IRRIGATION TRAINING AND RESEARCH CENTER
California Polytechnic State University
San Luis Obispo, CA 93407

Phone: (805) 756-2434
FAX: (805) 756-2433
www.itrc.org

Managing District Data Needs – Narrowing in on a Moving Target

San Luis Water District, Panoche Water District, Delano-Earlimart Irrigation District (DEID), Westside Water District, Glide-Kanawha Water District (GKWD), and Central California Irrigation District (CCID) are blazing data management trails in the Mid-Pacific Region of the USBR. Ditchriders in these districts use or are beginning to use hand held data recorders (HHDR) to gather field information. The data management needs of these districts differ and as a result, the approach for each district differs. Further, each district is tackling portions of its data management needs in a stepwise fashion. The success of each step and the successes of other district approaches help define the evolution of this new phase of district data management.

In 1995 San Luis WD and Panoche WD contracted with Advanced Professional Services in Fresno, CA [(559) 435-8570] to develop a water ordering and billing software program. The resulting program called STORM was completed in 1997 and upgraded functionality continues to be added to the program. Several other districts are now using STORM. A Panoche WD representative noted that there is an interest in using HHDRs to gather field data and then integrate the data into STORM.

DEID collects daily turnout (TO) meter readings for its pipeline system with the goal being to produce accurate usage and billing information for their customers. SCAN-IT (Mark Hayes, (916) 987-9880), in cooperation with Hammond Consulting (Gene Hammond, (209) 845-8846), and ITRC developed the Irrigation Data Collection System (IDCS) program for the Percon Falcon HHDR. The program allows ditchriders to gather the field data according to DEID requirements and a transfer program is used to link the data to a Microsoft Access database table. From this table, personnel at the district produce monthly bills to growers.

Westside WD had similar objectives to DEID but the approach the district chose was different. Through a US Bureau of Reclamation grant a company called EasyReader International (Euan Slidders, (805) 650-7888) was contracted to formulate a solution to the Westside WD needs. Computer hardware was purchased and Videx LasarPro HHDRs were chosen to gather totalized meter reading at farmer TOs on a monthly basis. EasyReader developed the HHDR software and what is now known as a Financial edition of their H_2O Pro district database management software. This software enables the district to download the HHDR data, keep track of field and tenant/owner information, and generate monthly usage reports by owner for billing purposes. A future possibility may be to add an accounting link between the billing database and accounting software.

GKWD applied for and was awarded a USBR grant to address their data management needs. The old DOS-based software it was using was no longer flexible enough to meet its needs and was unlikely to be Y2K compliant. GKWD wanted to be able to collect daily meter readings at its turnouts, produce statistical reports required by USBR, validate that the sum of consumer water usage matched lateral deliveries, and validate lateral delivery sums to USBR reported deliveries to the district. EasyReader recently completed a Statistical edition of their H_2O Pro data management software to address the GKWD needs using the LaserPro HHDR for the data collection.

Input from other districts that had been awarded USBR grants to address their data needs, (Dunnigan WD, Colusa County WD, Orland-Artois WD, and Corning WD), was incorporated into the development of an Enterprise edition of the EasyReader H_2O Pro software. The Enterprise version is modular-based so districts can pick and choose the components that meet their needs. EasyReader incorporated the Westside WD and Glide-Kanawha WD specifications into the Enterprise edition and it also included the following functionality:

1. The ability to take water orders and produce district orders to their water supplier.
2. A check of lateral capacity against orders and a check of orders against seasonal allocations.
3. The ability to track multiple tenants and crops at the same time on a turnout by acreage or meter difference.
4. The ability to track one tenant/owner with multiple crops on a turnout.
5. Access to variable units of measure.

Other desirable functions identified by districts include:

1. Customer specific bar codes on bills to reduce billing errors.

2. Crop growth stage.

3. Flow meter operational status.

4. Identifying and documenting field maintenance requirements.

5. Water use type.

6. Weather data input.

CCID also applied for and was awarded a USBR data management grant. This large district (145,000 acres managed in 8 sections) wanted to give their ditchriders more functionality in the HHDR than the pre-defined data entry of other HHDR systems. EasyReader was contracted to address the needs and a prototype of their Precision edition of its H_2O Pro software is currently being integrated into some sections of the district. The Panasonic S10 HHDR was chosen by the CCID ditchriders for its power and its display, which is easy to read in the sun. This HHDR allows the ditchriders to access and manipulate the database for their section.

At CCID, the ditchriders take customer orders for their section through radio, telephone, and voice mail in their trucks. The customers are often on community ditches where the ditchrider sets the flow into the ditch and the customers are responsible for splitting the flow based on their order. The HHDR emulates the current manual system of order handling, tracking of water usage, acreage being irrigated, and crop type. The ditchrider is able to group customers that are currently taking water and make changes as new orders are made. The HHDR calculates total daily diversions so the ditchrider can make accurate water requests from the district water master. It also allows the ditchrider to generate a route sheet that prepares him for the next day's orders and a log sheet that documents the daily diversion, broken down by tenant. Using this data, the district provides accurate usage to the customer on a monthly basis with the ditchrider being able to correct errors on a daily basis. Future functionality might include dynamically linking HHDR entries to the central database and integration of modules from the Enterprise version to match the evolution of the district's data management.