

UHealth Memorial Hospital Central is a 368-bed hospital in Colorado Springs that provides inpatient and outpatient services to residents in the region. It is also the only Level I Trauma Center and comprehensive stroke center in southern Colorado.

Hospital facilities leadership had researched several approaches for reducing the high-water consumption of older vacuum pump systems. Even though the pumps worked flawlessly and were predicted to be extremely reliable for years to come, leadership was concerned with the volume of water they required to operate. It was decided to replace the water seals system with an air-cooled, oil seal system.

Action Taken

In January of 2022, the hospital replaced its six existing water-cooled medical vacuum pumps with four air-cooled pumps. Critically, these pumps support operating rooms every day.

Water Savings Results

To accurately measure water consumption of the old pumps, our water conservation team installed a portable meter to capture actual water use for a week. Results showed usage of approximately 2.5 gallons of water per minute, or 1.3 million gallons (4 acre-feet) per year. Since the new oil seal system uses no water, that annual water consumption is now considered water savings.

To verify the savings estimate, we compared daily hospital water use for the six-month period of January – June 2021 (old system) and 2022 (new system). We observed a decrease in water use of approximately 1,000 cubic feet (about the volume of a large U-Haul truck) per day, which is 4.5–5% of total hospital water usage. A large portion of these savings can be attributed to the new pumps.

Our custom water rebate covered approximately 15% of the cost of the project. Added to the hospital's water bill savings, the hospital's return on investment will be realized in seven to eight years.

Testimonial from Memorial Hospital

"Although there are operational cost savings with the newer pumps, money was not the only factor considered. Knowing that the hospital is such a large user of our local utilities, it only makes sense that we be good stewards of our region's resources."



Old water-cooled pump



New air-cooled pump