

# 106 SUCCESS STORY

## Inventory and GIS: Tools for Expediting Disaster Response and Recovery

New Orleans, Louisiana



“As technology advances and new tools to facilitate rapid responses to disasters improve our ability to perform Section 106 quickly, the methodology developed following Hurricane Katrina will be refined and improved. Facing more powerful and destructive storms in 2017, where critical power and communication infrastructure was severely damaged, these technologies were challenged in their reliance on Internet connectivity. In the future, we need to combine strategies to find the most effective way to respond to disasters while working to save our cultural resources from further damage.”

—DEIDRE McCARTHY, GISP  
Chief, Cultural Resource GIS Facility  
National Park Service

Photos: Above, aerial of flooded neighborhood New Orleans (FEMA photo by Jocelyn Augustino); Right, Ninth Ward destruction; surveyors using GIS (photos courtesy NPS)



### THE STORY

Founded in 1718 along the Mississippi River, the City of New Orleans became the largest U.S. port in the South during the 19th century. With 20 National Register Districts and a host of individual historic properties, the city’s landscape represents 300 years of history, architecture, and culture unequalled in the nation. However, in August 2005, Hurricane Katrina made landfall as the one of the most intense hurricanes in history, causing catastrophic flooding following the failure of the levees. The floods caused \$108 billion in damages and created an unprecedented cultural resources disaster.

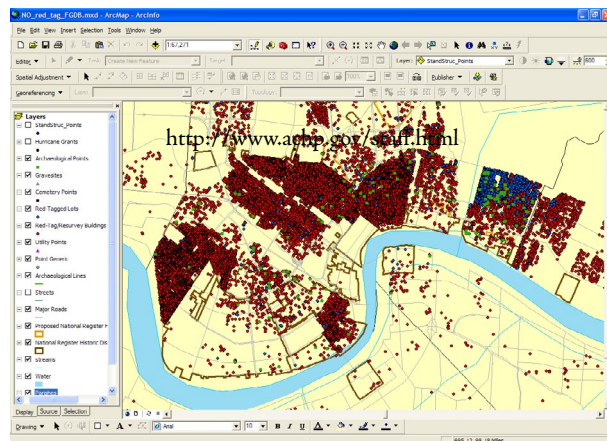
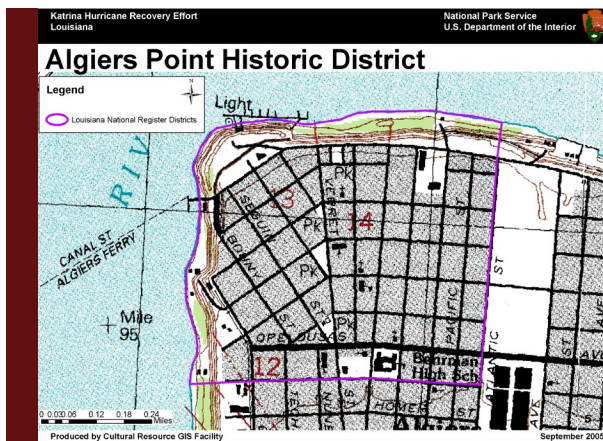
### THE PROJECT

As the federal agency responsible for disaster response and recovery, the Federal Emergency Management Agency (FEMA) was a first responder, focused initially on preserving life and property. After the flood waters receded, FEMA was responsible for developing a strategy to assist the City in its disaster recovery, and increasing resilience to future disasters. As part of its strategy, FEMA considered two criteria: identifying properties threatening to public health and safety that needed to be demolished, and identifying historically significant properties that could be salvaged or saved from further damage. To expedite recovery funding, this identification effort had to be done in a timely, efficient fashion. However, while researching, FEMA learned there were properties that had not been evaluated, and information in some National Register nominations was out of date or incomplete, leading to a potential slowdown in recovery efforts.

### THE 106 PROCESS

FEMA was responsible for conducting the Section 106 process under the National Historic Preservation Act. Section 106 requires that federal agencies identify historic properties and assess the effects of the projects they carry out, fund, or permit on those properties. Federal agencies also are required to consult with parties that have an interest in the historic property when adverse effects may occur.

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Examples of the GIS mapping of the New Orleans area (courtesy NPS)

To obtain the information needed to assess a property's stability and historic significance, FEMA asked the National Park Service's (NPS) Cultural Resource Geographic Information Systems Facility to construct a methodology to identify and evaluate all potentially affected properties within the city using GIS and GPS technologies.

As a result of the identification efforts, FEMA worked closely with the Louisiana State Historic Preservation Officer (SHPO) and numerous consulting parties to assess damage to individual historic properties and neighborhoods. FEMA and SHPO staff visited properties together to determine their historic significance and integrity, consider building safety and condition, and decide if buildings could be rehabilitated. Using this GIS-based inventory, FEMA and the SHPO collaborated to significantly shorten review periods for Section 106 reviews. While compromises were sought over buildings determined to be hazardous to public health and safety, FEMA also worked with consulting parties to rehabilitate many buildings and develop a more pro-active management strategy to assist in the event of future disasters. Where demolition was necessary, FEMA worked with the SHPO and consulting parties to develop Memoranda of Agreement laying out what could be done to offset the loss of the historic property within the community.

## THE SUCCESS

While demolition of historic buildings and structures was unavoidable at times, the number of demolitions was greatly reduced because of the GIS/GPS inventory, concurrence and management strategy. Complete information allowed FEMA to focus rehabilitation and restoration efforts on historically significant properties. The GIS/GPS strategy developed by FEMA and NPS significantly enhanced the response time during the disaster recovery period, reducing the time spent per resource by approximately 84 percent, turning a typical 90-day Section 106 process into a 14-day response. More than 50,000 locations were catalogued as part of the GIS/GPS effort.

Additionally, the GPS documentation of resources, the derived GIS data, and the method of review for Section 106 purposes are digital for the first time. The digital format allows direct links between FEMA, the SHPO, the City, and the local historic commission, with new data to use in planning for future disasters. The resulting locational and descriptive data collected for contributing and non-contributing resources within eligible and listed National Register historic districts provides enhanced information previously unavailable to the NPS, the SHPO, and their partners for future preparedness and planning efforts. The collaborative approach to disaster recovery and Section 106 compliance allows the GIS/GPS inventory to serve as a management tool for current use and future disaster and recovery efforts.

### Consulting Parties:

Federal Emergency Management Agency  
National Park Service  
Louisiana State Historic Preservation Officer  
Governor's Office of Homeland Security and Emergency Preparedness  
City of New Orleans

For more about Section 106 and the ACHP go to [www.achp.gov](http://www.achp.gov)

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