

**Council Meeting: January 15, 2013****SUBJECT: Award of a Contract for a Supervisory Control and Data Acquisition (SCADA) System Upgrade for the City's Water Supply and Distribution Operations (F1106-73)****BACKGROUND**

Approval is requested to award a contract in the amount of \$458,820 to Glenmount Global Solutions of Napa for an upgrade to the City's existing SCADA system. Approval is also requested for a 10% project contingency in the amount of \$45,882.

**DISCUSSION**

The SCADA system monitors and controls the operation of the City's water supply and distribution system. The system is operated through a SCADA control server at the Corporation Yard facility and is connected to twenty six sites consisting of five sanitary sewer lift stations, two stormwater pump stations, one recycled water plant, and eighteen potable water sites. The system provides for remote control access and monitoring capabilities to provide information on tank levels, pump/motor and well operations, valve positions (open/closed), and distribution of water pressure and flow.

The current system was constructed in 2006 as a phase 1 project, with phase 2 scheduled to incorporate Pressure Reducing Valves (PRVs) at multiple sites throughout the City. However, through the design and scoping for the phase 2 project, staff determined that rather than continue with phase 2, replacing the current system will address and complete the SCADA needs for the water and sewer distribution and collection systems. The current system runs on proprietary software, the manufacturer no longer supports product updates, obtaining service has become difficult and expensive, and the computer server hosting the SCADA system is in danger of imminent failure. Additionally, Council recently awarded a contract to HydroScience Engineers of San Jose to conduct a comprehensive preliminary design study of the potable water system which will evaluate pressure regulation throughout the City and will likely result in a reduction in the number of PRV sites (RTC No. 12-265).

The system upgrade will replace the existing primary and backup computer servers and operating system software, implement a monitoring and controlling software system, and provide recommendations for physical improvements to the existing SCADA room at the Corporation Yard to provide for better security and efficiency. The recommended contract will be for a turnkey solution, with Glenmount Global Solutions providing equipment, software programming, and specialized training for City staff on operating and maintaining the new system.

Request for Proposal (RFP) specifications were prepared by Public Works, Environmental Services, and Purchasing Division staff. RFP No. F1106-73 was released on September 12, 2012, direct mailed to seven Bay Area engineering firms and posted on the Onvia Demandstar public procurement network. Twenty nine firms requested RFP documents.

One responsive proposal was received, from Glenmount Global Solutions of Napa, in the amount of \$478,912 for services as specified. The proposal was evaluated by staff from the Departments of Public Works and Information Technology, as well as the City's technical consultant. A software demo of the proposed product was conducted at the Corporation Yard, followed by an extensive question and answer period. Negotiation with the consultant resulted in its proposal price being reduced from \$478,912 to \$458,820. Staff recommends awarding a contract for the SCADA System Upgrade to Glenmount Global Solutions, of Napa.

### **FISCAL IMPACT**

Contract costs are as follows:

|                           |                 |
|---------------------------|-----------------|
| SCADA System Upgrades     | \$458,820       |
| Project contingency (10%) | <u>\$45,882</u> |
| Total Cost                | \$504,702       |

Budgeted funds are available in Capital Project 815203 (Replacement of Water/Sewer Supervisory Control System). The project is funded by the Water Supply and Distribution Fund. The purchase price includes an initial one-year warranty period for system maintenance and support (which begins once the system is fully operational), and all required training. Annual maintenance and support costs for the current system has been \$20,000, but this amount has not included software upgrades. Ongoing system support costs for the new system include software upgrades, and consequently may be higher than the current amount spent. Staff will evaluate ongoing costs as the installation progresses. Additional funds needed for adequate system support will be identified in the FY 2014/15 Recommended Budget cycle.

Because the new system includes setup, configuration and installation of hardware and software to be integrated with all water and sewer sites, a 10% contingency in the amount of \$45,882 is recommended, to be used if necessary. Potential issues that may require contingency funds are the Corporation Yard SCADA room configuration, the possible replacement or upgrading of existing Programmable Logic Controllers (PLCs) in the field necessary for system integration, and additional vendor site visits.

In order to complete the work associated with this contract, approximately \$5,000 in budgeted project funding will be utilized to upgrade the electrical panel in the SCADA Room at the Corporation Yard, and for Microsoft Office licenses for notebook computers to be used by Operations staff for remote access to the SCADA System.

**PUBLIC CONTACT**

Public contact was made by posting the Council agenda on the City's official-notice bulletin board outside City Hall, at the Sunnyvale Senior Center, Community Center and Department of Public Safety; and by making the agenda and report available at the Sunnyvale Public Library, the Office of the City Clerk and on the City's Web site.

**RECOMMENDATION**

It is recommended that Council:

1. Award a contract, in substantially the same format as the attached draft and in the amount of \$458,820 to Glenmount Global Solutions for the subject project, and authorize the City Manager to execute the contract when all necessary conditions have been met; and
2. Approve a 10% project contingency in the amount of \$45,882.

Reviewed by:

Grace K. Leung, Director of Finance  
Prepared by: Pete Gonda, Purchasing Officer

Reviewed by:

John Stufflebean, Director, Department of Environmental Services

Reviewed by:

Kent Steffens, Director, Department of Public Works

Approved by:

Gary M. Luebbers  
City Manager

**Attachments**

- A. Draft Consultant Services Agreement

**DRAFT  
ATTACHMENT A**

**CONSULTANT SERVICES AGREEMENT BETWEEN CITY OF  
SUNNYVALE AND GLENMOUNT GLOBAL SOLUTIONS FOR  
SUPERVISORY CONTROL AND DATA ACQUISITION (SCADA) SYTEM  
UPGRADE**

THIS AGREEMENT, dated \_\_\_\_\_, is by and between the CITY OF SUNNYVALE, a municipal corporation ("CITY"), and GLENMOUNT GLOBAL SOLUTIONS ("CONSULTANT").

WHEREAS, CITY desires to secure professional services necessary for investigation, analysis, design, provision of computer software and hardware, installation, consultation, and other services for a project known as the City of Sunnyvale Supervisory Control and Data Acquisition (SCADA) System Upgrade; and

WHEREAS, CONSULTANT represents that it, and its sub-consultants, if any, possess the professional qualifications and expertise to provide the required services and are licensed by the State of California to practice engineering in the required disciplines;

NOW, THEREFORE, THE PARTIES ENTER INTO THIS AGREEMENT.

1. Services by CONSULTANT

CONSULTANT shall provide services in accordance with Exhibit "A" entitled "Scope of Work." All exhibits referenced in this Agreement are attached hereto and are incorporated herein by reference. To accomplish that end, CONSULTANT agrees to assign Brian Goodrich to this project, to act in the capacity of Project Manager and personally direct the professional services to be provided by CONSULTANT.

Except as specified in this Agreement, CONSULTANT shall furnish all technical and professional services, including labor, material, equipment, transportation, supervision and expertise to perform all operations necessary and required to satisfactorily complete the services required in this Agreement.

2. Notice to Proceed/Completion of Services

(a) CONSULTANT shall commence services upon receipt of a Notice to Proceed from CITY. Notice shall be deemed to have occurred three (3) calendar days after deposit in the regular course of the United States mail.

(b) When CITY determines that CONSULTANT has satisfactorily completed the services defined in Exhibit "A," CITY shall give CONSULTANT written Notice of Final Acceptance, and CONSULTANT shall not incur any further costs hereunder. CONSULTANT may request this determination of completion when, in its opinion, it has satisfactorily completed the Scope of Work (Exhibit "A"), and if so requested, CITY shall make this determination within fourteen (14) days of such request.

3. Project Schedule

The Project Schedule is set forth in the attached Exhibit "A-1."

4. Payment of Fees and Expenses

Payments shall be made to CONSULTANT on a monthly basis as set forth in the attached Exhibit "B" entitled "Compensation Schedule." All compensation will be based on monthly billings as provided in Exhibit "B." Compensation will not be due until said detailed billing is submitted to CITY within a reasonable time before payment is expected to allow for normal CITY processing. An estimate of the percent of total completion associated with the various categories of the services shall be furnished by CONSULTANT with said billing. When applicable, copies of pertinent financial records will be included with the submission of billing(s) for all direct reimbursables. Compensation shall not exceed the amounts set forth in Exhibit "B" for each phase. In no event shall the total amount of compensation payable under this agreement exceed the sum of Four Hundred Fifty Eight Thousand Eight Hundred Twenty and No/100 Dollars (\$458,820.00) unless upon written modification of this Agreement. All invoices, including detailed backup, shall be sent to City of Sunnyvale, attention Accounts Payable, P.O. Box 3707, Sunnyvale, CA 94088-3707. All project payment milestones shall be as listed in Exhibit "B".

5. No Assignment of Agreement

CONSULTANT bind themselves, their partners, successors, assigns, executors, and administrators to all covenants of this Agreement. Except as otherwise set forth in this Agreement, no interest in this Agreement or any of the work provided for under this Agreement shall be assigned or transferred, either voluntarily or by operation of law, without the prior written approval of CITY. However, claims for money due to or to become due to CONSULTANT from CITY under this Agreement may be assigned to a bank, trust company or other financial institutions, or to a trustee in bankruptcy, provided that written notice of any such assignment or transfer shall be first furnished to CITY. In case of the death of one or more members of CONSULTANT's firm, the surviving member or members shall complete the services covered by this Agreement. Any such assignment shall not relieve CONSULTANT from any liability under the terms of this Agreement.

6. Consultant is an Independent Contractor

CONSULTANT is not an agent or employee of CITY but is an independent contractor with full rights to manage its employees subject to the requirements of the law. All persons employed by CONSULTANT in connection with this Agreement will be employees of CONSULTANT and not employees of CITY in any respect. CONSULTANT is responsible for obtaining statutory Workers' Compensation coverage for its employees.

7. Consultant's Services to be Approved by a Registered Professional (Where Applicable)

All reports, costs estimates, plans and other documents which may be submitted or furnished by CONSULTANT shall be approved and signed by a qualified registered professional in the State of California. The title sheet for calculations, specifications and

reports, and each sheet of plans, shall bear the professional seal, certificate number, registration classification, expiration date of certificate and signature of the professional responsible for their preparation.

8. Standard of Workmanship

CONSULTANT represents and maintains that it is skilled in the professional calling necessary to perform the services and its duties and obligations, expressed and implied, contained herein, and CITY expressly relies upon CONSULTANT's representations regarding its skills and knowledge. CONSULTANT shall perform such services and duties in conformance to and consistent with the standards generally recognized as being employed by professionals in the same discipline in the State of California.

The plans, designs, specifications, estimates, calculations reports and other documents furnished under the Scope of Work (Exhibit "A") shall be of a quality acceptable to CITY. The criteria for acceptance of the work provided under this Agreement shall be a product of neat appearance, well-organized, technically and grammatically correct, checked and having the maker and checker identified. The minimum standard of appearance, organization and content of the drawings shall be that used by CITY for similar projects.

9. Warranty (Software and Manufacturing)

CONSULTANT warrants all equipment manufactured by CONSULTANT to be free from defects in materials and workmanship under normal use and services for a period of twelve (12) months from date of shipment. All parts or products not manufactured by CONSULTANT will be covered only by the express warranty of the manufacturer. The warranty does not extend to damage or wear caused by CITY misuse, negligence, accident, corrosion, modification, faulty installation, loss of product, or tampering in a manner to impair normal operation of the equipment.

CONSULTANT will replace, or at its option, repair, any equipment or parts which are found defective in material or workmanship within one year from date of delivery. The CONSULTANT's obligation with respect to such parts shall be limited to replacement or repair FOB jobsite, and in no event shall the CONSULTANT be liable for consequential or special damages, or for transportation, installation, adjustment or other expenses which may arise in connection with such equipment or parts. Expendable items are specifically excluded from this warranty.

The foregoing warranty is expressly made in lieu of any and all other warranties, express or implied, including the warranties of merchantability and fitness for any particular purpose.

No waiver, modification or alteration of the foregoing shall be valid unless made in writing and signed by an executive officer of the CONSULTANT.

Field Service: CONSULTANT warrants that Products comprised of services, including engineering and custom application programming services, whether provided on a fixed cost or time and material basis, will be performed in accordance with generally accepted industry practices to the extent such services are subject to written acceptance criteria agreed to in advance by CONSULTANT. All other warranties relative to provided services are disclaimed.

City Specifications: CONSULTANT does not warrant and will not be liable for any design, materials or construction criteria furnished or specified by CITY and incorporated into the Products or for Products made by or sourced from other manufacturers or vendors specified by CITY. Any warranty applicable to such CITY-specified Products will be limited solely to the warranty, if any, extended by the original manufacturer or vendor. To the extent that CONSULTANT has relied upon any data or information supplied by CITY to CONSULTANT ("Data") in the selection or design of the products and the preparation of CONSULTANT's quotation, and the Data is inadequate or inaccurate, any warranties or other provisions contained herein which are affected by such conditions shall be null and void.

Remedies: Satisfaction of the above warranties will be limited, at CONSULTANT's option, to the replacement, repair, re-performance or modification of, or issuance of a credit for the purchase price of the Products involved, and where applicable, only after the return of such Products with CONSULTANT's consent. Replacement Products may be new or reconditioned. Any warranty service (consisting of time, travel and expenses related to such services) performed other than at CONSULTANT's facility, will be at CITY's expense.

General: Warranty satisfaction is available only if (a) CONSULTANT is notified in writing within five (5) days of alleged warranty concern and (b) CONSULTANT's examination discloses, to its satisfaction, that any alleged defect has not been caused by CITY misuse, neglect, improper installation, operation, maintenance, repair, alteration or modification, accident, or unusual deterioration or degradation of the Products or parts thereof due to physical environment or electrical or electromagnetic noise environment.

#### 10. Responsibility of CONSULTANT

CONSULTANT shall be responsible for the professional quality, technical accuracy and the coordination of the services furnished by it under this Agreement. Neither CITY's review, acceptance nor payment for any of the services required under this Agreement shall be construed to operate as a waiver of any rights under this Agreement or of any cause of action arising out of the performance of this Agreement and CONSULTANT shall be and remain liable to CITY in accordance with applicable law for all damages to CITY caused by CONSULTANT's negligent performance of any of the services furnished under this Agreement.

Any acceptance by CITY of plans, specifications, calculations, construction contract documents, reports, diagrams, maps and other material prepared by CONSULTANT shall not, in any respect, absolve CONSULTANT for the responsibility CONSULTANT has in accordance with customary standards of good engineering practice in compliance with applicable Federal, State, County and/or municipal laws, ordinances, regulations, rules and orders.

#### 11. Right of CITY to Inspect Records of CONSULTANT

CITY, through its authorized employees, representatives, or agents, shall have the right, at any and all reasonable times, to audit the books and records including, but not limited to, invoices, vouchers, canceled checks, time cards of CONSULTANT for the purpose of verifying any and all charges made by CONSULTANT in connection with this Agreement. CONSULTANT shall maintain for a period of three (3) years from the date

of final payment to CONSULTANT or for any longer period required by law, sufficient books and records in accordance with generally accepted accounting practices to establish the correctness of all charges submitted to CITY by CONSULTANT. Any expenses not so recorded shall be disallowed by CITY.

12. Confidentiality of Material

All ideas, memoranda, specifications, plans, calculations, manufacturing procedures, data, drawings, descriptions, documents, discussions or other information developed or received by or for CONSULTANT and all other written information submitted to CONSULTANT in connection with the performance of this Agreement shall be held confidential by CONSULTANT and shall not, without the prior written consent of CITY be used for any purposes other than the performance of the Project services, nor be disclosed to an entity not connected with the performance of the Project services. Nothing furnished to CONSULTANT which is otherwise known to CONSULTANT or is or becomes generally known to the related industry shall be deemed confidential. CONSULTANT shall not use CITY's name, insignia or distribute exploitative publicity pertaining to the services rendered under this Agreement in any magazine, trade paper, newspaper or other medium without the express written consent of CITY.

13. No Pledging of CITY's Credit

Under no circumstances shall CONSULTANT have the authority or power to pledge the credit of CITY or incur any obligation in the name of CITY.

14. Ownership of Material

All material, including information developed on computer(s), which shall include, but not be limited to, data, sketches, tracings, drawings, plans, diagrams, quantities, estimates, specifications, proposals, tests, maps, calculations, photographs, reports and other material developed, collected, prepared or caused to be prepared, under this Agreement shall be the property of CITY, but CONSULTANT may retain and use copies thereof.

CITY shall not be limited, in any way, in its use of said material, at any time, for work associated with Project. However, CONSULTANT shall not be responsible for damages resulting from the use of said material for work other than Project, including, but not limited to the release of this material to third parties for work other than on Project.

Title to the application of software remains with CONSULTANT, except those components of Products explicitly sublicensed to CITY from the original intellectual right holder, in which case CITY is subject to any third party licenses. CONSULTANT will grant to CITY a personal, paid-up, perpetual non-exclusive, non-transferable license to use application software in the application for which the software was designed in conjunction with the specified equipment. CONSULTANT retains exclusive title to and use of Intellectual Property, including all patents, copyrights, mask works, industrial property rights, trademarks, trade secrets, and other rights and information of a similar nature worldwide.

15. Hold Harmless/Indemnification

To the extent permitted by law (including, without limitation, California Civil Code section 2782.8), CONSULTANT agrees to indemnify, defend and hold harmless CITY, its officers and employees from any and all claims, demands, actions, causes of action, losses, damages, liabilities, known or unknown, and all costs and expenses, including reasonable attorneys' fees in connection with any injury or damage to persons or property to the extent arising out of any negligence, recklessness or willful misconduct of CONSULTANT, its officers, employees, agents, contractor, subcontractors or any officer, agent or employee thereof in relation to CONSULTANT's performance under this Agreement. Such defense and indemnification shall not apply in any instance of and to the extent caused by the sole negligence, recklessness or willful misconduct of CITY, its officers, employees, agents or representatives.

In no event will CONSULTANT be liable for incidental, indirect, or consequential damages of any kind. The term "consequential damages" shall include, but not be limited to loss of anticipated profits, revenue or costs incurred including without limitation for capital, fuel and power, and claims of CITY's customers, CONSULTANT's maximum cumulative liability relative to other claims and liabilities, including that with respect to direct damages and obligations under any indemnity, whether or not insured, will not exceed the cost of the products/services giving rise to the claim or liability. Any action against CONSULTANT must be brought within eighteen (18) months after the cause of action accrues. These disclaimers and limitations of liability will apply regardless of any other.

16. Insurance Requirements

CONSULTANT shall take out and maintain during the life of this Agreement policies of insurance as specified in Exhibit "C" attached and incorporated by reference, and shall provide all certificates and/or endorsements as specified in Exhibit "C."

17. No Third Party Beneficiary

This Agreement shall not be construed or deemed to be an agreement for the benefit of any third party or parties and no third party or parties shall have any claim or right of action hereunder for any cause whatsoever.

18. Notices

All notices required by this Agreement, other than invoices for payment which shall be sent directly to Accounts Payable, shall be in writing, and shall be personally delivered, sent by first class with postage prepaid, or sent by commercial courier, addressed as follows:

To CITY:                      Jennifer Ng, Senior Engineer  
   Department of Public Works  
   CITY OF SUNNYVALE  
   P. O. Box 3707  
   Sunnyvale, CA 94088-3707

To CONSULTANT: GLENMOUNT GLOBAL SOLUTIONS  
Attn: Brian Goodrich  
2650 Napa Valley Corporate Drive  
Napa, CA 94558

Nothing in this provision shall be construed to prohibit communication by more expedient means, such as by telephone or facsimile transmission, to accomplish timely communication. However, to constitute effective notice, written confirmation of a telephone conversation or an original of a facsimile transmission must be sent by first class mail, by commercial carrier, or hand-delivered. Each party may change the address by written notice in accordance with this paragraph. Notices delivered personally shall be deemed communicated as of actual receipt; mailed notices shall be deemed communicated as of three days after mailing, unless such date is a date on which there is no mail service. In that event communication is deemed to occur on the next mail service day.

19. Waiver

CONSULTANT agrees that waiver by CITY of any one or more of the conditions of performance under this Agreement shall not be construed as waiver(s) of any other condition of performance under this Agreement.

20. Amendments

No alterations or changes to the terms of this Agreement shall be valid unless made in writing and signed by both parties.

21. Integrated Agreement

This Agreement embodies the agreement between CITY and CONSULTANT and its terms and conditions. No verbal agreements or conversation with any officer, agent or employee of CITY prior to execution of this Agreement shall affect or modify any of the terms or obligations contained in any documents comprising this Agreement. Any such verbal agreement shall be considered as unofficial information and in no way binding upon CITY.

22. Conflict of Interest

CONSULTANT certifies that to the best of its knowledge, no CITY employee or officer of any public agency interested in this Agreement has any pecuniary interest in the business of CONSULTANT and that no person associated with CONSULTANT has any interest that would conflict in any manner or degree with the performance of this Agreement.

23. California Agreement

This Agreement has been entered into in the State of California and this Agreement shall be governed by California law.

24. Records, Reports and Documentation

CONSULTANT shall maintain complete and accurate records of its operation, including any and all additional records required by CITY in writing. CONSULTANT shall submit to CITY any and all reports concerning its performance under this Agreement that may be requested by CITY in writing. CONSULTANT agrees to assist CITY in meeting CITY's reporting requirements to the state and other agencies with respect to CONSULTANT's work hereunder. All records, reports and documentation relating to the work performed under this Agreement shall be made available to City during the term of this Agreement.

25. Termination of Agreement

If CONSULTANT defaults in the performance of this Agreement, or materially breaches any of its provisions, CITY at its option may terminate this Agreement by giving written notice to CONSULTANT. If CITY fails to pay CONSULTANT, CONSULTANT at its option may terminate this Agreement if the failure is not remedied by CITY within thirty (30) days after written notification of failure to pay.

Without limitation to such rights or remedies as CITY shall otherwise have by law, CITY also shall have the right to terminate this Agreement for any reason upon ten (10) days' written notice to CONSULTANT. In the event of such termination, CONSULTANT shall be compensated in proportion to the percentage of services performed or materials furnished (in relation to the total which would have been performed or furnished) through the date of receipt of notification from CITY to terminate. CONSULTANT shall present CITY with any work product completed at that point in time. In such event, CITY shall pay CONSULTANT for the work actually performed plus any documented and verifiable non-cancellable costs and expenses incurred by the Seller through the date of written notice of termination.

26. Subcontracting

None of the services covered by this Agreement shall be subcontracted without the prior written consent of CITY. Such consent may be issued with notice to proceed if subcontract consultants are listed in the project work plan.

27. Fair Employment

CONSULTANT shall not discriminate against any employee or applicant for employment because of race, color, creed, national origin, sex, age, condition of physical handicap, religion, ethnic background or marital status, in violation of state or federal law.

28. Changes

CITY or CONSULTANT may, from time to time, request changes in the terms and conditions of this Agreement. Such changes, which are mutually agreed upon by CITY and CONSULTANT, shall be incorporated in amendments to this Agreement.

29. Other Agreements

This Agreement shall not prevent either Party from entering into similar agreements with others.

30. Severability Clause.

In case any one or more of the provisions contained herein shall, for any reason, be held invalid, illegal or unenforceable in any respect, it shall not affect the validity of the other provisions which shall remain in full force and effect.

31. Captions

The captions of the various sections, paragraphs and subparagraphs, of the contract are for convenience only and shall not be considered nor referred to for resolving questions of interpretation.

32. Entire Agreement; Amendment

This writing constitutes the entire agreement between the parties relating to the services to be performed or materials to be furnished hereunder. No modification of this Agreement shall be effective unless and until such modification is evidenced by writing signed by all parties.

33. Miscellaneous

Time shall be of the essence in this Agreement. Failure on the part of either party to enforce any provision of this Agreement shall not be construed as a waiver of the right to compel enforcement of such provision or any other provision. This Agreement shall be governed and construed in accordance with the laws of the State of California.

IN WITNESS WHEREOF, the parties have executed this Agreement.

ATTEST:

CITY OF SUNNYVALE ("CITY")

By \_\_\_\_\_  
City Clerk

By \_\_\_\_\_  
City Manager

{CONSULTANT'S NAME}  
("CONSULTANT")

APPROVED AS TO FORM:

By \_\_\_\_\_

\_\_\_\_\_  
Name/Title

\_\_\_\_\_  
City Attorney

By \_\_\_\_\_

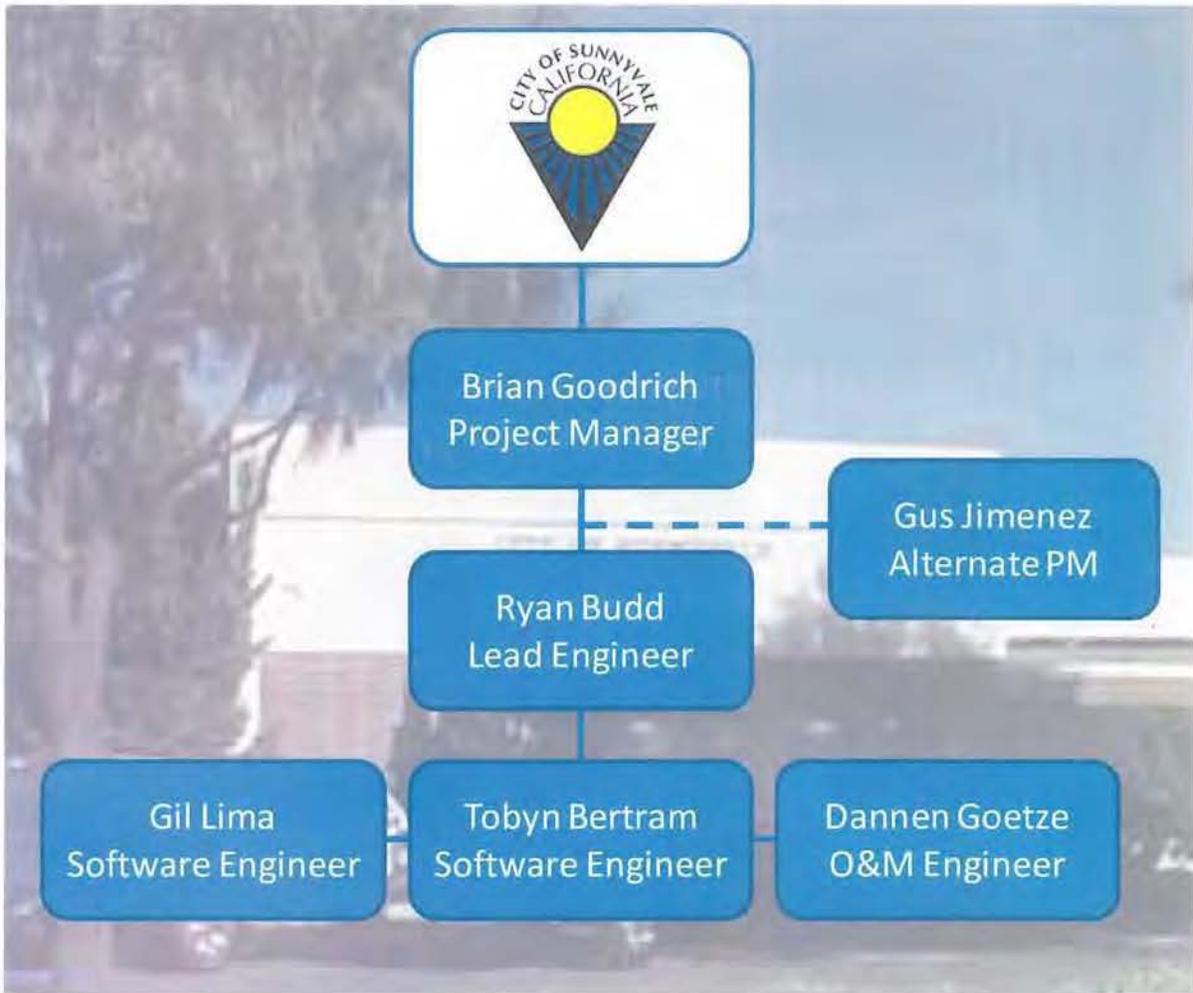
\_\_\_\_\_  
Name/Title



## 4 INTEGRATOR'S ORGANIZATION

### 4.1 STAFF QUALIFICATIONS

GGs's staff has extensive experience in the Water/Wastewater field and has designed, developed, integrated, replaced, upgraded and commissioned SCADA systems using software packages from the leading industry suppliers. The proposed team members all have recent experience with SCADA Software packages from Schneider Electric/Control Microsystems, Invensys/Wonderware, Rockwell Automation, and many others. Individual summaries of the proposed team's qualifications and their relevant experience follow the project organizational chart.



## 4.2 INDIVIDUAL QUALIFICATIONS SUMMARIES

All members of the proposed team work out of GGS's Napa, California office. Below are the summary qualifications of the proposed team members. Resumes are provided in Appendix A.

**Brian Goodrich, Project Manager-** Over 22 years experience in design engineering and project management. In the last five years he has delivered over 35 Water/Wastewater projects with a total of over \$15 million in contract value. As the project manager, Brian will be the primary point of contact for the City of Sunnyvale, and other relevant stakeholders, on all commercial and technical issues. Additionally, he will manage the execution of the design process utilized in the engineering services portion of the project. During this phase, the prioritized requirements of the new SCADA system will be determined. As the project manager he will provide overall technical and commercial quality control to ensure the City's requirements are met.

**Ryan Budd, Lead Engineer-** Over 8 years experience developing, integrating, and commissioning SCADA/PLC controls in Water/Wastewater applications. Ryan will act as the technical lead as well as site supervisor for the commissioning and start-up phase of the project. Ryan has extensive programming, commissioning, and customer service expertise. He is fluent in a number of the leading SCADA packages mentioned elsewhere in this proposal.

**Gil Lima, Software Engineer-** Over 15 years experience in SCADA systems integration in the Water/Wastewater industry. Gil's role will be to set HMI and alarming standards and to develop screens and reporting. Gil has extensive programming, commissioning, and compliance reporting experience. He has substantial experience and expertise with the leading SCADA packages we have identified, and more. Additionally, Gil will be a key member of the commissioning team.

**Tobyn Bertram, Software Engineer-** Over 7 years experience in SCADA systems integration in Water/Wastewater. Tobyn's role will be to develop screens and system testing. He has extensive programming, commissioning, and customer service expertise. He also has substantial experience and expertise with the leading SCADA packages we have identified, and more. Additionally, he is well-versed in treatment processes.

**Dannen Goetze, O & M Engineer-** Mr. Goetze has over 30 years of instrumentation, process control and system integration experience. His tasks have included construction, start-up, commissioning, training and professional services contracts. Mr. Goetze has managed projects with operating budgets exceeding 4.5 million dollars. Dannen will assist during the commissioning and start-up phase and will assume a key role during the operations and maintenance phase of the project.

**Gus Jimenez, Back-up Project Manager -** Over 25 years experience in project and program management, instrumentation, process control and system integration. His tasks have included hardware/software/instrumentation designs, switchgear and motor control center design, PLC and HMI development, construction, start-up, commissioning, training, professional services contracts, and project management. Gus will act as an additional technical resource on this project and will serve as the back-up project manager.

## 5 GENERAL DESCRIPTION/OVERVIEW OF SCADA SYSTEM ARCHITECTURE

The following sections describe and overview of the software application and architecture along with a narrative on the project tasks as called out in the RFP.

### 5.1 SOFTWARE SYSTEM OVERVIEW

GGs proposes the use of Schneider Electric's ClearSCADA application. It is an integrated SCADA host software and comprises three components; the server, a windows client known as 'ViewX' and a web client known as 'WebX'. The server performs all of the functions of the SCADA system including the polling engine, real-time database, alarm processor, historian, reporting and running a web server. The client applications function as the HMI and are connected to the server in a client-server architecture using TCP/IP network.

For high reliability systems, ClearSCADA can be configured in a multitude of redundancy options including dual, triple, disaster recover (DR) sites and remote performance servers for local access. Even LAN/WAN links and connections to remote controller can be configured for redundant paths.

One potential issue for SCADA software when deployed across WAN links is how to manage the graphic displays. If these reside on the SCADA server a high bandwidth link is needed for reasonable pull-up times. An alternative is to store a local copy of graphics on the remote workstation, but this creates an issue with version management. ClearSCADA native format for graphics is vector based and this is typically 1/20 the size over bitmap graphics, therefore graphics are managed by the server and friendly for low bandwidth communication links.

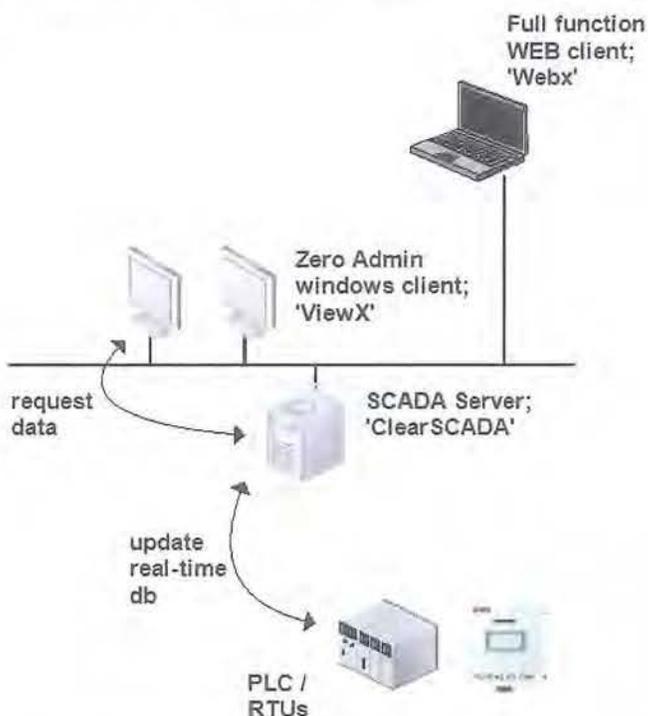


Figure 1: ClearSCADA Architecture Overview



There are 3 components to ClearSCADA:

1. ClearSCADA Server (point based)
2. ViewX windows client (operator station)
3. WebX client (remote/intermittent user)-optional

It is important to remember that the server manages the complete system, that is:

- communication drivers
- alarm and event journal
- historic archive (historian)
- configuration database

The clients do not store any part of the SCADA database locally, hence they are known as Zero Administration Clients (ZAC)

The specific architecture, of the proposed system is shown in the System Architecture, figure 2. This architecture utilizes two SCADA servers for full redundancy of the SCADA system along with two operator work station clients (ViewX). Optionally, the system can integrate seamlessly with a web based client (WebX) for remote access via laptop computer. The City has standardized on Schneider Electric's SCADAPack 32. Their ClearSCADA application is tightly integrated with this product and will allow for seamless startup and commissioning of the new system. The system requirements table has been completed and is presented in Appendix B for your reference.

## 5.2 SOFTWARE SYSTEM ALTERNATIVE

GGG committed to presenting the City of Sunnyvale with the SCADA solution that we believe provides the best value per the City's specifications, and have done so with our proposal of Schneider Electric's ClearSCADA application. Nevertheless, we also feel it is our responsibility to discuss with the City how your SCADA system selection today may impact your future system development plans.

The capabilities of the ClearSCADA system will satisfy your specified needs and the system is scalable to accommodate growth. However, there are additional capabilities available that the City may be considering for future implementation that might be better served by a different system. For example, integration of asset management, business intelligence, business process workflow, and energy management systems with your SCADA system enhance your ability to optimize efficiency, cut costs, improve procedural consistency and training, and increase safety. These capabilities are available as add-on modules to a Wonderware SCADA system.

- 1) **Asset Management:** Asset reliability and performance can be a major factor affecting operations and maintenance costs. The ability to provide maintenance management, spare parts and inventory management, and to provide or interface with your own procurement management capabilities, lays the foundation to maximize your asset performance. Real-time, actionable asset intelligence to facilitate your enterprise-wide asset strategies is available with condition-based monitoring solutions, added on to your base, computerized maintenance management system.
- 2) **Business Intelligence:** In industries like water/wastewater, meaningful data is often spread across the enterprise. Disparate data silos emerge, isolating information from SCADA systems, ERP systems, security systems, transaction services systems, and more. The Wonderware Intelligence module allows you to create customized Key Performance Indicators (KPIs), correlate data across traditional

boundaries to evaluate performance in more meaningful ways, and quickly develop dashboards that allow you to leverage information for better decision-making.

- 3) **Business Process Management (BPM):** BPM solutions allow firms to model, implement, assess, and improve their processes. When manual and automated processes come together and impact one another, it is especially important to institutionalize best practices that will protect the company whether the events or actions are considered normal, unscheduled, or disruptive. A storm water event might be an applicable example for your facilities. Equally significant in these situations is the ability to maintain comprehensive process audit trails.
- 4) **Energy Management:** Energy costs are one of the major expenses for water and wastewater utilities and these costs continue to rise. Initiatives to be responsible with power usage are increasing and ultimately will lead to enforced regulations. Energy management solutions allow firms to monitor and manage their energy usage and costs, identify opportunities to improve, and make strategic decisions regarding choices such as which water source has the lowest delivery cost.

Because the initial costs and support costs were slightly higher than those for the Control Microsystems solution, we have presented ClearSCADA as the best value solution to meet your specifications. If you would like to weigh the minor cost differences against the potential system capabilities, we would be happy to discuss those issues with you.

## 5.3 PROJECT TASK NARRATIVES

The following are narrative descriptions of proposed services based on the project tasks called for in the RFP.

### 5.3.1 PROJECT ADMINISTRATION

GGS has adopted the Project Management Institute's (PMI) five step project management methodology. In addition to adopting PMI's proven project discipline, we have a mature project management organization (PMO) with project managers and administrators that are 100% dedicated to this task. They are focused on managing project expectations per owner requirements. GGS has existing tools and processes in place for quality assurance, reporting, scheduling, and for tracking of project performance. Your assigned project manager will be the dedicated single point of contact for all communications, schedule, scope, project quality, project performance, and budget.

### 5.3.2 FIELD INVESTIGATION

GGS will meet with the City's SCADA users, at the Corporation Yard, to determine their needs for the SCADA room reconfiguration. We will need to determine required security, needed furnishings, existing utilities and their locations, physical dimensions, and a location for placement of the new SCADA hardware. At this time physical dimensions will be recorded. Upon collection of user needs and the existing physical layout, GGS will sketch out several possible layouts for review and selection by the City. Final documents will include bills of materials, room layout of furnishing and SCADA hardware. It will include placement of servers, workstations, monitors and displays, and SCADA console along with any utility changes. We have also allotted time for coordination and investigation of sites with pending construction upgrades.

### 5.3.3 PROCUREMENT OF HARDWARE AND SOFTWARE

Provided SCADA hardware and software will be procured by GGS. The City will need to provide its designated owner's contact information so that software can be registered to the City at time of procurement.

### **5.3.4 INSTALLATION, CONFIGURATION, INTEGRATION, AND COMMISSIONING**

Please refer to section 6 of this proposal for detailed scheduling and task related to our project approach. It covers the complete project from initiation, submittals, meetings, application development, integration and commissioning. Note that we have allotted meeting and design review time for the development of HMI graphics and reporting submittals with the owner. This will insure that the owner's specific needs are accounted for in a timely manner.

### **5.3.5 TRAINING**

Our proposal complies with the requested training and training plan requirements. This includes maintenance technician and operator training, called out in project task 8 of the RFP, along with documentation called out in 13410 3.03, and with application, basic, and advanced training called out in 13453 3.01 F. While GGS has quoted the training requirements per the specification, we believe that the training called out is in excess of the need relative to the scope and complexity of the project. We believe that a custom training plan tailored to the specific needs of the City and one that is specific to the application and selected software would be better suited for the City. This would be an opportunity to reduce project pricing.

### **5.3.6 INSTALLATION AT EXISTING SERVER RACK AND SWITCHOVER TO NEW SCADA SYSTEM**

To facilitate operation of both the existing and new SCADA systems, GGS includes 1 additional server rack that will be used for the new SCADA servers and UPS's. This will allow for the existing and new systems to be operated independently during phase I and will allow for the removal of the existing system without disruption of the new system. Additional benefits are that the system can be assembled and tested at GGS's facility, in advance of shipment to the site. This will facilitate rapid startup, once the server system arrives onsite. This new server rack would readily roll into the permanent location identified in the SCADA room relocation recommendations or could readily be placed where the existing SCADA rack is upon decommissioning.

### **5.3.7 REPLACEMENT SYSTEM DOCUMENTATION AND TESTING**

System documentation will be captured for both development and for the "as built" and tested system. During system development decisions will initially be logged in GGS provided meeting notes and regular status reports. As the architecture, HMI screens, reports, training plans, and test plans are formalized, they will be submitted for approval. All exceptions, clarifications, and revisions will be logged in this submittals. For phase 1 GGS will provide a minimal set of training and documentation so that the City's staff can operate the system. GGS will provide VPN and telephone support, should issues arise that the City's staff cannot resolve. For phase 2, a final documentation set of the "as built" and tested system will be provided as part of system acceptance. Additionally, GGS will provide annotated copies of any provided software applications.

### **5.3.8 OPERATIONS AND MAINTENANCE**

Support Services will be provided for the City of Sunnyvale proposed SCADA system upgrade during the one-year period, effective at final system acceptance. Both on-site and telephone support is provided, as appropriate. GGS will coordinate and provide 24 hours per quarter of Preventative Maintenance Services performed on-site. Support Services covers troubleshooting and repairing all RTU based components, PLC and Remote I/O Panels, RTU and HMI networks and network hardware, HMI computers, and application software.

## 6 INSTALLATION PLAN AND SCHEDULE

### 6.1 PROJECT MANAGEMENT

Project management functions are critical to the success of a project. GGS will assign a dedicated team to ensure the proposed project is executed according to the criteria as outlined in this proposal.

GGS has adopted the Project Management Institute's (PMI) five step project management methodology. In addition to adopting PMIs proven project discipline, we have several PMP certified enterprise project managers. The investment in the certification of our project managers punctuates the belief that disciplined project management more any other single area of our business is what guaranties that we will achieve our two most important goals in any project:

- ▶ Meeting or exceeding Client expectations
- ▶ Provide specified project value on time and on budget

GGS will provide the project management essential to execution of the project as outlined in this proposal. GGS will manage all activities related to our engineering, component procurement, component manufacturing, programming, and start-up & commissioning labor as listed in this proposed scope of work.

#### 6.1.1 Communication

Weekly reports will be issued to cover outstanding issues and the current status of the project. The Project Manager will serve as GGS's designated point of contact and will be responsible for the technical, schedule and cost baseline established for this project. GGS requests that the City also provide a designated point of contact for the project. GGS suggests all communication relating to this project be conveyed via email and if possible any additional team members be copied to insure that everyone involved is working with the most current information.

#### 6.1.2 Safety and Security

GGS safety standards will be followed for all facets of the project. While on site at the project location, GGS will follow all Safety and Security regulations provided by the City of Sunnyvale. This plan does not account for any other requirements.

### 6.2 APPROACH TO THE PROJECT

GGS takes a disciplined approach to project management based on PMI principals. The Glenmount Project team would be structured as shown in Figure 1, Proposed SCADA System Upgrade Integration Team. A project of this nature will have a dedicated project manager, lead engineer, and key support staff members. The project manager (PM) will be the primary point of contact for the City, and other relevant stakeholders, on all commercial and technical issues. As such, the PM coordinates all scheduling, resource, and quality issues using company standard operating procedures. The project manager is part of a dedicated project management group. This group manages and controls projects utilizing Microsoft Projects, Server Edition. The project manager will be supported by the local technical team as well as a project controls administrator and local executive management. Throughout the project, GGS's project manager will be applying proven project management principals with a phased approach that includes initiation, planning, execution, control, and project closure. This will allow for the identification, mitigation, avoidance, and control of risk. Our specific approach for this project is broken into the sections detailed below and is included in the corresponding, attached milestone schedule. The approach is our suggested path based on experience and the information provide in the RFP. Upon project initiation, the approach will be tailored to the specific needs of the City. All phases of this work will be executed by GGS's local staff from its Napa, CA office, located 80 miles from the Sunnyvale Corporation Yard. Please see the attached detailed Gantt chart which provides schedule and task details from award of the project through initiation, and execution of phases one through three.

## 6.2.1 PROJECT INITIATION AND PLANNING

Once awarded, the project starts with a site Kick-Off Meeting. The goal of this initial meeting is to review GGS's Project Quality Plan (PQP), meet the project team and key stakeholders, and to review roles and responsibilities. Review of the plan will include the project approach and details of the proposal, such as project scope and objectives, assumptions, potential risk, constraints, and exceptions along with pricing and the invoice schedule. This meeting should conclude with an agreed upon project approach, identification of potential risk, clear communication paths, established roles and responsibilities, and a plan for next steps. Since the nature of the phase I work is urgent, the City should expect to turn over tag data bases and a complete set of HMI screens from the existing SCADA system. Additionally, as part of the kick-off meeting, GGS will want to do field investigation at the existing master station. GGS will provide the SCADA software and hardware submittal for review at this time.

## 6.2.2 PROJECT EXECUTION

With the conclusion of the kick-off meeting and creation of the PQP, project execution begins. The first phase of execution is procurement and engineering services. The goal of this part of the project is to evaluate the District's existing SCADA system and to identify the requirements for a new SCADA system. Our project manager will be leading the process of evaluating and obtaining requirements. Tasks included in this process are detailed below.

### 6.2.2.1 PHASE I

GGS understands the urgent requirement to mitigate the risk of failure on the existing Dynac SCADA system and the need to bring the new SCADA system up in a timely, cost effective manner. As such, we have identified some potential risk and a plan to over-come and get the new system operation in the shortest duration possible.

#### Issues

- 1.) Specification 01110 1.4 A. 3 calls for "...configure and implement a short list of graphics and programs needed to maintain the system in operation".

We do not believe that this short list would be of much value to the owner, and that the scope of the overall work is not so large that an initial set of screens could not match those that are already existing on the Dynac SCADA system. What we propose for phase I is to provide a complete set of HMI screens to match the existing system. This approach would provide a number of benefits: 1.) earliest possible path to complete functionality within the new system; 2.) allow the City to use the new system so as provide suggested improvement for phase II; and 3) Provide a system for the City staff to get hands-on training at the earliest date possible.

GGS, agrees, per the City's post demonstration request, to change around the order of operations to bring on line a fully functional subset of the system first (say 10 of the 27 locations), versus as specified fast start up and fully functional following thereafter

- 2.) Specification 01110 1.5 B. 1 calls for "After commissioning both the new and existing master station equipment shall be fully functional".

This presents a risk as polling from two different systems is likely to overwhelm the serial radio communications system. This would cause errors in data delivery to each system. GGS will work with the City to determine the optimal technical work around to this risk.

With these issues in mind, we recommend the following phase I tasks and milestones

**Project kick-off-** To include a scope and schedule review, master site investigation, HW & SW submittal review and transmittal of the tag database and screens by the city.



**SCADA Hardware and Software Submittals-** These items are critical path for Phase I and will be prepared in advance by GGs for project kick-off.

**Training for City Staff** – Software manufacturer's basic class for key City controls staff. We believe that the City will get the most value from having this initial SCADA software application training in Phase I. This will allow the City to start building their staff expertise and system experience at the earliest point possible.

**Procurement-** SCADA Hardware and Software. Procurement of the system is a critical path milestone for timely completion of Phase 1.

**SCADA Application Development-** Conversion of existing tag database and HMI screens. As noted above, our intention is to provide a complete set of screens for Phase 1. GGS will need to coordinate closely with City staff on obtaining the proper data for the most efficient conversion from the existing system. GGS will have two staff members, a technical lead and a senior engineer, dedicated to this effort. Staff will develop templates for each of the City's common asset types (e.g. water plants, sanitary lift stations, domestic water connections).

**Un-witnessed Testing-** To the extent possible, all hardware and software will be installed, assembled, configured, tested, and documented by GGS at its Napa facility, prior to delivery to the City.

**Install/Set-up and Configuration of SCADA system-** This will include installation of one of two servers in a new rack along with one work station and associated monitors. One server and workstation will remain at GGS for remote support via VPN and for Phase II development. The City's IT and controls staff will need to be available for integration support of the existing network configuration and for support of the existing radio communications configuration.

**Factory Acceptance Test (FAT)-** GGS will demonstrate the functionality of the system and validate radio communications through the existing stations.

**Site Testing, Start-up, and Commissioning-** All provided screens will be tested and documented against the existing system. GGS will provide two staff members, a technical lead and a senior engineer, one for on-site work and a second for on-site support or remote assistance as needed to meet the project timeline.. Assigned staff members have direct past experience with similar projects. Please reference section 3 and 4 of this proposal for additional staff experience and completed projects. The City will need to provide two trained O&M staff, at remote locations, so as to exercise equipment for validation through the new SCADA system. Additionally, one member of the City's controls staff will need to be on-hand to assist with and to witness functional validation of each site.

**Acceptance-** Phase I documentation and sign-off. At this point, the City will have a functioning system that will be able to monitor the entire system and be able to do simple reporting and alarming.

There are a number of issues that need to be planned for so as not to impact schedule. The following are a list of risk items and concerns.

1. City staff availability for training and commissioning support.
2. Compatibility of the existing tag database: Since the existing SCADA system is proprietary, GGS will need the assistance of the City's subject matter expert to assist with getting a complete tag data set that can be readily translated into the new SCADA system. We do not foresee an issue here, but need to plan, with the City, for mitigation of any potential risk.

### 6.2.2.2 PHASE II

Phase I development and completion will give the City and GGS insights into the executed architecture and its operation. These insights will be leveraged in Phase II to allow the system to be tailored and refined to utilize the capabilities of the new software application and to meet the specific needs of the City's stakeholders. GGS will hold a series of formal design reviews and create submittals for HMI graphics, reporting, alarming, training, and testing. This phase will also include development of the SCADA room reconfiguration recommendations.

We recommend the following phase II tasks and milestones.

**Design Reviews and Coordination-** A series of design reviews will be used to gather the detailed requirements for advanced graphics, alarming, and reporting. Additionally, reviews will be held to plan for start-up and commissioning of the new I/O and coordination of future site additions.

**Submittals-** Detailed HMI, Reporting, Testing, Acceptance, and Training Program submittals will be provided.

**SCADA Room Recommendations-** GGS will perform a site investigation and meeting to determine the City's needs for the room and to determine the physical layout and existing utilities. From these inputs a recommended layouts and BOM's will be presented to the owner. Upon approval of the layout GGS will place the new Server rack, workstations, and monitors as well as decommission the existing rack.

**SCADA Application Development-** Architecture and graphics refinement, advanced reporting and alarming, and the addition of new I/O will be part of this scope of work.

**Install/Setup-** On-site installation of redundant Server and workstation.

**Training-** As described in section 5.2.5 and 6.1.2.1

**Site Testing, Startup and Commission-** As each component of the existing system is brought on line, a Site Acceptance Test (SAT) will be performed. Documentation will be provided to systematically confirm and sign-off correct operation of each screen. Part of this process will be to pull up each screen and have it exercised and functionally tested, prior to taking the component off of the existing network. We recommend that the District be able to provide two staff members for this work, one at the control room to confirm operation and one in the field to exercise related equipment and to ensure continued automated operation. This can be considered on-the-job training and allows operators to begin to take ownership of their new system.

### 6.2.3 PROJECT CLOSEOUT

Note that throughout the project, GGS's project manager will be applying proven project management principals with a phased approach that includes initiation, planning, execution, control, and project closure. This will allow for the identification, mitigation, avoidance, and control of risk. The project close-out phase will include the following tasks that will ensure proper closure.

**7 Day-** Per specification requirements. Upon completion of the SAT, training, resolution of punch list items, and completion of final documentation, a 7-day operation test will be performed. Glenmount Global Solutions will work with the District to resolve operational and/or performance issues, should they arise during this period.

**30 Day-** Per specification requirements. Upon completion of the 7-day test and correction of any punch list items, the system will be turned over to the District for a 30 day test. Glenmount Global Solutions will work with the District to resolve operational and/or performance issues, should they arise during this period. GGS will provide remote VPN and telephone support during this period.

**Documentation** – Final O&M. A final O&M will be created to capture all provided SCADA system "as built" conditions. To include notated programs, software licenses, warranty terms, system architecture, product data, and test reports.

**Acceptance**- GGS will provide validation that all technical and contractual requirements have been met.

## 6.3 EXCLUSIONS AND CLARIFICATIONS

1. Exclusion- 13410 3.03 GGS believes this item is not relevant to the proposed scope of work. Training will be provided per RFP p.5 of 15 "5. Training" and 13453 3.01 F. GGS will provide provisions for training sessions to be video recorded.
2. Exclusion & Clarification- 13452A 1.01 C. 3. & Addendum 1, A7. , Installation for supplied I/O modules called out in A7. is to be by others. Per appendix 1, 4 AO modules and 1 AI modules will be supplied loose to the City.
3. Exclusion- 13453 3.01 E. 2. GGS takes exception to testing as called out here and related details per 13410-3.02. The scope of work for this project is primarily SCADA hardware and software. Most of the I/O is existing. As such, it is not practical to conductor factory testing "...to perform point-to-point I/O to demonstrate that I/O points are wired correctly". GGS will test items provide by GGS as specific to SCADA. This excludes existing I/O loop checks and calibration, but includes loop testing, via the SCADA system, of new I/O. GGS includes Factory Testing of up to 50 I/O points added since the original SCADA project was installed. Provide testing from the field equipment to SCADA workstations through the respective PLC.

## 6.4 PROJECT SCHEDULE

The project schedule in Gantt Chart format is presented on the following page.

## 7 RELIABLE MAINTENANCE AND SUPPORT

### 7.1 PROPOSED MAINTENANCE PLAN

Support Services will be provided for the City of Sunnyvale proposed SCADA system upgrade during the one-year period, effective at final system acceptance. Both on-site and telephone support is provided, as appropriate.

GGs will coordinate and provide 24 hours per quarter of Preventative Maintenance Services performed on-site. Quarterly support for the City of Sunnyvale SCADA System Upgrade includes, but is not limited to the following:

- Hard drive maintenance
  - > Defragging
  - > Data file archiving
  - > Create system back-ups
- Integration of additional SCADA Clients (continuous improvement)
- Instrumentation calibration (annually)
- Remote site, application back-ups and battery replacements

These services apply to the following facilities/assets:

- Distributed SCADA Application
- One master station located at the Corporation yard
- Twenty Six RTU site locations
- Data Collection Historian
- SCADA Server / PC Maintenance
- Instrumentation

Support Services covers troubleshooting and repairing all RTU based components, PLC and Remote I/O Panels, RTU and HMI networks and network hardware, HMI computers, and application software. Specific services include:

- Tracking current and historical Emergency Service Issues.
- Contacting and coordinating resources on problems requiring third party hardware and software vendor's component support.
- Troubleshooting and identifying root cause of support calls.
- Assisting in disaster recovery using system backup, if required.
- Conducting quarterly maintenance.

A sample Maintenance and Support Services Manual for services to be to the City of Sunnyvale under the proposed service plan is provided in Appendix C. This appendix also includes reference contacts for clients for whom GGS is currently providing ongoing, maintenance or emergency support services.

## 7.2 INTEGRATOR'S CAPACITY AND AVAILABILITY

Control systems engineering is a unique and specialized discipline. Because of the ongoing expansion, upgrade, and maintenance requirements, most clients prefer the services of a firm that is not too far away. Therefore, many control systems firms are small and local. To support their needs on large projects, some of the larger multi-disciplined engineering firms have developed in-house electrical/instrumentation & control (E/I&C) departments, but there are generally not enough projects to support an E/I&C department in every locale. Consequently, when large firms pursue control systems projects their proposed experts are often not local to the client, even though the firm may have a local office. The result is that most local control systems firms and the E/I&C divisions of most large engineering firms both tend to be rather small and limited to expertise with one or two control system hardware and/or software platforms.

Glenmount Global Solutions is different in that we have built a nationwide firm with international capabilities focused on control systems engineering and integration. We have California offices to provide personal and convenient service to the City of Sunnyvale. We also have the depth of resources to have personnel certified with most of the SCADA hardware and software platforms utilized for industrial manufacturing and we maintain the highest levels of certification and partnership with multiple manufacturers. This is important because the plans that will affect the direction of your SCADA software choices for the next five to ten years should be made with an eye to all the available technology and with a concern for what will best meet your needs, not limited to one manufacturer because of limitations placed by your integrator.

While staff for this project would come from GGS's Napa, California offices, the company has the ability to pull staff from multiple regions statewide and nationally. This allows Glenmount great flexibility in managing resources and schedules while pulling from a large pool of experts. Glenmount expects to collaborate with the City and the selected software package provider to execute the work. Typically, on a project of this nature, our staff will be in touch with the software package provider, via their technical support line and engineering staff, to address hardware and software compatibility issues before they arise. In addition to the local project team and management based in our California offices, should the need arise, GGS can support and supplement the local team with Professional Engineers, Software Engineers, Network/IT professionals, and programmers from remote offices. Additionally, our local staff is supported by our corporate VP of Technology. This resource ensures that all offices use company standardized tools and that all staff is made aware of known implementation issues, and solutions, with common SCADA and PLC package suppliers. As part of GGS's project quality plan, a communications plan will be provided. This document will provide GGS's local and national executive management contacts, should the City feel a need to escalate a specific project concern.

As previously noted, Glenmount Global Solutions has dedicated project management resources that utilize Microsoft Project, Server Edition and a number of other business tools to manage, forecast, and control project to budget and schedule. These tools, along with a dedicated project administration staff, are used to plan and forecast project specific schedules and resources. The tools not only allow management of individual projects, but also allow for a complete view of all active and forecasted projects. This planning tool enables management to view overall resource capacity, so as to avoid conflicts between projects, and to be able to level forecasted resource demands. Current staff utilization is booked at 70%. Forecasted resource utilization falls to 50% in December, 2012, and falls further to 40% in February, 2013, as significant projects pass their final completion dates. In summary, GGS expects to have capacity to take on additional and significant projects at the forecasted project award date.



## 8 SUBCONSULTANT SERVICES

Glenmount Global Solutions hold the necessary licenses and permits to complete the specified work without the need for any sub-consultants. However, just as we believe our clients should select the best qualified specialists for their SCADA engineering and integration needs, we believe in utilizing specialists, where appropriate, to provide our clients with the highest quality and best value. For this project, we anticipate a potential need for minimal usage of an electrical sub-contractor, specifically related to the reconfiguration of the SCADA room at the Corporation Yard for tasks such as server relocation. If needed, GGS is prepared to utilize the services of:

- 1) Atlas/Pellizzari Electric, Inc., 450 Howland St., Redwood City, CA 94063  
a trusted partner with whom we have worked on a number of previous projects.

## 9 PAYMENT AND SCHEDULE MILESTONES

| Description   | Amount |
|---|--------|
| Contract Execution  | 15.0%  |
| Successful completion of the factory test of the system       | 0.0%   |
| Delivery of hardware to the City                              | 15.0%  |
| Successful on-site testing for Phase 1                        | 10.0%  |
| Acceptance Test of Phase 1                                    | 5.0%   |
| Successful Completion of the 7-day onsite testing for phase 2 | 20.0%  |
| Successful testing of training                                | 5.0%   |
| Successful completion of the 30-day onsite test               | 5.0%   |
| Project acceptance  | 25.0%  |

## 10 ACCEPTANCE TESTING PLAN

An acceptance test plan will be provided as part of the contract work to comply with the RFP request. Listed requirements will be addressed as follows.

- a. Forms will be provided which allow for verification and sign-off of each provided software and hardware component with reference to the relevant specification section.
- b. Bill of materials (BOM) will be provided for sign-off of each provided software and hardware component. Model, serial, and license numbers will be provided and verified.
- c. Forms and written procedures for the verification of each provided HMI screen will be submitted prior to testing. Each screen will be tested for function, trending, and alarming. Testing will be documented and each non-conformance will be noted and tracked to close by GGS.

Upon completion of all testing and validation, the completed and signed final forms will be submitted to the City for acceptance.