

Overview

Irrigation District Engineering and Assistance Program

The Irrigation District Engineering and Assistance (IDEA) Program first began in 1990's with projects to introduce surge flow irrigation and lay-flat tubing into two districts and to determine changes needed in district operations to ensure the success of the technologies. In 1996, the program expanded into GIS (geographical information system) mapping and use for improved district management and regional water planning. Our programs have continued to grow, and IDEA is now the most extensive University-based program of this kind in the United States.

Applied Research Programs

- GIS-based irrigation district water distribution network simulation model for rehabilitation planning and network management/optimization
- Multi-spectral remote sensing for detecting leaks in canals and underground pipelines
- Database/accounting system for irrigation districts with GIS integration
- Rapid Assessment Tool (RAT), composed of visual facility rating procedures combined with limited direct measurements to define the need for renovation and to quantify the potential water saving of proposed rehabilitation projects
- Rehabilitation and improving the operation and management of irrigation schemes - with the National Irrigation Commission of Jamaica

Short Courses/Educational Opportunities

- Geographical Information System (GIS) for Irrigation District Mapping and Management
- GPS (Global Positioning System) Surveying and Data Processing
- Water Measurement and Metering in irrigation districts
- Customized Individual and Group Training

Technical Assistance

- Analyzing the water supply situation in districts and their ability to deliver sufficient water and head at the farm turnout to allow for efficient on-farm irrigation
- Analyzing water losses in districts through seepage loss tests, spill measurement, etc, prioritizing and determining water savings in proposed rehabilitation projects
- Rating the condition of district infrastructure to identify water distribution network components and structures needing renovation
- GIS mapping and integration with district accounting and database systems
- Selection, programming and use of automatic gate and other water control systems
- GPS surveying of district facilities
- Database programming and modernization
- Design of GIS systems and set-up in districts

Related Projects

- Regional water planning and analysis of potential water savings in irrigation districts
- GIS implementation program for managing data and optimizing field operation, harvesting and transportation to the mill - with the Lower Rio Grande Valley Sugar Growers, Inc.
- Technical assistance, design and training in GIS implementation and database/accounting system integration, including the optimization of water distribution network and in-field irrigation systems - with Hawaiian Commercial and Sugar (HC&S), Inc.