

In-depth interviews with administrators of education/educational institutions

In-depth interviews were conducted with higher education institutions. The research team organized focus group workshops and interviews with the key stakeholders in Southeast Texas to discuss resiliency and recovery in the aftermath of Harvey. This helped to discover and elicit the risk management practices used by the education sector. The following are the findings of PARM methodology for **campus closure**:

Preparedness to Hurricanes and Storms

- Educational institutions follow the National Hurricane Center's updates and instructions.
- Some of the institutions had a subscription to StormGeo service to have additional weather forecasting information.
- At the end of spring some institutions meet internally to update emergency plans for the season.
- Educational institutions have manuals and policies to manage these risks.
- These risk management documents also state "who is in charge of what" in case of natural disasters.

Risks Related to Harvey

- The rain came fast and intensively so most of the institutions could not keep up.
- Montagne Center converted to an evacuation center providing shelter to 500+ evacuees from the city.
- Red Cross was not able to manage the shelter in the first 24 hours. Temporarily Lamar University assumed a management role, including provided food to all evacuees.
- In total there were around 1400 people (students and evacuees from the city) on campus.
- City water shut down complicated the situation as campus needed potable and non-potable water.
- Water damaged various buildings and equipment.

Practices of Risk Management and Lessons from Harvey

- Emergency teams stayed on campus around the clock during Hurricane Harvey to manage the risk more efficiently.
- During the time when the campus was impacted by the water shut down, the administration was able to deliver water via tanker.
- Educational institutions have plans to purchase diesel generators for buildings to avoid risks of electricity interruptions in future disasters.
- Educational institutions revised various policies and included response strategies to events like Harvey.
- Online software/apps provide an opportunity to continue university services.
- IT servers are installed in specific locations away from campus to offer protection from hurricanes and other natural disasters.

The next section presents the results of the PARM methodology during **campus opening**:

Post-Hurricane Recovery

- Legislative appropriation requests during the 86th Regular Session provided educational institutions significant support and financial resources to recover from Hurricane Harvey.
- Texas Senate Bill 500 made supplemental appropriations to public institutions including educational institutions of Southeast Texas.
- Various education institutions have contracts for repairs in place in order to be able to recover quickly if natural disasters damage campuses.

Risks Related to Harvey

- Loss of student credit hours led to tuition revenue loss. The loss of tuition revenue was generally short-lived.
- In general, the effect of an event such as Harvey on an academic institution is prolonged, and generally lasts from 3 to 5 years.
- FEMA has special procedures to apply for compensation. The FEMA procedure from application to compensation is slow and time-consuming.
- Many buildings don't have electricity generators.
- Lack of specific financial reserves for natural disasters slows down the recovery.

Practices of Risk Management and Lessons from Harvey

- Drones were acquired to survey of damage assessment across campus.
- Due to water shutdown university rented portable toilets to maintain hygienic conditions on campus
- The company ServicePro has been contracted to assist in recovery and restoration for certain types of damage on campus.
- There are plans to elevate KVLU radio equipment, in order to provide Southeast Texas community objective news without interruptions.

The following explains **human resource management** during campus closure and campus opening:

Risk Related to Harvey

- Loss of productivity due to educational institutions' decisions to suspend operations.
- Even if employees didn't report to work during natural disasters they still get compensated as administrative leave.
- Overtime payment to employees engaged in recovery efforts (some institutions compensated at the rate of two and a half pay) have been provided.
- Building coordinators don't have incentives to maintain an updated assessment of existing conditions and vulnerabilities of buildings.

Practices of Risk Management and Lessons from Harvey

- Special policies for remote work have been established.
- An incident command center has been established.
- Personnel policies state responsibilities for emergency situations.
- Business continuity plans, risk management policies, procedures, and manuals were revised and now include better approaches to address disasters like hurricanes and tropical depressions.
- Crowdsourcing App has been made available to better manage the crisis and have an additional instant communication channel with employees.

The following presents the **impact on students**:

Risk Related to Harvey

- A temporary decrease in enrollment.
- Risk of not returning school of student population especially taking into consideration that many students are first-generation
- The majority of students were in residential halls and experienced issues to get food and had parking problems due to flooding.
- Parents complained that LU evacuated athletes but not other students from residential halls.
- The design of residential halls makes the buildings vulnerable in events of this magnitude.
- Food shortages in town caused problems to find food for students.

Practices of Risk Management and Lessons from Harvey

- E-learning resources such as Blackboard allow uninterrupted teaching.
- Educational institutions have engaged in more consistent and proactive communications via messaging, emails, social media and other channels.
- The LiveSafe App has been adopted and its use is encouraged among the university community.
- In order to address students' needs various institutions created surveys to gather information about hurricane impacts.
- Financial aid supported students to overcome financial hardship resulting from Harvey.
- University purchased special vehicle, hired commercial driver to be able to move through campus and address students' needs, this helped to serve cold lunch students and evacuees. These actions helped to provide dinner at night.