Intelligent Levee
iLevee

PROJECT PROFILE

CLIENTS:
Louisiana Coastal Protection and Restoration Authority

LOCATION:
Greater New Orleans, LA

VALUE:

- 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 component 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

SERVICES PROVIDED:

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

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QUANTITATIVE RISK MANAGEMENT MONITORING

Geocomp was the Program Manager for the Intelligent Levee, or iLevee program, a $3M, 2-year contract incorporating 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 should 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 were used in the design of the future full-scale roll-out of the system. 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.

BACKGROUND

The State of Louisiana Coastal Protection and Restoration Agency (CPRA) deployed a state-of-theart 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.