



CITY of NOVI CITY COUNCIL

Agenda Item D
May 22, 2017

SUBJECT: Approval to award SCADA implementation services to ICS Integration Services LLC for work related to the completion of the City's SCADA system, in the amount of \$63,188.

SUBMITTING DEPARTMENT: Department of Public Services, Water and Sewer Division *ZLC*

CITY MANAGER APPROVAL: *[Signature]*

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|-----------------------------|---------------------------|
| EXPENDITURE REQUIRED | \$ 63,188 |
| AMOUNT BUDGETED | \$ 200,000 |
| LINE ITEM NUMBER | 592-592.00-976.003 |

BACKGROUND INFORMATION:

The City's new water storage facility at 12 Mile and West Park Drive was put into service in August of 2014. One component of that project was the implementation of a SCADA (Supervisory Control and Data Acquisition) system, which allows for remote/off-site monitoring of the storage tank and other critical components of the City's water system. ICS Integration Services (ICS) was the sub-contractor used by Sorenson Gross, the prime contractor for construction of the water storage facility, for the development and implementation of the SCADA network for the water system. As the SCADA system was being installed and tested toward the end of the project, it became apparent that additional effort would be required to handle some unforeseen issues that were causing complications, including significant radio signal interference causing communication failures. Additionally, City staff identified additional operational troubleshooting would be required outside the original contract scope between ICS and Sorenson Gross. Since ICS will have a service contract with the City for future maintenance of the SCADA system, it was determined that ICS would be used for the completion of the network installation. The additional tasks included in this award include the following:

Task 1: Once the communication failures were identified, ICS worked to diagnose and isolate system failures, resulting in the determination that the proposed antenna is likely inadequate - \$6,600.

Task 2: Through their experience and contacts in the SCADA industry, ICS was able to identify an alternative antenna controlled by Oakland County, and was able to acquire the rights for use by Novi. This antenna is at twice the height of the original, and should eliminate the communication failures previously observed. This task includes the purchase and installation of the new controls and electrical panel for the new antenna, coordination with Oakland County and their contractor to transfer the antenna's cables for future use by Novi, and the programming and testing of the system to get it operational - \$21,369.15.

Task 3: The City requested an upgrade to the SCADA software to allow unlimited users of the system (i.e. all Water and Sewer Division staff) – \$6,000.

Task 4: The City requested ICS' expertise to help diagnose issues caused by pressure spikes during low demand time periods. ICS monitored the system to determine how to re-program the start-up procedure for the variable-speed pumps at the booster station - \$10,290.

Task 5: Annual software maintenance contract, technical support, and upgrade protection for SCADA software package. This includes 2016 and 2017 - \$16,274.

In addition to the above work related to the water system SCADA, the modems used for the City's sanitary system SCADA need to be replaced. An additional piece of equipment called a Cisco 1921 is needed for the integration of these modems to allow the routing of data through the Verizon network to our internal SCADA system - \$2,655.20.

RECOMMENDED ACTION: Approval to award SCADA implementation services to ICS Integration Services LLC for work related to the completion of the City's SCADA system, in the amount of \$63,188.35.



ICS Integration Services LLC

35245 Schoolcraft Road

Livonia, MI 48150

Tel: (734) 306-6779

Fax: (734) 785-6025

4/30/2017

Ben Croy
City of Novi

Subject: Tracking of additional tasks for SCADA project.

Dear Mr. Ben Croy:

ICS Integration Services LLC is pleased to submit pricing for the above-mentioned project.

Scope of Services

Below is a breakdown of our tracking for additional tasks required on this project.

Task 1:

Diagnose ongoing issues with system failures, determine what is causing them.

1. Worked to diagnose and isolate ongoing system failures that presented as network or server issues.
2. Write additional trap logic and monitoring to determine that intermittent radio failure was what was causing the communication drop outs.
3. Engaged third party analysis of cross talk possibilities with existing non SCADA radio traffic present at DPW facility.

| | |
|------------------------|-------------------|
| Labor | \$6,600.00 |
| Total this task | \$6,600.00 |



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Task 2:

Resolve ongoing radio issues that are causing communication failures and unreliable system operation.

1. Radio troubleshooting tasks – work on determining what is causing radio issues and failures of communications.
2. Assist with negotiating handover of Oakland County radio antenna at higher elevation for use within Novi system.
3. Build additional panel, provide materials and programming for panel to integrate Oakland County antenna with Novi SCADA Network.
4. Panel design, assist electrical contractor and additional programming costs associated with Radio fix.

| | |
|------------------------|--------------------|
| Materials | \$3,034.15 |
| Labor | \$18,334.00 |
| Total this task | \$21,369.15 |

Task 3:

Upgrade Ignition server to unlimited user license:

1. Provide upgrade Ignition license beyond base contract to support unlimited DPW personnel.

| | |
|------------------------|-------------------|
| Materials | \$6,000.00 |
| Total this task | \$6,000.00 |



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Task 4:

Winter mode (2016) operational adjustment programming:

1. Diagnose and troubleshoot issues with spiking in the winter mode during 2016 low flow season. Re-program VFD's to accelerate and ramp slower. Re-write program for altering shaving and starting methods with pumps during winter mode. Monitor effect of changes and make further adjustments.

| | |
|------------------------|--------------------|
| Labor | \$10,290.00 |
| Total this task | \$10,290.00 |



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Task 5:

Annual Software maintenance costs:

1. Provide software maintenance contract, technical support and upgrade protection on SCADA software package.

| | |
|------------------------|--------------------|
| 2016 | \$7,900.00 |
| 2017 | \$8,374.00 |
| Total this task | \$16,274.00 |

Thank you for the opportunity to quote these services. Should you have any questions regarding this proposal, please do not hesitate to call.

Sincerely,

A handwritten signature in cursive script that reads 'Michael Bak', enclosed within a hand-drawn oval.

Michael Bak
I & C Manager
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4/27/2017

Ben Croy
City of Novi

Subject: Verizon Cisco 1921 router.

Dear Mr. Ben Croy:

ICS Integration Services LLC is pleased to submit pricing for the above-mentioned project.

Scope of Services

We will provide labor and material as outlined below.

- 1) QTY (1) Cisco 1921 router with security configuration package compatible with Verizon private network implementation.

Pricing

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|-------------------|------------|
| Cisco 1921 router | \$2,655.20 |
|-------------------|------------|

| | |
|----------------------------------|-------------------|
| Total price Not To Exceed | \$2,655.20 |
|----------------------------------|-------------------|



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Thank you for the opportunity to quote these services. Should you have any questions regarding this proposal, please do not hesitate to call.

Sincerely,

A handwritten signature in black ink that reads 'Michael Bak'. The signature is enclosed within a hand-drawn oval.

Michael Bak
I & C Manager
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