



Weather Hazards & Forecast Challenges across the Commonwealth

Presentation & Panel Discussion

Tuesday, May 17, 2016 1:30-3:00PM
 Wednesday, May 18, 2016 8:30-10:00AM





Session Outline

Introduction
 Jeff Jumper, PEMA State Meteorologist

Weather Trivia
 Peter Jung, Warning Coordination Meteorologist – NWS State College
 Fred McMullen, Warning Coordination Meteorologist – NWS Pittsburgh

Seasonality of PA Weather & Forecast Challenges
 Dr. John Scala, Certified Consulting Meteorologist & WGAL-TV





Session Outline

Panel Discussion

Moderator
 Barbara Watson, Meteorologist-in-Charge – NWS State College

Panel Members
 Peter Jung, Warning Coordination Meteorologist – NWS State College
 Fred McMullen, Warning Coordination Meteorologist – NWS Pittsburgh
 Dr. John Scala, Certified Consulting Meteorologist & WGAL-TV
 Joe Murgo, WTAJ-TV Chief Meteorologist
 Jeff Jumper, PEMA State Meteorologist



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Panel Questions

How would you describe your audience on social media?

How has it evolved?

How do you expect it to change?



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Panel Questions

How do you handle misinformation?



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Panel Questions

What is your biggest weather fear for your jurisdiction?



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Panel Questions

Which particular weather event type has the greatest effect on you?



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Panel Questions

What are your primary sources of weather information?

Why?



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Panel Questions

How often do you need a forecast update?

What forecast changes do you feel warrant an update?





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Panel Questions

How much lead time do you require in non-severe warnings & advisories?

(i.e., freezing rain, wind chill, fire weather)



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Pennsylvania High Impact Weather Trivia

**Did this happen in Pennsylvania?
If so, where (and when)?**

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EF-3 Tornado: Lyons, PA (Berks County) May 30, 1998



Wall Cloud: Allentown, PA (Lehigh County) June 30, 2015



Tsunami: Hawaii, 1946





Flooding: Easton, PA (Northampton County) June 29, 2006





Turnpike Accident: Lower Bucks County, PA February 14, 2014





EF-1 Tornado: Lawrence County, PA 2013



Heavy Snow: Terra Alta (Preston County, WV) 2010

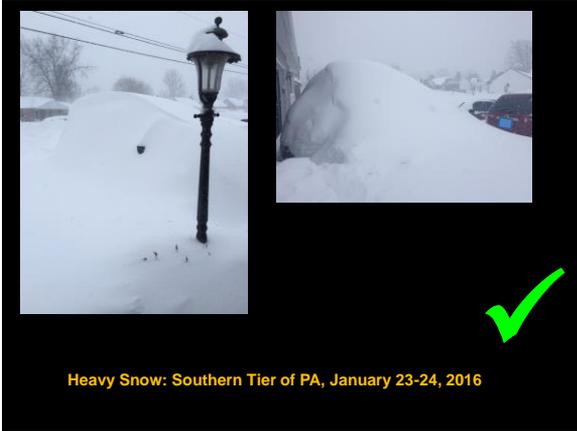


EF-2 Tornado: White Horse (Lancaster County) Feb 24, 2016





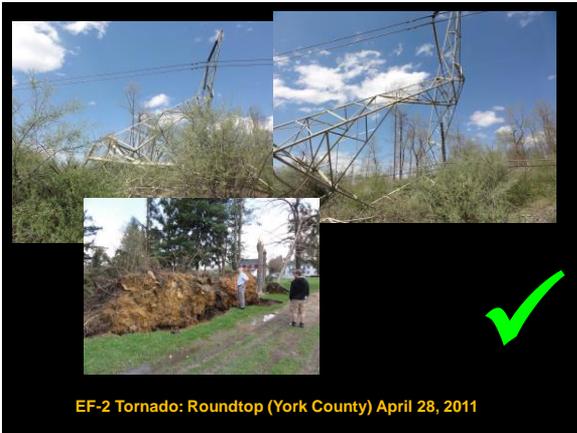


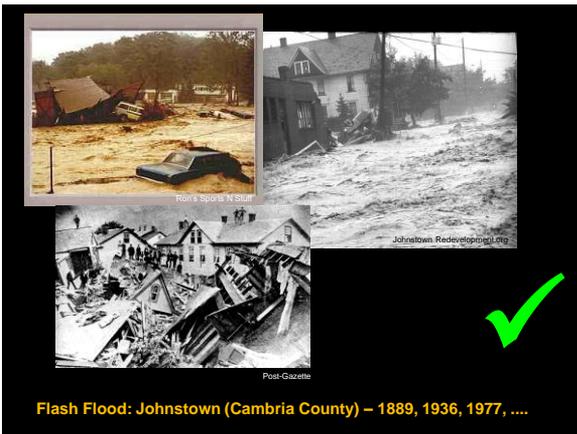












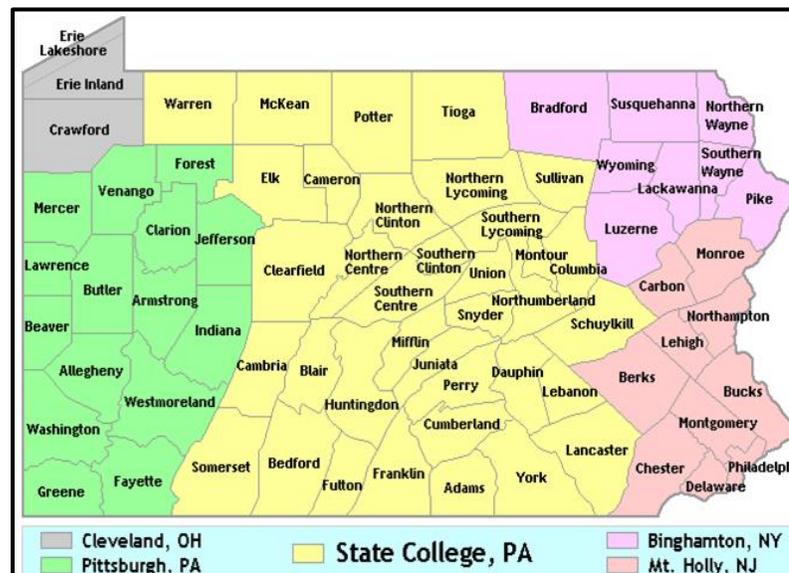


Snow Squall: Erie, PA (Erie County) – November 18, 2014

Weather Resources

Local National Weather Service Weather Forecast Offices are your primary point of contact for county specific weather and climate information.

- **National Weather Service – Binghamton, NY**
 - Bradford, Lackawanna, Luzerne, Pike, Susquehanna, Wayne and Wyoming counties
<http://www.weather.gov/bgm/>
- **National Weather Service – State College, PA**
 - Adams, Bedford, Blair, Cambria, Cameron, Centre, Clearfield, Clinton, Columbia, Cumberland, Dauphin, Elk, Franklin, Fulton, Huntingdon, Juniata, Lancaster, Lebanon, Lycoming, McKean, Mifflin, Montour, Northumberland, Perry, Potter, Schuylkill, Snyder, Somerset, Sullivan, Tioga, Union, York and Warren counties
<http://www.weather.gov/ctp/>
- **National Weather Service – Mounty Holly, NJ**
 - Berks, Bucks, Carbon, Chester, Delaware, Lehigh, Monroe, Montgomery, Northampton and Philadelphia counties
<http://www.weather.gov/phi/>
- **National Weather Service – Pittsburgh, PA**
 - Allegheny, Armstrong, Beaver, Butler, Clarion, Fayette, Forest, Greene, Indiana, Jefferson, Lawrence, Mercer, Venango, Washington and Westmoreland counties
<http://www.weather.gov/pbz/>
- **National Weather Service – Cleveland, OH**
 - Crawford and Erie counties
<http://www.weather.gov/cle/>



Weather Resources

Additional information can be found on rivers/hydrology through the River Forecast Centers:

- Mid-Atlantic River Forecast Center – <http://www.weather.gov/marfc/>
- Ohio River Forecast Center – <http://www.weather.gov/ohrfc/>

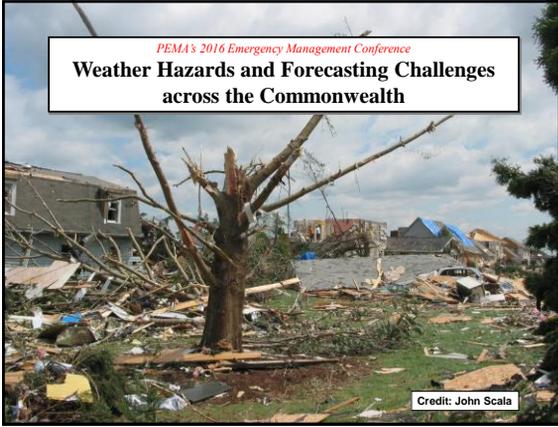


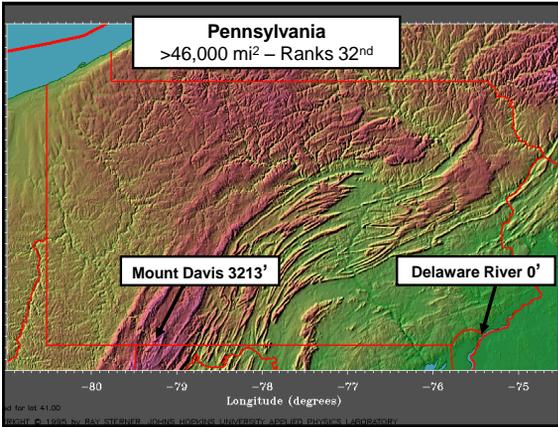
Additional information can be found on climate through the following resources:

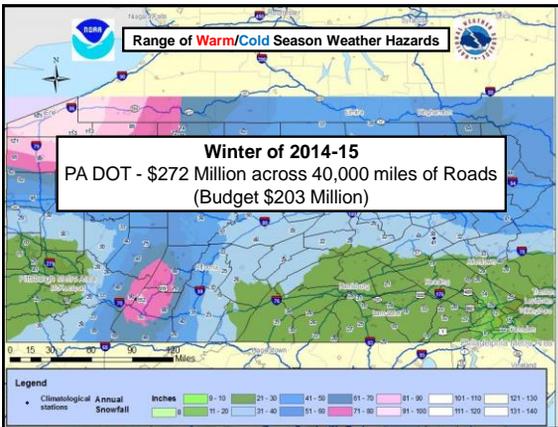
- **Pennsylvania State Climatologist**
 - <http://climate.met.psu.edu/> – Phone: 814-865-8732
- **National Centers for Environmental Information (NCEI)**
formerly National Climatic Data Center (NCDC)
 - <https://www.ncei.noaa.gov/> – Phone: 828-271-4800
- **Climate.gov**
 - <https://www.climate.gov/>

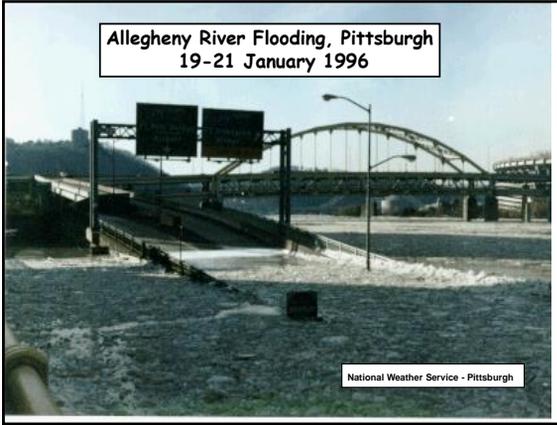
Additional weather information can be found through the following resources:

- **Storm Prediction Center** – <http://www.spc.noaa.gov/climo/online/>
- **National Hurricane Center** – <http://www.nhc.noaa.gov/climo/>
- **Flood Insurance Rate Maps (FIRMs)**
 - PA Department of Community & Economic Development – <http://www.pafloodmaps.com/>
- **FEMA Flood Map Service Zone** – <https://msc.fema.gov/portal>
- **Earthquakes, Energy, Soil, Water Use, Volcanos**
 - US Geological Survey – <http://data.usgs.gov/datacatalog>
- **Remote Sensing Data**
 - National Operational Hydrologic Remote Sensing Center – <http://www.nohrsc.noaa.gov/>

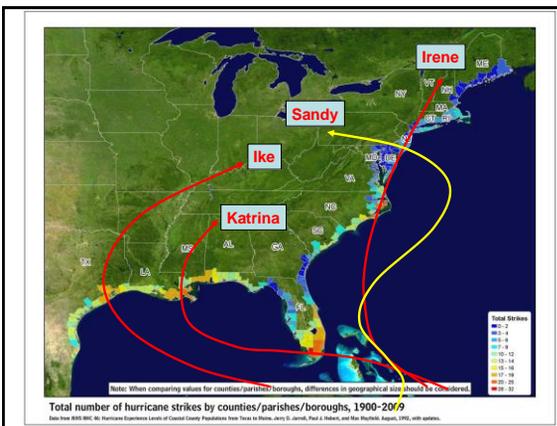


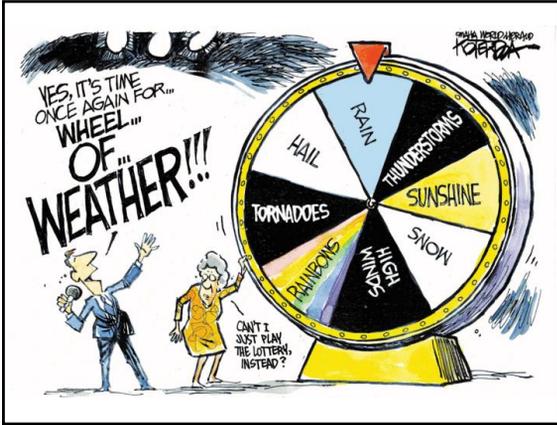


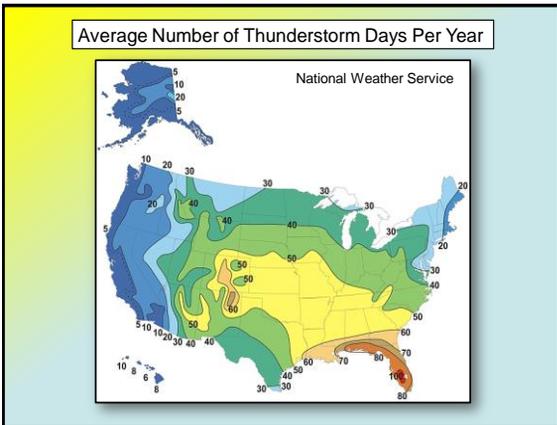


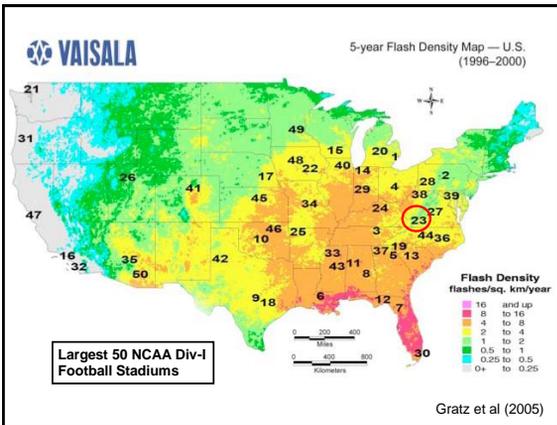








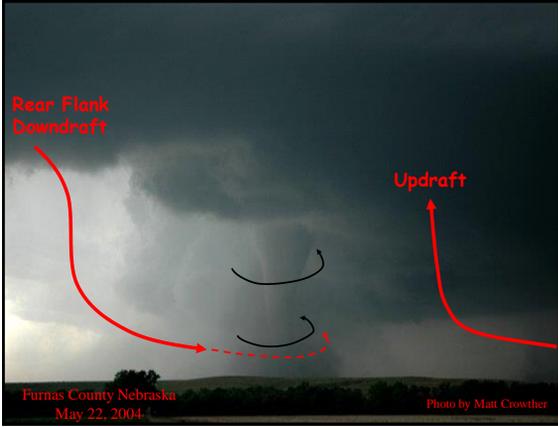


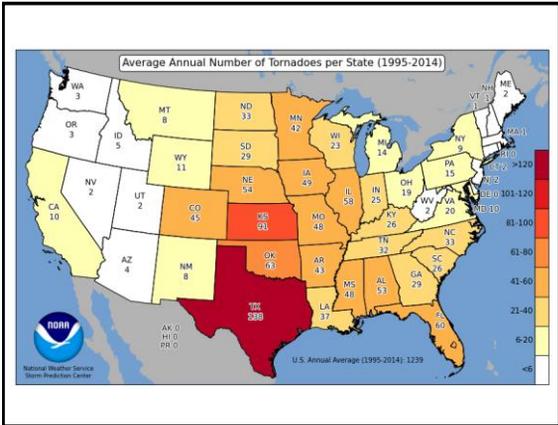


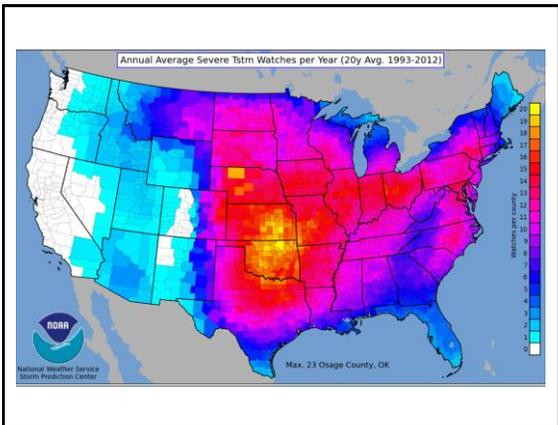






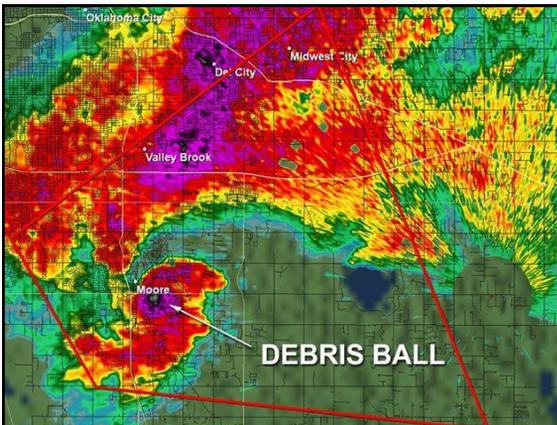
















Numerical Weather Prediction

Global Models (operational)	Mesoscale Models (operational)	Ensemble Prediction Systems
CMC	AFWA MMS	CMC
ECMWF	NAM	ECMWF
NCEP GFS	CMC GEM	NCEP GFS
NOGAPS	RUC	NCEP SREF
UKMET		NOGAPS

Credit: John Scala

**Challenge of Conveying
Life-Threatening Weather Information**



- Pre-conditioning of response to severe weather
- Individual perception of risk and vulnerability
- Variable tolerances (human, physical, programmatic)
- Communicating range of impacts to diverse audience

Traffic jam - Moore, OK
May 20, 2013

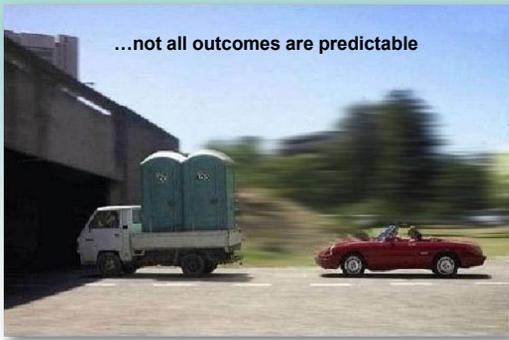
Smithville, Mississippi
April 27, 2011



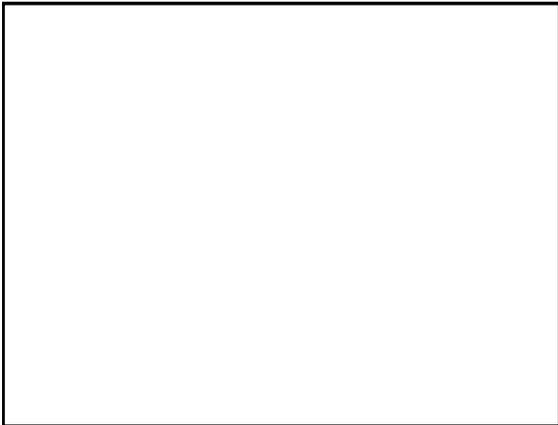
**"...providing more accurate forecasts may
not lead to rational decision making."
*Harold Brooks, National Severe Storms Lab***

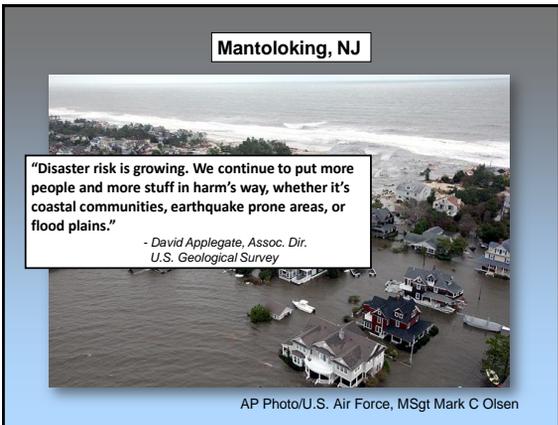
MS EMS/NWS MEM

Communicating Risk...









Kinzua Viaduct Bridge – constructed 1882, improved 1900...



... destroyed July 21, 2003

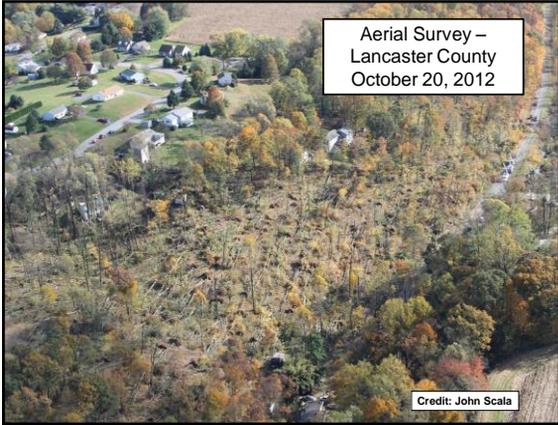


Credit: John Scala

S Annville Township
Healthy Hardwood
2.5 feet in Diameter



Credit: John Scala



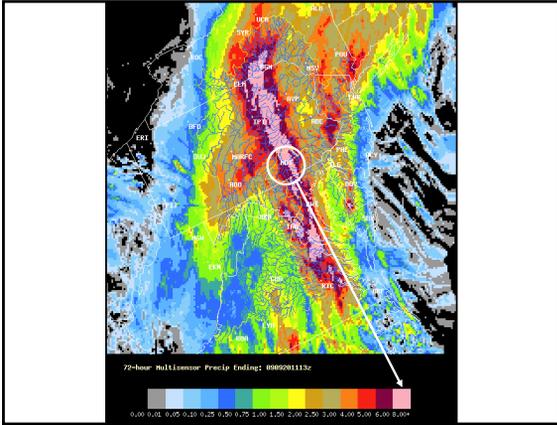




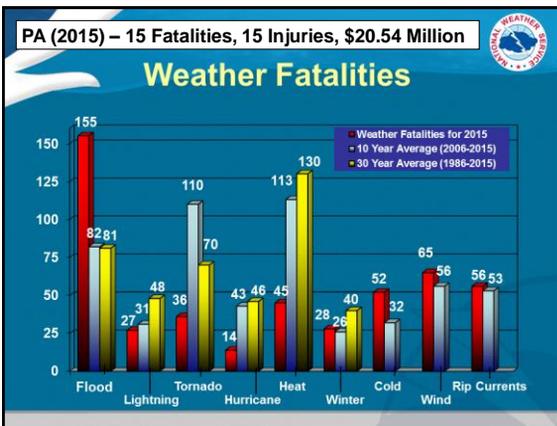




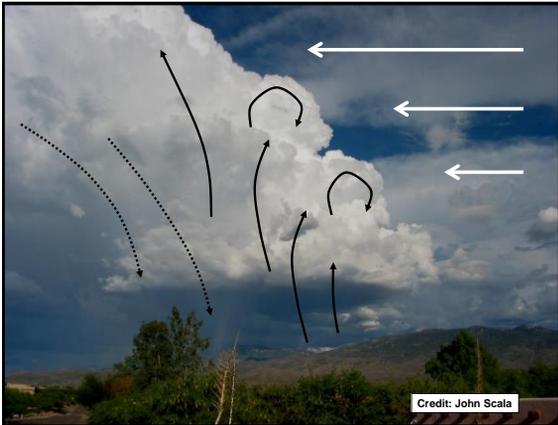










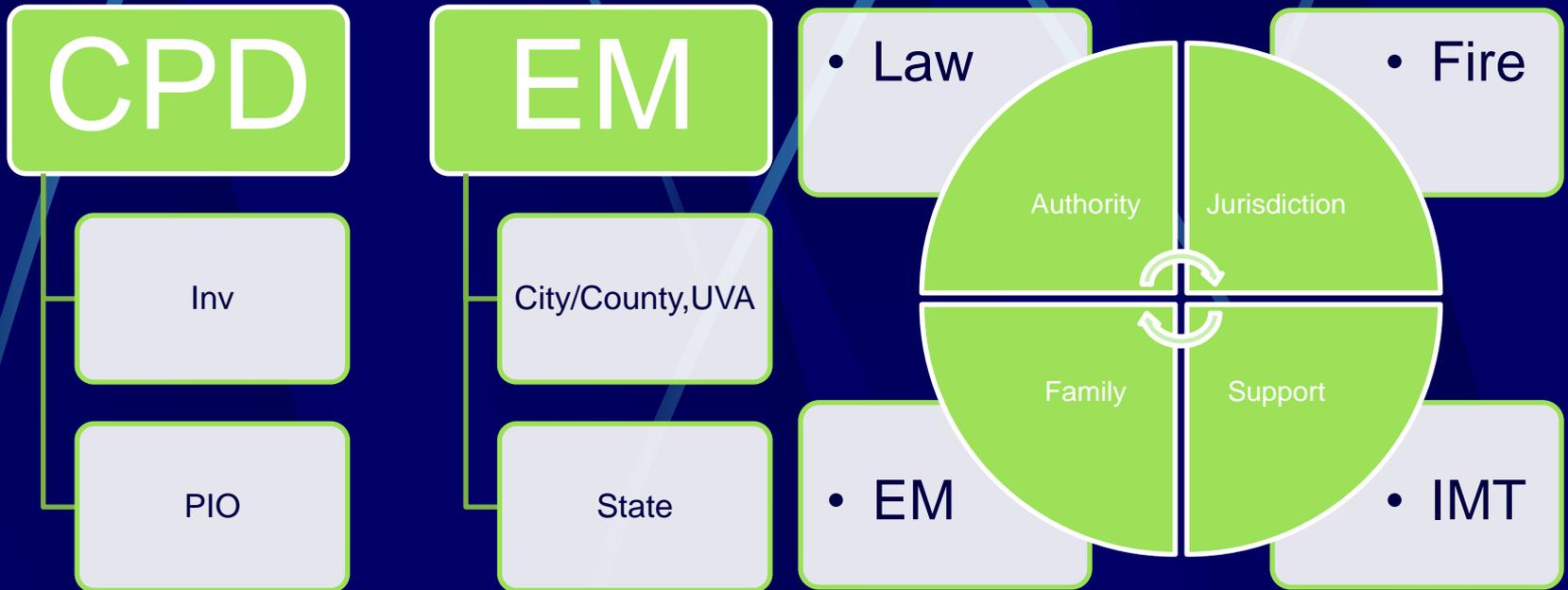




Central Virginia All Hazards Incident Management Team helps coordinate massive search for Hannah Graham



Command Structure





This presentation will NOT focus on anything related to investigation or evidence by Law Enforcement-ONLY the Searches coordinated by Emergency Management



Hannah Graham Search



Charlottesville-Albemarle



Emergency Management



OPERATIONAL PERIOD(S)

Date From: 9/20/2014 Date To: 9/20/2014

Time From: 0600 Time To: 1900

Date & Time Prepared: 9/19/2014 @ 2030

The Search for Hannah Graham



Hannah

- 18 years old female student at UVA
- Northern Virginia native
- UVA ski team
- 5' 11" thin, blue eyes, brown hair
- Left a party on 9/13/14, alone & reportedly intoxicated, on her way home
- Got lost

Timeline

- Video in her apartment building shows her at 2130 hours Friday, 9/12/14
- Left party at 0015 hours on Saturday, 9/13/2014
- Last heard from on 9/13/14 at 0120 hours in a text to that she was lost
- Security video placed her near downtown with someone following her
- CPD notified at 1634 hours on Sunday, 9/14/15

Charlottesville, Virginia

- County Seat for Albemarle County
- 45,000 population
- 10 square miles-urban
- Home to the University of Virginia

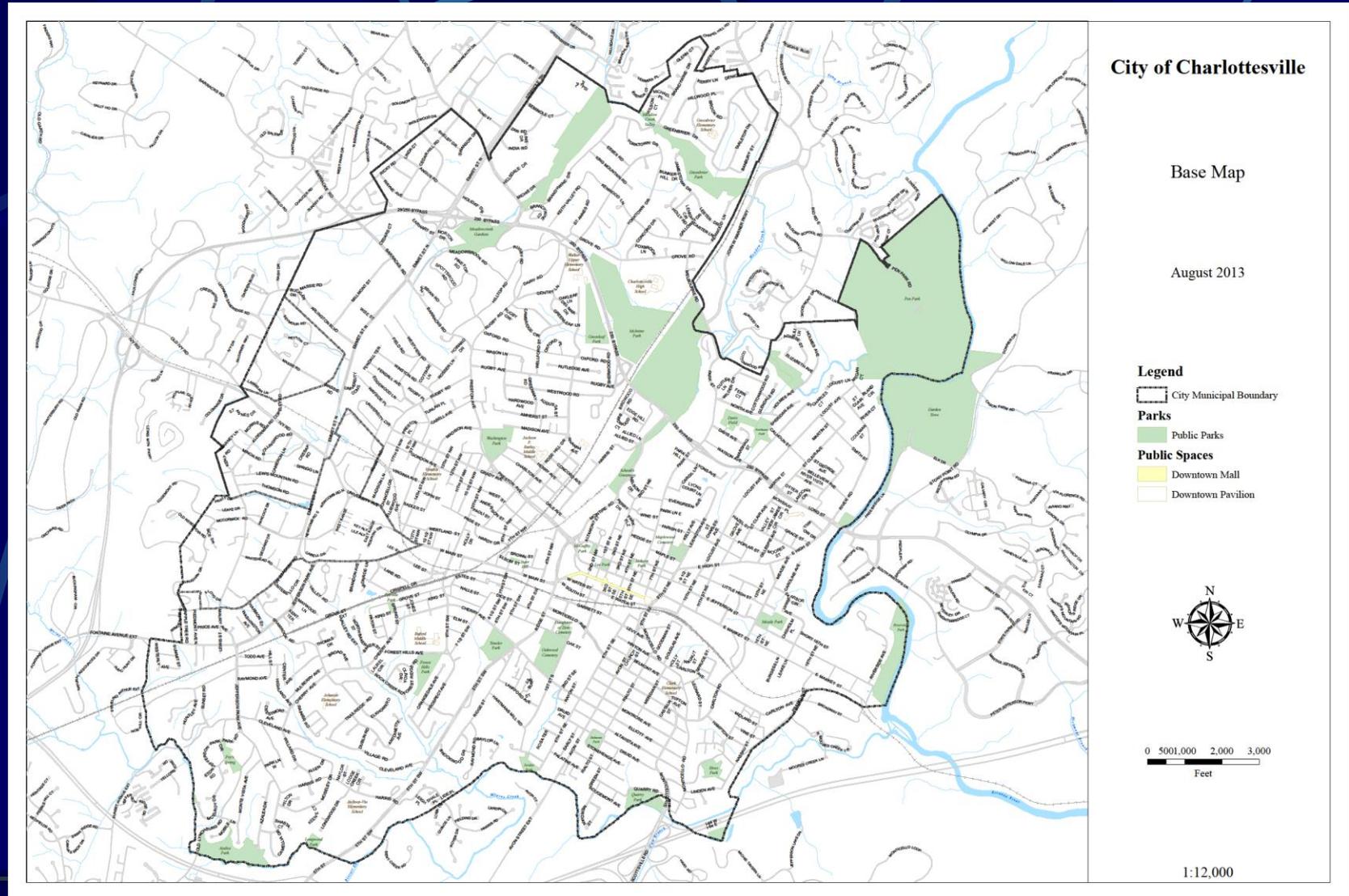
Charlottesville Public Safety

- Police Chief Tim Longest
- Fire Chief Charles Werner
- Sheriff James Brown
- Emergency Manager Kirby Felts

The “Face” of the media



Charlottesville, Virginia



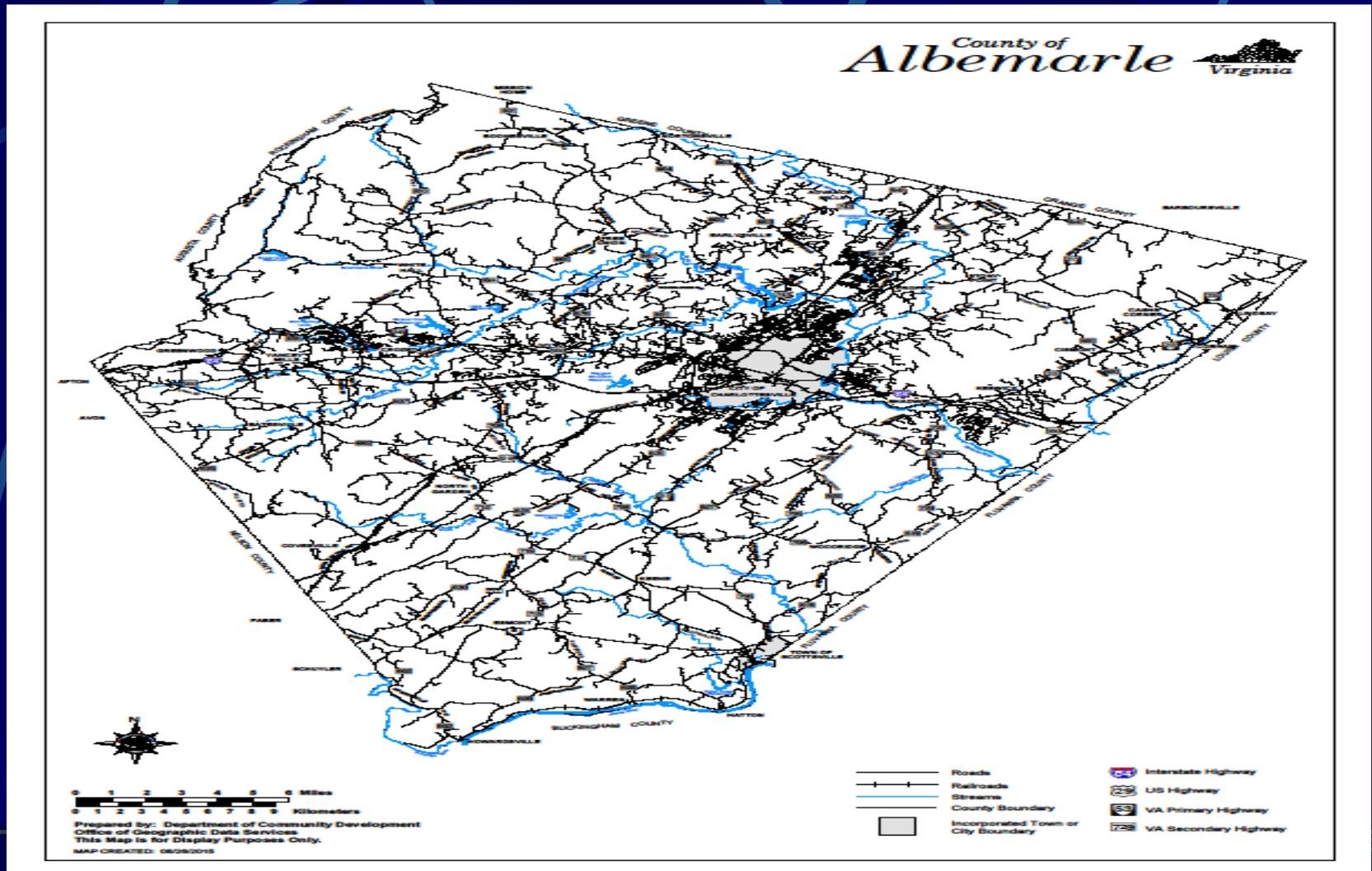
Albemarle County, Virginia

- Surrounds the City of Charlottesville
- 93,000 population
- 726 square miles-suburban and rural
- Home to Thomas Jefferson and James Monroe (James Madison nearby)

Albemarle Public Safety

- Sheriff Chip Harding
- Police Chief Steve Sellers
- Fire Chief Dan Eggleston
- Emergency Manager Kirby Felts

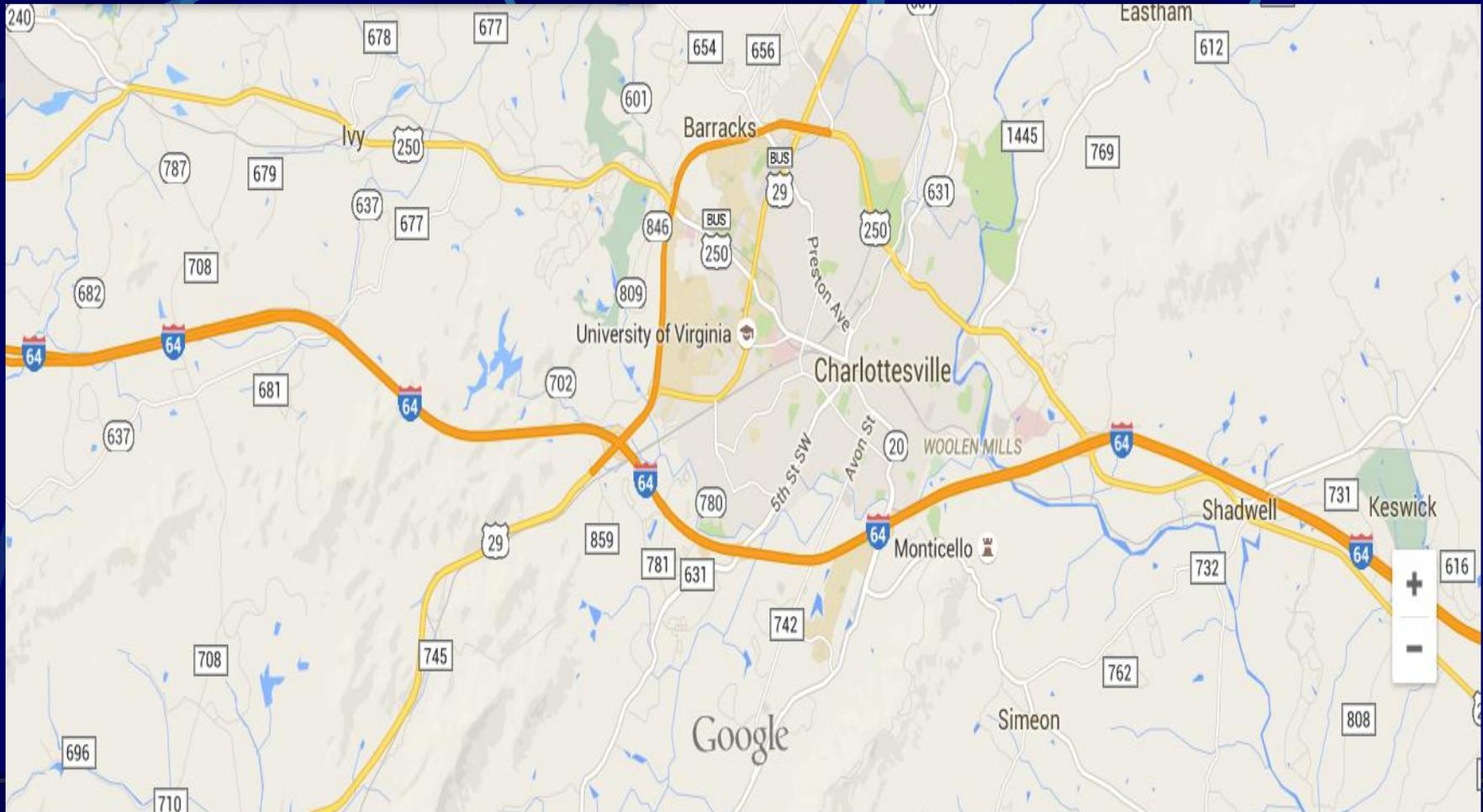
Albemarle County, Virginia



University of Virginia

- 20,000 students
- University Police Chief Michael Gibson
- University Office of Emergency Preparedness Director Marge Sidebottom

University of Virginia



Virginia Department of Emergency Management

- State Coordinator Jeff Stern
- SAR Coordinator Mark Eggeman
- Region 3 Coordinator Gene Stewart

Virginia Department of Emergency Management



Last minute instructions



Central Virginia All Hazards Incident Management Team



Types of IMTs

Type 5: Local Village and Township Level - a "pool" of primarily fire officers from several neighboring departments trained to serve in Command and General Staff positions during the first 6-12 hours of a major or complex incident.



Type 4: City, County or Fire District Level - a designated team of fire, EMS, and possibly law enforcement officers from a larger and generally more populated area, typically within a single jurisdiction (city or county), activated when necessary to manage a major or complex incident during the first 6-12 hours and possibly transition to a Type 3 IMT.



Type 3: State or Metropolitan Area Level - a standing team of trained personnel from different departments, organizations, agencies, and jurisdictions within a state or DHS Urban Area Security Initiative (UASI) region, activated to support incident management at incidents that extend beyond one operational period. Type 3 IMTs will respond throughout the State or large portions of the State, depending upon State-specific laws, policies, and regulations.



Type 2: National and State Level - a Federally or State-certified team; has less staffing than Type 1 IMTs. There are 35 Type 2 IMTs currently in existence, and operate through the U.S. Forest Service and State Foresters.



Type 1: National and State Level - a Federally or State-certified team; is the largest staffed most fully equipped and self-contained. Sixteen Type 1 IMTs are now in existence, and operate through the U.S. Forest Service.





Background of AHIMTs

- Post 9/11/2001-NIMS created to provide a consistent approach for natural and manmade disasters
- Created under Homeland Security Presidential Directive #5
- Funding is based on Regional Cooperation



Background

- Few jurisdictions have the financial, human, or physical resources to implement a large IMT
- Disasters often resulted in numerous small IMTs competing for resources
- Low Frequency/High Risk Events



Benefits of Type 3 AHIMT

- Larger jurisdictions help each other
- Larger jurisdictions help smaller ones
- Good Stewards of our communities
- Develop a larger personnel pool
- Develop a larger equipment pool
- Multiple disciplines increase strength
- Better access to funding



Benefits of a Type 3 AHIMT

- Better decision making
- Unbiased perspective
- Improved productivity
- More emphasis on safety
- Better management of resources
- Better tracking of costs



Key words

- Collaboration
- Cooperation
- Consensus
- Consistency



Pitfalls

- Interpersonal Dynamics
- “Turf Battles”
- Competition
- Personality Conflicts



The Beginning of the Search

- Delay in reporting due to typical college lifestyle
- Investigation began as a typical missing college student
- Soon transitioned into possible criminal activity and Law Enforcement expanded their command structure
- Local EM requested VDEM support
- Attracted National Media attention



One of many media trucks





End Result

- Developed into the largest coordinated search ever conducted in the Commonwealth of Virginia
- The CVAHIMT was able to be very successful in a supporting role and receive many accolades from all
- The downside is that Hannah's body was found a few weeks later



How we got there

- VDEM began assisting local EM and Fire in support of local PD
- VDEM Coordinator Jeff Stern called the CVAHIMT Program Manager Lee Williams on Thursday, 9/18 to pre-alert us for a potential activation
- Official alert came at 1900 hours for a report to the ICP on 9/19 at 1000 hours



The Journey

- Many reservations by state and local officials on whether an IMT was needed and how we could “add value”
- Request for a maximum of 14 members in order to not overwhelm the localities
- Advance Team departed at 0700 to get SA and in-briefing

Used our previous AARs and Lessons Learned



- Search for Robbie Wood in Hanover, VA
- Type 1 and Type 2 IMTs on Wildfire Training Assignments
 - Texas
 - New Mexico
 - Washington (2 fires)
 - Montana (3 fires)



Robbie Wood Search





Initial Situational Awareness

- Separate ICP for EM and PD
- EM ICP being relocated to JPJ
- Initial assignment was to support local IC with Plans, Logistics, Safety, and Liaison
- Political plan was to support trained SAR teams with several hundred citizen volunteers



Agency Administrator Briefing

- Citizen groups set up a registration website to solicit volunteers
- CERT members would be brought in to assist the CVAHIMT
- The search could not interfere with routine public safety staffing in the area
- The search could not interfere with the public safety communications system



The PLAN

- Get Unified Command to agree on Objectives
- Develop IAP to support objectives
- Friday afternoon-deliver JIT training to 80 CERT members to support the CVAHIMT in administrative functions
- Develop IAP and OPS Briefing for 1400 volunteers who had signed up online



Command and General Staff Meeting







Additional jobs

- Call back for additional CVAHIMT members!
- Brief approximately 50 media representatives from local and national media outlets
- Coordinate Communications Plan with 5 Virginia Radio Caches
- Conduct Ops Briefing in John Paul Jones Arena for 1400 searchers



Media Briefing





CERT Just in Time Training



Communications Cache





Ops Briefing





Ops Briefing





Ops Briefing





Additional jobs

- Develop check in procedure for citizen volunteers based on health and background
- Develop organization plan for the OSC to be able to manage citizen volunteers-
- Utilized 5 Divisions on Saturday and 6 Divisions on Sunday

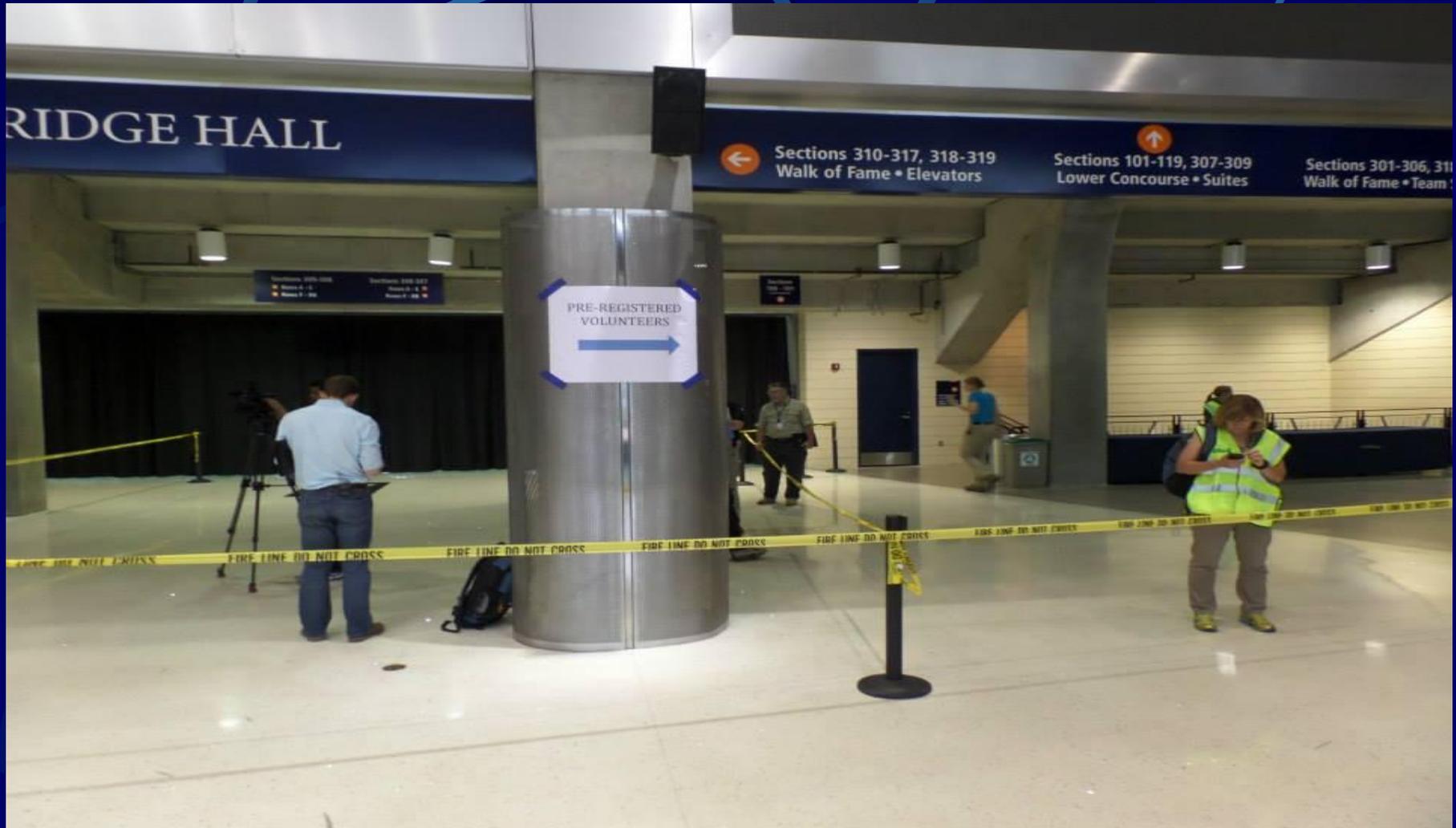


Incident Check in



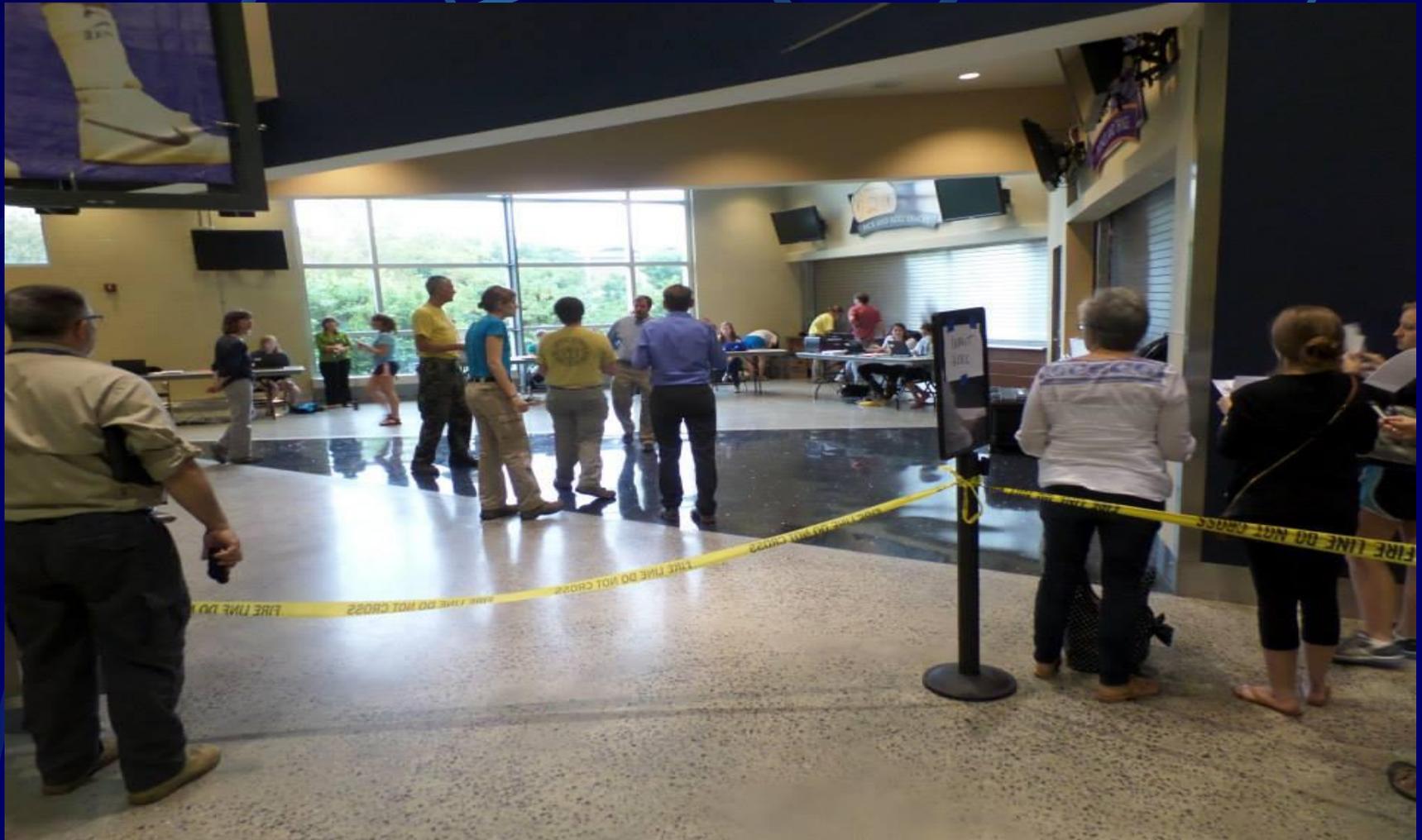


Pre-registered Check in





Use of Media





Resource Unit



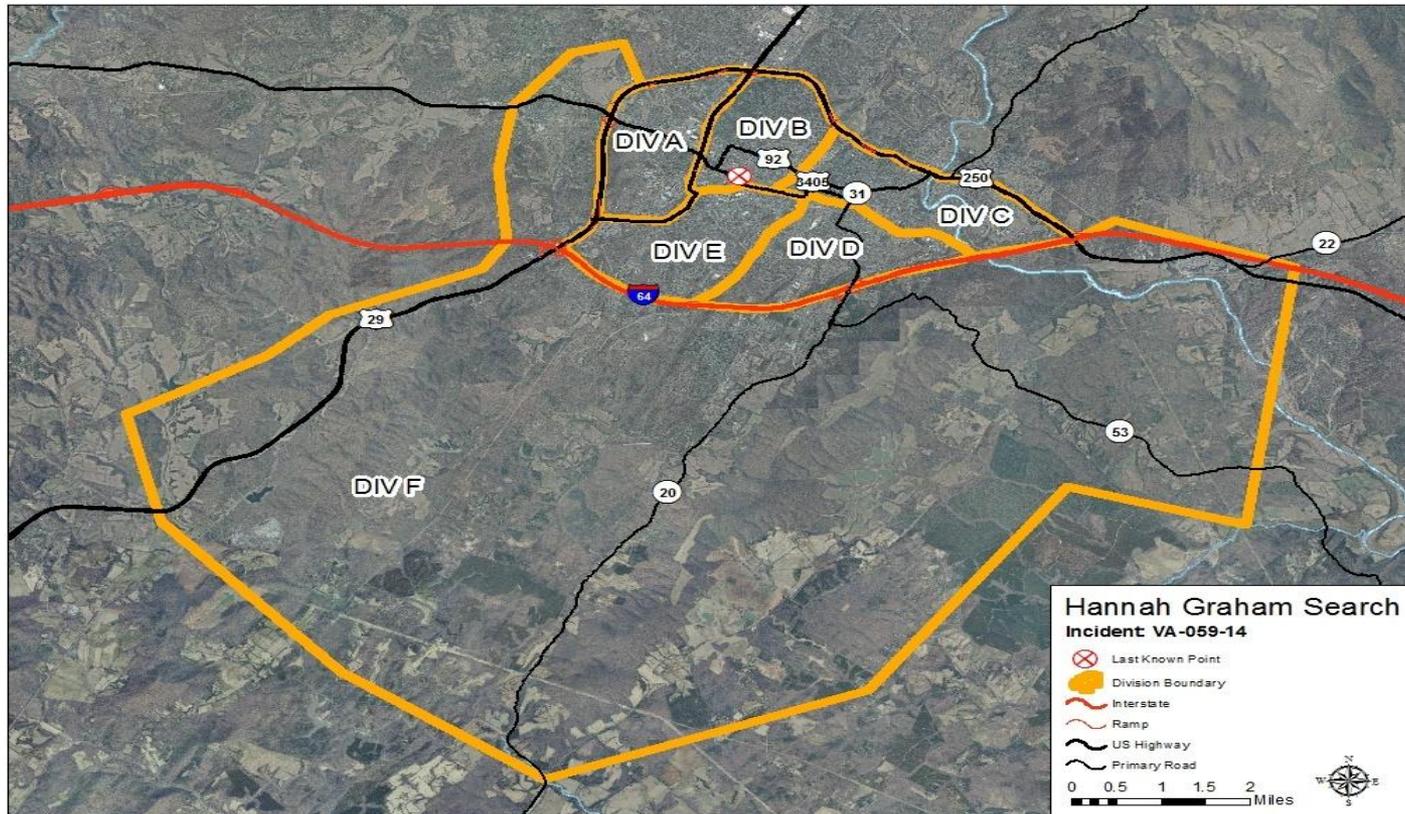


Division Briefings





Division Boundaries





Additional jobs

- Develop Traffic Plan utilizing University Transit Bus System
- Develop Food Unit utilizing University Caterers for John Paul Jones Arena
- Develop Rehab Plan to insure adequate rotation of crews
- Develop Safety Briefing, Medical Plan, and Forensic Plan



Traffic Plan





Food Unit





Additional Jobs

- Staff a Resource Unit to insure accountability
- Staff a Situation Unit to update the IC and OSC throughout the day
- Staff a Liaison Officer to coordinate Assisting and Cooperating Agencies
- Develop a Demob Plan



Saturday morning

- Website had expanded and we checked in 1865 untrained volunteers and 200 SAR team members
- All plans worked according to IAP
- Maintained 100% accountability for 2065 operational resources
- Treated 3 injuries with only 1 transported (bee sting)



Saturday morning

- Repeaters and portable antennas worked as planned
- LOFR coordinated with 37 Assisting and Cooperating Agencies
- Located numerous clues to have Forensic Unit identify and investigate
- Completed 9397 manhours of searching



Command Post





Plans Section





Plans Section





CVAHIMT Results

- The Benefits will outweigh the obstacles
- Develop Regional Support
- Develop lasting Relationships



Vision

- Prepared to help when you need us most.



Mission Statement

- *The mission of the Central Virginia All Hazards Incident Management Team is to respond upon request; providing a trained, qualified team capable of supporting and assisting communities in the management of events and incidents.*



Value Statement

- We will serve as stewards of our communities rooted in the value sets of compassion, competency, and commitment.



Team Success

- Requested to work additional ops period
- Coordinated among all agencies
- Numerous accolades from Local and State Agencies
- Recognition from Virginia Secretary of Public Safety, Deputy Secretary, and Coordinator of VDEM



Questions?

Contact:

LeeWilliams@cvahimt.org
(804) 513-1645

Mental Health
Crisis Response
in the Community
For First Responders

A Crisis is defined as a Critical Incident which threatens to overwhelm normal ability to adapt and problem-solve.

First Responders react to Critical Incidents (e.g., accidents, fires, acts of violence) on a daily basis. While the general public or those directly affected by the incident might see these events as a “crisis”, the responders might assess these events as: “not too bad” or “bad, but we got everyone out” or “really bad, but could have been a lot worse.”

Critical Incidents are “unusually challenging events that have the potential to create significant human distress and can overwhelm one’s usual coping mechanisms” (Everly, 2016).

The Federal Emergency Management Agency (FEMA) defines three levels of Critical Incidents:

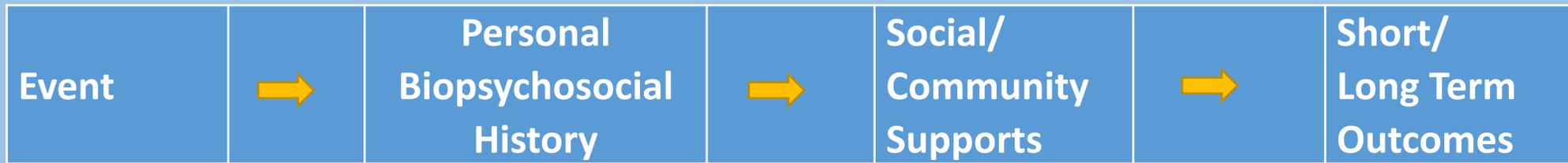
1. Emergencies (Local events that can be effectively managed by local responders)
2. Disasters (Events that exceed local resources)
3. Catastrophies (Events which exceed all response capacity)

Crisis is the psychological and physical distress that occurs in direct response to the Critical Incident. “Normal” ability to cope and manage the mental, emotional and behavioral reactions is temporarily suspended. This is an extremely uncomfortable state in which the person is flooded with contradictory thoughts and emotions, and there is a strong desire to escape this state as rapidly as possible.

Trauma is the sum of the Critical Incident and Crisis reaction, and refers to the short and long-term impacts of the event on person(s). Trauma has biological, psychological and social impact on a person or group.

1. Biological – Release of stress hormones (epinephrine, norepinephrine, dopamine), which then are depleted.
2. Psychological – shock, numbing, intense anxiety, anger, confusion, dissociation, time distortion
3. Behavioral – Fight, Flight or Freeze

For a Crisis to become a Trauma, there is a complex interaction between the intensity and duration of the Critical Incident, the Personal Biopsychosocial history of the persons effected and the availability of mitigating supports.



Terrorism is a general description for deliberate events, perpetrated by humans, designed to create/evoke trauma and intentionally destabilize individuals and the social support system. Terrorism has also been described as “Psychological Warfare” or “Asymmetric Warfare” as the goal is to defeat the target by demoralizing and engendering fear.

Whether terrorism or not, often the most traumatic events are those wherein a deliberate, purposeful act by one human being on others is committed. These can be large events (e.g., 9/11/2001) or small events (e.g., rape, assault, murder). These types of events often evoke the most powerful feelings (e.g., rage, confusion, blaming).

“Trauma destroys cognitive schemas (our maps about how the world should operate) regarding safety and self efficacy” (Bessel Vanderkolk, 1989).

Crisis Response and Crisis Intervention

1. Crisis Response is the deployment of appropriate resources to the individuals impacted by the event.
2. Crisis Intervention is what those resources do.

Crisis Intervention is to Psychotherapy
as First Aid is to Surgery

(Everly and Mitchell, 1999)

Crisis Intervention is an immediate, supportive intervention designed to mediate and stabilize the crisis, not the event. The immediate goal is stabilization, symptom reduction and restoration of normal functioning, or referral for more intensive intervention (Caplan, 1964).

The PIE Model:

1. Proximity – Go to where you are needed
2. Immediacy – Go as quickly as possible to the persons affected
3. Expectancy – The reactions are viewed as “normal reactions to abnormal events”, and that stabilization will happen; that the reactions are not pathological.

World War I and World War II

For combat fatigue (acute stress disorders) “treatment within the sound of artillery” returns 70-80% of soldiers to duty within hours (Salman, 1917)

Removing the soldier from the front returns only 5% of soldiers back to duty (Artiss, 1963)

Common Models of Crisis Intervention

1. Psychological First Aid (e.g., American Red Cross)
2. Mental Health First Aid (Adult and Children)
3. SAFER-R (Everly, 1995)
4. RAPID PFA (Johns Hopkins' CPHP)
5. Resilient Moment Communications Model
6. Pastoral Crisis Intervention (Everly, 2000)
7. Critical Incident Stress Management (Primarily for first responders)

All Crisis Intervention Models have Key Elements

(U.S. Department of Health and Human Services, 2004)

1. Protection from future harm
2. Providing opportunity to talk, but without pressure
3. Non-judgmental listening and reflection
4. Displaying genuine compassion
5. Identify basic needs and get these met
6. Ask for feedback and try to address concerns
7. Discourage negative coping (e.g., alcohol)
8. Encourage positive coping (e.g., return to family routines, exercise, relaxation techniques)
9. Encourage social connections
10. Offer further support if appropriate (e.g., followup)
11. Referral to professional or support services as appropriate

Example: The SAFER-R Model (Everly, 1995)

1. Stabilization - Remove the persons from the immediate event area if needed. Connect with the person and meet basic needs (e.g. get a cup of coffee, water. Introduce yourself and your role. Ask: “What do you need right now? How can I be of help?”

Example: The SAFER-R Model (Everly, 1995)

2. Acknowledgment of the Crisis - This is the person describing the event, often with emotions, but sometimes in a numbed state. “What can you tell me about what happened?” The effort here is not to evoke more emotions, but to honor the reaction and keep the person more cognitive to gain some emotional regulation. “How are you doing now?” can anchor the person into the current moment.

Example: The SAFER-R Model (Everly, 1995)

3. Facilitation of Understanding - This is often referred to as “normalization of the reaction to terrible”. Human emotional reaction to overwhelming stress are normal reactions to abnormal events. Hormonal changes in response to stress are part of our normal adaptive reactions. People react in many ways, but these reactions are temporary and reflect our brain resetting itself after an overload.

Example: The SAFER-R Model (Everly, 1995)

4. Encourage Adaptive Coping - The use of social support is key to recovery. Being able to talk about and reflect is critical, but in the initial moments of crisis, often there is a loss of future orientation and a diminished capacity to use normal coping skills. Here, the intervention allows for emotional release, cognitive restructuring, delaying of impulsive reactions, drawing from the person's own coping history to find things that may help. Simple things such as slowing down breathing rate, pacing conversation at a normal rate, making good eye contact, and being present can be the key.

Example: The SAFER-R Model (Everly, 1995)

5. Restoration of Adaptive, Independent Functioning or Referral - Here, the goal is to summarize the previous four steps and have a plan for the next step. Most persons will have achieved a level of consolidation at this point, and may require little follow up. Others may need a referral to more structured services such as mental health assessment, ongoing pastoral counseling, or emergency room if the distress is so intense that safety cannot be assured. Integration into the normal support system is the best outcome, enlisting family, friends, church and other social networks.

Resilience

In crisis intervention, resilience refers to the “ability of an individual, group, organization, or even entire population, to rapidly and effectively rebound from psychological and/or behavioral perturbations associated with critical incidents, terrorism, and even mass disasters” (Everly, 2012, p.7).

Elements that Factor Resilience:

1. Actively facing fears and trying to solve problems
2. Regular physical exercise
3. Optimism
4. Having a moral compass
5. Promotion of social supports, friendships and positive role models
6. Being open minded and flexible in problem solving

The key purpose of crisis intervention is to support, stabilize, normalize, and build resilience. To that end, crisis intervention fosters but does not interfere with natural supports and recovery.

Special Issues in Crisis Intervention: When more may be needed

On occasion, more serious acute symptoms may develop in response to a traumatic event. Recognizing these symptoms is helpful to decide when a referral may be needed. Individuals exposed to Critical Incidents may have histories of mental health concerns that may worsen during the immediate crisis, or in the short/longer term timeframe.

Common Traumatic Reactions (Acute)

The initial reaction to acute traumatic stressors are often shock, disbelief and a strong need to restore some type of equilibrium. Often an immediate sense of being numb, dissociated, and time “standing still” or slowing occurs. Extreme reactions can be Acute Stress Disorder, where the individual initially is numb, then becomes flooded with intense anxiety, flashbacks, nightmares, depersonalization, derealization, anhedonia, and denial/avoidance. In an extreme case, Brief Psychotic Disorder can occur, wherein the individual loses contact with reality and develops delusions, hallucinations, incoherence and disengaged or catatonic behavior. A total delusional denial of the event can occur. Children may regress to earlier developmental functioning (bed wetting, clinging to caretakers) and emotions may swing eventually from intense fear, anger, and sadness to numbing emptiness.

Common Traumatic Reactions (Chronic)

Bereavement refers to the common reaction to loss, usually of a significant other. The other common term is Grief. Even an expected loss can be traumatic, and normal reactions include sadness, emptiness, sleep disturbances, loss of appetite, moodiness, irritability, social withdrawal and temporary disruption of “normal” activities. The dysphoria tends to come in waves and is associated with the lost person or activity (job). Positive recollections are mixed with feelings of sadness, and these reactions tend to balance over time. While the individual may have thoughts of joining deceased or have fantasies of restoration, full suicidal thoughts are not usually seen. Everyone grieves at their own pace, and there is no timetable for “getting over it”. The quality of coping with the loss changes over time.

Common Traumatic Reactions (Chronic)

Major Depression occurs when deep sadness or loss of pleasure in activities (anhedonia) presents for at least two weeks and is accompanied by highly negative thoughts (self-blame, worthlessness, excessive guilt) and biological symptoms of sleep, appetite and energy disturbances. Loss of mental focus and suicidal thoughts are also present. Major Depression is not simply tied to the loss or trauma, but spreads out into overall self-perception, where deep suffering and loss of hope develop. Major Depression is highly associated with completed suicide, with overall estimates of 10% mortality.

Common Traumatic Reactions (Chronic)

Persistent Complex Bereavement Disorder (with or without traumatic loss) is offered in DSM-5 as another possible loss/trauma disorder. Here, after the death of a significant other, the individual continues to be obsessed with the deceased for at least 12 months after the death. Here, the person who died becomes a life focus to the exclusion of personal identity and functioning. The death is not accepted, positive memories are not incorporated, bitterness, anger, withdrawal from other social connections, a loss of future goals/planning and avoidance of reminders of the loss are noted. A major risk for this disorder is a dependent relationship on the deceased or the loss of a child. Prevalence is 2.4 – 4.8%.

Common Traumatic Reactions (Chronic)

Post Traumatic Stress Disorder occurs when the impacts of the traumatic event become sealed in a person's reactions. After an exposure to a traumatic event or events, there are four major sets of symptoms which can slowly emerge over the course of six months: 1) intrusive recollections (flashbacks, nightmares), 2) persistent avoidance of triggers associated with the trauma, 3) negative alterations in mood/cognition such as amnesia numbing, detachment, anhedonia, 4) alterations in arousal and reactivity (exaggerated startle response, hypervigilance, reckless or self-destructive behaviors). For children, re-enactment in play and regression to earlier developmental levels is seen with temper tantrums, withdrawal, clinging as symptoms. Risk for PTSD is associated with biological, psychological and social factors prior to trauma, and recovery is associated with ability to use supports. The prevalence is 8.7% in the U.S., with symptoms in most individuals slowly reducing over months and years. However, persistent PTSD may occur in 5-10% of those diagnosed.

Other Types of Reactions to Loss/Trauma

While all persons experience loss and trauma, each person's own unique biopsychosocial and cultural background greatly influences how these stressors are experienced. There is no "right" or "wrong" reaction. Anxiety, sadness, anger and temporary loss of normal functioning is not unusual. A failure to openly express emotions is also not unusual, and should not imply that the individual is reacting badly. It is necessary to connect with an individual and dialogue with them without imposing any assumptions about how they "should" react. When severe symptoms emerge as noted above, professional assessment may be warranted.

Special Issue: Suicide Risk and Assessment

- Suicide is defined as the intentional taking of one's own life
- Suicide kills approximately 42,000 persons each year in the U.S. (CDC, 2014)
- Crisis events can increase suicide risk in vulnerable individuals (e.g., those with pre-existing mental health concerns)
- Suicides may increase after a natural disaster (the population rate after Hurricane Katrina increased from 9/100,000 to 21-28/100,000 by 2005)

THE BIG LIE

If you ask someone if they are thinking of killing themselves, it will cause them to do it.

NOT ASKING INCREASES RISK

ASK

“Have you been thinking of hurting or killing yourself?”

If yes, use the C-C-D-R Crisis Intervention. (Everly, 2015)

1. Clarify: “Do you really want to die, or do you simply want to change your life?”
2. Contradict:
 - Suicide is a permanent solution to a temporary problem
 - Suicide will damage others by creating “permission effect”
 - Suicide is a reaction to hopelessness; help is available
3. Delay: This is not a time to decide this.
4. Refer: Always refer for mental health assessment

Special Issue: Burnout in Crisis Responders

Called “Compassion Fatigue”, this syndrome reflects a psychological breakdown in the ability to maintain effectiveness in service. May show up as irritability, depression, fatigue, pessimism, procrastination, sleep disturbance, and substance use.

How to Burnout Well

(Everly, 2015)

1. Be a perfectionist, accept nothing less
2. Never exercise
3. Remember: the glass is half empty
4. Never eat breakfast and load up on junk food
5. Blame all of your life failures on everyone else, your parents, your boss, the government, etc.
6. Accept responsibility for everyone all the time
7. Control everyone and everything at all times
8. Sleep as little as possible
9. Feel guilty and never take time off
10. Use drugs and alcohol to cope

A Better Plan

1. Physical exercise
2. Cognitive exercise
3. Meditation/relaxation response
4. Interpersonal support
5. Active optimism – positive attitude
6. Know your limits – respect yourself
7. Faith – something more than you

Questions And Discussion

EMERGENCY BEHAVIORAL HEALTH INTEGRATION IN EMERGENCY MANAGEMENT

Presented By:
Pennsylvania Department of
Human Services
Office of Mental Health and
Substance Abuse Services

- Effective and organized intervention
- Strives to stabilize emotions and reactions to a crisis or disaster
- When emotional health and welfare are threatened
- Survivor, family members, first responders and community



- Most people affected by crisis/disaster function normally within the stress of everyday life
- Reactions to disaster are normal and understandable



3 Types of Responses

Physiological

- Fatigue
- Headache
- Sleeplessness
- Increased heart rate

Cognitive & Intellectual

- Disorientation
- Inability to make decisions
- Confusion
- Intrusive thoughts
- Distorted logic, judgment, reasoning

Emotional & Behavioral

- Sorrow/sadness
- Grief
- Fear
- Irritability
- Shame
- Anger
- Lashing out
- Reckless behavior

- Prevents unnecessary disruptions of Emergency Response Operations
- Reduces the likelihood/occurrences of PTSD & ASD
- Contributes to the safety, security and comfort of those affected by crisis/disaster
- Contributes to community cohesion necessary for recovery

- PFA - Psychological First Aid
- DCORT - Disaster Crisis Outreach & Referral Team
- CCP - Crisis Counseling Program
- CISM - Crisis Incident Stress Management
- KCIT - Keystone Crisis Intervention Team
- NOVA - National Organization for Victim Assistance



Psychological First Aid (PFA)

- Establishes human connections in a non-intrusive, compassionate manner
- Enhances safety while providing physical and emotional comfort
- Calms and orients emotionally overwhelmed and distraught survivors
- Helps survivors identify immediate needs
- Gathers information as necessary
- Offers practical assistance and information to address immediate needs and concerns

Disaster Crisis Outreach & Referral Team (DCORT)

- Team of individuals trained in EBH interventions
- Assists individuals impacted by crisis/disaster
- Provides emotional support and therapeutic activities
- Eases stress, fosters compassionate presence, aids in community resilience
- On-scene interventions
- Deployed by county EMA and/or the county mental health authority
- Not all counties use the term DCORT to describe their EBH response teams

Crisis Counseling Program (CCP)

- Grant program offered through FEMA and SAMHSA after a Presidentially Declared Federal Disaster
- Assists individuals and communities in recovering from effects of natural & human-caused disasters
- Community based outreach & psycho-educational services
- Goal to return survivors to pre-disaster level of functioning
- Provides in-community disaster assistance

Crisis Incident Stress Management (CISM)

- Method of helping first responders and others involved with incidents that leave them emotionally and/or physically affected
- A process that enables peers to help their peers understand problems that might occur after an event
- This process also helps people prepare to continue to perform their services or in some cases return to a normal lifestyle

<http://www.icisf.org/about-us/>

Keystone Crisis Intervention Team (KCIT)

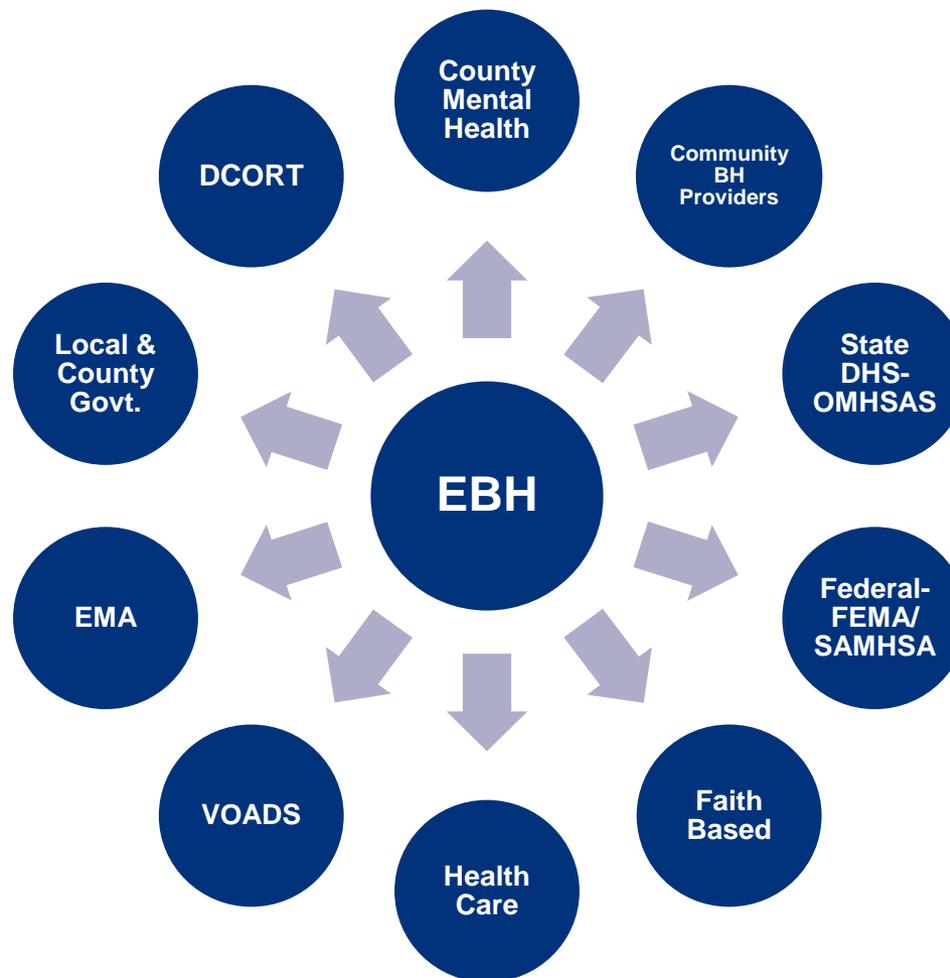
- Empowers local communities to support crime victims in recovery from traumatic incidents
- Activation: Official request made by person or agency having authority at the crime scene
- Toll-free 24/7 Hotline 855-SOS-KCIT or 855-767-5248

National Organization for Victim Assistance (NOVA)

- Private, non-profit membership organization of victim assistance and witness assistance professionals
- Assists individuals, groups and communities
- Develops, utilizes, and builds natural resources of strength and resilience in emotional aftermath of disaster
- Response dependent upon community invitation
- Values of NOVA: compassion, accountability, collaboration, and passion

EBH Needs:

- Survivors, families & friends, and communities at large have different EBH needs during different phases of crisis and disaster
- No single source can address all necessary services & needs
- Awareness of community partners and assets and planning in advance for collaboration is a necessary part of an EBH Plan



VOADS – Voluntary Agencies Active in Disaster Examples:

American Red Cross	Salvation Army	Lutheran Disaster Relief	Mennonite Disaster Services & UMCOR	Team Rubicon
<ul style="list-style-type: none">• EBH/PFA• FAC• Shelter/ Mass Care	<ul style="list-style-type: none">• Food Canteen	<ul style="list-style-type: none">• Child Care• Spiritual Care• Long Term Recovery	<ul style="list-style-type: none">• Recovery• Rebuilding• Community Development	<ul style="list-style-type: none">• US Military Veterans• Self-contained to clean up & re-build



- Use preparedness events to promote EBH educational readiness and awareness
- Discuss EBH planning needs in advance
 - FAC logistics
 - Quiet rooms
 - Training
 - Procedures

Prior to Event

During Event

- Type of response
- Determination of teams/responders
- Logistics
 - Child Care
 - Resources and resource materials
 - Counseling
 - Spiritual care, etc.

- EBH referrals
- Community meetings, memorials etc.
- Comprehensive Emotional Health (physical needs)
 - Economic/Social Service Benefits
 - Recovery/Re-building needs
 - Connection with collaborative services

Post Event

Three I's for Successful Integration

- IDENTIFY
- INVITE
- INTEGRATE



Identify:

- Utilize planning meetings to identify potential EBH needs and response protocols- Who, What, When & Where
- Familiarize yourself with available county resources and with the processes for requesting outside assistance
- Determine which response systems will be utilized for each potential event
- Design deployment protocols

Invite:

- County resources/teams to the planning table
- EBH training
- EBH teams to community meetings and AAR meetings
- EBH teams to participate in trainings and exercises

Importance of inviting EBH teams to trainings and exercises:

- Increases EBH team knowledge of the roles of other disaster responders
- Increases knowledge of other responders about EBH concerns and capabilities
- Keeps teams connected, ready, and motivated
- Strengthens relationships

Integrate:

- Formalize plans to include EBH response in the County Emergency Operations Plan
- By integrating the response, survivors will receive a spectrum of assistance not confined to one discipline
- Consultation services and assistance available through DHS OMHSAS EBH Program
- Robyn Kokus 717-510-8563 or rkokus@pa.gov

- www.paprepared.net





Risks: Avoid Making a Bad Day Worse



Troy Neville, MS, CEM, CBCP, ISO 22301 LI, FO-III, ISO
2016 Pennsylvania Emergency Management Conference

Abstract

- Emergency Management, Business Continuity, COOP and Risk Management are all in the bad day business. Causes and contributing factors of bad days can usually be grouped into four broad categories: hidden or ignored risks, incorrect assumptions, risk controls and plans not covering the worst-case, and ineffective incident or crisis management.
- In this session we will explore real world events to highlight changes that should be incorporated into continuity and response plans to try to avoid making a bad day worse.

Troy Neville, MS, CEM, CBCP

- 25+ years: information technology, business continuity, fire rescue, emergency management, disaster response



- Certified Business Continuity Professional (CBCP)
- DRII Instructor



- Certified Emergency Manager (CEM)



- ISO 22301 Lead Implementer



- Fire Officer III
- Fire Service Instructor II
- Incident Safety Officer

Troy Neville, MS, CEM, CBCP

CURRENT

- DRII Instructor
 - Millersville University - CDRE
- Business Continuity Process Manager
 - Top 10 U.S. Bank
- Facility Vulnerability Assessment Team
 - SCTF-BI&I
- Deputy Emergency Management Coordinator
 - Manheim Township
- EOC Volunteer
 - Lancaster County EMA

PREVIOUS

- Technical Specialist/Engineer/Firefighter
- Communications, Damage Assessment Officer, EPLO
 - American Red Cross
- Information Technology

EDUCATION

- M.S. Emergency Management
 - Millersville University

About CDRE

Millersville University
SEIZE THE OPPORTUNITY



Center for Disaster Research & Education

www.millersville.edu/cdre

- Master of Science:
Emergency Management
(MSEM) - Online
- Master of Social Work/MSEM
Joint Degree
- Minor in Environmental
Hazards and Emergency
Management
- Research funded through:
 - National Science Foundation
 - FEMA
 - PEMA

Poll: Which best describes what you do?

1. Private sector business continuity/coop
2. Private sector health/safety/security
3. Public sector business continuity/coop
4. Public sector health/safety/security
5. Fire/EMS/Hazmat/Law enforcement
6. Health care (public or private)
7. Emergency management (public or private)
8. Other

Risk Management and Business Continuity/COOP/EM

Risk management and
business continuity
are in the
“bad day” business

Bad Days Are Inevitable



The Bad Day Business

- Prevent bad days where we can
- Prepare for the bad days we cannot prevent
- Mitigate the impact bad days can have
- Respond to bad days when they happen to:
 - Keep people safe
 - Sustain critical operations
 - Stop the bad day from getting worse
- Recover from bad days to make things as close as we can to the way they were

Tomorrow could be a bad day

Resilience is often overestimated

People can be the weakest link

Risk Management and Business Continuity/COOP/EM

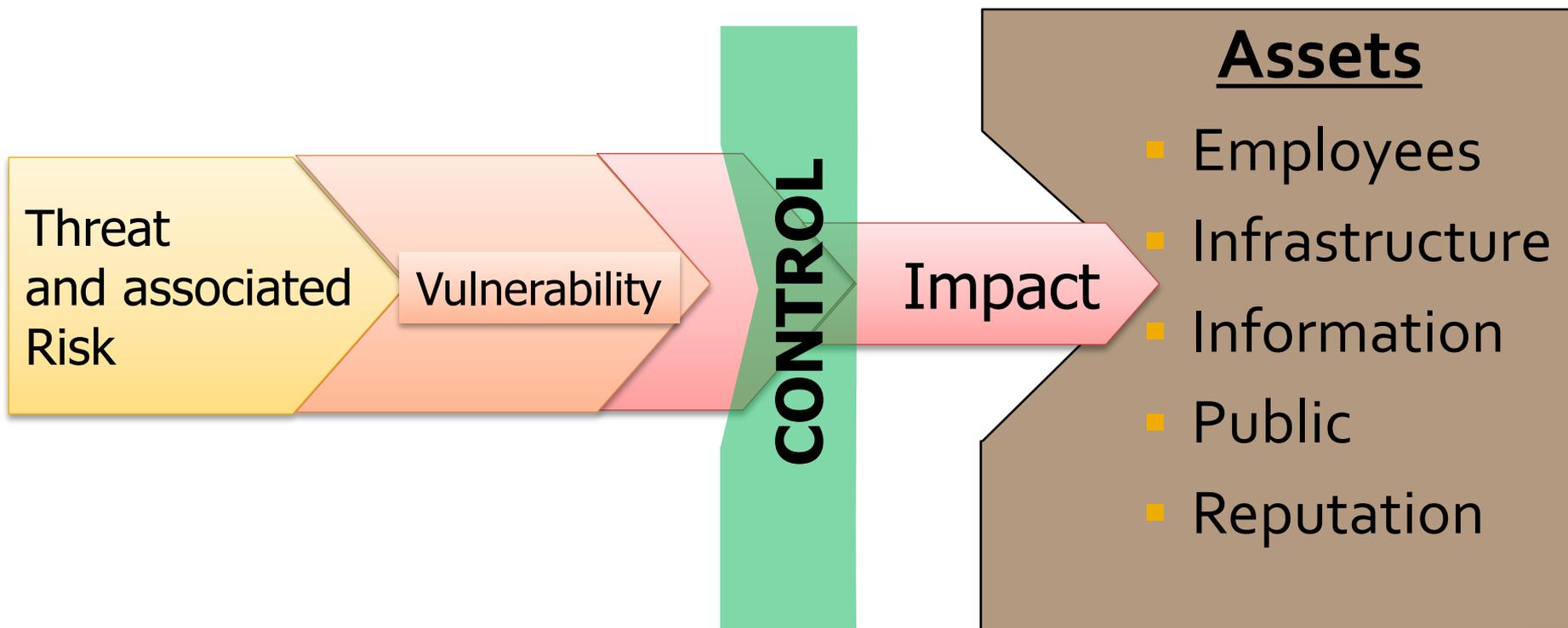
- Risk management and business continuity are in the “bad day” business
- Bad days are inevitable
- Tomorrow could be your next bad day
- Resilience is often overestimated
- People can be the weakest link

...yet bad days still happen - sometimes with catastrophic consequences

Some definitions

- **Vulnerability** - is a weakness or susceptibility to damage or harm
- **Risk** - Potential for exposure to loss which can be determined by using either qualitative or quantitative measures
- **Threat** - A combination of the risk, the consequence of that risk, and the likelihood that the negative event will take place

Risk Management and Business Continuity



Risk Management Business Continuity

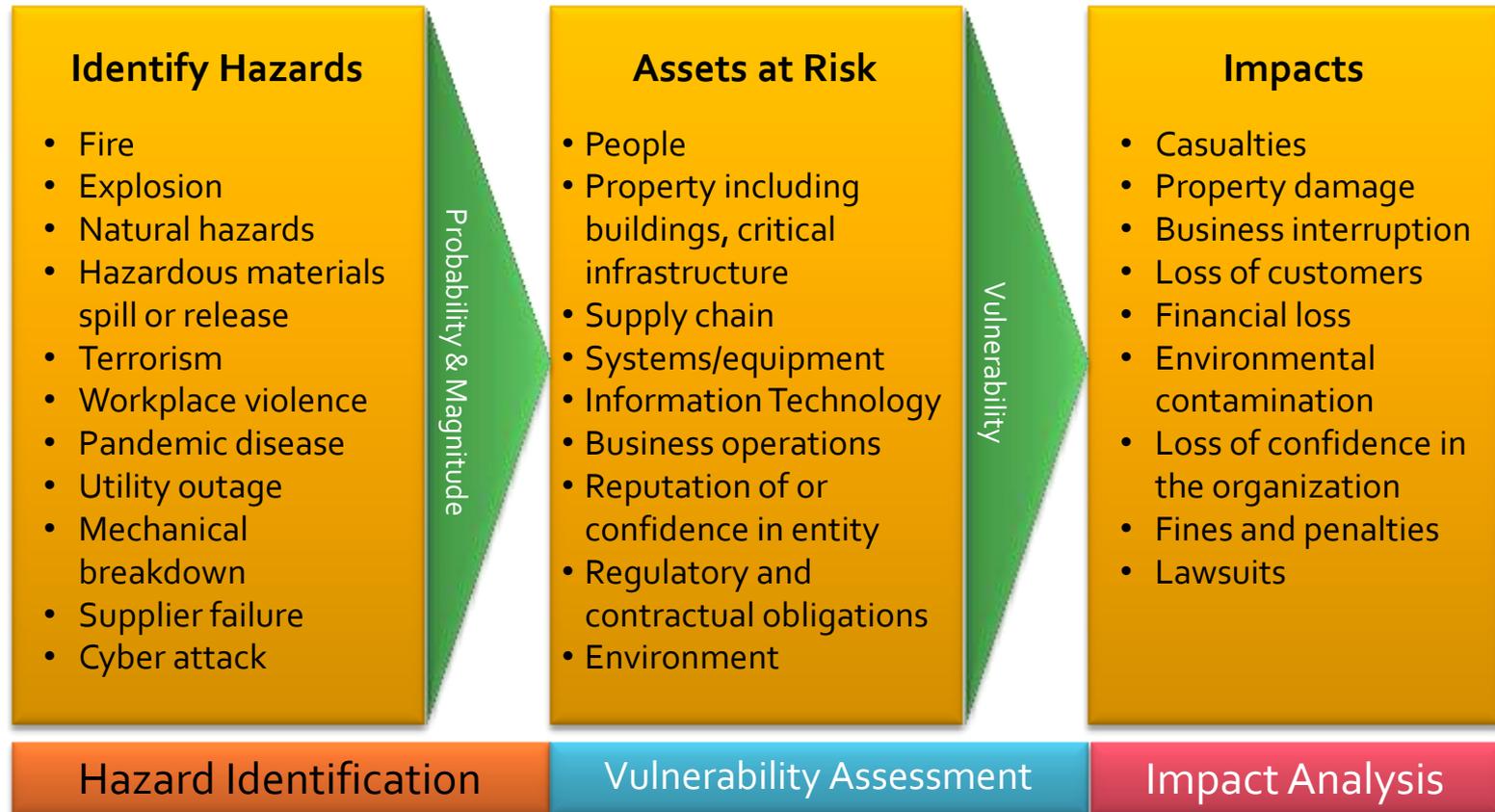
- Prevention
- Mitigation
- Response
- Recovery

Impact - Control exceeded

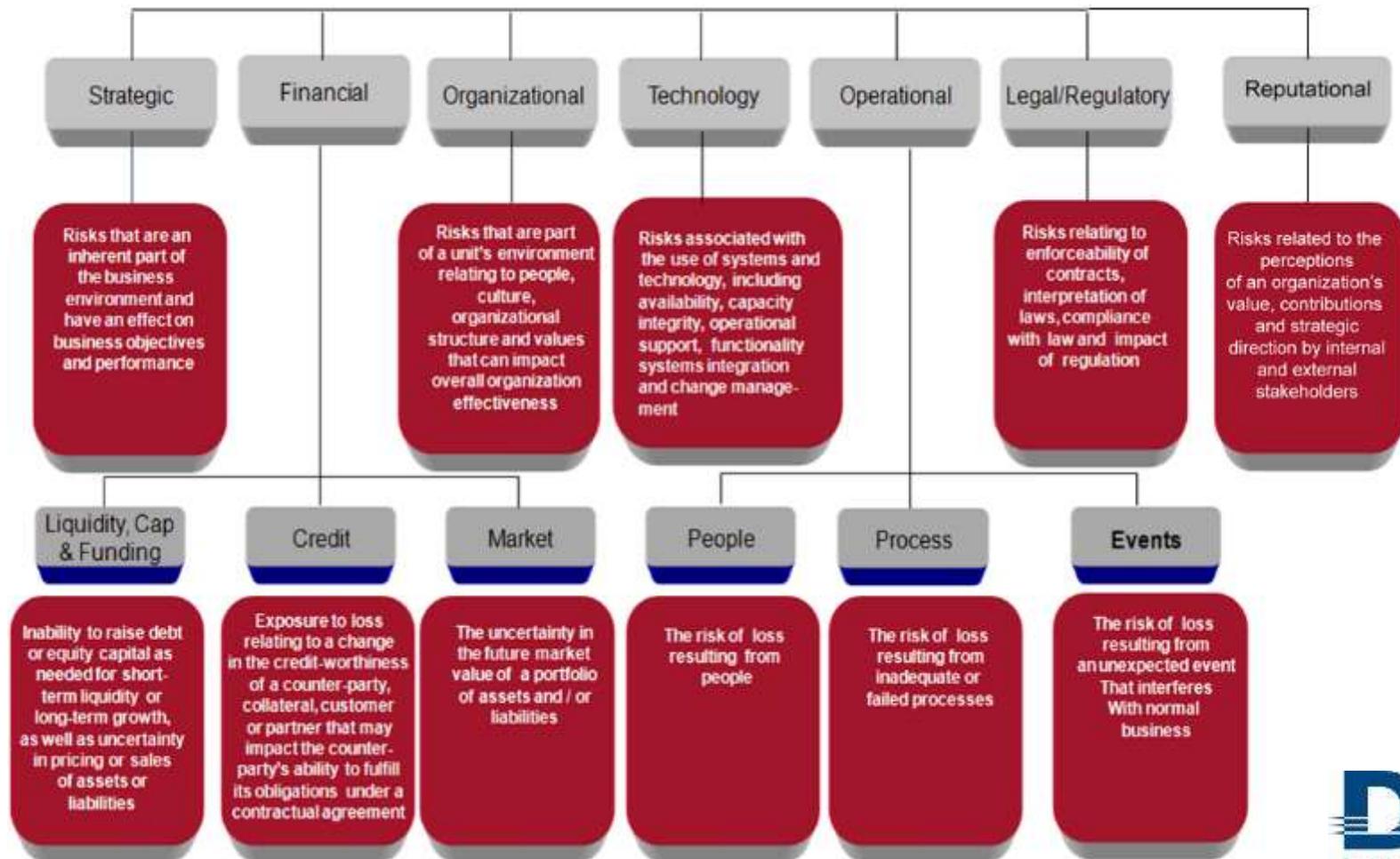


The Tennessean

Risk Assessment Process



Impacts to consider



Risk Assessment Process – Issues

- Impacts
 - Difficult to quantify
 - Lack of historical data on impacts
 - Should be based on worst case
- Probability and Magnitude
 - Reliable probabilities do not exist for all risks
 - Low probabilities often ignored

What can make a bad day worse?

1. Hidden (or ignored) risks
2. Incorrect (or deficient) assumptions
3. Controls and plans not covering worst-case scenario
4. Ineffective incident or crisis management
[response risk]

1. Hidden or Ignored Risk

1. Hidden (or ignored) risks

- Simple mistakes can have catastrophic impacts
- Risks can be 'hiding' in plain sight
- How many risks are truly hidden?

Simple mistakes

What would you do if a low water warning light is displayed on your car dashboard?

Dana Corporation – June 2007

1. Hidden or ignored risks



State of Tennessee - DLWD

Hidden Risks?

- 2005 – Hurricane Katrina
- 2008 – Financial crisis
- 2009 – Toyota accelerator pedal
- 2010 – BP Deepwater Horizon disaster
- 2011 – Fukushima Daiichi nuclear disaster
- 2012 – Paulsboro NJ train derailment
- 2014 – GM ignition switch recall
- 2014 – Elk River WV chemical spill
- 2014 – Dallas TX Ebola crisis
- 2015 – Flint MI water crisis
- 2015 – Takata airbag recall

'Hidden' Neighborhood Dangers

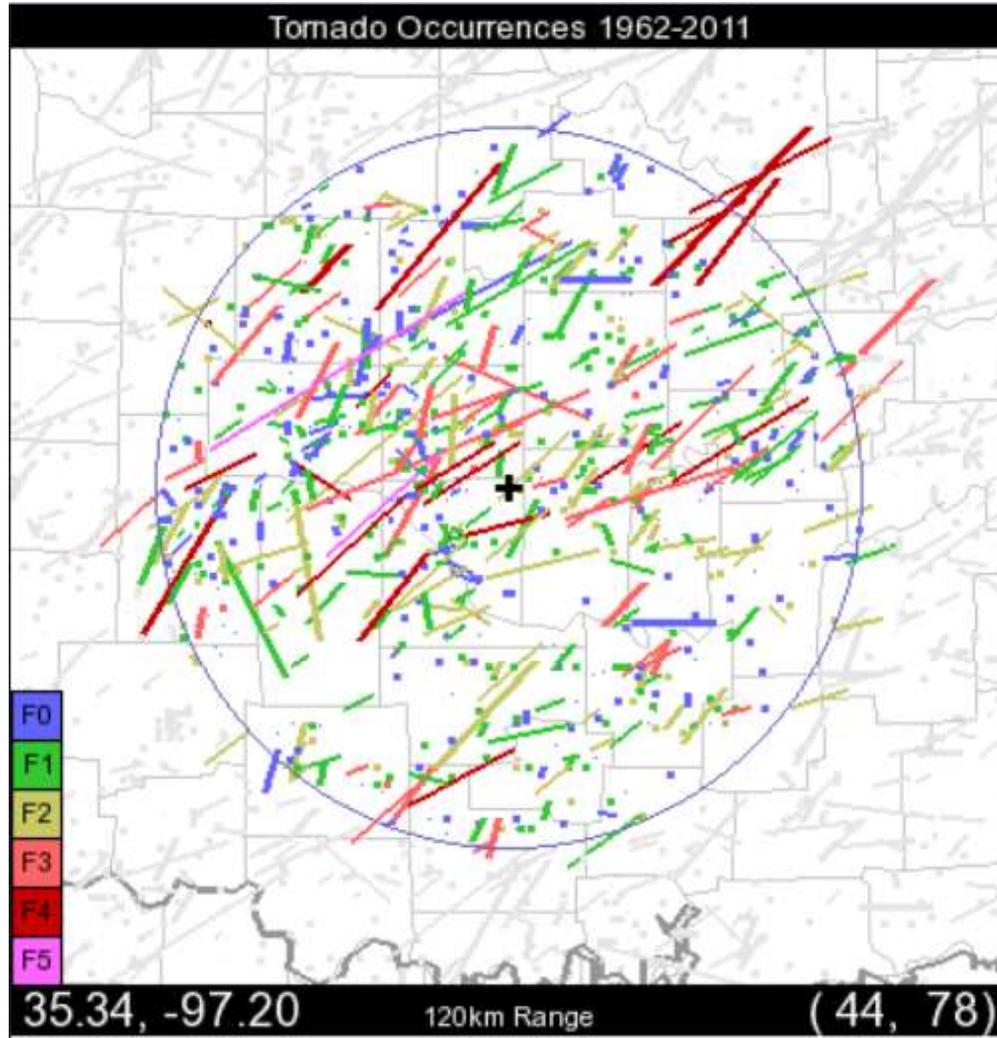
2013 WEST, TEXAS

- 30 tons ammonium nitrate
- Development occurred closer to plant
- Explosion 20 minutes after 911 call reporting fire
- 15 dead, 200+ injured

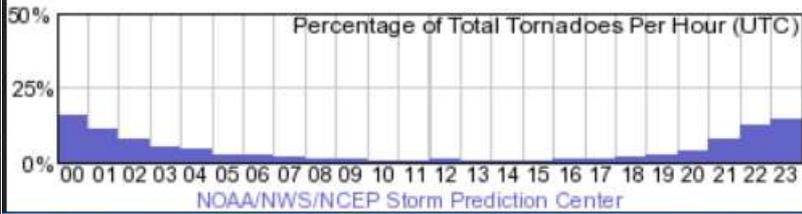
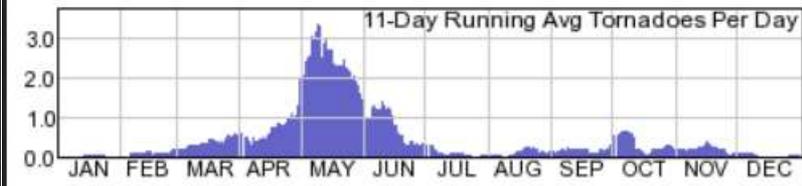


Tornados – Oklahoma City Area

1. Hidden or ignored risks

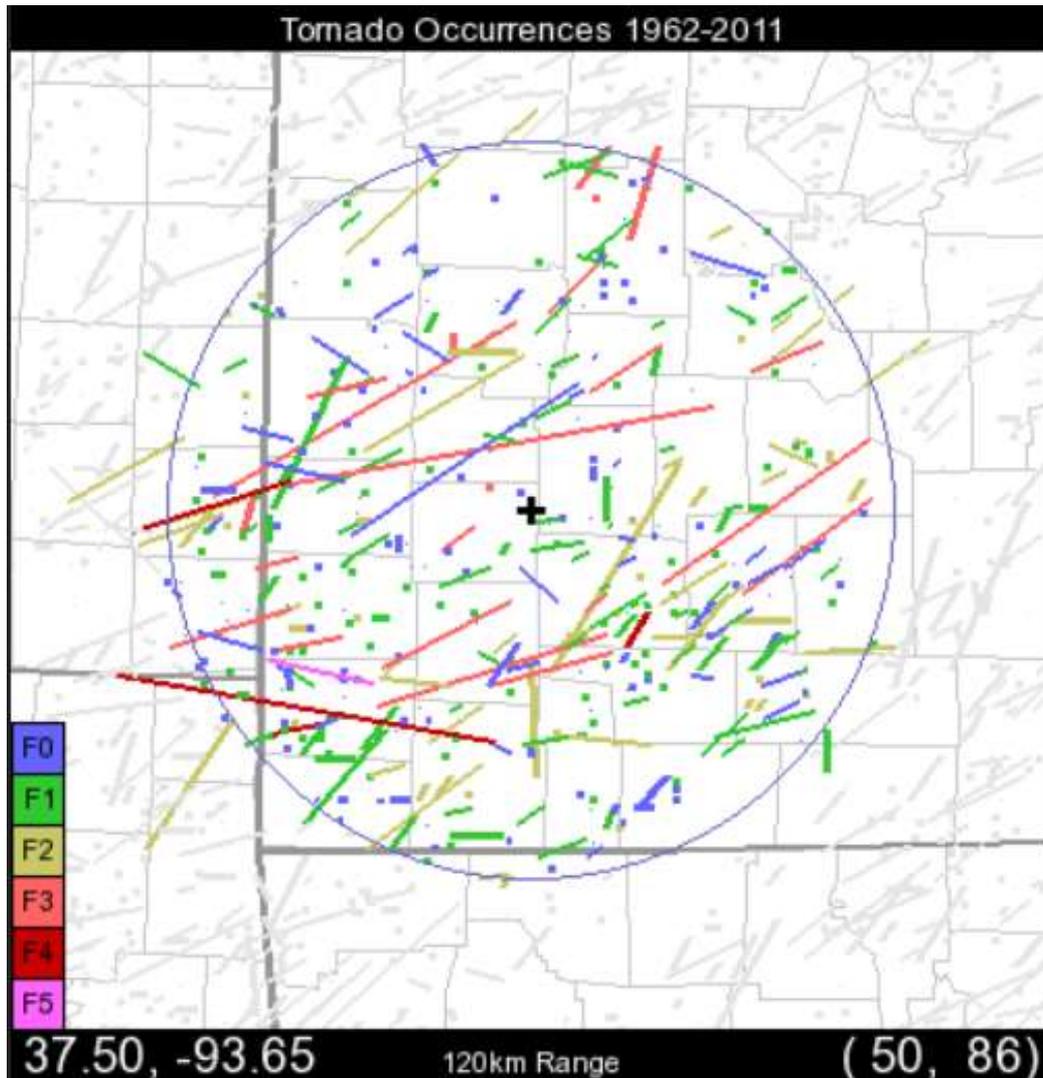


Scale	Num	Fat	Inj	PLen	Area	DPI
F0	324	0	2	367.45	17.7	17.7
F1	288	3	58	858.86	104.1	208.2
F2	163	2	207	935.06	186.7	560.0
F3	50	20	347	641	190.9	763.5
F4	19	37	734	439.05	213.7	1068.7
F5	2	45	764	100.1	93.2	559.0
TOT	846	107	2112	3341.5	806.2	3177.0

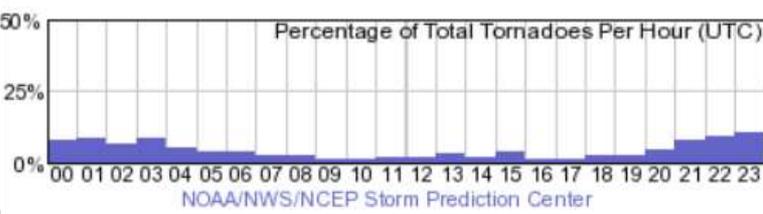
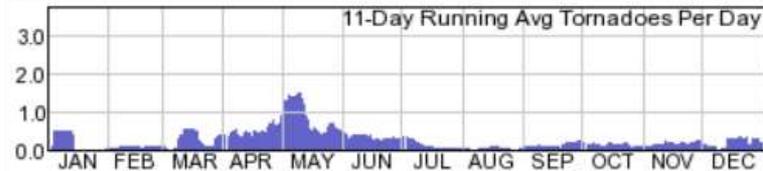


Tornados – Southwest MO

1. Hidden or ignored risks



Scale	Num	Fat	Inj	PLen	Area	DPI
F0	184	0	14	352.2	16.5	16.5
F1	178	3	82	618.92	55.2	110.5
F2	69	8	157	592.82	67.2	201.7
F3	22	30	316	523.39	142.5	570.0
F4	5	30	471	140.41	102.7	513.3
F5	1	158	1150	21.62	19.7	117.9
TOT	459	229	2190	2249.4	403.7	1529.8



Joplin MO – May 2011

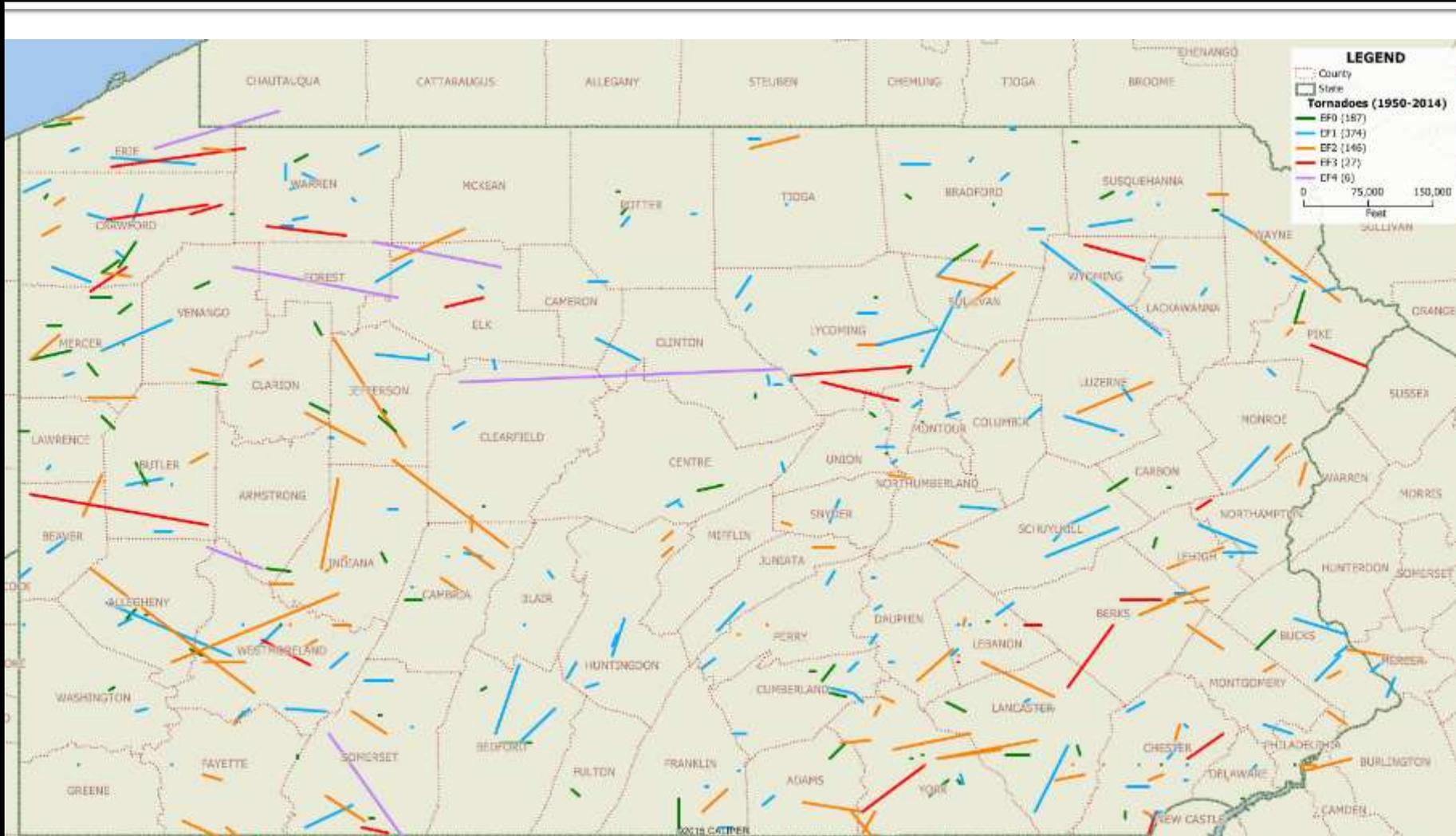


EF-5

200
mph
winds

740 PA Tornadoes (1950-2014)

1. Hidden or ignored risks



Tornado Threat

- Are you doing enough to protect your employees?
 - Wireless Emergency Alerts awareness?
 - Shelter areas identified?
 - Posters in lunch rooms?
 - Follow-up: did they actually take shelter?
 - Disciplinary action for failure to take shelter?

Long Island, NY – February 2014

1. Hidden or ignored risks

What kind of risk management thinking?

1. Hidden or ignored risks



What kind of risk management thinking?

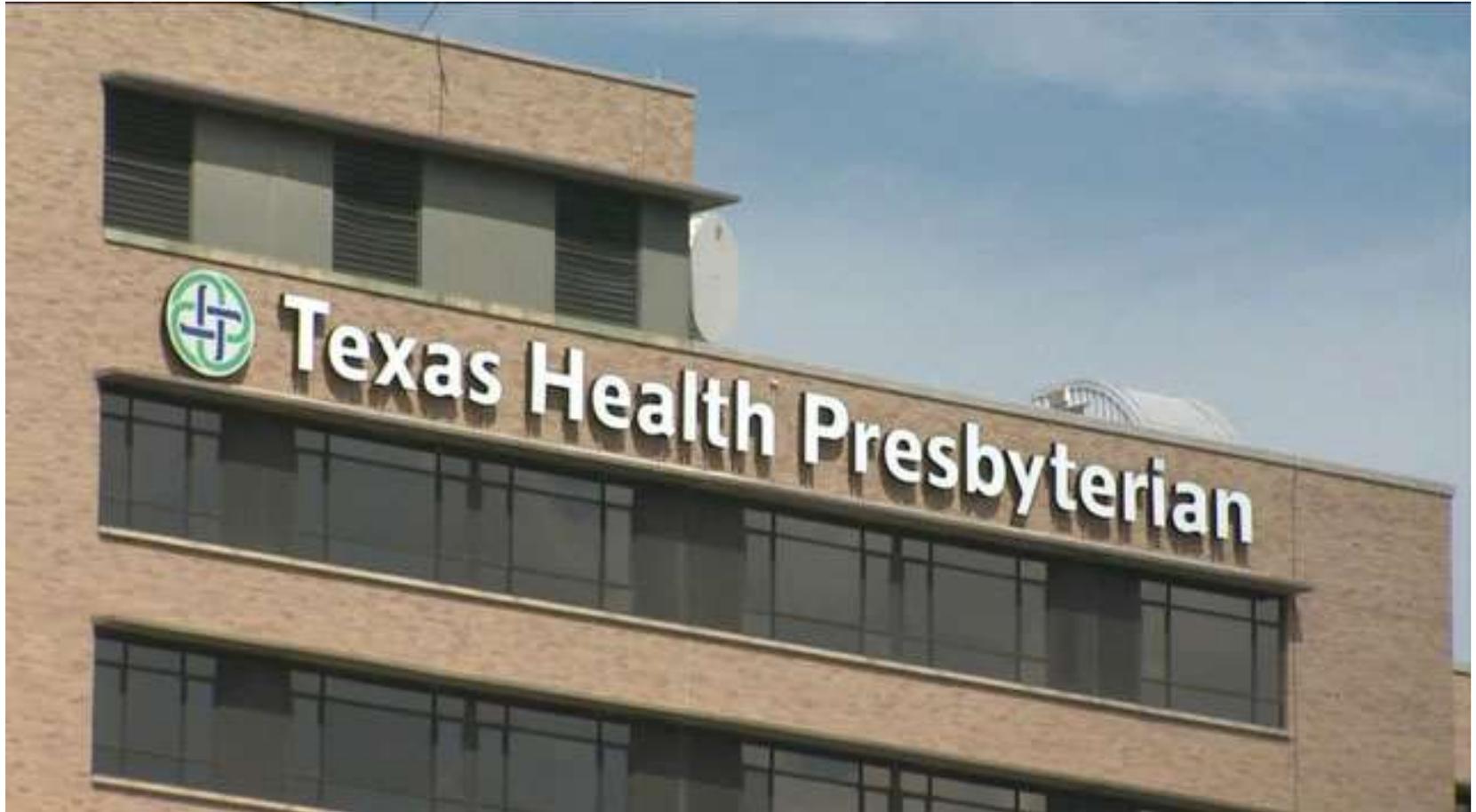
“TRADITIONAL” THINKING

- CO detectors not required by code
- Systems serviced and inspected annually – what could go wrong?
- Wait for a bad day

RM/BC THINKING

- Employee safety #1
- CO is a real risk
- Install CO detectors to prevent a bad day
- Inspect/test CO detectors to make sure they work
- Do not allow vendors to tamper with detector
- Train staff on what CO alarm is and what to do

Culture of Risk Management?



1. Hidden or ignored risks

The Near Miss

A near miss is an opportunity for you and your organization to prevent a future bad day



US Navy Safety Center

The Near Miss – a missed opportunity to prevent a bad day

- May precede or foreshadow a future bad day
- Some accept risk if good outcomes over time
 - “Everything went well, just like last time!”
 - “No one was hurt, another success!”
- Others have outcome bias
 - Focus on good outcome not potential risks in process
 - “See, it worked. You worry too much!”



Recognize and Learn From Near Misses

- Heed high pressure situations (time/cost)
- Learn from deviations from expected outcomes
- Uncover root causes
- Demand accountability
- Consider worst-case scenarios
- Evaluate projects/responses at every stage
- Reward owning up

“How to Avoid Catastrophe.” Tisley, Dillon and Madsen. Harvard Business Review. April 2011.

1. Hidden (or ignored) risks

- Risks can be 'hiding' in plain sight
 - Employee awareness
 - Effective communication
- Risk management culture
 - "See Something, Say Something"
 - Responsive and involved top management
- Near miss: opportunity to prevent a bad day
- Learn from the mistakes of others – don't wait until it happens to you

2. Incorrect (or deficient) assumptions

2. Incorrect (or deficient) assumptions

- Probability
- Consequence
- Workforce availability
- Time of day
- Duration
- Communication
- Utilities
- Geographic impact
- Supply chain/IT vendors
- People

Probability: 100 Year Flood

2. Incorrect or deficient assumptions

Historical Crests for Red River of the North at Fargo

(1) 40.84 ft on 03/28/2009

(2) 39.72 ft on 04/18/1997

(3) 39.10 ft on 04/07/1897

(4) 38.81 ft on 04/09/2011

(5) 37.34 ft on 04/15/1969

(6) 37.13 ft on 04/05/2006

(7) 36.99 ft on 03/21/2010

(8) 36.69 ft on 04/14/2001

(9) 35.39 ft on 04/09/1989

(10) 34.93 ft on 04/19/1979

(11) 34.41 ft on 04/02/1978

(12) 33.31 ft on 05/01/2013

(13) 33.26 ft on 07/04/1975

(14) 30.88 ft on 06/09/2007

Eight 100-year floods
in 17 year span

Consequence: When the worst-case happens

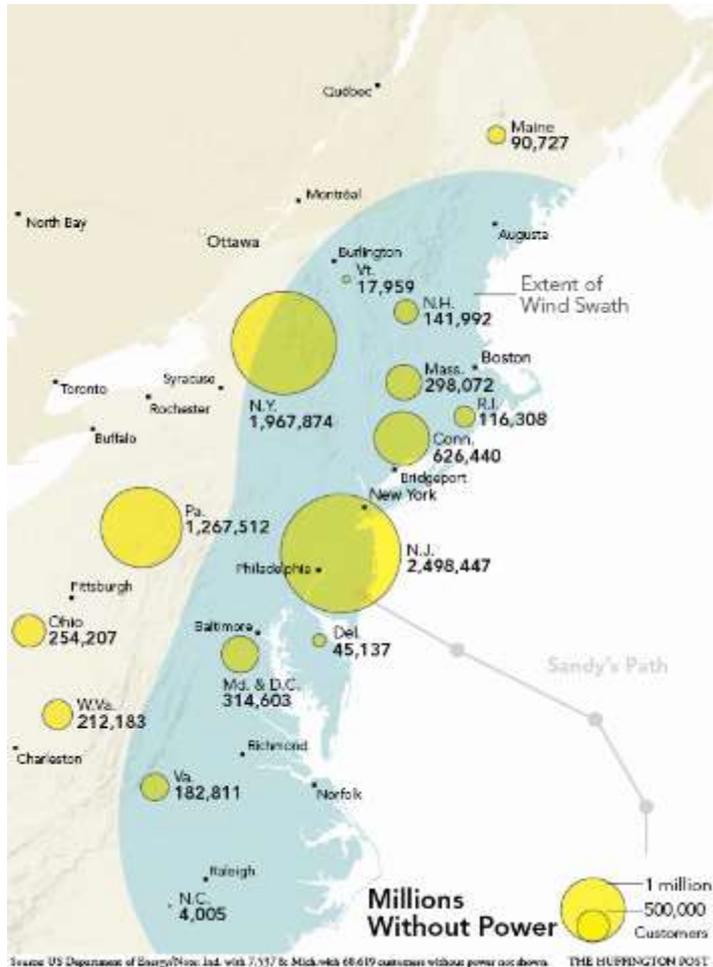


Verizon Main Office
140 West Street, New York

- 5 sub-levels
- Cable vault flooded
- Generator fuel tanks and pumps below ground – failed
- Some customers outages lasted 2 weeks

Workforce Availability

2. Incorrect or deficient assumptions



- Work from home dependencies
- Home disaster – family comes first
- Key personnel not available
- Reduced staffing levels

Time of Day

Do your plans
and exercises
assume that
a disruption
will occur at the
worst possible
time?



Duration

2. Incorrect or deficient assumptions

THREAT OF DISRUPTION

- Power
- Water/Sewer
- Internet
- Flood
- Earthquake
- Chemical spill
- Pandemic

Duration of event and resulting impact and disruption

THREAT OF DISRUPTION

- Power
- Water/Sewer
- Internet
- Flood
- Chemical spill
- Pandemic

DURATION

- 1 hour
- 2 hours
- 4 hours
- 12 hours
- 24 hours
- 2 days
- 3 days
- 1 week
- 2 weeks
- 6 months

Communication

- Power dependency
 - Wireless-only home phones
 - VOIP service
- Cell phone only
- Voice mail down
- Phone lines not forwarded
- Email reliance
- Notification system

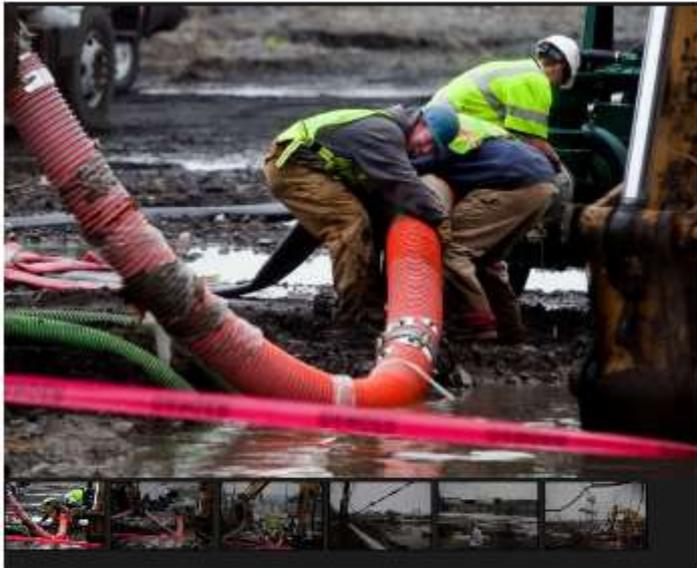
Utilities

Harrisburg workers await parts to fix broken water pipe that has closed Capitol, HACC

By The Patriot-News
Follow on Twitter

on April 19, 2011 at 12:56 PM, updated April 19, 2011 at 5:44 PM

Print



Harrisburg City crews work on repairing a water main break that has left buildings in the downtown area, including state government buildings, experiencing low water pressure. JENNY KANE, The Patriot-News

CBS Sacramento
Stockton Modesto

13
KVCN 1140
Good Day

Home News Sports Audio Video Best Of Events Health Traffic

BREAKING NEWS
Comcast & Verizon
Reporting Major Internet Outage

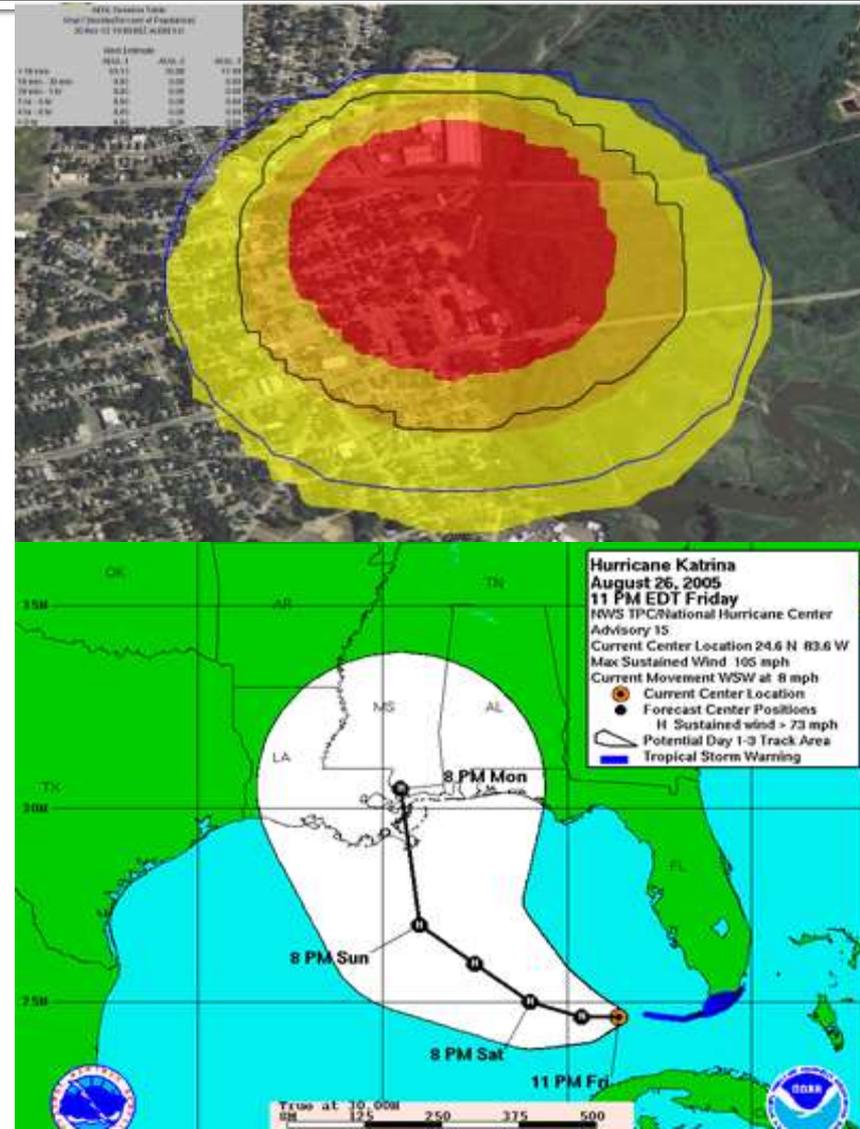
00:12:01:34

**Major Comcast, Verizon Outage
Affecting Internet Customers After Line Cut**

Geographic Impact

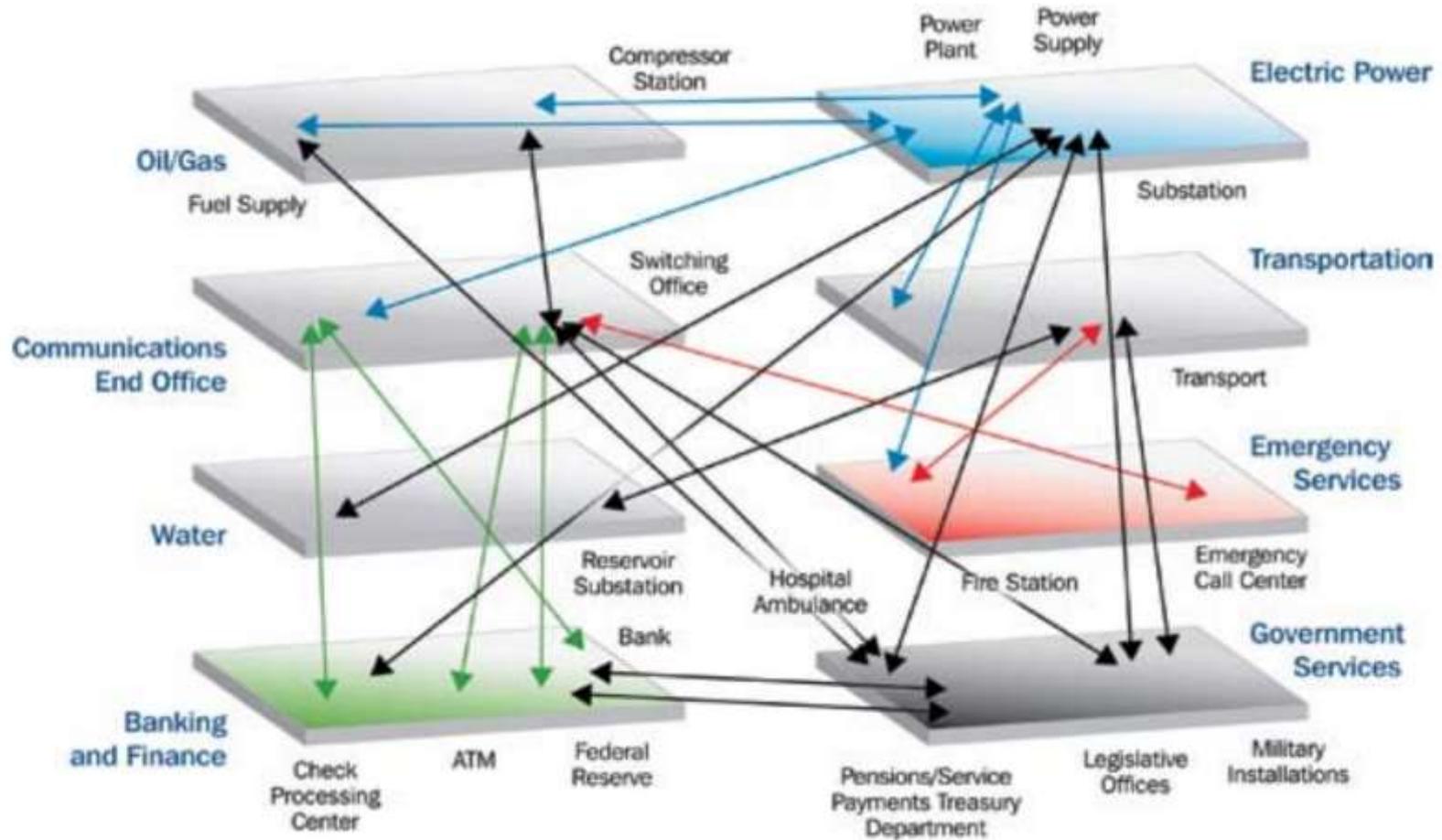
PROXIMITY TO IMPACT

- Company sites
- Employee homes
- Customer sites
- Critical vendor's site
- Recovery sites



2. Incorrect or deficient assumptions

Regional Impact



2. Incorrect or deficient assumptions

Vendors/Supply Chain

- Do you perform a vendor risk assessment?
- Do you review their BC plans?
- Do you review their BC/DR test results?
- Do they notify you if they have a disruption?
- Do you have alternate suppliers?

People

2. Incorrect or deficient assumptions



LOCAL / L.A. Now

Metro bus driver quarantined after passenger yells 'I have Ebola!'



An L.A. Metro bus passenger wearing a mask yells: "Don't mess with me, I have Ebola!"

By **Veronica Rocha**

Related Coverage



Sick passenger who prompted Ebola scare at LAX recently visited Africa

Oct. 12, 2014

People

People always:

- Do what is expected
- Do the right thing
- Do things the right way
- Follow procedures
- Put the customers first
- Put the company second
- Plan for the worst
- ?????????????????????????????????

2. Incorrect (or deficient) assumptions

- Assumptions telegraph:
 - What will cause a bad day
 - When plans will fail
 - What will make a bad day worse
- Low probability/catastrophic consequence events need greater attention (black swan event)
- Vendor/supply chain dependencies are risks that require treatment

3. Controls and plans not covering worst case scenario

3. Controls not covering worst-case scenario

- Second-guessing history
- Using budgets to dictate risk controls
- Ignoring worst-case or near worst-case

Gaylord Opryland Resort

3. Controls not covering worst-case



The Tennessean

Gaylord Opryland Resort

- Flood wall rated as 100-year
- USACE recommended 500-year flood wall
- Owner did not build – too costly
- 500-year flood occurred
- \$250 million loss



Opryland worker Jason Bowlin sits in a boat in the flooded parking lot of the Opryland Hotel in Nashville, Tenn., on Monday, May 3, 2010. After heavy weekend rains and flooding, officials in Tennessee are preparing for the Cumberland River, which winds through Nashville, to crest more than 11 feet Monday afternoon. (AP Photo/Mark Humphrey)

- Owner built **\$12 million 500-year flood wall**

“Fukushima was preventable”

The Fukushima accident was, however, preventable....

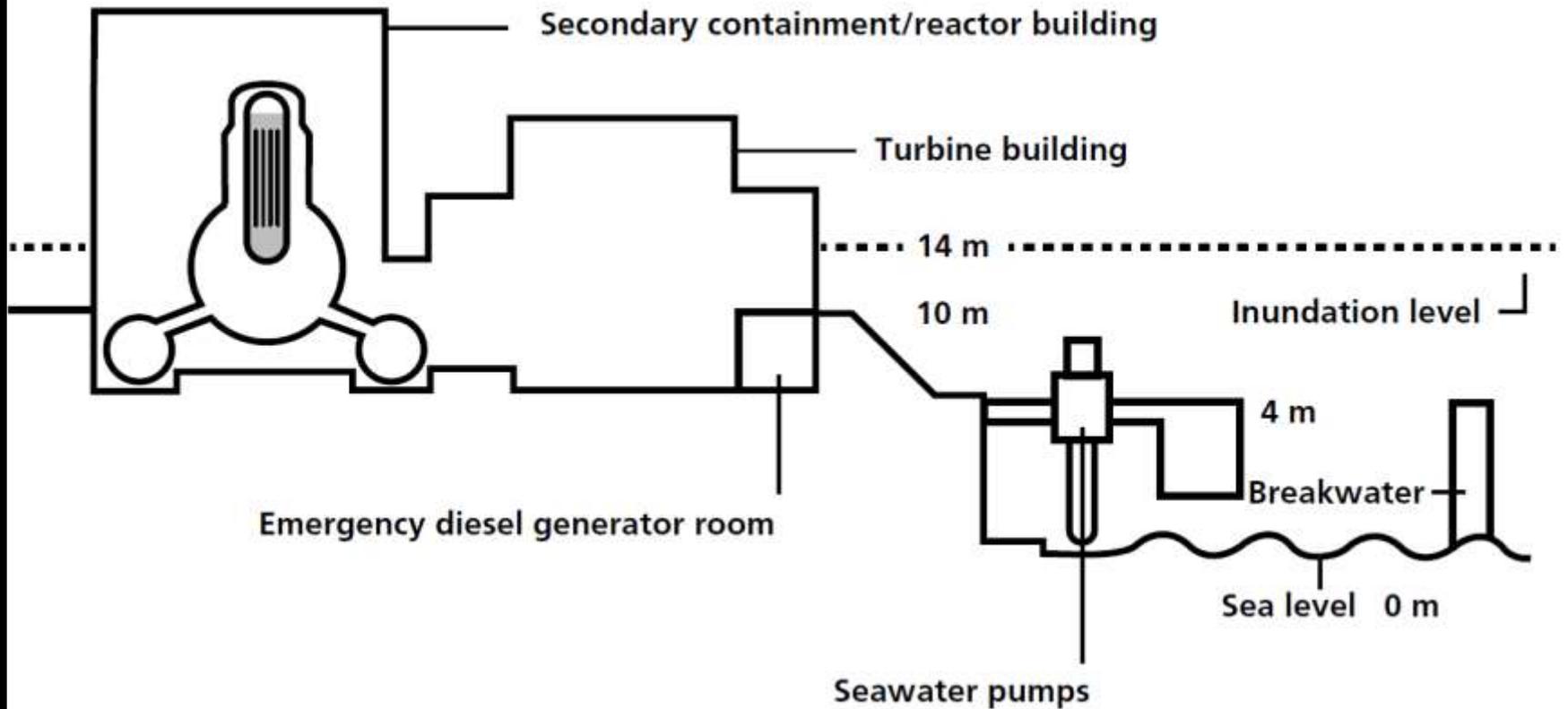
The methods used by TEPCO and NISA to assess the risk from tsunamis lagged behind international standards in at least three important respects:

- Insufficient attention was paid to evidence of large tsunamis inundating the region surrounding the plant about once every thousand years.
- Computer modeling of the tsunami threat was inadequate. Most importantly, preliminary simulations conducted in 2008 that suggested the tsunami risk to the plant had been seriously underestimated were not followed up and were only reported to NISA on March 7, 2011.
- NISA failed to review simulations conducted by TEPCO and to foster the development of appropriate computer modeling tools.

-Acton and Hibbs. Why Fukushima was Preventable. The Carnegie Papers. March 2012.

Plant Design

3. Controls not covering worst-case



Historical Data

- Fukushima Daiichi design-basis
 - 3.1 meter tsunami
 - Based on impact from 1960 Chile earthquake (9.5)
- Since 1498 (in and around Japan)
 - 12 tsunamis > 10 meters
 - **6 tsunamis > 20 meters**
- NISA and TEPCO didn't believe tsunami was a serious threat
- NISA now requires 15 meter seawalls

Cyber - Target

- HVAC vendor was source
- Remote access to Target payment processing system
- HVAC staff computer infected
- Credential information stolen
- Information used to exploit Target systems

Power Outage – August 2003

3. Controls not covering worst-case



Solar Storm Threat

Estimated power system impact from a Carrington-level event

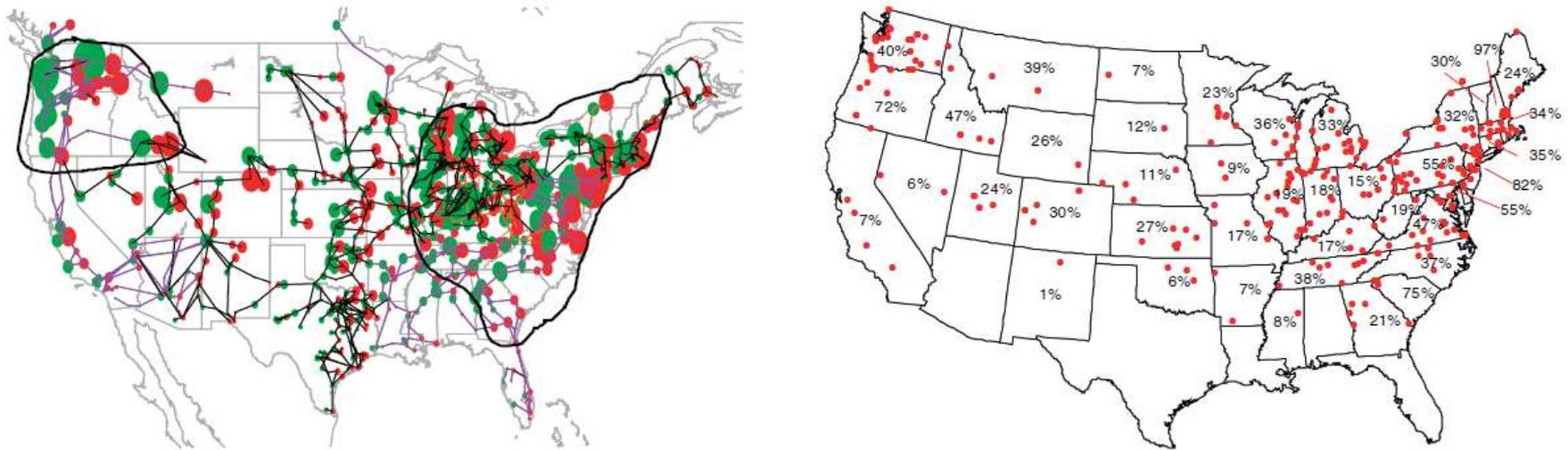


FIGURE C.3 (a; left) 4800 nT/min geomagnetic field disturbance at 50° geomagnetic latitude scenario. The regions outlined are susceptible to system collapse due to the effects of the GIC disturbance. The region impacted would be of unprecedented scale and involve populations in excess of 130 million. (b; right) A map showing the at-risk EHV transformer capacity by state for this disturbance scenario. Regions with high percentages could experience long-duration outages that could extend multiple years. Source: Geomagnetic Storms and Their Impacts on the US Power Grid. Metatech Corp. 2010

- Estimated probability of a Carrington-level event in next 10 years: 12%

Active Shooting

3. Controls not covering worst-case



Getty Images

3. Controls not covering worst-case scenario

Continuity plans are the risk control of last resort, what to do when the impact could not be prevented, to allow the organization to continue critical functions

3. Controls not covering worst-case scenario

- You are planning for bad days:
 - How bad of a bad day?
 - What assumptions do you make?
 - Do you understand the controls in place and their design limits?
 - Have you identified additional controls to cover worst-case?
 - If you don't plan for worst-case, what will you do if/when the worst-case or near worst-case happens?

4. Ineffective incident or crisis management

Response Risk

Emergency Response Plan

BEFORE ARRIVAL OF FIRST RESPONDERS

- Protect lives, property and environment
- Manage incident
- Situational awareness
- Direct employee actions
- Emergency communications
- Account for employees

AFTER ARRIVAL OF FIRST RESPONDERS

- Coordinate incident management with FR
- Account for employees
- Situational awareness
- Direct employee actions
- Initiate formal BC response plan
- Update stakeholders

Incident Response Plan

ISO 22301 8.4.2

- Identify impact thresholds
- Assess nature and extent
- Provide for welfare
- Initiate response
- Procedures for activation, operation and coordination of response
- Resource management
- Crisis communication

NFPA 1600 6.8

- Protective actions for life safety, property, operations, environment, and entity
- Warning, notifications and communication for response
- Resource management
- Crisis communication
- Donation management

4. Ineffective Incident or Crisis Management

- Lack of situational awareness
- Failure to manage risks during response
- Lack of subject matter expertise
- Crisis communication failures

Situational Awareness

4. Ineffective Incident Management



Situational Awareness



Lack of situational awareness

- Events are dynamic
- New risks emerge
- Existing risks change
- Strategies and tactics have to change to address risks and ensure incident priorities are being met



Sources of information

- Internal stakeholders
- External stakeholders
- Traditional media
- Social media
- Emergency services
- Subject matter experts
- Peer
- Have you engaged them pre-crisis?
- What can they provide?
- How can they be contacted?
- Do you have sufficient resources to monitor, gather, analyze and disseminate critical information?

Situational Awareness-Barriers

- Faulty perception
 - Novel situation
 - Lack of experience
 - Filter or silo effect
- Complacency
- Overload
- Fatigue
- Poor communication

Situational Awareness

Best Practices

- Build pre-event connections with sources and subject matter experts
- Dedicate a person or team to situational awareness
- Maintain the big picture
 - Current, emerging and changing threats
- Prioritize incoming information
- Continually evaluate if current status aligns with response objectives

Situational Awareness

Best Practices

- Develop standard format for effectively disseminating information
 - Not multiple reply all email chains in an hour
- Use same SA processes for all incidents and exercises to increase familiarity and proficiency

Situational Awareness Best Practices

KEY TAKEAWAY

Incident Response Team Situation Report

Event:			
Issued:	Date:		Time (24hr):

Incident Category:	
Level:	
Reason:	
Escalation:	No
Event Summary:	
Impacted Location or Business Unit(s):	
Impact (actual or expected):	
Employees:	
Customers:	
Facilities:	
Services:	
Financial:	
Reputational:	
Regulatory:	
Legal:	
IRT Structure:	
IRT Commander:	
IRT Participants:	
EOC:	
Bridge Line:	
IRT Activation:	Not Required At This Time – Stand-By – Activated – Stand Down
Actions Taken (since last update):	
IRT:	
[Location/Unit]:	
Security:	
Facilities:	
IT:	
HR:	
Legal:	
Corp Comm:	
Unmet Needs:	
IRT:	
[Location/Unit]:	
Security:	
Facilities:	
IT:	
HR:	

Legal:	
Corp Comm:	

Critical Information (since last update):	
[Source]:	
Response Priorities:	
[#1]:	
Responsibility:	
[#2]:	
Responsibility:	
[#3]:	
Responsibility:	
Planned Actions:	
IRT:	
[Location/Unit]:	
Security:	
Facilities:	
IT:	
HR:	
Legal:	
Corp Comm:	
Internal Communications:	
Intranet:	None
Mass Notification:	None
Email:	None
External Communications:	
Traditional Media:	None
Social Media:	None
Public Website:	None
Supplemental Information:	

Next Update:	
Prepared By:	



Failure to manage risks during response

Problem versus Crisis

PROBLEM

- Normal operations
- Daily
- Routine problem solving
- Focus on resolution
- Usually low level threat to organization

Problem versus Crisis

PROBLEM

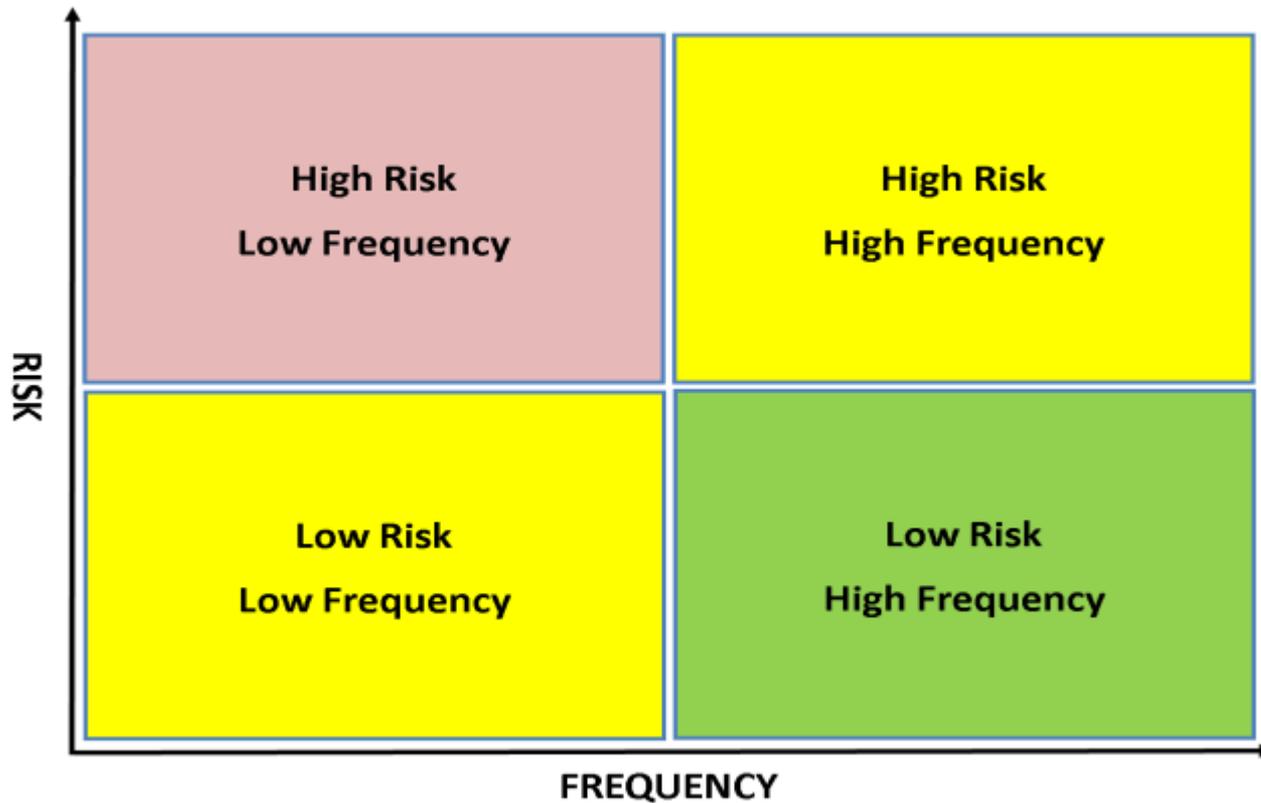
- Normal operations
- Daily
 - **High frequency**
- Routine problem solving
- Focus on resolution
- Usually low level threat to organization
 - **Low risk**

CRISIS

- Unexpected
- Non-routine
 - **Low frequency**
- Produces uncertainty
- Creates opportunities
- High level threat to organization
 - **High risk**

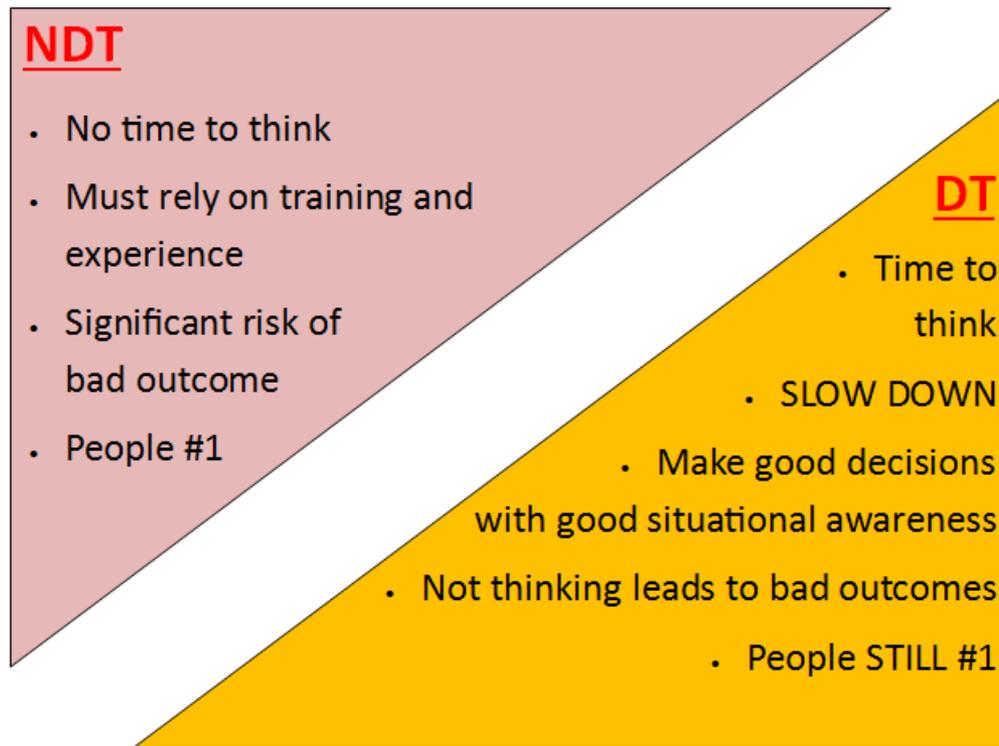
Risk Management - Response

Source: Gordon Graham



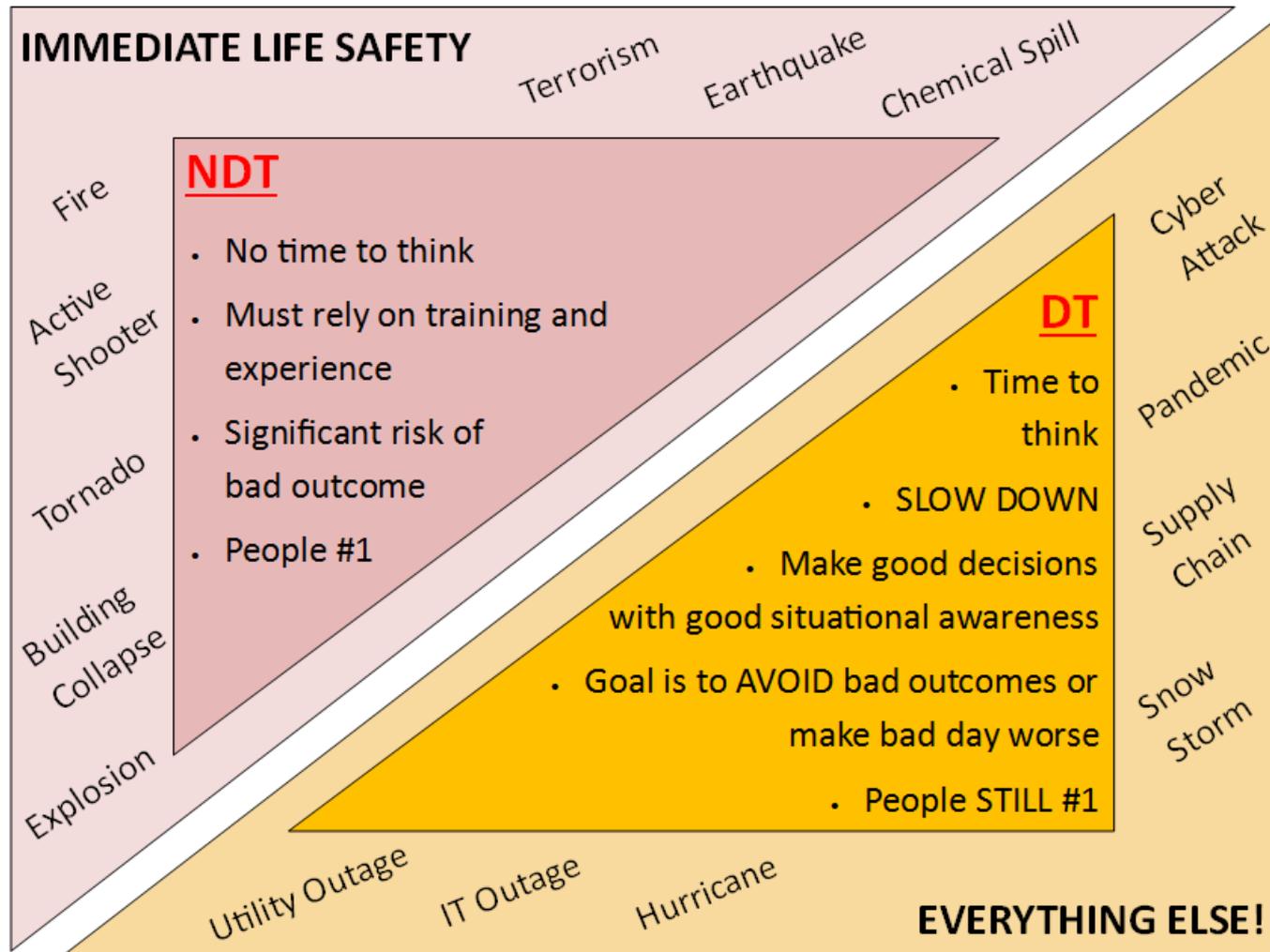
High Risk/Low Frequency

Source: Gordon Graham



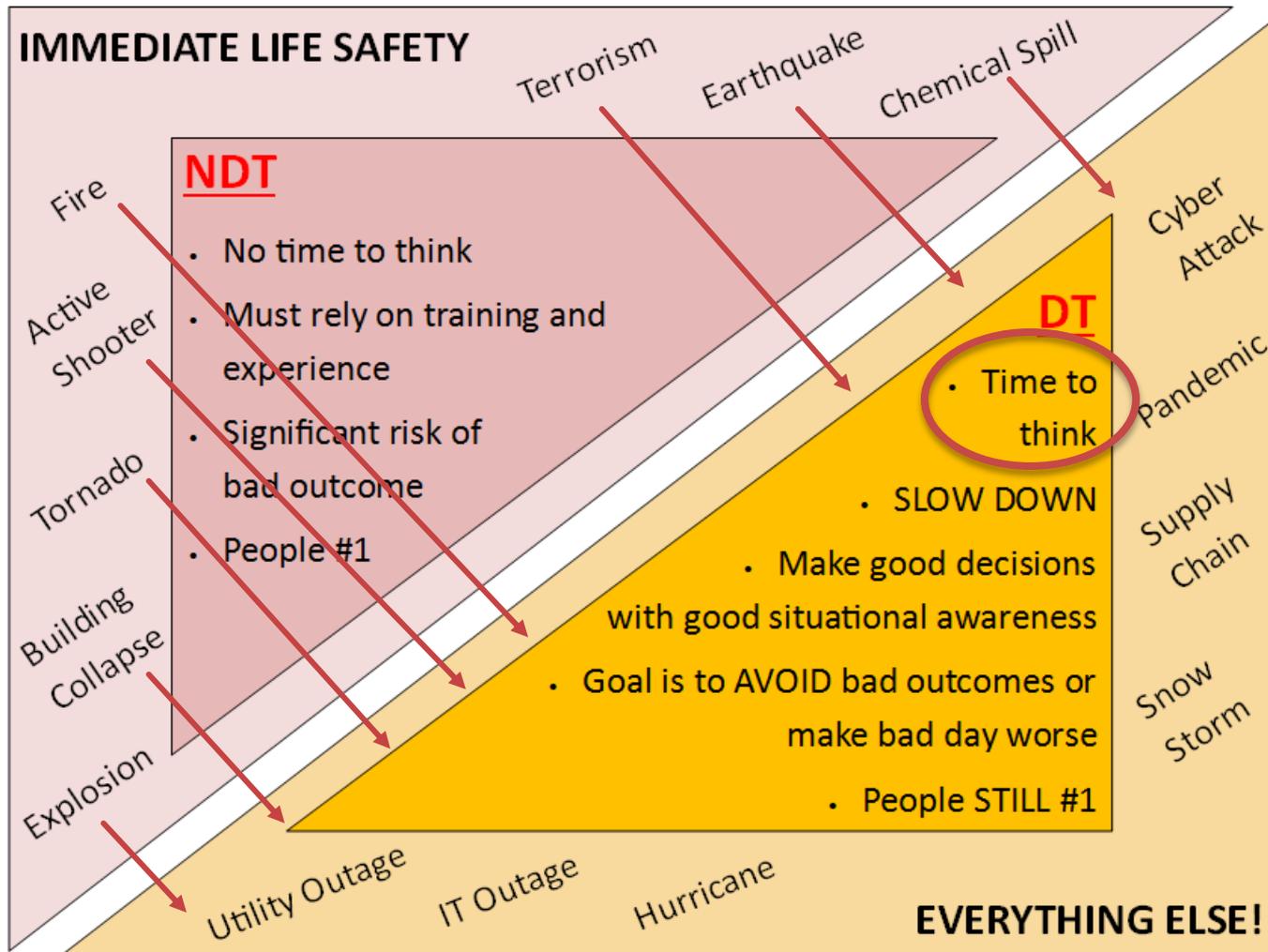
High Risk/Low Frequency

4. Ineffective Crisis Management

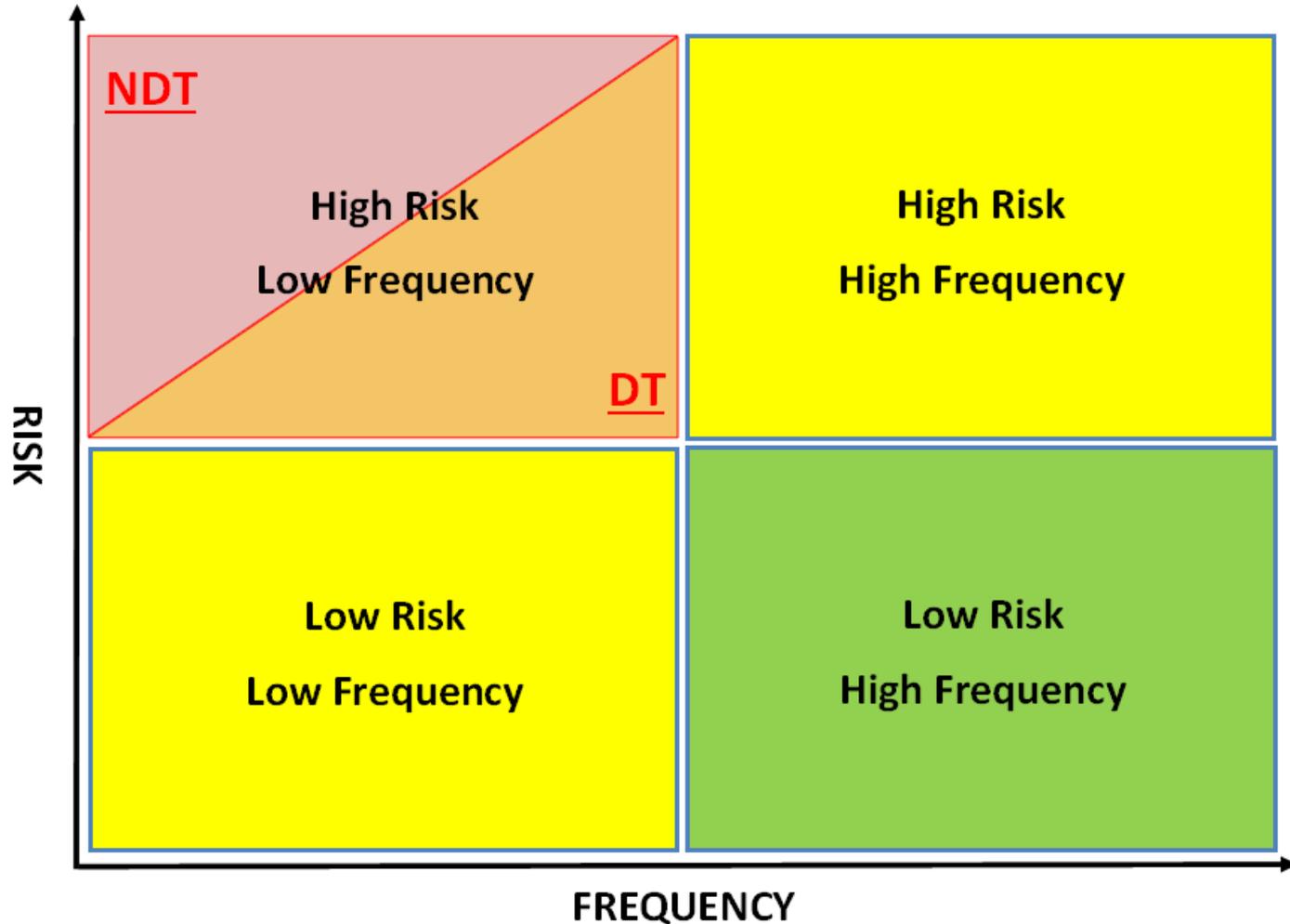


Once life safety addressed

4. Ineffective Crisis Management



Risk Management - Response



Risk Management

- Risks must be effectively identified and managed in all phases of a comprehensive emergency management and business continuity program
- Failure to do so can make a bad day worse

Risk Management for Incident and Crisis Management

- Life safety is always #1
- What 'box' are you in?
- Establish written goals and priorities
 - What is the most important action you need to take now?
- Maintain situational awareness
- Look for new risks or risks that changed
- Communicate priorities and risks

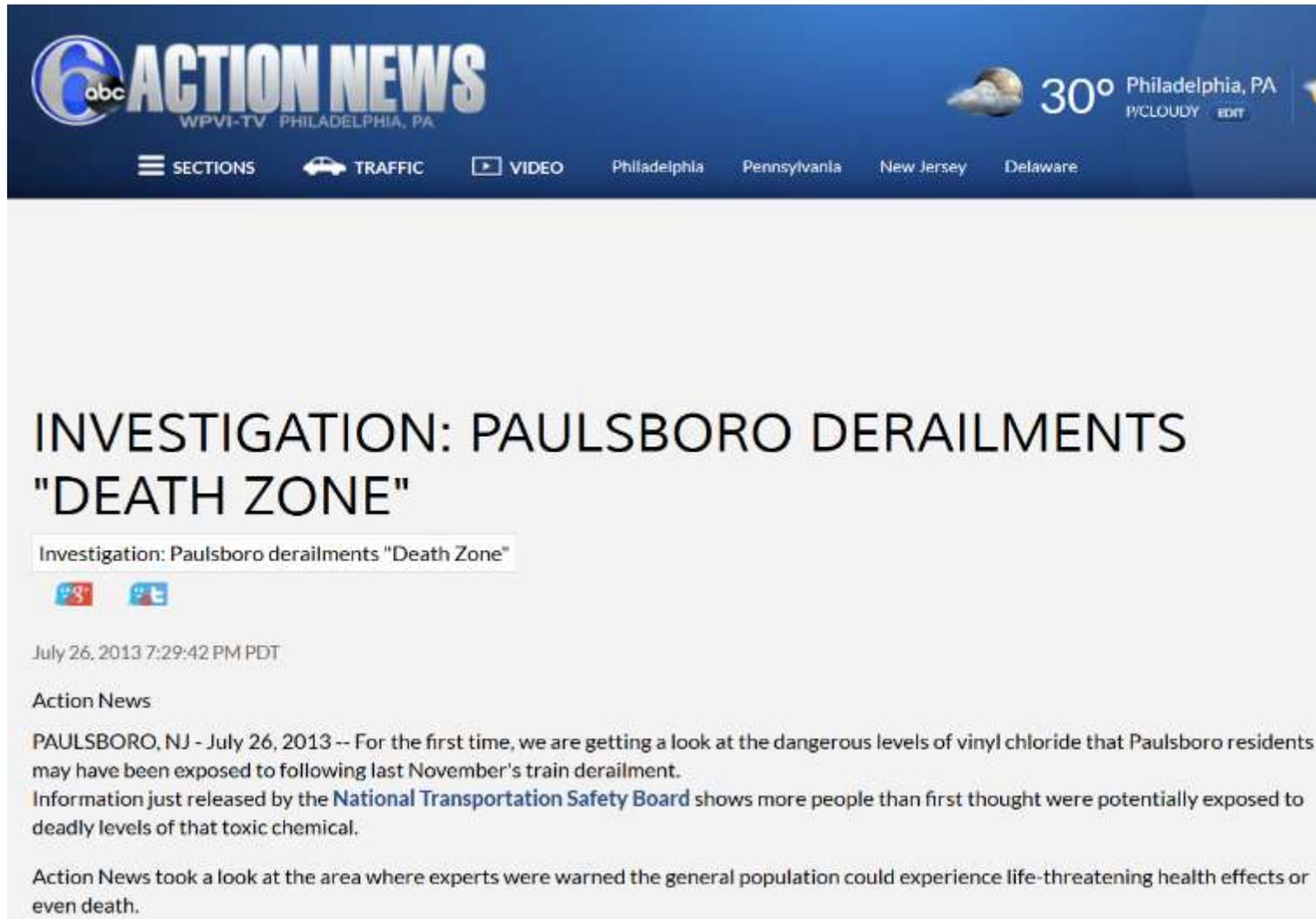
Lack of subject matter expertise

Paulsboro NJ – November 2012

4. Ineffective Crisis Management



Paulsboro NJ – 7 months later



The image is a screenshot of a news article from Action News Philadelphia. The top navigation bar is blue and contains the station's logo (6abc ACTION NEWS WPVI-TV PHILADELPHIA, PA), a weather widget showing 30 degrees and cloudy conditions in Philadelphia, PA, and a menu of sections: SECTIONS, TRAFFIC, VIDEO, Philadelphia, Pennsylvania, New Jersey, and Delaware. The main headline is "INVESTIGATION: PAULSBORO DERAILMENTS 'DEATH ZONE'". Below the headline is a sub-headline "Investigation: Paulsboro derailments 'Death Zone'" and social media sharing icons for Google+ and Twitter. The article is dated July 26, 2013, at 7:29:42 PM PDT. The text of the article begins with "PAULSBORO, NJ - July 26, 2013 -- For the first time, we are getting a look at the dangerous levels of vinyl chloride that Paulsboro residents may have been exposed to following last November's train derailment. Information just released by the National Transportation Safety Board shows more people than first thought were potentially exposed to deadly levels of that toxic chemical." The article continues with "Action News took a look at the area where experts were warned the general population could experience life-threatening health effects or even death."

6abc ACTION NEWS
WPVI-TV PHILADELPHIA, PA

30° Philadelphia, PA
CLOUDY

SECTIONS TRAFFIC VIDEO Philadelphia Pennsylvania New Jersey Delaware

INVESTIGATION: PAULSBORO DERAILMENTS "DEATH ZONE"

Investigation: Paulsboro derailments "Death Zone"

July 26, 2013 7:29:42 PM PDT

Action News

PAULSBORO, NJ - July 26, 2013 -- For the first time, we are getting a look at the dangerous levels of vinyl chloride that Paulsboro residents may have been exposed to following last November's train derailment. Information just released by the [National Transportation Safety Board](#) shows more people than first thought were potentially exposed to deadly levels of that toxic chemical.

Action News took a look at the area where experts were warned the general population could experience life-threatening health effects or even death.

Paulsboro NJ – “Death Zone”

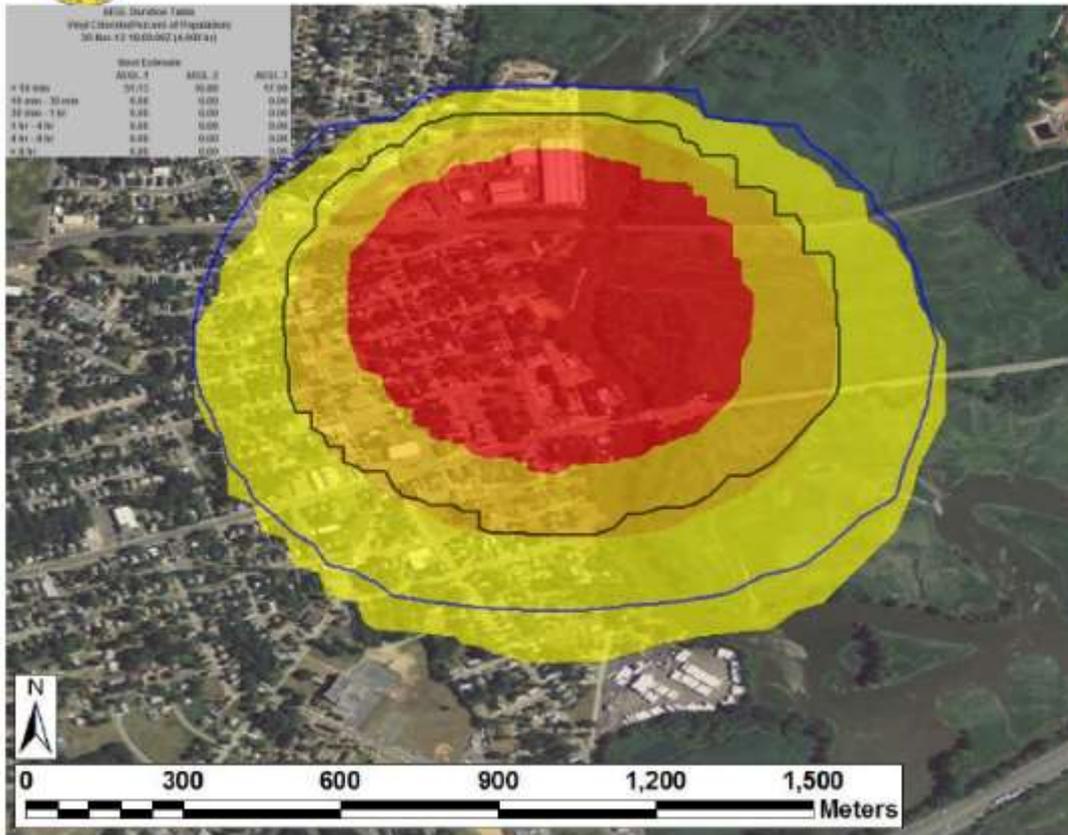


For Official Use Only

Vinyl Chloride – Initial Response

Basic Duration Table
Wind Characteristics of Population
30 Nov 12 16:00:02 (4:00 hr)

Wind Estimate	MSL 1	MSL 2	MSL 3
4.51 m/s	0.00	0.00	0.00
4.51 m/s	0.00	0.00	0.00
4.51 m/s	0.00	0.00	0.00
4.51 m/s	0.00	0.00	0.00
4.51 m/s	0.00	0.00	0.00
4.51 m/s	0.00	0.00	0.00



Vinyl chloride: Acute Exposure Guideline Levels (INTERM)
30 Nov 12 16:00:02 (4:00 hr)
"Best Estimate" - Mean Contours

	Value	In contour population
Death Possible	3.0	293
Injury Possible	2.0	538
Threshold	1.0	992

Worst Case (w/windier)

	Value	In contour population
10% Death Possible	3.0	535
10% Injury Possible	2.0	913

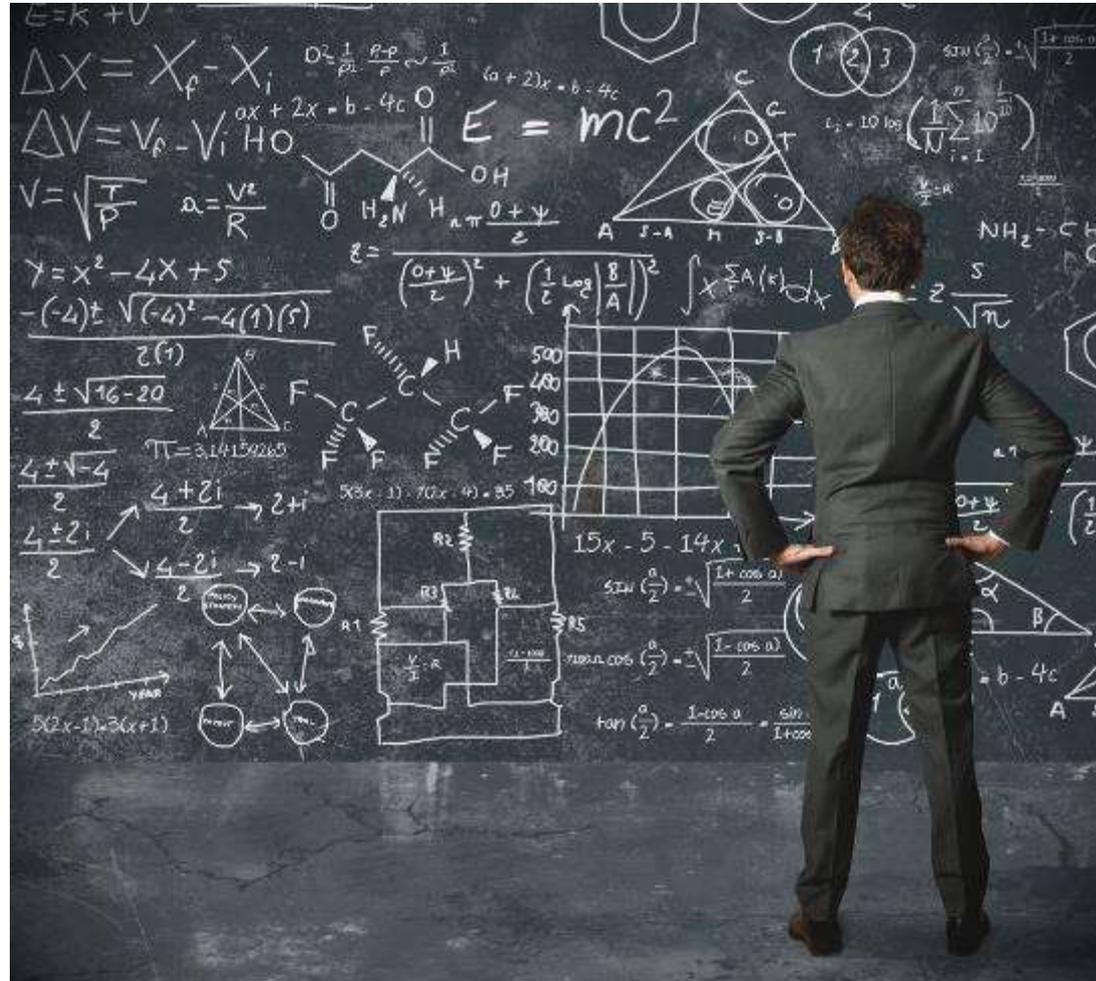
This quick response used a weather prediction model; and was not coordinated with other IMAAC participants. Coordination will follow, and product will be updated as needed.

FACTS

Paulsboro, NJ
 Location: 39.834044° N / 75.237884° W
 Event Time: 1200Z (0700 Local)
 30NOV2012
 Amount: Vinyl Chloride
 Dissemination: Train derailment/Leak
 Weather: 12 km NAM
 Model: HPAC 5.1
 Static Population Estimates:
 LandScan 2011

Can you recognize when you are in over your head?

Good people with good intentions but insufficient information or expertise can make a bad day worse



KEY TAKEAWAY

Crisis Communication Failures

- Untrained/uncoached spokesperson
- Lack of pre-crisis social media presence
- Not building positive relationships with stakeholders (before, during and after)
- Not listening to stakeholders
- Not communicating early and often with stakeholders
- Stating absolutes in the face of uncertainty
- Improper messaging

GermanWings Airline Crash

BP Oil Spill

Managing The Message

4. Ineffective Crisis Management



The image shows a screenshot of a Twitter post. At the top left is the Twitter logo. To the right are navigation links: Home, Profile, Find People, Settings, Help, and Sign out. The main text of the tweet reads: "Proud to announce that BP will be sponsoring the New Orleans Blues Festival this summer w/ special tribute to Muddy Waters. #bpcares". Below the text, it says "1:52 PM May 24th via web" and "Retweeted by 100+ people". On the right side of the tweet, there are icons for Reply and Retweet. At the bottom left of the tweet is the BP logo and the text "BPGlobalPR BP Public Relations". At the very bottom of the page, there is a footer with copyright information and various links: © 2010 Twitter, About Us, Contact, Blog, Status, Goodies, API, Business, Help, Jobs, Terms, Privacy.

twitter

Home Profile Find People Settings Help Sign out

Proud to announce that BP will be sponsoring the New Orleans Blues Festival this summer w/ special tribute to Muddy Waters. #bpcares

1:52 PM May 24th via web
Retweeted by 100+ people

Reply Retweet

 **BPGlobalPR**
BP Public Relations

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Crisis Communication

WHO

- Employees
- Management
- Customers
- Shareholders
- Families
- Tenants
- Public
- Regulatory bodies

HOW

- Phone
- Email
- Text
- Conference bridge
- Notification system
- Social media
- Traditional media
- Correspondence

When will they be notified and by whom? How frequently will they be updated?

Crisis Communication

BEFORE

- Define goals for crisis communication
- Develop partnerships with groups important to the organization
- Develop strong positive stakeholder relationships

DURING

- Stakeholders = partners
- Listen to stakeholders
- Communicate early
- Acknowledge uncertainty
- Assure that you will maintain contact
- Avoid absolutes until information verified
- Do not over-reassure stakeholders about impacts

Successful Communication Strategy

- Focus on needs of customers
- Make a commitment to effective communication
- Integrate communications into planning and operations
- Be transparent
- Ensure that your information is accurate
- Release information in a timely manner
- Make spokesperson available and accessible
- Create a connection with audience
- Build a partnership with media and “first informers”

Source: Haddow, G. Haddow K. (2009). Disaster Communications in a Changing World.

Dealing with uncertainty

KEY TAKEAWAY

- Acknowledge – do not hide – uncertainty.
- Explain that risks are often hard to assess and estimate.
- Explain how risk estimates were obtained and by whom.
- Announce problems and share risk information promptly, with appropriate revelations about uncertainty.
- Tell people that what you believe either (a) is certain, (b) is nearly certain, (c) is not known, (d) may never be known, (e) is likely, (f) is unlikely, (g) is highly improbable, and (h) what can be done to reduce uncertainty.
- Tell people that what you believe now may turn out to be wrong later.

Source: Covello V. 2008. "Risk Communication: Principles, Tools and Techniques."

Reputation

You do not own it – it is assigned to you by others:

- **What you say - intent**
- **What you do - action**
- **Direct experience by stakeholder**
- **Peer perspectives**

Source: Griggin, Andrew. Crisis, Issues and Reputation Management.

Reputation

Organizations that institute strong, positive value positions, such as openness, honesty, responsibility, accountability, and trustworthiness, with key organizational stakeholders before a crisis happens are best able to create renewal following the crisis.

Source: Ulmer, Robert R.; Sellnow, Timothy L.; Seeger, Matthew W. (2014).
Effective Crisis Communication: Moving From Crisis to Opportunity

Situational Crisis Communication Theory (Reputation)

- Instructing Information
 - People are priority – how to stay safe
- Adjusting information
 - Coping with crisis (what, when, where, why, how)
- Adjusting posture
 - Break relationship between crisis/organization
- Diminishing posture
 - Organization had little or no control of event
- Rebuilding posture
 - Apology and compensation
- Bolstering posture
 - Build positive connection with stakeholders

4. Ineffective Incident or Crisis Management

- Develop systems and resources to maintain situational awareness
- Identify and manage risks during response
- Identify and humbly use subject matter expertise
- Develop and test crisis communications plans against multiple scenarios

What can make a bad day worse?

1. Hidden (or ignored) risks
2. Incorrect (or deficient) assumptions
3. Controls and plans not covering worst-case scenario
4. Ineffective incident or crisis management

Questions?

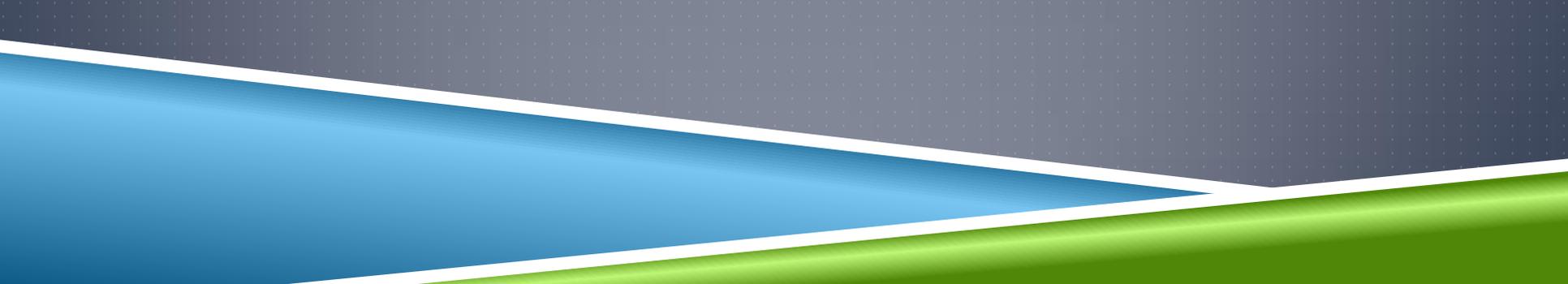
Troy Neville, MS, CEM, CBCP
tneville@comcast.net

THE GOOD, THE BAD, THE GREAT

IMT & EOC Coordination on the September 2013 Floods

Amy Danzl

Boulder Office of Emergency Management



BOULDER EOC

- ▶ Situational Awareness
- ▶ Resource Mobilization
- ▶ Coordination & Partnerships
- ▶ Forge & Implement Dynamic Solutions
- ▶ Policy Group Management



WHY IT MATTERED

- ▶ 1102 People Evacuated by Air
- ▶ 558 Animals Evacuated by Air
- ▶ 707 People Evacuated by Road
- ▶ Only Four Deaths



RELATIONSHIPS, CONFLICTS & FAILURES



IMTS & EOCs: COMMONALITIES

- ▶ Results
- ▶ Mutual SA & Info Support
- ▶ Restore order in chaos.
- ▶ Uniquely trained.
- ▶ Problem solving oriented.



IMTS & EOCs: DIFFERENCES

- ▶ Command & Control versus Coordination & Support.
- ▶ Scope: incident footprint versus the whole community.
- ▶ Authorities: single line versus multiple authorities.
- ▶ 12-hour versus undefined operational periods.
 - ▶ Planning Cycle.
 - ▶ Staff Transitions.
 - ▶ Briefings.
 - ▶ Media.
- ▶ Dynamic versus static IAPs.
- ▶ Style of Management.
- ▶ Skill sets and training.



IMTS & EOCs: COMPLEMENTATION

IMTs

- ▶ Command & Control
- ▶ Primary Objective: Life Safety
- ▶ Needs Additional Resources
- ▶ Needs Additional Coordination
- ▶ Manages the Incident

EOCs

- ▶ Support & Coordinate
- ▶ Primary Objective: Unmet Needs
- ▶ Fills Resource Requests
- ▶ Coordinates with MAC or Policy Groups
- ▶ Manages the Coordination of the Event Surrounding the Incident

DELEGATION VS. DECLARATION

DELEGATION VS. DECLARATION

Delegations

- ▶ Wildfire Model.
- ▶ Well practiced in Colorado.
- ▶ Delegate authority.
 - ▶ Can specify which authorities are delegated and which are maintained.
- ▶ Local to Sheriff to State (EFF) to Federal (FMAG).

Declarations

- ▶ All-Hazards Model.
- ▶ Every special district (including fire districts) is responsible for declaring their own disaster in order to access funds.
- ▶ Everyone maintains their authority (and responsibility to pay).
 - ▶ Flood: Boulder EOC authorized resource orders because the County and State were paying.
- ▶ Local to County to State to Federal (Stafford Act, "Major Disaster" w/potential IA and PA)

DELEGATION VS. DECLARATION

Delegations

- ▶ Funding: Upfront cost-share agreement, usually costing the local jurisdiction nothing or very little.
- ▶ Under EFF or FMAG, the State of Feds can hire contractors (such as volunteer firefighters) to prevent the emergency from escalating.

Declarations

- ▶ Funding: 75% reimbursement of eligible expenses come weeks, months or years later.
 - ▶ Payment of staff is equal to that paid prior to the disaster.
 - ▶ Response: \$3.2m, Reimbursable: \$1.6m.
- ▶ Utilizes an Emergency Operations Plan (EOP) and annexes.
 - ▶ Must be followed to be eligible for reimbursement.

FLOOD EXPERIENCE: COMMAND VS. SUPPORT

- ▶ Jurisdictions maintained authority
- ▶ FPDs became branches or divisions
- ▶ Mission clarity



SOLUTIONS: COMMAND VS. SUPPORT



▶ Delegation:

- ▶ Mission definition
- ▶ Pre-script
- ▶ Education for all-hazards
- ▶ Conflict resolution process
- ▶ EOP + Annexes

▶ Transition:

- ▶ Roles and responsibilities
- ▶ Unique capabilities
- ▶ Relationship and communication

FLOOD EXPERIENCE: AUTHORITY TO ORDER

- ▶ All-Hazards Declaration: authority and payment
- ▶ County and State Cost Share
- ▶ IMT subject to agreement - Preorder
- ▶ Interagency Dispatch



SOLUTIONS: AUTHORITY TO ORDER



- ▶ Nuances in transition meeting
- ▶ Resource Mobilization Standards
 - ▶ Developing statewide curriculum
- ▶ More informed all-hazards IMT response
- ▶ Ductile: able to undergo change of form without breaking.

FLOOD EXPERIENCE: ALL-HAZARDS COMPLEXITY

- ▶ Footprint - shower units, catering, office trailers.
- ▶ Hundreds of special districts: water districts, ditch companies, school districts, 22 fire protection districts, multiple cities and townships.
- ▶ Financial impacts



SOLUTIONS: ALL-HAZARDS COMPLEXITY



- ▶ Scoping: duration and pre-order
- ▶ Understanding the geo-political environment
 - ▶ IMT status and mobilization board in WebEOC
- ▶ Developed Field 213RR for pre-IMT deployment
- ▶ Creative collaboration - Fuel pump security

FLOOD EXPERIENCE: THE GREAT



- ▶ Got the job done!
- ▶ Sheriff's confidence and trust in our IMT3.
- ▶ Learned the all-hazards environment.
- ▶ Honest desire to improve teams statewide based on learning from this all-hazards incident.

“Peace cannot be kept by force. It can only be achieved by understanding.”

–Albert Einstein

QUESTIONS?



Amy Danzl

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Boulder, Colorado

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