



Purchasing Division
 18 North County Street, 9th Floor
 Waukegan, Illinois 60085-4350
 Phone 847-377-2992
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Award Information – 6/1/2020

Contract Information

Purchase Description: **Design and Implementation of SCADA network for the Southeast and former Lakes Region Sanitary District remote sites for Lake County Public Works**

Contract Start Date: **June 9, 2020**

Initial Term: **100 days from contract execution**

Term Dates: **N/A**

Renewals: **N/A**

Vendor Information

Company Name: **Donohue & Associates, Inc.**

Address: **230 W. Monroe Street** **2925**
Street Address *Suite/Unit #*

Chicago **IL** **60606**
City *State* *ZIP Code*

Contact Name: **Eric Cockerill**

Funding Account Description: **Public Works Budget**

Budget Information: **Was included in the FY20 Budget and service is within budget expectations.**

Department: **Public Works**

Department Contact: **Brittany Sloan** Award Amount: **\$69,680**

Bid / RFP Information

Registered Vendors: **40 (2 Local)** Responses Received: **3 (0 Local)**

Intent:
 The Lake County Public Works Department (LCPWD) provides essential water and wastewater services to over 40% of the County’s residents, and the LCPWD owns and operates three water reclamation facilities, twelve water distribution systems, 345 miles of sewer main, 300 miles of water main, and all associated infrastructure
 The Lake County Public Works Department mission statement is to provide drinking water and wastewater treatment services in an efficient, reliable and safe manner that meet or exceed the expectations of our customers and satisfy all local, state and federal requirements. Lake County Public Works has five program divisions, Systems Operation, System Maintenance, Laboratory, Engineering Services, and Administration & Financial Management.

In March 2015 Lake County Public Works purchased the following software:
 A. Historian (Server): Wonderware Historian, version 2017 Update 3.



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- B. Historian (Client): Wonderware Historian Client, version 2017 Update 3.
- C. Data Collection Software: Wonderware Remote Industrial Data Acquisition Service, version 2017 Update 3.
- D. Reporting Software (Server and Client): Allmax Software, Operator 10 Water and Wastewater.
- E. Reporting Server Interface to Historian: Allmax OPC/DDE Interface to SCADA.
- F. Reporting Server Audit Trail Software: Allmax Audit Trail.
- G. Dashboard Software: DataHub WebView, latest version.
- H. Dashboard Software Interface Software: DataHub OPC DA Tunneller, latest version.

The Lake County Public Works SCADA network is divided into six individual regions (Northwest, Northeast Central, Northeast, Southeast, Central, and South Central). The network within each region uses various hardware and communication protocols to monitor and control the water and wastewater systems within that region.

Three facilities, as noted in the following table, have been designated as the “hub” for a region or group of regions. Each hub has an existing desktop computer that is running Wonderware InTouch and a Wonderware Data Access (DA) Server. Lake County Public Works recently acquired Lakes Region Sanitary District in the Northwestern portion of the County which serves Unincorporated areas of Lake Villa, Ingleside and portions of the bordering municipalities of Round Lake and Volo. The Des Plaines River WRF and nearby facilities such as the Pekara wells are connected to the SCADA network. Remote lift stations in the Southeast Region are not connected to the network. Plans for the remote sites in the Southeast region of the County are at approximately 60 percent completion.

The Lakes Region remote sites are equipped with equipment to work with SCADATA© software which is not compatible with Lake County Public Work’s network. Lake County Public Works has coordinated with Verizon Wireless to create a Private Network to deliver data from remote sites that cannot reliably communicate using 900 MHz radio frequency. GE MDS Orbit Cellular radios are installed at each remote site and communicate to a cellular radio installed at each of the Water Reclamation Facilities.

REGION	HUB	EXISTING DA SERVER
NORTHWEST	MILL CREEK WRF	WONDERWARE DASABCIP AND DASABTCP
NORTHEAST		
CENTRAL		
NORTHEAST		
LAKES REGION SANITARY DISTRICT	VERNON HILLS WRF	WONDERWARE DASABCIP AND DASABTCP
CENTRAL		
SOUTH CENTRAL	DES PLAINES WRF	WONDERWARE FSGATEWAY
SOUTHEAST		

Scope of Work:

Phase 1 – Site Investigation and Planning

To start the project, Donohue will host a virtual kickoff meeting to introduce the staff, review the project plan, and coordinate on site activities.

Task 1 – Inventory of Remote Sites

Donohue will visit and document inventory of each remote site in the Southeast Region and Lakes Region. Inventory will include, but not limited to, existing equipment, physical condition rating, existing communication protocols, panel dimensions, and GPS coordinates.

Task 2 – Cellular Feasibility Study

Donohue and its subconsultant, J&K Communication, will use the GPS coordinates for each of the remote sites and conduct an electronic propagation study to verify cellular communication probability for each of the selected sites. Donohue will consult with Verizon Wireless for the cellular communication.

Task 3 – Standardization and Cost Analysis

Donohue will consolidate the results of the Field Investigation Report to develop a set of Standard Lift Station control panels. It is assumed that many of the 48 remote sites will be categorized or classified into smaller groupings, which will be used to develop an opinion of probable construction costs. Using a standardized approach provides commonality throughout the hardware and maintenance as well as commonality of the control panel designs, which is the most cost effective means of designing a large quantity of control panels. An example of standardization, which may be expanded or modified during the Project is as follows:



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Type 1 – Radio and Antenna Replacement Only

Type 2 – Backpanel Replacement with new control hardware and radio hardware

Type 3 – Complete Control Panel Replacement

Donohue will prepare for and lead a workshop to review the deliverables of the Site Investigation and Planning Phase with the Owner. The workshop will be held at the Owner's facility.

Phase 1 Deliverables

Task 1 – Field Investigation Report

Task 2 – Cellular Feasibility Report

Task 3 – Standardization Memorandum with Cost Opinions

Following Phase 1, Future Phases 2 and 3 may be authorized through amendments.

Future Phase 2 – Control Panel Design

Upon completion of the Phase 1 Deliverables, Donohue will prepare control panel designs for each of the remote stations and telemetry hubs, as defined in Phase 1. Donohue will begin with a single control panel design for each of the standard “types” identified in Phase 1. The control panel designs will be submitted to the Owner for review, comment, and approval prior to completing the remaining control panel designs. Control panel designs will include detailed electrical schematics, wire numbering, scaled layout drawings, and bill of materials with manufacturer part numbers.

Upon completion of the detailed control panel design, Donohue will solicit quotations from three reputable UL listed panel shops to receive firm pricing for the control panels and materials. In addition to the material pricing, Donohue will solicit pricing from three electrical subcontractors for installation of control panels, conduit, and field wiring.

Phase 2 Deliverables

Standard Control Panel Designs (one for each type of lift station)

Detailed Control Panel Designs (one for each remote site)

Bidding Results

Future Phase 3 – Construction

Upon completion of Phase 2 Deliverables, Donohue will work with the Owner to award subcontracts for the control panel construction and electrical installation. Subcontracts for these services will be negotiated under Donohue's contract with the Owner. Donohue will provide PLC and HMI programming for the remote sites, telemetry polling hubs, and associated SCADA application development to incorporate the Southeast Region and former Lakes Region remote sites into the existing SCADA system.

Donohue, in cooperation with subcontractors, will complete the installation and functional testing to incorporate the Southeast Region and former Lakes Region remote sites into the existing SCADA system.

Donohue will prepare for and lead biweekly workshops or progress meetings throughout the Construction Phase of the project. Workshops will be used to review progress, coordinate installation, and review Owner concerns throughout the project.

Phase 3 Deliverables

As Built Control Panel Drawings (PDF and AutoCAD Electrical format)

Application programs for all PLC, HMI, radio configurations, or other programmable devices

Department Recommendation:

Lake County Purchasing received and opened 3 SOIs for the Design and Implementation of SCADA network for the Southeast and former Lakes Region Sanitary District remote sites for Lake County Public Works on March 3, 2020 at 11:00 a.m. In accordance with the SOI and the Local Government Professional Services Selection Act (50 ILCS 510/). Lake County held interviews with the top 3 ranked firms. It has been determined that Donohue & Associates, Inc. is the most qualified firm. Lake County Public Works agrees with my recommendation.