

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 Categories

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 actual removal from the hazard area. Examples include acquisition, elevation, relocation, structural retrofits, storm shutters, and shatter-resistant glass.

3. Public Education and Awareness:

This form of hazard mitigation involves 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:

This category includes 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:

Emergency services provide 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:

Structural mitigation projects include 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 Projects and Actions

The public was invited to a meeting held in Montmorency County on May 27, 2004, to discuss and identify hazards and possible mitigation actions and projects that would help lessen hazard vulnerability in Montmorency. Community and agency officials, LEPC members and general public were invited to attend the workshop that was held in conjunction with the Montmorency County Local Emergency Planning Committee.

Evaluation and Prioritization of Mitigation Actions

Members of the Montmorency LEPC met on October 18, 2004, to evaluate and prioritize the list of mitigation actions that were identified at the May 27, community-wide meeting..

Governmental level, agencies and organizations that could carry responsibility for completing the respective actions and possible funding sources were also identified. 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 Mitigation Committee used a normative ranking process to prioritize and rank the list of projects compiled at the earlier session. The planning team chose to use an approach termed "multi-voting." Actions were ranked by hazard type. Each participating member was given a number of selections equal to approximately half the total number of potential actions listed. In other words, if there were 20 mitigation actions for wildfires, participants could vote for 10 of the actions. In some cases additional projects were selected. It was decided by the Mitigation Committee that rather than rank the respective projects they would identify the projects as either priority or not priority. Those items that did not qualify as "priority projects" are included at the end of the list for each hazard type, if they were considered applicable to the county situation. 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. Specific site application and an anticipated timeframe for completing the actions were also estimated.

Review and Updating Hazard Mitigation Action Items

The Committee reviewed the 2006 Mitigation Strategies and made necessary changes. Several action items were eliminated or combined. Actions that have been completed were eliminated. Time lines were altered on mitigation strategies. The 2006 mitigation strategies list is attached to show changes in the document.

Changes in local land development have been negligible given the 2007 nationwide recession. The committee did not identify areas with significant land development since the last plan was completed and therefore made no changes to the plan in relation to new development.

Most activities in the hazard mitigation plan that the community has worked on are related to on-going mitigation actions.

The committee made minor changes in priorities in the Public Health by elevating its risk and adding strategies.

Mitigation Actions & Implementation Strategies A. Multi-Hazard Actions. #1	Priority	Responsible Agency	Funding Sources	Application	Progress	Original Status	New Status
1. Develop an all hazards education and awareness program in schools, which includes classroom presentations and incorporating wildfire and weather hazard preparedness.	Medium	A, J, R	B, C, T	Countywide	All hazards awareness is now be taught along with fire prevention	Short term	Short term
2. Produce and distribute family emergency preparedness information relating to all natural hazards affecting the County.	High	A	B, C, H, T	Countywide	Family preparedness materials are distributed throughout the year at various venues	Short term	Short term
3. Identify feasible sites for public early warning systems and networks and seek funding to install.	Low	A, C, F	T	Countywide	This project has been cost prohibitive	Ongoing	Ongoing, Short term
4. To address multiple hazards in the county improve tree trimming and maintenance efforts to prevent limb breakage and safeguard nearby utility lines. The end goal is to create and maintain a disaster-resistant landscape in public rights-of-way.	High	P, U	T	Countywide	Power lines are trimmed on a 5 year cycle	Ongoing	Mid term
5. Conduct workshops at community gatherings to encourage residents to develop a Family Disaster Plan, which includes preparation of Disaster Supplies Kit.	High	A	B, C, H, T, N, I	Countywide	Workshop are presented at various location annually	Ongoing	Short term
6. Encourage continuation of house numbering program	High	C, B	T	Countywide	The 911 Advisory board is currently pursuing universal house number	Ongoing	Ongoing, short term
7. 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.	High	A,C,H,N,O	B, C, T, I	Countywide	Standard operation plan have been put into place to assist high risk populations during severe weather events	Ongoing	Ongoing
8. Study and promote installation of automatic NOAA radio systems in new residential construction.	Low	B,C,O,Q	T	Countywide	No Progress	Short term	Mid term
9. 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)	Medium	B,E,F,J	A, B, C, Q, T,	Countywide	New software has recently been purchased	Ongoing	Ongoing, Mid term
10. 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.	High	A,B,C,D,O	T	Countywide	Weather radios have been purchased for most public gathering place as funding permits.	Ongoing	Mid term

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F. NEMCOG	L. Real Estate Co.	R. Schools	

Mitigation Actions & Implementation Strategies A. Multi-Hazard Actions. #2	Priority	Responsible Agency	Funding Sources	Application	Progress	Original Status	New Status
11. Ensure that the County and individual communities have adequate equipment, staff, and training to respond to transportation-related accidents specific to their needs.	High	B,C	B, C, T	Countywide	Additional equipment and communications equipment has been purchased through HSGP grants	Ongoing	Ongoing
12. Identify optimal staffing levels for County and community needs – seek funding to meet optimal levels	Medium	B,C	T	Countywide	Sheriff department has added 5 additional officers through a millage request.	Short term	Ongoing, Long term
13. Individual communities should prepare future land use plans and capital improvement programs to plan for their future hazard mitigation needs.	Low	B,C,F	T	Countywide	Minor progress made	Short term	Ongoing, Long term
14. Encourage residents to develop a Family Disaster Plan that includes the preparation of a Disaster Supplies Kit.	High	A	B, C, H, T, I	Countywide	Workshop are presented at various location annually	Mid Term	Mid term
15. Ensure key gasoline stations have the capacity to pump gasoline during power outages.	High	A	T	Countywide	Stations have been identified	Long Term	Long term
16. Pre-planning for debris management staging and storage	Medium	A,E	T	Countywide	Debris staging and storage sites have been identified in the EAG	Long Term	Mid term
17. Review current status and provide back-up generators to maintain community infrastructure at acceptable operating levels during extended power failures.	High	A,B,C,R	B, C, T	Countywide	Additional generators have been procured through grants when available	Long term	Long term
18. Promote and implement solutions for keeping roads and driveways accessible to vehicles and fire equipment.	Medium	A,E	Q, T	Countywide	Moderate progress made	Ongoing	Ongoing, Mid term
19. Identify water supplies for emergency firefighting, areas lacking adequate water supplies and develop strategy to construct dry hydrants.	Medium	B,D,U	T	Countywide	Water sources have been identified, several dry hydrants have been installed	Ongoing	Mid term
20. Review and improve program to provide regular maintenance and equipment checks of all critical equipment.	Low	A, B, C, D, E	B, C, D, E	Countywide	Minor progress made	Ongoing	Ongoing
21. Study and implement development of public information to cover hazards effecting county.	Low	A, B, C, D	B, C,	Countywide	Minor progress made	Short term	Short term
22. Develop plans to identify and inform persons of "Safe Areas" during festivals/events. (include signs and directions to shelters)	Low	A, B, C, D, I, N, V	B, C, N, V	Countywide	Minor progress made	Short term	Short term
23. Promote need and implement study re-installation of siren system across county	Low	A, B, C, D	B, C, Q, T	Countywide	No Progress	Mid term	Mid term
24. Identify escape routes and emergency snow routes.	Medium	A, B, C, D, E	A, B, C, E	Countywide	Evacuation routes have ben identified during local disaster exercises	Ongoing	Short term

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Mitigation Actions & Implementation Strategies B. Transportation Accident	Priority	Responsible Agency	Funding Sources	Application	Progress	Original Status	New Status
1. Provide more training for fireman, police and first responders to school bus and commercial bus accidents.	High	A,D	T	Countywide	A local school bus extrication training class is held annually	Short term	Short term
2. Review and/or develop Regional EMS response plan to assist county's mass casualty plan.	High	A	T	Countywide	Mutual aid plans have been made with adjoining counties	Mid Term	Mid term
3. Arrange and conduct meeting with all local bus providers and review their emergency plans.	Medium	A	T	Countywide	Minor Progress made	Short term	Short term
4. Exercise a 60 person accident involving a bus and logging truck.	Medium	A, D,R, W	T	Countywide	Completed in 2009	Short term	Short term
5. Provide training, planning, and preparedness for mass-casualty incidents involving all modes of public transportation.	Medium	A,D,M,W	T	Countywide	Several mass Casualties exercise have been done	Mid Term	Mid term
6. Hold annual meeting with trucking industry and local fire and law enforcement agencies.	Low	A,D,M	T	Countywide	Minor Progress made	Mid term	Mid term
7. Meet with local industries from surrounding counties to determine type of products transported over county highways, and provide local HAZ/MAT team and fire agencies with this information.	Medium	A,D,M,W	T	Countywide	Moderate progress made	Mid term	Mid term
8. Program load type into CAMEO and develop pre-evacuation plans by material type.	Medium	A	T	Countywide	Minor progress made as funding permits	Long term	Long term
9. Continue upgrade protocols in Central Dispatch.	High	A, D,W	T	Countywide	Ongoing upgrades	Ongoing, Long term	Ongoing, Long term
10. Inventory current heavy equipment, wreckers and jaws units within 30 minutes of county locations.	Medium	A, B, C, D	A, B, C, D	Countywide	Mutual Aid agreements with surrounding county's	Mid term	Mid term
11. Encourage strict enforcement of trucking industry highway speed	Low	W		Countywide	Minor Progress made	N/A	Short term
12. Provide more training for airfield emergencies involving all county fire departments.	Low	A, B, C, D	A, B, C, D	Countywide	Minor Progress made	N/A	Mid Term
13. Research and develop medical airlift plan for plane accidents.	Medium			Countywide	Moderate progress made	N/A	Long term
14. Encourage strict highway speed enforcement during school transport times.	Low	W	W	Countywide		N/A	Long term
15. Promote and conduct annual review of school buses and emergency exits, plus new features.	Medium	R	R	Countywide	School Bus extrication training is offered annually	N/A	Short term
16. Encourage long-term planning that provides more connector roads for reduced congestion of arterial roads.	Low	C	C	Countywide	N/A	N/A	Long term
17. Arrange and conduct meeting with all local bus providers and review their emergency plans.	Low	A, R	A, R	Countywide	Minor progress made	N/A	Mid term

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Mitigation Actions & Implementation Strategies C. Winter Weather Hazards	Priority	Responsible Agency	Funding Sources	Application	Progress	Original Status	New Status
1. Establish heating centers/shelters for vulnerable populations	High	A,I	B, C, H, T	Countywide	Operational plans have been developed for vulnerable populations during severe weather events	Ongoing	Mid term
2. Promote and implement solutions for keeping roads and driveways accessible to vehicles and fire equipment.	Medium	E,U	E, Q, T	Countywide	Moderate progress made	Mid term	Mid term
3. Complete and inventory problem sections of roads. Place snow fences or "living snow fences" (rows of trees or vegetation) to limit blowing and drifting of snow over critical roadway segments	Low	E, N,	E, Q, T	Countywide	Minor progress made	Long Term	Long term
4. Produce and distribute family emergency preparedness information relating to severe winter weather hazards	Medium	A,B,C,D,I,R	T	Countywide	Winter weather information is distributed in local paper annually	Short term	Short term
5. Compile a listing of homes and facilities with vulnerable residents such as elderly, infirmed and disabled individuals; and establish outreach procedures for assisting residents after winter storm events	High	A, B, C, H, N,	B, C	Countywide	Council on Aging have developed plans and outreach procedures	N/A	Short term
6. Prearrange for shelters for stranded motorists/travelers and others	Medium	A, C, I	A, C, I	Countywide	Minor progress made	N/A	Short term
7. Complete and inventory problem sections of roads. Place snow fences or "living snow fences" (rows of trees or vegetation) to limit blowing and drifting of snow over critical roadway segments	Low	E	E	Countywide	Ongoing	N/A	Long term
8. Study and employ available NOAA data to predict location and warn motorists of potential white-out road hazards.	Low	A, O	A, O	Countywide	No activity	N/A	Long term
9. Acquire portable signs to inform motorists of high wind area, lake effect snow area and road glazing area on major highways.	Low	E	E	Countywide	No Activity	N/A	Long term

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Mitigation Actions & Implementation Strategies							
D. Structural Fire #2	Priority	Responsible Agency	Funding Sources	Application	Progress	Original Status	New Status
1. Develop public education and school programs related to the use of stoves, heaters, fireworks, matches/lighters, etc.	High	A,D,R	D, T	Countywide	Fire safety programs are presented at all schools annually	Mid Term	Mid term
2. Develop program to encourage landlords and families to install and maintain smoke detectors and fire extinguishers. Train residents in use a fire extinguisher.	High	D,N,U	Q, T	Countywide	Fire and smoke alarms are made available to low income families though the fire dept. or health dept.	Mid term	Mid term
3. Promote safe use and maintenance/cleaning of fireplaces and chimneys...	Medium	D,N,U	T	Countywide	Minor progress has been made.	Short term	Short term
4. Increase volunteer recruitment, and study offering paid training.	Medium	D	T	Countywide	No cost training is available through the regional training center at the Alpena AANG facility.	Ongoing	Short term
5. Develop strategy to standardize equipment so that all firefighters in County system can operate any piece of equipment.	Medium	C,DJ	Q, T	Countywide	All radios are now standardized and programmed identically.	ongoing	Long term
6. Review and develop programs to raise community awareness on proper installation and maintenance of heating systems.	Low	B,D,Q	B,D,Q	Countywide	Minor progress made	N/A	Long Term
7. Develop information and programs about safe and responsible use of electric and "space" heaters.	Low	B,D,Q	B,D,Q	Countywide	Minor progress made	N/A	Long Term
8. Communicate to resident's information related to handy household items that can be used as fire tools.	Low	D	D	Countywide	Accomplished through Firewise Program	N/A	Long Term
9. Identify adequate water supplies for emergency firefighting, areas lacking adequate water supplies and develop strategy to construct dry hydrants.	Medium	A, D	A, D	Countywide	Water sources have been identified, several dry hydrants have been installed	N/A	Long Term
10. Develop integrated water supply system using multi-tankers to well-located water supplies, with easy year around access.	High	A, D	A, D	Countywide	Mutual Aid agreements have been made.	N/A	Long Term

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Mitigation Actions & Implementation Strategies <i>E. Extreme Temperatures</i>	Priority	Responsible Agency	Funding Sources	Application	Progress	Original Status	New Status
1. 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)	Low	C,F,G,P	Q,T	Countywide	Minor progress has been made	Long term	Long term
2. Identify location and organize outreach to vulnerable populations during periods of extreme temperatures...	High	A, C, N, U	T	Countywide	Operational plans have been developed for vulnerable populations during severe weather events	Ongoing	Mid term
3. Develop housing/landlord codes to enforce heating requirements.	Low	B, C	B, C	Countywide	Minor progress made	N/A	Long Term
4. Improve and/or enact landlord/tenant ordinances.	Low			Countywide	Minor progress made	N/A	Long Term

Mitigation Actions & Implementation Strategies <i>F. Transportation of Hazmat, #1</i>	Priority	Responsible Agency	Funding Sources	Application	Progress	Original Status	New Status
1. Provide training, planning and preparedness for hazardous material incidents along roadways and railways (in addition to fixed site emergencies).	High	D,W	T	Countywide	Several exercises have been held regarding Haz-Mat incidents	Ongoing	Mid term
2. Insure that all future planning will locate schools, nursing homes, and other special facilities away from major hazardous material transportation routes.	Medium	B,C,R,H,U	T	Countywide	Moderate progress made	Long term	Ongoing, Long term
3. Meet with local industries from surrounding counties to determine type of products transported over county highways, and provide local HAZ/MAT team and fire agencies with this information.	Medium	D,W	T	Countywide	Moderate progress made	Ongoing	Short term
4. Hold annual meeting with trucking industry and local fire and law enforcement agencies.	Low	A,D,W	T	Countywide	Minor Progress made	Short term	Short term
5. Encourage improvements in driver education; traffic law enforcement and transportation planning to balance needs of hazardous material transporters with public safety...	Low	Q, W	Q, W	Countywide	Minor progress made	N/A	Long Term
6. Develop and implement improved design, routing, and traffic control at problem roadway areas.	Low	R, Q	R, Q	Countywide	Minor progress made	N/A	Long Term
7. Review compliance with and enforcement of USDOT and MDOT regulations regarding hazardous materials transport.	Low	E, Q	E, Q	Countywide	Minor progress made	N/A	Long Term
8. Encourage use of ITS (intelligent transportation systems) technology	Low	Q	Q	Countywide	Minor progress made	N/A	Long Term
9. Provide for exercise gasoline or propane accidents.	Medium	A	A	Countywide	Completed/Ongoing	N/A	Long Term

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Mitigation Actions & Implementation Strategies G. Severe Winds	Priority	Responsible Agency	Funding Sources	Application	Progress	Original Status	New Status
1. Review regulations and implement necessary changes to insure proper anchoring of manufactured homes and exterior structures...	Low	B,C,K	T	Countywide	Minor Progress made	Long Term	Long term
2. Encourage securing loose materials, yard and patio items indoors or where winds cannot blow them about.	Low	A,K	T	Countywide	Minor Progress made	Mid term	Mid term
3. Review current and propose improvements to wind engineering measures and construction techniques to strengthen public and private structures against severe wind damage	Low	B, C, Q	B, C, Q	Countywide	Minor Progress made	N/A	Long Term

Mitigation Actions & Implementation Strategies H. Public Health Emergencies	Priority	Responsible Agency	Funding Sources	Application	Progress	Original Status	New Status
1. Encourage residents to receive immunizations against communicable diseases	High	H,N	H,T	Countywide	Public awareness campaigns encourage residents to have flu shots annually	N/A	Ongoing
2. Maintain a community public health system with sufficient disease monitoring and surveillance capabilities to adequately protect the population from large-scale outbreaks	High	H,	H,T	Countywide	The local health department and CDC monitor outbreaks.	N/A	Ongoing
3. Increase public awareness of the causes, symptoms, and protective actions for disease outbreaks and other potential public health emergencies	Medium	A,H	H,T	Countywide	Moderate progress has been made	N/A	Ongoing, Long term
4. Coordinate with health department and local communities to assure proper location, installation, cleaning, monitoring, and maintenance of septic tanks	Medium	A, B,C,H	T	Countywide	All septic tanks installation require a permit and inspection through the health department	N/A	Ongoing, Long term
5. Increase public awareness of radon dangers and the prevention efforts that can be taken to reduce concentrations of radon in homes and buildings	Low	H	H	Countywide	Public awareness campaigns encourage residents to have homes checked for radon	N/A	Ongoing
6. Expand community support of free or reduced-expense clinics and school health services	Medium	H	H	Countywide	There are two reduced -expensed clinics in the county	N/A	Ongoing
7. Inform public and support pollution control, enforcement and cleanup; proper disposal of chemicals and scrap materials	Low	B, C	B, C	Countywide	Minor Progress made	N/A	Ongoing
8. Seek support and funding to clean up sites of environmental contamination	Low	B, Q, T	Q, T	Countywide	Minor Progress made	N/A	Long Term

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Mitigation Actions & Implementation Strategies <i>I. Wildfire, #1</i>	Priority	Responsible Agency	Funding Sources	Application	Progress	Original Status	New Status
1. Develop a program to instruct residents on proper procedures for wildfire evacuation, ...	Medium	D, J, N,U	B,C,D,Q,T	Countywide	High risk areas have evacuation routes posted	Mid term	Mid term
2. Identify communities or neighborhoods to develop "Firewise" demonstration projects.	Medium	D,J,N,U	Q,T	Countywide	The Firewise has been promoted at various events annually	Short term	Short term
3. Work with insurance companies to provide wildfire safety information to area residents, and consider reduction of insurance premiums if homes meet "Firewise" criteria.	Low	D,K,U	Q,T	Countywide	Minor progress has been made	Short term	Short term
4. Distribute wildfire education materials to homeowners and businesses through tax bill receipts.	Low	B,C,D,K,U	D,Q,T	Albert, Briley, Hillman, Montmorency, Vienna Twps.	Minor progress has been made	Short term	Short term
5. Review and strict enforcement of open burning regulations.	High	B,C,J,U	D,Q,T	Countywide	Burn restrictions are strictly enforced	Short term	Short term
6. Promote creation of defensible space around structures in fire-prone wildland areas.	High	B,C,D,J,N,U	T	Albert, Briley, Hillman, Montmorency, Vienna Twps.	This has been promoted through the "Firewise" program	Short term	Short term
7. Conduct annual wildfire planning with all fire departments and MDNR.	High	C,D,J	T	Countywide	Annual meeting are between MIDNR and local fire dept.	Short term	Short term
8. Promote media broadcasts of fire weather and fire warnings	Medium	A,J,D,K	T	Countywide	High fire danger days are broadcast on local TV and radio stations	Short term	Short term
9. Promote and implement fuel management by thinning of flammable vegetation, creation of fuel breaks, use of fire-retardant materials/vegetation and selective thinning....	High	D,J,K	Q,T	Countywide	This has been addressed through the Firewise program	Short term	Short term
10. Develop program to form Wildfire Safety Coalition to develop neighborhood watch program to instruct others about escape routes, sprinkler systems, power lines, etc...	Low	A,D,J,N,U	T	Countywide	Minor progress made	Short term	Short term
11. Organize neighborhood wildfire safety coalitions to plan how to work together to prevent wildfire	Low	A, D	A, D	Countywide	No progress	N/A	Mid term
12. Develop program to inspect campsites in public forest areas to insure safe open fires, where allowed.	Medium	D, Q	D, Q	Countywide	Complete/ MIDNR patrols	N/A	Mid term
13. Develop and implement strategy to introduce "Firewise" program in risk communities.	Medium	D, Q	D, Q	Countywide	The Firewise has been promoted at various events annually	N/A	Short term
14. Community Chipper Days - Organize a program to provide a chipper for properly disposing of woody debris, in conjunction with composting programs and spring clean-up days.	Low	C	C	Countywide	Minor progress made	N/A	Long term

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Mitigation Actions & Implementation Strategies J. Fixed Site Hazmat	Priority	Responsible Agency	Funding Sources	Application	Progress	Original Status	New Status
1. Educate public and implement steps to encourage "shelter in place" response to Hazmat incidents.	Medium	A	T	Countywide	Sheltering in place has been promoted to area residents and businesses.	Short term	Short term
2. Provide public education to help identify and eliminate clandestine neighborhood drug labs in the County.	Medium	A,C,N,W	T	Countywide	Much information has been presented in the local media regarding clandestine drug labs.	Short term	Short term
3. Emphasize locating industrial areas away from schools, nursing homes, and hospitals, in future planning.	Low	B,C,F,R	T	Countywide	Minor progress made	Short term	Short term
4. Develop and/or improve public warning systems and networks for hazardous material releases.	High	A,C,D,O	T	Countywide	302 sites have siren warning systems	Mid term	Mid term
5. Inform public and support pollution control, enforcement and cleanup; proper disposal of chemicals and scrap materials.	Medium	B,C,D,M	H,T	Countywide	Moderate progress made	Ongoing, Mid term	Ongoing, Mid term
6. Provide annual training to County Fire Departments related to on site products, and how they are handled.	High	D,M,	T	Countywide	Area fire department train annually with 302 sites.	Mid term	Mid term
7. Provide training in and compliance with all safety procedures and systems related to ... hazardous materials.	High	A, D, Q	Q, T	Countywide	Currently a requirement of MI firefighters Training Council.	N/A	Ongoing
8. Review and/or implement strategy to train, equip, and prepare site and local hazardous material emergency response teams.	Medium	A, D, Q	Q, T	Countywide	Mutual Aid agreements with neighboring Haz-Mat teams	N/A	Mid term
9. Reinforce planning emphasis on proper separation and buffering between industrial areas and other land uses.	Low	C	C	Countywide	Minor progress made	N/A	Ongoing
10. Research and develop contingency plans for worker and public protection, including inclusion of rescue and evacuation procedures for well hazard areas.	Low	A, D, Q	A, D, Q	Countywide	Minor progress made	N/A	Long Term
11. Develop and/or expand public warning systems and networks for hazardous material releases.	Low	A, D, Q	A, D, Q	Countywide	Minor progress made	N/A	Long Term

A. County Emergency Management Office	G. MSU Extension	M. Local Businesses	S. Medical
B. County	H. District Health Dept.	N. Civic Gr.& Churches	T. Federal Government
C. Local Units of Gov.	I. American Red Cross	O. National Weather Service	U. landowners
D. Local Fire Dept.	J. USFS & MDNR	P. Utility Company	V. Salvation Army
E. County Road Commission	K. Insurance Companies	Q. State	W. Police
F. NEMCOG	L. Real Estate Co.	R. Schools	

Mitigation Actions & Implementation Strategies K. Gas and Oil Production, Related	Priority	Responsible Agency	Funding Sources	Application	Progress	Original Status	New Status
1. Enforce community and operator compliance with Oil/gas industry safety regulations and standards	High	B,C,J,Q	T	Countywide	Gas and oil companies must meet standards set forth by industry regulations.	Ongoing, Long term	Ongoing, Long term
2. Research and develop contingency plans for worker and public protection, including inclusion of rescue and evacuation procedures for well hazard areas in emergency plans.	Medium	A,M,J,Q	T	Countywide	Emergency plans contain response procedures	Mid term	Mid term
3. Develop and implement strategy to improve and enforce well site signing, to include larger signs and moving signs to gate site.	Medium	B,C,D,M	T	Countywide	Most gas and oil site now meet this requirement	Short term	Short term
4. Increase public awareness of pipeline location and appropriate emergency procedures in case of pipeline problem.	Low	A, D, Q	A, D, Q	Countywide	Moderate progress made	N/A	Long term
5. Review pipeline design and enforce proper pipeline construction, maintenance and inspection.	Low	Q, T	Q, T	Countywide	Moderate progress made	N/A	Long term
6. Explore enlisting aid of insurance companies to provide evacuation information for oil & gas related incidents...	Low	A, Q	A, Q	Countywide	Minor progress made	N/A	Long term

Mitigation Actions & Implementation Strategies L. Infrastructure Failure	Priority	Responsible Agency	Funding Sources	Application	Progress	Original Status	New Status
1. Review and improve mutual aid assistance for failures in utility and communications system.	Low	A,B,P	T	Countywide	Moderate progress has occurred.	Short term	Short term
2. Review and develop strategies to identify and employ generators for backup power at critical facilities.	Medium	A,B,M,P	B,C,T	Countywide	As funding permits generator are installed at critical sites.	Short term	Short term
3. Identify sites and obtain support to improve critical road/stream crossings.	Medium	E, F, Q	Q, T	Countywide	Several critical crossing have had improvements done in the last 5 years.	Short term	Short term
4. Review and develop strategies to insure redundancies in utility and communications systems, especially "lifeline" systems.	High	P, Q	P, Q	Countywide	Ongoing progress	N/A	Mid term
5. Identify electrical systems that will fail due to overload and develop "Rolling blackout" strategy	Low	P, Q	P, Q	Countywide	Minor progress	N/A	Mid term

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