



Customer Background

The City of Santa Ana is located in the heart of Orange County, California, and is approximately 27 square miles. The City provides potable drinking water for the City's 334,000 residents and businesses. The City's water production system consists of 22 wells, 4 pressure control stations, 7 Metropolitan Water District connections, 7 pumping stations, 8 reservoirs. The City also operates and maintains 4 sewer lift stations. Control and monitoring of the water system and sewer facilities are coordinated via the City SCADA system using a series of radios which transmit data from remote locations to the centralized City Home SCADA control room.

Project Background

The City normally uses design-bid-build project delivery mechanisms, which yields a variety of contractors implementing their water production facilities but they desired more consistent designs to streamline operations and maintenance. In order to make standardization a priority and instigate a cultural shift, the City decided they needed a qualified automation consultant to prepare standardized functional specifications, HMI graphics standards, control panel drawings, automation program testing protocols, and change control mechanisms as a means to institute oversight for the City's contracted controls programmers.

EA Solutions

After being awarded the qualifications-based contract, EA met with City engineers and technicians to document their open and upcoming projects to identify immediate opportunities for automation improvement, in accordance with their construction schedules.

EA hosted several process control and standardization workshops with City personnel and immediately used the decisions to develop functional specifications, electrical design standards, and test protocols for several pump stations in the design phase. Concurrently, EA created change control policies, a source control system, and developed documented programming standards for all future City projects to ensure their water facilities were consistent.

Key Insights

- SCADA Standards development
- Contractor design review
- Automation & Electrical standards
- Functional Specification development
- HMI graphics standards
- Programmer oversight

Key Technologies:

- Modicon M340 PLCs
- Modicon Magelis OITs
- Radio communication

Project Metrics:

- Contract Period: 2018—Present

