

Real time monitoring of flood control dams for emergency action management

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Purpose of Study

This study will identify, classify, and analyze two dams in the Mesilla Valley, Broad Canyon Dam and Apache-Brazito-Mesquite Dam1, based on capacity, storage, and inflow, all to determine normal and overflow conditions.

Study Underway

In 2013, the American Society of Civil Engineering's annual infrastructure report card on dams gave New Mexico a D+. Dams across the state are considered to be deficient and are not in satisfactory condition. The data attained in this study will be presented to Elephant Butte Irrigation District (EBID). Using the data, an effective early warning emergency plan can be employed by EBID. To allow for this, data will be collected via remote sensors that will be positioned at various elevations of the dams. Data and methodology used to analyze these two dams could then be generalized and used as a guide for monitoring other dams in New Mexico and the U.S.

Benefits

This project is expected to provide information concerning the amount of water and expected outflows at various water levels. Water levels correspond to alarm stages at which the sensors will warn EBID of potential threatening activity. Such alarm warning messages would indicate when water is present in the pool of the dam, the water level is rising too rapidly, the dam has reached 50 percent capacity, spillway flow is plausible, spillway flow is imminent, and emergency spillway flow is occurring.

This photo was taken in front of the civil engineering building, Hernandez Hall, at NMSU. From left to right Dennis Felipe Jr. (Pueblo of Acoma, NM), Malcolm Braughton (Los Alamos, NM), Abdullah Alazmi (Kuwait), Reynold Durden (Ramah, NM), Paul Candelaria (Hatch, NM), Seth Davis (Draper, VA).

