

**Martin County**  
**All-Hazard Mitigation Plan**



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## **PART ONE: THE PLANNING PROCESS**

Martin County, Minnesota is subject to natural and human-caused hazards that threaten life, health, and property. Disasters due to flooding were declared in 1965, 1969, 1993 and 2004. A winter storm event created emergency conditions with cascading hazards in 1997. Currently, county and city law enforcement agencies are dealing with the theft of anhydrous ammonia fertilizer used for the production of the illegal drug methamphetamine. The powerful and highly addictive nerve stimulant is an extremely dangerous substance resulting in loss of life, loss of property, and a myriad of other governmental and social costs.

*Hazard mitigation planning is the process of determining how to reduce or eliminate the loss of life and property damage resulting from natural and human-caused hazards.*

Completely eliminating the risk of future hazards and disasters is neither technologically possible nor economically feasible. However, substantially reducing the negative impacts of future disasters is achievable through the development and implementation of a pragmatic hazard mitigation plan.

### **The Purpose of Our Program**

The purpose of hazard mitigation in Martin County is two-fold. The primary purpose of the program is to reduce loss of life and property due to natural disasters by encouraging the implementation of mitigation measures. Secondly, it is our goal to fully satisfy the requirements set forth in Section 104 of the Disaster Mitigation Act of 2000 (42 USC 5165.) Under the aforementioned act, it is the responsibility of counties such as ours to compile an effective and approved hazard mitigation plan should we desire to access post-disaster mitigation funds through the Hazard Mitigation Grant Program. Upon receiving a passing score from FEMA, this plan can be adopted by Martin County and cities within the county. Additionally, townships may also adopt this hazard mitigation plan if they wish. Supporting documentation (i.e. resolutions) for each jurisdiction adopting this plan will be included in the appendices after such adoption has taken place.

### **Planning for Disaster: Key Concepts and Definitions**

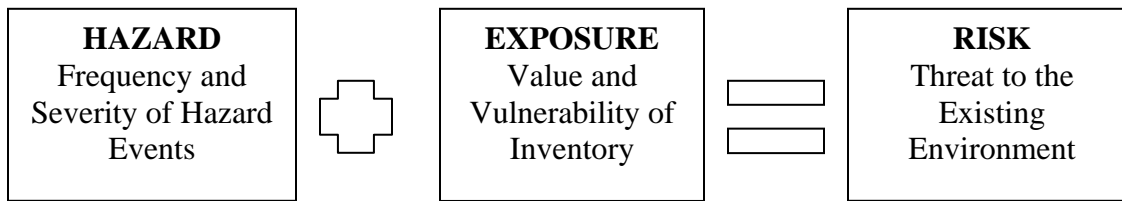
Careful planning is an important aspect of a successful mitigation program. Hazard mitigation planning is a collaborative process whereby hazards affecting the community are identified, vulnerability to the hazards is assessed, and consensus is reached on how to minimize or eliminate the effects of these hazards.

The key concept of mitigation planning is that mitigation reduces risk, and risk is defined as potential threat to the existing environment posed by all of the hazards being considered. The potential for damages, losses, and casualties must all be taken into consideration when assessing risk.

The mitigation planning approach used in this plan is based upon quantitative assessment of risk. Rational prioritization and implementation of mitigation measures can be achieved only by evaluating the level of risk for both pre-mitigation conditions and post-mitigation conditions.

That is, the effectiveness of mitigation measures in reducing risk must be evaluated. The extent of the risk depends on the combination of hazard and exposure:

### Use of Key Concepts in Hazard Mitigation Planning



### Definitions of Key Concepts in Hazard Mitigation Planning

#### HAZARD

A natural or technological event that may cause damage, losses, or casualties. Included in the definition are floods, winter storms, tornadoes, hazardous material spills, etc. Hazards are characterized by their frequency and severity as well as by the geographical area affected.

#### EXPOSURE

The quantity, value, and vulnerability of the built environment (inventory of buildings and infrastructure) in a particular location subject to one or more hazards. Inventory is determined by the number, size, shape, type, use, and occupancy of buildings, and by the infrastructure present.

#### RISK

The threat to the built environment and the potential for damages, losses, and casualties arising from hazards. When a hazard and exposure are combined, risk is the result.

#### MITIGATION

An action designed to reduce the risk due to hazards. Mitigation projects may be “hard” projects (construction which physically reduces risk), or “soft” projects, namely the undertaking of planning activities that reduce the negative impacts of hazard event occurrences.

### Organizing Resources

The first step in creating a mitigation plan is to understand what resources are available and from what authorities to draw information. In Martin County, our first step was to assign the project to the Region Nine Development Commission. In this manner, the information from each county

could be compared with information provided in as many as eight other counties, allowing interplay of thoughts and ideas across neighborhoods throughout South Central Minnesota. It also created the possibility of centralized communication and organization through a third party.

Another resource of value was the existing handbook, *State and Local Mitigation Planning*, published by the Federal Emergency Management Agency (FEMA) in September of 2002. Many local jurisdictions commented on their own unique Emergency Response Plans, effectively providing a gauge indicating which hazards are currently being monitored and prioritized by localities within the county.

The public was also of value in the initial phase of the plan's creation. Individuals capable of gathering information about their own constituencies were involved and encouraged to read drafts of the plan and submit information about hazards that have occurred in the past in Martin County, whether in written or anecdotal form. As was mentioned in the opening of this plan, citizens of Martin County have been involved in emergency situations and were eager to share their unique perspectives, and to contribute to the hazard mitigation process. Many of these experiences surfaced during a Hazard Mitigation meeting held for both the members of the community and the elected officials.

<b>Official Contributors to the Martin County All-Hazard Mitigation Plan</b>		
<b>NAME</b>	<b>TITLE</b>	<b>FUNCTION</b>
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To begin communication with jurisdictions in Martin County, each city clerk was sent a questionnaire to complete. The document asked each jurisdiction to answer the following questions:

- Has your city adopted the Minnesota State Building Code?
- What hazards are of most concern to your community and why?
- What equipment does your city have that can be used in the event of a disaster?

- How many full and part-time police officers does your city employ?
- How many homes and businesses are located in the 100-year floodplain?
- What bridges and/ or streets are vulnerable to flooding?
- What public education and outreach programs dealing with disaster awareness, safety, and preparedness are available to your city residents? What departments and/ or agencies are responsible for the organization of these programs?
- What types or acts of terrorism most concern your city and why?

Information gathered using these questionnaires has been utilized in the assessment of the overall risks for all possible hazard events that could possibly happen within Martin County. This information, gathered from individual Martin County communities, is presented when appropriate and applicable throughout the narrative of this paper, particularly in the “Vulnerability” sections discussed under each potential hazard. The full questionnaire results are also presented in the appendices section as well.

Beyond the questionnaire several steps were taken to develop the plan, which included the process events outlined in the chart below.

<b>Process</b>	<b>Event Timeline</b>	<b>Location</b>	<b>Comments</b>
Informational Meetings County Staff	Jan. 2003		This was a countywide meeting to inform all jurisdictions.
Discussion EMS Coordinator	Jan. 2003		The purpose of this meeting was to coordinate and communicate planning efforts.
Established Web log	Feb. 2003		This allowed officials and citizens the opportunity to view plans and comments.
Established Web links	Feb. 2003		Links were established to help searchers find other appropriate information.
Discussed Planning with Higher Education Planning Ctr.	Oct. 2003	Mankato	Regional expertise was sought and interns were provided an opportunity to participate in the process.
Board Presentations	Oct. 2003		Jurisdictions discussed the planning process and passed resolutions to participate. These meetings were open to the public, giving an opportunity for public comments.
Planning Meetings			Internal staff discussed planning activities.
Created Community Profile	July 2004		This background information was gathered and presented for plan development.
Memorandum to Cities	Sept. 2004		Jurisdictions were communicated with in order seek community specific information and to provide information to jurisdictions regarding the process.
Informational Meetings	March 2003	Fairmont	This was a countywide meeting to inform all jurisdictions.
Draft Plans	March 2005		Draft plans were developed and shared with

counties for review.

Multi-county Meeting	June 2003	LeSueur and Blue Earth	These were informational meetings for all counties, which allowed neighboring counties to know what was happening in the abutting county.
Mailed Information Surveys	Varied depending on jurisdiction	Jurisdiction specific	This instrument was utilized to further gather community specific information and input. Not applicable to all communities.
Phone Interviews	Varied depending on jurisdiction	Jurisdiction specific	This instrument was utilized to further gather community specific information and input. Not applicable to all communities.
Informational Meeting	Dec. 2004	Fairmont	This was a countywide meeting to inform all jurisdictions.
State Plan Review	July 2005		State reviewed plan and provided feedback on plan.
Federal Plan Review	July 2005		FEMA reviewed plan and provided feedback on plan.
Local Plan Review	July 2005 June 2005		Counties received draft of plans for review and subsequently after comments by State and FEMA
County Plan Approval	Projected Spring 2007		Final comments and approval of plan sought.

### COMMUNITY SUPPORT

All cities and townships in Martin County passed resolutions to support mitigation planning:

#### Cities

Ceylon Northrop Truman	Dunnell Ormsby Welcome	Fairmont Sherburn	Granada Trimont
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#### Townships

Cedar Fairmont Jay Nashville Silver Lake	Center Creek Fox Lake Lake Belt Pheasant Prairie Tenhassen	East Chain Fraser Lake Fremont Rutland Waverly	Elm Creek Galena Manyaska Rolling Green Westford
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### Assessing Risks

To assess risks in Martin County, each city clerk was asked to collaborate with city officials and respond to a more in-depth set of questions (listed and described in Table 3 below). Both natural and human-made hazards were identified. Discussions included implications of flooding, tornadoes, rail lines, building conditions, and chemical facilities. City officials and staff were asked to think about hazards facing their community and generate a list of potential hazards most

in need of mitigation. Once identified, the hazards were prioritized based on the process described below.

### **Risk Assessment Steps**

<b>Steps</b>	<b>Detailed Descriptions</b>
<b>Hazard Assessment</b>	For each hazard listed, describe the event and determine the probability that the hazard event will impact your community. Has the hazard event occurred in the past? What geographic areas will it impact? Would you categorize the hazard as having a human impact? Environmental? Physical? How many buildings or lives might be affected?
<b>Risk Assessment</b>	For each hazard, indicate, using numbers one through three, how vulnerable the community is to each hazard. Using the same system, indicate how severely the community would be impacted. (One equals highest risk and highest impact; three equals lowest risk and impact.)
<b>Prioritization</b>	According to the quantified risk assessment, which hazards have the highest combination of probability and impact? Which hazards represent an acceptable risk? Which should be further researched?
<b>Mitigation</b>	Of the hazards in your community found to impose an unacceptable amount of risk, what steps should be taken to prevent the hazard or reduce the impact it has on your community?

Once each of the surveys were completed, they were compiled and researched to find any patterns that may indicate what the county as a whole should address and what gaps and deficiencies Martin currently faces. This allowed us to generate and classify a very accurate list of priority hazards for the county. Any hazards unique to individual jurisdictions were classified as such and separated for consideration on a smaller scale, thereby eliminating unnecessary research and space within the plan.

County groups and individual jurisdictions discussed potential action steps to mitigate identified hazards. Various actions and strategies were identified for the top prioritized hazards based upon estimated effectiveness of those actions/strategies. Effectiveness was based upon local knowledge of resources, capability and practicality of the strategy. Historical actions or mitigation steps already in place were also considered as variables when identifying actions. For example, existing sirens used for the tornado warning system were identified, although shelter would need to be identified for citizens living in mobile home areas. Therefore, actions to include a shelter could become more of priority because another portion of an overall strategy to tornado was in place, henceforth the jurisdiction's ability to more fully mitigate that hazard would be realized.

A risk assessment table, which describes and ranks the hazards via the use of the aforementioned scoring system and the knowledge of Region Nine staff has also been created and included for each individual hazard. These tables are different from those that are included for individual jurisdictions in that they define risk factors for all of Martin County rather than simply the different communities that are spread throughout the county. These assessments provide a summary of each hazard by gathering and presenting information about each hazard, and delineate areas of special concern among different Martin

County jurisdictions. The risk assessment takes different questions regarding the risk factors into consideration and attempts to quantify the level of risk by assigning numerical values to different levels of risk. This information allows the hazards to be compared to each other in order to determine which hazards carry the highest levels of risk to the county. It should be noted that the scale utilized by this risk assessment tool is noticeably different from the one that is utilized in the previously discussed city questionnaires, in that it uses a scale of 1 through 4, 1 being low-risk, low-impact, and 4 being high-risk, high-impact.

The risk assessment is determined by using the following criteria:

- 1) **The Frequency of Occurrence:** This asks how often the events will happen and how likely it is that the hazard will occur. The assigned values are:
  - a. Unlikely – 1
  - b. Occasional – 2
  - c. Likely – 3
  - d. Highly Likely – 4
  
- 2) **Warning Time:** This asks the approximate amount of warning time that would be available prior to an event.
  - a. More than 12 hours – 1
  - b. Between 6 and 12 hours – 2
  - c. Between 3 and 6 hours – 3
  - d. Minimal or No Warning – 4
  
- 3) **Potential Severity:** This asks how severe the overall effects of the event could possibly be.
  - a. Limited – 1
  - b. Minor – 2
  - c. Substantial – 3
  - d. Major – 4
  
- 4) **Risk Level:** This asks how severe the impacts of an event would be for different categories, including Citizens/People, Animals/Livestock, Housing, Critical Structures, and Infrastructure. The average of all these categories makes up the numerical value of the risk.