Hazardous Materials Roundtable Meeting

February 5–6, 2019

Chantilly, VA

Sponsored by the USDOT Pipeline and Hazardous Materials Safety Administration (PHMSA), the FEMA U.S. Fire Administration (USFA), and the International Association of Fire Chiefs (IAFC)

The Roundtable's positions do not necessarily reflect the views of PHMSA or USFA

April 3, 2019

Contents

I. EXECUTIVE SUMMARY

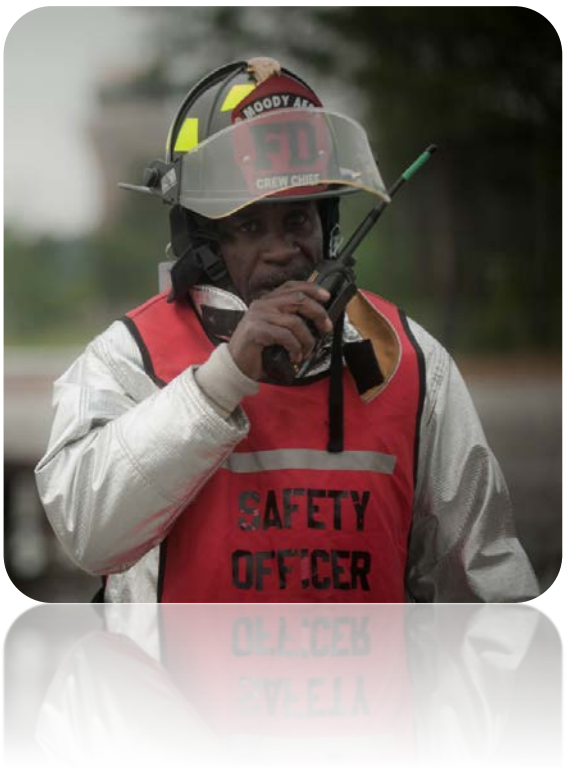
Hazardous materials emergency response is a complex and evolving public safety service provided throughout the United States today. While the level of services provided may vary between communities and states, there is universal acceptance that hazardous materials preparedness (i.e., prevention, planning and response) is a required public safety function. While the fire service is the most frequently cited agency responsible for the delivery of this service, other key players include emergency management, EMS, law enforcement, Local Emergency Planning Committees (LEPCs), and business and industry. Likewise, it is no longer simply an activity that is limited to emergency response provided through a Hazardous Materials Response Team (HMRT). Rather, as noted in consensus standards such as NFPA 1600 and FEMA guidance such as the *Comprehensive Preparedness Guide 101* and *Continuity Guidance Circular*, hazardous materials preparedness is a comprehensive service that encompasses planning, management, response, mitigation, and recovery in order to ensure compliance and protect the community and the environment.

NOTE: As used in this report, the terms "emergency preparedness" or "hazardous materials (hazmat) preparedness" encompass the planning, prevention and response phases of emergency management. Otherwise, the individual term or focus area (i.e., planning, prevention, or response) will be noted, as appropriate.

For a number of years, the International Association of Fire Chiefs (IAFC) has convened a roundtable of hazardous materials (hazmat) response technical specialists and subject matter experts who identified critical issues and suggested plans of action to strengthen hazmat response throughout the country, thereby protecting lives, property, and the environment. Roundtable members included representatives of federal, state, and local governments; fire and emergency service agencies; private industry; and other key stakeholders from the hazardous materials community. After 2011, there was an eight-year break in the ongoing roundtable work, and the service and collaboration of the roundtable was missed in the nation's hazardous materials community. As a result, the U.S. Department of Transportation (DOT) Pipeline and Hazardous Materials Safety Administration (PHMSA) and the U.S. Fire Administration (USFA) partnered with the IAFC to reconvene the roundtable process with a two-day meeting on February 5 and 6, 2019, at the IAFC Headquarters in Chantilly, Virginia. This report documents the work of the roundtable and serves as an action plan for all stakeholders.

Several key themes emerged from the meeting and are reflected in this report, including the following:

- Leadership at the local and state level is critical in developing both the systems and partnerships necessary for a safe and effective response to the wide variety of and ever-changing hazardous materials risks and threats in the modern age.
- Building an integrated planning and response capability to better protect local communities requires the support and direct involvement of the "whole community," including responders, planners, regulators, government, industry, small business, and the public with expertise in all areas of hazard identification and communication, hazardous materials development, manufacture, transportation, storage, and use.
- The application and use of risk-based planning and response processes based upon current national consensus standards provides a safe and effective foundation for the emergency preparedness activities. Nonetheless, there are still many issues and challenges to address to strengthen the nation's preparedness capabilities.
- While there have been substantial improvements, training content, availability, and delivery continues to be a critical challenge in ensuring that the emergency preparedness community has the tools, skills, and competencies to protect their respective communities.
- Continued, locally based, strategic planning is needed to identify, prioritize, and fill capability gaps.
- A continued need to improve community hazard awareness, to involve the public in community preparedness planning, and to provide education so that community roles and responsibilities to take public protective actions are clarified and enhanced.



- The role of LEPCs is a critical and foundational element in providing the hazard, risk, and capability assessments needed by the response community. These assessments should be followed by strategic planning at the community level to prioritize and fill capability gaps. Likewise, these LEPC efforts will require sustained support at the national, state, and local levels.
- There is a need to provide guidance to policy makers on the process of developing improved metrics to evaluate both the efficiency and effectiveness of local and regional hazardous materials preparedness capabilities, and the community's progress in filling capability gaps.
- Driven by homeland security efforts, the last decade has seen sustained improvements in the gathering, coordinating, and sharing of critical information throughout the emergency preparedness community. However, there remains a need for systems and processes within the hazardous materials preparedness community that can gather, analyze, package, and distribute critical information in a timely and "user-friendly" manner.

These and many other issues were discussed in the roundtable meeting, and meeting attendees strongly recommended that the roundtable meetings be continued on an annual basis as a service to the nation's hazardous materials community. Section II of this report lists the attendees at the meeting. Section III of this report briefly describes the methodology followed in the five discussion sessions, while Section IV of the report identifies the issues / observations and consensus recommendations made by the meeting attendees.

II. MEETING PARTICIPANTS

Special Acknowledgments

Special acknowledgment is given to Gregory Noll, member and past chairperson of the National Fire Protection Association (NFPA) Technical Committee on Hazardous Materials / Weapons of Mass Destruction Emergency Response and member and past chairperson of the InterAgency Board for Emergency Preparedness and Response—Training and Exercise SubGroup (IAB), who acted as meeting leader and facilitator.

Special acknowledgment is also given to the International Association of Fire Chiefs, who graciously hosted this roundtable meeting at their Headquarters in Chantilly, Virginia.

Finally, special acknowledgment is given to the U.S. Department of Transportation—Pipeline Hazardous Materials Safety Administration, and the United States Fire Administration—National Fire Academy, without whose sponsorship, this roundtable meeting would not have been possible.

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Disclaimer: Please note that governmental representatives observed the Hazardous Materials Roundtable process and provided agency subject matter expertise. They were not involved in drafting the report and neither they nor their agencies are responsible for any conclusions, suggestions, or recommendations contained within the report.

III. MEETING ANALYSIS AND DISCUSSIONS

The Roundtable meeting involved two days of facilitated group analysis focusing upon current and emergent issues in hazardous materials preparedness. There were five major discussion sessions:

1. Opening: How did we get to where we are today?
2. What is working today in hazmat preparedness, and what is not?
3. What are the emerging risks and challenges that we will be facing in the future in hazmat preparedness?
4. Forming Roundtable Observations, Consensus Findings, and Recommendations
5. Next Steps Action Planning

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In the discussions, the attendees explored many topics and issues, and were able to reach consensus on a number of recommendations. Those recommendations are provided below in Section IV: Meeting Observations and Recommendations. Most of the recommendations are potential action items that need to be pursued in the future. It was generally recommended by all attendees that there is a need for continuing the Roundtable meeting format on an annual basis if not more frequently, in order to provide a continuing national forum to address issues impacting the nation's hazardous materials community. Several future Roundtable meetings were envisioned, both to address new emergent issues and to facilitate implementation of many of the recommendations made in this first Roundtable meeting.

As background to these recommendations, the following topic ideas and issues were presented prior to the meeting as starting points for the discussions. These ideas are presented here as part of the record of the meeting.

1. Do hazmat emergency response training standards reflect the operational needs and capabilities required for hazmat emergency response? At a strategic level, what are the strengths and weaknesses of hazmat training and competence as currently found across the country?
2. The domestic energy renaissance is having significant impacts upon many areas and regions of the country. Emergency preparedness challenges include the exploration and production of energy products (e.g., crude oil, LNG, CNG, NGL's); increased transportation of energy products via pipeline, rail, and marine; construction of new pipelines and pipeline reversals of current pipelines; and the construction of new facilities in regions where there has not been a significant historical footprint.

3. Complementing the domestic energy renaissance is the rapid growth in the application and use of alternative energy sources, with an emphasis upon battery storage units. What actions should be recommended to ensure that community emergency preparedness stays ahead of these emerging trends and concepts?
4. As part of the "whole community" concept, what strategies and programs can be implemented to encourage greater participation and input by citizens and community leaders in hazmat emergency preparedness?
5. Local Emergency Planning Committees (LEPCs) have existed since the late 1980s. What defines an effective LEPC? Are there strategies and actions that could be taken to further improve and enhance the role of the LEPC in the community planning process?
6. At a strategic level, what does a "good" hazmat emergency preparedness program look like? What criteria would be used to determine what is an acceptable level of hazmat emergency preparedness? What additional actions could be taken to further enhance this preparedness process?
7. Emergency responder training and operations regulations (OSHA 1910.120 (q)) have not been updated since their initial promulgation in 1989. In contrast, NFPA hazmat consensus standards have been revised through five editions.

8. Do the current regulations meet the health and safety challenges posed by a 2019 risk environment, or is there a need for review and revision? If yes, what elements would be changed?
9. From a health and safety perspective, the exposure gap between structural firefighting and hazmat emergency response operations no longer exists. In short, a structure fire is a hazmat incident in terms of personnel exposures and effects, as well as tactics and processes to manage the health and safety risks. While there are increasing health and safety initiatives in this area, gaps remain. What actions could be taken to reduce the overall risks to firefighters operating at both structure fires and wildland interface scenarios?
10. The threats posed by the criminal use of hazardous materials, including weapons of mass destruction (WMD), continue to influence hazmat emergency preparedness at the community level. Are changes required within the hazmat emergency preparedness community to meet these changing risks?
11. The legalization of marijuana by many states is creating hazmat emergency preparedness challenges, especially as it relates to grow facility design, construction, and operations. Are there risk management actions or processes that can be implemented to increase the level of preparedness at the community level?

The consensus conclusions of the discussions of these and many other issues in the meeting are summarized in the actual recommendations listed in the next Section IV: Meeting Observations and Recommendations.

IV. MEETING OBSERVATIONS AND RECOMMENDATIONS

Below are the issues / observations and recommendations made by the participants in the roundtable meeting. They are not listed in any priority order, but are grouped for convenience into seven (7) subtopics:

1. Planning
2. Prevention
3. Response
4. Training
5. Standard of Care
6. Funding
7. Information Sharing

It should be noted that all recommendations are made at a strategic level; follow-up meetings and activities will be required to develop individual improvement plans and tasks to addresses the respective recommendations.

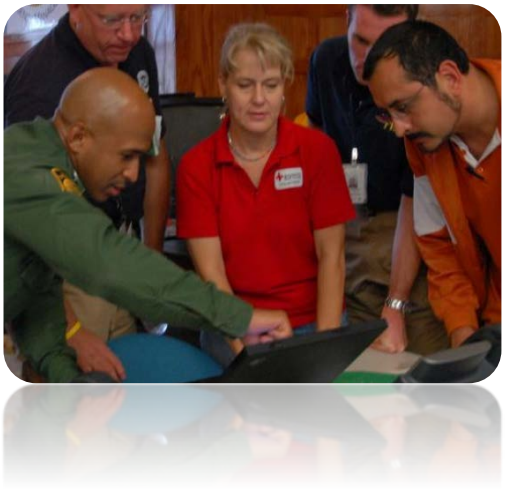
In lieu of having a large number of individual recommendations, several recommendations pertaining to a common mission were combined (e.g., "Recommendation 1—Planning" and "Recommendation 4—Training").

PLANNING

Recommendations #1

Better utilize and integrate the Local Emergency Planning Committee (LEPC) into the local planning process. Specific actions that can improve LEPC utilization include:

- Federal agencies should engage State Emergency Response Commissions (SERCs) to provide guidance and expectations of LEPCs in local planning efforts.
- Foster strategies to better coordinate and blend the various federal planning and reporting requirements that local planners follow.
- Reduce the separation of hazmat and environmental-related issues captured in the LEPC process and utilize the all-hazards planning process used in the emergency management community.
- Planning efforts should be risk-based and embrace the Threat and Hazard Identification and Risk Assessment (THIRA) process.



- Facilitate the selection and development of strong local leaders who can improve LEPC utilization and effectiveness.
- Encourage stronger participation by both the emergency response community and industry in LEPC activities.
- Provide consistent and sustained funding streams to support LEPC activities in community planning efforts.

Issues / Observations #1

Under the Emergency Planning and Community Right-to-Know Act of 1986 (EPCRA), SERCs should be providing policy guidance and direction to the LEPCs. Effective preparedness involves a partnership at the local level between all key stakeholders.

In order to stimulate the activities of LEPCs, SERCs need to help LEPCs engage with local community partners to develop answers to these key questions:

- Applying a THIRA process, what are the hazmat accident risks of transportation and facilities in your community, and how are they being prevented? Are commodity flow studies included as part of analyzing transportation risks?
- Based upon the identified risks, what are the plans and capabilities of the response organizations and the community, should an accident occur?
- What are the roles and responsibilities of all community members (i.e., public and private sector partners) during a hazmat incident?
- What capability gaps exist and how are plans put in place to strategically prioritize and fill those gaps based on community priorities?

Recommendations #1A

Foster strategies to blend the various federal planning and reporting requirements that local planners must follow in order to better integrate planning efforts.

Issues / Observations #1A

Competing planning requirements at the national level may be undermining or confounding local preparedness efforts. This may be a challenge at the local level if there are competing hazard priorities between what local jurisdictions want or need to address, and what federal support or grant funding will allow. This suggests that there may be a need at the national level to simplify and integrate federal systems that provide guidance and funding to local preparedness efforts. Prioritization should be given to locally derived strategic plans to fill capability gaps.

Recommendations #1B

Reduce the separation of hazmat- and environmental-related issues captured in the LEPC process and utilize the all-hazards, THIRA-based planning process as used in the emergency management community.

Issues / Observations #1B

Some stakeholders and governmental representatives view LEPC responsibilities as being totally focused upon environmental health and safety issues, generated only by USDOT- or EPA-classified hazardous materials. The LEPC mission should reflect an all-hazards approach that is integrated into the overall community planning process. This is critical, both because local focus and concern is naturally all-hazards-based, and because all-hazards planning efforts facilitate more coordinated emergency preparedness efforts.

Recommendations #1C

Facilitate the selection and development of strong local leaders who can improve LEPC utilization and effectiveness.

Issues / Observations #1C

In many jurisdictions, strong personal leadership by LEPC chair and/or strong support by local government are critical elements in an effective LEPC. This suggests an effort might be needed to encourage local government leaders to better understand the application and utilization of the LEPC as a comprehensive, "whole community" planning element beyond environmental-related scenarios, to more positively support LEPCs as a planning element, and encourage jurisdictions to seek out and recruit professionals committed to the preparedness mission and process.

Federal Agencies (PHMSA, CSB, EPA, and FEMA—SERCs, LEPCs) and first responder organizations should work to identify, educate, and cultivate emerging community leaders to promote local, community-based, preparedness efforts. There may also be a need for national training efforts to better engage and provide a more positive track to run on for prospective LEPC members.

Recommendations #1D

Encourage stronger emergency responder and industry participation in LEPC activities.

Issues / Observations #1D

In a number of jurisdictions, LEPCs are active and more effective because of well-engaged local industry support. Government and industry efforts to promote greater involvement in "under-performing" LEPCs would be a low-cost program with the potential for high returns.

A similar situation exists in some communities where emergency planning and emergency response duties are not effectively coordinated between each other.

Providing training of LEPC members in how to better engage both the emergency response community and local industry should also be considered part of this initiative.

Recommendations #1E

Provide consistent and sustained funding streams to support LEPC activities in community planning efforts.

Issues / Observations #1E

Although LEPCs are a critical component of community risk planning and coordination, many LEPCs are not fully funded or must develop funding on an ad hoc basis. Regulatory efforts should recognize and include LEPCs in planning and contingency efforts. Cash-match grant requirements are often counter-productive for LEPCs located in small, rural communities. Alternative approaches to eligibility and matching requirements must be considered to create better utilization of available funds.

Recommendations #1F

Recommend outreach to the philanthropic and academic communities on their role in preparedness planning, and the resources that might be available to facilitate local / regional planning efforts.

Issues / Observations #1F

The academic and philanthropic communities often have resources, such as access to volunteers and expertise, beyond financial support that can facilitate the planning process. Government agency outreach and education efforts may promote improved community preparedness if focused on the development of local priorities. These efforts are not necessarily monetary in nature; examples such as an increased role in educating the public and community leaders on the techniques to assess risks, capabilities, and techniques to fill capability gaps, may be beneficial. In some areas, the philanthropic community has assisted in the creation of grant and other financial support programs focused towards community emergency preparedness efforts.

PREVENTION

Recommendations #2

There is a need for hazardous materials accident prevention and protection measures to be better integrated into the emergency preparedness system. The application and use of community risk reduction (CRR) processes to the hazmat risks should be strongly encouraged. Prevention and protection measures can involve a range of administrative and engineered options, including educational, outreach, mitigation control, and protection or replacement / substitution of products or processes.

Issues / Observations #2

Risk mitigation measures are often rated as a lower priority need when compared to more immediate and short-term planning and response measures. Securing funding for local hazard mitigation activities, including plans review, inspections, and public education measures are often viewed as low priority tasks.

Prevention measures involving fixed facilities and critical infrastructure (both facility and transportation) often have substantial capital funding requirements and significantly longer timelines for project review, budgeting, and installation. Community outreach and educational measures may be necessary to improve community reception and acceptance of longer-term prevention and risk countermeasures.

Recommendations #2A

Develop guidance materials and provide training / educational opportunities focused upon identifying accident prevention initiatives and risk assessment processes that can be applied to hazmat transportation and facility scenarios. The goal is to improve the skills and capabilities of local planners and inspectors to identify opportunities where accident prevention measures can be employed, evaluate special hazard / risk scenarios, and ensure the improved preparedness and safety of both responders and the community at-large.

Issues / Observations #2A

The natural nexus between response, planning and prevention lies in the hazard and risk evaluation process. If the process starts with an identification of hazards and the evaluation of risks, then the next logical step is to consider whether to prevent the risk (i.e., replacement or installation of counter-measures), or plan on how to respond to the risk. Under this process, planning, prevention, and response requirements are all based on the same objective of risk reduction.

Planning processes that start with a requirement to "develop a plan" based solely upon an external planning requirement often do not consider the impacts of either prevention or risk mitigation. This is especially true when planners do not understand the inter-relationships between prevention, planning, and response.

Recommendations #2B

Recommend the inclusion of hazmat accident prevention / mitigation measures in federal disaster funding programs.

Issues / Observations #2B

Federal support of accident prevention and mitigation efforts are often associated with natural disaster-related scenarios, such as hurricane and flood scenarios. In these scenarios, a post-incident funding application process with built-in priorities is typically employed; however, this process and its federal government priorities may conflict with local hazmat accident prevention and preparedness priorities.

Most natural disasters have a hazmat component that can be addressed within the response and recovery efforts.

If hazard mitigation planning does not include accident prevention measures to reduce the occurrence or severity of a hazmat incident, the plan should be recognized as incomplete.

As applicable, federal grants should be tied to accident prevention-based codes and consensus standards, which should be recommended as best practices.

RESPONSE

Recommendations #3

Ensure that the delivery of hazmat emergency response services are based upon a risk-based response (RBR) process using science- and evidence-based data, in accordance with current hazmat regulations, standards and the hazmat standard of care.

Issues / Observations #3

The collective "body of knowledge" pertaining to hazmat emergency response has grown significantly over the last three decades. Today, responders have access to substantially more data and information pertaining to hazmat/WMD behavior, exposures, and their effects upon humans and materials than even a decade ago.

Despite these gains and achievements, some tactics and doctrine have not stayed abreast of these updates and changes. Science- and evidence-based data and

findings should be integrated into both training curricula and incident-specific action plans to minimize incident impacts upon critical infrastructure processes and systems.

Recommendations #3A

Given the decrease in the number of actual hazmat/WMD incidents over the last decade and the corresponding decrease in actual incident response experience, facilitate the delivery and adoption of more risk-based training and exercises opportunities for responders.

Issues / Observations #3A

Since the promulgation of the Emergency Planning and Community Right-to-Know Act (EPCRA), related regulatory requirements (e.g., Process Safety Management, Oil Pollution Act) and industry-based preparedness and management programs (e.g., TRANSCAER, CHLOREP), the number of "working" hazmat incidents has substantially decreased. This is a positive accomplishment that reflects the gains achieved through planning, accident prevention, and risk management efforts.

Because of fewer incidents, the need for effective, risk-based training and exercise opportunities increases substantially. An increasing number of newer and less experienced emergency responders often do not have the opportunity to develop the incident-based experience that is important in applying a risk-based response decision-making process. While this is an evolving challenge in all response areas, it is an acute issue in hazmat response because of the greater need for technical skills, as well as incident analysis and decision-making competencies.

These training challenges also exist with public education efforts on hazmat risks and the public's responsibilities for self-protection.

Recommendations #3B

The determination and delivery of local / regional emergency response capabilities should be based upon a risk-based evaluation process that is administered at the local level.

Issues / Observations #3B

Hazmat emergency responders must assume a more proactive stance in community risk reduction and preparedness efforts.

The majority of hazmat incidents are handled by responders trained to the First Responder Operations level. While not every community requires a local response capability at the Hazmat Technician level (e.g., Hazmat Response Team), every community should have access to that capability within a pre-determined timeline (e.g., HMRT on-scene within 2 hours).

Various options are being employed at the state and regional levels to meet this basic benchmark, including the use of Regional HMRTs, resource typing of HMRTs to outline desired operational capabilities, etc.

Recommendations #3C

Current doctrine on response priorities and strategies should be expanded to include controlling incident impacts upon critical infrastructure processes and systems (e.g., transportation systems, business disruption, etc.).

Issues / Observations #3C

Historically, operational response to hazmat/WMD scenarios has often had a hard "stop" at life safety incident priorities, without also analyzing potential incident impacts upon related community and critical infrastructure activities.

By applying risk-based response processes, there are additional strategies and tactics that can often be employed to minimize both the short-term and long-term incident impacts to critical infrastructure processes and operations.

Recommendations #3D

Given emerging trends, threats, and risks, and hazmat/WMD response protocols, information and training materials must be developed and released to the hazmat preparedness community in a timely and expeditious manner.

Given the potential for "threat du jour" solutions, it should be emphasized that the utilization of current risk-based response principles and practices are still applicable and should be utilized.

Issues / Observations #3D

Emerging national trends and issues, such as the energy renaissance, climate change and social changes (e.g., opioid use, legalization of marijuana), present new challenges for the hazmat/WMD planning and response communities. Most recent examples include:

- Structural firefighting and cancer exposures
- Energy storage systems
- High hazard flammable liquid trains (HHFT) transporting crude oil and ethanol
- Lithium ion batteries (propylene carbonate, lithium hexafluorophosphate, hydrogen fluoride)
- Firefighting foams used for vapor suppression (PFOS-based, C8-based, C6-based, etc.)
- Evolving terrorism threats, including biological (Ricin, Abrin, botulinum toxin), radiological (low level medical isotopes), and chemical (binary devices, opioids, fourth generation agents).

While avoiding being focused on the "threat du jour," sustained efforts are necessary to (1) anticipate possible new response challenges associated with these and similar developments, and (2) quickly release recommended information and guidance to the emergency preparedness community.

TRAINING

Recommendations #4

Ensure that training and exercise doctrine and requirements incorporate the following elements:

- Training and exercise funding requests are based upon the hazards, risks, and capability gaps documented through a community THIRA process, thereby providing a post-training method to establish metrics and measure program improvements and effectiveness.
- Address both the "basic" concepts of hazmat emergency preparedness and evolving emerging response trends, issues, and scenarios.

- Skills and competencies are based upon national consensus responder training and certification standards (NFPA 472, 1072, et. al.).
- Training is delivered by instructors who are trained / certified based upon national consensus instructor standards (e.g., NFPA 1041 or equivalent).
- Training curriculum and course content integrates the principles of a risk-based response (RBR) process.
- Training is based upon the needs of the target audience, and is available through a variety of delivery methods (i.e., classroom, computer-based, online webinars and podcasts, scenario-based, etc.).
- Utilize integrated response training deliveries, as appropriate.

- Quality assurance measures are in place to evaluate critical training factors, including need for pre-requisites, instructor performance, course content, and changes / improvements in student skills, knowledge and/or behaviors.

Issues / Observations #4

Given the positive impact of various regulatory and prevention measures, there has been a significant reduction in the number of "working" hazmat incidents. As a result, the value and importance of hazmat/WMD training and exercise programs becomes more important.

Hazmat/WMD training courses and curricula supported through federal grant funds and programs should integrate the basic elements of course design and content, as provided through FEMA, the Emergency Management Institute (EMI), the U.S. Fire Administration, and the National Fire Academy (NFA).

Recommendations #4A

Provide tools and information to assist emergency planners and responders in screening, evaluating, and using online hazmat information and training sources accessible through social media.

Issues / Observations #4A

An increasing number of emergency responders, especially new and internet savvy planners, responders, and the public, use the internet and social media sources for both information and supplemental training on hazardous materials. While this information is easily and more readily accessible than traditional methods, the content may not be vetted or accurate. Given the absence of evidence-based technical oversight or peer review, the potential for planners, responders, and the public to inadvertently use and apply incorrect information and/or response procedures will increase. Given the probability that this trend will continue, the need to establish some form of quality assurance and quality control will become increasingly necessary. Options may include the development of an internet screening tool, responder search system, or site endorsement process.

Recommendations #4B

The key Federal Partners (PHMSA, FEMA, EPA, etc.) should establish a Hazmat/WMD Training Coordination Group to facilitate improved communications and coordination between the key stakeholders within the training community. This should include the grantors, grantees, training providers, and representatives of the hazmat emergency preparedness community.

Issues / Observations #4B

At the present time there is no single organization or coordination point which brings together all of the key stakeholders within the hazmat/WMD community. Challenges have included instances where similar courses have been funded for the same target audience, duplication of training development and/or delivery efforts, and low student attendance.

The Training Coordination Group should include representatives from the following:

- Federal Agency Grantors (e.g., PHMSA, FEMA, etc.)
- Recipients of federal grants focused towards HM/WMD training.
- Business and Industry training providers (e.g., TRANSCAER, CHLOREP, Ammonia Institute).
- Emergency Preparedness Discipline Professional Organizations (e.g., IAFC, IAFF, NVFC, NASTTPO, IAEM, IAB).
- State agencies who provide HM/WMD training to the emergency response community, such as the North American State Fire Training Directors.

STANDARD OF CARE

Recommendations #5

As used in the EMS and medical communities, the concept of "Standard of Care" should be articulated within the hazmat emergency planning and response communities to provide metrics for the accepted level of hazmat service that is delivered, as determined at the local community level.

Issues / Observations #5

There is no single metric that can be used to evaluate preparedness and performance of a hazmat emergency preparedness program. However, there is an evolving "standard of care" that can be applied to many elements of hazmat preparedness.

Standard of care is defined as the minimum level of hazmat service to be provided as may be set forth by law, current regulations (i.e., OSHA 29 CFR 1910.120), consensus standards (i.e., NFPA standards and recommended practices), local protocols and practice, and what has been accepted in the past (precedent). Standard of care is a dynamic element and historically has improved over time.

Hazmat Program Managers must recognize that (1) a standard of care exists, and (2) that the "high bar" is constantly moving upward. Among the factors that should be considered are the following:

- Our operations are legal and within the requirements of the law.
- Our actions and decisions should be consistent with voluntary consensus standards and recommended practices as they are updated and revised.
- Our actions and decisions to control a hazmat / WMD problem should have a technical foundation.
- Our actions and decisions must be ethical.

Recommendations #5A

Provide guidance and risk-based tools that can be used to facilitate the assessment of local emergency preparedness programs in assessing and managing their local hazmat hazards, risks, and capabilities.

Issues / Observations #5A

There is a need for better metrics to evaluate improvements in response capability and whether the community is having success in achieving the desired preparedness and operational capabilities as expected by the community. Progress in closing capability gaps should be measured against a strategic plan developed at the local community level.

Regulatory compliance should not be viewed as equivalent to emergency preparedness and operational effectiveness. Simply having responded to or engaged in preparedness for the latest "problem du jour" is not sufficient criteria to measure success within the hazmat response community. There needs to be locally derived, acceptable measures / metrics that clearly equate the desired capability with local risks, so that gaps can be strategically addressed and filled.

Recommendations #5B

HMRTs and Hazmat Technician-level responders are most effective when employed as a health and safety resource.

Issues / Observations #5B

Historically, HMRTs were originally developed and focused upon issues involving hazardous materials, as defined by various governmental agencies and regulations (e.g., DOT, EPA, OSHA). Unfortunately, there are numerous trends and issues which may not be viewed as a traditional hazmat problem, but which generate significant risks to both responder and community safety and are being handled by HMRTs (see Recommendation 3D). Most notable of these current issues is the incidence of firefighting cancers as a result of structural firefighting exposures.

HMRTs and individuals trained to the Hazmat Technician level have both technical and analytical skills that can be employed in various response scenarios. It should be noted that response organizations viewed by their peers as "best in class" are now moving in this direction of functioning as a health and safety resource.

Recommendations #5C

Encourage the updating of federal regulations for hazmat emergency response (OSHA 29 CFR 1910.120.q) to more accurately reflect current response issues, scenarios, and related challenges.

Issues / Observations #5C

The primary health and safety regulations pertaining to hazmat emergency response operations (OSHA 29 CFR 1910.120q and its EPA equivalent, EPA 40 CFR Part 311) have not been updated since their initial promulgation in 1989. As a result, the regulations do not accurately reflect a number of current emergency response and health and safety issues, including the selection of PPE, decontamination practices, and the utilization of risk-based response processes.

In contrast, NFPA 472 and its associated standards are now in their 6th edition, with the most current edition published in 2018.

FUNDING

Recommendations #6

Provide guidance and tools to assist local jurisdictions in identifying and utilizing supplemental sources of both hazmat and all-hazards funding to support local hazardous materials preparedness.

Issues / Observations #6

Funding, sustainment, and community support will always be foundational elements in the delivery of a successful and effective hazmat emergency preparedness program. The more funding and other resource "tools" that can be placed into the toolboxes of the LEPCs, Emergency Management Coordinator, and Hazmat Program Managers, the greater the likelihood that these resources can result in improved local emergency preparedness.

Recommendations #6A

Provide enhanced flexibility on the application for and use of hazmat grant funds, providing that a connection between the funding stream and the project goals and objectives can be validated.

Issues / Observations #6A

Although the response community will always respond regardless of the incident, equipment, training and staffing levels (or lack thereof) are all directly influenced by funding and can present significant challenges. Excluding the PHMSA HMEP grants, hazmat grant funding and federally provided special training offerings are often "stove-piped" for specific hazards or specific functions only.

While keeping with the original intent of the grant funding, recipients should be encouraged to apply the funds so that outcomes are focused on an all-hazards response environment and address locally prioritized capability gaps.

Grant applications should validate how the funds will be used within the parameters of the grant program to achieve the desired outcomes. Grant guidance for siloed or problem-specific funding streams should be modified to provide more flexibly, providing the primary risks and gaps specified in the original grant guidance are addressed.

INFORMATION SHARING

Recommendations #7

Support the timely and effective dissemination of critical information on emerging threats, risks, and agency capabilities to facilitate both short-term and long-term hazmat/WMD emergency preparedness activities.

Issues / Observations #7

Since 9/11, there have been significant improvements in the sharing of critical information between disciplines about emergent trends and risks. However, opportunities remain for improved communications and coordination. The development of relationships and partnerships must continue to be fostered to ensure that critical information is passed along to agencies for both situational awareness and risk-specific actions.

Trust must continue to be fostered among federal and state agencies (e.g. Fusion Centers) and the local / regional emergency response community. Relationship-building is key to this trust-building and information-sharing process. Supporting this process may involve training, encouraging the leadership in

preparedness organizations needing to work together, and improved communication systems and linkages.

The packaging and delivery of this critical information should vary depending upon the topic and its security classification. Simple, one-page summaries of critical information (e.g., FDNY Watchline, EMR ISAC Bulletins, DHS S&T CSAC News Reports) have been particularly effective for communicating unclassified, open source information to key stakeholders, especially within the emergency preparedness community.

Recommendations #7A

Foster improved communications at the local / regional level of emerging threats, risks, operational, and support capabilities.

Issues / Observations #7A

The world is constantly evolving, and hazmat/WMD emergency response programs will always be challenged with new and emerging hazards and risks. Nonetheless, it is important that response programs assess community-specific hazards and focus training and response preparedness efforts on those hazards and not the "problem du jour" that may be trending nationally (but not a problem in their own community). Information sharing and relationship-building between disciplines is vital to facilitate the delivery of the appropriate and integrated response process.

The emergency preparedness community must also ensure that their elected officials and key stakeholders are aware of these changing risks and the corresponding services and operational capabilities that are being provided. Too often, emergency preparedness agencies are their own worst enemy when it comes to marketing their capabilities and making sure the public understands their services and mission. This is especially true in areas primarily supported by volunteer-based organizations.

Recommendation #7B

HAZARDOUS MATERIALS ROUNDTABLE

The Hazardous Materials Roundtable Report should be viewed as a "living document." In order to ensure its long-term success, the roundtable meeting should be conducted on an annual basis to ensure that organizational relationships are maintained, and an Improvement Plan (IP) to prioritize, respond to, and address the stated recommendations can be developed and implemented. Given the broad range of stakeholders involved in the process, Roundtable participants should consider designating one organization to serve as the Secretary of the Roundtable Report, so as to facilitate long-term continuity.

Issues / Observations #7B

The concept of the HazMat Roundtable was initially started in the early 2000s timeframe, with the most recent Roundtable being held in September 2011. Although the 2011 report focused upon implementing the findings and recommendations of the 2010 report, it appears that there was no follow-up tracking or communications between the Roundtable members. As a result, several issues identified in the 2010 and 2011 reports still continue today.

V. NEXT STEPS

This Roundtable was a continuation in a series of over twenty years of meetings addressing national challenges in hazardous materials emergency preparedness. The vision of the Roundtable initiative is as an on-going national forum to identify issues in hazardous materials emergency preparedness and to facilitate changes to address those issues in the planning, prevention and response programs of the nation's emergency preparedness community. Although this particular Roundtable meeting was sponsored by DOT PHMSA and FEMA USFA and hosted by the IAFC, the Roundtable initiative is not intended to be the proprietary program of any individual agency or organization. Rather the Roundtable initiative is intended to be "owned" and to represent the interests of the national hazardous materials emergency preparedness community at-large.

This Roundtable meeting continued the work of previous Roundtable meetings and generated many ideas about strategic goals and targets for improvements in hazardous materials emergency preparedness. It is planned that future Roundtable meetings will continue to build on this work as a living vision of the strategic improvements needed nationally and will also concurrently begin to foster and encourage specific tactical actions and programs by participating Roundtable organizations that will help achieve those strategic goals. For example, a future Roundtable meeting might focus specifically on one mission, such as planning or creation of metrics, with participating Roundtable organizations in that case asked to explore possible initiatives within their programs and mandates that might help address some of the planning issues identified in this report.

It is also envisioned that there will continue to be a growing membership and expanding number of participants in the Roundtable work. As future Roundtable meetings focus on specific mission or issues, there may be groups of subject matter experts added to the membership who can contribute importantly to one mission meeting or another. While it is possible that different Roundtable meetings may have different cross sections of participants attending a given meeting, it is nonetheless envisioned that all persons participating at any time in the Roundtable effort will continue to be considered part of the national Roundtable Team and will have continuing opportunities to provide input and participate in the program.

The nation's hazardous materials community is indebted to the fine work of the attendees of this and all previous Roundtable meetings and to the future benefits all hazardous materials planning, prevention and response personnel will glean from the products of future ongoing Roundtable efforts.