



## *Tabletop Exercise*

### Scenario 1: Chlorine Tank Explosion (Truck Scenario)





## *Tabletop Exercise Objectives*

- Examine key response challenges associated with a Hazardous Chemical release/spill in a populated area.
- Become familiar with resources and agencies that would respond in a hazmat incident.
- Identify gaps and shortfalls in current county hazmat plans, policies, and procedures.
- Identify and share best practices and lessons learned.
- Develop innovative and practical applications.
- Improve understanding of complexities and enhance local response effectiveness.



## *Pre-Tabletop Exercise Overview*

- Participants should be well versed in local and state plans, policies, and procedures prior to the exercise.
- Discussion questions are meant to initiate dialogue among exercise participants; additional discussion beyond questions is encouraged.
- Don't fight the scenario; the scenario has been developed to accommodate relevant issues and to drive discussion and interaction among agencies and jurisdictions.
- Discussion card links on applicable slides can lead to additional topics for discussion.









# Vehicle-Borne Improvised Explosive Device Background

- Terrorists have repeatedly used heavy vehicles to conduct VBIED attacks in Iraq and Afghanistan. Terrorists could also carry out similar attacks in the US.
- Given their innocuous appearance, they provide a platform to breach security measures and transport an explosive payload to a target.
- VBIED attacks against high visibility targets garner international attention with a minimal investment.
- VBIEDs have also been used to disperse toxic industrial chemicals and materials.



BATF Explosive Standards

ATF	Vehicle Description	Maximum Explosives Capacity	Lethal Air Blast Range	Minimum Evacuation Distance	Falling Glass Hazard
	Compact Sedan	500 pounds 227 Kilos (In Trunk)	100 Feet 30 Meters	1,500 Feet 457 Meters	1,250 Feet 381 Meters
	Full Size Sedan	1,000 Pounds 455 Kilos (In Trunk)	125 Feet 38 Meters	1,750 Feet 534 Meters	1,750 Feet 534 Meters
	Passenger Van or Cargo Van	4,000 Pounds 1,818 Kilos	200 Feet 61 Meters	2,750 Feet 838 Meters	2,750 Feet 838 Meters
	Small Box Van (14 Ft. box)	10,000 Pounds 4,545 Kilos	300 Feet 91 Meters	3,750 Feet 1,143 Meters	3,750 Feet 1,143 Meters
	Box Van or Water/Fuel Truck	30,000 Pounds 13,636 Kilos	450 Feet 137 Meters	6,500 Feet 1,982 Meters	6,500 Feet 1,982 Meters
	Semi-Trailer	60,000 Pounds 27,273 Kilos	600 Feet 183 Meters	7,000 Feet 2,134 Meters	7,000 Feet 2,134 Meters



# Chlorine Overview

- Pressurized and cooled for liquid storage and shipment; when depressurized, liquid chlorine quickly reverts to a gas.
- Highly corrosive yellow-green gas with an irritating odor similar to bleach that produces hydrochloric acid when mixed with water.
- Heavier than air; collects in low-lying areas.
- Non-flammable; becomes explosive when combined with compounds, e.g. petroleum fuels, acetylene, ammonia, hydrogen, and turpentine.
- Long-term complications from chlorine exposure not generally found in survivors of sudden exposure.

No Adverse Effects (1-8 hrs at <0.5 ppm)	Minimal Effects (1 hr at 0.5-2 ppm)	Significant Effects (1 hr at 2-20 ppm)	Severe Effects (1 hr at >20 ppm)	Very Severe Effects (1 hr at ≥34 ppm)
<ul style="list-style-type: none"> <li>• Bleach-like odor possible</li> <li>• No irritation anticipated</li> </ul>	<ul style="list-style-type: none"> <li>• Strong odor</li> <li>• Slight irritation of nose, throat, and eyes</li> </ul>	<ul style="list-style-type: none"> <li>• Burning eyes or throat</li> <li>• Some coughing and choking</li> </ul>	<ul style="list-style-type: none"> <li>• Sense of suffocation</li> <li>• Chest pain</li> <li>• Shortness of breath (dyspnea)</li> <li>• Nausea, vomiting</li> <li>• Hoarseness</li> </ul>	<ul style="list-style-type: none"> <li>• Pulmonary edema</li> <li>• Sudden death bronchospasm (closure of larynx)</li> <li>• Lethality has been reported after 1 hour 34-51 ppm</li> </ul>



# *Pre-Incident Background*

- Robert has an on-going dispute with his neighbors that involved local city officials.
- Robert has stockpiled large amounts of chemicals, to include chlorine.
- His plan is to gain revenge against the city for perceived wrongs by detonating a truck carrying hazardous chemicals





# Pre-Incident Background



- Every county is required to have a Hazmat response plan.
- The response plan must be reviewed and an exercise conducted annually by the LEPC.
- Response plans should take into consideration any fixed facility within the county as well as potential transportation network hazards to include rail, roads and pipelines.
- Hazmat incidents could include accidental releases as well as terrorist attacks.





# COUNTY PREPAREDNESS

- HAZMAT response involves all aspects of emergency response from 911 response to law enforcement and fire.
- Public notification is vital.
- While all hazard response plans are important, HAZMAT plans provide a greater level of detailed response in the event of an incident.
- HAZMAT incidents can happen anywhere – Think West Texas.

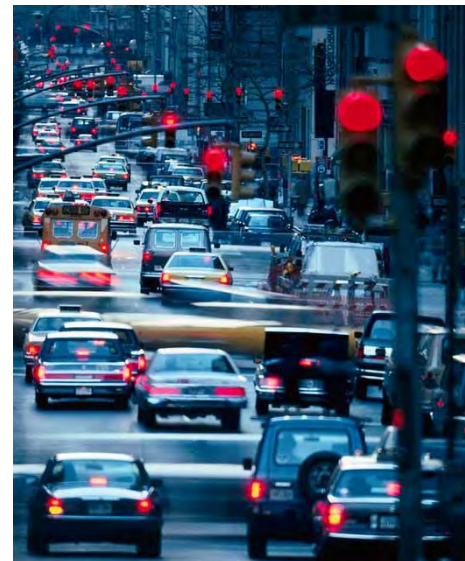






# THE ATTACK

- A large explosion occurs within the local community. The blast can be heard and felt for miles.
- Initially, 911 is overwhelmed with calls concerning the explosion.
- Reports of a large vapor cloud of greenish-yellow gas are received.
- Reports begin to arrive of casualties within the local area in the vicinity of the explosion.





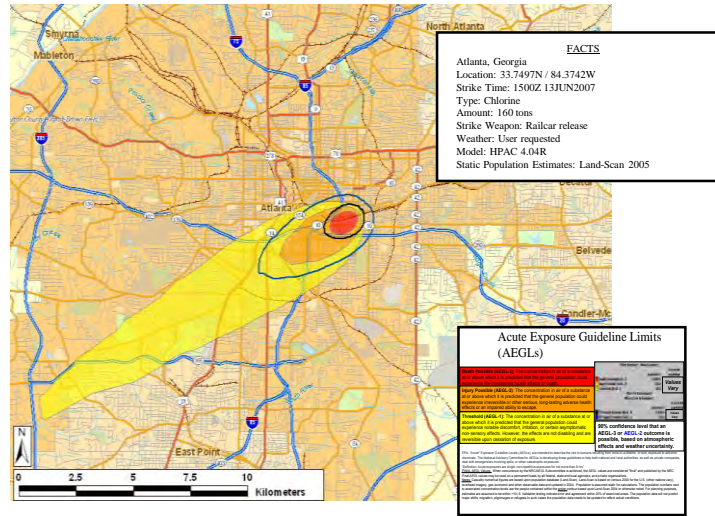
# *HAZMAT RESPONSE*

- Police and fire dispatchers continue to respond to calls about explosions and reports of the giant green cloud.
- Incident Command reports the hazardous material is possibly chlorine based on observation and symptoms.
- Shelter-in-place instructions are broadcast over the Emergency Broadcast System, local radio and television channels.
- People in the hazard area experience eye and nasal irritation, sore throat, coughing, and burning skin.





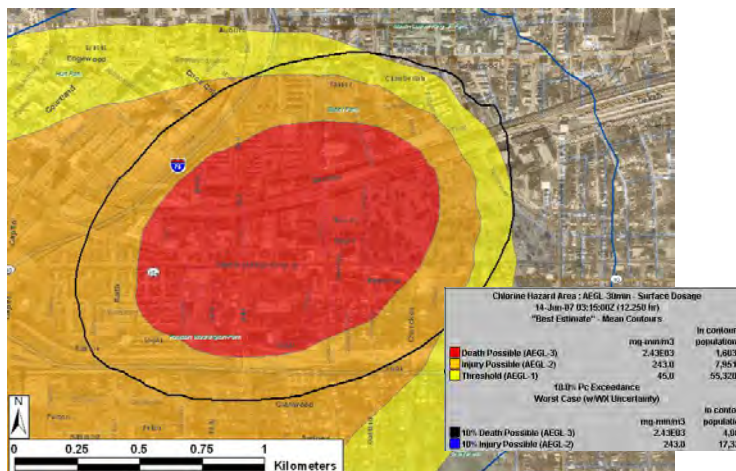
# Impact Assessment – Far View



Insert Far View Attack Plume Model provided for your county.



# Impact Assessment – Near View



Insert Near View Attack Plume Model provided for your county.



# *ATTACK EVENTS*

- Some seek shelter indoors, but others ignore instructions and attempt to self-evacuate.
- The immediate area becomes jammed with cars and people interfering with response vehicles.
- Many exposed to higher concentrations of chlorine experience severe respiratory distress and many succumb to toxic effects.





# ***PUBLIC INFORMATION***

- There will be a high demand from various entities for information regarding the incident.
- The press, public as well as elected officials will seek information on injured as well as a status of uninvolved family members.
- Social media will have an impact with rumors as well as real information.





# ***FOLLOWING THE ATTACK***

- The scale of operations produces significant communications challenges between responders.
- Landline and cell phone systems reach capacity; service is unreliable.
- Non-interoperability of many radios, computers, and communications systems slow response and recovery efforts.
- Shortages of communications equipment limit capabilities.





# *RETURN TO “NORMALCY”*

- The area must be determined to be safe following the incident.
- Law enforcement must consider a cordon of the area and be prepared to turn the scene over to federal officials as a crime scene.
- Local officials will continue to be queried for status on injured as well as expectations for return to normalcy.







# *ENDEX*



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# *After Actions Review*

## *(AAR)*



## **An AAR is centered on four questions**

1. What was expected to happen?
2. What actually happened?
3. What went well and why?
4. What can be improved and how?

## **An AAR features**

1. An open and honest professional discussion
2. Participation by everyone on the team
3. A focus on results of an event or project
4. Identification of ways to sustain what was done well
5. Development of recommendations on ways to overcome obstacles



# *AAR GROUND RULES*

- *Active participation: it is important for everyone to participate*
- *Everyone's views have equal value*
- *No blame*
- *Be open to new ideas*
- *Be creative in proposing solutions to barriers*
- *Consensus where possible, clarification where not*
- *Quotes will not be attributed to individuals without permission*



# *AAR SAMPLE FORMAT #1*

- **Issue:**

- **Discussion:**

- **Resolution:**



- **Issue:** The HAZMAT plan has not been updated in over 7 years.
- **Discussion:** There has been significant turnover of personnel within the LEPC. As a result, we have had no continuity of effort in our efforts. We now have a more active LEPC with leadership resolved to provide a higher level of active support to our first responders through planned training and a HAZMAT plan in the event of an incident.
- **Resolution:** A committee will be formed consisting of Tom, Liz and Paul. This committee is tasked with reviewing the existing plan and comparing it to items discussed in this TTX. The committee will then make recommendations for changes to be submitted to all LEPC members prior to the next meeting. LEPC members will approve or disapprove the recommendations. Upon completion, the plan will be sent to the MERC.



# *AAR SAMPLE FORMAT #2 (to be completed by each person)*

## **Three Positives**

- 1.
- 2.
- 3.

## **Three Negatives**

- 1.
- 2.
- 3.



# *AAR SAMPLE FORMAT #2 (to be completed by each person)*

## **Three Positives**

1. We were able to identify a need for more HAZMAT training
2. The TTX was well designed
3. We identified a need for an updated HAZMAT plan

## **Three Negatives**

1. The room was too cold
2. We didn't finalize a plan to update the PIO plan
3. We didn't have representation from law enforcement at the TTX





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# *Sample Discussion Cards*

**CARD NUMBER: 1**

**QUESTIONS:**

- What general measures and agency specific (911/Fire/Police/EMS/EMD) actions are taken to prepare for HAZMAT response?
- Who is responsible for maintaining the local HAZMAT plan, and when was it last updated? Who participated in the most recent update revision? Who should participate?
- Who is familiar with the local HAZMAT plan and the required actions in it? Who should be?
- What actions are currently being taken to familiarize local citizens on the HAZMAT hazards and response? What actions should be taken?
- Do local elected officials know their responsibilities in relation to HAZMAT? What are they?
- What could we be doing different to prepare for a HAZMAT incident?
- Are local first responders familiar with fixed facility incident plans? If not, how do we obtain those?
- Do we know what the local hazards are? If so, what are they?

**ADDITIONAL QUESTIONS:**

- \_\_\_\_\_
- \_\_\_\_\_
- \_\_\_\_\_



# County Preparedness

**CARD NUMBER: 2**

**QUESTIONS:**

- Are county staff pre-identified and trained to respond to a HAZMAT incident? Will staffed personnel remain consistent regardless of the incident type?
- What resources and training are available to first responders regarding HAZMAT response?
- How prepared are county first responders, 911 operators and local officials to operate within a HAZMAT incident?
- Are personnel with the correct expertise assigned to the appropriate positions?
- In the event of a terrorist attack within the county, what is the planned command structure?

**ADDITIONAL QUESTIONS:**

- \_\_\_\_\_
- \_\_\_\_\_



# *Initial Response*

**CARD NUMBER: 3**

**QUESTIONS:**

- What are the anticipated actions of 911? Who is notified? What resources are initially requested?
- How long will it take to determine what has occurred? How long will it take to determine the HAZMAT threat and response?
- Who is in charge of the response?
- What is the initial response?
- Do we have the right equipment/training to respond (non-HAZMAT)? If not, what do we need?
- What do we have available in non-HAZMAT mutual aid? Do they have the right equipment/training?

**ADDITIONAL QUESTIONS:**

- \_\_\_\_\_
- \_\_\_\_\_



# *HAZMAT Response*

**CARD NUMBER: 4**

**QUESTIONS:**

- With a better understanding of the event, what are the anticipated actions of 911? Who is notified? What additional resources are requested? What is fire doing? What are the police doing? Others?
- Is shelter in place and evacuation addressed in the county plan?
- When is a shelter in place or evacuate decision made? Who makes it? How are citizens notified?
- Do we have the right equipment/training to respond to the HAZMAT threat? If not, what do we need?
- What do we have available in HAZMAT mutual aid? Do they have the right equipment/training?

**ADDITIONAL QUESTIONS:**

- \_\_\_\_\_
- \_\_\_\_\_



**CARD NUMBER: 5**

**QUESTIONS:**

- What resources do we have to respond to these types of medical emergencies?
- What is the plan to protect our medical responders from exposure or other threats?
- Are medical facilities prepared for a HAZMAT incident? If so, how? Do they train or exercise for HAZMAT?

**ADDITIONAL QUESTIONS:**

- \_\_\_\_\_
- \_\_\_\_\_



# *Public Affairs Message*

**CARD NUMBER: 6**

**QUESTIONS:**

- Who is responsible for the public messaging?
- How is messaging to be completed?
- What are the primary messages that need to develop and conveyed to the public?
- What organizations should the PIO coordinate with concerning news releases about on-going missions and efforts?
- Does this scenario merit requesting additional PIO assistance from the state or elsewhere?

**ADDITIONAL QUESTIONS:**

- \_\_\_\_\_
- \_\_\_\_\_



# *Communications / Common Operating Picture*

**CARD NUMBER: 7**

**QUESTIONS:**

- Are communications systems interoperable between State and local agencies? What about with mutual aid responders? What work-arounds exist where systems are not interoperable?
- How much reliance is placed on the Internet or landline/cellular phones?
- How will situational awareness be maintained?
- What COP tools are needed?

**ADDITIONAL QUESTIONS:**

- \_\_\_\_\_
- \_\_\_\_\_





**CARD NUMBER: 8**

**QUESTIONS:**

- How will an all clear determination be made? Who makes it? How will it be transmitted to the public?
- Is there enough law enforcement to respond to the incident, cordon the area and still maintain public safety?
- Is there a long term communications plan for the PIO?
- Do elected officials understand their role in long term return to normalcy? What is it?

**ADDITIONAL QUESTIONS:**

- \_\_\_\_\_
- \_\_\_\_\_