in Maine caused by earthquake

Objectives	Actions	Resources	Agency	Time Frame	Results of Action	Status Report 2010
1. Monitoring. Continue to monitor earthquakes.	A. Monitoring. Continue instrumental monitoring of earthquake occurrences and collection of intensity reports.	Existing Staff \$ F, S, L	MGS	Ongoing	Compilation and analysis of data base on earthquake occurrences and effects	MGS monitors seismic activity throughout the State
	B. Emergency response. In the event of a large earthquake, mobilize the State's emergency response system.	Existing Staff \$ F, S, C, L	MEMA	As needed	Emergency response, including assistance to most severely affected populations	State ERT would be activated through State EOC
	C. Communication. Communicate with regional seismologists to gather information. Continue to educate and inform the public and other State and local agencies.	Existing Staff \$ S	DOC/ MGS	Ongoing	Guidance to private and public decision-makers	Weston Observatory issues reports of areas affected for state distribution

B, C. Evaluation and Prioritization of Actions

Each of the preceding goals, objectives and actions were analyzed, evaluated and prioritized by the Hazard Mitigation Team using the following criteria:

- Population benefited
- Environmental soundness
- Probability of funding
- Technical feasibility for implementation
- Improved information for better hazard mitigation

The criteria table that was used to evaluate and prioritize the preceding actions is shown below.

MITIGATION ACTION CRITERIA TABLE

Criteria Category	4 Points	3 Points	2 Points	1 Point	0 Points
Population Benefited	Over 1 Million	500,000 to 999,999	100,000 to 499,999	10,000 to 99,999	1 – 9,999
Environmental Soundness	Greatly improves the environment	Small improvement to environment	Neutral impact to environment	Small impact to environment	Causes harm to environment
Probability of Funding	Funds are already available	Grants with matching funds required	Requires one year investment	Requires long term investment	No chance of funding
Technical Feasibility	Very easy to implement	With effort, can put into place in 1 year	Requires regulatory changes only	Requires statutory changes	No chance of implementation
Information for Better Management	Greatly improves info for better management	Small improvement in info for better mgt	Public service information only	Information for small # of people	No improvement in info for better mgt
Cost Effectiveness	Highly Cost Effective	Moderately Cost Effective	Somewhat Cost Effective	Possibly Cost Effective	Unknown, or Not Cost Effective

The criteria points worksheet used to evaluate each of the actions is shown on the next page.

MITIGATION ACTIONS – CRITERIA POINTS WORKSHEET

Actions	Pop. Ben.	Envir. Sound.	Prob. Fund.	Tech. Feas.	Better Info.	Cost Effect.	Total Points
Administration							
1A 406 program education	4	2	4	4	4	4	22
1B 406 program - project identification	4	2	4	4	4	4	22
2A Plan integration	4	2	3	3	3	4	19
2B County plan updates	4	2	3	3	3	4	19
2C Standardization	4	2	3	4	4	4	21
2D State plan update	4	2	3	4	4	4	21
3A MEMA website	4	2	4	4	4	4	22
3B Community outreach	4	2	4	3	2	4	19
3C Workshops	4	2	4	3	4	4	21
3D Open houses, public info	0	2	4	4	4	4	18
3E Early warning systems	4	2	3	3	4	4	20
4A Additional staff	4	3	1	4	4	4	20
4B Prioritization MEMA staff	4	2	4	4	4	4	22
5A Mitigation committee	4	3	4	4	4	4	23
5B Leveraging partnerships	4	4	4	4	4	4	24
5C Hazard additions to GIS system	4	4	3	3	4	4	22
5D Potential loss data, State facilities	4	2	3	3	4	3	19
6A Best practices manual	4	4	3	3	4	3	21
6B Administration Plan	4	2	4	4	4	3	21
Flooding							
1A Workshops on geo-synthetics	4	4	3	3	4	4	22
2A Map modernization	3	4	4	4	4	4	23
2B Coastal LIDAR maps	3	4	3	4	4	4	22
3A Monitor sea level rise	4	4	3	4	4	4	23
4A Monitor watershed development	4	3	2	3	3	3	18
4B Watershed recommendations	3	3	3	3	2	3	17
5A GIS mapping of dams	1	2	2	3	1	2	11
6A County plan updates	4	3	3	3	3	3	19
Winter Storms							
1A County plan updates	4	3	3	3	3	3	19
Summer Storms/Hurricanes							
1A Flood plain mgt recommendations	1	2	3	3	3	2	14
1B DEP project review	1	3	3	3	3	2	15
2A County plan updates	4	3	3	3	3	3	19

Actions	Pop. Ben.	Envir. Sound.	Prob. Fund.	Tech. Feas.	Better Info.	Cost Effect.	Total Points
Erosion/Landslides							
1A Coastal bluff and landslide mapping	2	3	3	3	4	4	19
2A Inland landslide mapping	2	3	1	3	4	4	17
2B Policy development	1	3	4	3	3	4	18
3A Coastal beach mapping	1	2	4	3	4	4	18
3B Analysis	1	2	4	3	4	4	18
3C Maine Beach Monitoring Project	1	2	4	3	4	4	18
Wildfires							
1A Community assessments	1	2	3	3	1	4	14
2. County plan updates	4	3	3	3	3	3	19
Drought							
1A Continue monitoring	4	2	3	3	4	4	20
1B Action plan when needed	4	0	2	3	0	3	12
Earthquake							
1A Continue monitoring	4	2	3	3	4	4	20
1B Emergency response	4	0	2	3	0	3	12
1C Communication	4	2	4	4	4	4	22

D. How each Activity Contributes to the Overall State Mitigation Strategy. The format of the Goals, Objectives and Actions contained on the previous pages demonstrates how each action relates to the overall strategy:

- The overall strategy is arranged by topic area (Flooding, Winter Storms, Wildfire, etc).
- For each topic area, there is a general goal (for example "reduce loss of life, injury and property damage caused by flooding."
- For each topic area, there are a series of broad objectives aimed at achieving the goal(s),
- For each objective, there are one or more actions aimed at implementing the objective.
- For each action, there is an indication of the resources required for implementation, the responsible agency, the time frame, and a summary of the results of the action.
- The "Results of Action" column contains a brief description of how the specific action contributes to the overall strategy.
- The "Status Report" column describes what has been done to implement the strategies.

E. Actions and Strategies Contained in County, Local and University System Plans

This 2010 Plan reflects the priorities and thinking that went into the preparation of 16 county plans and the University of Maine System plan, in large part because of MEMA's extensive involvement with the planning processes of these various jurisdictions. Inclusion in this Plan of all of the goals, objective, strategies and recommended projects from these plans would very cumbersome and redundant. Copies of these plans are on file with MEMA and some are

available on line on county websites. MEMA has prepared a guide for use in the preparation of county plans to encourage a consistent format as well as similar actions where appropriate.

FUNDING SOURCES	
<i>Requirement §201.4(c)(3)(iv). [The State mitigation strategy shall include an] identification of current and potential sources of Federal, State, local, or private funding to implement mitigation activities.</i>	
<i>Elements</i>	<i>A. Does the new or updated plan identify current sources of Federal, State, local or private funding to implement mitigation activities?</i>
	<i>B. Does the new or updated plan identify potential sources of Federal, State, local or private funding to implement mitigation activities?</i>
	<i>C. Does the updated plan identify the sources of mitigation funding used to implement activities in the mitigation strategy since approval of the previous plan?</i>

A, B, Current and Potential Sources of Federal, State, Local or Private funding for Mitigation. The State of Maine and local jurisdictions use several funding sources to implement hazard mitigation activities. The majority of the funding comes from federal and municipal programs. Federal funds are typically managed by the State.

The State is interested in pursuing other sources of funds and encouraging municipalities, Maine residents and local businesses to invest in hazard mitigation measures. Some existing and potential funding sources are included in the table below.

Current and Potential Funding Source	Purpose	Hazard	Pre- or Post-Disaster	Estimated Amount (Annual)
FEDERAL				
Hazard Mitigation Grant Program	Implement long-term mitigation strategies	All-Hazards	Post	15% of Disaster
Pre Disaster Mitigation Grant	Provide planning and projects to lessen impacts of disasters	All-Hazards	Pre	\$0-3 million
Flood Mitigation Assistance Program	Planning, Project & Technical Assistance Grants	Flooding	Pre	\$160,000
Community Development Block Grant	Improve community services and facilities	Flooding	Pre	\$3,000,000
FEMA FIRE Grants	Upgrade community emergency services	All-Hazards	Post	\$10,000,000
Homeland Security Grants	Upgrade community emergency response and homeland security capabilities	All-Hazards	Post	\$11,000,000
US DOA National Conservation Resources Service	Provide funds to farmers to incorporate erosion control and stormwater management into their farming practices	Flooding	Pre	Varies
Emergency Management Performance Grants	Funds to help educate the public on natural and technological hazards	All-Hazards	Pre	\$1,700,000
Disaster Housing Program	Small grants to incorporate hazard mitigation into home repairs	All-Hazards	Pre	% of disaster

Current and Potential Funding Source	Purpose	Hazard	Pre- or Post-Disaster	Estimated Amount (Annual)
STATE				
Maine Highway Fund	Provide funding for highway road maintenance and capital improvements	Winter Storm	Post	Varies
Environmental Protection Permits	Enforce compliance with stormwater management and erosion control	Flooding	Pre	Varies
MUNICIPAL				
Municipal Mitigation Projects	Construct long-term upgrades to local roads and bridges	Flooding	Pre	Varies by community
Municipal rainy day funds	Funding for unanticipated needs including emergencies	All Hazards	Post	Varies
PRIVATE				
Individual households	Purchase flood insurance	Flooding	Pre	Varies
Individual households	Purchase homeowners' insurance	Fire, wind, other	Pre	Varies

The majority of these funding sources are highly competitive and the amounts can differ greatly. In addition, some funding sources (Community Development Block Grants, Maine Highway Fund, Land Use Impact Fees) are only marginally related to hazard mitigation.

C. Sources of Mitigation Funding The following is a summary of the funding sources that were used to implement various implementation actions.

- Hazard Mitigation Grant Program (HMPG)
- Pre-Disaster Mitigation Grant Program
- Flood Mitigation Assistance
- Homeland Security Grants
- Emergency Management Performance Grants