

CASE STUDY / DODD WTP UPGRADES PROJECT

## WATER UTILITY SEES DESIGN-BUILD BENEFITS WITH QUICK FACILITY UPGRADE

The Dodd Water Treatment Plant provides safe and clean water for communities in the Niwot, Colorado, area. A complex facility retrofit was needed to increase the plant's treatment capacity in time for peak seasonal demand. A collaborative project delivery allowed the integrated team to meet an expedited schedule.



# EFFICIENT DESIGN-BUILD PROCESS PAVES THE WAY FOR AGGRESSIVE PROJECT SCHEDULE

The Dodd Water Treatment Plant required rapid upgrades and increased treatment capacity to meet seasonal demand.

## PROJECT STATS

### CLIENT

Left Hand Water District

### LOCATION

Niwot, Colorado

### COMPLETION DATE

August 2016

# \$1M

IN COST SAVINGS  
RETURNED TO OWNER

# 20K

CUSTOMERS SERVED  
IN BOULDER AND  
WELD COUNTIES

# 2.25

YEARS IN EXPEDITED  
DESIGN-BUILD SCHEDULE

## CHALLENGE

The Left Hand Water District required significant upgrades to its Dodd Water Treatment Plant in Niwot, Colorado, to meet higher seasonal water demands from farmers and residents.

When exploring viable solutions, it was noted that cost and schedule effectiveness were critical to project success. Additionally, due to local environmental regulations, the team decided to reuse and renovate the existing facility, which can sometimes be more difficult than constructing something new.

## SOLUTION

The district opted to leverage a design-build team, consisting of Burns & McDonnell and Garney Construction, to shorten the

project schedule and reduce costs. From design start to construction completion, renovations were made within two years and three months.

The team had to tackle the following:

- Completely replace the existing conventional treatment process with new pretreatment and incorporate new microfiltration/ultrafiltration (MF/UF) membranes into the treatment process.
- Increase treatment capacity from 8 million gallons per day to 10 MGD, with the capability to expand to 16 MGD in the future.
- Modify the high service pump station, administrative spaces, holding ponds, storm drainage and raw water pipes.





To begin, the team demolished the interior of the existing facility, which previously housed all pretreatment and filtration processes under one roof. Once only the shell of the building remained, a new facility was constructed next door to house the new and improved pretreatment system. Then, the team installed new MF/UF membranes into what was the previous pretreatment facility.

At the onset, the team established Early Work Packages (EWPs) to prioritize procurement activities.

By implementing EWPs, the team established a planned and executable project process, which resulted in more than 10 months in schedule savings. For example, the membrane filtration system was procured before the final design phase, allowing multiple processes to happen simultaneously and creating greater efficiencies in the design process.

## RESULTS

The Left Hand Water District knew our team, along with Garney Construction, had the design-build experience

and knowledge of local regulations to make the renovations in a timely manner under an expedited schedule. Using design-build delivery, the district saved more than \$1 million and more than a year in the schedule.

After this successful design-build project, the Left Hand Water District has plans to continue to utilize the design-build approach for future projects.



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