



CASE STUDY: CITY OF SPARKS

Water Reclamation Facility Cuts Costs With Aeration System

The City of Sparks Truckee Meadows Water Reclamation Facility (TMWRF) treats wastewater from the Reno/Sparks area. One critical step in this process is aeration, which reduces the environmental impact by introducing oxygen into the wastewater to support metabolizing microorganisms that break down the organic pollutants.

Recognizing an opportunity to cut energy costs, TMWRF replaced its energy-intensive mechanical aeration system with efficient subsurface fine bubble disk diffuser systems in four of its aeration tanks. With this upgrade, TMWRF eliminated three 60-horsepower pumps that operated around the clock to support the old mechanical system, dramatically reducing energy consumption. This project also provided more effective aeration for the wastewater treatment process and received a rebate from NV Energy.

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Project Summary

Fine bubble systems introduce air near the bottom of the aeration tank, producing very small bubbles. Because smaller bubbles provide more surface area per unit volume, fine bubble systems provide greater oxygen transfer efficiency.

The plant operator indicated an extra benefit—the new aeration system provides additional plant treatment capacity, which may defer the need for future expansion. At the time this project was completed, TMWRF converted three additional aeration tanks to the fine bubble system.



Energy-saving Equipment

Replacing mechanical systems with fine bubble systems in four aeration tanks is saving more than \$82,000 in annual energy costs.



Project Results

Building Type: Water reclamation facility

Project Type: Retrofit

Measures: Subsurface fine bubble disk diffuser systems

Incentive: \$10,000

Projected Annual kWh Savings: 1,040,002