



**ENTERPRISE
AUTOMATION**
A TETRA TECH COMPANY

PROJECT PROFILE

SCADA Upgrade Design

GOLDEN STATE WATER

Customer Background

Golden State Water (GSW), a private entity formed by a joint venture of multiple districts around California, has been a significant player in the water sector. For decades they have provided water service to more than 1 million customers in over 80 communities across Northern, Coastal, and Southern California. About five years ago, they embarked on a comprehensive review of all their sites, aiming to assess and upgrade their infrastructure. The initiative was specifically focused on SCADA systems, and they chose the Simi Valley, Los Osos, and Orcutt districts to serve as a model for future upgrades.

The primary water supply of the Simi Valley system is treated surface water supplemented with groundwater from the Simi Valley Groundwater Basin. The Los Osos System receives groundwater pumped from the Los Osos Valley Groundwater basin through wells. Orcutt receives local groundwater pumped from the Santa Maria Groundwater Basin through wells.

Enterprise Automation has supported Golden State Water in improvements across 10 districts to date.

Project Background

The project's scope was expansive, encompassing multiple districts with a focus on futureproofing the infrastructure's efficiency and scalability through standardization. For the Simi Valley, Los Osos, and Orcutt Districts, GSW brought EA on to design new SCADA systems that would leverage GSW's Operations Management Interface (OMI) standards and bring the system up to date. The endeavor involved meticulous site evaluations, strategic PLC replacements, and panel upgrades. This project introduced enhanced technology such as M340 PLCs, Red Lion OITs, alarm functions, and a new reporting infrastructure.

Project Manager



**Paul
Rahmanian**

Project Technical Lead



**Nicholas
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Key Insights:

- Provided designs that will serve as the framework for unified modernization across 30 districts
- Standardized IO profiles and control strategies to increase efficiency during construction and operation

Key Technologies:

- Modicon M340 PLC
- OIT Red Lion Graphite HMI
- AVEVA System Platform OMI

EA Solutions

Enterprise Automation embarked on this series of projects to enhance efficiency and modernize the district infrastructure. As a first step, EA conducted rigorous site evaluations and field assessments to pinpoint areas needing upgrades.

EA systematically replaced the near-end-of-life Momentum PLCs with state-of-the-art M340 PLCs. This technological upgrade was a core facet of the project. As equipment ages and becomes obsolete, its performance deteriorates, making routine maintenance increasingly challenging without access to new security patches, dedicated technical support, and replacement parts. This upgrade also entailed the integration of Red Lion OITs, which offer the functionality to connect, monitor, and control operations. Another part of the improvements included a standardization of PLCs across all sites. The now-standardized SCADA system is powered by AVEVA System Platform OMI. This integration enhanced system scalability and streamlined operations by improving visualization and offering a user-friendly interface.

A critical aspect of Enterprise Automation's contribution was the comprehensive development of documents regarding electrical constructions, including conduits and towers. This meticulous process included the creation of detailed P&IDs and PLC designs, addressing concerns related to end-of-life equipment, and ensuring the accuracy of the project.

Another key aspect of EA's designs for these three GSW projects was preparing and planning for installing new instruments at sites as needed. This allowed all sites to have standardized IO profiles and control strategies to increase efficiency during construction and operation. In some instances, the project necessitated the installation of new instruments to enhance overall efficiency further. Identifying and committing to these optimizations underscores our dedication to a holistic and forward-looking approach.

Looking ahead, EA's designs for the Simi Valley, Los Osos, and Orcutt Districts serve as a pilot for future expansion plans. The roadmap includes executing these designs across all districts, with the overarching goal of covering 30 districts and ensuring a comprehensive and unified modernization. Enterprise Automation is committed to finding practical solutions while strategizing long term vision, and this project was no exception. From executing tasks such as site evaluations and PLC replacements to delivering a streamlined bid package for the execution phase, Enterprise Automation took charge of the entire design process while working closely with GSW's SCADA team to ensure our designs met their requirements.

Enterprise Automation's SCADA design provided a strong foundation for implementing an upgraded, reliable, standardized system across Golden State Water's diverse districts. As the project expands, the collaboration reflects a shared commitment to modernization, efficiency, and sustainability in the water sector, focusing on delivering practical solutions tailored to the unique needs of each site.

Enterprise Automation, A Tetra Tech Company (NYSE:TTEK), a nationwide process automation consultant - plans, designs, documents, builds, tests, deploys, and supports critical automation and OT infrastructure for process industries.

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