

Name of Project: Establishment of a statewide Texas ET and meteorological network database site.

Geographic Area of the Project: State of Texas

Name of Principal Investigator(s): Thomas Marek, Raghavan Srinivasan, and Guy Fipps

Mailing Address(es):

(Marek) TAES, 6500 Amarillo Blvd W, Amarillo, Tx 79106

(Srinivasan) Spatial Sciences Laboratory, 700 University Drive, Suite 104, College Station, TX 77843-2120

(Fipps) TAMU, Scoates Hall, College Station, TX 77843

Phone:

(Marek) 806-359-5401 Fax: 806-358-9718 E-mail: t-marek@tamu.edu

(Srinivasan) 979-845-5069 Fax: 979-845-2273 E-mail: srin@brc.tamus.edu

(Fipps) 979-845-7454 Fax: 979-847-8828 E-mail: g-fipps@tamu.edu

Amount of Funding Requested: \$20,000

Project Need, Description and Expected Outcomes

The Texas Agricultural Experiment Station and Texas Cooperative Extension, as well as other agencies, have been partners in their support to develop strategically located meteorological station networks throughout the state of Texas. Numerous objectives exist for each of these regional networks; however, the majority serves irrigated producers and urban clientele. However, there is no official centralized database for the data and no standardization of format(s) for potentially further effective use of the data from the respective networks, referring particularly to water related modeling, policy and planning issues. Furthermore, quality control, quality assurance standards need to be agreed upon for statewide uniformity of accuracy. Support for verification and maintenance of sensor instrumentation is also needed to insure data integrity. These data have and continue to serve irrigators in effective water conservation management. Additionally, they continue to assist water planners in current and future demands in several regions of the state and are potentially becoming the basis of future allocation, possibly either from the authority of a state agency or water district.

This effort proposes the development of a statewide committee of regional network representatives to address and develop a concerted set of standards where regional ET and meteorological data is produced. Subsequently, the data from these networks will be electronically transferred and formatted for use in a sanctioned, electronic TAMUS database and newly developed web site, possibly through the TAES Spatial Sciences Laboratory. This new website is not intended to replace any website within the regional networks or other state sites. Such standardization would provide efficient access to the dataset(s) and facilitates uniformity and integrity of the data. The dataset(s) will also be archived and maintained for future use by the lab or other TAMUS agencies.

The outcome of this effort should yield a uniform, sustainable structure for electronic access and archive to valuable water use and meteorological data from regional ET networks throughout the state Texas. The inherent benefit of such a format and data system should provide benefit to those in the state and others dealing with needed, accurate data requirements for a variety of water related and policy issues. The availability of these data in such a declared format should be of potential interest to other agency and commercial personnel. The facilitation of such a centralized database structure should also provide opportunity for other cooperative agency network integration.

Specific Issues Addressed

This effort specifically relates to the effective utilization of the quantity of water resources used in the most irrigated regions of Texas. It also directly pertains to the irrigation efficiency, both agricultural and urban. The ET data provided by these data directly impact water management and conservation in the state on a scale second to none. Accuracy of assessment is directly proportional to the accuracy, integrity and availability of the data being used as input. This effort addresses several of these issues directly.

Collaboration

Several agencies are directly involved in this effort with others being contributing partners in aspects of the network operations. The direct associations related to this proposal are as follows:

- TAES –Amarillo, Agricultural Engineering, (Marek, Dusek) – responsible for entire North Plains ET Network development, network programming, processing and integration of network to centralized database.
- TAES –Corpus Christi, Agronomy; (Fernandez) – manager of the Crop Weather Network - Coastal Bend.
- TAES –Spatial Sciences Laboratory (SSL) – (Srinivasan) – responsible for development, integration, operation and maintenance of database for statewide ET and meteorological transfers. Also, responsible for development and security of agency’s web site for data access and retrieval.
- TAES –Weslaco, Agricultural Engineering; (Colaizzi) - collaborator on user interface and development of Lower Rio Grande ET network.
- TCE – College Station, Agricultural Engineering; (Fipps, Flahive, Simpson) – Texas ET network and website manager, programmer and database manager, and coordinator of Urban ET program.
- TCE –Lubbock, Agricultural Engineering; (Porter) - responsible for South Plains ET Network development, processing, coordination with NPET network and part of Far West Texas network.
- USDA/ARS –Bushland, Agricultural Engineering; (Howell) – responsible for accuracy of water use data, ET equations and parameters related to instrumentation requirements and calibrations. Also, responsible for web-based ET, self teach program of NPET.

Budget Justification

This budget request supports the integration of electronic data from a variety of the major TAES/TCE ET network sources throughout the state of Texas. As such, it requires additional computer hardware to existing systems and programming efforts for both setup and startup operation. Travel is necessary for participants to address standardization issues among the various networks and the proposed centralized database. Partial support is also requested for verification and maintenance of sensor instrumentation in selected networks to insure data integrity.

Submitted by:
(P.I. signature)_____

Approved for submission:
(Unit Head signature)_____