

Identifying Local Hazards

August, 2012

Need to answer the question.....

“What kinds of hazards can affect my jurisdiction?”

- ▶ Natural
- ▶ Technological (manmade)

Natural Hazards

- Flooding
- Tornadoes
- Thunderstorms
- Lightning
- High Winds
- Wildfire
- Hail Storms
- Droughts
- Winter Weather Events
- Dam Failure
- Mudslide/landslide
- Ice Storms
- Earthquakes
- Extreme Temperatures
- Caving/subsidence
- Forest Health
- Infectious Disease

Technological Hazards

- ❑ Hazardous Materials Incidents
- ❑ Energy Emergencies
- ❑ Arson
- ❑ Terrorism
- ❑ Civil Disturbance
- ❑ Train derailment
- ❑ Industrial sabotage

Compiling your Hazard List

Countywide

Local participating communities

Each participant must identify relevant local hazards

Compiling your Hazard List

IRON COUNTY PRIORITY MATRIX										
Manmade/Technological Hazards										
EVENT	PROBABILITY	HUMAN IMPACT	PROPERTY IMPACT	BUSINESS IMPACT	DURATION	WARNING TIME	AFFECTED AREA	PREPARED-NESS	RESPONSE CAPABILITY	RISK
	<i>Likelihood this will occur</i>	<i>Possibility of death or injury</i>	<i>Physical losses and damages</i>	<i>Interruption of services</i>	<i>Event, secondary impacts</i>	<i>Time to prepare or evacuate</i>	<i>Size of area affected by hazard</i>	<i>Preplanning</i>	<i>Time, effectiveness, resources</i>	<i>Relative threat*</i>
SCORE	0 = N/A 1 = Low 2 = Moderate 3 = High	0 = N/A 1 = Low 2 = Moderate 3 = High	0 = N/A 1 = Low 2 = Moderate 3 = High	0 = N/A 1 = Low 2 = Moderate 3 = High	0 = N/A 1 = Short 2 = Intermediate 3 = Long	0 = N/A 1 = Long 2 = Intermediate 3 = Short	0 = N/A 1 = Localized 2 = Intermediate 3 = Countywide	0 = N/A 1 = High 2 = Moderate 3 = Low or none	0 = N/A 1 = High 2 = Moderate 3 = Low or none	0 - 100%
Hazardous Materials Incidents	2.3	2.5	2	2.3	2.4	3	1.5	1.5	1.5	52.00%
Energy Emergencies	2	1	1.7	2.3	1.8	2.7	2.7	2.3	2.3	46.80%
Structural Fires (Arson)	1.8	1.5	2	2	2.3	3	1	1.8	1.8	37.10%
Terrorism	1	1.5	1	1.5	1.6	2.5	2.5	2	2	20.30%
Civil Disturbance	0.8	1.5	0.8	1	1	2.8	1	2.3	1.8	12.50%
AVERAGE SCORE	1.6	1.6	1.5	1.8	1.8	2.8	1.7	2	1.9	32%

Compiling your Hazard List

- A. Probability
- B. Human Impact
- C. Property Impact
- D. Business Impact
- E. Duration
- F. Warning Time
- G. Affected Area
- H. Preparedness
- I. Response Capability

Probability

The likelihood that the hazard will occur.

Scoring

0 = N/A

1 = Low

2 = Moderate

3 = High

Human Impact

The possibility of death or injury related to this hazard.

Scoring

0 = N/A

1 = Low

2 = Moderate

3 = High

Property Impact

Probably physical losses and damages associated with the hazard.

Scoring

0 = N/A

1 = Low

2 = Moderate

3 = High

Business Impact

Interruption of business services due to the hazard.

Scoring

0 = N/A

1 = Low

2 = Moderate

3 = High

Duration

How long does the hazard last?

Scoring

0 =N/A

1=Short

2= Intermediate

3=Long

Warning Time

How much time is there to prepare or evacuate?

Scoring

0 = N/A

1 = Long

2 = Intermediate

3 = Short

Affected Area

How large is the area affected by hazard?

Scoring

0 =N/A

1=Localized

2 = Intermediate

3=Countywide

Preparedness

How prepared is the community to deal with the hazard and its impacts?

Scoring

0 = N/A

1 = Prepared

2 = Moderately prepared

3 = Not well prepared

Response Capability

How quickly can we act to address the impacts of the hazard? Do we have the resources and training necessary?

Scoring

0 = N/A

1 = High

2 = Moderate

3 = Low or none

Relative Risk (automatically calculated)

$$\text{RELATIVE RISK} = \text{PROBABILITY} \times \text{SEVERITY}$$

EVENT	PROBABILITY	HUMAN IMPACT	PROPERTY IMPACT	BUSINESS IMPACT	DURATION	WARNING TIME	AFFECTED AREA	PREPARED-NESS	RESPONSE CAPABILITY	RISK
	<i>Likelihood this will occur</i>	<i>Possibility of death or injury</i>	<i>Physical losses and damages</i>	<i>Interruption of services</i>	<i>Event, secondary impacts</i>	<i>Time to prepare or evacuate</i>	<i>Size of area affected by hazard</i>	<i>Preplanning</i>	<i>Time, effectiveness, resources</i>	<i>Relative threat*</i>
SCORE	0 = N/A 1 = Low 2 = Moderate 3 = High	0 = N/A 1 = Low 2 = Moderate 3 = High	0 = N/A 1 = Low 2 = Moderate 3 = High	0 = N/A 1 = Low 2 = Moderate 3 = High	0 = N/A 1 = Short 2 = Intermediate 3 = Long	0 = N/A 1 = Long 2 = Intermediate 3 = Short	0 = N/A 1 = Localized 2 = Intermediate 3 = Countywide	0 = N/A 1 = High 2 = Moderate 3 = Low or none	0 = N/A 1 = High 2 = Moderate 3 = Low or none	0 - 100%
Civil Disturbance	1	2	1	2	2	2	1	2	2	19%

$$\text{PROBABILITY} = 1 \text{ (given score)} / 3 \text{ (max score)}$$

$$= 0.3333$$

$$\text{SEVERITY} = 14 \text{ (sum of combined scores)} / 24 \text{ (highest possible total of all scores)}$$

$$= 0.5833$$

Relative Risk (automatically calculated)

$$\text{RELATIVE RISK} = \text{PROBABILITY} \times \text{SEVERITY}$$

EVENT	PROBABILITY	HUMAN IMPACT	PROPERTY IMPACT	BUSINESS IMPACT	DURATION	WARNING TIME	AFFECTED AREA	PREPAREDNESS	RESPONSE CAPABILITY	RISK
	<i>Likelihood this will occur</i>	<i>Possibility of death or injury</i>	<i>Physical losses and damages</i>	<i>Interruption of services</i>	<i>Event, secondary impacts</i>	<i>Time to prepare or evacuate</i>	<i>Size of area affected by hazard</i>	<i>Preplanning</i>	<i>Time, effectiveness, resources</i>	<i>Relative threat*</i>
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Civil Disturbance	1	2	1	2	2	2	1	2	2	19%

$$\text{PROBABILITY (0.3333)} \times \text{SEVERITY} = (0.5833)$$

$$= .194 \text{ or } 19.4\%$$

This value (19.4%) is used to automatically rank hazards in your list.

Results

IRON COUNTY PRIORITY MATRIX NATURAL HAZARDS

EVENT	PROBABILITY									
		HUMAN IMPACT	PROPERTY IMPACT	BUSINESS IMPACT	DURATION	WARNING TIME	AFFECTED AREA	PREPAREDNESS	RESPONSE CAPABILITY	RISK
	Likelihood this will occur	Possibility of death or injury	Physical losses and damages	Interruption of services	Event, secondary impacts	Time to prepare or evacuate	Size of area affected by hazard	Preplanning	Time, effectiveness, resources	Relative threat*
SCORE	0 = N/A 1 = Low 2 = Moderate 3 = High	0 = N/A 1 = Low 2 = Moderate 3 = High	0 = N/A 1 = Low 2 = Moderate 3 = High	0 = N/A 1 = Low 2 = Moderate 3 = High	0 = N/A 1 = Short 2 = Intermediate 3 = Long	0 = N/A 1 = Long 2 = Intermediate 3 = Short	0 = N/A 1 = Localized 2 = Intermediate 3 = Countywide	0 = N/A 1 = High 2 = Moderate 3 = Low or none	0 = N/A 1 = High 2 = Moderate 3 = Low or none	0 - 100%
Winter Storm	3	2.5	2	2.5	2.3	2.8	2.6	2.3	2	79.2%
High Winds	3	2.5	3	2	1.5	2.8	2.5	2.3	2.3	78.8%
Ice Storm	2.8	2.5	2	2.3	1.8	2.3	2.5	2.3	2	68.8%
Flooding	2.5	1.8	2.8	2.3	2.5	2.3	1.5	2.3	2	60.8%
Wildfire	2.5	1.8	2.5	2	2.5	2.8	2	2	1.8	60.4%
Lightning	2.5	2.5	2	1	1	3	1.3	2	2.5	53.1%
Extreme Temps	2.3	2	1.3	1.5	1.8	2	3	2	2.5	51.4%
Erosion	3	1	3	1	2	1	1	3	0	50.0%
Tornado	1.8	2.8	2.8	2.3	2.5	3	1.8	2.3	2	48.8%
Hail Storm	2.3	1.8	2.3	1	1	2.5	1.8	2.5	2.3	48.6%
Infectious Disease	1.8	2.5	1.3	2.5	2.6	1.5	2.8	1.5	1.5	40.5%
Dam Failure	1.8	1.8	2.5	1.8	2.5	2.5	1.5	2	1.5	40.3%
Caving/Subsidence	1.5	1.3	1.8	0.8	1.5	2.3	1	2.5	2.5	28.5%
Drought	1.5	0.5	0.8	0.5	2	1	2.3	2.3	2.3	24.4%
Forest Health (disease)	1	0	1	2.3	3	1	3	2.7	2.7	21.8%
Landslide	1	0.8	1	0.5	1.3	2.5	1	3	2.8	17.9%
Coastal Hazards	0.5	0.5	1.3	0.5	1.3	1.3	0.8	2	1.8	6.6%
AVERAGE SCORE	2.2	1.8	2.1	1.7	2.1	2.3	2.0	2.4	2.2	

Blank community hazard identification forms can
Be downloaded at www.nwrpc.com/rhmp