

**Client:**

Louisiana Coastal Protection  
and Restoration Authority

**Location:**

Greater New Orleans, LA

**Products Provided:**

- Robust hardware and computer systems to assist with emergency decision making

**Value Provided:**

- Real-time information to aid in the evaluation of a system's flood readiness
- Real-time warnings on system conditions leading up to possible failure of any components during a flood event
- Quantitative risk prioritization tool to enable systematic selection of reaches within the flood protection system for effective risk reduction through monitoring

## Background & Project Challenges

The State of Louisiana Coastal Protection and Restoration Agency (CPRA) deployed a state-of-the-art Intelligent Flood Protection Monitoring, Warning and Response System (iLevee) at strategic locations within the greater New

Orleans area for early warning of undesirable performance of the flood protection system. The iLevee system monitors the condition of the flood protection system at all times, both during every day operation and most importantly during a rare but devastating 500-year hurricane or 500-year flood event.



## Geocomp Role & Accomplishments

Geocomp was the Program Manager for the Intelligent Levee, or iLevee program, a \$3M, 2-year contract to incorporate sensor data from 10 test installations, visual observations from emergency personnel, operations and maintenance information from the levee districts and other publicly-available data streams into a geographical informational management (GIS) system.

Geocomp also used risk assessment tools and decision theory aids to identify where monitoring can be deployed to provide the largest reduction in risk. Within this context, Geocomp developed a probability analysis tool which integrates and transforms data from field instruments and routine field inspections into quantitative measures of risk for each levee component to help prioritize investment decisions. This enabled the State of Louisiana to systematically rank segments of their flood protection system in terms of risk and subsequently deploy monitoring systems for effective risk reduction. The results of this Phase 1 program was used in the design for the future full-scale roll-out of the system.

iLevee is the combination of a well-designed instrumentation program coupled with our state of the art data acquisition and information management system that collects data from monitoring sensors installed throughout the flood control system. iLevee collects a combination of voice, web-based, and photographic input and associate these with specific geographic locations. iLevee collects all types of input data into a centralized system, processes these data in real-time, and provides interactive real-time displays of the health and status of the flood control system using a geographic database. The vast amount of data collected will be sent to iLeveeCentral, a system of hardware and software to receive and store incoming data streams, a GIS system to track and display the location of each source of data, databases to store all incoming information for the life of the project, and a decision system to filter the incoming data and decide whether sufficient attributes exist to call attention to an event. iLeveeCentral includes a reporting system to provide operational status information, event information, historical information, and a project database with drill-down capability to call up any information relevant to a specific component of the flood protection system.