

HAZARDOUS MATERIALS ROUNDTABLE

MAY 21–22, 2024

**National Fire Academy (NFA)
16825 S. Seton Ave.
Emmitsburg, MD 21727**

Sponsored by the United States Department of Transportation (USDOT) Pipeline and Hazardous Materials Safety Administration (PHMSA), the Federal Emergency Management Agency (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, USFA, or the IAFC.

DRAFT Final 080624

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1 Executive Summary

Hazardous materials (hazmat) are present in all communities, and they pose threats to people, the environment, infrastructure, and property. Due to the ever-present nature of hazardous materials, it is critical to ensure that hazmat professionals, emergency responders, and communities understand their risks and how to respond when accidents occur. The HazMat Roundtable was developed to identify critical issues and to develop collective action to strengthen the Nation's hazmat community. Comprised of technical specialists and Subject Matter Experts (SMEs), the Roundtable meets annually to address pressing challenges and, consequently, help improve the nation's public safety.

On May 21–22, 2024, the 2024 HazMat Roundtable was hosted by the National Fire Academy (NFA) in Emmitsburg, Maryland. Sponsored by the United States Department of Transportation (USDOT) Pipeline and Hazardous Materials Safety Administration (PHMSA), the U.S. Fire Administration (USFA), and the International Association of Fire Chiefs (IAFC), the event was attended by hazmat technical specialists and practitioners from over 20 organizations. The objectives of the Roundtable were to discuss the priority areas and recommendations from the previous year, determine focus areas for the next year, review the accomplishments and best practices of Roundtable members over the past year, and develop recommendations for how the HazMat Roundtable can continue to its role as an advocate for community preparedness and as a facilitator for collaborative-based preparedness solutions.

The agenda included a review of the priority areas identified by the 2023 HazMat Roundtable, Roundtable member and Federal partner presentations, and discussion sessions to determine goals, action items, and recommendations for the hazmat community over the next year.

The following recommendations were developed to synthesize the discussions of the two-day meeting:

- Affirmation of 2023 Priority Areas:
 - The Roundtable confirms that the priority areas identified by the 2023 HazMat Roundtable remain critical to the hazmat community.
- Need for Better Quality Data:
 - Collecting more and higher-quality data is critical in supporting all of the HazMat Roundtable's priority areas. Taking collective action is difficult to organize and gain support for when there is insufficient data to demonstrate the effects of hazmat events, community gaps or to demonstrate the successes of partner projects and programs.
- Broader Public Engagement:
 - Hazmat response and emergency preparedness cannot occur successfully without the full engagement of the public. Each community and its members should have a strong understanding of the responsibilities and limitations of both their hazmat and emergency response teams as well as their roles in emergency planning.
- Fill Hazmat Response Program Gaps:
 - There is a severe lack of resources among the Nation's hazmat response programs, limiting their ability to properly equip themselves against, prepare for, and respond to hazmat incidents. The HazMat Roundtable participants recommend increasing funding to support the delivery of hazmat response capabilities at every level.

This report describes the Roundtable discussions, provides high-level summaries of member presentations and updates, and details the Roundtable's feedback, recommendations, and suggested plans of action.

2 Meeting Participants

2.1 Special Acknowledgements

- Gregory Noll, member and past chairperson of the National Fire Protection Association (NFPA) Technical Committee on Hazardous Materials/Weapons of Mass Destruction Emergency Response (NFPA 470) and adjunct member of the IAFC Hazardous Materials Committee, served as the meeting leader and facilitator.
- Eriks Gabliks, NFA Superintendent, hosted the event at the NFA facility in Emmitsburg, Maryland.
- PHMSA, NFPA, and IAFC, without whose sponsorship and support, this Roundtable meeting would not have been possible.

2.2 Names of Participants

A complete list of participants can be found in [Appendix A](#) of this document.

3 Welcome

Erik Gabliks welcomed the Roundtable members to the 2024 HazMat Roundtable, citing the importance of this year's meeting and the criticality of the topics at hand. Since the nineties, the Roundtable has been a place for hazmat and emergency management professionals to gather, share critical information, and explore creative tactics to take on the Nation's most challenging hazmat issues. Our nation's preparedness, response, recovery, and mitigation network is widespread and diverse. The Roundtable intends to continue to expand so that all related parties are represented, and the group can become a well-informed, unified group and strengthen our nation's preparedness and response.

4 Historical Reviews & Perspectives (2020-2023)

4.1 2023 Roundtable Outcomes

The 2023 HazMat Roundtable occurred on May 9-10, 2023. The following agencies and organizations were in attendance:

- American Chemistry Council (ACC) Chemical Transportation Emergency Center (CHEMTREC)
- Ammonia Safety & Training Institute (ASTI)
- Emery & Associates Inc.
- Environmental Protection Agency (EPA)
- Federal Emergency Management Agency (FEMA)
- Federal Railroad Administration (FRA)
- Department of Homeland Security (DHS)
- Department of Labor (DOL)

- Department of Transportation (DOT)
- DOT, Pipeline and Hazardous Materials Safety Administration (PHMSA)
- DHS Countering Weapons of Mass Destructions (CWMD) Office
- Hazardous Materials Management and Emergency Response (HAMMER) Federal Training Center
- International Association of Fire Chiefs (IAFC)
- International Association of Fire Fighters (IAFF)
- National Association of SARA Title III Officers (NASTTPO)
- National Association of State Fire Marshals (NASFM)
- National Fire Academy (NFA)
- National Fire Protection Association (NFPA)
- National Volunteer Fire Council (NVFC)
- Occupational Safety and Health Administration (OSHA)
- South-Central PA Regional Task Force (SCTF)
- U.S. Fire Administration (USFA)
- University of Findlay All Hazards Training Center
- Utah Valley University (UVU) Emergency Services
- Virginia Department of Fire Programs (VDFP)
- Washington State Patrol (WSP)

To prepare for the discussion and activities of the 2023 HazMat Roundtable, the issues, recommendations, and solutions from 2020-2022 were reviewed, analyzed, and consolidated. This effort resulted in the following list of improvement areas:

1. Planning & LEPC/TERC Performance
2. Risk-Based Response & Preparedness
3. Funding
4. HazMat Training
5. HazMat Standard of Care
6. Information Sharing
7. Prevention/Mitigation

Before the 2023 meeting, Roundtable members participated in an online survey that asked them to assign a priority to each of the seven improvement areas:

- Critical: Address within the near term (CY 2023)
- High: Address within the next 12-18 months
- Medium: Address within 24 months
- Low: Address after 24 months

Using the results of the survey and tailoring them based on discussions over the course of the 2023 Roundtable, the following critical and high-level issues were agreed upon:

- Critical Issues:
 - Information Sharing
 - HazMat Training & Funding
 - Funding & Prevention/Mitigation
- High-Level Issues:
 - Risk-Based Response & Preparedness

5 2024 Roundtable Discussion Topics

After reviewing the results of the 2023 HazMat Roundtable, the participants discussed how the prioritized issues have evolved over the last year. This session set the tone and focus for the two-day meeting. By reflecting on the decisions of last year's Roundtable, participants were given space to think deeply about the priority areas and begin to formulate recommendations for how to overcome the roadblocks and preparedness gaps in each topic area. The session began with the following critical and high-level issues: Information Sharing, HazMat Training & Funding, Funding & Prevention/Mitigation, and Risk-Based Response and Preparedness.

5.1 Critical Issue: Information Sharing

Information sharing includes both the short-term and long-term processes for sharing critical information on emerging trends and issues among stakeholders. Information includes everything from formal trainings and Federal mandates to informal processes, such as email forwarding and networking. The 2024 HazMat Roundtable participants agreed that this topic remains critical.

At its core, information sharing ensures that the right information is getting to the necessary people in a timely and actionable manner. Delivering critical information to the people who most need it is just as important as packaging information in a format recipients can understand and use.

Questions for the Roundtable to continue to reflect upon in this regard are, "How do we make it easy for people on the ground to access information?" and "How do we get information to people in a way that they will actually use?" The answers to these questions are not one-size-fits-all. A website with great information on it is only useful to those who have time to peruse the site. People on the ground, especially during emergencies, need information fast. They often do not have internet access or time to search through archives.

5.1.1 HazMat Information Clearinghouse

One of the largest roadblocks to effective information sharing is access. While Roundtable participants could identify multiple agency and organization websites and newsletters that contain excellent hazmat and emergency response information, they noted that their greatest weakness was their separation. If an individual only has access to one site, they are not reaching the full breadth of the information, education, and training that is available to support their role. On the other hand, if an individual is receiving updates and trying to keep up with multiple platforms, they may become overwhelmed and burnt out. Participants reported that emergency responders are also approaching a point of information overload. Often times, information is being pushed to emergency responders from multiple places. Because the content is presented differently (and sometimes in contradiction with other formats) from multiple sources, it becomes difficult for the emergency responders to know what guidance to follow. Roundtable participants highlighted that it should not be difficult to find critical information and it should not require a lot of individual effort.

Participants agreed that a full-service hazmat information center would remedy many of the above concerns. The Roundtable discussed the following strengths and roadblocks of building and maintaining of a centralized HazMat Data Clearinghouse:

Strengths	Roadblocks
<ul style="list-style-type: none"> Centralized location: <ul style="list-style-type: none"> Critical data, news, information, resources, and training will be located in one place. Users will have more confidence that information is relevant and accurate. Accessibility: <ul style="list-style-type: none"> Limits confusion about where information is located. Awareness: <ul style="list-style-type: none"> Everyone in the hazmat community will know where to look for breaking news and updates. Information will be disseminated to the pertinent stakeholder audiences quicker and more efficiently. 	<ul style="list-style-type: none"> Information quality and quantity: <ul style="list-style-type: none"> There will be an overabundance of information that can be difficult to sift through. Posted content needs to be quality assured. There is a risk of confidential information being shared with the public/wrong audience. Maintenance/Personnel: <ul style="list-style-type: none"> Each site will need dedicated staff to maintain the operational capability. All stakeholders need a process to periodically send critical information to the site. Champion: <ul style="list-style-type: none"> Need to identify a single organization/agency to advocate, lead and maintain the project. Collaboration: <ul style="list-style-type: none"> Every stakeholder needs to feel empowered to add information to the site and utilize the resources to their full extent.

The IAFC HazMat Center for Data Collection and Analysis was used as a de-facto case study for the effectiveness of a centralized hazmat data clearinghouse. The Center was a collection site for hazmat data regarding recent studies, hazmat incidents, and nationwide training. The intention of the site was to be a useful database for emergency responders and hazmat professionals to easily access critical information. Unfortunately, the site became an unmanageable project. Several cited reasons for this are a lack of staff time to update and maintain the Center, lack of timeliness in updates, and limited outside stakeholder interaction.

5.2 Critical Issues: HazMat Training & Funding

HazMat training and funding remain a top priority of the HazMat Roundtable. Because there is so much information and it is constantly being updated, Hazmat community members need standardized, consistent and high-quality training. Adding funding to this priority emphasizes the importance of monetarily supporting training needs. Funding hazmat training not only includes paying for the development and deployment of training resources, but also ensuring that trainings are accessible to all levels of organizations and individuals. Allocating funds to training is a direct way to improve lives in our communities.

5.2.1 Grant Funding

The process of finding, applying for, and being awarded grants can be a major roadblock to training development and delivery. The process of applying for grants can be confusing and challenging, especially for volunteer organizations. Because of these difficulties, the use of grant funding is often limited, meaning potential training money is left on the table. The Roundtable identified the following barriers to obtaining grant funding:

- Grants.gov, the main source for Federal grants, is difficult to navigate.
- Some States are disproportionately advantaged to apply for grants. Some States hire professional grant writers, whereas others rely on employees with other job responsibilities to take on the grant application process.
- Volunteer fire departments are often classified as nonprofit organizations and therefore cannot apply for Federal grants.
- Because of the disparate and grassroots nature of local hazmat resources, it can be difficult to determine who needs guidance regarding applying for grants at the local level.

Supporting the grant application process will ensure that more people develop and receive critical training.

5.3 Critical Issue: Funding & Prevention/Mitigation

Prevention and mitigation are two hazmat tenets that require adequate funding. All community preparedness starts and ends at the local level. The application and utilization of risk-based prevention and mitigation process and policies can be critical in addressing short-term and long-term community gaps and capabilities. The management of hazmat risks requires monetary resources to remedy issues and maintain secure procedures. While there are many available funding sources for hazmat prevention and mitigation, certain rules and regulations make funding only available for particular actions. Additionally, it can be difficult for local governments to define their risk management actions as mitigation, which limits their access to funding reserved solely for mitigation projects. The Roundtable wants to remove obstacles that prevent local governments from gaining the funding they need to adequately address their community hazmat risks.

5.4 High-Level Issue: Risk-Based Response & Preparedness

Everything related to community hazmat preparedness is based on risk. The Risk-Based Response & Preparedness priority issue is rooted in access to critical information and guidance addressing emerging risks and personnel resources. The disparate arms of hazmat and the disconnect between local, State, regional, and national hazmat networks make engaging a united and cohesive hazmat network difficult. Additionally, the manners in which information is shared within the hazmat preparedness community can make comprehensive and collaborative response and preparedness processes nearly impossible. Roundtable participants cited that critical information addressing emerging threats and risks is not released in a timely manner and is not made available to all of the necessary stakeholders. Hazmat responders cannot provide a safe and effective response capability if only a portion of the community has up-to-date information and resources.

On the other hand, the collection of hazmat data is incomplete at best. Data collection and reporting is voluntary in many instances and difficult to maintain for smaller hazmat programs and organizations. Because of the piecemeal nature of the available hazmat data, it is hard for Federal, State, and regional agencies to accurately assess the hazmat risks and resource gaps across the Nation.

The disjointed nature of the hazmat community is further exacerbated by recruitment and retention issues. Despite very robust incentives, recruiting personnel to the public safety community at-large, and specifically to specialized first-responder units is challenging. The hazmat response community is aging and retiring, and there are not enough new recruits to fill their positions.

While only the above four issues were categorized as critical and high issues, there are several other areas of concern that the Roundtable has discussed and will continue to consider at the annual meeting, such as prevention/mitigation, standard of care, and LEPC/TERC planning and performance.

6 Roundtable Member and Federal Partner Updates and Presentations

Select Roundtable members provided updates regarding their organization's relevant work, recent hazmat preparedness efforts, and successes from the past year. Below is a list of those who presented:

- Erik Gabliks – National Fire Academy (NFA)
- Eddie Murphy – Pipeline and Hazardous Materials Safety Administration (PHMSA)
- James Burgess – International Association of Fire Fighters (IAFF), HazMat Training Department
- Tim Gablehouse – National Association of SARA Title III Program Officials (NASTTPO)
- Tom Miller – National Volunteer Fire Council (NVFC), HazMat Partners in Training
- Mark Maday – Federal Railroad Administration (FRA)
- Rick Edinger – National Fire Protection Association (NFPA)
- Bob Royall and John Woulfe – International Association of Fire Chiefs (IAFC)
- Dave Chicka – Occupational Safety and Health Administration (OSHA)
- Rebecca Broussard and Paul Ruesch – Environmental Protection Agency (EPA)
- April Heinze – National Emergency Number Association (NENA)
- Joe Milazzo – Chemical Transportation Emergency Center (CHEMTREC)/Transportation Community Awareness and Emergency Response (TRANSCAER)
- Andrea Curtis – All Hazards Training Center, University of Findlay (OH)
- Tom Warnock – Federal Emergency Management Agency (FEMA)

6.1 Erik Gabliks, NFA

Topic: NFA Updates

U.S. Fire Administration efforts are centered around the U.S. Fire Administration Summit. This summit is intended to strengthen relationships with partner organizations. Fire EMS partners were brought together to discuss Fire Service One Voice. As part of this initiative, individuals from fire service organizations meet to identify the issues they want to focus on collectively. The priority focus areas determined at the U.S. Fire Administration Summit were as follows:

1. Cancer: Preventing, diagnosing, and treating cancer in first responders
2. Behavioral Health/Mental Health: Supporting the behavioral and mental health needs of first responders
3. Recruitment and Retention: Increasing hiring and maintaining staff levels

4. Environmental Changes: Targeting new environmental challenges brought on by climate change
5. Codes and Standards: Ensuring all communities have and are subscribing to up-to-date codes and standards, maintaining codes and standards that suit the resource needs of communities
6. Funding/Equity of Funding: Gaining adequate funding for fire services, communicating with stakeholders the immense cost of fire services in relation to other emergency services
7. Data: Collecting and analyzing data regarding newest technologies and fire incidents
8. EMS: Alleviating resource gaps in EMS (e.g., ambulance companies going out of business, extensive wait times for patients)
9. Emerging Issues with Technology: Maintaining up-to-date training on newest technologies (e.g. lithium-ion batteries) and their hazmat risks

Working groups have been assigned to each of the above priority areas. The working groups are collaborating with partner agencies to deliver a progress report on their assigned topic, including current status, resource gaps, and needs. These areas are discussed in more detail below.

6.1.1 National Emergency Response and Information System (NERIS)

The NERIS platform will be a hub for all-hazards information and data regarding the Nation's fire problems and capabilities. The platform will provide real-time updates on the scope of fire and emergency incidents across the Nation. It will also offer insights on large fire, hostile, and disaster events. NERIS will begin next year with six pilot communities. Eventually, the system will be available to every fire department to report fire incidents and to fire marshals to assess risk and mitigation solutions in their communities.

6.1.2 Fire Brigades Standards Update

OSHA is updating the Fire Brigades Standards, which will include updates to the new emergency response standards. NFA is working with OSHA to ensure all members of the first responder community, not just fire services, are aware of the update. The goal is for all first responders to be aware of the changes and offer feedback before the new document is finalized. The comment period was open through June.

6.1.3 World Fire Congress

On May 7-8, the NFA hosted the World Fire Congress, a bi-annual gathering of representatives from countries around the world to collaborate on fire services best practices and how countries can work together to reduce fire risks. The World Fire Congress was held in Washington, DC and consisted of representatives from 56 countries.

6.1.4 Per- and Polyfluoroalkyl Substances (PFAS)

The NFA is working to distribute PFAS-free firefighting turnout gear for 1.2 million career and volunteer firefighters in the country. They have partnered with the Department of Defense to equip firefighters with alternative protective equipment for both hazmat and structural firefighters. In addition, NFA is working with their partners to obtain PFAS-free firefighting foam.

6.1.5 Firefighter Cancer Registry

The NFA is supporting the Center for Disease Control in developing the Firefighter Cancer Registry to document incidents of cancer in all current and retired firefighters. The national database will provide high-quality data to support continuing research in the field.

6.1.6 NFA Training Goals

The NFA is focusing on incident management classes on and off campus and developing capacity for all-hazard incident management teams across the country, not just fire services and emergency medical services (EMS). This year, the NFA has a goal to have 90,000 students complete on-campus, off-campus, and virtual classes. To see the National Fire Academy's full course catalog, follow this link: <https://www.usfa.fema.gov/nfa/courses/online/>.

6.2 Eddie Murphy, PHMSA

Topic: PHMSA Updates

PHMSA is an administration within the DOT. The Administration is split into two focus areas: the Office of Hazardous Materials Safety and the Office of Pipeline Safety. PHMSA is responsible for the safe, reliable, and environmentally sound transportation of hazardous materials. PHMSA partners with three other administrations within the DOT for multi-modal hazmat transportation:

- Federal Aviation Administration – Air
- Federal Motor Carrier Safety Administration – Highway
- Federal Railroad Administration – Railroad

PHMSA has the following roles and responsibilities:

- Rules and Regulations:
 - Create rules, regulations, and standards
 - Conduct research, development, and risk analysis
 - Draft advisory bulletins and guidance
- Inform and Promote:
 - Offer trainings
 - Hold outreach events
 - Issue grants
- Ensure Compliance:
 - Inspect those involved in the hazmat industry
 - Enforce rules and regulations
 - Conduct accident investigations

PHMSA also awards grant funding to support work in the hazmat field and produces Final Rule publications.

6.2.1 The Emergency Response Guidebook

PHMSA creates and updates the Emergency Response Guidebook (ERG). The ERG is designed as a rapid response guide for first responders to use in the initial critical minutes of a transportation-related hazardous materials incident. Among other topics, the Guidebook provides information on how to protect people through evacuation, protective-action distances, and first-aid information. The 2024 ERG is now available. The major highlights of the new edition are as follows:

- New response guidance for electric vehicle fires involving lithium batteries
- Added guide pages to new dangerous goods in line with United Nations standards

- Updated the initial isolation and protective distances based on the latest modeling of hazmat releases

To see the full summary of changes in the 2024 Emergency Response Guidebook, visit the following webpage: <https://www.phmsa.dot.gov/training/hazmat/erg/erg2024-summary-changes>.

DOT is committed to ensuring that the ERG is free to all first responders. It is available in book form and electronically via the ERG app or online download. The Guidebook is in the process of being translated into over 30 languages.

Please submit all feedback on the 2024 Emergency Response Guidebook to ERGcomments@dot.gov. All suggested changes and comments help PHMSA improve this important resource.

6.3 James Burgess, IAFF

Topic: IAFF HazMat Training Department Updates

The HazMat Training program has been active at IAFF since the mid-80's. IAFF is partnered with the DOT and with the National Institute of Occupational Safety and Health to develop and maintain the HazMat Training Program. The primary focus of the program is certification-level training.

The IAFF is Pro Board accredited and therefore can deliver certification testing to students. The Pro Board is the original fire service system for the accreditation of agencies that certify candidates to the various disciplines and levels identified in the NFPA Professional Qualification series of standards. The IAFF is authorized to deliver HazMat Operations, HazMat Technician, and Confined Space Technician- and Operations-level programs. The IAFF also has a suite of additional courses that clients can add to their trainings. For example, an organization may want to add the terrorism class to their standard HazMat Operations course.

What's unique about the IAFF is that they bring hazmat courses to departments. Instead of using the most up-to-date equipment to train individuals, the IAFF uses the equipment available at each facility to train first responders. This ensures that departments are prepared to take on hazmat incidents safely with the equipment they have.

The IAFF has their own in-house curriculum designers. Perez Atwood is the curriculum designer specifically assigned to the HazMat Training Division. Having an in-house team of curriculum designers allows the IAFF to update their own curriculum, shortening the time between when updates are needed and when they get implemented. The designers are also much closer to the curriculum topics than an outside contractor and can therefore develop more advanced courses.

The IAFF is ranked in the top ten of Pro Board-Certified entities, based on registration fees generated and certifications registered. In 2023, IAFF registered over 11,000 Pro Board certifications. At the time of the 2024 HazMat Roundtable, IAFF had issued 756 Pro Board certifications in CY 2024.

A challenge that IAFF is currently facing is the need to waitlist trainings. Due to lack of resources and funding, IAFF cannot deliver training immediately upon request. They have been able to repurpose funding from other programs to support the HazMat Training Program but are still trying to find ways to clear the waitlist as quickly as possible.

6.4 Tim Gablehouse, NASTTPO

Topic: NASTTPO Response to the 2023 HazMat Roundtable priority topics

The NASTTPO Board has had several conversations about the 2023 HazMat Roundtable report, regarding how the recommendations affect their work and how they can better support the

initiatives championed by the HazMat Roundtable. Their approach is divided into two focus areas: improving public awareness and involvement in preparedness planning and engaging Local Emergency Planning Committees (LEPCs) to address these issues.

6.4.1 Improving Public Awareness and Involvement in Preparedness Planning

NASTTPO believes that the best way to gain community support for planning activities is by building public awareness. Talking to community members helps ensure that the public understands preparedness planning and knows what actions are taking place to support them and why. Public education also supports elected officials and community planning. If elected officials understand the importance of preparedness planning, then they can better advocate for funding and resources to engage in those activities.

6.4.2 Developing LEPCS

Due to their broad membership and their local community knowledge, LEPCs are key to engaging the public in preparedness planning. Most importantly, NASTTPO believes that emergency planning and preparedness is a civil right. To ensure that the Nation is getting the support that it is due, LEPCs need to be fully integrated into the emergency planning and preparedness structure. That being said, LEPCs do not have the resources to take on this responsibility alone. Leaders in the hazmat community need to educate, train, and support LEPCs to fill capability gaps. Educating the community about what their first responders' responsibilities are before and after an event will be important to reduce criticisms in the aftermath of events. Paired with a more educated and capable community, incidents will hopefully be reduced, and their effects lessened.

NASTTPO does not want to target Community Emergency Planning Committees (CERCs) because they are more widespread, difficult to identify, and have less coverage than LEPCs. LEPCs can be trained and then pass information and resources to their CERCs.

NASTTPO believes it is the responsibility of the Roundtable participants as hazmat and first responder leaders to seek out ways to engage and educate our communities. The following are some of the ways NASTTPO is educating, training, and supporting LEPCs:

- Distributing enhanced NASTTPO guidance documents
- Offering trainings on advanced issues (in-person and webinars)
- Creating a credentialing program to demonstrate trainings accomplished
- Forming a 501(c)3 nonprofit to support funding (scholarships, conference/travel expenses)

6.5 Tom Miller, NVFC

Topic: Partners in Training (PIT Crew) Hazmat Train-the-Trainer Program

The NVFC PIT Crew training program was established to develop and implement training on local hazmat issues. Rather than enforcing broad trainings around the country, the PIT Crew program brings focused, specialized trainings to communities to fill information gaps on the hazmat risks of their specific areas. (For example, ammonium nitrate may be a large risk in one community, but another community may have a larger anhydrous ammonia risk.)

The NVFC has 15 different PIT Crew programs. Each instruction is a standardized course on the topic that is tailored to the specific needs of the organization receiving the training. Instructors assess the needs of the organization by driving around their area taking pictures of risks and environments, looking through the resources available to each organization, and talking with the project leads about their biggest training needs and resource gaps. With these techniques, PIT Crew instructors design courses that suit the needs of each organization and utilize techniques and resources available to them. So, while two fire departments may have completed the

Instructor Training for Flammable Gases, the content of the two instructions would not have been identical.

With their next round of grant funding, the NVFC will develop and implement 15 additional trainings over the next 2 years, create 5 new courses, and expand instructor-led trainings to reach every interested region.

6.6 Mark Maday, FRA

Topic: FRA Background and Current Initiatives

FRA's mission is to enable the safe, reliable, and efficient movement of people and goods for a strong America, now and in the future. FRA's Office of Railroad Safety promotes and regulates safety throughout the Nation's railroad industry. The Office includes 400 Federal safety inspectors who specialize in one of six technical disciplines: Track, Motive Power and Equipment, Operating Practices, Signal and Train Control, Hazardous Materials, and Grade Crossings.

The HazMat Division of the FRA aims to minimize the risks inherent to the transportation of hazardous materials by rail. The Division's main responsibilities are to enforce Hazardous Materials Regulations declared by PHMSA and to verify compliance with international regulations and industry standards.

The HazMat Division of the FRA regulates the following communities:

- Freight Rail: 800 + carriers
 - Class I: 8
 - Class II: ~20
 - Class III: 800+
- HazMat Shippers/Offerors: 9,000–12,000
- HazMat Shipping Points: 15,000–20,000
- Tank Car Facilities: 400

FRA's HazMat Division undertakes HazMat Incident Investigations (HMIIs) to determine the root cause of incidents and the corrective and preventative actions that must take place to prevent reoccurrence. There are three things that can trigger an investigation: package failure, non-accident releases, and one-time movement approvals. In 2023, the HazMat Division completed 281 HMIIs. The top two defective conditions identified were leaking manway covers and leaking liquid valves.

6.6.1 Current Initiatives

The FRA identified the following strategic initiatives to focus their efforts of improving hazmat safety on the nation's railways:

- Focus Inspection Process:
 - Risk-based analysis to determine inspection priorities
 - Risk analysis data to help determine inspection intervals
- Updated HM Shipper Inspection Process:
 - Supports "quality over quantity" inspections
 - Focus on package selection
 - Improves data quality

- Development of Field SMEs:
 - Radioactive materials transportation
 - Security and routing
 - Intermodal operations

In response to the East Palestine Derailment, FRA has developed the following list of focused initiatives to ensure that similar events are mitigated and responded to in a way that reduces impacts:

- Publish Safety Culture Audits and the High-Hazard Flammable Train (HHFT) Route Assessment online to increase access and information sharing
- Review progress of Legacy DOT-111 Tank Car Phase-Out
- Focus Rail Safety Advisory Committee Workgroups on the following:
 - Wayside detectors
 - ECP/Advance braking systems
- Publish an East Palestine Vent & Burn Lessons Learned document
- Support PHMSA Rulemaking Efforts:
 - HM-263: Real-Time Train Consist Information Sharing
 - HM-251G: High-Hazard Train

6.7 Rick Edinger, NFPA

Topic: NFPA HazMat Response Committee

The NFPA is a not-for-profit organization that maintains 200+ codes, standards, and recommended practices. All NFPA standards are developed in accordance with American National Standards Institute's (ANSI) standards.

The NFPA HazMat Response Committee is responsible for the development and maintenance of NFPA Technical Standard 470 and NFPA Recommended Practice 475. Previously, the Committee maintained NFPA 472 (training competencies), NFPA 473 (EMS for hazmat response), and NFPA 1072 (Professional Qualifications for Hazmat Responders). Due to consolidation, 472, 473, and 1072 were merged into one document, NFPA 470. The Committee is a varied group of hazmat professionals and disciplines, including individuals from the following groups:

- First responders
- Industry professionals
- Department of Defense fire and emergency services
- Pro Qual communities
- Technical experts

NFPA 470 is a training standard for various the various responder levels as based on OSHA 29 CFR1910.120(q). It was expanded to various training competency levels as the response industry evolved. Each training level is written as a competency chapter (former 472 chapters) and an equivalent Pro Qual chapter (former 1072 chapters). The Pro Qual chapters are used by certifying agencies (Pro Board, IFSAC).

NFPA 475 is a best practice for managing a hazmat response program. It includes everything that is needed for all aspects of program management.

Each of these documents has a five-year revision cycle, and both documents are entering their first draft cycle. The comment period is open now and will close on September 6, 2024. The next revision will be posted in late 2026 or early 2027.

6.8 Bob Royall and John Woulfe, IAFC

Topic: IAFC Updates

6.8.1 ALERT Grant

The Assistance for Local Emergency Response Training (ALERT) Grant provides emergency responders with hazmat training, specifically regarding activities related to transportation of crude oil, ethanol, and other flammable liquids by rail (i.e., HHFT). The ALERT Grant is awarded by the DOT and PHMSA.

To support the grant, IAFC partnered with other training agencies and vendors to produce a training program to address the planning, training, and response needs of rural and remote fire services regarding flammable liquids emergency incidents.

The IAFC is currently working to expand their training and resources toolkit so they can be a clearinghouse for necessary rail hazmat incident information.

6.8.2 Partnership with Propane Education and Research Council

IAFC has partnered with the Propane Education and Research Council (PERC) to increase awareness of critical information and issues regarding propane training and to improve preparedness for hazmat incidents related to propane and butane. The two organizations are continuing their partnership by creating new trainings and updating existing training programs to adequately train emergency responders on the hazmat risks of propane.

6.8.3 TC Energy Mexico

IAFC has partnered with TC Energy Mexico for the past six years to offer IAFC's hazmat and emergency response trainings to hazmat teams and first responders in Mexico. The partnership includes updating the trainings to match the circumstances and needs of hazmat teams in Mexico, as well as translating the courses to Spanish. As of the 2024 HazMat Roundtable meeting, IAFC has trained in 10 states in Mexico.

6.8.4 Training Gap Analysis and Needs Assessment Survey

IAFC is developing a national survey to assess the training gaps and the needs of hazmat teams across the Nation. A team of SMEs developed the list of questions in the survey. Once the survey instrument is built, the survey will be sent to hazmat professionals across the country. IAFC will assess the survey data to determine their next course of action regarding hazmat training and resources allocation.

6.8.5 Rail Incident Course Update

The Regional Rail Response course is being updated for rural hazmat and emergency response departments. The course will train rural departments how to prepare for and respond to train derailments. The update is scheduled to be complete by the end of September 2024.

6.9 Dave Chicka, OSHA

Topic: OSHA Updates

OSHA has published an update to the Hazard Communication Standard. The most important aspect of the update for the hazmat community is that companies and organizations can no longer omit credible hazard information that is proprietary or a trade secret. If a product includes a credible hazard, that information must be included on the label. This will greatly limit risk to individuals.

OSHA is also addressing the EPA's recent rule making about users and manufacturers in the highly hazardous chemicals industry. OSHA wants to enhance the requirements for facilities that produce and handle highly hazardous chemicals to protect emergency responders.

OSHA is also expanding their scope and content of the process safety management standard.

6.10 Rebecca Broussard and Paul Ruesch, EPA

Topic: EPA Updates

6.10.1 EPA Region 5 Trainings

Over the last decade EPA Region 5 has conducted several Transportation Rail Incidents Preparedness and Response (TRIPR) one-day workshops annually to provide best practices related to rail incidents involving Hazard Class 3 flammable liquids. These events are spaces for resource sharing, training, and scenario walkthroughs to better prepare community members for the effects of transportation rail incidents. Since they began in 2016, Region 5 has hosted 1732 individuals at their TRIPR events. The next two 2024 events are tentatively scheduled for Toledo, Ohio and Erie, Pennsylvania.

EPA Region 5 also hosts EPA On-Scene Coordinators (OSC) Academy training sessions. Since the first EPA OSC Academy in 2016, over 100 OSCs have been trained. Additionally, Region 5 conducts transport-related extremely hazardous substance (EHS) tabletop exercises (TTX) in the Chicago area. The exercises cover the causes and effects of tanker wrecks involving hazardous materials. Since 2020, the EHS TTXs have reached over 350 individuals.

6.10.2 RMP Ruling

On February 27, 2024, the EPA finalized their newest amendment to the Risk Management Program (RMP) rule, which requires safer technologies and alternatives analysis in industry sectors with high accident rates. It also prioritizes employee participation, training, and decision-making in facility accident prevention and requires third-party compliance audits and root cause analysis investigations for facilities with prior accidents. All aspects of the amendment work to strengthen emergency response and lessen the effects of accidents in high-risk facilities.

6.10.3 PFAs Ruling

On April 17, 2024, the EPA signed a final ruling designating perfluorooctanoic acid (PFOA) and perfluorooctanesulfonic acid (PFOS) and their salts and structural isomers as hazardous substances. This ruling dictates that any entity that releases a pound or more of PFOA or PFOS in any 24-hour period must report those releases consistent with CERCLA 103 and EPCRA 304. The effective date of this ruling is 60 days after Federal Register publication.

6.10.4 Clean Water Act Hazardous Substance Facility Response Plans

On March 14, the EPA signed a final ruling that requires facilities to create facility response plans for a worst-case discharge of Clean Water Act hazardous substances. As the effects of climate change increase, the likelihood of worst-case releases increases. Facilities that have the potential to release the related substances are required to prepare response plans and submit them to the

EPA. These new planning requirements aim to protect the environment, especially waterways, by ensuring facilities are prepared to react to any catastrophic releases of hazardous substances.

6.11 April Heinze, NENA

Topic: NENA Introduction and Background

NENA, also known as the 9-1-1 Association, is dedicated to 9-1-1 emergency communications. It is a member-driven, member-focused organization that is the only open-standards organization dedicated to 9-1-1 issues. NENA's mission is to empower its members and the greater 9-1-1 community to provide the best possible emergency response through standards development, training, thought leadership, outreach, and advocacy. NENA's coverage spans anywhere that 9-1-1 is the emergency number that includes all of the Americas and has over 22,500 members worldwide.

NENA has three areas of focus:

- Standards and Best Practices:
 - NENA's standards and best practices are developed by public safety and industry volunteers who commit their time, knowledge, and experience to enhancing access to 9-1-1 and emergency response services.
 - NENA has about 150 standards and best practices that cover a variety of technical and operational needs. These standards are industry accepted and provide consistency between agencies. They also help local entities develop their own standards and provide information to defend their local policies.
- Training and Education:
 - NENA provides industry-leading education and certification programs for the 9-1-1 profession and education to the public regarding 9-1-1 operations in their communities. For more information about NENA courses, visit www.nena.org/courses.
- Advocacy and Outreach:
 - NENA is the only professional organization focused solely on 9-1-1. Therefore, NENA provides government advocacy and outreach to ensure that 9-1-1 needs are met at the local, State, regional, and Federal levels.
 - NENA works closely with Federal agencies that are responsible for governing the various components of 9-1-1 and emergency response. Their partners include the Department of Justice, the Federal Communications Commission, and the Department of Homeland Security.

6.12 Joe Milazzo, CHEMTREC/TRANSCAER

Topic: CHEMTREC/TRANSCAER Updates

Joe Milazzo shared an overview of the progress, goals, and objectives of CHEMTREC and TRANSCAER in the past year.

6.12.1 Incident Data

CHEMTREC/TRANSCAER tracked the following hazmat incidents in 2023:

- 32,184 leaks/spills
- 2,443 human exposures
- 334 accidents involving highways transportation vehicles with no release
- 649 damages
- 374 derailments with no leak

The top three UN Codes reported for those incidents were paint (flammable) with 2,420 incidents, plain related material (flammable) with 1,009 incidents, and batteries (wet filled with acid) with 481 incidents.

6.12.2 HELP Awards

The CHEMTREC HELP Awards provide funding to volunteer fire departments to increase their response capabilities and local preparedness to prepare for and respond to hazmat incidents. As of the 2024 HazMat Roundtable, \$165,000 has been awarded through the HELP Awards. The following volunteer fire departments received HELP Awards in 2023:

- Caledonia Fire Department (Caledonia, NY)
- Gales Ferry Volunteer Fire Company (Gales Ferry, CT)
- Haynesville Fire Department (Haynesville, LA)
- Patrick Springs Volunteer Fire Department (Patrick Springs, VA)
- Sequoyah County RFPD#1 (Gore, OK)

6.12.3 TRANSCAER Trainings

TRANSCAER offers free hazmat training across the nation. In 2023, TRANSCAER reached 47,456 students across 1,092 training events. Of the total students, 12,748 were trained via online learning platforms.

6.12.4 Augmented Reality Application

TRANSCAER created the Augmented Reality Application as an interactive learning tool to train users in responding to real-life hazmat incidents. The app uses the cellphone camera of the user to project a simulated 3D model of hazmat incidents into the users' surroundings. Currently, users can manipulate the following scenarios: DOT 117 Handles, rupture discs, manway gaskets, and chlorine leaks. Upcoming scenarios will include rail crossing hazmat incidents and tank car ID and train consist. To download the app and view the TRANSCAER Augmented Reality User Guide, visit this webpage: <https://www.transcaer.com/augmented-reality-app>.

6.12.5 TRANSCAER Hazmat Team Response Fund

The Hazmat Team Response Fund was established to assist hazmat teams in acquiring the necessary equipment and advanced training they need to protect themselves and their communities when responding to hazmat transportation incidents. Since 2021, the Hazmat Team Response Fund has provided \$20,725 to 9 hazmat teams across the country.

6.13 Andrea Curtis, University of Findlay All Hazards Training Center

Topic: ONTRACK Rail Car Safety Training Overview

The University of Findlay's All Hazards Training Center ONTRACK Rail Car Safety Training program develops and delivers courses for the Rural Domestic Preparedness Consortium (RDPC) and PHMSA.

AWR-147: Rail Car Incident Response is an eight-hour DHS/FEMA-certified course developed for the RDPC that educates rural emergency responders on freight rail car incidents involving hazardous materials. The tuition-free-course can be delivered both virtually and in-person. The course's target audiences are fire service personnel, other first responders, emergency management personnel, and other community stakeholders (including railroad representatives). As of March 31, 2024, AWR-147 has reached 13,287 students through 539 course deliveries.

Rail Car Incident Response for Crude, Ethanol, and Other Flammable Liquids is an eight-hour course developed for PHMSA to train emergency responders on freight car incidents involving crude oil, ethanol, and other flammable liquids. The course is taught in-person and targets fire service personnel, other first responders, emergency management personnel, and other community stakeholders (including railroad representatives). As of March 31, 2024, the course has reached 13,403 students through 690 course deliveries.

6.14 Tom Warnock, FEMA

Topic: FEMA Updates

6.14.1 National Defense Authorization Act

During the 2023 HazMat Roundtable, FEMA briefed participants on the National Defense Authorization Act and the potential technical hazards associated with it. FEMA completed a lot of planning and research to provide technical assistance and to make links between government agencies and communities, but the Act never came to fruition. The plans that FEMA developed will still be utilized in other ways through other authorities.

6.14.2 Radiological Program

FEMA completed an instrumentation study on portable and handheld monitors in cooperation with the National Urban Security Technology Lab. The results of this study are being used to update portable and handheld monitoring usage guidance that hasn't been updated since 1995 and 2002, respectively. There will be formal comment periods and webinars to discuss the science and effectiveness of the monitors before the final study is guidance is published.

6.14.3 East Palestine

One of FEMA's biggest goals is to synthesize all aspects of emergency management. The aftermath of the East Palestine rail incident highlighted some successes. Beaver County PA and Columbia County OH emergency managers credited FEMA's preparedness work with lessening the direct impacts of the derailment on emergency responders, specifically regarding the Beaver Valley Power Station. Power station workers were trained and prepared for evacuations and effectively sheltering their populations. Emergency responders in Columbia County noted that the alert notification system allowed them to react to the event quickly. FEMA hopes that these anecdotes can be used to demonstrate the effectiveness of emergency preparedness and further support the Nation's need for emergency preparedness across all hazmat communities.

6.14.4 Office of Emerging Threats

FEMA's Office of Emerging Threats maintains the CBRNResponder Network. The CBRNResponder Network is a platform for all chemical, biological, radiological, and nuclear

(CBRN) incident data-sharing and management. The Network allows field teams to input data and coordinate across active incidents, including monitoring, sampling, and collaborating. Use of the CBRNResponder Network has become the standard for emergency responders during active CBRN incidents. FEMA is constantly updating and adding features to the Network to increase access to mutual aid assets and monitoring and sampling technology.

7 Today's Takeaways

To close the first day of the 2024 HazMat Roundtable, participants engaged in a facilitated discussion. The group was asked to reflect upon the top hazmat issues that arose over the past year and to project what needs the Roundtable will need to address in the future.

7.1 East Palestine

While not a focused topic of discussion for the 2024 HazMat Roundtable, the Norfolk Southern freight train derailment in East Palestine, Ohio on February 3, 2023, was mentioned in many of the day's discussions. The incident highlighted many of the critical and high-level issues the Roundtable prioritized last year. Most notably, the train derailment and the human health and environmental disaster resulting from the spilled materials from the train cars exemplified the need for clear and direct lines of communication. Anecdotally, it felt as though as soon as the incident occurred misinformation about it began spreading across the United States. The EPA is currently developing an AAR and FOSC report that can be shared at next year's Roundtable. Additionally, the EPA intends to share a presentation that summarizes the derailment and the emergency response within the year.

7.2 Roundtable Needs

The HazMat Roundtable recognizes that the 2023 prioritized issues are not only the responsibility of Federal agencies and organizations to solve. There are actions that every participant in the Roundtable can take to advance the recommendations of the group.

7.2.1 Expanded Reach

The HazMat Roundtable is not an exclusive event, but due to confidentiality concerns, it cannot be an open-invitation meeting. That being said, PHMSA is willing to extend an invitation to anyone in the hazmat community who would like to attend. Because it has not been publicly advertised, PHMSA has received feedback that the event seems exclusive and secret. To alleviate this false narrative, the HazMat Roundtable participants have been encouraged to spread the word about the annual Roundtable meeting and to invite their partners at other organizations and agencies to attend.

The issues discussed and the recommendations developed at the annual HazMat Roundtable reach a wide audience, far beyond the few individuals who attend the meeting. To encourage extensive collaboration and synthesis within the hazmat community, the participants of the HazMat Roundtable want to continue to expand the reach and accessibility of the meeting. While the composition of the Roundtable has already developed beyond the group of fire chiefs and hazmat responders present at the very first HazMat Roundtable meeting, there is more work to be done to ensure this group reflects the "whole community" concept.

7.2.2 Succession Planning

Encouraging, recruiting, and training the next generation of hazmat professionals and emergency responders will ensure the strength and integrity of the hazmat community for years to come. Part of succession planning includes accepting the differences between the past, current and future generations. Participants of the HazMat Roundtable want to emphasize that there is a balance to be achieved between embracing the characteristics that have made the preparedness and

response communities strong while also acknowledging the potential for growth and expansion within the next generation.

7.2.3 Celebrate Wins

Due to the nature of hazmat work, it can be easy to get caught up in the destruction of hazmat incidents and hypothesizing about what could've been done to better prevent damages. It can be hard to find time to acknowledge the successes and growth of current plans and actions when there is always more that could be done. The HazMat Roundtable wants to make space to celebrate the successes that occur between yearly meetings and to encourage all partner agencies and organizations to do so as well. Celebrating wins not only builds morale, but also demonstrates the benefits of the work of the hazmat community to the public. Every success, no matter how small, makes a difference to the lives of our Nation's public.

7.2.4 Data Collection

Every priority area depends on data collection and sharing to track developments and improve plans and actions. The Roundtable identified severe lacks in data and/or data coordination as a key limiting factor to information sharing and closing training gaps.

There is a lack of understanding across the hazmat community regarding what data should be collected and where it should be reported. Because of this miscommunication, necessary data is either not being collected or it is being collected and not reported to accessible platforms. The Roundtable participants urge the need for a single, consolidated source to report and access data. Having a single place for all hazmat data will reduce fatigue in finding and reporting data, reduce duplication of data collecting efforts, and will give users a clear understanding of existing data gaps.

Once all existing data is consolidated, individuals in the hazmat community will be better able to assess the country's current needs in terms of training and resources and where the hazmat community could be doing a better job preparing for and responding to hazmat incidents. A single source for data could also be used as encouragement for local communities to report more frequently because they will know their data is reflecting their current issues and challenges contributing to a larger purpose.

7.2.5 Coordination

The Roundtable recognizes that they do not have the power to begin to address the priority areas alone. Participants also noted that the priority areas that come out of the Roundtable meetings often do not reflect the priorities of partner organizations and the hazmat community at large. Roundtable participants want to continue to find ways to discuss the outcomes of the HazMat Roundtables with their leadership teams and begin to gain traction on the priority areas. It will be very difficult to attain the goals of the HazMat Roundtable without support from Federal agencies and leaders. Federal partners have the resources to support large scale projects and have the jurisdiction to mandate actions from local, State, and Regional hazmat stakeholders. This work has already begun with FEMA's all-hazards approach, but without more Federal oversight, it will be difficult to gain alignment across the entire hazmat community. The yearly HazMat Roundtable reports can be a powerful tool to demonstrate alignment across multiple agencies to leadership.

7.2.6 Standardized Training Schedules

Trainings are being produced and delivered consistently, but there is a growing concern that hazmat personnel and emergency responders are not staying current with their trainings. While plenty of individuals are attending each of the trainings offered by Roundtable member organizations, there is no current way to track if individuals are keeping up to date with the most recent versions of trainings necessary for their jobs. To be successful and safe in the field, hazmat teams and first responders need to know the most current hazmat information and procedures. This education cannot be acquired by attending a specific class one time. Certifications and

recertification plans may be necessary to better track training progress to ensure that our hazmat professionals and communities are as safe as possible from hazmat risk.

8 Challenges and Recommendations

To continue the conversation about the 2023 prioritized issues, the Roundtable reviewed the challenges and recommendations they developed to target specific concerns within the Information Sharing and HazMat Training & Funding priority areas.

8.1 Information Sharing

8.1.1 Challenges

Roundtable participants identified three main roadblocks to attaining constructive, accessible, and balanced information sharing: rapidly developing information, strategic-level information gaps, and disparate information-sharing pathways.

Rapidly Developing Information

Information and technology changes are quickly making it difficult to keep all parties adequately abreast of what data and information points are the most current and accurate. Especially during an active hazmat event, making sure responders and communities have the most up-to-date information is crucial to mitigating risk.

Strategic-Level Information Gaps

Not everyone in the hazmat community has the same level of expertise nor do they have the same information needs. A first responder will need a higher-level technical hazmat information than a local elected official. In comparison, there are a number of topics that need to be shared at a strategic level. A major challenge in information sharing is ensuring that all parties receive the appropriate critical information while also making sure that no individual or group is being overloaded with unnecessary or overly complicated information which ultimately becomes “background noise.”

Disparate Information-Sharing Pathways

Currently, there is no one place to look for hazmat information and data. While several sources are effectively sharing information, data, and trainings, the lack of cohesion across the hazmat community has caused large information gaps. Several Roundtable participants noted that their communities are not always aware of the emerging news in other areas of the discipline. Similarly, because there are so many places to look for information, the available information is not always aligned and having to dig through multiple sites quickly becomes overwhelming.

8.1.2 Recommendations

The Roundtable recommends the following actions and boundaries to develop constructive, accessible, and balanced information sharing tactics.

HazMat Information Clearinghouse

The Roundtable recommends developing and maintaining a centralized HazMat Information Clearinghouse as a one-stop-shop for all hazmat information, relevant studies/data, emerging trends/topics, and trainings. Having a single, well-organized, and in-depth repository of all hazmat information and resources will eliminate the deep siloing that has occurred within the hazmat community.

Ideally, the clearinghouse will contain all relevant hazmat information including data, recent studies, recommendations, technology updates, discussions around recent hazmat observations, and an extensive database of trainings. The site should be internet-based with options to

download materials and accessible on mobile devices to accommodate hazmat first responders in the field.

The clearinghouse needs to be championed and housed within a single agency or organization. Having a single administrator will alleviate the disjointed nature and lack of accountability that Roundtable participants cited as failures of similar clearinghouses in the hazmat community. Many participants noted that they believe FEMA should be the administrator for the hazmat information clearinghouse. The hazmat community should already be operating beneath the National Response Framework that FEMA developed and maintains. The clearinghouse is a natural addition to the extensive hazmat work FEMA is already undertaking. Another suggestion for who should house the clearinghouse was the U.S. Fire Administration due to their proximity to and breadth of influence within the hazmat community. No matter who becomes the site manager, the information held within the clearinghouse should come from all branches of the hazmat community.

The development and maintenance of the HazMat Information Clearinghouse will be a full-time endeavor. Whoever takes on this resource should hire a full-time employee whose main responsibility is administrative responsibilities related to the clearinghouse. Roundtable participants cited the failure of other hazmat clearinghouses due to disjointed accountability or lack of personnel resources. The clearinghouse is likely to fail if it becomes an add-on responsibility for an individual or set of individuals who have other job duties.

The HazMat Roundtable recognizes the immense amount of energy required to create and maintain an all-encompassing clearinghouse. While the site should be housed within one agency or organization, all members of the hazmat community need to understand their responsibility in sending updated information as often as possible. The site only succeeds if it is fed with new information as it becomes available and is being accessed successfully by those who need it. Several Roundtable members noted the Bomb Data Center as a possible template to build upon.

Pushing and Pulling Information

The HazMat Information Clearinghouse will be a great resource for those seeking hazmat information, relevant data, and trainings. But, to effectively use the clearinghouse, an individual will need to know what information they are looking to pull from the site. As with any repository, the clearinghouse will contain more information than an individual can digest without structure.

Pushing information to those who most need it is the other half of the information-sharing puzzle. Agencies/organizations need to develop and utilize effective information-sharing strategies to ensure their jurisdictions are staying up to date. We cannot solely rely on people/organizations seeking out information on their own. Many organizations do not have the resources to spend time seeking out hazmat information.

The HazMat Roundtable participants believe States should be the main driver getting information to local stakeholders. While the Federal Government is often releasing mandates and critical information, they have too broad of oversight to be able to effectively reach local, on-the-ground stakeholders. While most States already have information-sharing techniques to deliver information to regional and local communities, there are opportunities for improvement. States need to have a solid understanding of who their hazmat communities are and the resources that they need.

Agencies and organizations, including every member of the HazMat Roundtable, also need to take responsibility in sharing information, both to larger organizations and to local and individual stakeholders. Every agency can do a better job pushing information to those who need it, rather than posting information publicly and hoping it gets shared accordingly.

The Roundtable members take ownership for their part in lessening this roadblock to information sharing. While no single organization or agency has the current means to lead information sharing

within the community, each entity can begin the process at home. Each individual at the Roundtable is tasked with reaching out to their partners and jurisdictions and beginning the process of shoring up their information sharing systems.

Incentivization for seeking out information can also help to close the information gap. Local leaders need to be incentivized to seek out resources and training for their people. Roundtable participants cited several anecdotes where critical information was being delivered to the appropriate agencies, but the leadership at the agency did not forward that information to the first responders on the ground. This is especially problematic for training, continuing education and sharing the lessons learned from critical incidents. If there is no mandated or encouraged system for attaining trainings and re-trainings, then few people will seek out the resources.

8.1.3 Best Practices

A number of information-sharing best practices were identified by the Roundtable. However, most of the information sharing tools are either focused on a small topic / niche or are limited in their ability to be shared outside of a relatively limited target audience. While the Roundtable agreed that each of the below practices were successful, they also agreed that none of them can take on the massive burden of information sharing alone.

- *FDNY WatchLine Newsletter*: Weekly terrorist threat analysis newsletter that contains one page of important updates and key issues from the week prior.
- *Hazardous Materials Hotline*: Informal one-pager document sent out by email contain four to five emerging topics or important updates
- U.S. Bomb Data Center: Collection, storage, and analysis of information regarding incidents involving arson and criminal-use of explosives hosted by the Bureau of Alcohol, Tobacco, Firearms and Explosives
- DHS and FEMA Websites: Housing site for a large amount of hazmat materials, data, and trainings. One example is the *Homeland Security Information Network (HSIN)*. *This is the official system for trusted sharing of Sensitive But Unclassified (SBU) information between federal, state, local, territorial, tribal, international and private sector partners. Mission operators use HSIN to access Homeland Security data, send requests securely between agencies, manage operations, coordinate planned event safety and security, respond to incidents, and share the information they need to fulfill their missions and help keep their communities safe.*
- Domestic Preparedness Websites: Localized databases of hazmat information, data, and trainings

8.2 HazMat Training & Funding

The largest roadblock for developing, delivering and maintaining training is access to funding. Roundtable participants noted that in most cases there are more than enough funds available to develop and deliver trainings, but it is not always accessible to the necessary parties.

Each year, large amounts of grant funding are unobligated. Organizations and agencies that most need the grant funding to achieve their training goals are often under resourced to apply for and win grants. The process to apply for grants, let alone research applicable and available grants, is a major limitation. Volunteer and small organizations barely have the resources to support their day-to-day functions.

Resources to support smaller organizations in learning about and applying for grants would help more funds get to hazmat teams in need of training and equipment. Additionally, allocating certain

Federal funds to small and local emergency response teams will support the hazmat community from the ground up.

9 Breakout Groups

At the end of the second day, participants were given the opportunity to synthesize the discussions and priority areas of the two-day meeting. Participants broke into small groups to discuss their answers to the following three questions:

- Past: Are the 2023 HazMat Roundtable priority issues still current?
- Future: What emerging trends and issues should we be monitoring?
- Present: If you were king/queen for the day, what one action would you take to make progress on our priority areas?

9.1 Question #1: Are the 2023 HazMat Roundtable priority issues still current?

All of the breakout groups reported that they believe the 2023 HazMat Roundtable priority issues are still current. Though the ranked importance of the issues may fluctuate month-to-month and year-to-year, the HazMat Roundtable participants agreed to continue to monitor and address all of the priority issues.

A major note expressed by several of the breakout groups was the need to further refine and detail the specific target areas within each priority issue. While it will be useful to discuss the larger issues at a high level every year, identifying specific topics to address will help streamline discussion and expedite action. For example, the HazMat Training & Funding priority area could be assigned the following sub-topics: assessing the quality of existing trainings, identifying training gaps, funding the development of courses, and allocating funding to individuals for access to trainings (travel, lodging, time-off work, etc.). Focusing the topics of future Roundtable discussions may produce more creative and actionable results.

9.2 Question #2: What emerging trends and issues should we be monitoring?

This question addresses trends and issues outside of the 2023 HazMat Roundtable priority issues. The following items are topics of note that the Roundtable participants believed will be or should be future priority areas or that may pose a threat to the hazmat community in the near future: Data Ambiguity, Community Engagement, Personnel Limitations, Codes and Standards, Rapidly Developing Technology, Societal/Geopolitical Challenges. The Roundtable participants understand that several of the emerging trends and issues notes can be folded into the priority areas but found it useful to call out specifically in terms of planning for future risk.

9.2.1 Data Ambiguity

Many of the functions of the hazmat community rely on data collection to adequately engage with and address problem areas. Unfortunately, the processes and procedures for how and what kind of data is being collected is not consistent across the community. The HazMat Roundtable may explore setting standards and schedules for collecting data from all aspects of the hazmat community, including training, resource allocation, and hazmat incidents.

9.2.2 Community Engagement

Hazmat personnel cannot successfully prevent, mitigate, and respond to hazmat risks if their community is not aware of their roles, responsibilities, and limitations. Lack of community engagement is an ever-present concern for the hazmat community, especially in smaller

communities and areas with fewer resources. The effects of the lack of communication and understanding between hazmat professionals and their communities will develop over time as hazmat risks change and technology develops. There needs to be constant connection with a community to adequately identify and respond to hazmat risk.

9.2.3 Personnel Limitations

Participants of the HazMat Roundtable noted great concern with the longevity and retention of employees in the hazmat community. These challenges are not unique to just the hazmat community and can be found in virtually all disciplines that make up the public safety community.

Hazmat and emergency responders have noted that it is hard to recruit new members to their agencies and teams. Once new personnel are hired, retaining them can be difficult due to the nature of the job. The Roundtable participants want to continue to find ways to recruit and retain career employees and volunteers. They see their ability to recruit and retain greatly connected to teams being able to offer work/life balance, time off, and other benefits to be competitive in the workforce. To ensure the longevity of hazmat response teams, current members also need to be more open to training new employees and accepting that newer and younger members may bring differing perspectives and habits to the workplace.

9.2.4 Codes and Standards

The production, manufacturing, transportation and use of hazardous materials is an integral element of both our society and economy, and its related challenges are rapidly increasing across the country. Warehouses and distribution centers have grown in quantity, footprint, and capability; the transportation of goods between these centers and the public has evolved in turn. There is great concern that communities and businesses are not adopting new fire standards. This creates immense risk of incidents and increases the risk to first responders when entering buildings. Not only do codes and standards need to be updated to match the growing complexity of the hazmat landscape, but also there needs to be regular confirmation that all communities are adequately adopting the new codes and standards.

9.2.5 Technology Boom

Technology related to hazmat response has evolved rapidly and is continuing to expand. While newer and better technology is a good thing, it is only useful if emergency responders in general, and hazardous materials response teams specifically, have access to it and know how to operate it properly. This disconnect between technology and training is a growing concern. Some teams have excellent monitoring and detection equipment but not enough time or resources to train to use it properly. Other teams have outdated technology due to lack of funding, with the technology outpacing their resources. This issue will likely fall under the HazMat Training & Funding priority in future HazMat Roundtable meetings.

9.2.6 Societal/Geopolitical Challenges

The HazMat Roundtable will need to assess the current societal and geopolitical landscapes each year. Participants will need to identify, adapt with, and respond to the ever-changing landscape within the United States and throughout the world. Major issues will likely be houselessness, military conflict, immigration, and transition to renewable energy sources.

9.3 Question 3: If you were king/queen for the day, what one action would you take to make progress on our priority areas?

At the end of the breakout session, participants were asked what single action they would take to improve the hazmat community, regardless of the necessary time and resources. The following responses reflect the actions that the participants believed would make the greatest impact in the hazmat community or would advance the priority areas most drastically. The responses below do

not reflect the opinions of the HazMat Roundtable as a whole. This activity was meant as a brainstorming challenge, not a working session with vetted outcomes.

What single action would you take today to make progress on our priority areas?

Action	Reasoning
Identify a champion agency or organization to lead the charge toward accomplishing our major goals	A single leader is needed to organize all of the disparate arms of the hazmat community and to lead the creation of useful plans and products.
Change the culture of the hazmat community	Community members should be aware of all of the hazmat risk around them. Every building should be considered as a potential hazmat issue as it relates to health, safety and environmental protection.
Improve the relationship between hazmat and emergency responders	Hazmat and emergency response should be working together constantly, not just meeting for the first time when an incident occurs.
Grant unlimited funding to all branches of the hazmat community	Develop and deliver all necessary training throughout the Nation. Provide all hazmat response teams (regardless of size) with the most up-to-date technology and resources.
Eliminate all confusion about where critical information is located	Information is only useful if it is accessible.
Simplify monitoring and detecting technologies	Streamlining monitoring and detecting will support all levels of hazmat response in reporting and responding to hazmat risks.
Understand the Nation's true hazmat response capabilities	The Nation cannot begin to address gaps if they are not identified.
Place more responsibility on manufacturers to limit, eliminate, and respond to hazmat risks	Manufacturers should be responsible for protecting communities and responding properly to incidents they created.
Privatize the National Response Corporation (NRC) and task them with developing a national response plan. QUESTION: Is this referring to the National Response Center as staffed by USCG? A National Response Plan already exists	The NRC is already hosting hazmat resources and creating response procedures. They have the expertise and resources that other agencies/organizations do not have to develop a thorough and successful national response plan.

10 Summit of Railroad HAZMAT Thought Leaders

The Summit of Railroad HazMat Thought Leaders was held March 26-28, 2024, in Addison, Texas. The summit was hosted by PHMSA with the goal of gathering insights and feedback on hazmat rail-related issues. Approximately 80 participants from 24 States and Canada attended, including individuals from the railroad industry, training centers, law enforcement, and academia

as well as first responders, public officials, emergency managers and city, county, State, and Federal response officials.

Through panel and facilitated group discussions, attendees discussed critical topics to increase safety for emergency responders through training, preparedness, and outreach. The summit included discussions on the following topics: Training Consistency, Training Types, Preparedness, and Community Outreach. Through these discussions, the attendees identified issues, gaps, and recommendations to improve the Nation's capacity to respond to hazmat rail incidents.

The following are the key takeaways from the Summit of Railroad HazMat Thought Leaders:

- The Summit provided a collaborative platform for sharing of training, preparedness and outreach activities. Examples of specific items are as follows:
 - UP/IAFF/IAFC/NVFC sharing information on what could be part of a Railway HAZMAT Specialist curriculum
 - NVFC sharing First 30 minutes class information to enhance understanding of how to be prepared
 - Sharing of vetting process for third party vendor instructors and content
 - Stakeholders taking ownership of responsibilities via the HazMat Roundtable to address trends and threats
 - Enhance marketing of training opportunities and incentivize both individual and organizational participation in training
- The Summit was an open forum to share issues, challenges and gaps to understand the complexities across the multiple sectors.
- Staying focused on Rail HazMat can be a challenge due to evolving and conflicting priorities.
- Increased platforms to share cross-sector best practices would improve integration into preparedness activities and improve capabilities.
- The Summit inspired participants to share historical expertise and many left wanting to share information with someone they are mentoring to build up the Next Generation of Thought Leaders.

PHMSA will be gathering feedback from Summit attendees and developing a report on their observations from the two-day summit.

11 Emerging Trends and Issues

11.1 Andy Brynes, Jack Rabbit III Phase I Data Comparison

The Jack Rabbit project began in 2010 to study catastrophic releases of hazardous materials and the potential for terrorist attacks regarding catastrophic releases. The initial tests reviewed ammonia and chlorine gases and analyzed atmospheric and environmental effects of their releases. In 2015 and 2016, the Jack Rabbit II project expanded upon the data from Jack Rabbit I and included emergency responders in the research and testing of chlorine. The emergency responders included research on response equipment and how the releases would affect individuals and communities. Jack Rabbit III focuses solely on ammonia, its flammability and its toxicity.

Ammonia is, by volume, the most widely shipped toxic inhalation hazard chemical in the United States. Ammonia has a high pH and has a wide flammable range, making it caustic with moisture, toxic by inhalation, and it will burn rich, a problem inside structures. To limit the harm to first

responders during ammonia releases, the Jack Rabbit III project team tested how accurately a variety of photoionization detectors (PIDs), lower explosive limit (LEL) sensors, and electrochemical sensors (ECs) respond to ammonia releases. Conducting a variety of tests helped the Jack Rabbit III team determine the technology gaps in the current detectors and sensors available to first responders.

The Jack Rabbit III testing resulted in the following conclusions:

- PID Sensors:
 - Responded well to high parts per million (ppm) scenarios, but three-point calibration of the devices would improve accuracy.
 - Factors that effect PID accuracy:
 - High concentrations of ammonia
 - Humidity and temperature
 - Internal flow path of the device
- LEL Sensors:
 - Begin to respond at ~10X above immediately dangerous to life or health (IDLH) levels
 - Not sensitive to low ppm concentrations
 - Caustic vapors may cause rapid burn-out of the sensor
- EC Sensors:
 - Read in low ppm concentrations and lock at 100ppm
 - Caustic vapors may cause rapid burn-out of the sensor

The findings of the Jack Rabbit III project will be shared throughout the hazmat community to further develop adequate technology for first responders.

11.2 PFAS

The use and effects of PFOS and PFOA, two types of PFAS, are an urgent threat to first responders, community members, and the environment. PFAS are a public safety issue. They are known as “forever chemicals” and have long-term health effects on responders who dispense them as firefighting foam in trainings and during hazmat incidents. PFAS are linked to several health problems including cancer, liver damage, developmental defects, and thyroid disease. PFAS also contaminate water sources and result in negative reproductive, developmental, and immunological effects in wildlife.

The Roundtable participants predict that PFAS will continue to be a large issue for the hazmat community. First responders and hazmat response teams need to be better equipped to protect themselves against the effects of PFAS, receive more and frequent training about the use and effects of PFAS, and need to have access to PFAS alternatives. While there has been a slight conversion to the use of eco-foams instead of PFAS firefighting foam, the eco-foam is proving to have its own challenges. Because of the effectiveness of PFAs in fighting electrical vehicle fires and the lack of a suitable alternative, the Roundtable participants foresee the elimination of the use of PFAS being a long-term battle.

The HazMat Roundtable will continue to monitor the topic and take action where possible. In the short term, the Roundtable suggests that all retired and active first responders and hazmat response team members who have used PFASs foam get tested to monitor their chemical exposure, for more information please go to: [Perfluoroalkyl and Polyfluoroalkyl Substances | Health.mil](https://www.health.mil/Perfluoroalkyl-and-Polyfluoroalkyl-Substances).

11.3 Management of Change

Organizational and process change is a time when safety systems become vulnerable. Planning and monitoring processes need to ensure that when implementing change, new hazards are not created, and existing control measures are not breached. This is critical to all safety and preparedness programs including community preparedness programs and hazmat response operations.

Historically Management of Change (MOC) has been thought of as a requirement for industrial facilities. It is good practice to consistently review changed circumstances, irrespective of the specific regulatory requirements. These concepts apply in planning for hazmat response and community preparedness, though this sentiment is often unstated. Regardless of the change, there are community preparedness aspects that could be addressed by LEPCs and responders.

For both responders and community planners, initial planning for new or highly modified facilities or transportation routes is a critical time to evaluate mitigation efforts, including reviewing all the primary emergency planning activities such as monitoring equipment, assessing response equipment, and reviewing evacuation distances and routes. In addition, community planning can evaluate key factors such as zoning, buffer zones, transportation routes, and community awareness. In the case of redevelopment of contaminated ground or facility shutdown, the level of clean up and eliminating or managing pathways of exposure by which contaminants might reach the public, drinking water sources or cause environmental harm can be evaluated and mitigated. No community is static. Responders and LEPCs need to be vigilant in anticipating and evaluating change to the risks in the community. Community members need to be made aware of changes that could adversely impact them and their families along with education on appropriate actions and projected gaps in planning and response capabilities.

12 Improvement Plan and Tracking Issues

12.1 Recommendations

To summarize the main takeaways from the two-day HazMat Roundtable meeting, the participants compiled a list of recommendations for future iterations of the meeting.

Affirmation of 2023 Priority Areas

The Roundtable participants want to further emphasize the importance of the 2023 priority areas. They remain pertinent in 2024, as they will likely remain crucial topics in 2025 and beyond. The recommendation is to continue on the path of improving hazmat work within those priority areas. Even as the Roundtable evolves over the years, the group should continue to check in on progress in the priority areas and tweak the strategies to achieve goals within the priority areas to fit the needs and available resources of each year.

Need for Better Quality Data

This topic pertains to nearly every aspect of hazmat preparedness and response. Without high-quality data that is collected on a regular basis, the HazMat Roundtable participants cannot adequately prepare for and engage with the national level of hazmat risks. The Roundtable participants recommend the pursuit of detailed and regular data collection and reporting at all levels of the hazmat and emergency planning communities. This recommendation includes the desire for consistent data collection processes and increased levels of reporting.

Broader Public Engagement

Hazmat response and emergency preparedness cannot occur successfully without the full engagement of the public. The Roundtable participants recommend increasing community engagement at the local, State, regional, and Federal levels. No single entity can achieve this goal

alone. Each community should have a detailed understanding of the planning actions, hazmat risks, and resources and capabilities within their communities. They should have a strong understanding of the responsibilities and limitations of both their hazmat and emergency response teams as well as their roles in emergency planning and response.

Fill Hazmat Response Program Gaps

Several of the topics of conversation held at the 2024 HazMat Roundtable were stifled by an understanding of a severe lack of resources within the Nation's hazmat response programs. While there are countless creative and productive ideas for how to better manage the Nation's hazmat risk, none of them can be acted upon without proper funding, training, staffing, and technology. The Hazmat Roundtable participants recommend increasing funding to hazmat response teams at every level. To do so, hazmat agencies and organizations need to develop a stronger public perception of the benefits of hazmat response teams and a realistic understanding of what it takes to have a properly outfitted and trained program.

13 Final Observations/Statements

The ultimate goal of the HazMat Roundtable is to make positive impacts on the lives of the Nation's public. This goal includes identifying the hazmat risks at the community level, evaluating the associated community preparedness gaps, and improving the operational capability of emergency responders to plan for and respond to those risks.

The objectives of the 2024 Roundtable were (1) to discuss the priority areas and recommendations from the previous years; (2) determine focus areas for the next year, (3) review the accomplishments and best practices of Roundtable members over the past year, and (4) develop recommendations for how the HazMat Roundtable can continue to its role as an advocate for community preparedness and as a facilitator for collaborative-based preparedness solutions.

In closing, the HazMat Roundtable and the yearly report are intended to be living organisms that represent all aspects of the hazmat community, including first responders, public safety, and the Nation's public. The Roundtable participants encourage all members of the hazmat community to contact one of the current participants to inquire about joining next year's meeting.

14 Next Steps

A draft of the report will be provided to the group in early August for comment and feedback. After the comments and feedback are adjudicated, the report will be published and posted on the PHMSA website by September 2024.

Appendix A: List of Participants

The following table includes the 2024 HazMat Roundtable participants listed in alphabetical order (based on last name).

Name	Agency/Company/Organization
James Blais	Federal Emergency Management Agency (FEMA)
Rebecca Broussard	Environmental Protection Agency (EPA)
Rachel Buczynski	National Volunteer Fire Council (NVFC)
James Burgess	International Association of Fire Fighters (IAFF)
Tim Butters	International Association of Fire Chiefs (IAFC)
Andy Byrnes	Utah Valley University (UVU) Emergency Services
Nicole Cassels	National Fire Protection Association (NFPA)
Dave Chicca	Department of Labor (DOL)
Lorraine Churchill	Ammonia-Safety & Training Institute (ASTI)
Bob Clatterbuck	National Transportation Safety Board (NTSB)
Andrea Curtis	University of Findlay All Hazards Training Center
Art Deyo	Utah Department of Public Safety
Rick Edinger	National Fire Protection Association (NFPA) Technical Committee for Hazardous Materials/Weapons of Mass Destruction (WMD) Response
Manny Ehrlich	U.S. Chemical Safety and Hazard Investigation Board (CSB)
Bruce Foreman	Federal Emergency Management Agency (FEMA)
Wade Francis	Utah State Fire Marshals Office, Hazmat Section
Tim Gablehouse	National Association of SARA Title III Officers (NASTTPO)
Eriks Gabliks	National Fire Academy (NFA), Superintendent
Rebecca Harned	International Association of Fire Chiefs (IAFC)
Clayton Hatfield	Department of Transportation (DOT)
April Heinze	National Emergency Number Association (NENA)
Melissa Hunt	International Association of Fire Fighters (IAFF)
Mark Kirk	Department of Homeland Security (DHS)

Name	Agency/Company/Organization
Scott Lancaster	Washington State Patrol (WSP)
Christopher Lawver	Office of Emergency Management and Preparedness (OSHA)
Sean Lynum	National Transportation Safety Board (NTSB)
Mark Mayday	Department of Transportation (DOT)
Janis McCarroll	Federal Emergency Management Agency (FEMA)
Joe Milazzo	CHEMTREC®
Thomas Miller	National Volunteer Fire Council (NVFC)
Richard Miller	International Association of Fire Chiefs (IAFC)
Aaron Mitchell	Department of Transportation (DOT)
Eddie Murphy	Pipeline and Hazardous Materials Safety Administration (PHMSA)
Gregory Noll	Senior Planning Specialist, South-Central PA Regional Task Force (SCTF)
Phillip Oakes	National Association of State Fire Marshalls (NASFM)
Debi Plunket	Bloomsburie
Harriet Rennie-Brown	National Association of State 911 Administrators
Bob Royall	International Association of Fire Chiefs (IAFC), Hazardous Materials Committee and Harris County Fire Marshal Office (retired)
Paul Ruesch	Environmental Protection Agency (EPA) Region V
Bill Schoonover	Department of Transportation (DOT)
Sarah Somers	Grayson County Office of Emergency Management
JoAnna Wagschal	Bloomsburie
Thomas Warnock	Federal Emergency Management Agency (FEMA)
Julia Weeks	Bloomsburie
John Woulfe	International Association of Fire Chiefs (IAFC)
Nicole Zawadzki	Hazardous Materials Management and Emergency Response (HAMMER) Federal Training Center

Appendix B: Acronyms

Name	Agency/Company/Organization
AAR	After Action Review
ACC	American Chemistry Council
ALERT	Assistance for Local Emergency Response Training
ASTI	Ammonia Safety & Training Institute
CBRN	chemical, biological, radiological, and nuclear
CERC	Community Emergency Planning Committee
CHEMTREC	Chemical Transportation Emergency Center
CWMD	Countering Weapons of Mass Destruction
DHS	Department of Homeland Security
DOL	Department of Labor
DOT	Department of Transportation
EC	electroconductivity sensors
EHS	extremely hazardous substance
EMS	Emergency Medical Services
EPA	Environmental Protection Agency
ERG	Emergency Response Guidebook
FEMA	Federal Emergency Management Agency
FOSC	Federal On-Scene Coordinator
FRA	Federal Railroad Administration
HAMMER	Hazardous Materials Management and Emergency Response
HHFT	High Hazard Flammable Train
hazmat	hazardous materials
HMII	HazMat Incident Investigations
IAFC	International Association of Fire Chiefs
IAFF	International Association of Fire Fighters
LEL	lower explosive limit
LEPC	Local Emergency Planning Committee
MOC	Management of Change
NASFM	National Association of State Fire Marshalls
NASTTPO	National Association of SARA Title III Officers
NENA	National Emergency Number Association
NERIS	National Emergency Response and Information

	System
NFA	National Fire Academy
NFPA	National Fire Protection Association
NRC	National Response Center
NVFC	National Volunteer Fire Council
OSC	on-scene coordinator
OSHA	Occupational Safety and Health Administration
PFAS	per- and polyfluoroalkyl substances
PFOA	perfluorooctanoic acid
PFOS	perfluorooctanesulfonic acid
PHMSA	Pipeline and Hazardous Materials Safety Administration
PID	photoionization detectors
PIT	Partners in Training
ppm	parts per million
RDPC	Rural Domestic Preparedness Consortium
RMP	Risk Management Program
SCTF	South-Central PA Regional Task Force
SME	Subject Matter Expert
TRANSCAER	Transportation Community Awareness and Emergency Response
TRIPR	Transportation Rail Incidents Preparedness and Response
TTX	tabletop exercise
USFA	U.S. Fire Administration
UVU	Utah Valley University
WSP	Washington State Patrol

