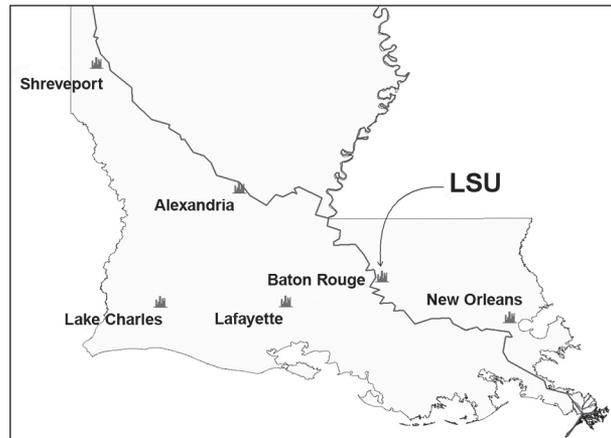


# Katrina Lessons Leave LSU Safer

By Dr. JoAnne Castagna

As students begin a new semester at Louisiana State University (LSU) at Baton Rouge, the school—with the help of the United States Army Corps of Engineers® (USACE)—takes a new approach to keep its college community safe from future hurricanes. The region recently marked the second anniversary of Hurricane Katrina, the sixth-strongest Atlantic hurricane ever recorded and the third-strongest hurricane on record to make landfall in the United States. USACE continues to deploy thousands of personnel to the Gulf Coast to assist the Federal Emergency Management Agency (FEMA) and other federal, state, and volunteer organizations in getting the beaten region back on its feet. One of the ways USACE is helping is through Geographic Information System (GIS) support.

A GIS expert with the New York District of USACE is one of four national action officers responsible for deploying and managing GIS teams throughout the Gulf region. He explained that GIS is a computer-based information system and tool for analysis of spatial data. It takes data from various sources—such as aerial photographs, drawings, and electronic geographic data—and combines these layers of information as overlays to perform spatial analysis and produce an electronic map that depicts the results of that analysis.



Map by Roger W. Porzig, Jacksonville District, USACE

## Louisiana State University at Baton Rouge

USACE is using the GIS to help make LSU a disaster-resistant school. Even though the school wasn't damaged by Katrina, the campus is still vulnerable to future hurricanes since it is located in the southern part of Baton Rouge, bordered on the west by the Mississippi River. Louisiana is a coastal state that faces threats from hurricanes and tropical storms year-round, but especially during hurricane season.

Katrina was a Category 5 storm that left death and destruction along its path. Since last year, USACE has been working with the university to map the entire school into the GIS. If a hurricane occurs, the school administration will have maps electronically available to help guide them through the situation and save lives of thousands of students and staff.

The main function of the GIS-based maps is to reduce the time it takes for emergency personnel to assess a given situation. LSU wanted to get its entire 2,000-acre campus into the GIS, including all of its buildings, parking lots, sidewalks, and roads. Building information was linked to the school's safety database, including building names, number of rooms, classroom numbers and layouts, square footage, and professors' names and telephone numbers. If an emergency occurs in a particular building, school staff members can pull up the GIS map, click on the building to see where emergency exits and fire



Photo by Brad Mooney, FEMA

**A USACE/LSU team maps out the university campus using GIS technology.**



**The Pete Maravich Assembly Center, a large indoor basketball arena, was used as a medical special needs shelter in the aftermath of Hurricane Katrina.**

extinguishers are located, and access contact information for professors or other personnel who are normally in that area of the campus. If a certain portion of a building is damaged, the GIS information can provide an idea of who may be trapped or in danger.

A spokesman for the university police said that the GIS will make LSU an “active campus” that will give important data about facilities. For example, if there is a fire in a laboratory, officials can click on that room, see what chemicals are stored there, and pass the information to the fire department. The Pete Maravich Assembly Center, a large indoor basketball arena, served as a medical shelter for New Orleans residents with medical special needs in the aftermath of Katrina. Now the school wants to better prepare it to serve as a medical special needs center in case another hurricane hits. Digitized drawings of the arena created electronic maps in the GIS,

and the school’s hospital and social services departments determined where beds, medicine, and volunteers should be placed. If the shelter is activated, employees working there will know where and how to set up the beds, where to store the medicine, and where tables are set up, so the operation will proceed smoothly. Officials will be able to assess an emergency situation more quickly with the GIS electronic-based maps than with printed maps that may be obsolete since roads, parking lots, and buildings may change over time. GIS maps can be updated with new information immediately, as opposed to printed maps that may only be updated every couple of years.

The GIS system will also serve as a basis for a 9-1-1 emergency telephone number system for the LSU campus, which is a city within a city. The GIS will also be useful in situations in which many different agencies converge on a scene. The personnel from the agencies may not know the area, so GIS maps will help them become familiar with the layout of the buildings and the campus. Before USACE developed the GIS maps for the school, campus addresses were not available and useful street data had not yet been developed. Simple package deliveries to the campus were major obstacles for the staff and faculty.

The USACE GIS team will continue to support FEMA and LSU in Baton Rouge as long as necessary. 

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**The Memorial Tower is a central feature of the Louisiana State University campus.**