



## PROJECT PROFILE

# Advanced Surface Water Treatment Facility

## City of Fresno Water Division

### Client background

The City of Fresno operates a large potable water system that delivers drinking water to roughly 500,000 residential, commercial and industrial customers over 114 square miles. They also operate numerous treatment facilities that treat ground and surface water for residential and commercial use. A unique aspect of the City's system is that pressure is entirely maintained by pumping zones, instead of elevated reservoirs and holding tanks.

### Project background

The City of Fresno's North East Surface Water Treatment Facility (NESWTF) was originally built in 2004, leveraging obsolete FactoryLink 7.5.1 HMI software and obsolete Modicon Concept 2.5 Quantum PLCs. Since the plant was a major source of water for the City, a SCADA failure presented a major risk. Therefore, through its Recharge Fresno program, the City commissioned a project to upgrade the system with the latest CitectSCADA and Modicon Unity Pro PLCs.

### EA solution

EA's solution included a fully virtualized Citect SCADA architecture, redundant PLC and Remote IO, fiber-ring network topology with segregated layers for business, SCADA, and instrumentation VLANs, and TopView alarm notification system.

The SCADA system heavily leveraged the City's standards for hardware and software. In particular, the HMI was developed to provide a consistent look and feel with the City's distribution system. The City's main goal was to allow operators and maintenance personnel to seamlessly transition between sites without significant retraining.

#### Project Manager



**Clarence  
Go**

#### Project Technical Lead



**Isabel  
Roberts**

#### Key Insights:

- Full SCADA system and PLC upgrade
- Modicon Concept to Unity Pro upgrade
- FactoryLink conversion
- Standardized SCADA template

#### Key Technologies:

- Redundant Modicon Unity Pro PLCs
- CitectSCADA HMI with Vijeo Historian
- VMWare virtualization
- TopView alarm notification