

PREPARING FOR THREATS IN HARRIS COUNTY: UTILIZING A COMMUNITY APPROACH

MASTER OF PUBLIC SERVICE
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Executive Summary

The recent federal response to the COVID-19 virus outlines the important role of planning in disaster preparedness. One vital variable within the planning phase, that is sometimes overlooked, is messaging to the general public. More succinctly, how can government entities effectively communicate important information to diverse populations? Addressing this question becomes more problematic as the population becomes larger and more diverse and when you also add population sprawl into the equation.

One might think the use of social media apps such as Twitter, Facebook, and Instagram would make reaching out to these diverse communities easier, which in some instances it does. However, sole reliance on social media accounts for communication raises issues such as disenfranchisement, or language and cultural barriers that may keep certain communities out of reach. With that issue in mind, how does a large metropolitan government entity approach communication issues to an economically, socially, and culturally diverse populace while recognizing a “one-size-fits-all” solution will not suffice?

This exact issue was recently posed by the Harris County Office of Homeland Security and Emergency Management (HCOHSEM) when they asked:

- (1) What are the most effective and efficient ways to synthesize and transfer actionable information on current and potential threats to constituents in Harris County? And;
- (2) What are the best methods to train the public to recognize, report, and respond to terrorist threats and emergencies?

Harris County, TX, like many counties across the United States (U.S.), is having to update their response frameworks to reflect the threats of the 21st century. Since the events of 9/11, as well as the recent COVID-19 pandemic, government officials have been asking the questions: Do we have the infrastructure in place to adequately respond to a terrorist attack or other potentially catastrophic events? and How do we synthesize and transfer actionable information on potential threats to our constituents? Each of these daunting questions poses formidable challenges to government leaders and policymakers within the county.

The purpose of this report is to provide a set of recommendations to the HCOHSEM for communicating community preparedness plans to county residents based on best practices and prior research. Additionally, this report reviews frameworks for communicating information during emergencies in a digestible format for the citizens of Harris County. Emergency management officials are perpetually overwhelmed with new information every day; therefore, it is important that government institutions employ measures dedicated to consolidating information in a manner that is concise and comprehensible enough for the public to understand. Although this report focuses on terrorism and its threats to Harris County, challenges in developing community preparedness and communicating pertinent information with the public are not unique to issues of terrorism. Best practices and recommendations provided in this report for building community preparedness and communicating with the public can translate to other issues such as the COVID-19 pandemic, times of economic hardship, natural disasters, and other extreme events that place abnormal levels of adversity on Harris County residents.

This report will be divided into five sections: Section I will define how terrorism is used in this report and outline the connection between terrorism and the role of the media in sharing threat information with the public. Section II will map the demographic profile of Harris County's constituencies and economy. This section will further highlight potential vulnerabilities or targets that might be of interest to individuals seeking to commit acts of terrorism within Harris County's jurisdiction. Section III will provide a review of existing sources and research on the role of public private partnerships, information sharing through social media for emergency management and homeland security purposes, methods of communicating with vulnerable populations, and how other comparable local governments handle crisis communication. Section IV mirrors the discussion of Section III by discussing public-private partnerships, emergency management operations in comparable cities and counties, and at-risk populations but focuses on best practices for developing community preparedness. Finally, Section V will provide a detailed outline of 10 recommendations on how HCOHSEM can improve their methods of communicating with county residents and make its constituency better prepared for threats.

The way threats and information about terrorism are communicated to and received by the public can severely impact a community's reaction during an emergency. Planning and partnerships are important in this process because improperly trained community leaders, media

outlets, and public information officials might put more lives in danger by using inappropriate ways of communicating with the public. There is no perfect way of communicating threats to the public nor is there a perfect method for preparing a community for a terrorist attack. People's perceptions of dangers or threats to their wellbeing vary based on their socioeconomic status, cultural background, religious affiliations, amongst other attributes. Emergency management offices in cities and counties in the U.S. that are comparable to Harris County often rely on emergency notification systems to send immediate notifications of threats and emergencies to community members subscribed to their service. Social media also plays a powerful role in disseminating emergency information to the public and promoting community preparedness. However, posts on local government social media accounts often do not reach the entire audience the message is intended to interact with. Also, vulnerable populations may not be able to receive information through traditional means used by emergency management officials, causing them to be more at-risk of harm during emergencies. This downfall of communicating with the public, before and after a crisis, makes improving social media practices, leveraging local and regional public-private partnerships, and utilizing community outreach programs much more important.

Recommendations

Based on research into best practices for communicating emergency information to the public and developing community preparedness, we propose 10 recommendations for the Harris County Office of Homeland Security and Emergency Management that can be sorted into three general areas: improving community outreach efforts, leveraging existing community networks with public-private partnerships, and rebranding of HCOHSEM social media accounts. The following 10 recommendations focus on improving the methods with which HCOHSEM communicates pertinent emergency information with the public and effectively promotes community preparedness. Public-private partnerships, social media, and consideration of vulnerable populations can be powerful forces in keeping the residents of Harris County informed and safe from terrorism and other emergencies.



Focus on *improving community outreach programs and campaigns to better prepare communities for emergencies* while enhancing relations with the public. Recognizing Harris County is a diverse region of unique communities implies the necessity to address community outreach gaps.

Recommendation 1: Reinforce to the community that HCOHSEM is not the Department of Homeland Security law enforcement agency, U.S. Immigration Customs Enforcement, through social media campaigns and in-person communication.

Recommendation 2: Introduce the Arabic language into written preparedness publications and official social media platforms.

Recommendation 3: Recruit community leaders to assist in communicating with the public.

Recommendation 4: Focus efforts and resources on informing young adults and teenagers on emergency preparedness.



Leverage *local and regional public-private partnerships in developing a unified methodology for communicating* within the region during emergencies. Research shows declining trust in government complicates relationship between public entities and constituents.

Recommendation 5: Create an “open table” coalition focused on bringing business and local leaders of Harris County together to improve community preparedness and communication.

Recommendation 6: Create industry-specific toolkits for identifying threats.

Recommendation 7: Implement a version of NYPD’s SHIELD program within Harris County.



Seek professional consultation on rebranding social media accounts for distributing emergency information. Many residents in Harris County and the Greater Houston Metropolitan Area have internet access but interactions on mainstream social media platforms and ReadyHarris.org are low.

Recommendation 8: Make the dissemination of information via social media platforms a priority when sharing information with the public.

Recommendation 9: Maintain a universal design across all social media accounts to ensure availability and accessibility to all users.

Recommendation 10: Seek professional consultation to improve social media presence and outreach.

Section I

Terrorism & Targeted Violence

What is Terrorism?

Terror tactics are continually evolving through innovation in technology and as world economies become increasingly intertwined with one another. As terrorism tactics evolve, so does the way the public and government agencies think about terrorism. For the purpose of this paper, we explore a few of the prominent definitions of terrorism to gain a better understanding of the threats facing Harris County.

There is much debate in the homeland security literature on how to define ‘terrorism’. Terrorism is defined by the U.S. Department of Homeland Security (DHS) as:

Any activity involving a criminally unlawful act that is dangerous to human life or potentially destructive of critical infrastructure or key resources, and that appears intended to intimidate or coerce a civilian population, to influence government policy by intimidation or coercion, or to affect the conduct of a government by mass destruction, assassination, or kidnapping. (2019a)

This is slightly different than the definition provided by Crime Stoppers, a prominent organization dedicated to community safety, who defines terrorism as “the unlawful use or threat of violence especially against the government or the public as a politically motivated means of attack or coercion” (Crime Stoppers, 2020). The State of Texas defines terrorism in Section 22.07 of the Texas Penal Code as: “any type of threat of violence against a person or institution with the intent to: cause a reaction by emergency services, place a person in fear of serious bodily injury or prevent or interrupt the use of a building, facility or meeting area” (2007). We use the term terrorism in this paper as it is defined by DHS because it applies to all counties in the U.S. independent of how individual states or private organizations define terrorism.

Targeted Violence

Many perpetrators of mass attacks do not fit the definition of a terrorist because they lack a clear ideological motive; this mistake is common in media reports. Unlike terrorism, targeted violence includes attacks otherwise lacking a clear, discernable political, ideological, or religious motivation. Like terrorism, acts of targeted violence are of such severity and magnitude as to suggest an intent to inflict a degree of mass injury, destruction, or death of a specific target (DHS, 2019a). The definition of targeted violence we use in this report is, “any incident of violence that implicates homeland security and/or DHS activities, and in which a known or knowable attacker selects a particular target prior to the violent attack” (DHS, 2019a). The threats of terrorism and targeted violence increasingly intersect with one another. Because of the similarities between targeted violence and terrorist attacks, addressing targeted violence is an essential asset of this report.

Terrorism & The Media

Security in the modern era has gravitated towards thwarting terrorism. Weapons used by terrorists are as diverse as the people that use them. Historically terrorists have used chemical or biological weapons, high-yield explosives, small arms, trucks, and airplanes to accomplish their missions. However, simple death and destruction have not traditionally been terrorists’ goals. Instead, terrorists often seek to evoke an abnormal amount of fear and create an enduring environment where a population is pervasively apprehended by potential threats (Breckenridge & Zimbardo, 2007). Another asset terrorists utilize in conjuring fear is the effect of mass media outlets reporting on terror incidents. Media outlets play a critical role in informing the public of threats, including information regarding what caused those threats. Unfortunately, the need to get pertinent information to the public can also supply the fear and notoriety that a terrorist may seek. One study even found a correlation between coverage of terrorist attacks by the *New York Times* and subsequent attacks (Jetter, 2017). The power of publicity and public hysteria is a key driving factor in a terrorist’s choice of attack as it is a force multiplier for spreading fear and panic, as well as sending a political message (Schmid, 2007). A terrorist seeks social and political change through performative violence as a means of communication with a greater audience. For instance, if a terrorist is successful in an attack, a population can infer that their

government is incapable of protecting them. An area such as Harris County has numerous avenues for making performative violence.

While an attack may or may not be prevented, what can be controlled is the narrative following the attack. If a terrorist is trying to send a message, then it falls on the shoulders of communicators and community leaders to shape how that message is presented to the public. There are two conflicting schools of thought regarding media relations and terrorism coverage. First, there is a correlation between media coverage and terrorist attacks that adds to the public perception of insecurity. Second, with the correlation between media coverage and terrorist attacks, censorship of coverage may not stop the attacks but instead provide an outlet for framing the message for people to understand it (Spencer, 2012). This begs the question of what the right amount of information is to give the public and what are the best practices of communicating with the public regarding terrorist attacks. Emergency management officials must have a robust media framework to shape how the public perceives the terrorist message.

Section II

Harris County

Harris County is a large county, it is home to many Fortune 500 companies, and houses millions of residents. These factors, and others, make this county a desirable target for various forms of terrorism. The following sections discuss the demographics, economy, and potential threats to Harris County.

Harris County is home to the fourth most populous city in the U.S.: Houston, which maintains a population of approximately 2.3 million of the almost 4.7 million Harris County citizens as of 2017 (U.S. Census Bureau, 2018). Harris County has rapidly expanded in terms of urbanization and cultural representation in the past 30 years. In 1970, 62 percent of the population was White and by 2010 they accounted for only 25 percent while Latino representation rapidly increased from 10 percent to 44 percent at the same time (Mejia, 2017). The county is notable for its diversity with 26 percent of the population being foreign-born and 43.7 percent of households speaking a language other than English at home (U.S. Census Bureau, 2018). Approximately 88 percent of households own a computer and 78.4 percent of those households have an internet subscription. High percentages of people having access to the internet can be beneficial to emergency management officials seeking to communicate with the public. Among Harris County's total population of roughly 4,698,619 people, children under the age of five account for 7.6 percent of the population, and children under 18 years old make up 26.6 percent. Senior citizens (people 65 years of age or older) account for 10.5 percent of the total population of Harris County. Women make up 50.3 percent of the total population of Harris County. 30.6 percent of the county population is more vulnerable because they are a part of a minority demographic. 19.9 percent of the county's residents are African American while American Indian and Alaskan Native are just 1.1 percent of the total population. 19.5 percent of Harris County's residents fail to earn a high school diploma (U.S. Census Bureau, 2018). Among the total population under 65 years of age in Harris County, 6.4 percent are physically disabled (U.S. Census Bureau, 2018). The residents of Harris County have diverse backgrounds in terms of educational attainment, racial or ethnic background, socioeconomic status, and other factors.

Each of these characteristics is important to consider when determining the best practices for communicating potentially life-saving information to the public.

There is no single industry that dominates Harris County's large economy. There are 2.22 million people employed within the county. The combined Gross Domestic Product of Harris County and its neighboring counties in 2017 was approximately \$478.6 billion. If the Greater Houston Metropolitan Area (GHMA) was an independent nation, its economy would be the 24th largest in the world (Post, 2018). Houston's gross metropolitan product in 2018 was \$580 billion dollars, the 5th highest in the U.S. (Duffin, 2019). The largest industries in Harris County are health care and social assistance services (235,671 people), retail and trade (235,612 people), and construction (226,588 people) (Kinder Institute, 2019). The county is also home to 19 Fortune 500 companies, two international airports, one spaceport, and one major deep-sea port with 200 industrial terminals (Harris County Office of Economic Development, 2018). Additionally, there have been licenses approved for NRG Energy to construct two nuclear reactors within Harris County in the future (Blum, 2016).

Overall, the residents of Harris County are happy with the job opportunities in their area, with 67 percent rating job opportunities as "excellent" or "good" (Kinder Institute, 2019). Harris County has an unemployment rate at 4.2 percent, which is relatively high when compared to the national average of 3.7 percent (Kinder Institute, 2019). Although Harris County is economically prosperous, many of its residents are financially insecure. Only 22 percent of students who began the eighth grade in Houston-area schools in 2006 had completed any college-level program by 2017 (Kinder Institute, 2019). 39 percent of county residents in a 2019 survey reported not having \$400 in savings that they could rely on in case of an emergency (Kinder Institute, 2019). One-quarter of all GHMA residents do not have health insurance and one-third report difficulty paying for basic needs such as groceries to feed their families or covering the costs of housing in the past year (Kinder Institute, 2019). Moreover, 15.9 percent of the population lives below the poverty line (U.S. Census Bureau, 2018). While Harris County's economy is growing, people's inability to purchase goods in the event of a disaster can pose serious problems when the government is trying to share information with residents about how to identify threats and cope with adversity.

Threats to Harris County

Targeted Acts of Violence

Like terrorism, targeted violence can have a significant impact on the safety and security of communities, schools, places of worship, and other public gatherings. Since Harris County is one of the largest counties in the U.S., many different venues are at risk of an attack. Harris County is home to numerous sports teams, entertainment venues, places of worship, event halls, schools, malls, and movie theaters. All these places have a history of being targets for violent attacks. The Houston Livestock Show and Rodeo (HLSR) hosts around 2.5 million people a year, and hundreds of thousands of people attend Astros, Texans, and Rockets games each season. Harris County is also home to many event centers, such as the Toyota Center and the Galleria Mall. In recent years, schools have become more significant targets for targeted violence. Sixteen school districts are housed in Harris County, including Houston Independent School District, which is the largest school system in Texas and the seventh largest in the U.S. Each of these venues are closed spaces with a large number of targets that would be unable to exit quickly in the event of an attack.

Agricultural Terrorism

The agriculture industry is one of the most important industries in the world. The federal government, “designated the Food and Agriculture Sector as a critical infrastructure sector, recognizing its significant contribution to national security and the economy” in 2003 (DHS, 2015). Attacks on American produce are a serious threat and can have devastating impacts on Harris County. Agroterrorism is defined as the deliberate introduction of an animal or plant disease with the goal of generating fear over the safety of food, causing economic losses, and/or undermining social stability (Monke, 2006). Some of the greater issues with agroterrorism are the social and economic effects of an attack. Catering to highly populated residential areas, a growing infrastructure, and increasing development of industrial and commercial facilities and complexes, much of the land in Harris County has been developed and urbanized. However, there are still undeveloped areas within the county that are used for agricultural purposes. According to a 2017 census, there are 1,891 farms in Harris County that encompass a combined

landmass of 218,659 acres with the average farm size consisting of 116 acres (U.S. Department of Agriculture (USDA), 2017). The estimated market value of land and buildings per farm is \$998,511 and \$8,635 per acre (USDA, 2017). Overall, the total market value of agricultural products sold in 2017 equated to \$50,612,000 and consist of soybeans, grains, hay, corn, cattle, hogs, horses, poultry, and other products (USDA, 2017).

Harris County must consider threats that target local farming communities supplying the urban community with food. A breach of agriculture can compromise the county at large and cause a ripple effect on local communities and industries. Another point to consider is that Houston is home to the HLSR. This event is held every year and brings in animals from across the country to compete and participate in auctions and events. As of 2019, the HLSR generated an economic impact of \$227 million and supported 5,133 jobs (HLSR, 2019). Harris County must consider threats that target the HLSR. The role of the agriculture sector in addition to the annual HLSR makes agroterrorism a serious threat to Harris County residents.

Chemical and Biological Terrorism

Chemical and biological terrorist events are different in the sense that one involves chemicals and the other requires biological agents, however, they often share similar characteristics in how terrorist attacks are carried out. Chemical terrorism is the use of chemicals as a weapon to attack a target for a political or ideological reason; while the Federal Bureau of Investigation (FBI) defines bioterrorism as the threat or conspiracy to use weapons of mass destruction, including any biological agent, vector, or toxin against a citizen of the U.S. (FBI, 2011). Harris County is particularly susceptible to chemical terrorism because of the presence of many chemical refining and plastic manufacturing plants. Harris County is also home to one of the largest hospital networks in the nation, so this makes the threat of chemical or biological attacks more severe. Chemical refining plants and medical facilities harbor an abundance of hazardous chemicals that could be easily utilized as weapons against members of the community. This makes it even more important for hospital and chemical plant employees to be properly trained on how to identify potential threats associated with their chemical products. The threat of an employee stealing chemical or biological agents to develop a hazardous weapon with the

intent of attacking the surrounding area warrants as much caution as an outsider with the same intention.

Cyberterrorism

As the U.S. economy becomes increasingly integrated with the internet, the threat of cyberterrorism has rapidly grown into a serious problem for people across the U.S. Cyberterrorism is similar to other forms of terrorism mentioned throughout this report, but is unique in that it involves attacks within cyberspace (Hua & Bapna, 2013). Cyberterrorism is conducted by hackers who “(1) wish to access/modify data, files, and resources without having the necessary authorization to do so, and/or (2) wish to block services to authorized users” (Hua & Bapna, 2013, p. 176). Harris County has some of the nation's largest chemical refining plants, is home to a large financial sector, and houses a robust infrastructure and transportation network, as well as, a variety of other types of critical infrastructure. These systems are becoming increasingly reliant on the internet for operation and are thus more at risk of being compromised by cyberterrorism. Harris County plays a significant role in the American economy, further causing it to be a target for cyberterrorism. Shutting down a power plant, chemical refining plant, financial institutions, or large manufacturing plant can have serious implications on both the U.S. and global economies. On a more micro level, there are many homes in Harris County that are individually connected to the internet, the electrical grid, and utilities, all of which are at risk of being compromised during a cyber-terror attack. If nefarious actors can acquire contact information that belongs to residents of Harris County, they can also risk the security of county residents through ransomware and phishing emails. It is important that the residents of Harris County are aware of the risks posed by cyberterrorism and can properly identify potential cyber threats to them and their families.

Nuclear Terrorism

The U.S. has dealt with the threat and fear of a nuclear attack since the beginning of the Cold War. Nuclear terrorism is when a terrorist uses a device that produces a nuclear explosion causing fallout that can affect many people even at far distances from the radiation (DHS, 2005). Harris County could be a valuable strategic target for a nuclear strike for various reasons. As

mentioned throughout this report, Harris County's economy is home to a variety of successful businesses and significant transportation and shipping conglomerates. Harris County could be a target of a strategic nuclear attack target due to the role it plays in the U.S. economy. Also, because of the tremendous assets within Harris County and Houston's role in popular culture, Harris County could be perceived as representing western culture and business. This depiction then might entice a criminal or terrorist organization into attacking the county with a nuclear weapon for political, cultural, or military reasons.

Section III

Communicating with the Public

Establishing frequent and open communication with the public should be of paramount concern to governing officials—especially in this modern era where social media reigns supreme among information sharing outlets. Even when controlled or confidential material is involved, officials must find a way to provide the public with some baseline information. In cases such as the Boston Marathon Bombings, when accurate, frequent, and official communications were absent, news organizations and social media outlets oftentimes filled information gaps with speculation and misinformation (Bullock et al., 2016). Public information campaigns should be developed to include an open relationship with the media and strong social media presence to improve the dissemination of accurate and timely information (Bullock et al., 2016). In this section, we will address best communication practices that have been identified in emergency management literature and highlight how other cities and counties are communicating with their constituents.

Harris County Communication Practices

Currently, Harris County has divided the way they communicate to the public regarding emergency management into three main channels: social media, traditional mass media, and their website/app.

Harris County Social Media

Twitter: The Office of Homeland Security and Emergency Management Twitter account is under the Twitter handle “@ReadyHarris”. According to the bio for the account, this is “the official source for emergency/preparedness information in Harris County.” This account updates county residents with the events going on within the office. The @ReadyHarris account also actively engages through retweets and replies with other agencies such as Houston Emergency Management, National Weather Service, the Texas Department of Transportation, and the

Metropolitan Transit Authority of Harris County. This allows citizens to gain additional updates on issues in their community without having to actively follow all Harris County accounts on social media. Potential issues that can arise with this platform are that this account is not the easiest to locate. When searching for Harris County accounts, @ReadyHarris is further on the list of Harris County and Houston government agencies. This may hinder citizens from actively searching for the account beyond the first few results of the search.

Facebook: When looking at Facebook, HCOHSEM is found under the page name “ReadyHarris”. The contents of this page are like the Twitter account, alerting the public of possible threats to the area by collaborating with other government agencies. This platform can be useful by being able to engage a different age group, one that would not use platforms such as Twitter or Instagram. This allows more citizens to become engaged and aware of the potential harms. This account is also difficult to find. Due to the nature of the page being called ReadyHarris rather than the official office name, citizens may have a more difficult time finding the page without explicit knowledge of what their name is.

Another potential issue that both ReadyHarris accounts have is the lack of engagement with the public when citizens respond to the reports. This can be seen on the Facebook page when a citizen asked if a certain area was affected by a tornado. Although this individual commented to receive an answer, the ReadyHarris account seems to not engage in the comments. This can be an issue since one of the major benefits of social media usage by the government is enhanced citizen-government communication. On the other hand, ReadyHarris may simply not wish to be liable for any information that is said in response to comments, so that is to be taken into consideration.

YouTube: The ReadyHarris YouTube channel has 78 subscribers as of February 2020. The ReadyHarris YouTube channel includes videos regarding Federal Emergency Management Agency (FEMA) assistance and emergency preparedness. Although YouTube is one of the most popular social media websites, the channel receives about 50 views per video, with the lowest being five views and the highest being 386 views.

Instagram: The ReadyHarris Instagram is the least engaged of all the social media platforms that the department currently maintains. The account has 26 followers as of February 2020. Each post has little engagement with HCOHSEM constituents, with little to no comments on each post.

Traditional Mass Media

Print and broadcast media also play an active role in the lives of the citizens of Harris County. HCOHSEM's newsroom disseminates press releases as one of the core communications tools between media outlets, emergency management leaders, and the public. The distribution of press releases are done traditionally through newspapers, but also through digital publications via the newsroom tab on the ReadyHarris website (<https://www.readyharris.org>). However, studies indicate the consumption of traditional forms of media has been on the decline due to the modern-day change of how people consume information (Twenge et al., 2019). A recent study of adolescent media use revealed the intake of printed media such as books, newspapers, and magazines has been in decline since 2008 (Twenge et al., 2019). Furthermore, the growth in technology is forcing traditional forms of media to transition into the digital age (Ahmad, 2020).

Harris County Websites & App

When a Google search for "Harris County Office of Emergency Management" is conducted, the top result is the Harris County website domain: www.readyharris.org. Two results below ReadyHarris is the link to HCOHSEM's direct website: <http://hcohsem.org/>. The two websites, in tandem, are useful e-government resources for the public for preparedness, planning, and response information. A strength of both websites is the numerous language options available for the diverse constituency. In comparison to other Harris County e-government websites that adhere to only English and Spanish, ReadyHarris includes French, Vietnamese and Chinese and HCOHSEM uses the Google translate feature offering over 100 language options. Though multi-language communication requires more work on behalf of the website administrators to ensure correct translations, the reach can be greater for the diverse constituency in the long run (Sivaji et al., 2011). In addition to the website and social media accounts, HCOHSEM is associated with the ReadyHarris mobile web app. Unlike the ReadyHarris and HCOHSEM websites, the app is limited to English and Spanish. Like the websites, the app places emphasis on preparedness with resources on weather, available services, and emergency readiness plan guidelines.

Alert System

The emergency alert system used by Harris County is ReadyHarris and the Regional Emergency Notification System (RENS). As of February 2020, the ReadyHarris alerts had around 17,950 subscribers and RENS had 697 subscribers. With a population of around 4.5 million people, most Harris County residents are not subscribers to the alert system. The ReadyHarris website had 206,000 visits in 2019. These low website traffic numbers relative to the county population size could indicate that the public does not know where to get emergency information or does not have a desire to acquire this information outside of an emergency. Often, the public only becomes concerned with safety once an emergency is at hand. The highest traffic the website incurred was during the month of March of 2019 with over 110,000 visits. This is most likely due to the Deer Park fire that occurred around the same month. This same phenomenon occurs during imminent hurricanes or large-scale terrorist attacks. As such in the event of a large-scale attack, it is possible for these alert systems to become overwhelmed.

Comparable Counties and Cities

To better understand how information is currently being disseminated to the public, we researched five major cities located in counties like Harris County. We chose to look at New Orleans, Los Angeles, Chicago, Washington D.C., and New York.

New Orleans

The City of New Orleans' Department of Homeland Security has an emergency alert text message program that serves as the main method for disseminating emergency information directly to the individuals living in the City of New Orleans. NOLA Ready currently has two notification methods for which people can receive information: emergency alerts and seasonal info. Those who sign up for notifications will be alerted of "threats to life and property, such as severe weather or an active shooter" via phone calls, texts, and emails (NOLA Ready, 2020). City residents can register to receive emergency alerts through the city's website or by texting their zip code to 888777. When signing up to receive seasonal information, the city clarifies that those who sign up for this notification will be told: "preparedness information, such as how to get ready for hurricane season" (NOLA Ready, 2020). Individuals who sign up for these alerts

will receive text messages and email notifications. The only way to sign up for these alerts is through the online signup application. NOLA Ready is also available through Twitter and Facebook accounts. The City of New Orleans sends tweet alerts about the department, such as training opportunities and recovery preparedness on the NOLA Ready Twitter account. NOLA Ready also retweets other collaborative departments, such as New Orleans Emergency Medical Services and Fire Department. This method of information dissemination may not be the best practice because some people do not have access to the internet or mobile devices.

Los Angeles

Like the City of New Orleans, the City of Los Angeles' Emergency Management Department (LAEMD) also manages an emergency alert text message program. LAEMD emphasizes the importance of having more than one way to reach out and alert their constituents in case of a disaster (LAEMD, 2020). The best way to receive these notifications is to opt into the Los Angeles alert system, Everbridge. Individuals signed up for notifications will receive prompt information on a variety of situations such as severe weather, fires, road closures, natural disasters, and evacuations of neighborhoods (LAEMD, 2020). Users can also choose multiple addresses for alerts and are able to set language preferences. Another system to opt into for alerts in the Greater Los Angeles area is Nixle. By texting your zip code to 888777 or by signing up online, you will be notified via text or voice messages with alerts from local law enforcement. The City of Los Angeles also encourages the use of two federal systems during emergencies. These systems do not require sign-up or registration. One of the systems is Wireless Emergency Alerts and the other is Emergency Alert System. The former sends out evacuation orders and other messages to any compatible mobile device based on your current location while the latter will interrupt local radio shows and Comcast television programming in the event of a large-scale emergency (LAEMD, 2020). The LAEMD also distributes emergency alerts via their social media accounts on Twitter, Facebook, and Instagram. With all these methods in mind, the LAEMD's are likely to reach people from all over as long as they are aware of these notification opt-in systems.

Chicago

The City of Chicago's Emergency Management and Communication (COEMC) website pushes a program called "Notify Chicago". This is a city service that provides residents with text messages and or email alerts on various emergency and non-emergency situations taking place throughout the City of Chicago (COEMC, 2020). When individuals opt-in to this program, they will receive alerts on everything from weather-related emergencies to traffic alerts to the use of hazardous materials. This program is a service under the Smart911 system that the City of Chicago also leverages. Smart911 is a service that allows residents to create a free safety profile for their household that includes any information they want 911 and first responders to have in the event of an emergency. Then, when anyone in that household dials 911 from a phone associated with their profile, their profile is displayed to the 911 operator, providing additional information that can be used to facilitate the appropriate response to the proper location. At a time when seconds count, Smart 911 provides details that could impact response the second an emergency call is placed. The idea of this is that these details can save seconds or even minutes during an emergency (COEMC, 2020). Like Los Angeles, Chicago also uses the Everbridge System and Nixle to receive alerts from the local police department. Individuals can opt-in by texting their zip code to 888777. They will then receive alerts for severe weather, criminal activities, severe traffic, missing persons, and local events. CEMC's office also manages Twitter and Facebook pages that share community alerts with the public.

Washington, D.C.

Washington, D.C.'s Homeland Security and Emergency Management Agency (HSEMA) has an alert program called "AlertDC". This system is again by Everbridge and Nixle. Once residents make a profile, the system will enable the government to provide them with information in a variety of situations (AlertDC, 2020). When opting into alerts, residents can choose which alerts they want to receive. These alerts come directly from public safety officials and emergency managers. Residents can receive alerts either via text, email, cell, landline, or mobile app. Additionally, AlertDC will tell residents where to go, what to do, and how to stay informed during emergencies. HSEMA also has a Twitter, Facebook, Instagram, and LinkedIn

account that encourages people to download the HSEMA app. Each of these accounts has thousands of followers and the handles on each of these pages vary from site to site.

New York City

The City of New York manages an application dedicated to sending out notifications to its residents called “Notify NYC”. One can register for this program on the city’s website or by calling 311. People can also enroll by downloading the mobile app or following the @NotifyNYC account on Twitter. This is the main option for receiving alerts in NYC. The emergency management department maintains social media accounts through Facebook, Instagram, Linked, Twitter, and YouTube to ensure people are always up to date on emergencies in the area. Each of these accounts has a couple of thousand followers, but the Twitter account has 60,000 followers - more than any other city mentioned. NYC also has a page dedicated to teaching the community about various hazards in the area and what to do if you believe you have run into this issue called “Plan for Hazards”.

The cities of New Orleans, Los Angeles, Chicago, Washington D.C., and New York have various mechanisms in place to promptly disseminate emergency information to the public. With a mixture of opt-in text message and email programs, federal programs, social media, and the usage of downloadable city emergency apps, the way information is relayed to the public is not sparse. It should be noted that these five metropolitan cities have these emergency programs in place because of the huge population that lives in these areas. Similar to Houston, which also possesses a vast population, these emergency dissemination programs are in place to assist the public in a society where technology reigns supreme and those who are fortunate enough to have access to it, are safer than those who do not.

Public-Private Partnerships

Creating a healthy relationship between the public and private sectors is of the utmost importance for establishing a vital communication network in Harris County. The private sector owns and manages most of the nation’s critical infrastructure while the public sector regulates it. Public-private partnerships (PPP) support increased communication and awareness between the private and public sectors and can lead to more effective crisis management.

There are various factors that should be considered when thinking about the role of private sector organizations in mitigation and emergency management activities (Bullock et al., 2016). Possible factors could include a business impact analysis, crisis communication planning, information technology and systems infrastructure redundancy planning, geographic location and backup sites, transportation planning, crisis leadership, and insurance (Bullock et al., 2016). Regarding communication, some private organizations have the capacity to provide employees with baseline awareness training or encourage investment in establishing a continuity of operations plan for individuals and organizations. Unfortunately, many private organizations choose to be reactive far more than they choose to be proactive. This then places the burden of proper training and education on the public sector. To assist private organizations in pursuing favorable processes, government organizations such as DHS, working through FEMA, have consolidated information, resources, checklists, and toolkits for private industry to consider when moving forward in developing better practices (FEMA, 2017).

PPPs should also include nonprofits, as this third sector has continuously proven to be a vital asset in all facets of a well-organized society—especially regarding national security and emergency management. The American Red Cross (ARC) received \$371,978 in 2002 for a program that would increase the number of volunteers in communities that have been deemed most vulnerable to terrorist attacks (Bullock et al., 2016). This grant provided for a yearlong program consisting of 30 Community Preparedness Corps (CPC) members working in 19 chapters (Bullock et al., 2016). These CPC members were given the task of working with community members—totaling some 27 million—to ensure that they all had a ‘family disaster response plan’ (Bullock et al., 2016). CPC members were able to provide tailored plans for at-risk communities (i.e. those with language barriers, disabilities, children, and the elderly) while also working to minimize intolerance across the country. CPC members were focused on educating the public by teaching community members international humanitarian law and the principles of the International Red Cross Movement (Bullock et al., 2016). CPC volunteers facilitated recruitment and training for an estimated 400 new members who in turn increased the availability of educational programs for vulnerable communities (Bullock et al., 2016).

The ultimate success of PPPs relies on two guiding principles—aligning interests and identifying shared outcomes (Bullock et al., 2016). If these sectors can synchronize continuity of

operations plans that better coordinate communications and training, then mitigation, prevention, and preparedness are likely to be more effective.

Best Practices in Crisis Communication

Post-Emergency Communication

Post emergency communication is vital to ensure that all people in an affected area are given the information that is necessary to help them survive. Specifically, after an act of terrorism or natural disaster, communication with the public is vital because of the mass panic that ensues. However, effective emergency response operations are often crippled by the lack of accessibility to critical information or emergency responders. Best practices for information sharing have developed overtime for public organizations trying to overcome hurdles in crisis communication.

A best practice of mitigating the failure of communication is that of pre-event planning (Seeger, 2006). Having a thorough plan in place serves as a constant reminder to be vigilant of potential problems and provide checkpoints for employees to follow in hopes of preventing a crisis. Such pre-planning can enhance overall mindfulness regarding threats (Seeger, 2006). It is also important to clarify the relationship between a crisis communication plan and a larger crisis response or emergency management plan. While the two are often in one document, duties are sometimes separated and associated with different departments or agencies. What is most vital to this lesson is that the communication process is essential to creating a fool-proof emergency management plan (Seeger, 2006). It is also worth mentioning that crisis communication should include structures that allow for regular updating and revision. This way, the plan can always be reassessed to accommodate new understandings about risk, new PPPs, and new response contingencies. For this reason, information-sharing networks are effective and efficient ways of obtaining new insights that can then be incorporated into the planning process (Seeger, 2006).

Partnering with the public is another best practice mentioned in emergency management literature. By accepting the public as a legitimate and equal partner, crisis communication can be significantly improved (Seeger, 2006). The public should be informed of what is happening, and federal and state organizations who manage the crisis have the responsibility to share this information to their constituents in an efficient and timely manner (Seeger, 2006; Tierney, 2003).

When considering communication with the public, the government has various factors to consider, including legal ramifications. 5 U.S. Code § 552 establishes how the government handles public information, agency rules, opinions, orders, records, and proceedings. Under this law, an agency can withhold information under this section only if “the agency reasonably foresees that disclosure would harm an interest protected by an exemption described in this subsection” (5 U.S. Code § 552, 2012). Organizations that feel full disclosure of information can negatively affect the public’s perception of their organization can apply this code to protect its image. Regarding Texas laws discussing terrorism, sections 418.176 through 418.182 of the Texas Homeland Security Act make certain information related to terrorism or related criminal activity confidential (Attorney General of Texas, 2020).

Crisis management is most effective when the public is viewed as a resource instead of a burden. Therefore, communication best practices would include a dialogic approach of listening to the public’s concerns in order to mitigate future communication failure (Coombs, 1999; Ulmer, 2001). Organizations that fail to develop credible and trusting relationships prior to a crisis will have an exceptionally difficult time doing so post-crises. A lack of trustworthiness may enhance the probability of harm. If the public believes a risk exists, people can be expected to act according to their beliefs (Seeger, 2006). The best approach to increased dialogue with the public involves honesty and openness. Honesty should be promoted to build credibility and trust before, during, and after a crisis. Organizations being transparent about risks may promote an environment of risk sharing where the public and agencies mutually accept responsibility for managing risk (Seeger, 2006). If information about a crisis is not shared openly by the organization involved in the crisis, the public will likely obtain information from other sources. This could then hurt the organization’s ability to manage the crisis message. Honesty helps foster credibility with both the media and the public and minimizes misinformation.

Developing a pre-crisis network is an effective way of collaborating with credible resources. In order to sustain these networks, planners and communicators should always seek to validate sources and develop relationships with relevant stakeholders (Seeger, 2006). Coordinating messages with partnering organizations can reduce public confusion. Furthermore, by aligning and working with other parties, disaster officials can facilitate an effective crisis response (Seeger, 2006). However, it should be noted that a major issue that comes into play when trying to collaborate is open and effective communication with the media. The media is

often looked at as the primary outlet for disseminating information to the public and they should be allowed to report accurate and full information. However, this is not always the case. In order to establish an effective media partnership, government agencies should view the media as an entity to engage with continuously in order to maintain them as a reliable resource to aid in managing crisis, rather than a rogue liability (Seeger, 2006). When communicating with the media, departments should avoid offering overly reassuring messages. Public information officers should “demonstrate appropriate levels of compassion, concern, and empathy” to the public (Seeger, 2006, p. 241). In displaying these traits, the spokesperson can enhance the legitimacy of the media outlet both before and after an event. It has been found that the public tends to respond more positively to spokespersons who understand their concerns and show compassion for any harm that has resulted because of it (Seeger, 2006). Ultimately, the best methods for emergency management offices to utilize when communicating to the public after an event is through the implementation of pre-planned action plans, partnerships in collaboration with the public, and coordinating efficiently with media outlets to showcase trustworthiness and reliability, and through the training of public information officers who demonstrate professional levels of compassion and sympathy.

Social Media

People utilize various types of communication outlets and social media platforms during disasters and emergencies. However, many scholars believe social media has not been used to its fullest potential (Spence et al., 2016). The reason for this may be due to its recent popularity amongst the general population and the uncertainty of how to engage in its usefulness by emergency managers and other government agencies (Lin et al., 2016).

Integrating social media outlets into initial policy developments is critical for effective social media messaging (Lin et al., 2016). Since the public has increasingly relied on social media to share and receive information, it is easy to understand why emergency managers should consider leveraging social media outlets to disseminate information. A survey conducted by the Pew Research Center found 74 percent of Facebook, Snapchat, and Instagram users visit the websites daily (Perrin & Anderson, 2019). An example of integrating social media into communication planning is when FEMA developed a social media usage policy and provided training with regularly updated versions of social media tools, technologies, and strategies to

further emergency response goals (Veil et al., 2011). Further, various levels of agencies are recommended to also integrate social media utilization into their policymaking in order to increase local information dissemination during an emergency.

Active participation of emergency managers in online dialogues on threats and emergencies is important for crisis communication (Lin et al. 2016). Crisis managers can engage in online conversations with the public using modern social media technology. This allows them to listen to constituents' concerns and reply to victims' questions (Lin et al., 2016). While social media might not have been created with emergency management offices in mind, it has become increasingly useful in diffusing information to aid in crisis response. Social media can be a useful tool for emergency managers. An example of an emergency when social media was not utilized to its full extent was during Hurricane Sandy when there were over 12.5 tweets sent per second using hashtags promoted by FEMA; however, only nine tweets from official governmental organizations included the hashtag (Lachlan et al., 2014a; Lachlan et al., 2014b). Posts on social media by residents can also provide useful information for emergency managers, first responders, and law enforcement officials (Waters & Williams, 2011). Therefore, emergency management officials should monitor online activity to stay informed (Lin et al., 2016).

Research has indicated that source credibility can reinforce the authority of information providers and improve public trustworthiness (Glik, 2007; Lin et al., 2016). Additionally, information that lacks credibility would likely hinder communication efforts and potentially make emergency situations worse. Citizens are more likely to share social media posts from government news sources and influential community figures (Starbird et al., 2010). Social media platforms can also create challenges for disseminating credible information during extreme events (Lin et al., 2016). The best way to combat misinformation is through creating social media accounts for government agencies to share accurate information with the public. Government organizations are recommended to build a team of members who can utilize official social media accounts to provide constant updates to the community.

Hashtags on social media play an important role in sharing information during emergencies. During the pre-crisis stage and after an event, emergency agencies should promote a specific hashtag to use for acquiring information. By organizations 'owning the hashtag', responses to their tweets may be able to directly lead audiences to actionable information, while reliance on the public's choice of hashtags may lead audiences to misinformation, spam, and

other less than ideal advice (Lin et al., 2016). If an organization promotes a hashtag, that organization needs to police the hashtag during an emergency to ensure only useful information is available to the public. It is important to begin marketing the hashtag prior to expected emergencies as a tool for informing people of how to respond to disasters after they occur. This kind of planning will assist with the emergency mitigation process and messages associated with the hashtag prior to the event will continue to be observable during and after a crisis (Lin et al., 2016). Organizations should continue to promote preparedness messages and hashtags throughout a crisis so community residents can find breaking news and information from official resources.

One issue with over reliance on social media is the spreading of rumors (Lin et al., 2016). Rumors may be intentional or the product of the absence of information from traditional sources. When trusted sources are unable to provide the desired information, members of the public are more likely to generate rumors which then can be quickly disseminated (Lin et al., 2016). Social media platforms present government agencies, emergency managers, and first responders with a variety of new opportunities for reaching, informing, and motivating individuals who experience a disastrous event. Social media, while it may still not be considered as a legitimate news outlet, should be integrated, and employed by emergency officials as another effective method for disseminating information to the public.

Communicating with Vulnerable Populations

What might be considered as best practices in crisis communication for connecting with one segment of the population might not be effective for other groups. Vulnerable groups of people often have limitations in receiving, processing, and deciphering messages from the government and other entities about risks or disaster preparedness. Vulnerable groups are identified as those who do not have adequate access to information and resources necessary for survival in an emergency. This vulnerability arises due to age, socioeconomic, language, cultural, and psychological factors. Proper training and strategic planning can minimize this gap (Georgescu et al., 2012).

The vulnerable groups that are most affected during crises are minorities, low-income people, elderly people, children, and women. Lower economic status and scarcity of resources

has become a hindrance to these groups receiving timely information about emergencies. Minority communities are less likely to get appropriate information and are more likely to be victims of any risk situation, including terrorist attacks (Eisenman et al., 2007). Racial isolation and bias, ethnic insensitivity, and cultural ignorance play a role in the hindrance of effective communication practices. Also, for emergency managers, the process of communication can become more difficult when attempting to convey messages to people who lack proficient literacy and those without a basic understanding of science (Fischhoff, 2002). Community residents need to be literate if warning messages are to be conveyed in a written manner. Illiterate people will suffer disproportionately as they cannot understand emergency messages. Moreover, to grasp certain types of messages, the reader should have some basic scientific knowledge - which a lot of people are lacking. These factors, regarding disaster or risk awareness, need special attention in strengthening community preparedness. Strategic communication and proper planning can help overcome these problems (Eisenman et al., 2007).

Economic, sociocultural, psychological, and health factors can also hinder or help communication that certain groups require to combat threats (Vaughn & Tinker, 2009). Each vulnerable group may interpret messages differently with various levels of seriousness (Vaughan & Tinker, 2009). Dissemination of information from government bodies cannot always inform, instruct, and motivate people. Lack of trust and the transmission of rumors also confuses people causing vulnerable groups to become more at risk. Rural people are more vulnerable in terms of getting timely information, they are more difficult to reach, and are often victims of rumors. Preparedness strategies and methods of disseminating information should consider vulnerable groups and their inadequate access to proper communication regarding imminent hazards (Vaughan & Tinker, 2009).

Risk perception comes from the source of information. When people get information from the same sources, they are more likely to pay attention to the threat; however, frequent news coverage of threats leads the public to information overload. Information overload leads the public to decreased cognitive power; thus, they pay less heed to the threat that is broadcasted in the news media frequently (Aldoory & Van Dyke, 2006). As society becomes more dangerous due to terrorist threats, government organizations must develop new information-sharing systems that are appropriate and effective for all members of Harris County.

Section IV

Community Preparedness

Creating awareness, preparedness, and understanding of threats in a community should be of paramount concern to government and community leaders alike. Threats have inspired various government public awareness campaigns throughout U.S. history. An example of an awareness campaign conducted by the U.S. government is the “Bert the Turtle” cartoon—a cold war era animated film shown in schools with the intent of teaching children how to duck and cover in the event of a nuclear attack (Pruitt, 2019). Although there is little a duck and cover response can do in the event of a nuclear disaster, this campaign proved to be a useful tool for the government in promoting a more aware society. Today, the DHS promotes the “if you see something, say something” campaign to raise awareness in communities across the country (DHS, 2019b). This DHS campaign aims to increase reporting on suspicious activities and promote public participation to threat reduction. However, there are various barriers in getting a message to a community.

Money is often poured into developing awareness campaigns when a new threat or concern is identified. However, in order to be effective, these campaigns must incorporate multiple factors into their planning — such as age, race, population density, income, and disability status. According to FEMA, workplaces, schools, and volunteer organizations have proven to be effective channels for outreach regarding preparedness, safety, and emergency response and have provided for a “positive relationship to preparedness behaviors” (FEMA, 2014, p. 2).

Knowing your target audience and developing a clear and compelling message with a call to action is fundamental to developing a successful public awareness campaign (Christiano & Neimand, 2017). An example of a call to action campaign is Nancy Reagan’s “Just Say No” to drugs campaign. Although the campaign was based around using disinformation and fear to combat drug use as a tactic of influencing action, it was successful, and it influenced other campaigns such as DARE. Another key point to consider when developing a message for target audiences is finding something that is trendy and fun.

In 2011, Dave Daigle, a Centers for Disease Control and Prevention (CDC) communications specialist, was frustrated with the lack of response to a CDC awareness campaign that aimed to raise public awareness about preparedness for disasters (Christiano & Neimand, 2017). Daigle decided to tap into a pop-culture fascination that was prominent around 2011—a zombie apocalypse. Riding the wave left by shows such as *The Walking Dead*, Daigle created a CDC public awareness campaign around a zombie apocalypse scenario. In this scenario, Daigle incorporated all the things necessary to survive real-world threats such as fires and earthquakes but spun them in a way to accommodate a zombie apocalypse. Within minutes of the campaign website going live, over 30,000 people tried accessing the article causing the CDC’s website to crash and news organizations such as *The Wallstreet Journal* and *CNN* to pick up the story (Christiano & Neimand, 2017, p. 36).

Another major factor to consider when developing a public awareness campaign is the target audience’s understanding or lack of understanding of a topic. The general public in the U.S. has a short memory span. This general lack of memory can be explained in the book *Homeland Security* by former Secretary of Homeland Security Michael Chertoff where he discusses how costly it can be when a “society fails to learn lessons from previous disasters”—resulting in an “emergence of a disturbing cycle” (2009, p. 125). According to Secretary Chertoff (2009, p. 125), once an incident occurs, all finances are dedicated towards mitigation as a way to lessen the effects of another disaster. However, as time passes so do the memories of the major incident causing society to back away from their original commitment to reducing risk, thus increasing the likelihood of another disaster. Gaps and overlaps in the intelligence community were evaluated and addressed after September 11, 2001, DHS was created, and military campaigns were waged against Al Qaeda, along with countless other efforts. However, as time passed, and people became further separated from the events of 9/11, people began to question if strategies and postures were still relevant. Some even “proclaim[ed] the threat to ha[d] passed” and urged the relaxation of risk management positions and attitudes (Chertoff, 2009, p. 125).

Understanding Risk

To better understand how to prepare the community for potential terrorist threats, there is a need to comprehend how constituents perceive and communicate risks, as well as interact with

one another. In the case of Harris County, minority communities and PPPs are salient factors to building a competent emergency preparedness communication plan.

Risk is calculated by multiplying the probability of an incident occurring by the magnitude of the consequences after said event occurs (Kasperson et al., 1988). The formula assigns a value to a specified risk allowing emergency managers and politicians to allocate resources where they are needed most. However, the average citizen outside of the intelligence community (IC) perceives risk in a less calculated way. Risks may be positive or negative depending on the possibility of social, financial, and physical harm or loss (Rohrmann, 2008). The separate points-of-view can also be defined as sociotropic fear, or the estimated impact a threat may have on a person's well-being (Breckenridge & Zimbardo, 2007). For the IC to serve the public, there must be a holistic understanding of different interpretations individuals have based on their experiences, beliefs, and cultures.

Perception of risks is personal and depends on an individual's interpretation of the world (Rohrmann, 2008). For example, partaking in a financial bet may be beneficial if it pays off generously in a few years' time. On the other hand, when risks are assumed to have increased negative connotations, reactions can turn into public panic, like a terrorist or cyber-attack. The communication of such risks can cause panic under the right conditions (Kasperson et al., 1988). When a risk is perceived or a disaster takes place, the facts such as time, place, and location, begin to go through communication channels with signals (Kasperson et al., 1988). The signals differ depending on where an individual gets their news from. For instance, signals will differ if the news is received from a local newscast versus a peer (Kasperson et al., 1988). The separate communication channels have the possibility to either amplify or minimize public response to the threat.

One way to overcome individual risk perception is through the construction and utilization of social capital. According to Mathbor (2007), there are three phases to build up social capital: bonding, bridging, and linking. At the most basic level, individuals begin to bond through interactions at religious, political, economic, or business gatherings (Mathbor, 2007). Once a bond has been established, links with other communities can be bridged enabling shared interests (Mathbor, 2007). Social capital comes to fruition when the coalition of individuals and communities acquire a link to public or private organizations (Mathbor, 2007). The final partnership gives legitimacy to the causes and beliefs held through the social group. For

example, a study completed by the USDA over a wildlife preparedness education program showed increased social capital correlated to individuals engaging in preparedness prevention (Agrawal & Monroe, 2006). Despite varying perceptions of risk, social capital creates a basis involving individuals in community preparedness.

The risk terrorism poses is unique and varies by the form in which an attack could occur. In the immediate aftermath of the 9/11 terrorist attacks, organizations at all levels of government began reorganizing and planning for another potential terrorist attack. Even 20 years after 9/11, terrorism is still prevalent in the world. However, the degree to which individuals and their respective communities prepare for man-made hazards differs. Many constituents now suffer from optimism bias (Caponecchia, 2012). Optimism bias is the impression that an individual or group will less likely suffer from, in the scope of this paper's research, a potential terrorist attack (Caponecchia, 2012). This poses a risk to the community if the optimism bias of one powerful individual within a community or family could potentially influence others' views toward preparedness.

In order to combat optimism bias to increase community preparedness, mental health and behavioral elements will need to be considered when communicating with the public. In practice, awareness of behavior would include communicating with and through religious groups, schools, hospitals, and other public health organizations (Reissman et al., 2005). The American Psychological Association has issued numerous pieces of advice on how to cope with the threat of terrorism. The advice is readily available to be incorporated into local and county preparedness plans (Romano & Thomley, 2020). In addition, further research has recommended Critical Incident Stress Debriefings, to limit the stress of individuals and communities through the communication of the risk in times of heightened threats (Polatin et al., 2005; Simon, 1997).

Preparing Vulnerable and Minority Populations

Community preparedness in minority communities is something that should be of concern to emergency managers. Minority groups have different responses to emergency information based upon their perception of how severe the disaster is in alignment with their past experiences (Carter-Pokras et al., 2007). Disparities in risk perceptions among minority groups can be seen in emergency evacuation situations where they typically take longer to move than

most in the community (Miller, 2012). It is important everyone in the community is properly informed of emergency best practices to reduce the number of people at risk in emergencies. The key to changing risk perception for these communities is working with community leaders of these subgroups. These community leaders can be found within religious temples, schools, community clubs, as well as health care providers for those communities.

The growing digital age has allowed community preparedness to be more widespread and accessible to minority communities. The affordance of translators for the Harris County website has allowed the immigrant population within Harris County to gain access to information instead of relying on others to explain to them how to be best prepared for a disaster or emergency, or not get the information all together. As it stands, ReadyHarris allows translation of the website to Spanish, Mandarin, French, and Vietnamese. This is critical when considering the demographics of the Harris County population. 28 percent of the Houston residents are foreign-born (Capps et al., 2015). Additionally, the top five languages spoken in Houston, excluding English, are Spanish, Vietnamese, Mandarin, Arabic, and French (City of Houston, 2014).

Although the use of both social and mass media has allowed minority communities to access proactive preparedness materials, there is more to consider when assuring that these communities are properly prepared. Since there is an estimated 400,000 undocumented immigrant population within the City of Houston alone, it can be difficult to reach out to these individuals using traditional more ‘hands-on’ methods (Capps et al., 2015). Minority lead organizations and community leaders sometimes provide the information that is needed in a non-threatening way that resonates better with minority communities on a cultural level (Carter-Pokras et al., 2007). Furthermore, although translation capabilities are critical to spreading information to different communities, it is also important to ensure that information translated in a way that will resonate with its target audience; this can be in the form of using culture-specific vernacular that will better explain to these communities the severity of the situation.

Strained finances and poverty can also make someone more vulnerable to harm in emergencies. According to FEMA (2014, p. 2), “people with low incomes perceived much greater barriers to preparedness.” FEMA (2014, p.3) also states that critical differences in preparedness were found in:

- “People in high population density areas were more likely to rely on public transportation to evacuate the area in the event of a disaster.
- Volunteering in disaster preparedness/response was mostly done by people with average to high incomes.
- Retirement-aged people (75+ category) participated in disaster training much less than people in other age categories.
- People who are Hispanic were half as likely to have signed up for community alerts and warning systems as people who are White.
- People who are caregivers for individuals with a disability were more likely to have a household plan or participate in preparedness training and drills than others.”

When it comes to being prepared for a disaster, threat, or attack there is an individual financial aspect that needs to be considered. Taking steps to invest in life-saving emergency supplies and being financially prepared for a disaster or attack, can be the difference between life or death. In a 2018 U.S. household survey conducted by FEMA, it was found that “67 percent of adults have set aside some money for an emergency, although most have set aside less than \$500” (FEMA, 2019). Having less than \$500 set aside for an emergency can put people at greater risk of being affected by a targeted attack. FEMA recommends having the following prepared for an emergency: at least a three-day supply of food and water per person, multiple flashlights with spare batteries, a radio to listen to emergency broadcasts, a first aid kit, spare clothes and bedding, and money for miscellaneous emergency expenses (FEMA, 2014). Investing in these measures can help reduce life-threatening risks and property loss in the event of a disaster or attack. A small investment upfront can make a significant difference in well-being during and after an emergency or attack.

Comparable Cities and Counties

Levels of community preparedness varies by county. Weld County, Colorado, has developed community preparation guidelines that explain how families should be prepared for any emergency. The county government came out with this plan by combining information from NOAA, FEMA guidelines, the Office of Emergency Management in Weld County and the ARC. The most common preparation practiced for emergency management is creating and storing tool

kits for that time or incident. These guidelines also suggest different emergency kits for vehicles, pets, and for important family documents (Office of the Emergency Management, 2020).

To counter terrorism and crimes in the county, the Miami-Dade County Sheriff's Office developed continuously updated crime mapping for the media and county residents. This map provides daily information on crime incidents, so citizens are well prepared in the future. Recent history and daily activities are incorporated into the map to facilitate an up to date record for citizens. The LexisNexis Community Crime map also provides alerts and notifications on incidents. This technology enables the residents to get an idea about offenses, crashes, and other activity in their community. This data management system came as a result of the partnership between the county and the community by utilizing the latest technology and ensuring transparency (Sheriff Office Miami-Dade County, 2020).

The New York City Police Department (NYPD) is responsible for defending the citizens and businesses in the most populous city in the U.S. New York has been a target for many terrorist attacks, including the attacks on the World Trade Center in 1993 and 2001, among others. In response to the perpetual threat of violence against the people of New York, the NYPD has established a PPP called NYPD SHIELD that is based on the premise of open communication and information sharing between local law enforcement agencies and businesses that might have information that can be useful for protecting NYC from potential terrorist attacks (NYPD, 2011). In addition to NYPD SHIELD, the police department also operates the NYPD Operation Nexus, which is a nationwide network of over 25,000 businesses working together to prevent potential terrorist events by reporting suspicious business encounters to local law officials. Both the NYPD's SHIELD and Operation Nexus programs seek to leverage business transactions and community interactions to monitor suspicious behavior and collect intelligence on potentially terroristic behavior.

Public-Private Partnerships

Culture bonds between individuals have a strong influence in emplacing people into society. Leveraging communities, and what makes them different, can tailor a response package to aid in the aftermath of a catastrophe. Normally these include unions of community members to institutions within that same community. PPPs have shown greater situational awareness through

information sharing (FEMA, 2013). PPPs play a large role in preparing local communities for disasters and emergencies. In response to Hurricane Harvey in 2017, 80 percent of those impacted by the storm did not have flood insurance (Condon & Sweet, 2017). However, PPPs supported Harris County residents that did not have flood insurance nor the financial capabilities to recover from the storm. This response from PPPs was due to social capital and relationships established between people in the community.

Government agencies also rely on PPPs to combat terrorism and other threats. Local businesses and nonprofits engage with members of the community on a regular basis, and often provide important resources to law enforcement officials about questionable occurrences. Some municipalities have made it a priority to establish PPPs with private organizations that leverage the mutual benefit of information sharing between government and business. Local government officials seek information and tips from store owners and employees in order to better detect potential crimes and threats. In turn, companies in their partnership with the government often receive extra protection from law enforcement agencies and are better connected to the officials that run these organizations. However, there are some factors hindering the quality and frequency of information being shared between the public and private sectors that must be addressed to ensure the optimal function of a PPP for preventing terrorism. Government institutions and private enterprises have different objectives that often conflict with one another. Companies seek to maximize shareholder value by maximizing profits and maintaining a competitive status in the market while the government is responsible for protecting its constituents (Givens & Busch, 2013). Several decades of declining trust in the government has strained this relationship and made businesses increasingly reluctant to collaborate with the public sector (Givens & Busch, 2013). As mentioned earlier, businesses seek to maintain a competitive position within the markets they operate in. If they are going to give information to the government about security threats related to their facility or submit proprietary details about their business operations, they are going to be concerned that someone in the government might leak that information and damage their competitiveness in the market (Givens & Busch, 2013). On the other side, government officials can hold critical security information that might hold a certain classified status and might not be legal or appropriate for the general public to know about. Government officials might be concerned that sharing such information with the public might compromise the integrity of classified information processes and weaken their ability to

protect the public (Givens & Busch, 2013). Each sector's reluctance to share information with one another leads to poor quality information being transmitted between one another and oftentimes at a lower frequency as decision makers in government and enterprises spend more time determining which information is appropriate to share (Givens & Busch, 2013). It is important government officials and leaders in the business sector work to improve trust between each sector in order to promote the greater safety of the public from terrorism.

There are a variety of other programs that have been instituted across the country after the attack on the World Trade Center in 2001 that leverage the frequent interactions certain industries have with the general public to collect information for public safety officials. These partnerships often rely on an informal level of deputization, or the recruitment of third parties to serve as quasi-governmental detectives for law enforcement officials (Michaels, 2010). This "deputization" is often sought out intentionally by government officials seeking to establish formal connections with private corporations or citizens, with the persuasive argument that businesses would be patriotic for helping the government in homeland security efforts (Michaels, 2010). There can also be instances of unwarranted deputization where a band of citizens coordinate to create an informal network dedicated to a cause perceived to be benefiting national and homeland security (Michaels, 2010). An example of this is unsanctioned militias formed along the U.S.-Mexico border with the intention of defending the border from illegal immigration (Michaels, 2010). Whether formal or informal, these deputized informants serve as extensions of law enforcement agencies and can influence the way the community perceives the role of the government in their community. Informal deputization and PPPs can provide emergency management officials with new information on threats in their community that can repurposed to support preparedness programs.

Section V

Recommendations

Based on our research on terrorism, Harris County demographics, and best practices on strengthening community preparedness and the government’s ability to communicate with the public, we propose 10 recommendations for HCOHSEM that can be broadly categorized into three groups:



Focus on *improving community outreach programs and campaigns to better prepare communities for emergencies* while enhancing relations with the public. Recognizing Harris County is a diverse region of unique communities implies the necessity to address community outreach gaps.



Leverage *local and regional public-private partnerships in developing a unified methodology for communicating* within the region during emergencies. Research shows declining trust in government complicates relationship between public entities and constituents.



Seek *professional consultation on rebranding social media accounts* for distributing emergency information. Many residents in Harris County and the Greater Houston Metropolitan Area have internet access but interactions on mainstream social media platforms and ReadyHarris.org are low.

Community Outreach

Recognizing Harris County is a diverse community makes it critical that county leaders and emergency management professionals are keen on best practices for communicating with people from different cultural and socioeconomic backgrounds. Although HCOHSEM has community outreach programs in place, the following recommendations are aimed at raising local awareness to potential threats. By focusing on improving community outreach programs and campaigns, HCOHSEM will be able to better prepare communities for emergencies while improving relations with their constituents.

Recommendation 1: Reinforce to the community that HCOHSEM is not DHS's law enforcement agency, U.S. Immigration Customs Enforcement, through social media campaigns and in-person communication.

The term “homeland security” is often associated with ICE. In today’s political climate, ICE often has negative connotations within minority and immigrant communities. This could have a negative impact on HCOHSEM’s ability to connect with all residents in the county. Hence, it is necessary for HCOHSEM to acknowledge potential stigmas associated with the phrase “homeland security” within the office’s name. A lack of trust and decreased cooperation can come from homeland security-related school presentations because children of immigrants often suffer from high levels of stress due to fear of their parents being deported (McLeigh, 2010). A parent’s trust in a school as a public institution might be negatively influenced as well if their children tell them there were homeland security officials at their campus (Hagan, Castro & Rodriguez, 2020). In order to preemptively combat possible negative connotations, HCOHSEM should emphasize the office’s emergency management duties to the public to separate themselves from DHS and ICE operations.

Recommendation 2: Introduce the Arabic language into written preparedness publications and official social media platforms.

According to the Arab American Institute (2020), the top five populous Arab American communities in Texas are in Harris County, Tarrant County, Travis County, Dallas County, and Collin County. Arabic is one of the most spoken languages in Harris County (City of Houston, 2014). Incorporating Arabic, like the way Harris County employs Spanish publications, could create a more welcoming environment to further integrate Arab Americans communities into community preparedness efforts. Research on these communities emphasizes how challenging it can be to assimilate in certain social circumstances (Marsella, 2008). HCOHSEM should advocate for the inclusion of Arabic on the ReadyHarris website and develop shortened Arabic publications on preparedness to combat potential language barriers.

Recommendation 3: Recruit community leaders to assist in communicating with the public.

As mentioned previously in this report, partnerships are essential to developing a prepared and resilient community. Partnering with local community leaders, heroes, and icons that are well recognized by the public can be a major asset in outreach efforts and further promote preparedness information campaigns (FEMA, 2011). Harris County has its fair share of public leaders that carry great influence in their community. It is recommended that HCOHSEM invest in community leaders who can help facilitate community participation in preparedness efforts. These representatives can hold both formal and informal leadership roles in their respective community. HCOHSEM should consider leaders who have a strong social media presence, a powerful voice in at risk communities, and can leverage resources in the entertainment industries. HCOHSEM should develop a diverse list of potential community partners that can amplify existing emergency information to hard to reach groups within Harris County. Relying on a diverse mix of community leaders to help improve community preparedness in Harris County will give HCOHSEM a better perspective on how certain populations within the county communicate and will ultimately lead to a more comprehensive outreach campaign (FEMA, 2011).

Recommendation 4: Focus efforts and resources on informing young adults and teenagers on emergency preparedness.

We believe focusing on informing high school-aged residents or young adults in Harris County on emergency preparedness techniques will lead to better community response to emergencies in the long run. Targeting young adults in preparedness education campaigns will make them better informed on threats and how to prepare for emergencies as they enter the workforce and play a larger role in Harris County. As the number of people exposed to these preparedness campaigns increases, one should expect the county to be generally more prepared as well. Potential methods for informing young adults of best practices in emergency communication and emergency preparedness are:

High School Elective Course(s): High schools offer elective courses geared towards skills like firefighting, law enforcement, auto-tech, and woodshop; a possible addition to elective

course options in Harris County schools could be emergency preparedness and communication. High school emergency management courses could discuss issues including, but not limited to, emergency preparedness and crisis communication.

High School Group Speaker: Having a guest speaker that engages with a high school class would be a good way to inform teenagers of threats and preparedness practices. A speaker could talk to an audience or class of students on emergency management and demonstrate practical preparedness exercises to engage students in the discussion. These interactions might inspire more students to take emergency preparedness more seriously in the future.

Co-op/Internship Program: HCOHSEM could implement a co-op or internship program that provides high school students with experience in emergency management. Not only would such an opportunity develop emergency preparedness and communication skills in young adults, but it would also begin to train the next generation of emergency managers.

Public-Private Partnerships

Building relationships with community partners, both private and nonprofit sectors alike, is a highly successful technique to ensure the involvement of a wide range of local community members (FEMA, 2011). Local businesses and nonprofit organizations engage with members of the community on a regular basis and are often trusted more by members of the community (FEMA, 2011). In order to better reach the diverse residents of Harris County and improve communication with the public for community preparedness reasons, we provide three specific recommendations on how to leverage private and nonprofit organizations and create public-private partnerships.

Recommendation 5: Create an “open table” coalition focused on bringing business and local leaders of Harris County together to improve community preparedness and communication.

In order to facilitate involvement in strengthening community preparedness, we recommend creating a coalition composed of community leaders from a variety of different business and nonprofit sector organizations. This coalition should meet frequently and be made up of stakeholders from various communities that HCOHSEM serves. Partners to consider engaging include: members of community councils, volunteer organizations, faith-based

organizations, citizens that are public figures, disability services, schools, higher education officials, business owners, medical professionals, nonprofit organizations, advocacy groups, media outlets, and transportation providers (FEMA, 2011). Each of these partners will bring a unique perspective and play a key role in building community resilience. This “open table” coalition is most important during the planning stages. Involving various members will not only help communities feel like their voices are heard, but cooperation will also identify the strengths and weaknesses of each community regarding homeland security and emergency management. Once there is a shared understanding of actual needs, HCOHSEM in partnership with various members from the community can address existing or anticipated needs that may arise in a terrorist attack or emergency. Not all needs require the personal attention of HCOHSEM; therefore, it is important to also identify collective capabilities in communities to be able to address their own needs. Although the planning phase might be the most important time to facilitate an open table, it is important to engage the coalition in all aspects of the emergency management process. When members from the community are helping make decisions on policies that affect them, there will be greater community participation in preparedness planning and trust between private and public sector organizations.

Recommendation 6: Create industry-specific toolkits for identifying threats.

Information collected for homeland security purposes might not apply to every sector of the economy. We recommend Harris County create a commission or executive committee of the recommended “open table” concept where organizations can create industry-specific toolkits highlighting how new and existing businesses in Harris County can prepare for threats and report pertinent information on emergencies to relevant authorities in the area. An example of this would be organizations within the finance industry creating a toolkit tailored to suspicious signs new and existing banks in Harris County should look out for in normal day operations and how to report information to the proper authorities. Potential threats to the finance industry might look much different than the threats facing healthcare businesses, the oil and gas industry, and many other sectors of the economy. Tailoring toolkits to industry-specific threats would help protect Harris County’s economy in addition to its residents.

Municipalities across the U.S. look to Harris County for best practices in emergency management and developing toolkits would be another way to share best practices with members of the emergency management community. The City of Houston created toolkits showing how other municipalities can replicate the success Houston was seeing in their new ways of responding to human trafficking (City of Houston Anti-Human Trafficking Commission, 2017). Since the toolkits were developed, they have been downloaded in over 300 cities, states, and countries around the world (City of Houston Anti-Human Trafficking Commission, 2017). Developing best practice toolkits for strengthening community preparedness for terrorism could impact HCOHSEM's image and reputation as a national leader in emergency management while making the county safer and more resilient to future threats.

Recommendation 7: Implement a version of NYPD's SHIELD program within Harris County.

One of the benefits of implementing an “open-table” information sharing environment is that the HCOHSEM would have multiple avenues of networking with private and nonprofit organizations that regularly interact with thousands of people every day. We recommend HCOHSEM leverage this attribute of businesses and nonprofits by developing a platform like that of NYPD's SHIELD program where private businesses and nonprofit organizations can submit tips of suspicious or illegal activity in their area to HCOHSEM. If managed by HCOHSEM and a group of organizations from the open table, the reports can then be distributed to other member organizations and relevant public offices (i.e. Sheriff's Office, local authorities). This information-sharing framework between HCOHSEM and private sector organizations would provide the community at large with a centralized platform for collecting and reporting information, thus making Harris County safer for its over four million residents.

Rebranding Online Presence

As mentioned earlier in this report, social media is one of the newest tools government agencies are using in recruitment efforts, innovative campaigns, and marketing public programs. According to a study done by Sprout Social, social media was ranked people's top choice for customer communication (Jackson, 2017). While the private and nonprofit sectors have turned to social media for public engagement, government agencies often lack the popularity that most

private sector accounts have. This is interesting considering that one of the biggest benefits to Twitter, Facebook, and Instagram is the ease of communication. Social media makes it easier for citizens to share their opinions, and for the government to hear them (Jackson, 2017). Whether it is a city updating its citizens about a delay they should be aware of or the U.S. Department of State using YouTube to share press briefings, social media has made communication between constituents and government much easier and more applicable. For these reasons, we offer three recommendations on the role of social media in future HCOHSEM communications with the public:

Recommendation 8: Make the dissemination of information via social media platforms a priority when sharing information with the public.

Social media plays an important role in the lives of many Americans. For this reason, we recommend making dissemination of information through social media a priority when communicating with the public and sharing emergency information. One way to maximize the benefits that social media has to offer is through utilizing the ‘stories’ function on various social media apps. These stories, made popular by Snapchat, Instagram, and Facebook, are growing 15 times faster than feed-based sharing (DHS, 2012, p. 11; Shibu, 2019). Stories are often seen as more spontaneous and personal than their simple text-based counterparts, which some agencies may not be used to. It should also be noted that this video content is often more popular the shorter it is in length. Shibu (2019) states that there is a growing appetite among audiences for ‘snackable’ video content that is consistent and personal. Another way to maximize the benefits of social media is by partnering with local influencers to encourage citizens to follow government social media handles. In doing this and earning followers, the government organization can build credibility on social media by debunking false information and relaying the correct narrative before a crisis escalates (Shibu, 2019). A final way to increase the benefits that come with social media is to foster communication on social media by actively responding and providing feedback to those being critical and helpful online. By responding with empathy and professionalism to citizen complaints, government entities improve their trust with their constituents (DHS, 2012; Shibu, 2019). These are just some minor recommendations on how to make social media a priority in your organization for information sharing purposes.

Recommendation 9: Maintain a universal design across all social media accounts to ensure availability and accessibility to all users.

Because Harris County has a diverse population, we recommend that HCOHSEM maintain a universal design across all related social media and public outreach accounts. Maintaining universal design promotes inclusion, which will become more important as Harris County continues to grow and becomes more diverse. Posts that are made available in multiple languages while keeping the same meaning and urgency help keep different populations informed during a crisis. As part of universal design, if posts are made in different languages, the sense of urgency within a message needs to be there regardless of what language it is posted in. As mentioned earlier in this report, people of various backgrounds interpret threats differently; therefore, it might be necessary to tailor emergency messages to specific audiences. Implementation of universal design could potentially save lives by expanding outreach efforts to at risk communities and facilitate community participation in emergency preparedness.

Recommendation 10: Seek professional consultation to improve social media presence and outreach.

To ensure that the processes and procedures HCOHSEM relies on for communicating with county residents are effective, we believe consideration should be given to hiring a social media consultant. A social media or marketing consultant would be able to better inform the HCOHSEM staff about the intricacies of posting on social media. A consultant could provide specific expertise on topics including proper graphic design aesthetics that will engage the public, advice on when to post content to maximize constituent interaction, as well as information on how to properly develop content that is clear and concise. In the same vein as issues raised in our first recommendation, a marketing consultant can also support HCOHSEM in developing and managing a larger brand strategy on how the office wants to be perceived in the community.

Conclusion

Harris County plays a consequential role in the U.S. economy due to its stake in the energy, aerospace, and chemical industries; it is home to one of the largest medical centers in the country; it has many high-profile concert venues and professional sports arenas; and houses several offices of Fortune 500 companies. All these high-profile locations for an attack make Harris County a potential target for agroterrorism, cyberterrorism, chemical and biological terrorism, domestic terrorism, and targeted acts of violence. Each of these forms of aggression provide attackers multiple avenues of disrupting Harris County's economy and negatively impacting the lives of its nearly 4.5 million residents. Based on research into best practices for communicating emergency information to the public and developing community preparedness, we propose 10 recommendations for the Harris County Office of Homeland Security and Emergency Management that can be sorted into three general areas: community outreach, public-private partnerships, and rebranding of HCOHSEM social media accounts. The recommendations and best practices mentioned in this report are framed in the lens of terrorism, but can be translated to a variety of emergencies and disasters including, but not limited to, pandemics like COVID-19, economic recessions and depressions, and natural disasters.

Acronym List

ARC	American Red Cross
CDC	Centers for Disease Control and Prevention
COEMC	Chicago Office of Emergency Management and Communication
CPC	Community Preparedness Corps
D.C.	District of Columbia
DARE	Drug Abuse Resistance Education
DHS	U.S. Department of Homeland Security
FBI	Federal Bureau of Investigation
FEMA	Federal Emergency Management Agency
GHMA	Greater Houston Metropolitan Area
HCOHSEM	Harris County Office of Homeland Security and Emergency Management
HLSR	Houston Livestock Show and Rodeo
HSEMA	Homeland Security and Emergency Management Agency
IC	Intelligence Community
ICE	U.S. Immigration Customs Enforcement
LAEMD	Los Angeles Emergency Management Department
NOAA	National Oceanic and Atmospheric Administration
NYC	New York City
NYPD	New York Police Department
PPP	Public-Private Partnerships
RENS	Regional Emergency Notification System
U.S.	United States
USDA	U.S. Department of Agriculture

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