

Bringing Irrigation District Management to the Cloud

For more than three years, WaterMaster has provided irrigation districts with cloud-based water accounting, invoicing, water order and delivery tracking, and reporting.

Origins

WaterMaster's parent company, Advanced Control Systems (ACS), has been in business since 1992. It started out providing service work for computer- and numeric-controlled machinery and equipment. Over the years, in response to customer needs and requests, ACS has grown into an engineering and consulting company providing software solutions and control programming for manufacturing, water and wastewater, and irrigation automation.

The idea for WaterMaster's cloud-based irrigation account solutions was born out of ACS's work with the Vale Oregon Irrigation District. ACS, which had provided SCADA controls to the district in the

past, worked with the district to automate gates at a reservoir three hours away from the district office. Prior to automation, office staff would call the dam tender and request the needed amount of water for the canal. The tender would go out, turn on the hydraulics at the dam, open up the gates, and then drive her ATV—with her little dog in tow—half a mile down the creek to take measurement. She would then go back and make another adjustment. All together, it was a two-hour process repeated a few times a day.

When the dam tender retired, the district reached out to ACS to find an automated solution. ACS installed some controllers to provide a cellular connection to the dam. According to Curt Landreth, ACS president, "It enabled district operators to sit in their office three hours away and control the gates from their computer screen or phone." The solution was total computer control.

In working with Vale Oregon Irrigation District,



ACS learned about the district's antiquated billing system for irrigators—the DOS-based system would crank out invoices for some 475 customers, requiring repeated modifications to get them right. In addition, the district's ditch riders were still taking orders on paper and providing usage updates only once a month. The solution: Mr. Landreth and his team at ACS wrote software to enable the district to interface with QuickBooks. The invoicing process was reduced from days to minutes, and a week and a half's worth of water order data and report entry turned into two days' worth. WaterMaster was born.

The Service

Today, WaterMaster offers six modules:

- **BillTrack**—manages accounts and produces customizable invoices with payment tracking.
- **WaterRights**—tracks a district's water rights and properties with legal descriptions and irrigable acreage.
- **DitchRider**—enables the district manager to track gate activity and flow rates and view real-time demand for a district's water distribution at any time.
- **RideKick**—enables ditch riders to track, create, and receive water orders in the field via an iPad app.
- **District Groups**—helps districts assign members to a division, consolidate administrative fees, and allocate votes based on multiple factors.

WaterMaster is state-of-the-art, cloud-based software hosted on the WaterMaster servers, which are protected by bank-grade 256-bit SSL encryption and backed up daily.

How It Works

WaterMaster works with a district to migrate as much historic data as is reasonable into its system. The goal is to be able to present existing data in a recognizable and comprehensive way to the district. From there, a district can use the WaterMaster application to do billing, charge fees, turn water on and off, and track water certificates and historical certificate transactions.

Ditch rider data collection is completely automated. Ditch riders can enter data directly into an iPad app,



A screenshot of the Ditchrider module.

which automatically synchronizes and updates into the WaterMaster database. As soon as an order is submitted through the app, it is in the database and added to the demand calculations needed by district management.

Ditch riders often work in areas without phone or cell service. WaterMaster has addressed that issue by enabling ditch riders to take orders and record the adjustment of each headgate or diversion point without cell service; the information will synchronize with the system once the ditch rider returns to cell service or WiFi. When the information synchronizes, the app lets the customer and the district office know exactly how much water was ordered and delivered on a particular day.

Tyke Trogdon, WaterMaster's western states regional director, says that it only takes about five minutes for one of his customers, Farmers Irrigation District in Hood River, Oregon, which serves 1,800 patrons, to generate all its invoices. Mr. Trogdon sees long-term benefits for irrigation districts. "We are saving our customers hundreds of hours in time, and we are improving the accuracy

of their water accounting. Our system prevents the distribution of water to a customer beyond his allotment, which is just one of many ways WaterMaster aids in water conservation.”

Costs

According to Mr. Landreth, “Each module is about the cost of a cell phone each month. For that kind of monthly fee, you get all of the interaction without all the hassles of maintaining servers or software—there is no need to upgrade, pay maintenance fees, or purchase tech support. Also, there is no contract. If your district does not like our service, then you can stop paying us.”

A cloud-based account system poses unique challenges. Mr. Trogdon noted that some potential customers and their board members do not always understand what exactly they would be buying. “We migrate a district’s data into our system—we don’t install anything on your computer. [A district] may not feel like it is getting anything. You pay monthly for use of the app, but there is nothing physical to associate with it.”

But the features that cause those concerns are also the system’s greatest strengths. For Mr. Landreth, “The lack of a physical product is the benefit of a cloud-based system. You do not have to maintain software or have high-tech computers or an IT department. All you need is an Internet connection.”

Connecting With Irrigators

Mr. Trogdon is proud that WaterMaster supports organizations that support the irrigation districts, such as the Oregon Water Resources Congress, the Idaho Water Users Association, and the Family Farm Alliance. For Mr. Landreth, working with irrigators has been a fun process. “There has been a big learning curve in understanding the intricate details of the irrigation industry. You will never meet more salt-of-the-earth people than those in the irrigation industry.”

For more information about WaterMaster, visit www.mywatermaster.com or call Tyke Trogdon at (208) 362-5858.

Tyke Trogdon testing a WaterMaster module.

