

Company Background

Walker Water is a technology services company founded in 2021 by John Walker. This company is built upon his strong passion for conservation, and a budding knowledge of how the complex irrigation system in the Surface Creek Valley of Western Colorado works. The development of our technologies is based upon what we learned as irrigators and water users ourselves within this valley.

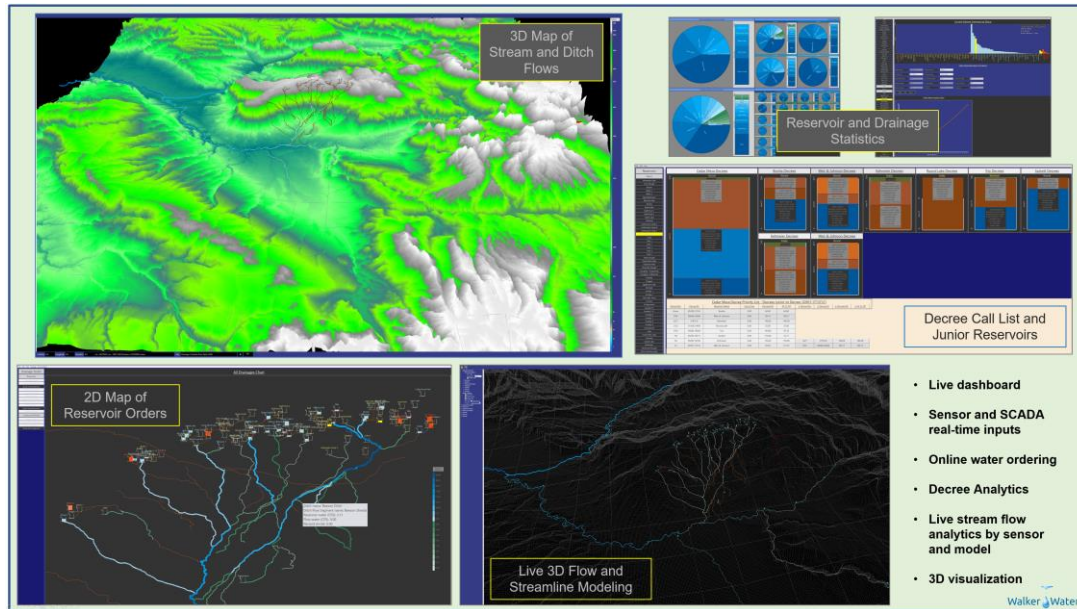
We are a software development and irrigation system consultation services company whose charge is to build tools that help the water administrator ensure the accurate and timely delivery of water to the rightful user and allow ditch companies and individual users to know what water is flowing in their ditch. We are also specialists in assisting our customers to successfully secure grant monies to help fund their water-related projects. See our web page <https://tpf4d.com>.

Introduction

Is water the new oil? Having graduated from CSM in 1985 with a Bachelor's in Geophysics I am familiar with the world of oil. While living in Houston for 30 years water wasn't something I thought of very often unless it was flooded streets delaying my commute to the office or back home. When I moved to Western Colorado and became an irrigation water owner/user I observed waste and misuse. I recognized that I wanted to be a part of the solution to protecting and preserving our vital resource. Consequently, my involvement in water has expanded to where I was elected and currently serve on two boards of directors of reservoir companies, the President of a third, and a board member of one of the local municipal water companies.

Water in the Western States is finite. Man can survive only a few days without it. It is a resource under intense pressure from increasing demand and dwindling supply. Proper management is becoming more and more vital to the life of municipalities and agriculture. We must find ways to conserve, use more efficiently and stretch our water as far as we can amongst all users; municipal, agriculture and recreation.

Walker Water is developing a comprehensive irrigation water administration system comprised of numerous software elements including reservoir and stream flow analytics using live sensor/SCADA feeds and dashboards, a full 3D visualization studio, decree priority analytics to ensure delivery of senior water rights in priority and on time, an alarm-based reservoir seep monitor tool, a web-based water ordering and account management system, and an AI-based water usage forecasting tool.



There is a generational change occurring right now in the world of water. The older generation who doesn't even use flip phones are leaving us; we need the next generation of young people to get involved. The young generation does everything on an app, from ordering food to finding a date and a way to get to a concert. We need an app in water, one that can handle the complications within our system! We are looking for the brightest and most creative minds in the world to participate in finding ways to not only conserve and preserve, but to get everyone involved in the process, both young and old.

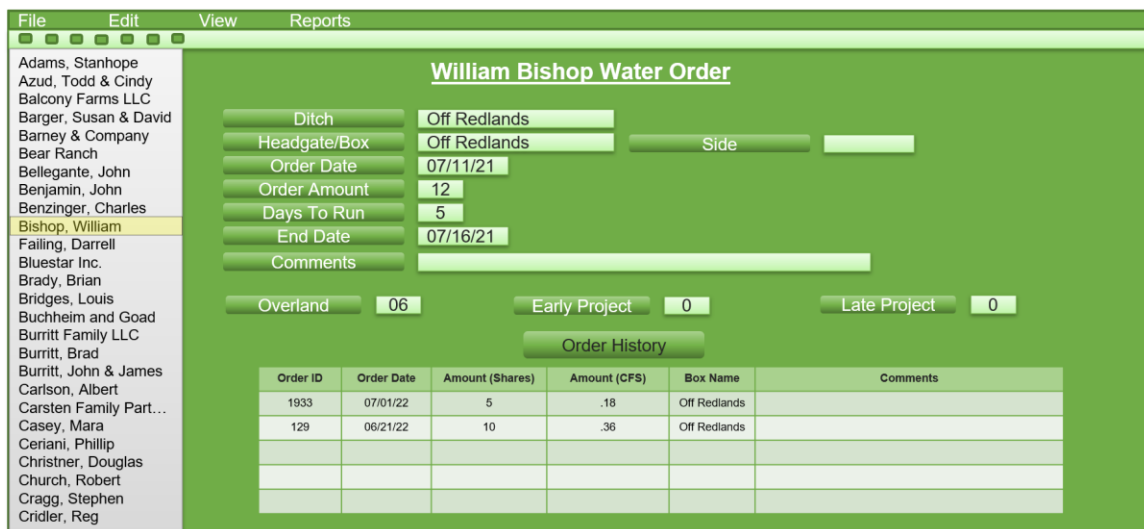
Work Description

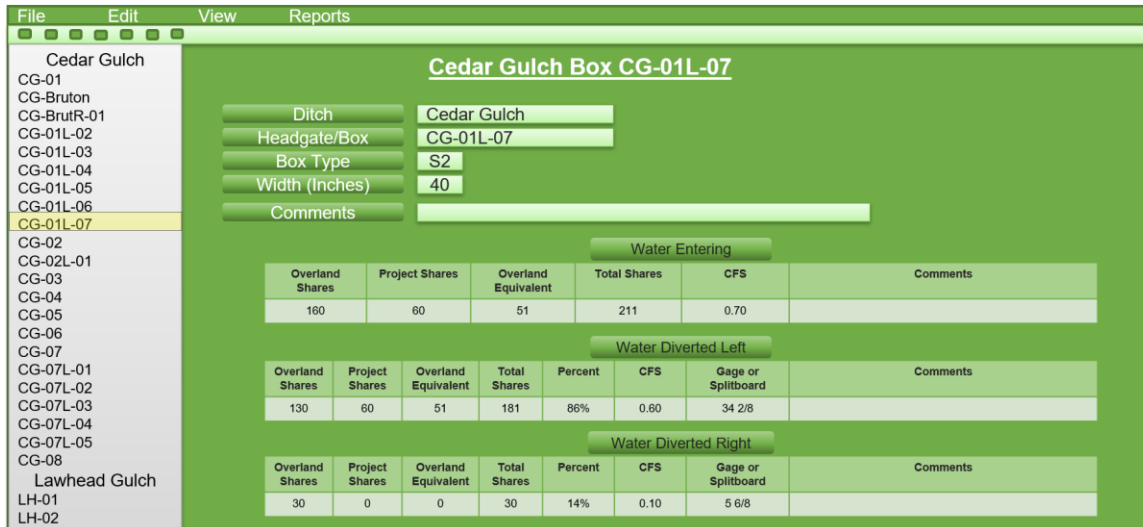
The product of this project is an online web-based water ordering system for water users to place their orders via a simple-to-use app. This app would service over 100 reservoirs, 5 major drainages, 200 hundred plus ditches and private laterals, more than 2,000 users and 4 municipal water companies just within the Surface Creek Valley of Western Colorado. The specifications include but are not limited to the list below:

- Administrator tool
 - Allow user profile setup
 - Personalize user accounts with information such as what ditches the user has permission to use
 - How much water the user owns or has leased
- Allow the user to tailor some aspects of their own account
- Keep track of usage through credits and debits to the remaining balance
- It will have an interactive map showing their ditch and other orders in the ditch
- A calendar interface to track how many run days or duration of the order and other orders within the ditch
- A lease portal with agreement forms for both parties and a method of payment
- Order history or look back

- Order and usage reports
- Administration reports
- Rules for orders to be approved
 - Orders to not exceed amount of water available
 - Minimum cumulative run amounts of water in the ditch
 - Red/green light to show rules have been approved and order went through
 - Ditch specific constraints
- Payment method for assessment fees
- Water order tickets for ditch riders
- Summary views of days remaining in the irrigation season and days of water left/net amount remaining
- Planning tool for ordering remaining water through the end of the season
- Water transit loss calculator
- Flume/flow rate calculator
- Usage monitoring tool/efficiency tools
 - Type of crop being watered
 - Water per acre
- 7-day weather forecast to see how the weather will impact water orders

A few mocked-up images show conceptually what the user interface may look like (although not an “app” look/feel):





Student Skill Set

Our software is written in C# (Visual Studio) and is currently a standalone program. However, the proposed water ordering app will be written in whatever language/toolkit makes sense for developing an app that will operate on iPhone/Android devices and a web browser.

Team Size

The team size should be a minimum of 3 but certainly could support 5 or 6 members.

Internship Possibilities

Walker Water would be delighted to offer internships. This would be a function of our financial condition at the time, and we anticipate this may be a possibility. That may depend on how the students receive our project and the larger scope of what we do. We really want the younger generation to take an interest in our vital and precious resource, water.

Work Location

Work can be performed remotely. We deploy a git repository that supports collaboration amongst team members who can be located anywhere. Since we live in Cedaredge, we would not ask nor require anyone to visit our office. However, it would be advantageous for students to see how our valley operates since it is arguably the most complicated irrigation distribution systems in the U.S.

NDA

We will not require an NDA for this project.

Intellectual Property

Walker Water will retain ownership of the app and all code developed theretofore.