



SCOPE OF SERVICES
CITY OF GREENSBORO
DEPARTMENT OF WATER RESOURCES
SCADA On-Call Support Services and Improvements
February 28, 2020

The City of Greensboro (City) requires SCADA On-Call Support Services and Improvements Services for the Lake Townsend Water Treatment Plant (WTP) and Mitchell WTP. The proposed project encompasses providing Supervisory Control and Data Acquisition systems (SCADA) systems integration, updates, training for plant staff, and additional SCADA services. The scope of services to be provided are listed below and shall be provided on a Time and Material (T&M) basis with a not to exceed cost of **\$150,000**. HDR shall inform the City on a regular basis of the budget expended so that the City may schedule services accordingly.

SCOPE OF SERVICES:

Task 1 – Project Management

Objectives: HDR will provide project management of this scope of services including participation at the meetings requested by the City held in Greensboro.

1. Project Management will primarily include the following tasks:
 - Monitor project progress, scope, budget and schedule;
 - Identify and manage resources
 - Participate in meetings listed above
 - Project administration including invoicing and scope management

Deliverables: Project Meeting Minutes and Invoicing

Task 2 – Water Treatment Plants SCADA On-Call and Improvements

Objectives: Provide SCADA On-Call services and improvements to the plant SCADA and PLC applications. The list of know and currently planned tasks are listed below. These tasks shall be provided on a time and material basis not to exceed **\$80,000**.

1. **VPN Tunnel:** HDR will assist City's IT staff with configuring the VPN tunnel between Townsend and Mitchell WTPs. City's IT department will control, monitor and maintain the VPN tunnel and will provide all the necessary system administration.
2. **Enterprise Historian (Tier-2):** HDR will assist the City's IT staff to configure new SCADA server per Wonderware software requirements. HDR will also install and



configure Wonderware Historian and license(s) on the Tier-2 Historian procured by the City. HDR will modify Townsend and Mitchell Historian’s configuration that will enable store-forward features.

3. **Mitchell WTP IP Conversion:** HDR will develop IP list and provide assistants to City with the implementation.
4. **Mitchell and Townsend WTP SCADA Alarms:** HDR will assist the City in implementing an alarm management strategy for Water Supply SCADA systems following ANSI/ISA-18.2 (Management of Alarm Systems for the Process Industries) including associated technical reports 18.2.1 thru 18.2.6.
5. **Training:** HDR will conduct training for the SCADA On-Call services and Improvements to maintenance or operations staff after tasks are completed.

Task 3 – Miscellaneous Tasks

Objectives: Upon authorization from City, HDR shall provide additional site visits, phone calls, research, and general support for the City’s SCADA system. These services shall be provided on a time and material basis not to exceed **\$55,000**. Tasks may include:

- Assist the City with project reviews to identify where automation can be used make treatment processes more efficient.
- Assistance with recovery of the SCADA system after SCADA system failures.
- Assistance in making additions or modifications to the instrumentation and control system including making applications software modifications, HMI screen modifications and development as well as performing other control system integration services.
- Provide technical assistance with the integration of new PLC equipment, process transmitters, radio equipment, or modifications to existing site instrumentation or other equipment;
- On-call assistance by phone or on site assistance.
- SCADA programming services
- Electrical, instrumentation and controls design services and inspection services; and
- Other control system assistance as requested.

COMPENSATION

Compensation for services described above shall be on a time and material basis with a not to exceed amount of **\$150,000**. An approximate fee breakdown is included in Table 1 (below).

Table 1 – Approximate Fee Breakdown	
Task Description	Approximate Lump Sum Breakdown
Task 1 – Project Management	\$15,000



Task 1 and Task 2 – SCADA On-Call and Improvements	\$80,000
Task 1 and Task 3 – Miscellaneous Tasks	\$55,000
Total	\$150,000

ASSUMPTIONS

1. HDR is not responsible for software “bugs” inherent to vendor package software including the Windows operating system, the Wonderware software, any reporting software, or the like.
2. City is solely responsible for any and all water quality aspects and impacts during the installation of the new SCADA communication system.
3. HDR is not responsible for resolving issues associated with existing equipment such as instrument calibration, wiring issues, PLC/SCADA programming issues, defective hardware, or the like.
4. HDR personnel shall have access to the SCADA system from 7 a.m. to 5 p.m. Monday through Friday, and at other City-designated times during startup and emergencies.
5. The City will procure and install all of the necessary hardware and software to conduct the SCADA On-Call and Improvements in tasks 2 and 3.
6. Any construction field work related to this project will be performed by others