Water Management System for Irrigation Companies

NORTH POUDRE IRRIGATION COMPANY

PROJECT SUMMARY

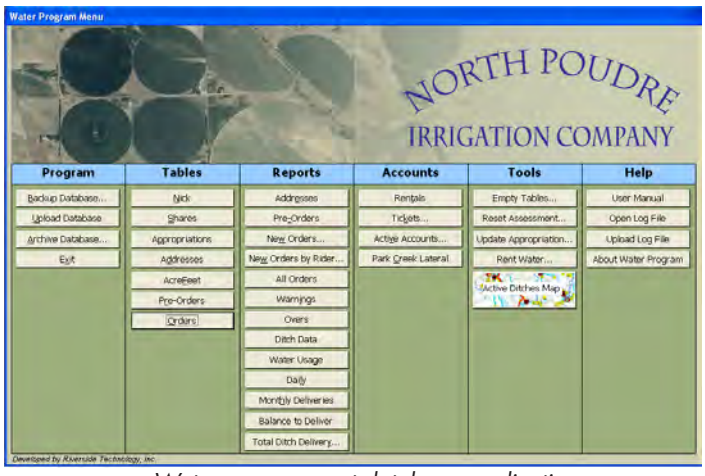
Riverside developed and implemented Water Program - a database application designed to help irrigation and ditch companies manage and automate their day-to-day operations activities. The system has been in use since implementation in 2007 by the North Poudre Irrigation Company to manage water orders, keep track of water usage, issue work orders for ditch riders, and generate a variety of useful water accounting and other reports.

LOCATION
Colorado, U.S.A.

PERIOD
2007 – Present

PROJECT DETAILS

North Poudre Irrigation Company (NPIC) was formed as a mutual ditch company over a century ago. NPIC has over 600 shareholders and provides, during the irrigation season, about 40,000 acre-feet of irrigation water to as many as 27,000 acres through 150 miles of ditches and 300 head gates and turnouts. NPIC required an application that efficiently managed the water delivery system and allowed the water clerk to receive water orders from shareholders, provide work plans for the ditch riders, and track water usage at various levels (shareholder, head gate, ditch, and service area).



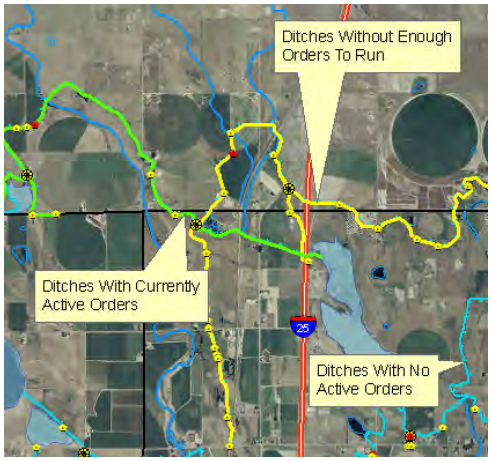
Water management database application

Riverside Technology, inc. (Riverside) designed, developed, and implemented a database application that automates many of these tasks. It allows the water clerk to:

- Maintain shareholder information.
- Take water orders.
- Modify existing orders.
- Generate daily work orders for the ditch riders.
- Keep track of water usage and available water by shareholder.
- Generate reports and warnings at different spatial (e.g., service area, ditch, head gate) and temporal (e.g., days, multiple years) levels.

The database is implemented using SQL Server 2008 and the front end is using Microsoft® Access. The system is intuitive, easy to use, and requires minimal training. The system is designed for simple maintenance and automated off-site backup.

The database application also interfaces with the ditch company's Geographic Information System (GIS) database. The application allows the user to open a map that displays NPIC's GIS data. The user can see the status of the ditch system including which laterals are currently running, which laterals do not have enough orders to run effectively, and which laterals currently have orders that exceed capacity. The user can also view other information such as head gate location, shareholder location, and aerial photography.



Ditch status displayed on GIS map

The system was designed to be easily adapted to other irrigation companies.

RELATED PROJECTS

Water Resources Planning for Poudre River Basin

South Platte Decision Support System

Watershed and Reservoir Model Calibrations for Locations in the Northeast United States

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