



Local Emergency Planning Committee

ReadyHoCo &
The Community Hazard
Handbook

2.23.17



Preparedness Campaign





Background & Significance

- OEM is taking a new approach to outreach and community preparedness
- ReadyHoCo is a long-term, comprehensive outreach program





Preparedness Steps

- ◎ **ReadyHoCo** is based off 4 main preparedness steps
 - > **“GET INFORMED”**
 - > **“MAKE A PLAN”**
 - > **“BUILD A KIT”**
 - > **“BE INVOLVED”**





Preparedness Packet



WHAT'S YOUR GAME PLAN FOR
EMERGENCIES?



The Challenge

- Preparedness comes with a cost (money, energy, time)
- Priorities frequently based on emotional response rather than research

Key Question

With limited resources, where should I be spending my preparedness energy?



Community Hazard Handbook



Community Hazard Handbook

HOWARD COUNTY OFFICE OF EMERGENCY MANAGEMENT





Today's Discussion

- What kind of information you can find in the Community Hazard Handbook
- How to use the Handbook for your own personal preparedness efforts



Hazard Categories

NATURAL HAZARDS

- Animal/Plant Infestation
- Drought
- Earthquake
- Flood
- Hurricane/Tropical Storm
- Lightning
- Severe Winter Storm
- Solar Storm
- Tornado/Wind Storm
- Wildfire

ADVERSARIAL/ INTENTIONAL HAZARDS

- Active Assailant
- Biological Attack
- Chemical Attack
- Civil Unrest
- Cyber/Communications
Infrastructure Attack
- Explosives
- Nuclear Blast
- Radiological Attack

TECHNOLOGICAL/ ACCIDENTAL HAZARDS

- Dam Failure
- Disease Epidemic/
Unintentional Biological Hazard
- Structure Fire
- Transportation Hazard
- Unintentional Chemical
Substance Release/Hazmat
- Unintentional Cyber/
Communications
Infrastructure Failure
- Unintentional Radiological
Substance Release
- Utility Disruption



What is Risk?

RISK =

Likelihood + Consequence

HAZARD =

Any potential source or
cause of harm or difficulty



HOWARD COUNTY RISK TOOL

LIKELIHOOD FACTORS

LIKELIHOOD

Estimated chance of a single hazard event occurring in a given year based on historical incidence and trend forecasting.

UNLIKELY (1)	INFREQUENT (2)	LIKELY (3)	VERY LIKELY (4)
No documented occurrence. Less than 1% chance of annual occurrence.	1-10% chance of annual occurrence.	1-30% chance of annual occurrence.	30+% chance of occurrence annually.

CONSEQUENCE FACTORS

IMPACT

Estimated effect of a single hazard event on property, health & safety, critical facility functioning, response capacity, the environment, the economy, and standard of living.

LIMITED (1)	SIGNIFICANT (2)	CRITICAL (3)	CATASTROPHIC (4)
<ul style="list-style-type: none"> Property damage is less than 5% of critical and non-critical infrastructure. Injuries are manageable with existing resources, no fatalities. Shutdown of critical facilities for less than 24 hours. Local resources are adequate to support the response. Little to no environmental impact. Little to no economic impact. Standard of living is only minimally disrupted. 	<ul style="list-style-type: none"> Property damage is 5-25% of critical and non-critical infrastructure. Injuries are manageable, may include at least one death. Critical facilities are down for 1-7 days. Local and mutual aid resources are adequate to perform response, with limited or no state assistance. Moderate environmental impact. Moderate economic impact. Standard of living is moderately affected. 	<ul style="list-style-type: none"> Property damage is between 26-50% of critical and non-critical infrastructure. Multiple deaths and serious injuries are probable. Shut down of critical facilities 1-4 weeks. Local resources are expended and require sustained support from mutual aid partners and/or the state/federal government. Serious environmental impact. Serious economic impact. Standard of living is seriously affected. 	<ul style="list-style-type: none"> Property damage is severe, greater than 50% of critical and non-critical infrastructure affected. Multiple deaths and serious injuries exceed jurisdiction response capacity. Shut down of critical facilities will be more than one month. Response capacity is overwhelmed and requires significant and long lasting state and federal government support. Severe environmental impact. Severe economic impact. Standard of living is extremely impacted and may not be fully recoverable.

WARNING TIME

Estimated time of awareness prior to the onset of the hazard event.





VERY LONG (1)	LONG (2)	MODERATE (3)	SHORT (4)
More than 24 hours	12-24 hours	Six-12 hours	Less than six hours

DURATION

Estimated time from onset to conclusion of the hazard event.

SHORT (1)	MODERATE (2)	LONG (3)	VERY LONG (4)
Less than six hours	Six-24 hours	Less than one week	More than one week

RISK SCORE WEIGHTING

LIKELIHOOD	IMPACT	WARNING TIME	DURATION
[50%]	[40%]	[5%]	[5%]
			

RISK = LIKELIHOOD + CONSEQUENCE



LIKELIHOOD FACTORS

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UNLIKELY (1)	INFREQUENT (2)	LIKELY (3)	VERY LIKELY (4)
No documented occurrence. Less than 1% chance of annual occurrence.	1-10% chance of annual occurrence.	1-30% chance of annual occurrence.	30+% chance of occurrence annually.

CONSEQUENCE FACTORS

Impact of a single hazard event on property, health & safety, and quality of life, including economic activity, environmental, historical, and cultural resources.

MINOR (1)	MODERATE (2)	CRITICAL (3)	CATASTROPHIC (4)
<ul style="list-style-type: none"> Property damage to less than 25% of structures or non-structural elements. Minor injuries or non-critical property damage. Minor property loss. Minor disruption of critical facilities. Minor disruption of services to support the response. Minor environmental impacts. Minor cultural and historical impacts. Minor disruption of critical facilities. Minor disruption of services to support the response. Minor environmental impacts. Minor cultural and historical impacts. Minor disruption of critical facilities. Minor disruption of services to support the response. 	<ul style="list-style-type: none"> Property damage to 25-50% of structures or non-structural elements. Minor injuries or non-critical property damage. Minor property loss. Minor disruption of critical facilities. Minor disruption of services to support the response. Minor environmental impacts. Minor cultural and historical impacts. Minor disruption of critical facilities. Minor disruption of services to support the response. 	<ul style="list-style-type: none"> Property damage to 50-75% of structures or non-structural elements. Minor injuries or non-critical property damage. Minor property loss. Minor disruption of critical facilities. Minor disruption of services to support the response. Minor environmental impacts. Minor cultural and historical impacts. Minor disruption of critical facilities. Minor disruption of services to support the response. 	<ul style="list-style-type: none"> Property damage to more than 75% of structures or non-structural elements. Minor injuries or non-critical property damage. Minor property loss. Minor disruption of critical facilities. Minor disruption of services to support the response. Minor environmental impacts. Minor cultural and historical impacts. Minor disruption of critical facilities. Minor disruption of services to support the response.

WARNING TIME

Minimum time available to evacuate or take other protective actions.

VERY LONG (1)	LONG (2)	MODERATE (3)	SHORT (4)
More than 24 hours	12-24 hours	6-12 hours	Less than six hours

DURATION

Minimum time available to evacuate or take other protective actions.

SHORT (1)	MODERATE (2)	LONG (3)	VERY LONG (4)
Less than 24 hours	24-48 hours	48-72 hours	More than 72 hours

RISK SCORE WEIGHING

LIKELIHOOD	IMPACT	WARNING TIME	DURATION
UNL	MIN	WNT	DUR

RISK = LIKELIHOOD + CONSEQUENCE



CONSEQUENCE FACTORS

IMPACT

Estimated effect of a single hazard event on property, health & safety, critical facility functioning, response capacity, the environment, the economy, and standard of living.

LIMITED (1)	SIGNIFICANT (2)	CRITICAL (3)	CATASTROPHIC (4)
<ul style="list-style-type: none"> Property damage is less than 5% of critical and non-critical infrastructure. Injuries are manageable with existing resources, no fatalities. Shutdown of critical facilities for less than 24 hours. Local resources are adequate to support the response. Little to no environmental impact. Little to no economic impact. Standard of living is only minimally disrupted. 	<ul style="list-style-type: none"> Property damage is 5-25% of critical and non-critical infrastructure. Injuries are manageable, may include at least one death. Critical facilities are down for 1-7 days. Local and mutual aid resources are adequate to perform response, with limited or no state assistance. Moderate environmental impact. Moderate economic impact. Standard of living is moderately affected. 	<ul style="list-style-type: none"> Property damage is between 26-50% of critical and non-critical infrastructure. Multiple deaths and serious injuries are probable. Shut down of critical facilities 1-4 weeks. Local resources are expended and require sustained support from mutual aid partners and/or the state/federal government. Serious environmental impact. Serious economic impact. Standard of living is seriously affected. 	<ul style="list-style-type: none"> Property damage is severe, greater than 50% of critical and non-critical infrastructure affected. Multiple deaths and serious injuries exceed jurisdiction response capacity. Shut down of critical facilities will be more than one month. Response capacity is overwhelmed and requires significant and long lasting state and federal government support. Severe environmental impact. Severe economic impact. Standard of living is extremely impacted and may not be fully recoverable.

HOWARD COUNTY RISK TOOL

LIKELIHOOD FACTORS
 Likelihood of an event occurring is based on historical evidence and monitoring.

LIKELIHOOD	INFREQUENT (1)	MODERATE (2)	VERY LIKELY (4)
Frequency of occurrence	Less than 1% chance of annual occurrence	1-10% chance of annual occurrence	10% chance of annual occurrence

CONSEQUENCE FACTORS
 Impact of an event on property, health & safety, critical facility functioning, response capacity, environment, economy, and standard of living.

IMPACT	MINOR (1)	MODERATE (2)	SEVERE (3)	CATASTROPHIC (4)
Property damage	Less than 5% of critical and non-critical infrastructure	5-25% of critical and non-critical infrastructure	26-50% of critical and non-critical infrastructure	Greater than 50% of critical and non-critical infrastructure
Injuries	Manageable with existing resources, no fatalities	Manageable, may include at least one death	Multiple deaths and serious injuries are probable	Multiple deaths and serious injuries exceed jurisdiction response capacity
Critical facilities	Shutdown for less than 24 hours	Shutdown for 1-7 days	Shutdown for 1-4 weeks	Shutdown for more than one month
Local resources	Adequate to support the response	Adequate to perform response, with limited or no state assistance	Expended and require sustained support from mutual aid partners and/or the state/federal government	Overwhelmed and requires significant and long lasting state and federal government support
Environmental impact	Little to no environmental impact	Moderate environmental impact	Serious environmental impact	Severe environmental impact
Economic impact	Little to no economic impact	Moderate economic impact	Serious economic impact	Severe economic impact
Standard of living	Standard of living is only minimally disrupted	Standard of living is moderately affected	Standard of living is seriously affected	Standard of living is extremely impacted and may not be fully recoverable

WARNING TIME

WARNING TIME	VERY LONG (1)	LONG (2)	SHORT (3)
Duration	More than 24 hours	10-24 hours	Less than 10 hours

RISK SCORES

RISK SCORE	VERY LOW (1)	LOW (2)	HIGH (3)	VERY HIGH (4)
Score	Less than 10	10-20	20-30	More than 30

RISK = LIKELIHOOD + CONSEQUENCE



WARNING TIME

Estimated time of awareness prior to the onset of the hazard event.

VERY LONG (1)	LONG (2)	MODERATE (3)	SHORT (4)
More than 24 hours	12-24 hours	Six-12 hours	Less than six hours

DURATION

Estimated time from onset to conclusion of the hazard event.

SHORT (1)	MODERATE (2)	LONG (3)	VERY LONG (4)
Less than six hours	Six-24 hours	Less than one week	More than one week

HOWARD COUNTY RISK TOOL			
LIKELIHOOD FACTORS			
LIKELIHOOD Estimated time of hazard event occurrence based on historical evidence and monitoring.			
UNLIKELY (1)	INFREQUENT (2)	LIKELY (3)	VERY LIKELY (4)
10% annual occurrence, less than 15 hours of annual occurrence.	10% annual or annual occurrence.	100% hours of annual occurrence.	50% to 100% of occurrence annually.
CONSEQUENCE FACTORS			
IMPACT Estimated time of hazard event based on property, health & safety, utility, farming, economic activity, environmental, historical, and cultural of the.			
LOW (1)	SIGNIFICANT (2)	CRITICAL (3)	CATASTROPHIC (4)
<ul style="list-style-type: none"> Property damage to less than \$100,000 or non-critical. 1-2 injuries or non-critical with medical attention not required. Property of critical nature for less than 24 hours. Local resources are adequate to support the response. Little to no economic impact. Minimal to no long-term, statewide damage. 	<ul style="list-style-type: none"> Property damage \$100,000 or critical and/or critical. 3-10 injuries or non-critical, one or more require medical attention. Critical facilities in operation for 12-24 hours. Local and regional resources are adequate to perform response, critical nature of the event. Minor to moderate economic impact. Minor to moderate long-term damage. 	<ul style="list-style-type: none"> Property damage between \$100,000 and critical. Multiple deaths and/or critical. Multiple critical facilities in operation for 24 hours. Local resources are required and require additional support. Major environmental impact. Minor to moderate long-term damage. 	<ul style="list-style-type: none"> Property damage greater than \$100,000 or critical. Multiple deaths and/or critical. Multiple critical facilities in operation for more than 24 hours. The event is of a critical nature. Response capacity is being challenged and long-term, statewide damage. Major environmental impact. Major to moderate long-term damage. Standard of living is severely impacted and long-term, statewide damage.
WARNING TIME Estimated time of awareness prior to the onset of the hazard event.			
VERY LONG (1)	LONG (2)	MODERATE (3)	SHORT (4)
More than 24 hours	12-24 hours	Six-12 hours	Less than six hours
DURATION Estimated time from onset to conclusion of the hazard event.			
SHORT (1)	MODERATE (2)	LONG (3)	VERY LONG (4)
Less than six hours	Six-24 hours	Less than one week	More than one week
RISK SCALE BY RISK			
LIKELIHOOD	IMPACT	WARNING TIME	DURATION
ONE	TWO	THREE	FOUR
RISK = LIKELIHOOD + CONSEQUENCE			



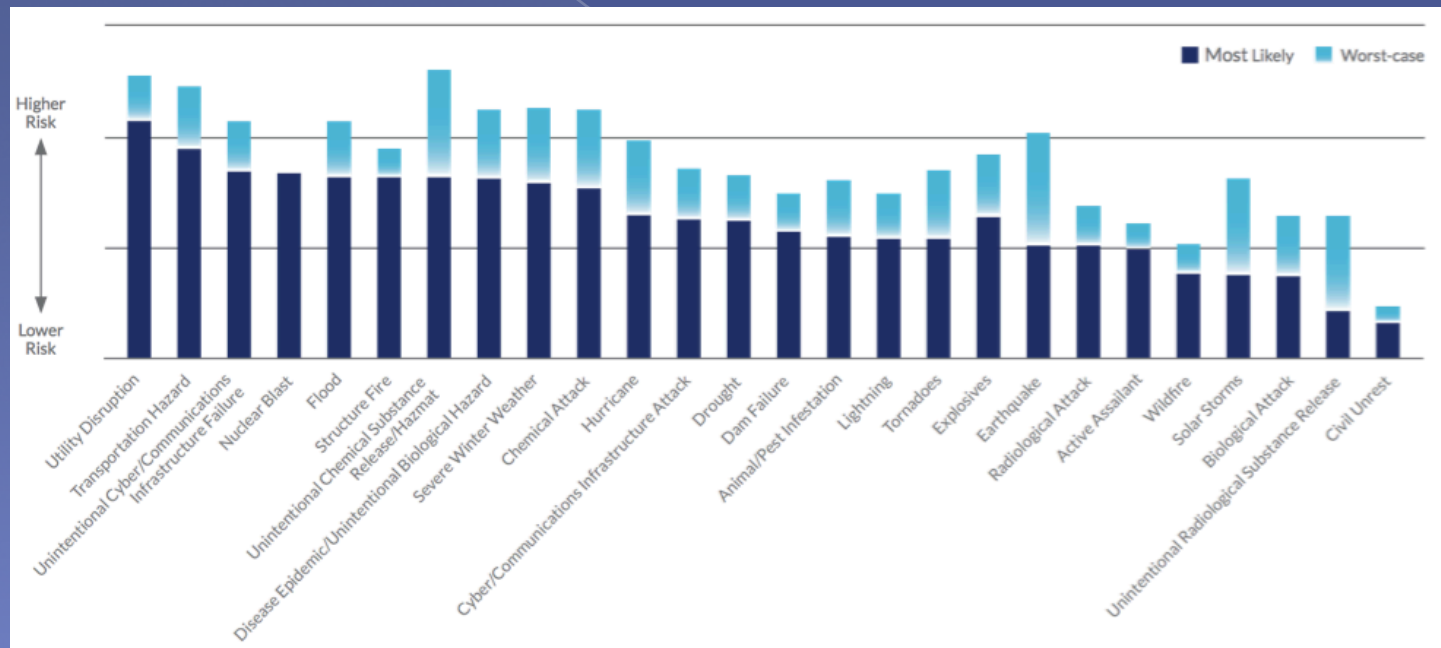
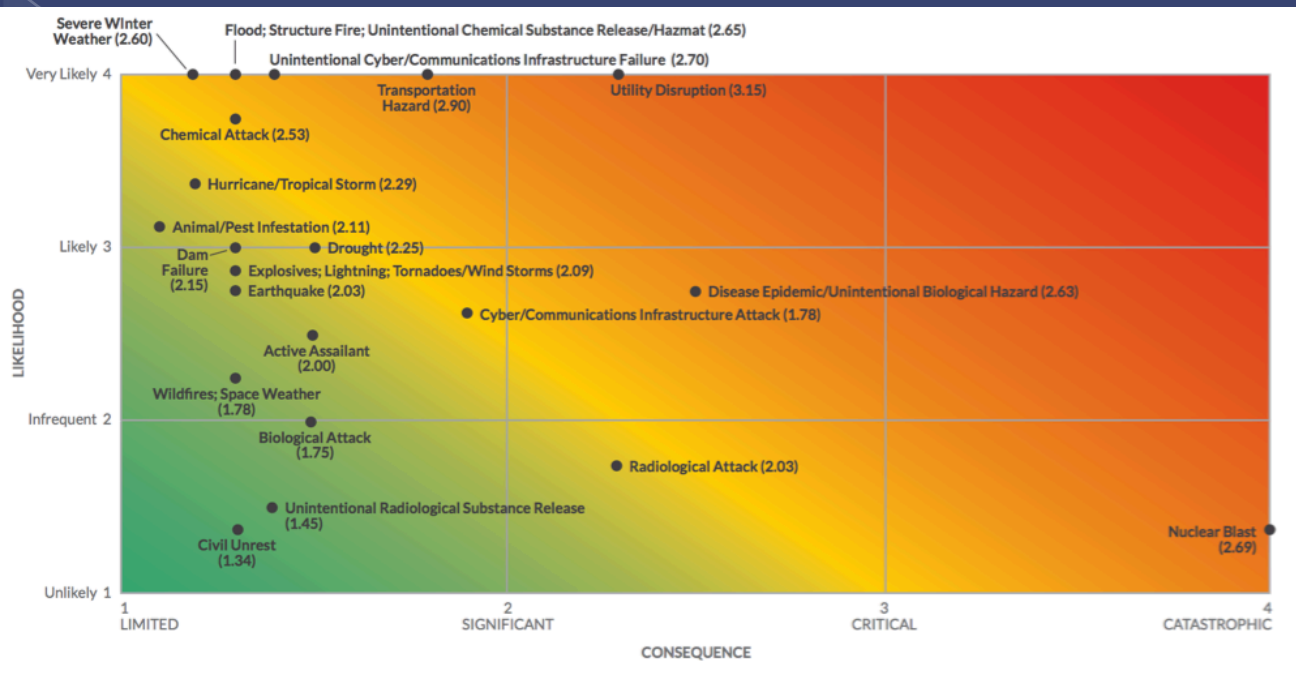
RISK SCORE WEIGHTING

LIKELIHOOD	IMPACT	WARNING TIME	DURATION
[50%]	[40%]	[5%]	[5%]

RISK = LIKELIHOOD + CONSEQUENCE

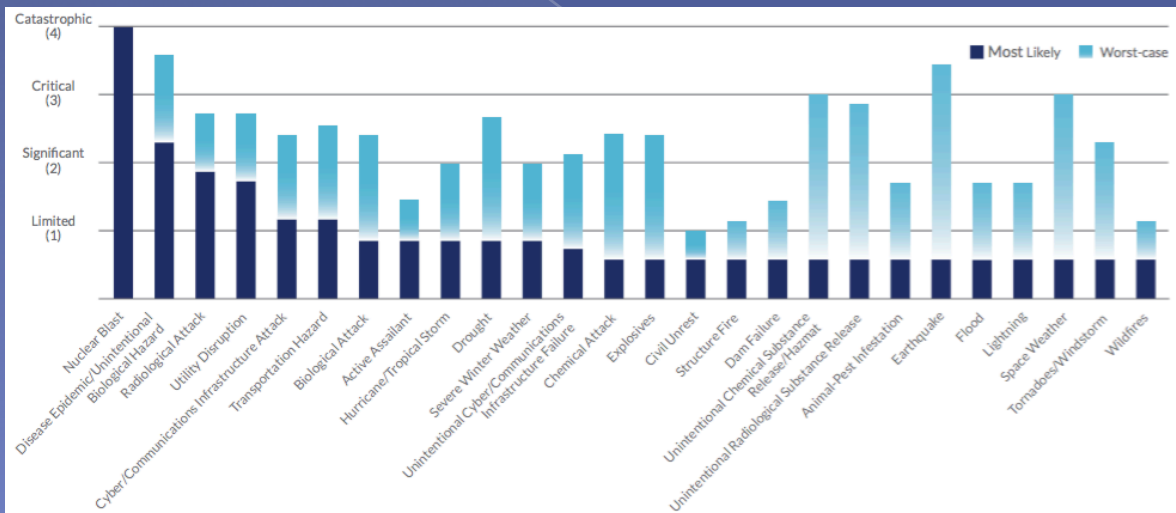
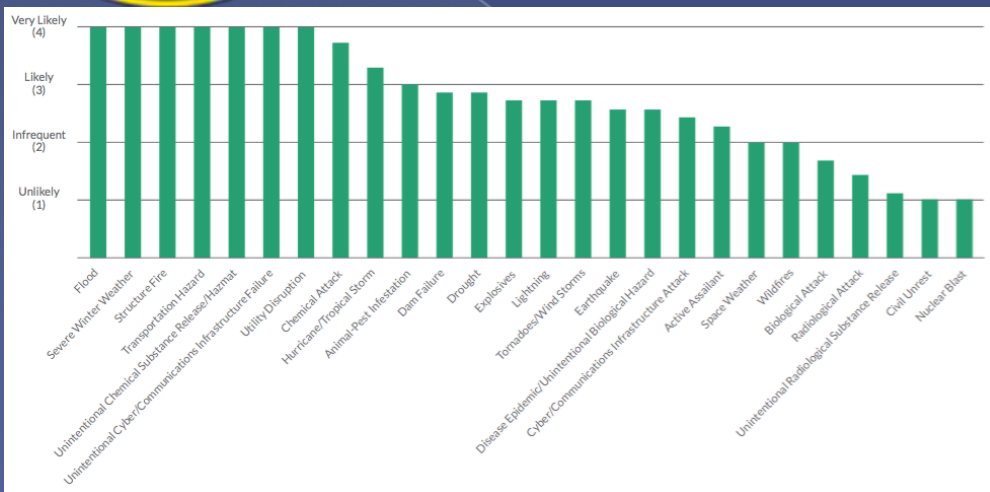
LIKELIHOOD-FACTORS			
LIKELIHOOD Assessment of development occurring to occur over time based on historical evidence and infrastructure.			
LIKELIHOOD 10 No development occurs. Less than 1% chance of annual occurrence.	INFREQUENT 15 10% chance of annual occurrence.	MODERATE 20 20% chance of annual occurrence.	VERY LIKELY 40 50% chance of occurrence annually.
CONSEQUENCE-FACTORS			
IMPACT Assessment of change based on property, health & safety, utility, farming, economic activity, environmental, historical, and cultural of thing.			
LIKELY 10 Property change is less than 2% of total or non-critical.	SIGNIFICANT 15 Property change is 2% to 20% of total or non-critical.	CRITICAL 20 Property change is between 20-50% of total or non-critical.	CATASTROPHIC 40 Property change is greater than 50% of total or critical.
SHORT 10 Less than 24 hours.	MODERATE 15 24 to 72 hours.	LONG 20 72 to 240 hours.	VERY LONG 40 More than 240 hours.
DURATION Assessment of duration in combination of impact event.			
SHORT 10 Less than 24 hours.	MODERATE 15 24 to 72 hours.	LONG 20 72 to 240 hours.	VERY LONG 40 More than 240 hours.
RISK SCORE WEIGHTING			
LIKELIHOOD	IMPACT	WARNING TIME	DURATION
[50%]	[40%]	[5%]	[5%]
RISK = LIKELIHOOD + CONSEQUENCE			







Likelihood + Impact





Hazard Profiles

OFFICE OF EMERGENCY MANAGEMENT | Howard County, Maryland

ACTIVE ASSAILANT

An Active Assailant hazard refers to an individual actively engaged in killing or attempting to kill people in a confined or populated area. Active Assailant hazards, occasionally referred to as active killers, active shooters, or active threats, are typically characterized by the assailant's intent to kill with no pattern or method to their selection of victims. Typically, Active Assailants use firearms and work alone. However, an Active Assailant hazard can involve multiple shooters and/or weapons other than firearms.

HAS IT HAPPENED LOCALLY?

There has been one Active Assailant hazard event in Howard County during the reviewed time period (1964-2014). A single assailant brought a concealed shotgun and several crude explosives into The Mall in Columbia on January 25th, 2014. The shooter opened fire in a second-story retail store, killing two employees, striking a third person in the foot, and ultimately taking his own life. The assailant did not know any of the victims prior to the attack.

WHAT IS THE ONGOING RISK?

There is an expected **1-30% Annual Likelihood** of an Active Assailant hazard in Howard County. In the most likely Active Assailant hazard scenario, the **Total Impact is considered Limited-Significant**. In the worst-case scenario, the **Total Impact is considered Limited-Significant**.

DID YOU KNOW?

- 98% of Active Assailant incidents are carried out by a single assailant.
- Nearly half of Active Assailant attacks occur in commercial facilities such as office buildings, factories, malls, or other retail locations.
- Another 29% of Active Assailant incidents occur in schools.

FOR MORE INFORMATION:

- Howard County Hazard Identification and Risk Assessment readyhoco.com/hazards
- U.S. Dept. of Homeland Security dhs.gov/xlibrary/assets/active_shooter_booklet.pdf
- New York City Police Dept nyc.gov/html/nypd/downloads/pdf/counterterrorism/ActiveShooter.pdf
- Federal Bureau of Investigation leb.fbi.gov/2014/january/active-shooter-events-from-2000-to-2012

RISK MATRIX

LIKELIHOOD	Very Likely 4				
	Likely 3	Active Assailant Likely Scenario (2.00)	Active Assailant Worst-Case Scenario (2.20)		
	Infrequent 2				
	Unlikely 1				
		1 LIMITED	2 SIGNIFICANT	3 CRITICAL	4 CATASTROPHIC
		CONSEQUENCE			

LOCAL RISK OVERVIEW

Future Likelihood	Infrequent Likely 1-30% chance of annual occurrence	
Impact	MOST-LIKELY	WORST-CASE
	Limited-Significant	Limited-Significant
Risk Score	2.00	2.20
Risk Ranking (High to Low)	Ranked #11 of 16 man-made hazards.	

ACTIVE ASSAILANT IMPACT

Where the Worst-Case bar is visible, Worst-Case Impact is equivalent to Likely Impact

Likely
 Worst-case

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HAS IT HAPPENED LOCALLY?

There has been one Active Assailant hazard event in Howard County during the reviewed time period (1966-2016). A single assailant brought a concealed handgun and several other weapons into The Mall in Columbia on January 25th, 2014. The shooter opened fire in a second-story restaurant killing two employees, striking a third person in the foot, and ultimately taking his own life. The assailant did not show any of the signs prior to the attack.

WHAT IS THE CONSEQUENCE?

There is an expected **1-30M Annual Likelihood** of an Active Assailant hazard in Howard County. In the most likely Active Assailant hazard scenario, the **Total Impact is considered Limited-Significant**. In the worst-case scenario, the **Total Impact is considered Limited-Significant**.

DID YOU KNOW?

- 90% of Active Assailant incidents are carried out by a single assailant.
- Nearly half of Active Assailant attacks occur in commercial facilities such as office buildings, factories, malls, or other retail locations.
- Another 25% of Active Assailant incidents occur in schools.

FOR MORE INFORMATION:

- Howard County Hazard Identification and Risk Assessment hazid.hccom.gov/hazards
- U.S. Dept. of Homeland Security https://www.dhs.gov/xlibrary/assets/active_shooter_booklet.pdf
- New York City Police Dept. www.nyc.gov/html/nypd/downloads/pdf/counterterrorism/active_shooter.pdf
- Federal Bureau of Investigation ia.hq.gov/2014/january/active-shooter-events-from-2000-to-2012

LOCAL RISK OVERVIEW

Event	Frequency	Severity	Impact
Active Assailant	1	High	2.00
Other	100	Low	0.20
Total	101	High	2.20

ACTIVE ASSAILANT IMPACT

Number of Active Assailant incidents by year (2000-2012)

Year	Number of Incidents
2000	0
2001	0
2002	0
2003	0
2004	0
2005	0
2006	0
2007	0
2008	0
2009	0
2010	0
2011	0
2012	1

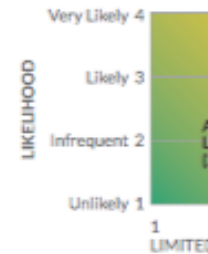


Hazard Profiles

HAS IT HAPPENED LOCALLY?

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RISK MATRIX



WHAT IS THE ONGOING RISK?

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FOR MORE INFORMATION:

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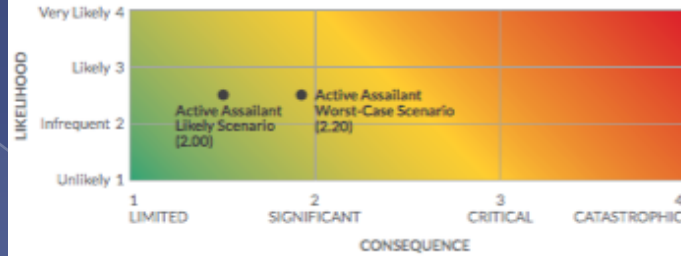
- Howard County Hazard Identification and Risk Assessment: hazid.hoco.com/ra2016
- U.S. Dept. of Homeland Security: https://www.dhs.gov/xlibrary/assets/active_shooter_booklet.pdf
- New York City Police Dept: www.nyc.gov/html/nypd/downloads/pdf/courterterrorism/active_shooter.pdf
- Federal Bureau of Investigation: www.fbi.gov/2014/01/active-shooter-events-from-2000-to-2012

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Hazard Profiles

RISK MATRIX

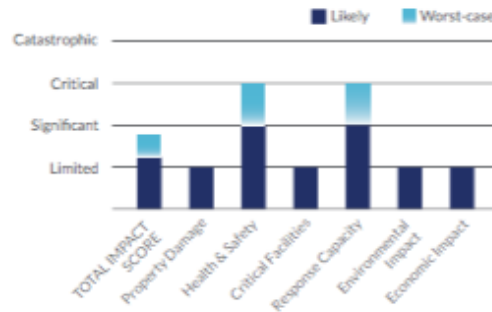


LOCAL RISK OVERVIEW

Future Likelihood	Infrequent-Likely 1-30% chance of annual occurrence	
Impact	MOST-LIKELY	WORST-CASE
	Limited-Significant	Limited-Significant
Risk Score	2.00	2.20
Risk Ranking (High to Low)	Ranked #11 of 16 man-made hazards.	

ACTIVE ASSAILANT IMPACT

Where no Worst-Case bar is visible, Worst-Case impact is equivalent to Likely impact



ACTIVE ASSAILANT

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HAS IT HAPPENED LOCALLY?

There has been one Active Assailant hazard event in Howard County during the reviewed time period (1966-2016). A single assailant brought a concealed handgun and several rounds of ammunition into the Mall in Columbia on January 25th, 2014. The shooter opened fire in a second-story restaurant killing two employees, striking a third person in the foot, and ultimately taking his own life. The assailant did not show any of the activities prior to the attack.

WHAT IS THE CONSEQUENCE?

There is an expected 1-30% Annual Likelihood of an Active Assailant hazard in Howard County. In the most likely Active Assailant hazard scenario, the Total Impact is considered Limited-Significant. In the worst-case scenario, the Total Impact is considered Limited-Significant.

DO YOU KNOW?

- Risks of Active Assailant incidents are carried out by a single assailant.
- Most of Active Assailant attacks occur in commercial facilities such as office buildings, factories, malls, or other retail locations.
- Another 25% of Active Assailant incidents occur in schools.

FOR MORE INFORMATION:

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- New York City Police Dept: http://www.nyc.gov/html/nypd/downloads/pdf/counterterrorism/active_shooter.pdf
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Active Assailant hazard. In the Limited-Significant.

Single assailant. Critical facilities locations.

ent

ActiveShooter.pdf



Hazard Profiles

FOR MORE INFORMATION:

- Howard County Hazard Identification and Risk Assessment readyhoco.com/hazards
- U.S. Dept. of Homeland Security dhs.gov/xlibrary/assets/active_shooter_booklet.pdf
- New York City Police Dept nyc.gov/html/nypd/downloads/pdf/counterterrorism/ActiveShooter.pdf
- Federal Bureau of Investigation leb.fbi.gov/2014/january/active-shooter-events-from-2000-to-2012

OFFICE OF EMERGENCY MANAGEMENT | Howard County, Maryland

ACTIVE ASSAILANT

An Active Assailant hazard refers to an individual actively engaged in killing or attempting to kill people in a confined or populated area. Active Assailant hazards, occasionally referred to as active killers, active shooters, or active threats, are typically characterized by the assailant's intent to kill with no pattern or method to their selection of victims. Typically, Active Assailants use firearms and work alone. However, an Active Assailant hazard can involve multiple shooters and/or weapons other than firearms.

HAS IT HAPPENED LOCALLY?

There has been one Active Assailant hazard event in Howard County during the reviewed time period (1966-2014). A single assailant brought a concealed handgun and several crude explosives into The Mall in Columbia on January 29th, 2014. The shooter opened fire in a second-story restaurant killing two employees, striking a third person in the foot, and ultimately taking his own life. The assailant did not show any of the activities prior to the attack.

WHAT IS THE CHRONIC RISK?

There is an expected **1-30% Annual Likelihood** of an Active Assailant hazard in Howard County. In the most likely Active Assailant hazard scenario, the **Total Impact is considered Limited-Significant**, in the worst-case scenario, the **Total Impact is considered Limited-Significant**.

DID YOU KNOW?

- 90% of Active Assailant incidents are carried out by a single assailant.
- Nearly half of Active Assailant attacks occur in commercial facilities such as shopping centers, restaurants, and other retail locations.
- 75% of Active Assailant incidents occur indoors.

FOR MORE INFORMATION:

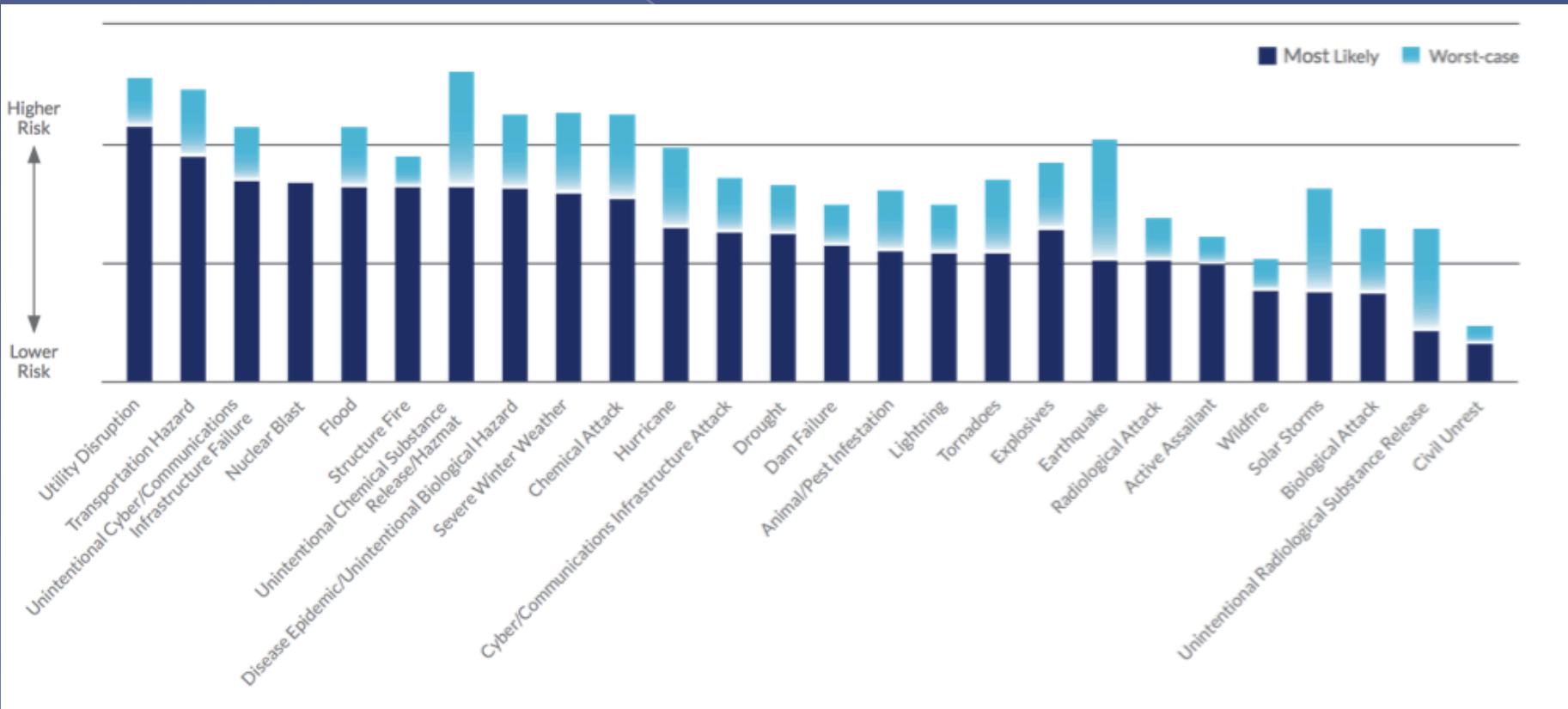
- Howard County Hazard Identification and Risk Assessment readyhoco.com/hazards
- U.S. Dept. of Homeland Security dhs.gov/xlibrary/assets/active_shooter_booklet.pdf
- New York City Police Dept nyc.gov/html/nypd/downloads/pdf/counterterrorism/ActiveShooter.pdf
- Federal Bureau of Investigation leb.fbi.gov/2014/january/active-shooter-events-from-2000-to-2012

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Get Prepared

- Identify high-risk hazards



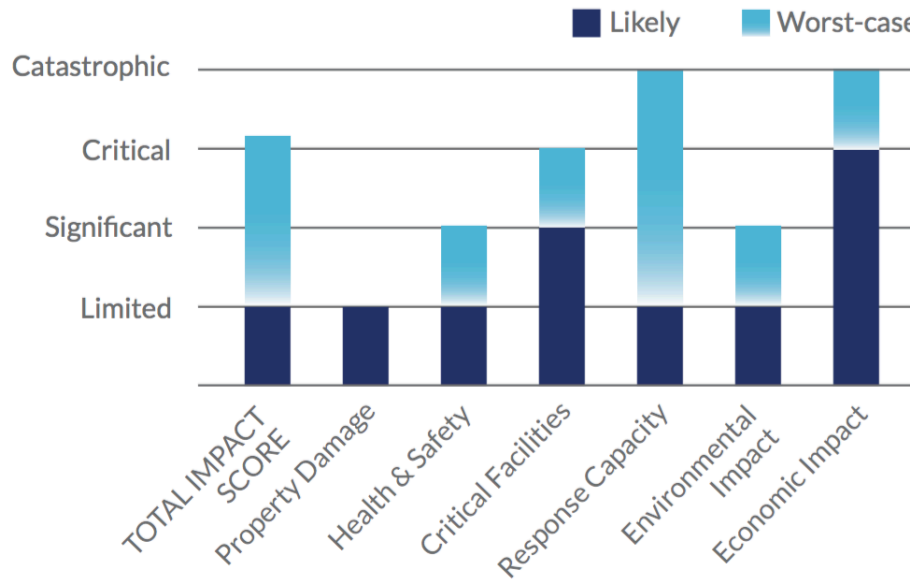


Get Prepared

- Mitigate against specific impacts

SPACE WEATHER IMPACT

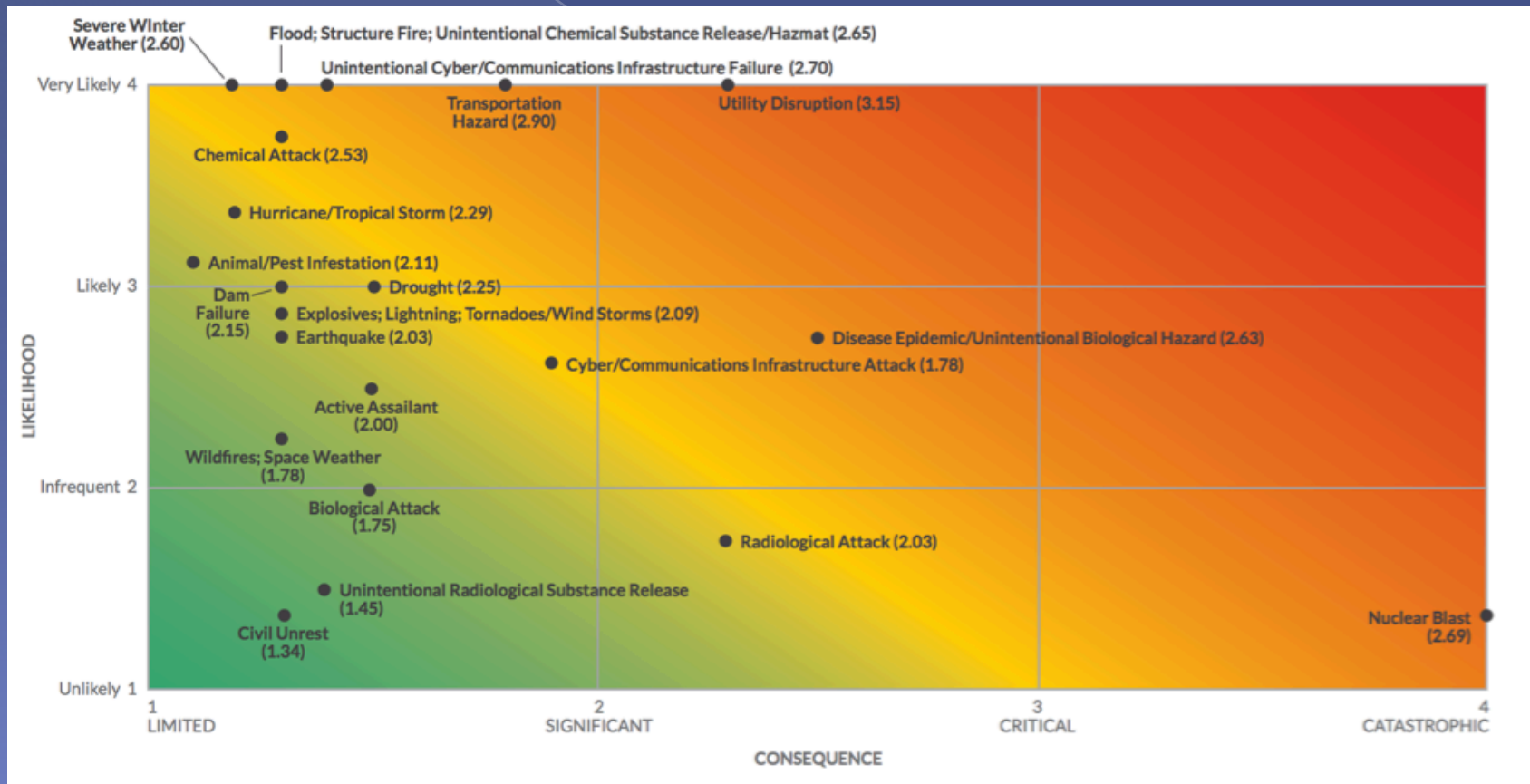
Where no Worst-Case bar is visible, Worst-Case impact is equivalent to Likely Impact





Get Prepared

○ Reducing Risk = Moving the Bar





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Howard County Fire and Rescue

6751 Columbia Gateway Dr
Columbia, MD 21046
410-313-6000

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Hazards in Howard County

Understanding Hazards in Howard County

Preparedness begins with understanding your local hazards. A hazard is any potential source of harm or difficulty and may be natural or manmade. High-risk hazards have a high likelihood of local occurrence and may result in serious consequences to life safety, property, critical infrastructure, the environment, and the economy.

$$\text{Risk} = \text{Likelihood} + \text{Consequence}$$

Hazard Resources

For detailed information on hazard risk in Howard County, the following resources provide detailed information on hazard risk in Howard County:

- [Community Hazard Handbook](#) – An overview of local hazards and hazard risk designed for families and businesses in Howard County.
- [Hazard Identification & Risk Assessment \(HIRA\)](#) – An in-depth resource for understanding hazards and hazard risk in Howard County.

Hazards in Howard County

Howard County's risk assessment includes 26 distinct hazard types. Click on a hazard below to learn more.

<u>Natural Hazards</u>	<u>Adversarial/Intentional Hazards</u>	<u>Technological/Accidental Hazards</u>
Animal/Plant Infestation	Active Assailant	Dam Failure
Drought	Biological Attack	Disease Epidemic/Unintentional Biological Hazard
Earthquake	Chemical Attack	Structure Fire
Flood	Civil Unrest	Transportation Hazard
Hurricane/Tropical Storm	Cyber/Communications Infrastructure Attack	Unintentional Chemical Substance Release/Hazmat
Lightning	Explosives	Unintentional Cyber/Communications Infrastructure Failure
Severe Winter Weather	Nuclear Blast	Unintentional Radiological Substance Release
Space Weather	Radiological Attack	Utility Disruption
Tornado/Wind Storm		
Wildfire		





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