



EMERGENCY MANAGEMENT USE CASE

Research Title:	Technological Hazard Information for Enhancing Community Preparedness and Response
Author(s):	David Bierling, Bradley A. Trefz
Description:	<p>In small and large communities across Texas, many emergency response and disaster management leaders rate hazardous materials (hazmat) transportation and/or hazmat facilities as among the top threats to their communities. Information about hazards and threats in and around their jurisdictions can help communities better prepare for and respond to hazmat incidents and emergencies. However, many leaders are unaware of hazmat transport information or how they can use it. Texas A&M Transportation Institute (TTI) and TDEM's Technological Hazards Unit have been working together and with communities across Texas through the Pipeline and Hazardous Materials Safety Administration's Hazardous Materials Emergency Preparedness Grant Program. This work has included projects that provide technological hazard and threat information to emergency management and response practitioners and other community partners. The projects include hazardous materials transportation assessments (commodity flow studies), emergency operations plan reviews, vulnerability assessments, and planning guides to assist local emergency planning committees (LEPCs), their constituents, and the state in assessing risk from hazmat incidents. This use case engages EM and response practitioners and their partners about what data and information are available, how communities can use them to evaluate risk, and actions communities can take to enhance preparedness and response to technological hazards.</p>
When Applied:	<p>This work applies to preparedness initiatives, including training needs and exercises, emergency response coordination, Threat and Hazard Identification and Risk Assessments, emergency operations planning, fire department inspections, Tier II and Risk Management Plan coordination between chemical facilities and local responders, zoning and other prevention and mitigation activities, commercial motor vehicle enforcement activities and any other activity involving risk analysis related to hazardous materials and chemical, biological, radiological, nuclear, or explosives (CBRNE) incidents.</p>
Who Applies:	<p>This work applies to county judges, mayors, local and state emergency management coordinators, emergency operations planners, district disaster coordinators, regional coordinators, LEPCs, TDEM, Texas Department of Public Safety (DPS) – Commercial Vehicle Enforcement, school districts, Texas Department of Transportation, public health and hospitals, and fire, law enforcement, and emergency medical system response organizations.</p>
Disaster Type:	<p>Disasters involving technological hazards (hazardous materials/CBRNE).</p>
Infrastructure Affected:	<p>Work affects transportation networks - road, rail, pipeline, and waterways, as well as regulated chemical facilities and the populations and infrastructure located along transportation networks where hazardous materials move.</p>
Industry Affected:	<p>Industries affected include oil and gas, railroads, pipelines, maritime freight, hazardous materials freight haulers (i.e., trucking companies), military and defense, chemical industry, local and county government</p>
Where Applied:	<p>This work applies to local, county, and state emergency management and emergency response practitioners and their partners.</p>



Agency Affected:	This work affects TDEM, Texas Commission on Environmental Quality (TCEQ), LEPCs, local and county offices of emergency management (OEM) and their community partners.
VOAD Affected:	In communities where they are engaged with EMs and LEPCs
Who/What Affected:	This work could affect all citizens in proximity to hazardous materials transportation corridors and the facilities served by those corridors.
How Affected:	This work would improve the quality and quantity of Threat and Risk Identification and Assessment and pre-planning for emergency response operations to address threats and risks associated with hazardous materials release.
Timing of Application:	Primarily pre-response (preparedness), however, information can be applied across all five phases of the emergency management cycle (we describe how here: https://tti.tamu.edu/documents/TTI-2021-8-Vol2.pdf).
Critical Points:	Good planning and preparedness is based on good information. While many in the EM and response communities rate hazmat as among the top hazards in their communities, they are often unaware of what hazards are in their communities, especially for rail and truck modes. This use case engages EM and response practitioners and their partners about what data and information are available, how communities can use them to evaluate risk, and actions communities can take to enhance preparedness and response to technological hazards.
What Benefit:	The practitioner community will be more informed and better prepared to protect responders and enhance life safety and protect property and the environment from technological hazards in their communities.
Where Used:	Throughout Texas
Additional Research:	In addition to data and information about technological hazards in communities, TTI and TDEM are also engaged in workshops on hazmat mutual aid and railroad incident response coordination in South and West Texas.
Additional Information:	https://hazmattransport.tti.tamu.edu
Expert Contact:	David Bierling, 713.613.9203, dhb@tamu.edu
Original Research:	Original research on conducting hazmat transport studies is presented in Bierling, D.H., Rogers, G.O., Jasek, D.L. Protopapas, A.A., Warner, J.E., and Olson, L.E. (2011). <i>Guidebook for Conducting Local Hazardous Materials Commodity Flow Studies</i> . Transportation Research Board of the National Academies, Washington, D.C. Available at http://onlinepubs.trb.org/onlinepubs/hmcrp/hmcrp_rpt_003.pdf . Numerous technical studies have been conducted with communities across Texas and the large majority of findings are not published by partner communities given sensitivity of data. A published example with similar content is available at https://static.tti.tamu.edu/tti.tamu.edu/documents/186052-00003-1.pdf .) Other guides and information may be found here: https://hazmattransport.tti.tamu.edu .
What Risks:	Remaining unaware of information to enhance preparedness and response is a risk.
Partner Agencies/Jurisdictions:	Any party that is a stakeholder of local emergency planning committees, including agency personnel from law enforcement, emergency management, fire and hazmat response, health and hospitals, environmental protection, or transportation departments or agencies, local and state elected officials, media partners, social, economic and environmental community interest groups, and industry partners including transportation carriers and fixed facilities.



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Please Note: Questions or suggestions regarding the Use Case Template may be directed to Dr. MacGregor Stephenson at the Texas Division of Emergency Management at macgregor.stephenson@tdem.texas.gov.