

Welton Ditch

Scalable Solutions for Welton Ditch

Case Study



Summary

The Welton Ditch Project in Colorado responded to a critical challenge: maintaining fair and reliable water distribution for local farms during periods of high river levels. Facing potential closure due to flooding and silt buildup, farmers turned to Nomad Water for a smarter solution.

Nomad upgraded the existing water control infrastructure with radar-based automation, transforming outdated systems into self-managing, precision-driven tools. The result? Reliable irrigation, equitable water access, and minimal maintenance—all while reducing environmental impact. With hands-on collaboration and intuitive tech, Nomad helped farmers stay focused on their crops and communities, not on controlling gates.

Challenge

Colorado's agricultural communities rely on strict and efficient water allocation. Welton Ditch is one of many essential irrigation channels supporting local farms—but its outdated infrastructure struggled under rising river levels, leading to:

- Risk of Closure: Overflowing water threatened the integrity of the ditch and surrounding farmland.
- Unfair Allocation: Without automated control, water distribution became inconsistent, especially during peak usage.
- System Inefficiencies: Silt and sand buildup caused frequent blockages and maintenance delays.

Farmers needed a dependable, hands-off solution to protect their livelihoods and support sustainable farming practices.

Objectives

To ensure long-term success, the project focused on these **core objectives**:

- Implement a radar-based system to automatically manage and monitor water flow for equitable usage.
- Improve System Reliability
- Upgrade infrastructure to reduce manual intervention, prevent silt-related blockages, and increase uptime.
- Minimize Disruption During Installation
- Collaborate with local construction teams to ensure a smooth transition with limited impact on ongoing farm operations.

Key Features



Scalable Solutions

The updated system is built to scale with the region's growing agricultural demands.



Hands-Off Operations

Automated systems reduce the need for manual controls, giving farmers more time to focus on their crops.



Real-Time Data Access

Immediate insights into water levels and system performance improve decision-making.



Reduced Blockages

The flushing system keeps water channels clear, minimizing downtime.



Precise Sensors

Radar technology and renewable power contribute to sustainable water management.

Solution

Improving Flow Control

To replace outdated equipment, a radar-based water level sensor has been installed further downstream, providing precise, real-time measurements of water levels. This data is integrated into an advanced control and automation system, allowing for dynamic, real-time adjustments to water flow based on actual conditions.

Custom Design:

We designed and built tailored components, including motor cooling shrouds and discharge manifolds, to fit the unique needs of the site. These were made from durable materials to withstand environmental challenges and ensure long-term use.

Pump Installation:

We installed Grundfos pumps with Hitachi motors, chosen for their efficiency and reliability. The system was built using galvanized steel pipes and heavy-duty couplings to handle high water pressure and protect against wear and tear.

Control & Monitoring:

To keep the system running smoothly, we installed a Symcom motor control system with smart sensors. This allows for real-time monitoring and includes features like phase loss protection to prevent damage.

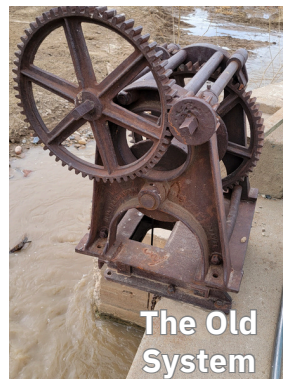
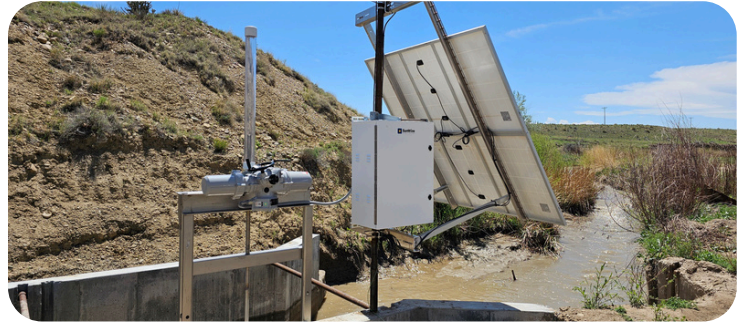
An air-line water level monitoring system was also added, giving operators an easy and accurate way to check how much water is in the well at any time.

Scalable System:

The pump setup was designed to support two flow options — 250 or 300 gallons per minute (GPM) — giving flexibility depending on future water demand.

Conclusion

The Welton Ditch Water Management Upgrade stands as a successful example of how innovative water control systems can protect and empower farming communities. With smarter tools, sustainable practices, and a farmer-first approach, Nomad Water helped ensure every drop reaches where it's needed most—securing the future of agriculture in Colorado.



Want to get control of your project? Visit nomadgroup.com for more information on our projects and services. We're here to help! Call 1-866-853-8593 today to learn more.

All trademarks referenced in this document are the trademarks of their respective owners.

© 2024 NomadGroup.
All Rights Reserved.