

Chapter 9 - Mitigation Strategies and Priorities

The next step in the hazard mitigation planning process is to identify mitigation actions suitable to the community, evaluate the effect the action will have on the specified mitigation objective and prioritize actions to decide what sequence or order these actions should be pursued.

Mitigation actions can be grouped into six broad categories:

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, building codes, capital improvement programs, open space preservation, and storm water management regulations.

2. Property Protection: Actions that involve modification of existing buildings or structures to protect them from a hazard, or removal 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 the 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, in addition to minimizing hazard losses, 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 after a disaster or hazard event. Services include warning systems, emergency response services, and protection of critical facilities.

6. Structural Projects: Actions that involve construction of structures to reduce the hazard impact. Such structures include dams, levees, floodwalls, seawalls, retaining walls, and safe rooms.

Identification of Mitigation Actions

The public was invited to a meeting held in Cheboygan County on May 10, 2004 to discuss and identify hazards and possible mitigation actions. Communities, agencies, LEPC and general public were invited to attend the workshop that was held in conjunction with the Cheboygan County Local Emergency Planning Committee.

Evaluation and Prioritization of Mitigation Actions

A sub committee of the Cheboygan LEPC met on September 13, and October 4, 2004, to evaluate and prioritize the list of mitigation actions. The committee also identified agencies and organizations responsible for completing the action and possible funding sources. Evaluation criteria included: social impacts, technically feasible, administrative capabilities, political impacts, legal issues, cost effectiveness, environmental, and overall benefit to the community. Appendix C shows the projects and associated evaluation criteria.

The committee used a normative ranking process to rank the list of projects compiled at earlier sessions. The planning team chose to use the approach termed “multi-voting.” Actions were ranked by hazard type. Each team member was given half the total

number of potential actions to use as individual votes. In other words, if there were 20 mitigation actions for wildfires, each member could vote for 10 of the actions. The number of votes was tabulated for each action, and based on that score, actions were given a high, medium or low priority. Therefore, all actions that were considered relevant by the committee are included somewhere on the list. Next, the committee identified possible responsible governments, agencies and organizations that might provide general funding for the respective projects. An anticipated timeframe for completing the actions was also estimated.

Mitigation Actions A. Multi-Hazard Actions. #1	Priority	Responsible Agency	Funding Sources	Application	Time Frame
Build the capabilities of the county GIS program to function as a tool to address multiple hazards. This effort would require the creation/updating of datasets such as parcels/ownership, location of all structures, driveways with ingress/egress conditions, roads, forest types, ownership types, floodplains, utilities (power lines, gas lines and water lines), wetlands, water features, bridges and culverts, (SARA III sites)	1	A,B,C,E,P,D,J	Local- General Fund State- MDIT Federal- F76, F77, F79, F104, F10 Homeland Security	County wide	Ongoing
Provide trained, equipped, and prepared search and rescue teams.	1	B,C,D,F,S,W	Local- LEPC State- Health Department Federal- F38, F104	County wide	Short Term
Review and develop site emergency plans for schools, factories, office buildings, shopping malls, hospitals, correctional facilities, etc .to cover all potential hazards.	2	A,B,C,D,E,K,M,N ,R	Federal- F87, F104	County wide	Short Term
Promote and implement solutions for keeping roads and driveways accessible to vehicles and fire equipment.	3	A,B,C,D,E,F,J,U	State- MDOT Federal- F102	County wide	Ongoing
Study and evaluate methods to improve NOAA Weather radio reception in county.	3	A,B,C,O	Federal- F104	County wide	Mid-term
Increase usage of NOAA Weather Radio by subsidizing purchase and distribution of radios to county residents, organizations and businesses. Use NOAA radios as a community emergency alert system to information on hazard events.	4	A,B,C,D,K,O,U,X	Federal- F104	County wide	Short term
Encourage residents to develop a Family Disaster Plan that includes the preparation of a Disaster Supplies Kit.	5	A,C,D,G,H,I,P,U	Local- General Fund State- Health Department Federal- F104 American Red Cross, Civic Groups	County wide	Mid-term

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Mitigation Actions	Priority	Responsible Agency	Funding Sources	Application	Time Frame
A. Multi-Hazard Actions. #2					
Organize outreach program to vulnerable populations during and after hazard events, including wildfires, extreme winter and summer weather events, periods of extreme temperatures, public health emergencies, and other hazards that can impact the community.	4	A,C,D,E,I,N,P, S	Local- General Fund Federal- F9, F70, F97, F98, F100, F104 American Red Cross	County wide	Mid-term
Pre-planning for debris management staging and storage areas ...	4	A,B,C,D,E,Q	Federal- F104	County wide	Mid-term
Encourage continuation of house numbering program	5	A,B,C,D,E,S,	Federal- F104	County wide	Ongoing
Produce and distribute family emergency preparedness information relating to all natural hazards affecting the County.	5	A,D,E,G,H,I,J,L ,N,O,Q,U,V	Local- General Fund State- Health Department Federal- F54, F104	County wide	
To address multiple hazards in the county recommend tree trimming and maintenance efforts to prevent limb breakage and safeguard nearby utility lines. Where cost effective bury and protect power lines. The end goal is to create and maintain a disaster-resistant landscape in public rights-of-way.		A,E,P		County wide	Long-term
Acquire portable/changeable message signs to direct crowds and provide information.		A,B,C,E,H,Q,X		County wide	Mid-term
Individual communities should prepare future land use plans and capital improvement programs to plan for their future hazard mitigation needs.		A,B,C,D,F		County wide	Long-term
Encourage key gasoline stations have the capacity to pump gasoline during power outages.		A,M,W		County wide	Long-term
Develop plans to identify and inform persons of "Safe Areas" during festivals/events. (include signs and directions to shelters)		A,B,C,D,E,N,Q		County wide	Long-term

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Mitigation Actions Winter Weather Hazards	Priority	Responsible Agency	Funding Sources	Application	Time Frame
Study and support pre-arranged shelters for stranded motorists/travelers, and others.	1	A,I,N,R	Local- General Fund State- Health Department Federal- F14, F92, F102, F104, F108	County wide	Mid-term
Inventory existing and acquire equipment and portable signs for road closures and traffic control in accident areas, and to inform motorists of high wind area, lake effect snow area and road glazing area on major highways.	2	A,B,C,E,Q,W,X	State- S38 Federal- F104	County wide	Short-term
Study and improve location and design and maintenance of water and sewer systems (to include insulation of critical components to prevent damage from ground freeze)		C,H,		County wide	Ongoing
Produce and distribute family emergency preparedness information relating to severe winter weather hazards		A,G,I,N		County wide	Mid-term
Study and employ available NOAA data to predict location and warn motorists of potential white-out road hazards.		A,E,O,W		County wide	Short-term

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Mitigation Actions C. Fixed Site Hazmat, #1	Priority	Responsible Agency	Funding Sources	Application	Time Frame
Provide annual training to County Fire Departments related to on site products, and how they are handled.	1	A,B,C,D,W	Federal- F68, F79, F81, F104	County wide	Short-term
Develop and exercise site emergency plans and community response plans as required under SARA Title III.	1	A,B,D,H	Federal- F68, F77, F104	County wide	Ongoing
Provide training in and compliance with all safety procedures and systems related to the manufacture, storage, transport, use, and disposal of hazardous materials, including public education to help identify and eliminate clandestine neighborhood drug labs in the County		A,B,C,D,M,U		County wide	Ongoing/ Short-term
Educate public and implement steps to encourage "shelter in place" response to Hazmat incidents.		A,B,C,D,U		County wide	Mid-term
Continue brownfield cleanup activities.		B,C		County wide	Ongoing

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Mitigation Actions D. Transportation & Trans Hazmat	Priorit y	Responsible Agency	Funding Sources	Application	Time Frame
Provide more training for firemen, police and first responders to school bus and commercial bus accidents.	1	A,B,D,E,R,W	Federal- F104	County wide	Ongoing/ Short-Term
Provide more training for aircraft emergencies involving all county fire departments	2	A,B,C,D,W	Federal- F54, F104, F105	County wide	Short-term
Encourage and enforce use of designated truck routes, and strict enforcement of weight and travel restrictions for truck traffic.	3	A,B,C,E,Q	Federal- F62, F63, F66, F104	County wide	Ongoing
Study and employ available NOAA data to predict location and warn motorists of potential white-out road hazards.		E,O,Q		County wide	Mid-term
Review and enhance airport maintenance, security, and safety programs.		A,B,C		County wide	Long-term
Explore placement of computerized weather kiosks at major Lake Huron marinas in conjunction with U.S. Power Squadron.		K,N,O	U.S. Power Squadron	Mackinaw , Beaugrand, Benton Twps, City of Cheboygan	Long-term

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Mitigation Actions E. Riverine Flooding,	Priority	Responsible Agency	Funding Sources	Application	Time Frame
Review and enforce basic building code requirements related to flood mitigation.	1	A,B,C	Local- General Fund Federal- F96, F102, F104	County wide	Ongoing
Promote accurate identification and mapping of flood-prone areas.	2	A,B,C,F,J,S	Federal- F20, F23, F31, F39, F104	County wide	Short-term
Increase public awareness of need for permits (MDEQ Part 31) for building in floodplain areas.	2	A,B,C,G,Q	State- MDEQ Federal- F23, F39, F104	County wide	Short-term
Study and implement appropriate solutions to property damage caused by “anchor ice” flooding in the Village of Wolverine	4	A,B,C,D,E,O,Q	Federal- F1, F9, F38, F39, F41, F43, F44, F70, F87, F96, F102, F104, F108	Village of Wolverine, Wilmot Twp, Cheboygan County	Short-term
Promote and employ soil erosion techniques within watershed.	4	A,B,G,N,S	State- S1 Federal- F3, F22, F23, F41, F104	County wide	Ongoing
Consider government acquisition, relocation or condemnation of structures within floodplain.		A,C,B,J,K		County wide	Long-term
Review and identify possible sites for drainage easements.		B,E,G		County wide	Long-term
Review and provide for detection and prevention/discouragement of illegal discharges into storm-water sewer system.		A,C		County wide	Mid-term

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Mitigation Actions F. Extreme Temperatures	Priority	Responsible Agency	Funding Sources	Application	Time Frame
Identify location and organize outreach to vulnerable populations during periods of extreme temperatures...	1	A,B,C,N,I	Federal- F104	County wide	Mid-term

Mitigation Actions G. Infrastructure Failure	Priority	Responsible Agency	Funding Sources	Application	Time Frame
Review and develop strategies to insure redundancies in utility and communications systems, and mutual aid assistance for failures in utility and communication systems.	1	A,B,C,D,H,N,O,W	Local- Private Federal- F35, F104	County wide	Long-term

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Mitigation Actions Dam Failures	Priority	Responsible Agency	Funding Sources	Application	Time Frame
Encourage MDEQ to enforce annual review requirements of dam Emergency Action Plan (EAP) with the local Emergency Operations Plan (EOP).	1	A,J,P	State- MDEQ Federal- F103, F104	County wide	Ongong
Regulate development in the dam's hydraulic shadow (where flooding would occur if there was a severe dam failure).		A,B,C			Mid-term

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