



EASTSIDE MAYHEM EXERCISE SERIES

After Action Report

Day 3: Lexington

November 3, 2016



Report Date: February 2017

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EXERCISE OVERVIEW



Exercise Overview

Exercise Name	Eastside Mayhem: Day 3—Lexington
Exercise Date	November 3, 2016
Exercise Location	Lexington, Texas
Scope	This was one of three operations-based regional exercises testing multi-jurisdictional response to chemical, biological, radiological, nuclear, and explosive (CBRNE) incidents. This exercise was held for three hours in Lexington, Texas. Players representing key participants of local response agencies drove the action of the exercise, while evaluators followed the process and decision making sequence. During the exercise, evaluators witnessed and documented the response actions of multiple agencies as they approached and responded to the realistic scenario. This was an operations-based exercise simulating real world conditions that would occur in a chemical, biological, radiological, nuclear, and explosive (CBRNE) related attack.
Purpose	To validate current policies and procedures, to identify gaps, and to develop potential solutions in order to advance Capital Area Council of Government’s (CAPCOG) regional CBRNE procedures and to enhance coordination and communication between multiple agencies.
Mission Area(s)	Response
Core Capabilities	Environmental Response/Health and Safety Operational Coordination Operational Communications
Objectives	<ul style="list-style-type: none"> Regional Standardization of Equipment and Training (ReSET) CBRNE teams will mitigate a leaking chemical tanker and will ensure protection of the public from any chemical hazards. ReSET CBRNE teams responding to an incident will coordinate command & task-level CBRNE operations to ensure effective mitigation is accomplished. Ensure the capacity for timely communications in support of security, situational awareness, and operations by any and all means available, among and between affected communities in the impact area and all response forces.
Threat or Hazard	CBRNE

Scenario	<p>A road tanker of ammonia hydroxide is parked in a park as the driver rests overnight.</p> <p>The driver is awakened by the strong smell of ammonia. The driver exits the truck and discovers a leak where the ammonia hydroxide is running off into dry creek bed, causing a large downhill flow spill.</p> <p>The park where the driver was resting is full with approximately 35 people. Concurrently, ammonia fumes are traveling downwind towards a high school and a neighborhood. The park-goers begin reporting respiratory issues and mild skin and eye irritation.</p> <p>San Marcos responds. Due to the large size of the potential affected area, San Marcos requests assistance from Williamson County and the Austin Fire Department (AFD) to help fix the leak, confirm the spill, decontaminate the park-goers, and conduct remote sensing of the downwind areas.</p> <p>A complete master scenario events lists (MSEL) is available upon request.</p>																																														
Sponsor	Capital Area Council of Governments (CAPCOG)																																														
Participating Jurisdictions	<table border="1"> <thead> <tr> <th style="background-color: #000080; color: white;">Agency</th> <th style="background-color: #000080; color: white;">Number of Participants</th> </tr> </thead> <tbody> <tr><td>Austin Fire Department (Fire, HazMat, Aerial)</td><td>15</td></tr> <tr><td>CAPCOG</td><td>3</td></tr> <tr><td>Cedar Park</td><td>4</td></tr> <tr><td>City of San Marcos Fire</td><td>12</td></tr> <tr><td>Georgetown</td><td>4</td></tr> <tr><td>Hutto Fire Rescue</td><td>3</td></tr> <tr><td>Lee County Emergency Management</td><td>6</td></tr> <tr><td>Lee County EMS</td><td>6</td></tr> <tr><td>Lee County Sheriff's Office</td><td>4</td></tr> <tr><td>Law Enforcement Standardization of Equipment & Training (LESET)</td><td>7</td></tr> <tr><td>Lexington Police Department</td><td>4</td></tr> <tr><td>Lexington Volunteer Fire Department (VFD)</td><td>8</td></tr> <tr><td>National Oceanic and Atmospheric Administration (NOAA)</td><td>2</td></tr> <tr><td>Regional Standardization of Equipment & Training (ReSET)</td><td>5</td></tr> <tr><td>Round Rock Fire Department Hazardous Materials Team</td><td>4</td></tr> <tr><td>San Marcos Hays County</td><td>3</td></tr> <tr><td>Texas Department of Public Safety (DPS)/Texas Division of Emergency Management (TDEM)</td><td>2</td></tr> <tr><td>Travis County</td><td>6</td></tr> <tr><td>Williamson County Communications</td><td>3</td></tr> <tr><td>Williamson County EMS</td><td>1</td></tr> <tr><td>Williamson County HazMat</td><td>2</td></tr> <tr><td>Williamson County Public Information Officer (PIO)</td><td>2</td></tr> </tbody> </table>	Agency	Number of Participants	Austin Fire Department (Fire, HazMat, Aerial)	15	CAPCOG	3	Cedar Park	4	City of San Marcos Fire	12	Georgetown	4	Hutto Fire Rescue	3	Lee County Emergency Management	6	Lee County EMS	6	Lee County Sheriff's Office	4	Law Enforcement Standardization of Equipment & Training (LESET)	7	Lexington Police Department	4	Lexington Volunteer Fire Department (VFD)	8	National Oceanic and Atmospheric Administration (NOAA)	2	Regional Standardization of Equipment & Training (ReSET)	5	Round Rock Fire Department Hazardous Materials Team	4	San Marcos Hays County	3	Texas Department of Public Safety (DPS)/Texas Division of Emergency Management (TDEM)	2	Travis County	6	Williamson County Communications	3	Williamson County EMS	1	Williamson County HazMat	2	Williamson County Public Information Officer (PIO)	2
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EXECUTIVE SUMMARY



Executive Summary

Purpose

On Thursday, November 3, 2016, the Capital Area Council of Governments (CAPCOG) hosted *Eastside Mayhem: Day 3—Lexington* as part of a three-day exercise series to validate current regional operations in response to chemical, biological, radiological, nuclear, and explosive (CBRNE) incidents.

The overall purpose of this regional full scale exercise (FSE) was to enhance the region's capability to respond to CBRNE incidents through practicing and testing notification procedures, hazard identification, establishing and maintaining unified command, and responding to the exercise scenario according to agency standard operating guidelines (SOGs).

Exercise Goal

The goal of this regional FSE series was to provide regional response organizations within the CAPCOG region the opportunity to assess procedures, validate information, and highlight gaps (both knowledge and processes) related to CBRNE incidents.

Structure

This exercise was one of three FSEs in a series that simulated potential real-world events. Each exercise was preceded with a participant briefing and exercise site tour and was followed by a hot wash. The exercise began with an inject to call dispatch describing the exercise scenario and concluded three hours later.



The tanker used during exercise play.

Twenty-eight controllers/evaluators observed and captured the events of the exercise. The evaluators were asked to provide responses and feedback after the exercise on overall exercise play, as well as specific information on the identified exercise focus areas.

This after action report and improvement plan (AAR/IP) was developed to document areas of strength and gaps witnessed during the exercise, and potential solutions to those gaps. This information was captured in a formal evaluation, as well as discussed during an after-action meeting held on December 16, 2016.



Student volunteers assemble and wait for the exercise to start.



Teams approach and begin work on the leaking tanker.

Exercise Core Capabilities and Objectives

The exercise objectives outlined in Table 1 describe the expected outcomes for the exercise. The objectives were linked to the Federal Emergency Management Agency's (FEMA's) core capabilities. The objectives and aligned capabilities were guided by the Exercise Planning Team. A matrix of core capability performance can be found in Appendix C.

Table 1: Exercise Objectives and Associated Capabilities

Core Capability	Exercise Objective
Environmental Response/Health and Safety (HazMat)	ReSET CBRNE teams will mitigate a leaking chemical tanker and will ensure protection of the public from any chemical hazards.
Operational Coordination	ReSET CBRNE teams responding to an incident will coordinate command & task-level CBRNE operations to ensure effective mitigation is accomplished.
Operational Communications	Ensure the capacity for timely communications in support of security, situational awareness, and operations by any and all means available, among and between affected communities in the impact area and all response forces.

Summary Analysis

Strengths identified in the exercise include:

1. CBRNE crews demonstrated the ability to adapt and utilize multiple methods for managing the leaking trailer.
2. Responders selected and executed the setup of the proper monitors in an expedient manner.
3. CBRNE teams adequately set up and maintained control zones throughout the incident.
4. The Guardian system worked well with AFD, Hays, Wilco, and 6th Civil Support Team (CST) units on system.
5. Responding CBRNE agencies were able to successfully communicate with local first responders on scene.
6. Communication flow was smooth at all levels of the command structure. Face-to-face communication was used whenever possible, cutting down on unnecessary radio traffic.
7. Liaisons were utilized to improve inter-agency communication.

Areas for improvement identified in the exercise include:

1. Teams did not follow proper chemical classification protocol.
2. There is a need to reinforce proper decontamination (decon) protocols among response personnel.
3. Regional response personnel would benefit from additional practice of personal protective equipment (PPE) selection procedures.
4. Response personnel were unfamiliar with multiple plug types.
5. Regional response agencies demonstrated a need for greater understanding of unified command procedures to perform quick establishment of roles and responsibilities and use of common terminology.
6. Space was not efficiently used in setting up the site during the exercise.
7. CST and Hayes County do not currently have individual network IDs for use on the Guardian system.

The following sections provide an overview of the performance related to each core capability and associated exercise objective, highlighting strengths and areas for improvement.



CAPABILITY ANALYSIS



Capability Analysis

Core Capability 1: Environmental Response/Health and Safety (HazMat)

The strengths and areas for improvement for the core capability aligned to this objective are described in this section. Recommendations associated with areas for improvement are provided in **bold** text.

Associated Objective:

ReSET CBRNE teams will mitigate a leaking chemical tanker and will ensure protection of the public from any chemical hazards.

Strengths

The partial capability level can be attributed to the following strengths:

Strength 1: CBRNE crews demonstrated the ability to adapt and utilize multiple methods for managing the leaking trailer.

Strength 2: Responders selected and executed the setup of the proper monitors in an expedient manner.

Strength 3: CBRNE teams adequately set up and maintained control zones throughout the incident.

Areas for Improvement

The following areas require improvement to achieve the full capability level:

Area of Improvement 1:

Teams did not follow proper chemical classification protocol.

Analysis:

Current procedures require that chemical identification be performed and verified through multiple methods including the initial placard reading, testing it with Spilfyter® chemical classifier strips and pH/fluoride paper, and utilizing technology such as HazMat 360 to fully classify the chemical. During the exercise, players solely relied on the placard to identify the chemical spill. Standard guidelines would require stopping the leak to continue additional testing. **To improve awareness of these procedures, regional training on standard chemical ID protocols would be beneficial to response personnel.**

Area of Improvement 2:

There is a need to reinforce proper decon protocols among response personnel.



Medical monitoring performed prior to donning PPE.



Decon performed on park goer.

Analysis:

Responding regional CBRNE agencies have established decon procedures. However, multiple protocols were not followed during the exercise. Firstly, an appropriate technical decon setup was not established. Players would be seen walking away from decon in level A suites after being deconned to retrieve their boots. Likewise, technical decon personnel should have been in Level B suits to decon those in level A suits. To prevent these errors, **jurisdictional training on proper decon protocol for response personnel should be beneficial to reinforce correct procedures in setting up, performing, and receiving decon.**

Area of Improvement 3:

Regional response personnel would benefit from additional practice of PPE selection procedures.

Analysis:

During the exercise, responders failed to conduct chemical research prior to PPE selection. Current protocol states that the three steps of research should have been conducted prior to PPE selection. To address this gap, **regional drill should be conducted regarding PPE selection procedures.**



Teams plug the leak.

Area of Improvement 4:

Response personnel were unfamiliar with multiple plug types.

Analysis:

The exercise presented two different leaks calling for two different methods to stop the leak, at a minimum. For the first leak, command initially decided to utilize the football method to plug a triangular leak. The first application of the football failed due to the bag being left on the football—an issue that could have been mitigated with familiarity with the method. The second, and ultimately successful, method of stopping the first leak involved using plug-and-dike to completely cover the leak. The second leak was long and jagged. It was mitigated by entry team 2 (AFD) using ratchet straps and a rubber mat. entry team 2 tried running the straps vertically across the mat and were unable to stop the leak, but the leak was stopped when the straps were run diagonally and sufficient pressure was applied to the center of the rubber mat. The variability in the prevalence and use of particular equipment across the region can lead to inefficiencies in response from unfamiliarity with the method. To address this issue, **the region should create a standardized list of plug types used within the region, and build a training and exercise initiative around the various plug types to create uniformity among response personnel.**

Core Capability 2: Operational Coordination

The strengths and areas for improvement for the core capability aligned to this objective are described in this section. Recommendations associated with areas for improvement are provided in **bold** text.

Associated Objective:

ReSET CBRNE teams responding to an incident will coordinate command and task-level CBRNE operations to ensure effective mitigation is accomplished.

Strengths

The partial capability level can be attributed to the following strengths:

Strength 1:

The Guardian system worked well with AFD, Hays, Wilco, and 6th CST units on system.

Areas for Improvement

The following areas require improvement to achieve the full capability level:



Representatives from response agencies strategize.

Area of Improvement 1:

Regional response agencies demonstrated a need for greater understanding of unified command procedures to perform quick establishment of roles and responsibilities and use of common terminology.

Analysis:

Unified command was established during the exercise, but it was slow to start. While some of the challenges may be attributed to changes in agencies playing in the exercise, an agency should have assumed command more quickly. Once command was assumed, a staging officer was not assigned to coordinate the

multiple agencies, vehicles, and equipment arriving on scene, which led to the inefficient site setup. Within the unified command, common terminology failed to be utilized, resulting in multiple assigned roles to single operations. Ongoing delays to setting up unified command and lack of common terminology use created ongoing confusion that led to a pause of the exercise to realign efforts. To prevent future occurrences, **continued practice and regional exercises regarding unified command establishment and principles would benefit response personnel.**

Area of Improvement 2:

Space was not efficiently used in setting up the site during the exercise.

Analysis:

Efficient utilization of space is important for effective command and decon. Evaluators noted that the exercise's two dressing areas, command post, and CBRNE group were scattered within the staging area in a hazardous way. Specifically, the technical decon trailer was too close to command and staging. The

decon entry corridors were not marked or easily seen, allowing for the placement of the trailer to create the unnecessary threat of secondary contamination. **The region should explore building a staging simulation tool and a corresponding training class on proper staging to provide responders with more opportunities to practice site setup.**

Core Capability 3: Operational Communications

The strengths and areas for improvement for the core capability aligned to this objective are described in this section. Recommendations associated with areas for improvement are provided in **bold** text.

Associated Objective:

Ensure the capacity for timely communications in support of security, situational awareness, and operations by any and all means available, among and between affected communities in the impact area and all response forces.

Strengths

The partial capability level can be attributed to the following strengths:

Strength 1: Responding CBRNE agencies were able to successfully communicate with local first responders on scene.

Strength 2: Communication flow was smooth at all levels of the command structure. Face-to-face communication was used whenever possible, cutting down on unnecessary radio traffic.

Strength 3: Liaisons were utilized to improve inter-agency communication.

Areas for Improvement

The following areas require improvement to achieve the full capability level:

Area of Improvement 1:

CST and Hayes County do not currently have individual network IDs for use on the Guardian system.

Analysis:

During the exercise, the Guardian system was able to be utilized by all local jurisdictions and 6th CST successfully. However, the 6th CST and Hayes were sharing an AreaRAE network ID for the system, which caused CST monitors to be assigned to Hayes County's hosts. Since monitors were still visible through the server, the issue was mendable but not ideal. To prevent the possibility of future issues, **the region should reprogram AreaRAE network IDs, moving Hayes County and the CST to separate network IDs on the Guardian system.**



First responder tends to actor displaying side effects of the leak.



CONCLUSION



Conclusion

Eastside Mayhem: Day 3—Lexington

This exercise provided a unique opportunity to integrate regional and local jurisdictional CBRNE response agencies in a FSE activity. Participants were able to engage in notification procedures to correct response agencies, recognize situational hazards, establish unified command, and perform activities according to SOGs to meet the exercise's needs. Exercise players and observers were able to identify areas of improvement relating to training, equipment, and operational procedures. The findings provide regional and local jurisdictional agencies with an adequate focus for future trainings to improve upon, including standard chemical ID protocols, decon setup and procedures, PPE selection, plug types, and command staging and placement. Corrective actions also suggest that the need for additional equipment and procedures for regional and local jurisdiction CBRNE response agencies exists.

Response agencies were able to successfully support the incident's needs with an effective and efficient response. By adding additional training, equipment, and procedures in the exercise's areas of improvement, regional and jurisdictional response teams will be able to better address future CBRNE situations.



Local students volunteering for decon watch the exercise after the conclusion of the decon portion.



APPENDICES



Appendices

Appendix A: Acronyms

Table 2: Acronyms

Acronym	Term
AAR/IP	After Action Report/Improvement Plan
AFD	Austin Fire Department
CAPCOG	Capital Area Council of Government
CBRNE	Chemical, Biological, Radiological, Nuclear, and Explosive
CST	Civil Support Team
Decon	Decontamination
FEMA	Federal Emergency Management Agency
HazMat	Hazardous Materials
ICS	Incident Command System
LESET	Law Enforcement Standardization of Equipment & Training
MSEL	Master Scenario Event List
NOAA	National Oceanic and Atmospheric Administration
PIO	Public Information Officer
PPE	Physical Protective Equipment
ReSET	Regional Standardization of Equipment and Training
SOGs	Standard Operating Guidelines
TDEM	Texas Division of Emergency Management
VFD	Volunteer Fire Department
Wilco	Williamson County

Appendix B: Capabilities Defined

The core capabilities addressed in this exercises are defined below.

Table 3: Core Capabilities Defined

Core Capability	Definition
Environmental Response/Health and Safety (HazMat)	Conduct appropriate measures to ensure the protection of the health and safety of the public and workers, as well as the environment, from all-hazards in support of responder operations and the affected communities.
Operational Coordination	Establish and maintain a unified and coordinated operational structure and process that appropriately integrates all critical stakeholders and supports the execution of core capabilities.
Operational Communication	Ensure the capacity for timely communications in support of security, situational awareness, and operations by any and all means available, among and between affected communities in the impact area and all response forces.

Appendix C: Capability Analysis Matrix

Aligning exercise objectives and core capabilities provides a consistent taxonomy for evaluation that transcends individual exercises to support preparedness reporting and trend analysis. Table 2 includes the exercise objectives, aligned core capabilities, and performance ratings for each core capability as observed during the exercise and determined by the evaluation team.

Table 4: Analysis of Core Capabilities

Objective	Core Capability	Performed without Challenges (P)	Performed with Some Challenges (S)	Performed with Major Challenges (M)	Unable to be Performed (U)
1. ReSET CBRNE teams will mitigate a leaking chemical tanker and will ensure protection of the public from any chemical hazards.	Environmental Response/Health and Safety (HazMat)		S		
2. ReSET CBRNE teams responding to an incident will coordinate command & task-level CBRNE operations to ensure effective mitigation is accomplished.	Operational Coordination			M	
3. Ensure the capacity for timely communications in support of security, situational awareness, and operations by any and all means available, among and between affected communities in the impact area and all response forces.	Operational Communications		S		

Ratings Definitions:

- **Performed without Challenges (P):**

The targets and critical tasks associated with the core capability were completed in a manner that achieved the objective(s) and did not negatively impact the performance of other activities. Performance of this activity did not contribute to additional health and/or safety risks for the public or for emergency workers, and it was conducted in accordance with applicable plans, policies, procedures, regulations, and laws.

- **Performed with Some Challenges (S):**

The targets and critical tasks associated with the core capability were completed in a manner that achieved the objective(s) and did not negatively impact the performance of other activities. Performance of this activity did not contribute to additional health and/or safety risks for the public or for emergency workers, and it was conducted in accordance with applicable plans, policies, procedures, regulations, and laws. However, opportunities to enhance effectiveness and/or

efficiency were identified.

- **Performed with Major Challenges (M):**

The targets and critical tasks associated with the core capability were completed in a manner that achieved the objective(s), but some or all of the following were observed: demonstrated performance had a negative impact on the performance of other activities; contributed to additional health and/or safety risks for the public or for emergency workers; and/or was not conducted in accordance with applicable plans, policies, procedures, regulations, and laws.

- **Unable to be Performed(U):**

The targets and critical tasks associated with the core capability were not performed in a manner that achieved the objective(s).

Appendix D: Improvement Plan

This IP has been developed specifically for CAPCOG as a result of the *Eastside Mayhem: Day 3—Lexington* conducted on November 3, 2016.

Capability	Issue/Area for Improvement	Corrective Action	Primary Responsible Organization	Organization POC	Start Date	Completion Date
Environmental Response/Health and Safety (HazMat)	Teams did not follow proper chemical classification protocol.	Provide additional training on standard chemical ID and classification protocols.	ReSET	ReSET Chair	11/2016	11/2017
	There is a need to reinforce proper decon protocols among response personnel.	Provide jurisdictional training on decon protocols, including setting up, performing, and receiving decon.	ReSET	ReSET Chair	11/2016	11/2017
	Regional response personnel would benefit from additional practice of PPE selection procedures.	Conduct regional drills on PPE selection procedures	ReSET	ReSET Chair	11/2016	11/2017
	Response personnel were unfamiliar with multiple plug types.	Create a standardized list of plug types used within the region.	ReSET	ReSET Chair	11/2016	11/2017
		Build a training and exercise initiative around the various plug types used within the region.	ReSET	ReSET Chair	11/2016	11/2017

Capability	Issue/Area for Improvement	Corrective Action	Primary Responsible Organization	Organization POC	Start Date	Completion Date
Operational Coordination	Regional response agencies demonstrated a need for greater understanding of unified command procedures to perform quick establishment of roles and responsibilities and use of common terminology.	Provide regional training on unified command.	CAPCOG	Eric Carter, CAPCOG Homeland Security Director	Ongoing	Ongoing
	Space was not efficiently used in setting up the site during the exercise.	Build a staging simulation tool.	ReSET	ReSET Chair	11/2016	11/2018
		Design a staging training class.	ReSET	ReSET Chair	11/2016	11/2018
		Provide the staging training class/simulation tool to regional response agencies.	ReSET	ReSET Chair	11/2016	11/2018
Operational Communications	CST and Hayes do not currently have individual network IDs for use on the Guardian system.	Reprogram AreaRAE network IDs, ensuring all applicable response agencies have IDs that need to have them.	ReSET	ReSET Chair	11/2016	11/2017