

## AGENDA REPORT

TO: Mayor & City Commission  
FROM: Ken Hibl, City Manager  
DATE: September 15, 2016  
RE: Authorization to Purchase SCADA Equipment

For the Agenda of September 19, 2016

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Background. We are constantly pursuing means and methods to become as efficient as possible, thereby conserving and/or saving our often-limited but always much-valued resources. We are trying to utilize more and more advanced technology in our public water and sanitary sewer systems and have made significant strides installing SCADA systems in significant portions of those two systems.

We earmarked monies in our 2016/2017 Capital Improvements Schedule and corresponding budget to expand our use of SCADA. Our SCADA vendor has provided (*copy att'd*) us a detailed outline of the costs of the new equipment we recommend for purchase and installation. This requested purchase is further explained in Dale's att'd memo. The City Commission is asked to authorize the purchase of the equipment.

Issues & Questions Specified. Should the City Commission authorize the purchase and installation of the new SCADA equipment?

Alternatives.

1. Authorize the purchase and installation of the requested equipment.
2. Authorize the purchase and installation of only a portion of the equipment.
3. Direct the purchase not be purchased.
4. Defer/delay/postpone decision regarding the date/time to a future scheduled Commission meeting.

Financial Impact. The total cost of the new equipment is \$54,800, which is approximately \$10K over the amount we budgeted for this purpose. A significant portion (\$6.8K) of this overage is for the optional Groov software explained in Dale's memo. We have assessed the payback on this software and consider it a worthwhile and prudent purchase. A budget amendment in the amount of \$9.8K will be required for this purchase.

Recommendations. I recommend that the City Commission authorize the purchase and installation of the SCADA equipment in the amount of \$54,800 by adoption of Resolution 2016-112.

Attachments.

1. SCADA Proposal.
2. Dale's Memo.
3. Resolution 2016-112.

Dale Clark  
Director of Water Treatment  
City of Clare

Subject: Water Tower & Well 7 Controls and Telemetry to eliminate leased lines

### Well 7 Radio & SCADA

- o Design & Supply new Pump Control Panel(24w x 24h placed in existing enclosure) with OPTO PLC, UPS(to set on top of enc) and Radio
  - Integrate new scada controls and tie into the existing HMI/SCADA system at the WWTP with new telemetry system(screen & alarms on existing HMI at WWTP)
  - 1 digital input module
  - 1 output module
  - 1 4-20ma input module
  - Ubiquiti 5ghz Ethernet radio
  - Ethernet switch
  - Electrical bid mgmt.(Electrical install budget: \$1300)

<b>Well 7 Engineering &amp; Hardware</b>	<b>: \$11,700</b>
<b>Electrical install(budgetary)</b>	<b>: \$1,300</b>
<b>Tower Base/install(budgetary)</b>	<b>: \$5,000</b>
<b>Total</b>	<b>: \$18,000</b>

### Existing Water Tower Radio & SCADA

- o Design & Supply new Water Tower Control Panel(24w x 36h) with OPTO PLC, UPS and Radio
  - Use Radio comms to replace the tower level signal to the Water Filtration Plant. Use new analog output module to retransmit the signal into the existing system. Add the level into the HMI/SCADA system at the WWTP with new telemetry system(Water Tower screen & Alarms on existing HMI at WWTP)
  - 1 digital input module
  - 1 digital output module
  - 1 4-20ma input module
  - Ubiquiti 5ghz Ethernet radios
  - Ethernet switch
  - Electrical bid mgmt.(Electrical install budget: \$2000)

<b>New Water Tower Engineering &amp; Hardware</b>	<b>: \$13,400</b>
<b>Electrical install(budgetary)</b>	<b>: \$1,900</b>
<b>Total</b>	<b>: \$15,300</b>

### Water Filtration Plant

- o Design & Supply new Water Tower/Water Filtration Plant Controls with OPTO PLC, UPS and Radio
  - Use Radio comms to replace the tower level signal to the Water Filtration Plant. Use new analog output module to retransmit the signal into the existing system. Add the level into the HMI/SCADA system at the WWTP with new telemetry system(Water Tower screen & Alarms on existing HMI at WWTP)
  - 1 digital input module
  - 1 digital output module
  - 1 4-20ma output module
  - Ubiquiti 5ghz Ethernet radio
  - Ethernet switch
  - Electrical bid mgmt.(Electrical install budget: \$2000)

**New Water Tower Engineering & Hardware : \$12,800**  
**Electrical install(budgetary) : \$1,900**  
**Total : \$14,700**

**New Groov installed at WWTP for remote/mobile system monitoring. (Optional)**

*groov* is Opto 22's new way to build, deploy, and view simple, effective, and scalable operator interfaces to monitor and control systems and equipment using computers and mobile devices. Using only a modern web browser, *groov* lets you quickly and securely build and deploy browser-based interfaces for automation, monitoring, and control applications. These operator interfaces can then be viewed on almost any computer or mobile device regardless of its manufacturer or operating system, including PCs, tablets, smartphones, and even smart high-definition televisions.

**WWTP Groov Hardware : \$3,600**  
**Programming & Startup : \$3,200**  
**Total : \$6,800**

Services by Perceptive Controls

- o Engineering and drawings for all new control panels
- o Programming the control and telemetry system
- o Scada and alarm programming
- o Training
- o Start-up

Provided by Clare

- Run equipment in Manual mode during start-up
- Provide Internet connection & Static IP for Groov at WWTP building

Total for all items: \$54,800

Terms: 30% with order, 30% on hardware delivery, 40% on completion

All payments are Net 30 days (1.5% finance charge/month after 30 days)

Best Regards,

**Ryan Fisher**

Perceptive Controls

Office: 269.685.3040 x102

Cell: 269.207.4287

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**INTEROFFICE MEMORANDUM**

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**TO:** KEN HIBL  
**FROM:** DALE CLARK  
**SUBJECT:** SCADA FOR WELL SEVEN AND THE SOUTH WATER TOWER.  
**DATE** 9/14/16  
**CC:** STEVE KINGSBURY

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Ken,

I would like to install SCADA on the south water tower and well seven. I have asked our SCADA provider, Perceptive Controls, for a quote. The cost of doing so would be about \$48,000.00. I budgeted for \$45,000.00 This will accomplish two things the first being the updating of the antiquated well seven controls. We can no longer get parts for these controls. The second is we will eliminate the need for the two dedicated phone lines supplied by AT&T. The cost of these lines are \$1,141.08 Monthly. This savings on the phone lines will pay for the SCADA in three and a half years.

In addition, Perceptive also included a quote for a new mobile monitoring system called Groov. This lets you monitor and control the SCADA from home computers smart phones and tablets. This hardware is completely optional. The coast of this hardware is \$6,800.00. This will eliminate the need for the Winn911 alarm hardware. The cost of Winn911, what we presently have, is about \$2,000.00 each time we buy a new SCADA computer. Groov will also eliminate a phone line needed for the Winn911 about \$109.00/a month. Groov hardware will also make it mandatory for water treatment personnel to carry a smart phone. I don't believe the 50 dollar cell phone reimbursement would cover the cost of the smart phone and data plan so I believe there should be an increase in that reimbursement.

**RESOLUTION 2015-112**

**A RESOLUTION OF THE CLARE CITY COMMISSION AUTHORIZING THE PURCHASE OF SCADA EQUIPMENT.**

**WHEREAS**, the City has been incrementally transitioning to automated monitoring and control systems in its public water and sanitary sewer systems for the past decade, thereby improving the overall efficiency in operating said systems; and

**WHEREAS**, the City included in its 2016/2017 capital improvement budget the purchase of additional automated systems software and equipment to further expand and improve its operating efficiency; and

**WHEREAS**, the City has received a quotation from its vendor for said equipment for the purchase of said equipment and software; and

**WHEREAS**, the City Staff has reviewed said quotation and has requested authorization to purchase and install said equipment; and

**WHEREAS**, the City Commission has duly reviewed and considered said quotation and the recommendation of its City Staff and determined said purchase is prudent, the cost is reasonable, and the purchase serves to improve the efficiency of operations of the City's public water system.

**NOW THEREFORE BE IT RESOLVED THAT** the City Commission of the City of Clare hereby authorizes the purchase and installation of SCADA software and equipment for a cost not to exceed \$54,800.

**ALL RESOLUTIONS AND PARTS OF RESOLUTIONS INSOFAR AS THEY CONFLICT WITH THE PROVISIONS OF THIS RESOLUTION BE AND THE SAME ARE HEREBY RESCINDED.**

**This Resolution was introduced by Commissioner \_\_\_\_\_ and supported by Commissioner \_\_\_\_\_. The Resolution declared adopted by the following roll call vote:**

**YEAS:**

**NAYS:**

**ABSENT:**

Resolution approved for adoption on this 19<sup>th</sup> day of September, 2016.

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Diane Lyon, City Clerk

