

System Integration Scope of Work

Revision 0

1. Introduction

The City of Beaumont requires System Integration Services for the upgrade of the existing Lift Station SCADA System. This document summarizes the scope of work associated with these services. The objective of this work is to provide a complete and operational control system for the lift stations that will provide a seamless integration with the SCADA system that is now installed at the wastewater treatment plant.

2. Project Goals

This Scope of Work has been developed to achieve the following goals:

- Replace the existing GE PLC's with Allen-Bradley CompactLogix PLC's (construction of panels and installation by Contractor)
- Develop new SCADA Screens and monitoring/control interface with the Inductive Automation Ignition platform.
- Build monitoring screens that allows operators to properly monitor each lift station.
- Build the text and voice notification system to notify operators of different events and alarms
- Setup the firewall and gateway equipment to allow information to be brought into the existing network/SCADA infrastructure in a secure and reliable manner
- Participate in system installation and commissioning activities.
- Provide training for the updated control system

3. Scope of Services

The Scope of Services has been divided into the following tasks (each task is further described below):

1. Task 1 – SCADA System Integration
2. Task 2 – Four Seasons Lift Station
3. Task 3 – Seneca Lift Station

4. Task 4 – Coopers Creek Lift Station
5. Task 5 – Marshall Creek Lift Station
6. Task 6 – Noble Lift Station
7. Task 7 – Upper Oak Lift Station
8. Task 8 – Lower Oak Lift Station
9. Task 9 – Little Lower Lift Station
10. Task 10 – Mesa Lift Station
11. Task 11 – Project Contingency

3.1.Task 1 – SCADA System Integration

Integrating the lift stations into the Ignition system will require the following:

1. Provide a secure way of communicating between each lift station and the existing SCADA servers. The SCADA servers will reside on their own secure network. To accomplish this, we will work with the City's IT staff to secure the traffic between the WWTP and each lift station.
2. We will work with the City to obtain cellular service for each of the sites and work to activate each modem for each remote location.
3. Install a new radio at the WWTP for communications to each site in addition to the cellular network. Install the appropriate firewalls for securing the system.

3.2.Task 2 – Four Seasons Lift Station

Integrating the Four Seasons Lift Station will require the following:

1. PLC and HMI programming will be provided for the site and overall SCADA system.
2. Coordination with Contractor for equipment cutover. Participate in Startup and Commissioning.

3.3.Task 3 – Seneca Lift Station

Integrating the Seneca Lift Station will require the following:

1. PLC and HMI programming will be provided for the site and overall SCADA system.
2. Coordination with Contractor for equipment cutover. Participate in Startup and Commissioning.

3.4.Task 4 – Coopers Creek Lift Station

Integrating the Coopers Creek Lift Station will require the following:

1. PLC and HMI programming will be provided for the site and overall SCADA system.
2. Coordination with Contractor for equipment cutover. Participate in Startup and Commissioning.

3.5.Task 5 – Marshall Creek Lift Station

Integrating the Marshall Creek Lift Station will require the following:

1. PLC and HMI programming will be provided for the site and overall SCADA system.
2. Coordination with Contractor for equipment cutover. Participate in Startup and Commissioning.

3.6.Task 6 – Noble Lift Station

Integrating the Noble Lift Station will require the following:

1. PLC and HMI programming will be provided for the site and overall SCADA system.
2. Coordination with Contractor for equipment cutover. Participate in Startup and Commissioning.

3.7.Task 7 – Upper Oak Lift Station

Integrating the Upper Oak Lift Station will require the following:

1. PLC and HMI programming will be provided for the site and overall SCADA system.
2. Coordination with Contractor for equipment cutover. Participate in Startup and Commissioning.

3.8.Task 8 – Lower Oak Lift Station

Integrating the Lower Oak Lift Station will require the following:

1. PLC and HMI programming will be provided for the site and overall SCADA system.
2. Coordination with Contractor for equipment cutover. Participate in Startup and Commissioning.

3.9.Task 9 – Little Lower Lift Station

Integrating the Little Lower Lift Station will require the following:

1. PLC and HMI programming will be provided for the site and overall SCADA system.
2. Coordination with Contractor for equipment cutover. Participate in Startup and Commissioning.

3.10. Task 10 – Mesa Lift Station

Integrating the Mesa Lift Station will require the following:

1. PLC and HMI programming will be provided for the site and overall SCADA system.
2. Coordination with Contractor for equipment cutover. Participate in Startup and Commissioning.

3.11. Task 12 – Project Contingency

We anticipate there will be some unforeseen issues arise while transitioning from the existing system to the new system. The project contingency is developed to cover the costs for dealing with those unforeseen issues. We have setup this contingency to be 10% of the overall project cost.

Cost Proposal

Task ID	Task Description	Project Manager (\$145/Hr)	Controls Engineer (\$125/Hr)	IT Specialist (\$125/Hr)	Labor Cost	Equipment / Software Cost / Per Diem	Total Cost
Task 1 - SCADA System Integration							
0101	Network setup and configuration	2	40	40	\$10,290	\$5,650	\$15,940
0102	HMI Programming	2	80		\$10,290		\$10,290
0103	Cellular Network setup	2	16	8	\$3,290		\$3,290
Task 1 Total:							\$29,520
Task 2 - Four Seasons Lift Station							
0202	Programming	1	24		\$3,145		\$3,145
0203	Installation & Commissioning	1	8	4	\$1,645	\$1,500	\$3,145
Task 2 Total:							\$6,290
Task 3 - Seneca Lift Station							
0302	Programming	1	24		\$3,145		\$3,145
0303	Installation & Commissioning	1	8	4	\$1,645	\$1,500	\$3,145
Task 3 Total:							\$6,290
Task 4 - Coopers Creek Lift Station							
0402	Programming	1	24		\$3,145		\$3,145
0403	Installation & Commissioning	1	8	4	\$1,645	\$1,000	\$2,645
Task 4 Total:							\$5,790
Task 5 - Marshall Creek Lift Station							
0502	Programming	1	24		\$3,145		\$3,145
0503	Installation & Commissioning	1	8	4	\$1,645	\$1,500	\$3,145
Task 5 Total:							\$6,290
Task 6 - Noble Lift Station							
0602	Programming	1	24		\$3,145		\$3,145
0603	Installation & Commissioning	1	8	4	\$1,645	\$1,500	\$3,145
Task 6 Total:							\$6,290
Task 7 - Upper Oak Lift Station							
0702	Programming	1	24		\$3,145		\$3,145
0703	Installation & Commissioning	1	8	4	\$1,645	\$1,500	\$3,145
Task 7 Total:							\$6,290
Task 8 - Lower Oak Lift Station							
0802	Programming	1	24		\$3,145		\$3,145
0803	Installation & Commissioning	1	8	4	\$1,645	\$1,500	\$3,145
Task 8 Total:							\$6,290
Task 9 - Little Lower Lift Station							
0902	Programming	1	24		\$3,145		\$3,145
0903	Installation & Commissioning	1	8	4	\$1,645	\$1,000	\$2,645
Task 9 Total:							\$5,790
Task 10 - Mesa Lift Station							
1002	Programming	1	24		\$3,145		\$3,145
1003	Installation & Commissioning	1	8	4	\$1,645	\$1,500	\$3,145
Task 10 Total:							\$6,290
Task 11 - Project Contingency							
1101	10% Contingency						\$8,513
Task 14 Total:							\$8,513
Sub Total:							\$93,643
Sales Tax (7.75% on Equipment):							\$438
Total:							\$94,081