

REQUEST AUTHORIZATION FOR MAYOR AND FINANCE OFFICER TO SIGN PROFESSIONAL SERVICES AGREEMENT

August 26, 2008

Project Name & Number: SCADA Master System Upgrade W08-1745 CIP #: 50741

Project Description: Upgrade of the master Supervisory Control and Data Acquisition (SCADA) system at the Water Treatment Plant. This system monitors remote locations throughout the water system. The existing system is near capacity for input signals.

Consultant: Quality Flow Systems, Inc.

Original Contract Amount: \$139,380.00 Original Contract Date: Original Completion Date: March 1, 2009

Amendment Number: _____

Amendment Description: _____

Current Contract Amount: _____ Current Completion Date: _____
 Change Requested: _____
 New Contract Amount: _____ \$0.00 New Completion Date: _____

Funding Source This Request:

Amount	Dept.	Line Item	Comments
\$139,380.00	933	4225	
\$139,380.00	Total		

Agreement Review & Approvals

 8-13-08 8-15-08
 Project Manager Date Date

 8/13/08
 Division Manager Date

 8-15-08
 Department Director Date

 City Attorney Date

ROUTING INSTRUCTIONS

Route two originals of the Agreement for review and signatures.
 Finance Office - Retain one original
 Project Manager - Retain second original for delivery to Consultant
 cc: Public Works
 Engineering
 Project Manager

FINANCE OFFICE USE ONLY

(Note to Finance: Please write date of Agreement in appropriate space in the Agreement document)

Date	Initials	Approved
Appropriation		Y N
Cash Flow		Y N



CITY OF RAPID CITY

Engineering Services

300 Sixth Street

Rapid City, SD 57701-2724

Telephone: (605) 394-4154 FAX: (605) 394-6636

August 15, 2008

To: Robert Ellis, P.E.
Public Works Director

From: Dan Coon, P.E.

Ref: SCADA Master System Upgrade
Project No. W08-1745

The City of Rapid City Water Division is in need of an upgrade to its master SCADA system. This system is used to monitor and control remote components of the water system from the Water Treatment Plant (WTP). Items that are monitored and controlled are physically remote from the WTP and include items such as wells, reservoirs, and booster stations. The City's current water SCADA system supplied by Siemens Water Technologies will reach capacity with the addition of the Red Rocks Reservoir and Well No. 12.

The City will be adding additional remote locations such as the Elk Vale Low Level Reservoir, the Signal Hill control valves, the Good Samaritan Society proposed Pinedale No. 2 Reservoir at St. Martins, Red Rocks Well No. 13, Rainbow Ridge Water Booster Station, Rainbow Ridge Reservoir, Morningside Reservoir, and Morningside Water Booster Station. If the City wishes to monitor and control these new remote locations the system will need to be upgraded. If the City does not wish to upgrade the system to monitor and control these new remote locations from the WTP the Water Division will need to dispatch personnel to each new location once to several times a day. These site visits would be required to make system adjustments such as turning on/off pumps and chemical feed systems, and verifying that the facility is secure. The City would also lose the ability to detect and respond to system malfunctions and security breaches at the new locations without the monitoring capabilities of an upgraded system.

The City has received a quote from Quality Flow Systems, Inc., the exclusive regional supplier for this equipment, for \$139,380.00 for upgrade of the Siemens system. This upgrade will increase memory capacity of the master controller from 256kb to 32MB which allows additional system input and output capacity for new facilities and system expansion. This additional capacity should serve the City of Rapid City Water Division well into the future.



EQUAL OPPORTUNITY EMPLOYER

Two concerns have been raised concerning this proposed upgrade:

1. Continued use of a proprietary control system and the possibility of switching to a more open architecture.

The Siemens system is propriety. However, per the attached July 30, 2008 e-mail from Gary Parker of Burns & McDonnell (B&M) open systems do have layers of proprietary components placed on them. Open architecture refers more to an industry standard open communication protocol that allows the use of any type of component that works within the protocol to be used. Per the attached Siemens letter dated August 8, 2008 and Siemens brochure the proposed new master controller allows use of this open communication protocol.

The change to a new system may require the change out of most if not all of the current system components. In the attached July 29, 2008 letter from AE2S they provide an estimate of \$1,500,000.00 for design and construction of a new system. This estimate is based on the change out of a system in a community similar in size to Rapid City. Please note AE2S estimated the City of Rapid City would need to monitor 29 remote sites. The City currently has 37 remote sites and anticipates the addition of more sites in the near future. Therefore, this estimate is probably low.

2. The City will discard the existing remote site SCADA system and replace it during construction of the two new water treatment plants.

Monitoring and control of the remote sites can and will continue using the Siemens system. The existing system will be salvaged from the existing WTP prior to demolition and re-installed in the new facility. Per the attached July 30, 2008 e-mail from Gary Parker of B&M he anticipates designing the WTPs with SCADA systems independent of the existing remote site system. The water system operators would be able to monitor both the plants and remote sites through the same human machine interface (HMI) or through separate interfaces. This can be determined during the WTP design stage.

The City of Rapid City Water Division recommends the City upgrade the remote site SCADA system using the Siemens system per the quote provided. The Water Division has been using a version of the Siemens control system since 1961. The existing version has provided reliable and quality monitoring and control service since 2000. The Water Division has been very pleased with the systems performance and the support received from Siemens and Quality Flow Systems, Inc. As such the Water Division sees no need for upgrade of the entire remote monitoring system at this time.

Cc: John Wagner
Stacey Titus



QUALITY FLOW SYSTEMS, INC.

800 6th Street North West
New Prague, MN 56071

Office: (952) 758-9445
Fax: (952) 758-9661

June 2, 2008

Mr. Dan Coon
City of Rapid City
300 6th Street
Rapid City, SD 57701

Re: SCADA Master Upgrades

Dear Mr. Coon;
Please find below our contract to provide hardware, software, and services needed to upgrade the existing Microcat 9710 Master Telemetry Unit to the LC3000 master Telemetry Unit (see attached description).

By signing below, the City of Rapid City & Quality Flow Systems, Inc. agrees to enter into a contract per the attached scope of supply. The city will identify the purchase amount based on items A-F or items A-G.

Total Contract Amount (initial one):

Items A through F - \$139,380.00 (+ tax) X

Items A through G - \$136,231.00 (+ tax)

The city of Rapid City and Quality Flow Systems, Inc. accept the above selected contract based on the complete scope of supply (6 pages – including this page).

City of Rapid City

Accepted By: _____ Authorized signer – (Printed)

Title: _____ (Printed)

Signature: _____

Date: _____

City of Rapid City

Accepted By: _____ Authorized signer – (Printed)

Title: _____ (Printed)

Signature: _____

Date: _____

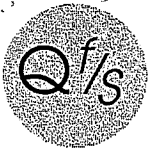
Quality Flow Systems, Inc.

Accepted By: Patrick Malay President – (Printed)

Signature: Pat Malay

Date: 6-2-08

By signing this contract, the above parties agree to perform the work detailed within this proposal in return for the agreed upon contract amount.



QUALITY FLOW SYSTEMS, INC.

800 6th Street North West
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To: <u>City of Rapid City, SD</u>	Quotation Date: <u>05/06/08</u>
Attn: <u>John Wagner</u>	Bid Date / Time: _____
Phone: <u>605-394-4128</u>	Estimated by: <u>Dale Holslin</u>
Fax: <u>605-394-4128</u>	Phone Number: <u>952-758-9445</u>
E-Mail: _____	Salesperson: <u>Jeff Seaton</u>
	Customer Reference: <u>201071/505095</u>

Project: <u>Rapid City, SD - MTU Upgrade</u>	Quotation Number: <u>070925DMH1QFPM Rev. E</u>
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Revision History:

- 0 – Initial Issue
- A – Issued with Price
- B – Changes per Mike Savelli and Jeff Seaton on-site meeting with customer the week of 12/17/07.
- C – Clarification of billing terms.
- D – Clarification of Item Reference for Options and Length of quote validity.
- E- Offered Option to delete backup LC3000 MTU configuration. The second LC3000 / OI3000 will be supplied as "on the shelf" spare parts.

We are pleased to provide a quotation on the following modifications and upgrades to the existing Siemens Water Technologies SCADA system at Rapid City, South Dakota. Our quotation is in accordance with the following descriptions, less any clarifications and exclusions listed below.

This quote provides hardware, software and services to upgrade the existing Microcat 9710 Master Telemetry Unit to the IntraLink LC3000 Master Telemetry Unit. The LC3000 will communicate with the existing Microcat and existing LC3000 RTU's and will provide expansion capabilities for future remote telemetry units.

Our itemized scope of supply is listed below. Quality Flow Systems, Inc or Siemens Water Technologies will not provide any items that are not specifically listed.

<u>Item</u>	<u>Qty.</u>	<u>Description</u>
A.	1	<p>Master Telemetry Unit. The existing 9710 MTU will be replaced with the IntraLink LC3000 Master Telemetry Unit. The new LC3000 MTU will communicate with the existing RTU's and will interface to the Wonderware HMI via new Ethernet interface.</p> <p>The existing MTU includes two 9710 MTU's, one is the primary MTU and the other functions as a backup MTU if the primary MTU fails. Two LC3000 MTU's will be furnished to provide the same primary/backup configuration.</p> <p>This panel will operate on 120 volt, 1 phase, 2 wire, 60 HZ incoming service. To Include:</p> <p>Qty. Item</p> <ul style="list-style-type: none"> 1 Back panel for existing enclosure 1 120 VAC incoming control power circuit breaker and surge arrester 2 Battery, 7 AH 2 15 VDC power supply 2 Model LC3000 Logic Controller/MTU 1 Remote Access Modem (Allows Factory dial-in for diagnostics, troubleshooting, etc.) 1 Ethernet Switch, 5 Port



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Item	Qty.	Description
		<p>1 Serial Port Combiner 2 CMM202 Phone Modem (for use with RTU 27) 1 VHF Radio Transceiver (Programmed with existing Frequency) 1 Bulkhead lightning arrestor 1 UL Label Lot Terminal Blocks, wire duct, labeling, fuses, nameplates, etc., as required Lot Programming services to convert existing MTU functions into LC3000 MTU Microcat platform. Includes primary/backup failover configuration. Lot Engineering and Factory Testing services to setup RTU's at factory and verify communications with new LC3000 MTU.</p> <p>NOTE: Existing Antenna Cable and Antenna will be reused.</p>
B.	1	<p>SCADA System HMI Computer Upgrade. The existing Dell computer will be replaced with the following new computer hardware and software. The computer will interface with the new LC3000 MTU via Ethernet communications. To Include: Qty Item 1 Computer, Dell Optiplex Mini-Tower Case with: <ul style="list-style-type: none"> • 2.4GHz Intel Core 2 Duo Processor • 2GB SDRAM • 1.44MB Floppy Disk Drive • 250GB SATA HDD, two drives in Raid 1 configuration (mirrored) • CDRW/DVD Combination Drive • Serial and Parallel Ports • Ethernet Port • V.92 Modem • Keyboard, Mouse and Speakers • Microsoft XP Professional Operating System Software • Hardware Support Services – 5 Year Business Standard Plan • Dell Gold Technical Support, 5 Years 1 17 in. Dell Flat Panel Monitor 1 Dot Matrix Alarm/Event Printer 1 InkJet Report Printer 1 Wonderware InTouch 60K Runtime with I/O Upgrade 1 PC Anywhere Remote Access Software 1 MS Office 2007 Professional Software Package (Excel, Word, Access) 1 Siemens Water Technologies Toolbox Software Package w/USB Key 1 Lot Engineering, Software Setup/Configuration and Testing Labor</p> <p>NOTE: An Ethernet Cable will be required between the MTU Panel and new HMI Computer.</p>
C.		<p>The existing Microcat Reporter software will be replaced with new reporting software. The LC3000 will now perform all report calculations that were done in the existing Microcat Reporter Software. To Include: Qty Item 1 Rewrite of Existing Reports. To include: <ul style="list-style-type: none"> • Daily Level Report • Monthly Level Report </p>



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Item	Qty.	Description
		<ul style="list-style-type: none"> • Monthly Runtime Report • Monthly Flow Report • Yearly Flow Report 1 Crystal Reports Software Package 1 Lot Engineering, Software Setup/Configuration and Testing Labor
D.	1	Laptop Computer. The laptop will be loaded with PC Anywhere Software, Siemens Water Technologies Toolbox Software and LC configuration files. To Include: Qty Item 1 Notebook Computer, Dell Latitude D630 with: <ul style="list-style-type: none"> • 2.0GHz Intel Core 2 Duo T7250 Processor • 1GB SDRAM • 14.1 inch Wide Screen WXGA LCD Panel • 80GB HDD • 8X DVD/RW • Dell Wireless Mini Card • Ethernet Port • Modem and Modem Cable • Large Nylon Carrying Case • Microsoft XP Professional Operating System Software • Hardware Support Services – 3 Year Limited Warranty plus 3 Year NBD On-site Service and CompleteCare 1 MS Office 2007 Professional Software 1 Ethernet Cable, 6 ft. RJ45/RJ45 1 Lot Engineering, Software Setup/Configuration. Install of PC Anywhere software, LC3000 Toolbox Software Package and current project LC configuration files.
E.	1	Startup and Training Services <ul style="list-style-type: none"> • Install LC3000 MTU and verify operation with remotes • Install HMI Computer and verify operation with new MTU • Training to include LC3000 overview (24 hrs) and HMI operation (8hrs), 32 hours total
F.	Lot	Siemens Water Technologies O&M Manual Documentation Updates

Total sell price for Items A through F is \$ 139,380.00 + (tax)

OPTION – Delete Backup MTU:

G.	1	Master Telemetry Unit Revision. Delete primary/backup arrangement of the LC3000 Master Telemetry Units. One LC3000 MTU will communicate with the existing RTU's and will interface to the Wonderware HMI via new Ethernet interface. The backup LC3000 and OI3000 Operator Interface Unit will be furnished as "on the
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	<p>shelf" spare parts and can be used in any location that uses the LC3000 or OI3000. The spare LC3000 unit will be loaded with the MTU software configuration.</p> <p>To Include:</p> <table><thead><tr><th>Qty.</th><th>Item</th></tr></thead><tbody><tr><td>-1</td><td>Battery, 7 AH</td></tr><tr><td>-1</td><td>15 VDC power supply</td></tr><tr><td>-1</td><td>Serial Port Combiner</td></tr><tr><td>-1</td><td>CMM202 Phone Modem</td></tr><tr><td>-1</td><td>Delete Programming services required to provide LC3000 MTU primary/backup failover configuration.</td></tr></tbody></table>	Qty.	Item	-1	Battery, 7 AH	-1	15 VDC power supply	-1	Serial Port Combiner	-1	CMM202 Phone Modem	-1	Delete Programming services required to provide LC3000 MTU primary/backup failover configuration.
Qty.	Item												
-1	Battery, 7 AH												
-1	15 VDC power supply												
-1	Serial Port Combiner												
-1	CMM202 Phone Modem												
-1	Delete Programming services required to provide LC3000 MTU primary/backup failover configuration.												

Total Deduct price for Option Item G is \$ -3,149.00

Clarifications:

- Pricing is based on doing a functional upgrade to the current InTouch Runtime License. A signed Functional Upgrade Agreement must be returned to complete the upgrade. The agreement requires the original license to be destroyed.
- Startup services are based on two (2) trips to the jobsite and on the premise that the existing system is operating properly. Any additional trips required to complete startup, resulting from non-Siemens Water Technologies equipment being non-functional or any additional time spent as a result of making repairs to the existing system will be charged to the Purchaser at the current demand service rate. We require notification at least ten (10) working days prior to the date start-up service is required.
- Other than retagging of Input/Output points and retagging of alarm data, no other modifications will be made to the existing Wonderware graphic displays or their toolbars. The existing screen content and resolution will remain the same.

Exclusions:

Unless specifically referenced above, Quality Flow Systems, Inc and Siemens Water Technologies excludes:

- All taxes, fees, permits, lien waivers, bonds and licenses.
- Startup, modifications and training trips and services.
- Onsite installation supervision.
- ISA loop drawings or P&IDs.
- Pricing for items having a quantity of more than 1 cannot be assumed to be equally divisible into the total item price. If a quantity less than quoted is required please consult Siemens Water Technologies for pricing verification or a new quotation.
- Receipt, storage, setting in place, installing or terminating any equipment or instrument.
- The supply of any mechanical appurtenances for panels or instruments. This includes, but is not limited to power company transformers/metering, pumps, motors, pull boxes, junction boxes, piping, tubing, valves, lighting panels, transformers, anchors, support stands, ground cables or rods, stilling wells, etc.
- The supply of interconnecting materials external to enclosures, i.e. wiring, cable, conduit, pressure taps, tubing, telemetry or phone lines, or special cables.
- The supply of or installation of separate mounting brackets, bases, stands, pushbutton stations, power fuses, pilot control switches, disconnects, manual starters or disconnect panels unless specifically listed in our scope of supply.
- Any demolition, removal, transfer or disposal.
- Concrete work of any type.
- Installation and final termination of all wires or cables.
- Communication cable / telephone line coordination or connection.



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- Jobsite progress or preconstruction meeting attendance.
- Any specialty electrical testing, including but not limited to insulation, resistance, grounding.
- Any specialty tools used for construction, testing or startup of equipment.

Proposed Delivery Schedule:

Delivery 28 to 32 weeks after receipt of purchase order.

Siemens Water Technologies' commitment to deliver in accordance within the contract schedule is contingent upon a prompt receipt of order, prompt negotiations of terms and conditions and a prompt submittal review/approval process. Our timeline for delivery schedules will begin once terms and conditions are negotiated and agreed upon by buyer and seller.

Delivery and Storage:

Freight allowed to job site, net F.O.B. Shipping Point. Off-loading and storage at site is the responsibility of others.

Terms:

Quotation is valid for 6 months from "Quotation Date" listed on the top of page one (1). Based on Quality Flow Systems, Inc General Terms and Conditions of sale. Quality Flow Systems, Inc standard progress billing schedule for this project is as follows:

30% due upon record submittal drawing shipment and purchase of hardware and software packages.

60% due upon shipment of hardware and software equipment to jobsite.

10% due upon completion of startup and training services.

Invoice payment terms net 30 days

Thank you for this opportunity to be of service to you. If you have any questions, please don't hesitate to call.

Sincerely,

Jeff Seaton
Quality Flow Systems, Inc.