Rice-Le Sueur Counties Chapter
Annex A

Hazard and Impact Analysis

I. Introduction

The hazard and impact analysis identifies the hazards that threaten the Rice-Le Sueur Chapter, determines the risks that the hazards pose and assesses the impacts on the community and the Red Cross.

II. Hazard Priority

Hazard risk can be defined in terms of frequency, duration and size, as well as in terms of the impact of the hazard on people and their property. For example, tornados can affect large geographical areas and have a high impact on people and property, but are typically an infrequent occurrence. Residential fires happen frequently, but typically have a low community-wide impact. Flooding in a certain area can occur frequently, last a long time and have a high impact within the flooded area but may be limited in size. The most frequent hazards in this chapter jurisdiction are residential fires, tornados, and chemical spills. Flooding has been successfully mitigates in most risk areas.

Legend for Hazard Risk

Highest to Lowest

5 – Certain

- Past 1-5 year history of occurrence within the jurisdiction of the chapter.
- The hazard has caused high-level disasters.
- The hazard could have escalated to a high-level disaster if the incident had not been brought under control.
- The emergency could have continued for a very long time.
- Hazards of this ranking should have the highest priority in planning.

4 – High Probability

- Past 5-10 year history of occurrence within the jurisdiction of the chapter.
- This hazard has caused disasters in the past.
- This could have escalated to a high-level disaster if the incident had not been brought under control.
- The emergency could have continued for a long time.
- Hazards with this ranking should have a high priority in planning.

3 – Moderate Probability

- Past 10-50 year history of occurrence within the jurisdiction of the chapter.
- This could have escalated to a high-level disaster but did not.
- This hazard did not last for an extended period of time.
- Hazards with this ranking should have a moderate priority in planning.

2 – Low Probability

- Past 50-100 year history of occurrence within the jurisdiction of the chapter.
- This hazard did not escalate to a high-level disaster.
- Conditions were present which could have led to a disaster.
- Hazards with this ranking should have a low priority in planning.

1 – Not Probable

- No emergencies have occurred due to this hazard.
- Conditions do not exist for this incident to occur.
- Hazards with this ranking should not have a priority in planning.

Legend for Impact

Highest to Lowest

4 – Catastrophic

- Significant numbers of deaths and injuries.
- Extensive property damage – more than 50 percent of the dwellings in the affected area.
- Complete shutdown of utilities for 30 days or more.
- Would require long-term community and individual assistance.

3 – Critical

- Multiple deaths and injuries.
- Extensive property damage – more than 25 percent of the dwellings in the affected area.
- Complete shutdown of utilities for about two weeks.
- Would require some long-term community and individual assistance.

2 – Limited

- Injuries and/or illnesses do not result in permanent disabilities.
- Minor quality of life lost.
- Shutdown of utilities is about 24 hours.
- Less than 10 percent of the dwellings in the affected area are damaged.

1 – Negligible

- Injuries and/or illnesses are treatable with first aid.
- Minor quality of life is lost.
- Shutdown of utilities is less than 24 hours.
- Less than 10 percent of the dwellings in the affected area are damaged.

Hazard Priority Matrix Area Covered: Rice and Le Sueur Counties

Hazard	Risk	X	Impact	=	Priority Score
Avalanche	*0*		*0*		*0*
Blizzard/Winter Storm	*2*		*1*		*2*
Chemical Spill	*3*		*2*		*6*
Civil Disturbance	*1*		*2*		*2*
Dam Break	*1*		*2*		*2*
Drought	*2*		*1*		*2*
Earthquake	*1*		*2*		*2*
Epidemic	*1*		*2*		*2*
Erosion	*2*		*1*		*2*
Explosion	*1*		*2*		*2*
Fire – Forest/Brush	*2*		*1*		*2*
Fire – Structure	*5*		*2*		*10*
Flooding – Flash	*1*		*1*		*1*
Flooding – Slow-rising	*2*		*1*		*2*
Fuel Spill	*1*		*1*		*1*
Hailstorm	*2*		*1*		*2*
Hazardous Waste Spill	*2*		*1*		*2*
Heat Wave	*2*		*1*		*2*
Hurricane/Tropical Storm	*0*		*0*		*0*
Ice Storm	*2*		*1*		*2*
Land Cave-In	*0*		*0*		*0*
Landslide	*0*		*0*		*0*
Nuclear Power Plant Incident	*0*		*0*		*0*
Radiation Fallout	*1*		*2*		*2*
Sand/Dust Storm	*0*		*0*		*0*

Structure Collapse	*2*		*1*		*2*
Thunderstorm/Lightning	*2*		*1*		*2*
Tidal Wave/Tsunami	*0*		*0*		*0*
Tornado	*4*		*3*		*12*
Transportation – Air	*1*		*2*		*2*
Transportation – Highway	*2*		*1*		*2*
Transportation – Rail	*1*		*1*		*1*
Transportation – Water	*0*		*0*		*0*
Volcano	*0*		*0*		*0*
Water Shortage (potable)	*1*		*0*		*1*
Weapons of Mass Destruction/Terrorism	*1*		*2*		*2*
Windstorm	*2*		*1*		*2*
Other (identify the type of hazard)	*N/A*				

III. Hazard Profile

Frequency: How often an event occurs (daily, weekly, monthly, yearly, every five years, etc.).

Magnitude: How large an event has the potential to be. This number is based on both past history of the event and the likely potential size of future events. The measurement should take into consideration: the number of people who could be affected, the severity of how those people are affected, the size of the area affected, the effect on the infrastructure, the duration of the event and the financial cost. Rate the magnitude on a scale from 1-5, 1 being low and 5 being high.

Location: Where the event is most likely to occur, given all of the possible areas that it could affect.

Size of Area: How large of an area is likely to be effected.

Duration: How long the event will last (1 second, 1 week, etc.).

Seasonal Pattern: The time of the year when the event is most likely to occur.

Speed of Onset: How quickly the event is likely to occur? (e.g.: tornado=fast, flood=slowly).

Warnings: Are there warning systems for this hazard? How much advance notice will you typically have?

Hazard Profile Chart Area Covered: Rice County and Le Sueur County

Hazard	Frequency	Location	Size of Area	Duration	Seasonal Pattern	Speed of Onset	Availability of Warnings
Avalanche	N/A						
Blizzard/Winter Storm	Occasionally	All	All	1-5 days	Winter only	Slow	Yes
Chemical Spill	Always possible due to many ag chemicals stored and transported	All	Limited to area of spill	Hours to days	All	Rapid	None
Civil Disturbance	N/A						
Dam Break	Rare	Any site	Limited to water spread area	Days	Spring through fall	Rapid	None
Drought	N/A						
Earthquake	Never – no significant events on record, but there is potential for one.	All	All	Seconds	All	Rapid	None
Epidemic	Rare	All	All	months or years	All	Slow	There are initial indicators an epidemic is starting.
Erosion	N/A						

Hazard	Frequency	Location	Size of Area	Duration	Seasonal Pattern	Speed of Onset	Availability of Warnings
Explosion	Rare	All	Limited to local area	Seconds	All	Fast	None
Fire – Forest/ Brush	N/A						
Fire – Structure	9/year	All	Limited	Hours	All	Rapid	None
Flooding – Flash	Rare	All low land	Limited	Hours	All	Rapid	Limited – maybe hours
Flooding – Slow-rising	Rare	River valleys / farm land	Limited	2-7 days	All	Slow	Hours
Fuel Spill	N/A						
Hailstorm	Rarely severe	All	All	Minutes	Winter	Fast	Some
Hazardous Waste Spill	N/A						
Heat Wave	Yearly	All	All	1 week	Summer	Slow	Days
Hurricane/ Tropical Storm	N/A						
Ice Storm	Every 2 years	All	All	1-3 days	Winter	Fast	Hours
Land Cave-In	N/A						
Landslide	N/A						

Hazard	Frequency	Location	Size of Area	Duration	Seasonal Pattern	Speed of Onset	Availability of Warnings
Nuclear Power Plant Incident	N/A						
Radiation Fallout	N/A						
Sand/Dust Storm	N/A						
Structure Collapse	Once every 5 years	All	Limited	Hours	All	Fast	None
Thunderstorm/ Lightning	1-3 per year rarely severe	All	Limited	Hours	Summer/ fall	Fast	Limited
Tidal Wave/ Tsunami	N/A						
Tornado	About every ten years	All	All	Minutes	More prevalent in summer	Fast	Possible
Transportation – Air	Rare – no history of commercial incidents; some private planes	All	Very limited area	Seconds	All	Fast	None
Transportation – Highway	Occasionally, but rarely severe	All	Very limited area	Seconds	All	Fast	None
Transportation – Rail	Rare	All	Tracks	Seconds	All	Fast	None
Transportation – Water	N/A						
Volcano	N/A						

Hazard	Frequency	Location	Size of Area	Duration	Seasonal Pattern	Speed of Onset	Availability of Warnings
Water Shortage (potable)	Rare	All	All	Days	Summer	Slow	Weeks
Weapons of Mass Destruction/ Terrorism	Rare – no history	All	All	Days	All	Fast	None
Windstorm	Yearly, rarely severe	All	All	Hours	All	Fast	Hours
Other (identify the type of hazard)	N/A						

IV. Hazard Impact Study

Use the *Hazard Priority Matrix* worksheet to identify the top hazards for each area of your jurisdiction. Complete one *Hazard Impact* worksheet for each of the top three hazards identified in each area of your jurisdiction. For example, if your jurisdiction has two separate areas and therefore two separate *Hazard Priority Matrix* worksheets, you should complete three *Hazard Impact worksheets* for each area for a total of six *Hazard Impact* worksheets. If you completed the *Hazard Priority Matrix* for your jurisdiction as a whole, you should complete a total of three *Hazard Impact* worksheets.

Hazard: Single family fire in Faribault Priority rating 10

Location: Within the city limits.

Geography: All roads in and out of the area would be accessible

Impact on People: The occupants of the building affected could be forced out of their home any length of time from one night to permanently. They could loose a range of personal belonging, from little to everything. There is a possibility that they could be injured or killed. The emotional impact is often great and long lasting.

Demographics: A single family fire can affect any resident of the jurisdiction, whether they live in a single family home, mobile home, or apartment.

Impact on Infrastructure: Normally no infrastructure is affected.

Impact on the Chapter: The chapter has several DAT members able to respond to a single family fire anywhere in the jurisdiction.

Chapter Response Needs: The Chapter needs DAT members more widely distributed throughout the chapter's jurisdiction.

Additional Comments: In Rice County, the response would be within the time guidelines, but in Le Sueur County, the response could take longer because there are no DAT members in the county.

Hazard: Tornado Priority Rating 12

Location: In a residential part of Le Center

Geography: Any road in the affected area could be temporarily closed by debris.

Impact on People: People are affected by a tornado physically and emotionally. They could be evacuated from their home which may or may not be damaged or destroyed. They could loose little personal belongings or all of them. They may need to be temporarily sheltered or may need to relocate. Injuries and death, while rare, are a possibility.

Demographics: Of the 2,240 plus living in Le Center, most could be affected

- 93.8% of the people are Caucasian, most of the rest are Hispanic, many of which speak Spanish at home.
- Of the 877 residences in Le Center, 74.8% are owner occupied and 25.2% are renter occupied.
- There are two assisted living facilities in Le Center.
- There is no hospital or clinic in town. There are 3 shelters and 1 motel.

Impact on Infrastructure: There could be streets blocked by debris. Power is likely to be unavailable because of lines downed. Water and sewer are not likely to be affected.

Impact on the Chapter: Since the chapter building is not in Le Center, it would not be affected.

- All shelter supplies would have to be transported from Faribault.
- The chapter would have to choose a shelter that is not in the affected area. It is possible that it would have to be in an adjoining community.
- If power were out for a long time, the population may need to be sheltered for an extended time. This would result in the chapter requiring assistance for the Regional Chapter.

Chapter Response Needs: The chapter could open a shelter, but would need assistance to run it for more than a few hours. They have no Job Director, Disaster Assessment, Liaison, mental health, staffing, Financial, Statistical Information supervisors or mobile feeding capability. If size is large enough they may need additional cots and blankets in addition to chapters brought in. They would need additional Health Services, shelter staff, and feeding staff. They do have some client

caseworkers and supervisors, so they could do the casework needed for the families that have homes damaged.

Additional Comments: Le Center is the county seat. As such, the business of government could be hampered. The EOC may need to be located in a temporary site.

Hazard: Chemical Spill Priority Rating 6

Location: Unincorporated town of Warsaw, MN due to a spill at Genesis east of Morristown-An agricultural chemical storage and retail company.

Geography: The major road out or area east or west is Highway 60 (Morristown Blvd.). If a northerly exit is required it would be north on Farwell Ave. then east on Cannon Lake Trail or west on 230th Street.

Impact on People: If a spill happened at the Genesis site and there was a southerly wind, it would take the chemical cloud over Warsaw, two miles to the north. Likely the entire community would be evacuated. Some could be sickened by the cloud. If the cloud arrived before people could be evacuated, they may be required to shelter in place, likely causing more physical symptoms. The evacuation could be very short or last a day or more depending on how long it took to mitigate the spill.

Demographics: Population is 254 according to the 2000 census

- The population is primarily Caucasian
- 60.2% of the homes are owner occupied

Impact on Infrastructure: There would be no impact on the infrastructure.

Impact on the Chapter: This would not impact the chapter's ability to respond

Chapter Response Needs: The chapter could probably open and run the evacuation shelter. Based on the population, fewer than 100 people would statistically come. Because the shelter would be so short term, feeding would be their only challenge. They may need assistance from the Regional Chapter at Rochester for feeding.

Additional Comments: The facility is 2.3 miles east of Morristown. The prevailing winds probably would not drive the chemical cloud in that direction.