

Public Private Partnerships for Resilience-Three Case Studies

Prepared for the Texas Economic Development Council

By the International Sustainable Resilience Center, Inc.

1. Resilient Health Facility

Hurricane (Typhoon) Katrina struck the U.S. gulf coast in 2005, flooding the city of New Orleans, Louisiana and causing catastrophic damages. Of the 1,170 deaths from Hurricane Katrina, an estimated 520 were in acute medical care prior to the storm.

Low-income and minority citizens were severely adversely affected due to severe damage and ultimate closing of the largest public charity hospital in the state. In response, the State of Louisiana entered into a public private partnership with the Children's Hospital Foundation, a nonprofit, to build a new charity hospital complex. University Medical Center New Orleans, a state-of-the-art facility, was designed and built for disaster readiness and resilience. The resilience measures incorporated in the design allow the hospital to continue operating under extreme weather conditions, and include the following measures:

- All critical components and services including patient rooms, the emergency department, the helipad and decontamination facilities are located on Level 2 and above flood level while noncritical public, conference and office functions occupy the ground floor
- The infrastructure including power generation, food and water supplies allow the facility to survive off the electrical grid for seven days.
- The glass façade is capable of withstanding the impact of a major hurricane including the force of a 2x4 hitting the exterior at 200 mph.
- The emergency room has redundant critical instruments and machines, can hold up to 200 people, and has enough food and water for two weeks.

This level of resilience was accomplished through the injection of \$143 million by the private foundation in partnership with the State and its flagship university's medical school, totaling \$1.064 Billion. Under the public private partnership agreement, the foundation operates and maintains the facility.

1. Affordable Housing for Disaster Recovery and Beyond

Disasters by hurricanes and flooding can particularly affect low-to-moderate income neighborhoods where pre-disaster housing is already inadequate. A pilot project was developed in the Rio Grande Valley of the U.S. State of Texas in an impoverished region on the border with Mexico, with the objective of building resilient temporary shelter (core) that could be easily expanded into a quality affordable home.

Utilizing pre-assembled components for the core provided significant cost savings, (\$25,000 vs \$125,000 for a mobile unit) proved very resilient (can withstand hurricane strength winds) and allows additional rooms to be added in converting the shelter into a quality affordable home.

The PPP solution was chosen because the U.S. Federal Government's policy is not to fund permanent home construction. The core unit is not considered a permanent home; however, utilizing a case management system to provide private financing and construction, the units

were able to be converted into permanent homes. In this pilot project, 20 core units were converted into permanent homes.

The project was funded through a public private partnership between the Texas Land Commission and three nonprofits, who managed the entire project including assembling the core units, providing case management for victims including architects to work with victims in converting shelters to homes, financial counseling to ensure victims were able to afford their new homes, and ongoing maintenance of the neighborhood. The pilot project was implemented in 2014, and all 20 homes are still occupied.

Resilient Supply Chain & Transportation Systems

The Louisiana Supply Chain & Transportation Council (LSCTC) was formed as a response to severely disrupted commerce in the wake of severe flooding events in the U.S. State of Louisiana. At one point in this disaster, every major transportation system (Highways, Ports, Airports, Railroads) were disabled, some for weeks or months. The LSCTC has been in continuous operation for five years and has no plans to disband.

This “soft” public private partnership includes representatives of private sector transportation associations (ports, railroads, water transport, trucking, airport operators) and public sector agencies (State and Federal transport agencies, the US Army Corps of Engineers, State and Federal Economic Development Agencies) has led to several “hard” infrastructure projects, with the goal to increase the overall effectiveness of transportation and reduce impacts on commercial and agricultural interests from future events.

As of March 2021, the LSCTC has accomplished the following:

--2018--Secured \$350,000 for development of an analysis of Louisiana’s transportation system with recommendations to increase resilience.

--2019—Based on the Resilience Analysis and recommendations, secured \$4.5 million for road and waterway flood protection improvements, with a match provided by private members

--2020—In response to record number of hurricanes, and after the City of Lake Charles was destroyed by two hurricanes within 5 weeks, created a response and resilience task force to meet both immediate needs and long-term resilience investments. The first of these is a Public Private Partnership to reconstruct, operate, and maintain a 2-km long bridge on Interstate 20 over the major transport waterway Calcasieu River, estimated to cost \$600 to \$800 million.

--2021—The Council is submitting recommendations to the Louisiana legislature for increased transportation resilience in the face of continuing increases in number and intensity of natural disasters, including several public private partnership projects.