

CASE STUDY

Rural District Upgrades To MBR Treatment

Project Type: Municipalities / Wastewater Treatment

Location: Dumont, Colorado

HIGHLIGHTS

Kept existing WWTP on during construction until the new system switchover.

Reduced the project cost from \$5.375M to \$3.5M through comprehensive value engineering.

Replaced an obsolete system with a MBR facility, significantly improving effluent water quality.

HIGH-ALTITUDE EFFICIENCY: MODERNIZING A WWTP IN THE ROCKIES.

The Central Clear Creek Sanitation District, located in Dumont, Colorado (40 miles west of Denver in the Rocky Mountains), faced the challenge of replacing its 40-year-old wastewater treatment system. The goal was to meet modern water quality standards for the downstream Clear Creek community. Veyra was contracted for the comprehensive upgrade, which centered on implementing a sophisticated (MBR) system.

CHALLENGES FACED

- **Exceeding the Project Budget:** The initial low bid from Veyra was \$5.375 million, significantly exceeding the Sanitation District's target budget. This required a major reevaluation of the design and scope to make the project financially viable for the community.
- **Maintaining Service During Construction:** Keeping the existing 40-year-old plant fully operational throughout construction and integration was vital, as it was the district's only wastewater treatment facility.
- **Complex Scope and Equipment Integration:** The project involved a comprehensive scope, including installing two parallel MBR trains, new headworks, converting an existing clarifier to an aerobic digester, and integrating complex electrical, control (PLCs), and yard piping systems, all within a constrained timeline and challenging high-altitude environment.



SOLUTIONS IMPLEMENTED

- **Strategic Value Engineering:** Veyra partnered with Dewberry Engineers and the District to execute a Value Engineering process. This involved a complete redesign of the MBR treatment system, the treatment building, and the electrical and controls systems, successfully slashing the project cost.
- **Meticulous Construction Sequencing:** Implemented a phased plan to build the new facility in parallel with the old one, ensuring uninterrupted service until the final system integration.
- **Comprehensive Infrastructure Overhaul:** The new system incorporated two parallel MBRs, a new influent screening and grit removal system, conversion of an old clarifier into a new aerobic digester, and a complete electrical overhaul.



OUTCOME AND IMPACT

- **Cost Savings and Strategic Partnership:** By saving \$1.875M without compromising quality or scope, the value engineering process ensured financial viability while solidifying a partnership where the District recommended Veyra for end-to-end expertise.
- **Superior Water Quality:** The successful installation and start-up of the MBR system, producing high-quality effluent, ensuring the District meets standards. This directly led to improved water quality in Clear Creek, benefiting residents and businesses in Dumont and downstream communities.

The Clear Creek MBR upgrade demonstrates how collaborative value engineering can deliver complex infrastructure within tight budget constraints. By maintaining continuous operations and reducing costs by over \$1.8M, Veyra transformed an obsolete system into a modern treatment facility.

"Our community is thankful for the work performed. [Veyra] did a great job from the value engineering phase of the project through construction and start-up. We view Veyra as a team partner and not just simply a contractor. We would highly recommend Veyra for future projects and value their expertise."

Carmen Barker, District Manager of Central Clear Creek Sanitation District



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