Crisis in Communication: Examples from TCMA Region 10

Authors: Jennifer Enloe, Jack LeFavour, Jack Callahan, Griffin Moreland, Teagan Trammell, Orel Rhodes, Maddie Luster, Lauren Champion, Justin Bosse, Abbey Anderson, Brooke Free, Ross Jackson, and Miner P. "Trey" Marchbanks III

Continuing from last month's article on Emergency Management in the Rio Grande Valley (the first of a three-article series), this article will walk through key findings drawn from extensive research conducted over the course of a year. This article was originally very citation-heavy, and because of this, we removed citation markings to aid in readability. This article includes the citations for readers who wish to consult the source material for further information. While these findings largely focus on the Rio Grande Valley (RGV), the types of disasters discussed and methods used at all phases of the emergency have broad applicability in urban and rural areas throughout the United States and even internationally.

Local governments' geographic closeness and intimate knowledge of their communities make them the best actors to respond to mass casualty incidents (MCIs). An MCI is a "single geographically focused event, which produces casualties of a sufficient number and severity that special operations and organizations are required at the scene" (NNPH, 2025). MCIs can be either naturally occurring, such as the result of a flood, earthquake, or wildfire, or they can result from man-made actions, either accidental (i.e., a hazardous waste spill) or intentional (i.e., acts of terrorism). Both man-made and naturally occurring MCIs are increasing in frequency. In 2001, there were three 'active shooter events' as defined by the FBI; by 2021, that number rose to sixty-one (Gramlich, 2025). From 1966 to 1975, there were 12 documented mass shooting events, while from 2013 to 2022, there were 170 mass shooting events (Rockefeller Institute of Government, 2023). The frequency of naturally occurring MCIs (specifically ones categorized as billion-dollar disasters) has been steadily on the rise since the 1980s. In the 1980s, the average of billion-dollar disasters stood at 3.3, and by the 2010s, the average rose to 13.1 (National Centers for Environmental Information [NCEI], 2025). The diversity of events that can be classified as MCIs and their increasing frequency are what make emergency planning an essential function of any local government entity. It is imperative for local government entities to understand the available communication methods for alerting residents of impending danger and the barriers they may face in receiving these communications.

I. Common Disasters Local Governments Manage

Naturally occurring disasters are the most frequent MCI events in Texas. Flooding from severe weather is the most common culprit for natural disasters. Despite the 126 severe storms hitting Texas from 1980 to 2024, there are still coastal regions that have not conducted official flood projections as part of their emergency planning efforts(National Centers for Environmental Information [NCEI], 2025).

In TCMA Region 10, Hidalgo and Cameron Counties are two current examples where a flood projection has not yet been completed at any level (federal, state, or local) of government, despite the increasing frequency and magnitude of events such as hurricanes. TCMA Region 10 is vulnerable to flooding due to the water levels of the Rio Grande that rise during storms, creating flooding concerns for rural communities much farther inland. In a Category 5 hurricane, storm surge would result in nearly half of the land in Cameron County and over a third of its population being underwater (Kyne, 2023). Robust infrastructure built to withstand flooding is the primary defense for many towns, but under-resourced and low-capacity rural communities are unlikely to be able to pursue these methods due to financial constraints or limited staff capacity. In areas where infrastructure improvements may not be feasible, focusing on revitalizing emergency communication equipment and procedures can help reduce confusion and loss of life.

While it is crucial for a local government to put resources toward preparing for the most likely MCI in their area, such as flooding for the RGV or tornadoes in the Midwestern United States, local governments must not ignore the possibility of other less common naturally occurring and man-made MCIs that could impact their community. According to FEMA (2025), 99% of counties in the U.S. have experienced a flood event. Over 40% of insurance claims filed through the National Flood Insurance Program were for geographic locations outside of FEMA-designated risk zones. This highlights the importance of preparing for all MCIs regardless of their likelihood to occur. This is not to say that there are not certain MCIs that will be more prevalent, but to illustrate the need to have emergency communication plans in place that employ both traditional and non-traditional communication methods to handle a variety of both man-made and naturally occurring MCIs.

II. Traditional and Nontraditional Methods of Communication

There are both traditional and nontraditional methods of communication, and both must be employed during emergency situations. Technology-based (non-traditional) methods of communication are at the forefront of both the present and future of emergency management. Chief among technology-based emergency communications is the use of alert systems. Colleges and universities provide excellent case study examples of how an alert system can be used to reach a large number of individuals in a short time by leveraging multiple different communication platforms.

The University of Texas Rio Grande Valley (UTRGV) has an emergency alert system that disseminates information to university-affiliated individuals through a variety of communication methods, including SMS (text messages), email, voice messages, and university social media outlets such as Facebook, Instagram, and X (formerly known as Twitter) (UTRGV, 2023). Local governments could easily replicate this kind of emergency alert system to share time-sensitive and critical information with their residents during an MCI. Another technology-based method is E-government platforms, such as city websites, where a large volume of information and available resources can be found in a single location. Other non-traditional methods include social media. However, fully unlocking the benefits of using social media requires proper training of municipal

employees on the various platforms. Training recommendations include government communication department employees being taught how to utilize multilingual communication on multiple platforms, such as Facebook, X, and SMS, depending on the demographics of a given municipality and the possibility of a secondary language being spoken in the region (LaLone et al. 2023).

While many have access to technology, there are still widespread areas in Texas, mainly in rural areas and those along the border, where access to up-to-date technology is almost nonexistent. A 2019 study by the National Digital Inclusion Alliance highlighted the RGV's lack of digital connectivity; three of the five least-connected cities in the nation are located in this region (Hinojosa, 2022). The City of Brownsville recently addressed this issue through a public-private partnership, which expanded broadband accessibility for its residents (Treacy, 2022). Unfortunately, the lack of access to technology permeates nationwide, especially in low-income areas. According to Pew Research (2021), only around 24% of adults in households making less than $30,000 owned a smartphone. 43% do not have home internet, and 41% do not own a desktop or laptop. It is in these areas where traditional forms of communication, such as radio and TV, are the most effective ways to disseminate information. People remain an essential component of these traditional methods. Human qualities, such as empathy, cultural understanding, and nuance, cannot be replicated by technological systems, making them indispensable in the emergency management process (Baezconde-Garbanati et al. 2005). These qualities must be emphasized in training along with technological competency.

While both traditional and non-traditional methods of communication have pros and cons, a municipality can leverage the pros and mitigate the cons that lead to more effective emergency communication. Employing both methods and engaging with all forms of governments, both vertically (local, state, federal) and horizontally (NGOs and nonprofits), is the ultimate recipe for success.

III. Barriers to Effective Emergency Communication

Another area of consideration for a city that is looking to establish or update its emergency communication plan includes identifying and addressing barriers to effective communication. One of the most common barriers local governments face in emergency communications is language barriers. 67.8 million U.S. citizens speak another language at home other than English, underscoring the growing language diversity of the country (U.S. Census Bureau, 2022).

Language barriers hinder emergency response, emphasizing the need for multilingual communication strategies (Turner et al., 2019). Whether it be traditional or non-traditional methods of communication, due to Texas's bilingual nature, information must be disseminated in both Spanish and English. Google Translate and QuickSpeak are tools that can help facilitate the translation process, making it easier to adapt messages for various linguistic groups (Turner et al., 2019). However, it is important to consider the nuances of translation when adapting messages for

different languages and dialects. For example, when translating from English to Spanish, a single English word may have varying degrees of urgency or meaning in different Spanish dialects (Otheguy and Zentella, 2012). For example, "warning" in Spanish directly translates to "aviso" and does not carry the same degree of urgency as its English counterpart; accordingly, translation issues can have devastating impacts (Trujillo-Falcón et al. 2022). For example, during a devastating F4 tornado in 1987 in Saragosa, Texas, a small West Texas town predominantly inhabited by Spanish speakers, 151 out of 183 residents sustained injuries. This high injury rate was partly due to emergency weather alerts being broadcast exclusively in English on television. Consequently, many residents had to rely on Spanish radio for information. However, the situation was exacerbated by communication challenges within Spanish-speaking communities, stemming from Spanish radio stations' direct translation of the term "warning," which led to unclear messaging (Trujillo-Falcón et al., 2022). Effective communication accounts for these linguistic variations and tailors the translations accordingly for the specific target audience.

Bridging the technology divide between individuals of different socioeconomic backgrounds is needed to ensure equal access to critical information during emergencies. Collaborating with local media outlets catering to diverse linguistic communities, such as non-English radio stations and newspapers, facilitates the dissemination of multilingual emergency information (Karidakis et al., 2022; Mathew and Kelly, 2008; Seale et al., 2024). In 2014, the National Weather Service (NWS) Brownsville/RGV implemented a Spanish Early Weather Alert/Warning System (NWS, 2014). The system includes two Spanish-only radio stations in Pharr and Harlingen that disseminate weather-related emergency alerts across the entire RGV. (Arlikatti et al., 2014; Bowden et al., 2006; Heuman, 2015).

There are also socioeconomic barriers to effective communication. Economic disparities in many regions of Texas, including the RGV, contribute to low levels of emergency preparedness and resiliency. Residents with lower incomes tend to be less equipped to handle emergencies, often due to limited resources and access to information (Donner and Lavariega-Montforti, 2018). Another socioeconomic barrier is age, albeit this is more nuanced than other barriers. While older adults are often more vulnerable, some research suggests they may be more knowledgeable during a disaster due to their lived experience, specifically if they have suffered property damage or loss (Donner and Lavariega-Montforti, 2018).

Lastly, a lack of infrastructure in a region is a barrier that can significantly inhibit the effectiveness of emergency communication. An area's infrastructure impacts the effectiveness of emergency communication systems. Adequate infrastructure ensures essential information can be disseminated quickly and reliably through multiple channels, such as landlines, cell phones, the internet, and television. However, in areas with limited or outdated infrastructure, such as rural areas, these channels may be unavailable or unreliable, hindering the timely dissemination of critical information. Additionally, physical infrastructure, such as well-maintained roads, bridges, and public transportation systems, is critical for safe evacuation and access by emergency responders. Reliable electricity and backup power systems are essential for maintaining communication channels and

other vital services during emergencies. Addressing these infrastructure challenges through investment, maintenance, and support is necessary to ensure effective emergency communication and response, particularly in communities with limited access to essential services.

The geographic diversity of communities, from large urban centers like Brownsville to small rural areas like unincorporated colonias in the RGV, is another barrier to communication. Rural communities often face significant challenges during emergencies, even when not directly impacted. These areas typically have less access to resources such as medical care, communication, infrastructure, and funding than their urban counterparts (Kapucu et al., 2014; Carpender et al., 2006). Rural communities often absorb evacuees when emergencies strike nearby urban centers, straining their already limited resources. Low levels of broadband access, less funding, and inadequate infrastructure, such as emergency shelters and roads, make it difficult for rural areas to support the influx of people (Carpender et al., 2006; Kearley et al., 2023). While we, for the sake of article length, will not delve deeper into these additional barriers, it is important to keep them in consideration when building emergency communication plans. The final article in the series will provide you with the steps to take to implement or update your emergency communication plan.

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