



TITLE

Water Treatment Plant Supervisory Control Advisory Data Acquisition Upgrade (SCADA)

RECOMMENDATION

Adopt a Resolution authorizing the City Manager to enter into an agreement with Telstar Instruments for Water Treatment Plant SCADA Upgrade Project in an amount not to exceed \$250,000.

CONTACT

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Jemelyn Cruz, Finance Director

BACKGROUND & ANALYSIS

Commissioned in 1974, the Water Treatment Plant (WTP) at 250 Kirkland Ranch Road consists of a Membrane Plant and a Conventional Plant, which typically operate simultaneously. The Conventional Plant is especially effective at treating high-turbidity water during storm events or when raw water quality fluctuates.

The WTP's Supervisory Control and Data Acquisition (SCADA) system oversees operations for both facilities. The Membrane Plant is controlled through a Zenon Control Panel located in the Control Room, which includes a ControlLogix PLC communicating with a remote I/O rack via ControlNet coaxial cable. An Operator Interface Terminal (OIT) provides real-time monitoring and control and serves as the dividing point between the Membrane and Conventional Plants.

In contrast, the Conventional Plant relies on outdated and aging infrastructure. Operations depend on a relay-based sequencing panel known as the Neptune panel, which is no longer functioning reliably, and a hardwired control panel equipped with loop controllers, switches, and relays. This legacy system lacks automation, integration with the broader SCADA system, and remote monitoring capabilities, resulting in higher maintenance demands, reduced visibility, and increased risk of operational failures.

As the City of American Canyon continues to grow, the WTP faces increasing challenges, including aging infrastructure, rising flow volumes and treatment complexity, more stringent regulatory

compliance requirements, and evolving cybersecurity threats to critical infrastructure. These limitations hinder staff's ability to optimize performance across both treatment systems, respond quickly to operational changes, collect and report accurate data, maintain system reliability, and safeguard against cyber risks.

A comprehensive SCADA upgrade is necessary to address these issues and prepare the facility for long-term demands. The proposed upgrade will replace obsolete infrastructure with secure, scalable systems, enhance operational efficiency through improved automation and control logic, enable real-time monitoring and remote alarm management, improve data integrity for regulatory reporting, streamline staffing and response to system events, support more effective staff training, and strengthen cybersecurity in line with current best practices. These improvements will ensure the WTP can continue operating reliably and efficiently as the city grows.

COUNCIL PRIORITY PROGRAMS AND PROJECTS

Organizational Effectiveness: "Deliver exemplary government services."

FISCAL IMPACT

The Water Treatment SCADA upgrade is funded through Capital Improvement Project WA26-0200 SCADA – WTP. Funding for the initial implementation and first-year software licensing has already been allocated in the FY2025/26 budget, utilizing funds from the City's 2021 purchase of the Ignition SCADA software for \$35,148.21.

The total implementation cost for FY2025/26 is \$250,000. This includes hardware installation, system configuration, integration with existing infrastructure, and staff training. Annual software services fees for the Ignition SCADA system are \$2,800 for FY2025/26 and are projected to increase to \$3,000 in FY2026/27. These recurring costs will be incorporated into the Information Technology Support Services budget (Division 42150) in subsequent years.

Should the City elect to continue the SCADA software subscription beyond FY2026/27, annual costs are anticipated to increase at a rate of approximately 4% per year. However, the investment in this upgrade is expected to yield long-term savings through improved operational efficiency, enhanced cybersecurity protections, reduced emergency response time, and better data-driven decision-making for facility operations.

Future funding for maintenance, support, and potential system expansions will be evaluated and proposed in future budget cycles as necessary.

ENVIRONMENTAL REVIEW

15378(b) - The action is not a "Project" subject to the California Environmental Quality Act ("CEQA") because it does not qualify as a "Project" under Public Resources Code Sections 21065 and 21080 and in Section 15378(b) of Title 14 of the California Code of Regulations.

COMMUNICATION

Level 1 – Minimal Communication

Project information will be included in future water quality reports.

ATTACHMENTS:

1. [Resolution - WTP](#)
2. [WTP Proposal](#)