

Texas Cooperative Extension Soil and Water Conservation Proposal

Project Name: New Irrigation Technologies for Nursery/Floral Producers and Commercial Landscapers

Is This a New Project or Request for Continuation?: New Project

Geographic Area of the Project: Statewide

Name of Principal Investigator:

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(see page 3 for additional participants)

County(s) and/or University Department(s), TAEX, or Unit:

Horticulture
Agricultural Engineering
Soil & Crop Science/ Turf

Amount of Funding Requested: \$7,500.00

Project Need, Description and Expected Outcomes:

Water continues to be one of the most critical issues facing the green industry. Water availability, conservation, and quality all impact nursery/floral producers, landscapers and retailers. In addition, commercial and residential landscape irrigation is the single largest water use category for most major municipalities. Improved technologies and better management practices will be required if we are to protect and conserve this valuable natural resource.

Experts agree that irrigation management is the most important factor in conserving water. A well-designed irrigation system is only efficient if it is operated properly. Advances in technology are providing new opportunities to better address water management. However, much of this technology is not readily available through traditional horticultural suppliers. The objective of this project will be to evaluate new irrigation technologies using currently available components.

There are a tremendous number of electronic components and computer software that have been developed for industrial water applications. However, many of these components have not been utilized in developing commercial, business or residential irrigation systems. This project will focus more on using existing technology versus research on developing new components.

This project will be conducted at the TAMU Horticultural Gardens in College Station, Texas. We currently utilize standard irrigation timers to monitor and control over 100 stations in the nursery, greenhouse and landscape. The proposed demonstration would incorporate modules equipped with X10 signal addressing to input data directly in to a PC. Commercially available X10 software (i.e. HomeSeer) will run in the background giving the user the ability set and modify run times as required. This mode allows users to assign an individual X10 code to each valve. An additional water conservation feature will be a default or maximum run time which may be set for each value. In event of a lost X10 command, run time will be determined by the default setting. Each zone will be programmed with it's own default value.

All of the X10 signal information will be automatically posted to a web site that provides both access and control of the irrigation system. Using a wireless PDA, PC or other internet device, users will have the ability to remotely access data, turn valves on and off, as well as monitor ph, salinity and flow. The acquisition of historical data will also provide meaningful analysis for improved management of the irrigation system.

The proposed project will have broad implications including the ability to remotely monitor and control commercial, business and residential irrigation systems. The project will also create an easy to use water management tool that will allow growers, commercial irrigators, retailers and homeowners do a better job of conserving and protecting our valuable water resources.

Specific Soil and Water Conservation Issues Addressed:

- Irrigation Efficiency
- Water Management and Conservation
- Resource Management

Result Dissemination:

Results from this project will be presented as follows:

- Final Report
- TNLA Magazine
- TNLA Pre-Expo Educational Seminar
- TAMU/TNLA Turf and Ornamentals Field Day
- On-site Demonstration at the TAMU Horticultural Gardens
- CEA Professional Development Activities at the TAMU Horticultural Gardens

Collaboration:

Dr. Michael Arnold, Associate Professor
Department of Horticultural Sciences
Texas A&M University
College Station, TX 77843-2134
(979) 845-1499

Will provide assistance in nursery/greenhouse crop culture and production.

Dr. Bruce Lesikar, Associate Professor
Department of Agricultural Engineering
Texas A&M University
College Station, TX 77843-2117
(979) 845-7451

Will provide assistance with hardware/software installation, as well as data collection.

Mr. Eddy Edmondson, President
Texas Nursery & Landscape Association
7730 South IH 35
Austin, TX, 78745-6698
(512) 280-5182

Will serve as industry liaison and assist in disseminating results from the project.

Submitted by _____

(P.I. signature)

Approved for submission _____

(Unit Head signature)