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October 24, 2023

To: Town of Westlake

Attn: Kyle Flanagan
Deputy Director of Public Works

Ref: Town of Westlake, TX SCADA System Upgrades Project
Prime Controls Quote No.: TOWTSSUP102423

PRIME CONTROLS PROPOSAL

Prime Controls, L.P. understands that the Town of Westlake, Texas is seeking to upgrade their Supervisory Control and Data Acquisition (SCADA) system for the Water Collections and Distribution system. The intention of this upgrade project is to provide a robust system SCADA system that is scalable, serviceable, and resilient meeting the current and future demands for the Town of Westlake. The scope of services described below are based on our site observations and discussions with operations staff.

Our proposal is based on the recommendations described in Section A “Systems Overview” and is based on providing the following major products, equipment, and services detailed in section B & C of this proposal. Our proposal is considered complete, with the exception of those items specifically excluded within the “Exclusions” section C of this proposal.

A detailed scope of work for each site and proposed network architecture are included in the attached appendices for reference.

A. SYSTEM OVERVIEW

WATER DISTRIBUTION & COLLECTIONS SYSTEM

The HMI application used for monitoring and control of the Water Distribution and Collection system currently resides at the Town of Westlake Operations Maintenance Center. There is one (1) operator workstation at this facility which hosts the legacy HMI application software (National Instruments, Lookout SCADA). This operator workstation is connected to an applications server, located at Westlake Academy which is hosting the software on a virtual machine. The SCADA application communicates to each of the remote sites listed below through a combination of point-to-point and repeater radios throughout the system.

- Vaquero Lift Station
- Deloitte Lift Station
- Westlake Ranch Lift Station
- Hwy 114 Lift Station
- Westlake Pump Station
- Knox Road EST (Shared Site with Keller)
- Westlake Academy School Zone Lights
- Davis Road Tunnel Lights

Site Observations

Based on our site observations and discussions with operations staff we have noted the following issues with the existing system:

- The existing HMI software out of date, and not supported by the manufacture anymore and requires legacy operating software. Both software packages are considered end of life (EOL).
- The existing radio communications network is unreliable. Several sites have communications issues and communications failures. There are repeater sites in the existing system that the Town’s operations staff have limited access to. In addition, there are line of sight issues due to development in the area or vegetation growth.
- The existing control panels located throughout the system have control hardware installed that is inoperative or no longer being used. This hardware needs to be removed and an accurate set of panel drawings needs to be provided for each site.
- The existing SCADAPack PLC hardware at the remote sites is obsolete or nearing end of life and needs to be replaced with newer PLC hardware that which meets current design standards and requirements.

System Improvements/ Enhancements

Based on our findings, we are proposing the following phased approach to upgrade the legacy controls system.

1. Phase 1- Upgrade the existing HMI and Communications network.
2. Phase 2- Upgrade the PLC Hardware at each site.

A detailed scope of work is described below and is included in Appendix “A” for reference.

ITEM	PHASE	DESCRIPTION
1.	1	Develop and deploy new control screens based on VTSCADA objects and input from operations staff.
2.	1	Furnish and install a data concentrator PLC enclosure at the operations maintenance building.
3.	1	Furnish and install one (1) desktop operators workstation (Tower) and UPS backup at the new Operations Maintenance facility.
4.	1	Setup, configure, and deploy the new HMI application onsite.
5.	1	Setup and configure remote alarming and call out through new HMI application.

6.	1	Migrate the existing remote collections and delivery sites to the new VTSCADA HMI application.
7.	1	Setup and configure reporting software and develop 1-2 operations reports to maintenance staff.
8.	2	Program new PLC hardware based on existing control logic and input from operations staff.
9.	2	Field replacement of existing PLC hardware and associated power supplies for nine (9) remote sites with Modicon M340 PLC hardware.
10.	2	Remove control system hardware that is unused or inoperable and provide new control panel layout drawings.

B. CONTROL PANELS AND MAJOR PRODUCTS

Material shall be furnished per plans and specifications. Major products and control panels to be furnished by Prime Controls include the following:

ITEM	QTY	DESCRIPTION
1.	LOT	Licensed Copy of VT SCADA Control Systems software Including: <ul style="list-style-type: none"> • 1000 I/O Tags (<i>For Expandability</i>) • Unlimited Client Connections (<i>PC/ Mobile</i>) • Historian • OPC Drivers • Remote alarming and monitoring capabilities
2.	10	Cellular Modems (<i>Town of Westlake to select cellular service provider</i>)
3.	1	Full Assembled Data Concentrator PLC with Cellular Modem installed at Operations Maintenance Facility. <ul style="list-style-type: none"> • Modicon M340 PLC Hardware • Cellular Modem • UPS with maintenance by-pass switch • Fiber optic patch panel (<i>to accommodate future city fiber optic network connection</i>) • Network switch (<i>to accommodate future city fiber optic network connection</i>)

Services to be provided by Prime Controls include the following major items:

ITEM	SERVICE
1.	Onsite field assessment and testing of the existing controls system prior to upgrade.
2.	Administer 1-2 control system / HMI workshops with operations staff during the design and development phase of the new control screens.
3.	HMI/SCADA System Software Development and Programming Services associated with migrating the existing legacy controls system software to the new HMI application (VTSCADA) for the Water Distribution System and collections system.
4.	Field Calibration, Check-Out and Start-Up Services
5.	Factory and Site Acceptance Testing with operations staff prior to onsite deployment.

ITEM	SERVICE
6.	Furnish/ provide control panel shop drawings for the new panels provided and I/O card wiring drawings for PLC replacement sites.
7.	Furnish/ provide operator and maintenance training services.
8.	Operations and Maintenance Documentation for new hardware and software.
9.	One year (1) warranty services for provided equipment and systems upon final completion of the project.

C. PROPOSAL EXCLUSIONS

The following items are not included in our pricing and shall be the responsibility of others:

ITEM	EXCLUSION
1.	Internet service provider data plan services /expenses for cellular modems. Prime Controls will coordinate with the City’s cellular plan provider to select the adequate cellular plan for the SCADA network
2.	Disposal of removed or demolished material. Such material will be turned over to the owner for salvage or disposal.
3.	Upgrading / replacement of the existing field instrumentation.

D. PROPOSAL CLARIFICATIONS

ITEM	CLARIFICATION
1.	Pricing does not include Sales Taxes or Bonding costs.
2.	Pricing shall be valid for 90 days only from proposal date.
3.	Pricing is based on the assumption that, once Prime Controls receives an order or notice to Proceed, the project will proceed without interruption. Should any interruptions occur due to Force Majeure, Prime Controls reserves the right to adjust pricing accordingly.



E. PROPOSAL PRICING

Item	Description	Pricing
1	Phase I – HMI and Network Communications Upgrade	\$164,000.00
2	Phase II- Remote site PLC Upgrades	\$155,000.00
TOTAL AMOUNT		\$319,000.00

We sincerely appreciate this opportunity and look forward to being of service for this work.

Sincerely,

Prime Controls, LP

Lain Cloy, PMP

Account Manager

Ph. 972-221-4849

Email l.cloy@prime-controls.com

Appendix A
Scope of work / Services by Site

Westlake Academy



Scope/ Services

Item	Description
Phase I	
1.	Install and configure VTSCADA HMI software application on a virtual machine host provided by the Town of Westlake.
2.	Install cellular modems at the traffic light locations and setup connection to the SCADA network. Remove existing radios at traffic light locations and Westlake Academy.
Phase II	
3.	Replace the existing PLC with a new Modicon M340 PLC. Clean up and remove existing control hardware that is no longer in use or in service.

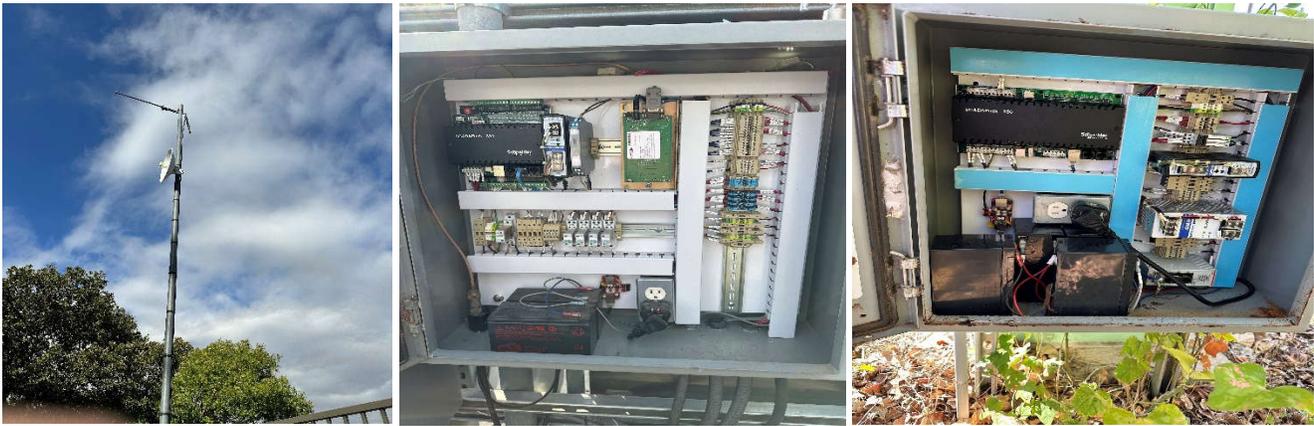
Operations Maintenance Center



Scope/ Services

Item	Description
Phase I	
1.	Furnish / Install a new Data Concentrator PLC with Cellular Modem.
2.	Furnish/ Install/ Configure a new backup SCADA Server/ Operators workstation.

Lift Stations & Davis Tunnel



Scope/ Services

Item	Description
Phase I	
1.	Install cellular modems at each lift station site. Remove existing, ethernet radios and antennas.
Phase II	
2.	Replace the existing PLC with a new Modicon M340 PLC and install new 120Vac to 24Vdc power supplies. Clean up and remove existing control hardware that is no longer in use or in service.

Westlake Pump Station & Knox EST



Scope / Services

Item	Description
Phase I	
1.	Install cellular modems and remove existing radio hardware.
Phase II	
2.	Replace the existing PLC with a new Modicon M340 PLC and install new 120Vac to 24Vdc power supplies. Clean up and remove existing control hardware that is no longer in use or in service.

Appendix B

Current and Proposed Network Architecture

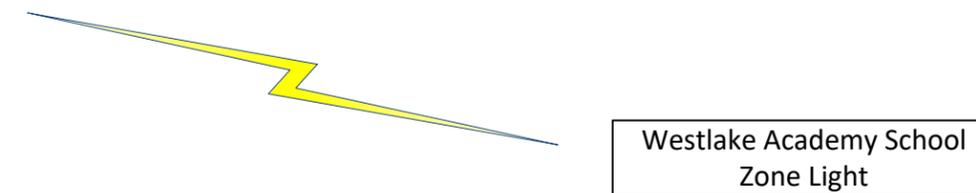
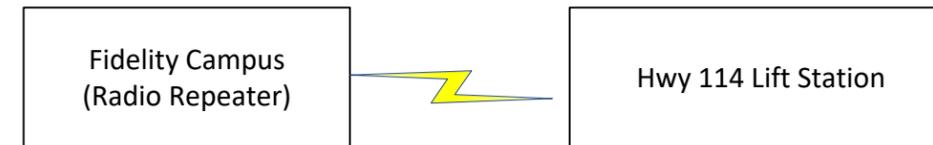
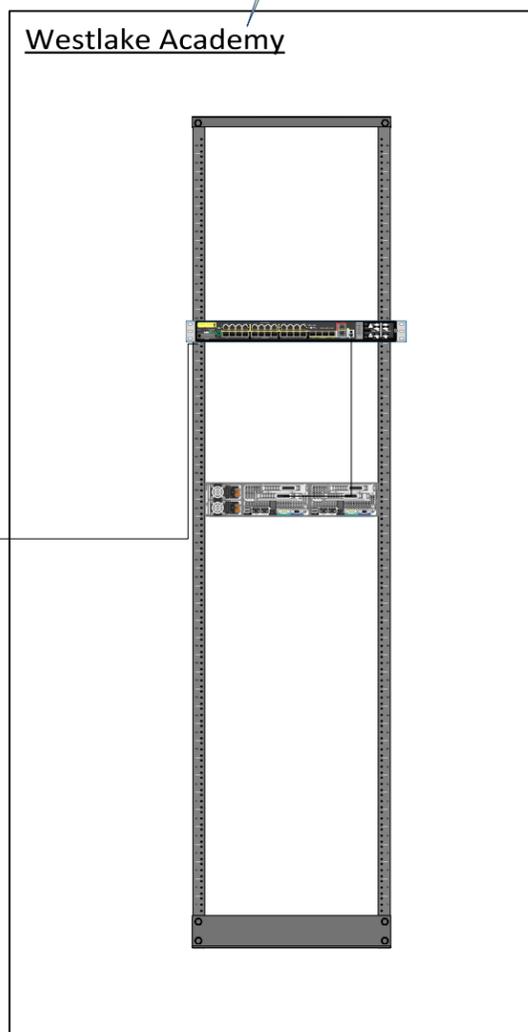
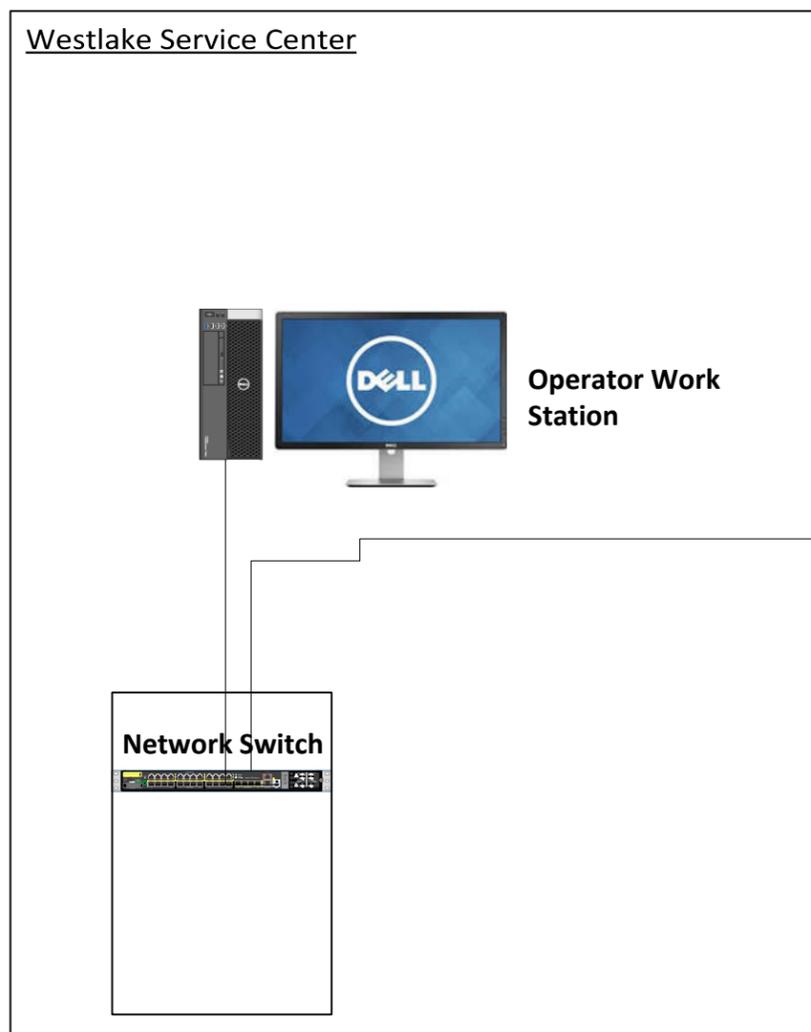
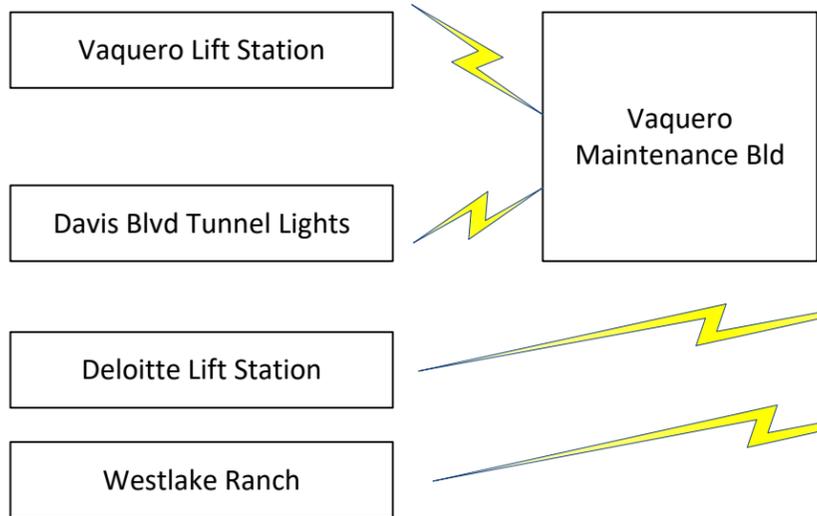
Town of Westlake SCADA
Current Network Architecture



Knox EST



Westlake Pump Station



Unlicensed Radio Link

Town of Westlake Modified SCADA Network Architecture

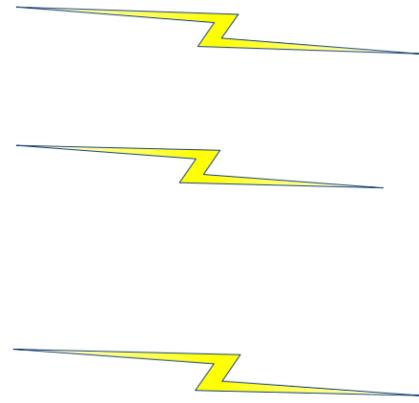
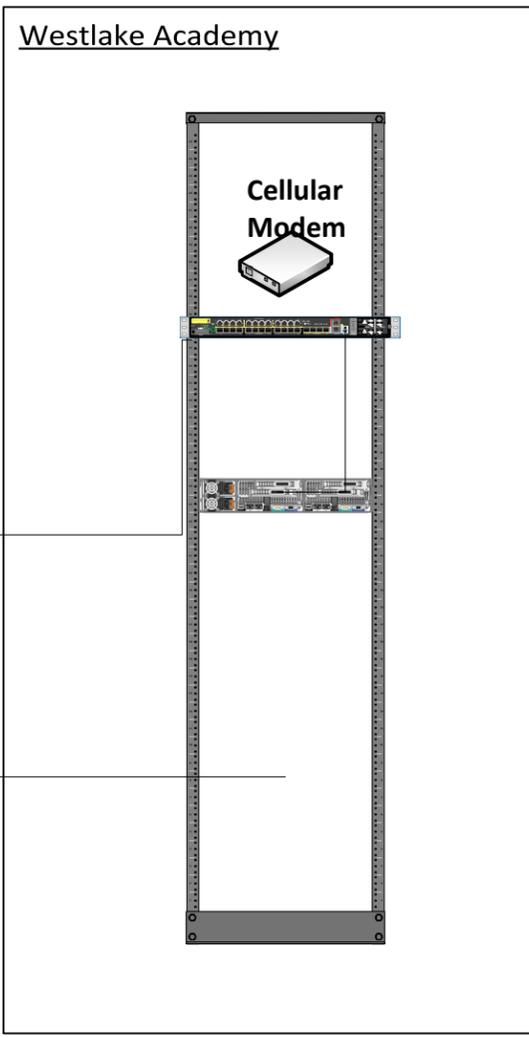
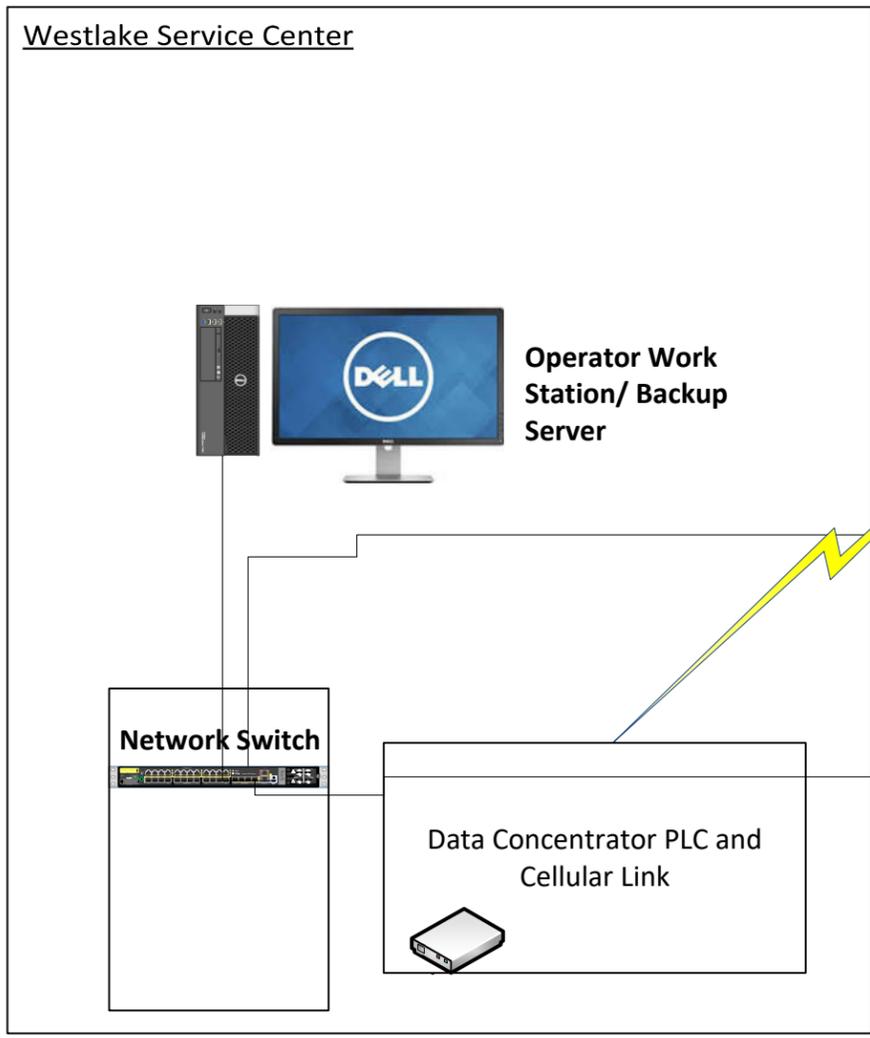
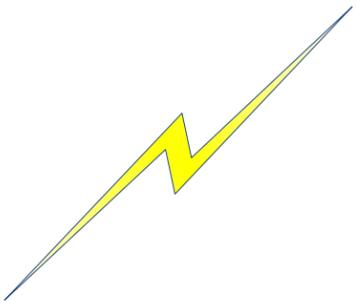
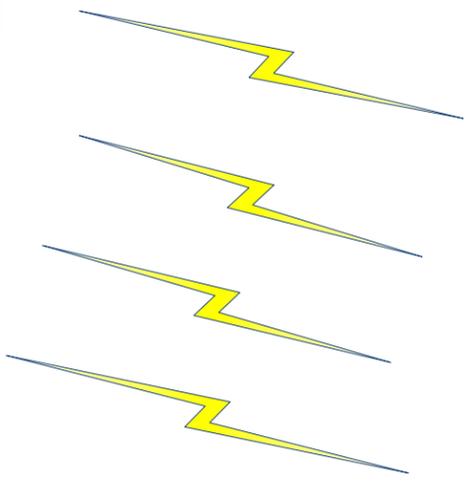


Knox EST



Westlake Pump Station

- Vaquero Lift Station 
- Davis Blvd Tunnel Lights 
- Deloitte Lift Station 
- Westlake Ranch 



-  Hwy 114 Lift Station
-  Westlake Academy School Zone Light
-  Westlake Academy School Zone Light

 Cellular Comm. Link

 Cellular Modem