



INSTITUTE FOR HOMELAND SECURITY



**Sam Houston
State University**

**PUBLIC AND PRIVATE COLLABORATION DURING AND AFTER WINTER
STORM URI:
LESSONS FOR IMPROVEMENT AND SUCCESS**

**Institute for Homeland Security
Sam Houston State University**

**David A. McEntire, PhD, SFHEA
Technical Paper #3**

Abstract

This technical report illustrates that the private sector performs critical roles in disasters, and reiterates that its collaboration with the public sector is necessary when extreme events occur. Using the February 2021 Winter Storm Uri as a case study, this paper explores the negative impact of the loss of power and subsequent cascading effects. It also reveals numerous areas where the businesses and the government collaborated to meet pressing disaster needs. The implication is that the private and public sectors must increase communication and mutual support when disasters take place.

Introduction and Overview

There is a growing recognition that the “whole community” must be involved in disasters, whether that is to mitigate hazards or be prepared for improved response and recovery operations in their aftermath (FEMA 2011). Businesses are a significant part of this whole community. And one of the most important relationships which facilitates the whole community approach is collaboration between the private and public sectors.

Research reveals that businesses perform important roles before and after disasters occur (Weber, McEntire and Robinson 2002). For instance, the private sector provides donations and volunteers, insures disaster losses, complies with occupational health and safety, plans for transportation accidents, assists with emergency medical care, facilitates sheltering, disseminates warnings and public information, engages in business continuity, and serves as vendors of goods and services.

The aftermath of the 9/11 is a great case in point. The private sector illustrated its value in this anthropogenic disaster and worked closely with the public sector to address significant challenges that were made manifest when the worse terrorist attack occurred in U.S. history. The private sector communicated and coordinated with the government to:

1. Warn and evacuate occupants of the twin towers at the World Trade Center complex.
2. Relocate New York City’s Emergency Operations Center and equip it with office equipment and phone lines.
3. Clean up debris generated by the collapsed buildings at ground zero.
4. Set up fences around ground zero for perimeter control.
5. Provide additional site security.
6. Deliver logistical support for Urban Search and Rescue teams.
7. Care for the medical needs of the victims of this horrific incident.

8. Disseminate information to the public through the media.
9. Repair communications and electrical infrastructure.
10. Restore nearby buildings that were damaged as a result of the collapse.
11. Share sanitation services with first responders and recovery personnel.
12. Relocate businesses and resume normal operations.
13. Distribute funds for disaster victims and cover insurance losses.
14. Manage other donations going to first responders and victims of the incident.
15. Replace fire apparatus lost on 9/11.
16. Install fixed, retractable, and removable bollards in front of government buildings to prevent further terrorist attacks.

The following technical report follows up on this prior research, and explores challenges encountered by the private sector and government officials during Winter Storm Uri in Texas in February 2021. It also shares notable successes resulting from this important collaboration.

Problem Statement and Gap Assessment

Businesses encountered a whole host of problems when Winter Storm Uri dumped snow and ice on virtually the entire state of Texas and plummeted temperatures to historic freezing records.

The most obvious challenge was the loss of natural gas and electrical service, and this may be traced – at least in part – to the 1935 Federal Power Act which deregulated electricity in Texas. Later on (in 1970), the Electric Reliability Council of Texas (ERCOT) was created to manage its standards and operating procedures. This resulted in the Texas power grid being a standalone and unstandardized grid. Unfortunately, several weaknesses were revealed in the grid and numerous recommendations were given to remedy the situation. This counsel included three major reports that stressed the need to improve power generation and distribution during severe weather:

- Outages and Curtailments During the Southwest Colder Weather Events on February 1-5, 2011. (Federal Energy Regulatory Commission & North American Electric Reliability Corporation 2011).
- Extreme Weather Preparedness Best Practices. (Quanta Technology 2012).
- Eye of the Storm: Report of the Governor’s Commission to Rebuild Texas. (Sharp 2018).

Unfortunately, as one emergency manager commented, “many of these recommendations were not followed . . . which left the electrical grid susceptible to extreme temperatures and high demand.” Specifically, the freezing temperatures and weak infrastructure caused the gas lines that provide power to the electricity companies to become semi-frozen in the pipes. In fact, some estimates suggest that half of the gas supply was hindered during the storm (Communications Team, 2022). Many plants shut down as a result, which prevented the generation and distribution of electricity.

Meanwhile, the demand for power was increasing because individuals, families, businesses, and government entities were striving to keep their buildings warm and habitable. The combination of a limited supply of electricity and heightened demand created a situation where rolling blackouts would be needed to prevent a total failure of the system. This loss of power forced many businesses to shut down relevant operations (e.g., extraction, manufacturing, distribution, sales, etc.).

A closely related problem was the provision of incorrect or insufficient information about the generation and transmission of electricity. When Winter Storm Uri made its way to Texas, ERCOT advised government leaders and the media that rolling blackouts would be needed to maintain partial operation of the grid. ERCOT notified businesses and citizens that power would be cut on a rotating basis in each power grid for approximately 30 to 60 minutes. Unfortunately, this announcement appears to have been erroneous. Some locations never lost power, but power was turned off in many locations of Texas for hours and even days on end. This resulted in the freezing and breaking of pipes and water mains, which subsequently produced flooding in and outside of buildings. Making matters worse, ERCOT did not issue many public statements between February 11th and February 17th. Neither the government nor businesses fully understood what was happening with electricity. One person interviewed for this study stated “We were told that there would be a possibility of sporadic outages, but they would be coordinated and no longer than a specified amount of time. And it was supposed to be intermittent.”

The loss of electricity produced rippling effects, that crippled routine business operations. Water soon became inaccessible for human consumption or for manufacturing purposes. Roads became impassible. The supply chain was severely disrupted and needed goods and services were severely curtailed. This included everything from food and water to generators and piping materials.

Although businesses were clearly victims of this extreme weather event, they also demonstrated incredible resilience and worked collaboratively with the government to respond to the challenges they faced. Successes were witnessed in countless areas:

- Businesses received information about the storm from the National Weather Service.
- The private sector helped remove snow and sanded/salted icy roads.
- Over 60 private tow truck operators were called to help clean up a 135-car pileup in Fort Worth Texas.
- Police, fire fighters and other government employees worked with an apartment complex to shut off water and evacuate residents to warmer locations.
- Police officers picked up nurses from their homes and drove them to hospitals so they could fill their shifts.
- Essential employees who were isolated at a chemical refinery walked to a nearby convenience store and relied on this establishment to obtain life-sustaining water and food.

- Government officials moved evacuees and others seeking refuge from the extreme temperatures to hotels in order to avoid congregate sheltering during Covid-19.
- Emergency management personnel called gas stations to determine which ones were open and had enough fuel to supply the needs of emergency vehicles.
- Government agencies contacted retail establishments to acquire water for public distribution and transport companies helped to get water to cities and counties that needed it the most.
- Stores provided generators for government agencies, hospitals, and nursing homes.
- Emergency managers helped access and ship diesel so a local petrochemical plant could keep its generators running and avert a potential leak and explosion.
- Government leaders shared information through private media entities about how to people could protect themselves from the cold (e.g., with layering of clothing, blankets, lining windows, etc.).
- The state acquired fuel from private sector providers and sent it to those in need around the state.
- Government officials were able to operate virtually because of software provided by the private sector (e.g., Microsoft Teams, Zoom).

Topic Discussion

As demonstrated, the private sector encountered many problems related to Winter Storm Uri. In addition, there were countless cases where the private and public sectors worked harmoniously to address pressing disaster challenges. With these issues in mind, there are several areas where the private sector can help to prevent a recurrence of what happened during Winter Storm Uri. And there are a variety of recommendations that can facilitate more effective and efficient public/private interactions in future disasters. Several will be mentioned here:

1. The private sector must be involved in rebuilding and strengthening the power grid in Texas.
2. Businesses are required to repair damaged public infrastructure (e.g., roads and watermain) and flooded homes.
3. Large corporations and small companies must anticipate unlikely hazards and complex disasters and develop or expand contingency plans accordingly (e.g., virtual operations).
4. Private business leaders must increase ties and communications with the National Weather Service as well as ERCOT to better comprehend severe weather and the implications this has on the provision of electricity.
5. Management and labor must augment levels of preparedness by reviewing vendor contracts, stocking needed supplies, and anticipating what orders should be placed in advance when disasters threaten.
6. Corporations and businesses should look for ways to provide essential services after a disaster, whether it be food, water, transportation, sheltering, fuel, generators, etc.

The Way Forward

Research reveals that businesses are essential partners in the whole community approach to disasters. In addition, case like Winter Storm Uri illustrate that the private sector must work closely with government leaders to address issues ranging from the loss of power and information sharing to supply chain issues and the rebuilding of critical infrastructure. By learning from prior disasters and implementing change, businesses can help themselves and the government to be more resilient.

References

Communications Team. (2022). Texas February 2021 Winter Storm: Lessons Learned One Year Later. <https://www.deandraper.com/blog/texas-february-2021-winter-storm-lessons-learned-one-year-later>.

FEMA. (2011). A Whole Community Approach to Emergency Management: Principles, Themes, and Pathways for Action. FDOC 104-008-1. https://www.fema.gov/sites/default/files/2020-07/whole_community_dec2011_2.pdf.

Federal Energy Regulatory Commission & North American Electric Reliability Corporation. (2011). Report on Outages and Curtailments During the Southwest Cold Weather Events on February 1-5, 2011: Causes and Recommendations (pp. 1-218).

Quanta Technology. (2012). Report on Extreme Weather Preparedness Best Practices. (p. 1-71).

Sharp, J. (Ed.) (2018). Eye of the Storm: Report of the Governor's Commission to Rebuild Texas. (p. 1-168).

Weber, Richard T., McEntire, David A., Robinson, Robie J. (2002). "Public/Private Collaboration in Disaster: Implications from the World Trade Center Terrorist Attacks." Quick Response Report #55. Natural Hazards Research and Applications Information Center. <http://www.colorado.edu/hazards/gr/gr155/gr155.html>