



WATER RESOURCES RESEARCH GRANT PROPOSAL

Project ID: 2002TX47B

Title: Enhanced Flood Warnings for the Texas Medical Center: A Second Generation Flood Alert System (FAS2)

Project Type: Research

Focus Categories: Floods, Models, Hydrology

Keywords: flooding, geographic information systems, severe weather, weather forecasting

Start Date: 03/01/2002

End Date: 02/01/2003

Federal Funds: \$5,000

Non-Federal Matching Funds: \$10,980

Congressional District: 7th

Principal Investigators:

Jude A. Benavides
Rice University

Philip B. Bedient
Rice University

Abstract

This project will develop an enhanced flood warning system to serve the Texas Medical Center complex in Houston. It will take advantage of a new high-resolution version of NEXRAD weather forecasting technology. In addition, the project will also test the use of novel short-range [1 to 2 hour in advance] weather prediction tools developed by MIT. The result will be the development of a modeling system that provides a very detailed display [16 times better than current methods] of flood data, that will greatly improve flood forecasting capabilities. This new flood alert system will also incorporate newer hydrologic models to better estimate flood flows from Brays Bayou. It is also expected to provide advice needed to develop action conditions and flood protection procedures that can be implemented in real time in the Medical Center complex, based on varying levels of flood risk. This project is a cooperative effort between Rice University and the Federal Emergency Management Agency [FEMA]. The project will utilize data from 2001 Tropical Storm Allison as a case study--Allison dumped 36 inches of rain on Houston in 2001 and caused billions of dollars of damages, much of which were in the Medical Center area.