



RFP: F1106-73
SCADA System Upgrade



APPENDIX B: System Requirements Table

ATTACHMENT B

**City of Sunnyvale SCADA System Upgrade
Requirements Table**

Inability to provide all modules and/or functions does not preclude you from consideration by the City of Sunnyvale. All questions must be answered (even if not available) to be considered a complete response by the Proposer.

For each numbered requirement included in this table, the proposer should indicate the status of the requirement within the proposer's solution by using the following notation codes. Provide a short explanation of proposer's capabilities as necessary.

Response	Description	Explanation
1	Yes, Available	A feature that is a standard item currently included in the solution (off the shelf) as proposed
2	Planned Future Enhancement	A requirement that can be satisfied by a planned future enhancement at no additional cost
3	One-time Customization	A feature that would require one-time customization at an additional cost
4	Not Available	A feature that is not available and is not scheduled for development at this time

ATTACHMENT B

1. Usability

Question	Response (1, 2, 3, 4)	The Proposed Solution: Note: Section numbers refer to sections in the Technical Specifications. Refer to Technical Specifications for additional information on requirements	Comments Note: Provide comments for response numbers 2 and 3.
1.1	1 Yes, Available	Is Easy to Learn : the user interface must be familiar to users, and should follow a single set of rules consistent with those of the operating system, or other mainstream applications, e.g. "F1" for help, "Ctrl-P" for print, "Ctrl-S" for save, etc.	
1.1.1	1 Yes, Available	Provide consistent menus and screens with a common look and feel throughout the application.	
1.1.2	1 Yes, Available	Provide comprehensive context-sensitive help that can be accessed both from the function in question and independently from a menu.	
1.1.3	1 Yes, Available	Provide a "Tool Tip" display for all buttons on the graphical toolbar and display the "Hot-Key" combination to perform the same action.	
1.2	1 Yes, Available	Is Efficient : common, frequently used transactions must be designed so that they can be completed with the smallest possible number of mouse clicks and/or keystrokes.	
1.2.1	1 Yes, Available	Users can move between modules or functions via menus, hot keys, buttons or tabs without returning to a "main menu".	
1.2.2	1 Yes, Available	Provide a calendar pop-up for date fields defaulting to the current system date.	
1.2.3	1 Yes, Available	Provide an intuitive graphical user interface using screen navigation via pointing device or keyboard at user option.	
1.3	1 Yes, Available	Is Effective : control, monitoring, and reporting processes must be accurately implemented as intuitive and streamlined workflows, and can easily be changed to accommodate changing needs.	

ATTACHMENT B

1.4	1 Yes, Available	Is Error Tolerant: Controls data entry errors using field validation (e.g. date, numeric, etc.) on fields not validated against tables or specific values.	
	1 Yes, Available	Must provide the ability for data entry errors to be identified with descriptive and instructional messages in non-technical terms.	
	1 Yes, Available	Make it difficult for the user to take incorrect, invalid, or irreversible actions.	
	1 Yes, Available	Data entry and processing errors to be identified with descriptive and instructional messages in non-technical terms.	
	1 Yes, Available	Ensures data validity by requiring certain fields to be completed before other dependent fields can be edited.	
1.5	1 Yes, Available	Is Engaging: The system should allow users to customize the graphical user interface, including menu contents, shortcuts, layout of screens, use of function keys, on-screen colors, fonts and font sizes, and audible alerts. These configuration changes made by the user should be saved in their user-profile.	
1.6	1 Yes, Available	Provides a "Find" functionality to search for selected data using a variety of simultaneous user-selectable search criteria including ranges, the ability to perform searches on a combination of fields, including "AND" and/or "OR" conditions. Criteria may include "NULL" values, the "*" wildcard, and greater than, less than, and between modifiers.	

ATTACHMENT B

2. Data Migration and Interoperability

Question	Response (1, 2, 3, 4)	The Proposed Solution: Note: Section numbers refer to sections in the Technical Specifications. Refer to Technical Specifications for additional information on requirements	Comments Note: Provide comments for response numbers 2 and 3.
2.1	1 Yes, Available	Allows for the migration (extraction, transformation, and loading) of historical data. Please describe data migration and conversion process in the proposal response narrative.	
2.2	1 Yes, Available	Allows for data conversion validation on a subset of at least 20% of the data prior to acceptance.	
2.3	1 Yes, Available	Provides an API (Application programming interface), web services, or other interfaces to allow integration with other systems, such as Finance, Human Resources, or custom applications.	
2.4	1 Yes, Available	Allows for the import and export of data in consistent table format to facilitate sorting and grouping, from and to Excel, delimited data, and common databases, including MS Access.	
2.5	1 Yes, Available	Allows the export of data based on the currently selected record, or all records that are the result of a search.	
2.6	1 Yes, Available	Is compatible with MS Office 2002 and later, including Office 2010.	
2.7	1 Yes, Available	Must be able to send email using Novell GroupWise 7.0, MS Exchange 2007 and later, and Google Mail (Gmail) for Business.	
2.8	1 Yes, Available	Allows the user to select any installed printer to print documents and reports, including the ability to output to PDF.	

ATTACHMENT B

3. Technical Requirements - General

Question	Response (1, 2, 3, 4)	The Proposed Solution: Note: Section numbers refer to sections in the Technical Specifications. Refer to Technical Specifications for additional information on requirements	Comments Note: Provide comments for response numbers 2 and 3.
3.1	1 Yes, Available	Is implemented in an N-Tier architecture, including, but not limited to: database, application, data & transactional services, client (desktop and/or web).	
3.2	1 Yes, Available	Runs on Microsoft Windows Server 2003 R2, or later	
3.3	1 Yes, Available	Runs using VMWare ESX.	
3.4	1 Yes, Available	Preferably utilizes Microsoft SQL Server 2005 or later as its RDBMS, but other standard RDBMS such as MySQL and Oracle may be considered. Please provide the following:	
3.4.1		RDBMS & version of proposed system (Proposer to write in response in comment field):	SQL Technical Reference – Introduction: The ClearSCADA database includes an integrated SQL query processor that accepts SQL commands using the ANSI SQL-92 syntax. The purpose of this document is to provide a technical reference for the SQL features supported in ClearSCADA. Information about the conventions used in this document can be found in the Notation page. The SCADA server supports four types of SQL command: 1) SELECT queries returning data from one or more tables. Refer to command-query for more details. 2) UPDATE commands setting new column values in a table. Refer to command-update for more details. 3) INSERT commands adding new rows to a table. Refer to command-insert for more details. 4) DELETE commands deleting existing rows from a table. Refer to command-delete for more details. Information about the Data Types supported in SQL commands can be found in the Data Types page.
3.4.2	4 Not Available	RDBMS shall be compatible and recommended by OIS packaged system	Additional clarification is needed.

ATTACHMENT B

3.5	1 Yes, Available	Operates in both LAN and WAN environments.	
3.6	1 Yes, Available	Supports Microsoft Windows Server Active Directory.	
3.7	1 Yes, Available	Provides user-maintainable industry standard referential table data, such as unit of measure, etc.	
3.8	1 Yes, Available	Has the capability for different departments, divisions, and work groups to share common or reference data, while providing separate operational data areas for the different functional groups.	
3.9	1 Yes, Available	Identify how many concurrent users can be supported without degradation of response time for both read and write access based on the proposed system's recommended Operating Environment (Proposer to write in a number):	
3.10	1 Yes, Available	Supports at least 2 concurrent editing users and an additional 5 concurrent read-only users. Provides full function software to provide options for graphic configuration.	
3.11	1 Yes, Available	Supports the concurrent editing of a record, while providing a contention resolution mechanism: if a record was changed by another user after it was opened for editing, an editing user must be notified of the changes, with the ability to cancel, combine, edit or overwrite the changes.	
3.12	1 Yes, Available	Provides unlimited text ("memo") data fields for comment and description entries throughout the system.	
3.13	1 Yes, Available	Provides rich text editing and basic word processing features for free-form comment or description fields.	
3.14	1 Yes, Available	Includes comprehensive administrator, user, and technical documentation describing all functions and operations of the system. Technical documentation should describe all configuration options, including their default values, and should include the following or equivalent:	
3.14.1	1 Yes, Available	System operations documentation	
3.14.2	1 Yes, Available	System technical documentation	
3.14.3	1 Yes, Available	System end user's documentation	
3.14.4	1 Yes, Available	Help Desk documentation	
3.14.5	1 Yes, Available	System/Architecture diagrams	
3.14.6	1 Yes, Available	Data Dictionary	
3.14.7	1 Yes, Available	As-built documentation of all configuration, including modifications or customizations	
3.14.8	1 Yes, Available	System back-up and recovery documentation	
3.14.9	1 Yes, Available	Hardware documentation	
3.14.10	1 Yes, Available	System maintenance documentation	

ATTACHMENT B

3.15	1 Yes, Available	Provides an on-line tutorial for basic functions.	
3.16	1 Yes, Available	Provides context sensitive help available at the field, screen and module level.	
3.17	2 Planned Future Enhancement	Allows customization of the on-line help files.	
3.18	1 Yes, Available	Provides clear and concise error messages.	
3.19	1 Yes, Available	Provides the ability to modify error messages.	
3.20	1 Yes, Available	Visually distinguishes between required and optional fields.	
3.21	1 Yes, Available	Allows the City to define required and optional fields for each screen or function.	
3.22	1 Yes, Available	Provides the functionality to create user-defined forms and fields.	
3.23	1 Yes, Available	Allows binary (audio, video or image) data attachments.	
3.24	1 Yes, Available	Ninety five percent (95%) of end-user online display screen and record update response times shall not exceed three (3) seconds, and none shall exceed ten (10) seconds.	
3.25	1 Yes, Available	Provides the ability to perform data sharing with Microsoft Office (MS) tools, including the ability to extract data to MS Excel or from other MS Office applications.	
3.26	1 Yes, Available	Must be available 24 hours a day, 7 days a week with the exception of predetermined scheduled maintenance.	
3.27	1 Yes, Available	Will have all servers and workstations hardware and related equipment to interface with the existing radio telemetry system. Servers and workstation hardware specifications are in Section 13453.	
3.28	1 Yes, Available	The proposed solution (system) is available (fully operational) 99.95 percent of the time (99.95%), which is not more than 4.38 hours per year of non-availability.	

ATTACHMENT B

4. System Administration And Data Security

Question	Response (1, 2, 3, 4)	The Proposed Solution: Note: Section numbers refer to sections in the Technical Specifications. Refer to Technical Specifications for additional information on requirements	Comments Note: Provide comments for response numbers 2 and 3.
4.1	1 Yes, Available	Has an "Administrator" function that allows the management of account information (user ID's, master files and tables) and all levels of security.	
4.2	1 Yes, Available	Provides a user interface that allows the system administrators to maintain reference table data as well as perform necessary administrative tasks.	
4.3	1 Yes, Available	Provides a means to set up user accounts, assign user passwords, and assign users to access-defined groups.	
4.4	1 Yes, Available	Has user security that can be set up by functional groups such as job, department, division, etc.	
4.5	1 Yes, Available	Security groups can be copied and altered to make new groups.	
4.6	1 Yes, Available	Individual users may be members of more than one group.	
4.7	1 Yes, Available	Security permissions are set up for create, read, update and delete access by function.	
4.8	1 Yes, Available	Security is available at several levels such as by menu, file, function, record and/or field level.	
4.9	1 Yes, Available	Provides an audit log of all transactions. Audit log should show the data before the change, after the change, the user that made the change, date and time of change, and the reason for the change (if a reason is required).	
4.10	1 Yes, Available	Provides standard reports listing all users, their access levels and limitations.	
4.11	1 Yes, Available	Provides ability to assign access by role, by functionality, and screen/view level.	
4.12	1 Yes, Available	Provides ability to set what each user role can see and/or edit at the screen/view level.	

ATTACHMENT B

4.13	1 Yes, Available	Authenticates users using Microsoft Windows Server Active	
4.13.1	1 Yes, Available	Require users to change their password after their first login.	
4.13.2	1 Yes, Available	Allow users to reset their password without requiring administrator support.	
4.13.3	1 Yes, Available	Force users to change their passwords after a specified period of time.	
4.13.4	1 Yes, Available	Enforces City of Sunnyvale standards for strong passwords: Minimum of 8 characters Must include 3 of the following 4: (1) or more upper case character (1) or more lower case character (1) or more numeric character (1) or more special character	
4.13.5	1 Yes, Available	Passwords are encrypted in the database.	

5. Reporting

Question	Response (1, 2, 3, 4)	The Proposed Solution: Note: Section numbers refer to sections in the Technical Specifications. Refer to Technical Specifications for additional information on requirements	Comments Note: Provide comments for response numbers 2 and 3.
5.1	1 Yes, Available	Describe in detail the reporting technology and capability of the software in the proposal response narrative or in the "Notes or Comments" section, below. Additional requirements for reporting is listed under functional requirements. Provide examples of reports commonly used, or available as standard, on your projects.	
5.2	1 Yes, Available	Allows users to create customized reports and save them for access to all users.	
5.3	1 Yes, Available	Allows users to created reports based on any fields of data throughout the system.	
NOTES OR COMMENTS: <i>(Bidder to attach sample reports or a listing of reports by name with description).</i>			

ATTACHMENT B

6. General Project Requirements

Question	Response (1, 2, 3, 4)	The Proposed Solution: Note: Section numbers refer to sections in the Technical Specifications. Refer to Technical Specifications for additional information on requirements	Comments Note: Provide comments for response numbers 2 and 3.
6.1	1 Yes, Available	Is in compliance with Section 01110 - Sequence of Work in Technical Specifications. Systems Integrator includes a detailed discussion of scope and work schedule and sequence.	
6.2	1 Yes, Available	Will be constructed by the Systems Integrator who will maintain records of work progress and provide weekly updates of the schedule and critical path items using Microsoft Project. Machine readable and PDF versions of the schedule will be distributed to City Staff and other designated project staff each month during construction. Schedules and	
6.3	1 Yes, Available	Will be constructed by a Systems Integrator who has described the firms experience and qualifications completely in the proposal. Experience and qualifications show clear evidence that the Systems Integrator is adequately staffed, financially capable, and technically knowledgeable to successfully complete this project.	
6.4	1 Yes, Available	Has been described by the System Integrator in a clear and complete manner that shows substantial understanding of the project and included an overview of the SCADA system. Specific advantages of the operator interface system (OIS) packaged software proposed for this project, as implement and customized by the System Integrator, have been adequately described.	
6.5	1 Yes, Available	Will be constructed by a Systems Integrator that demonstrates that it has no conflict of interest in the manufacturers, systems, or staff proposed to execute this project.	
6.6	1 Yes, Available	Will be constructed by a Systems Integrator that has completed at least 3 similar projects over the last 5 years. Describe each project completely with equipment, computer hardware, software, and systems used. Include at least 3 client references with their titles and telephone number. These references may contracted to inquire about these projects.	

ATTACHMENT B

6.7	1 Yes, Available	Will be in compliance with the Technical Specifications. In the proposal the Integrator shall have read and understood the requirements of the Technical Specification, and has presented clear and convincing showing that the system proposed will meet or exceed these requirements. In this table several requirements are described in greater with specific Sections of the Technical Specifications referenced. However, these descriptions do not relieve the Integrator from complying with all requirements in the Specifications.	
6.8	1 Yes, Available	Shall be constructed by a System Integrator that describes, and has considerable experience in, testing procedures for server hardware and software, workstations, radios, process graphic displays, alarm annunciation, and reports.	
6.9	1 Yes, Available	Have training procedures that are described and that show an understanding of the amount and type of training required. Staff used to teach training classes are well qualified with actual teaching experience. Include training procedures and qualifications in the proposal. Testing and training requirements meet the requirements of Section 13410.	
6.10	1 Yes, Available	Shall be constructed by a System Integrator that shows experience in integrating field control devices with servers, workstations, and other control center devices. Includes a system block diagram that completely describes the hardware and software systems proposed with the proposed interface to process control and monitoring equipment at the remote stations.	
6.11	1 Yes, Available	Shall be scalable with respect to servers, workstations, and HMI to add a 100% expansion of the system using the hardware and packaged software provided for this system. It is understood that custom application configuration and programming would also be needed to effect this expansion.	
6.12	1 Yes, Available	Shall be constructed by an Integrator that describes its intent and method for performing all work scope items.	
6.13	1 Yes, Available	At least one year warranty period for hardware and software after Notice of Completion is recorded.	

ATTACHMENT B

7. Server Software, Radio, and Control Center Integration Requirements

Question	Response (1, 2, 3, 4)	The Proposed Solution: Note: Section numbers refer to sections in the Technical Specifications. Refer to Technical Specifications for additional information on requirements	Comments Note: Provide comments for response numbers 2 and 3.
7.1	1 Yes, Available	Uses the latest version of Microsoft Windows Server that is compatible with the HMI, data, and historical data packaged software system, as the server operating system. Workstations shall use Windows 7 Professional as the operating system with Virtual Windows XP available. In the event that the software system cannot operate using Windows 7, then Windows XP Professional, Service Pack 3, shall be acceptable for workstations.	
7.2	1 Yes, Available	Uses programming and configuration of a standard packaged software system for data monitoring and control functions. Integration of PLCs, field operator display interfaces, radios, servers, PC, workstations alarm annunciation and reports are adequately described and in compliance with project requirements. Complies with Section 13452A and Section 13453.	
7.3	1 Yes, Available	Uses a packaged software system from a major SCADA control software manufacturer and that has been successfully used on similar projects for at least 5 years by the System Integrator. Complies with Section 13453.	
7.4	1 Yes, Available	Shall be constructed by a Systems Integrator that understands and has clearly described the SCADA system overview in a clear and complete manner using overview and other block and connection Drawings that shows substantial understanding of the project. Specific advantages of the OIS packaged software system for this project as implement and customized by the System Integrator have been described.	

ATTACHMENT B

7.5	1 Yes, Available	Shall have fully functional interface with radio systems used for transmission of field signals from each type of utility facility to the control center. Provide a description in the proposal that addresses the configuration and enhances communications reliability. The three types of radio systems used on this project, 450 MHz band, 900 MHz band, and spread spectrum should be addressed. Interface shall be in compliance with Section 13452A.	
7.6	1 Yes, Available	Shall control facilities according to control strategies that will be programmed by the System Integrator. Review the control descriptions in Section 13452B of the Technical Specifications and describe the methods that will be used to implement new control strategies at new stations, and integrate existing control strategies that are currently used at existing stations.	
7.7	1 Yes, Available	Shall monitor and control data points shown in the Input and Output List shown in Section 13452B of Technical Specifications. Discuss in the proposal the performance of your solution to process these points, store them securely in a database, produce user-configured graphics, and produce user configured real-time and historical reports.	
7.8	1 Yes, Available	Shall have at least the following graphics provided: system graphic, site location graphic, site overall graphic (for each site), site control graphic (for each site), equipment monitoring and control graphic (for each major piece of equipment for each site). Refer to attached Drawings for additional site information. Graphics shall be based on the	
7.9	1 Yes, Available	Shall conform to Industry-standard open interfaces and protocols.	
	1 Yes, Available	Open architecture standards and communication protocols: OPC (DA, HAD, A&E, XML, OLE Automation, ODBCISQL, HTTP, DNP3) and Modbus.	
	1 Yes, Available	Communications protocols handling native DNP3, and TCP/IP.	
	1 Yes, Available	Data backfilling after a power failure or communication loss. Full data recovery for communication loss less than 1 day.	

ATTACHMENT B

7.10	1 Yes, Available	Shall have full Server Redundancy (software and hardware)	
	1 Yes, Available	Seamless fail-over.	
	1 Yes, Available	Transparent to the system operators and automatic on failure of physical server, virtual HMI server, or virtual Data server.	
	1 Yes, Available	Alarm shall be transmitted in the event of any fail-over.	
7.11	1 Yes, Available	Intranet and internet server accessible by web client	
	1 Yes, Available	Internet server shall have virtual private network (VPN) as requested by City IT Department.	
7.12	1 Yes, Available	Shall have at least Two (2) Windows based development workstations for graphic maintenance and programming with fully implemented hardware and software for these functions.	
7.13	1 Yes, Available	A minimum of 30 days of live trending and storage for data and control points (see Section 13452B), and 5 years of historical trending and storage for data and control points shall be provided.	
7.14	1 Yes, Available	Shall have plug-in functions that provide time-based data to Microsoft Excel. Full reports shall be configurable for historical data including:	
	1 Yes, Available	Time base of data (e.g. seconds, hours, days, months, years)	
	1 Yes, Available	Average of data for the time base	
	1 Yes, Available	Minimum and maximum value of the data that occurred within the time base.	
	1 Yes, Available	Time when minimum and maximum value of the data occurred.	
	1 Yes, Available	Full configuration of trending graphs.	
7.15	1 Yes, Available	Shall comply with all electrical requirements of Sections 16010 to 16414, inclusive.	

ATTACHMENT B

8. Remote Access to System

Question	Response (1, 2, 3, 4)	The Proposed Solution: Note: Section numbers refer to sections in the Technical Specifications. Refer to Technical Specifications for additional information on requirements	Comments Note: Provide comments for response numbers 2 and 3.
8.1	1 Yes, Available	Has a secure method for obtaining information from the SCADA system remotely, over the internet, for authorized City staff. Describe in the proposal alternatives and recommendations for remote access.	
8.2	1 Yes, Available	Must have a remote alarm management system with dial, email, and web access similar to Specter Instruments WIN-911 or approved equal:	
	1 Yes, Available	Ability to annunciate, store, send, and display alarm	
	1 Yes, Available	Ability to sort, filter, and prioritize alarms on the display	
	1 Yes, Available	Ability to email and page alarms	
	1 Yes, Available	Ability to time-stamp alarms	
8.3	1 Yes, Available	Describes the unit cost to add a new remote station to the project. The new site shall be assumed to be similar to an existing water plant.	
8.4	1 Yes, Available	Shall be scalable with respect to servers, workstations, and HMI to add a 100% expansion of the system using the hardware and packaged software provided for this system. It is understood that custom application configuration and programming would also be needed to effect this expansion.	

ATTACHMENT B

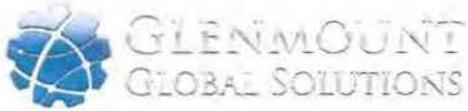
9. Statement

This proposal satisfies all necessary and customary devices, wiring, work, and incidentals for a SCADA system, complete, in place, and suitable for its intended purpose, and including all work indicated in the technical specifications. The only changes or deletions are as follows:

Proposer to make a list if applicable. If not applicable, indicate N/A

Proposers' Initials: BG _____

END OF TABLE



RFP: F1106-73
SCADA System Upgrade



APPENDIX C: Sample Maintenance and Support Services Manual

City of Sunnyvale

SCADA System Upgrade

RFP No. F1106-73
Project Task 8:
Operations and Maintenance



Table of Contents

1	INTRODUCTION.....	3
2	SUPPORT SERVICES PROVIDED	3
2.1	EXTENT OF SERVICES	3
2.2	MEANS OF SUPPORT	4
2.3	SUBSTITUTING ON-SITE EMERGENCY SERVICES FOR PREVENTATIVE MAINTENANCE	4
2.4	TIMELINESS OF EMERGENCY SUPPORT	4
2.5	ON-SITE SUPPORT	5
2.6	PREVENTATIVE MAINTENANCE SERVICES	5
2.7	TRACKING EMERGENCY SERVICE REQUEST	5
2.8	MATERIALS & SPARE PARTS	7
2.9	QUARTERLY REVIEW MEETINGS	8
2.10	RESTRICTIONS	8
3	PROGRAM MANAGEMENT.....	8
3.1	ADDITIONAL SERVICES AVAILABLE FROM GGS	8
4	RULES OF ENGAGEMENT.....	9
4.1	ON-SITE EMERGENCY SITUATION DETERMINED.....	9
4.2	CONTACTING CALL CENTER FOR SUPPORT	9
4.3	GGG TELEPHONE RESPONSE TO THE EMERGENCY	10
4.4	GGG ON-SITE SUPPORT	10
4.5	GGG FOLLOW UP	10
5	ONGOING MAINTENANCE & SUPPORT SERVICE REFERENCES	11
5.1	ONGOING PREVENTATIVE MAINTENANCE	11
5.2	24/7, 365 EMERGENCY SERVICE.....	12

1 INTRODUCTION

This manual serves as a reference for GGS provided reliable Maintenance and Support Services for the City of Sunnyvale. It deals specifically with the scope of the proposed maintenance, support services and associated Rules of Engagement.

2 SUPPORT SERVICES PROVIDED

2.1 Extent of Services

Support Services are provided for the City of Sunnyvale proposed SCADA system upgrade during the one-year period, which is effective at final system acceptance.

Quarterly support for the City of Sunnyvale SCADA System Upgrade includes, this includes, but not limited to the following:

- 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.

2.2 Means of Support

GGS Emergency Support is provided by both telephone and On-site Support. If GGS and the City of Sunnyvale jointly decided that the problem requires Emergency On-site Support, an engineer will be dispatched. The minimum Emergency On-site call is 4 hours.

In addition, 24 hours per quarter of Preventative Maintenance is provided for the RTU Control System and HMI computers.

2.3 Substituting On-site Emergency Services for Preventative Maintenance

On a cost basis, the 24 hours of Preventative Maintenance provided is equivalent to 8 hours of Emergency On-site Support.

If the 24 hours of Preventative Maintenance has not been provided for a given quarter, then the equivalent on-site hours will be applied to cover the initial 8 hours of an On-site Support call. City of Sunnyvale has the option of providing additional funding for Preventative Maintenance for that quarter or postponing Preventative Maintenance until the following quarter.

2.4 Timeliness of Emergency Support

Emergency Telephone support is provided 8 hours per day, 5 days per week, year round excluding holidays. When Emergency Support is required, the following response times can be expected:

Telephone support 8 hours a day, 5 days per week excluding holidays.

- For initial telephone support – 2 hours.
- Remote VPN access response time – 2 hours this access can be made available by City of Sunnyvale if the planned SCADA System has the appropriate infrastructure to accommodate.

On-site response will be scheduled within 8 hours after the need is determined.

- Day of on-site arrival will be communicated within 8 hours of determination of need.

2.5 On-Site Support

If GGS and City of Sunnyvale jointly decide that the problem requires Emergency On-site Support, an engineer will be dispatched with a minimum of 4 hours billed per call out. Emergency call out invoicing will include expenses and travel time charges.

GGS will provide restoration services (crash recovery) in the event of a system failure.

2.6 Preventative Maintenance Services

GGS will coordinate and provide 24 hours per quarter of Preventative Maintenance Services. Preventative Maintenance will be performed on-site. This includes but is not limited to the following:

SCADA System

- 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

Time for development and approval of Critical Environmental Work Authorization (CEWA) documentation is not included.

2.7 Tracking Emergency Service Request

GGS will be using a SharePoint site to log and track emergency calls as well as track their resolution. Each incoming call to our call center reporting an emergency will be assigned an "Issue ID" automatically by this SharePoint site. Documentation associated with the "Issue ID" will contain the date and time of the initial call, who initiated the call, desired call back phone number, description of the emergency, and actions taken to resolve the issue. Additionally, the root cause of the issue will be



evaluated by GGS engineers, followed by recommendations for any system improvements if so warranted.

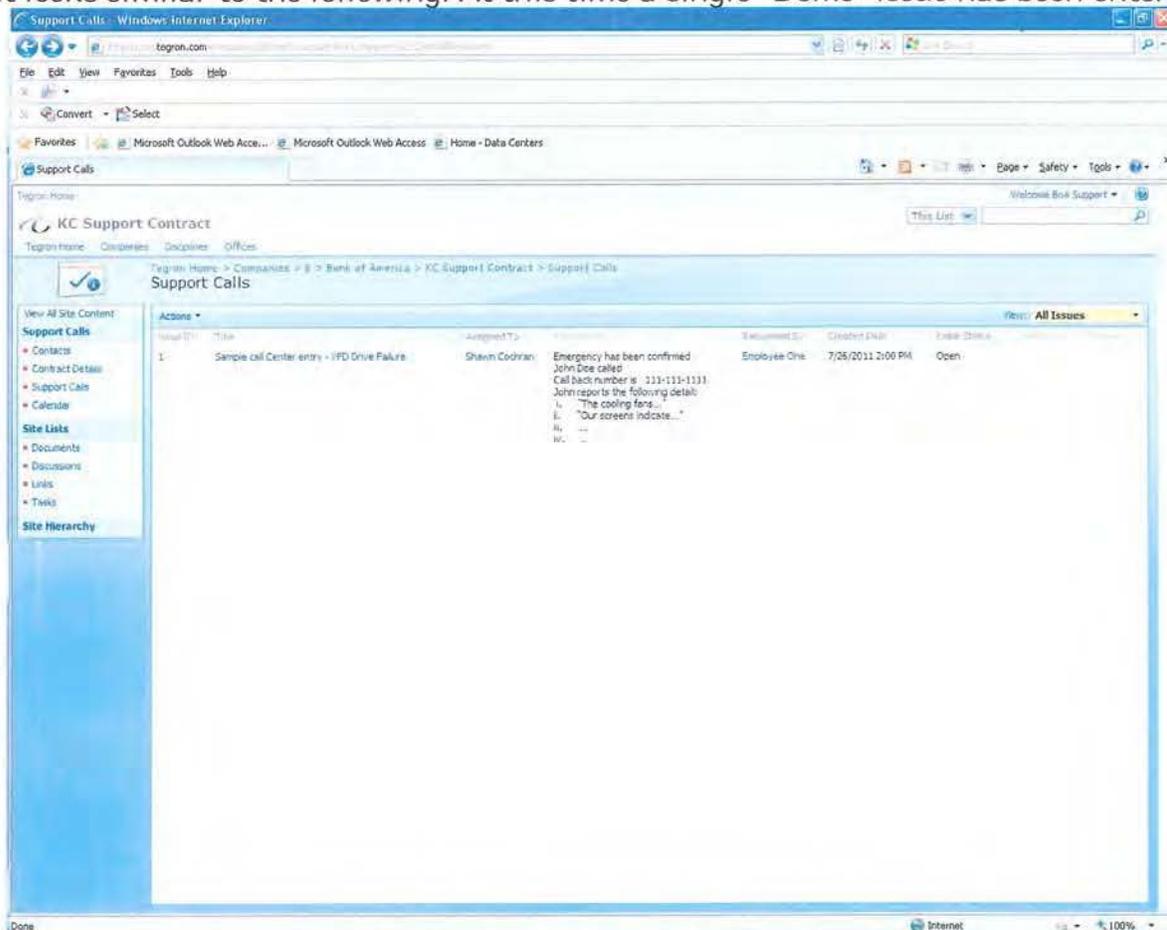
City of Sunnyvale will have read only access to this SharePoint site should they want to review any of the above mentioned issue details. The following link and login information can be used to access this SharePoint location. The following is a real example of an emergency call entry.

<http://sps.tegron.com/companies/s/sss/ssssupport/default.aspx>

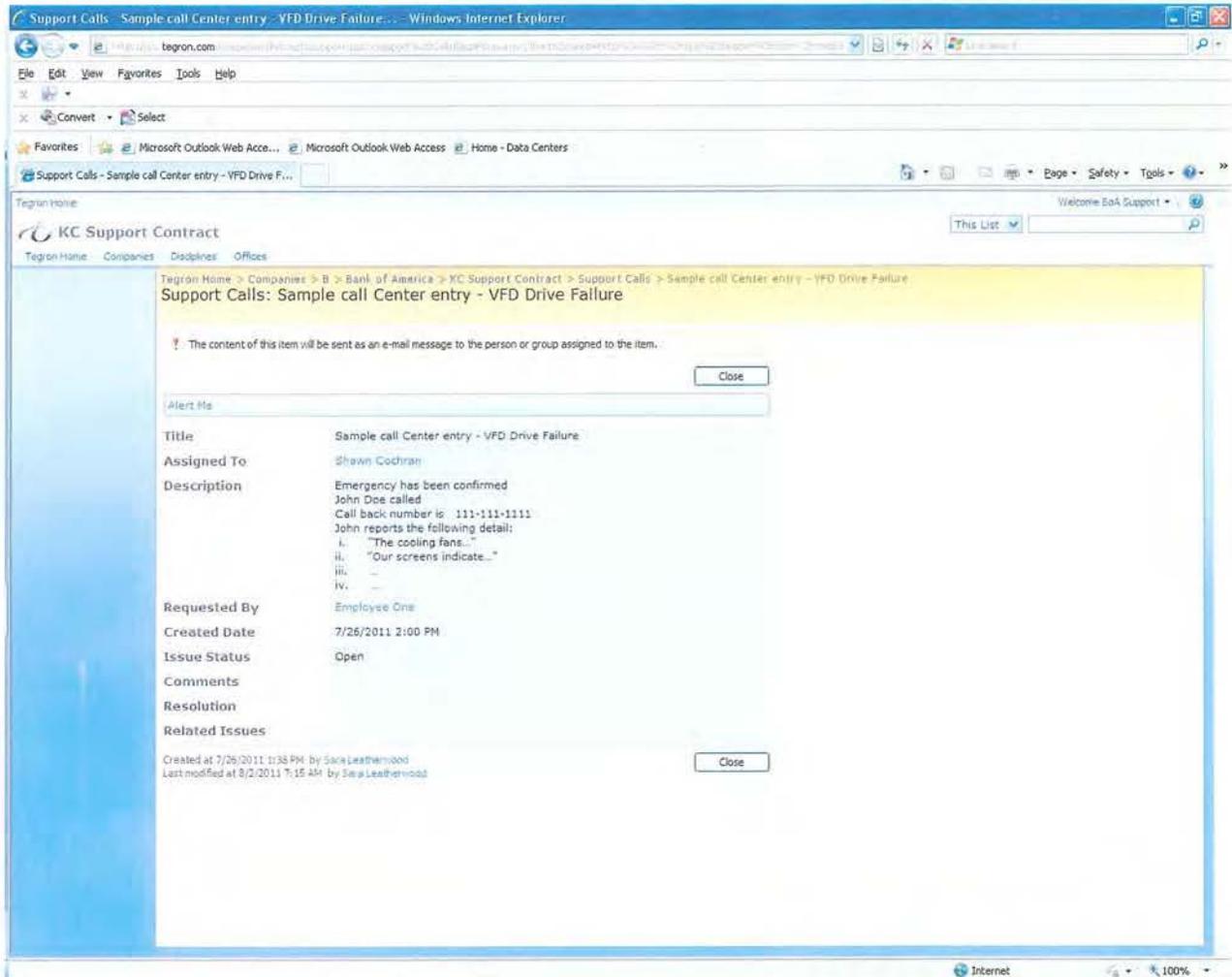
Username: corp_tegron\sss-support

Password: ssssupport@boa

The log of emergency call entries can be accessed by selecting "Support Call" located in the menu on the left side of the SharePoint screen. This will take the reader to a screen that looks similar to the following. At this time a single "Demo" issue has been entered.



The details of any logged issue can be seen by clicking on the issue ID number.



The screenshot shows a web browser window with the URL tegron.com. The page title is "Support Calls - Sample call Center entry - VFD Drive Failure...". The main content area displays the details of a support ticket:

- Title:** Sample call Center entry - VFD Drive Failure
- Assigned To:** Shawn Cochran
- Description:** Emergency has been confirmed
John Doe called
Call back number is 111-111-1111
John reports the following detail:
i. "The cooling fans..."
ii. "Our screens indicate..."
iii. -
iv. -
- Requested By:** Employee One
- Created Date:** 7/26/2011 2:00 PM
- Issue Status:** Open
- Comments:**
- Resolution:**
- Related Issues:**

At the bottom of the ticket details, it says: "Created at 7/26/2011 1:38 PM by SaraLea@tegron.com" and "Last modified at 8/2/2011 7:15 AM by SaraLea@tegron.com".

2.8 Materials & Spare Parts

Minor components such as fuses, relays and pilot lights-lamps are often stocked at GGS. Major components such as panel mounted instruments, power supplies, RTU's, modules and modems are not stocked by GGS.

At the request of the City of Sunnyvale, GGS will furnish replacement materials as necessary for system maintenance. The cost of these materials will be invoiced in addition to the normal quarterly invoicing, per the pricing under the terms and conditions.

City of Sunnyvale will house spare parts in a secure location and provide GGS with access.

GGS will coordinate with City of Sunnyvale for replacement of spare parts. Parts will be obtained from the OEM if under warranty and/or from local distribution channels.

2.9 Quarterly Review Meetings

GGS and City of Sunnyvale will jointly hold quarterly review meetings while GGS is onsite to perform quarterly maintenance. Status of all systems as well as the status of current customer Service Reports will be reviewed. Other outstanding issues will also be discussed. Quarterly onsite maintenance will be scheduled to occur at a time suitable to all participating parties.

2.10 Restrictions

This manual is written to reliably support Operations and Maintenance based upon the RFP NO. F1106-73 and it may not reflect any subsequent work orders issued by City of Sunnyvale.

3 PROGRAM MANAGEMENT

The provisions set out in this document are managed by a GGS dedicated Program / Accounts Manager.

The Program / Accounts Manager is the main point of contact for any information about the provided Support Services.

3.1 Additional Services Available from GGS

GGS can provide additional services not included in or part of the support services currently being proposed. These additional services are offered on a time and material



basis at GGS's standard service rates. Personnel and associated skills available are as follows:

AutoCAD Technician
Engineer
Project Manager

AutoCAD Designer
Sr. Engineer
Project Administrator

Work performed in excess of 8 hours per day Monday through Friday and Saturdays are charged at 1.5 x standard rate. Work performed on Sundays and holidays are charged at 2.0 x standard rate.

4 RULES OF ENGAGEMENT

This section specifies the sequence of events from an initial emergency to a final resolution. These Rules of Engagement provide coordination between GGS and City of Sunnyvale, allowing for a systematic course of action to take place.

4.1 On-site Emergency Situation Determined

It is the responsibility of City of Sunnyvale personnel to determine when and what kind of emergency has occurred. If this initial assessment dictates that help is needed, then GGS may be called to provide Support Services.

4.2 Contacting Call Center for Support

- For emergencies, contact GGS Support Services by dialing 1-877-257-1487.
- When asked, state your *name*, your *company name*, and *contact information* including desired call back phone number.
- State this is an Emergency Service request.
- Wait for a GGS Support Engineer to call back.
- When a GGS Support Engineer calls, discuss the emergency situation and with the Engineer try to resolve.

- If the emergency cannot be resolved over the telephone, request GGS On-site Support.
- When GGS Support Engineer arrives on-site, provide all available details regarding the emergency.

4.3 GGS Telephone Response to the Emergency

- GGS returns calls to City of Sunnyvale within the timeframes specified in Section 2.4.
- The engineer on call will discuss with City of Sunnyvale the situation and attempt to resolve the issue on the telephone.
- If the situation cannot be resolved and with the agreement of City of Sunnyvale, GGS on-site support is initiated.

4.4 GGS On-site Support

- GGS support arrives on-site within the timeframes specified in Section 2.4.
- GGS resolves the emergency.

4.5 GGS Follow Up

- Once GGS completes a reported issue, they will make comments and resolution additions to the SharePoint entry. Using information provided in section 2.7 above, City of Sunnyvale can review these additions at any time.
- The root cause of the emergency will be researched and a recommendation for system improvements will be made to City of Sunnyvale if so warranted.

5 ONGOING MAINTENANCE & SUPPORT SERVICE REFERENCES

5.1 Ongoing Preventative Maintenance

Per Section D. 3 we are providing contact information for customers that GGS is currently providing ongoing maintenance and support services.

Company Name:	City of Stockton
Type of Business:	Water & Wastewater
Customer Service Contract:	2 YR O&M Service
Address:	2500 Navy Drive, City of Stockton, CA
Contact Name:	Melissa Price
Contact Telephone:	209.937.8782
Email:	Melissa.price@stocktongov.com
Company Name:	City of Soledad Public Works
Type of Business:	Wastewater treatment Facility
Customer Service Contract:	2YR O&M Service
Address:	34520 Morisoli Road, City of Soledad, CA
Contact Name:	Ed Waggoner
Contact Telephone:	831.223.5190
Email:	Ed.Waggoner@cityofsoledad.com

Company Name:	City of Burlingame
Type of Business:	Sewer / Storm / Water
Customer Service Contract:	2YR O&M Service
Address:	1361 N. Carolan Ave., Burlingame, CA
Contact Name:	Gordon Gottsche
Contact Telephone:	650.558.7686
Email:	GGottsche@burlingame.org

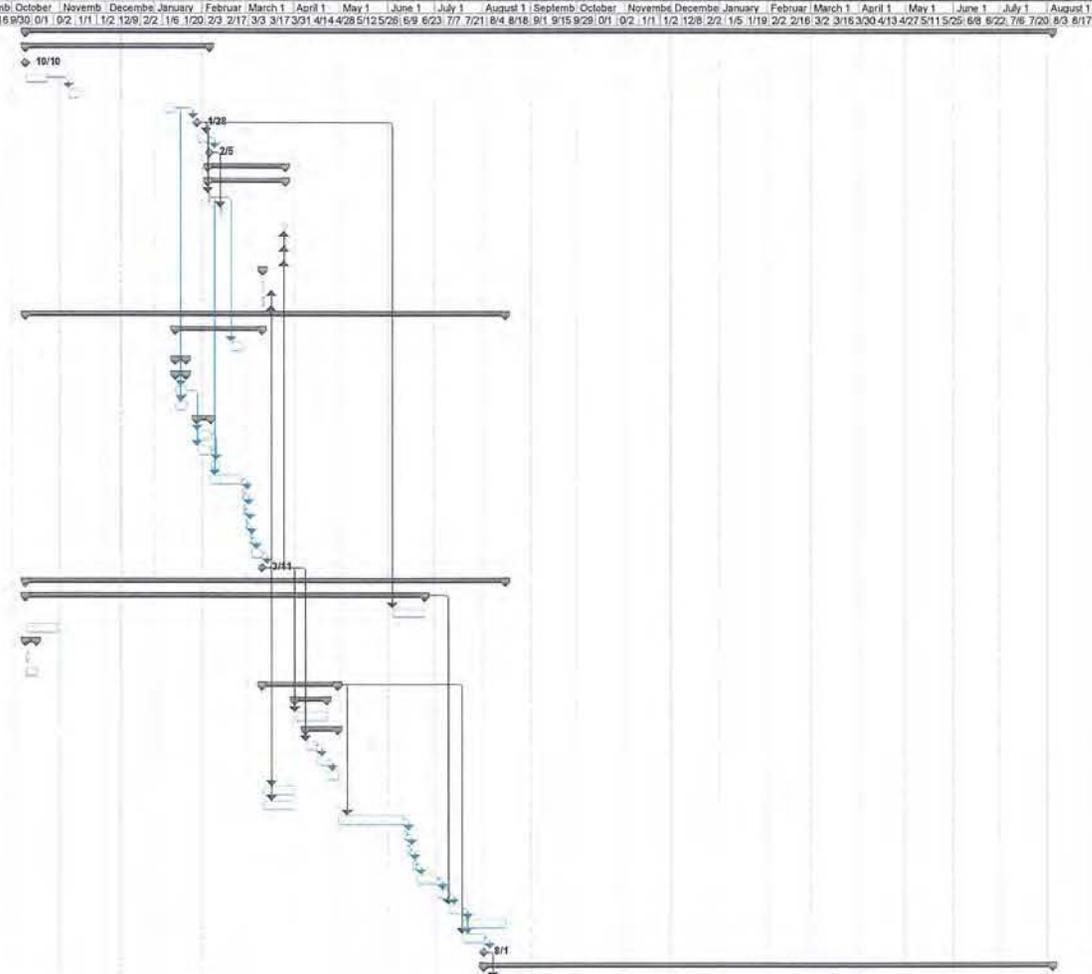
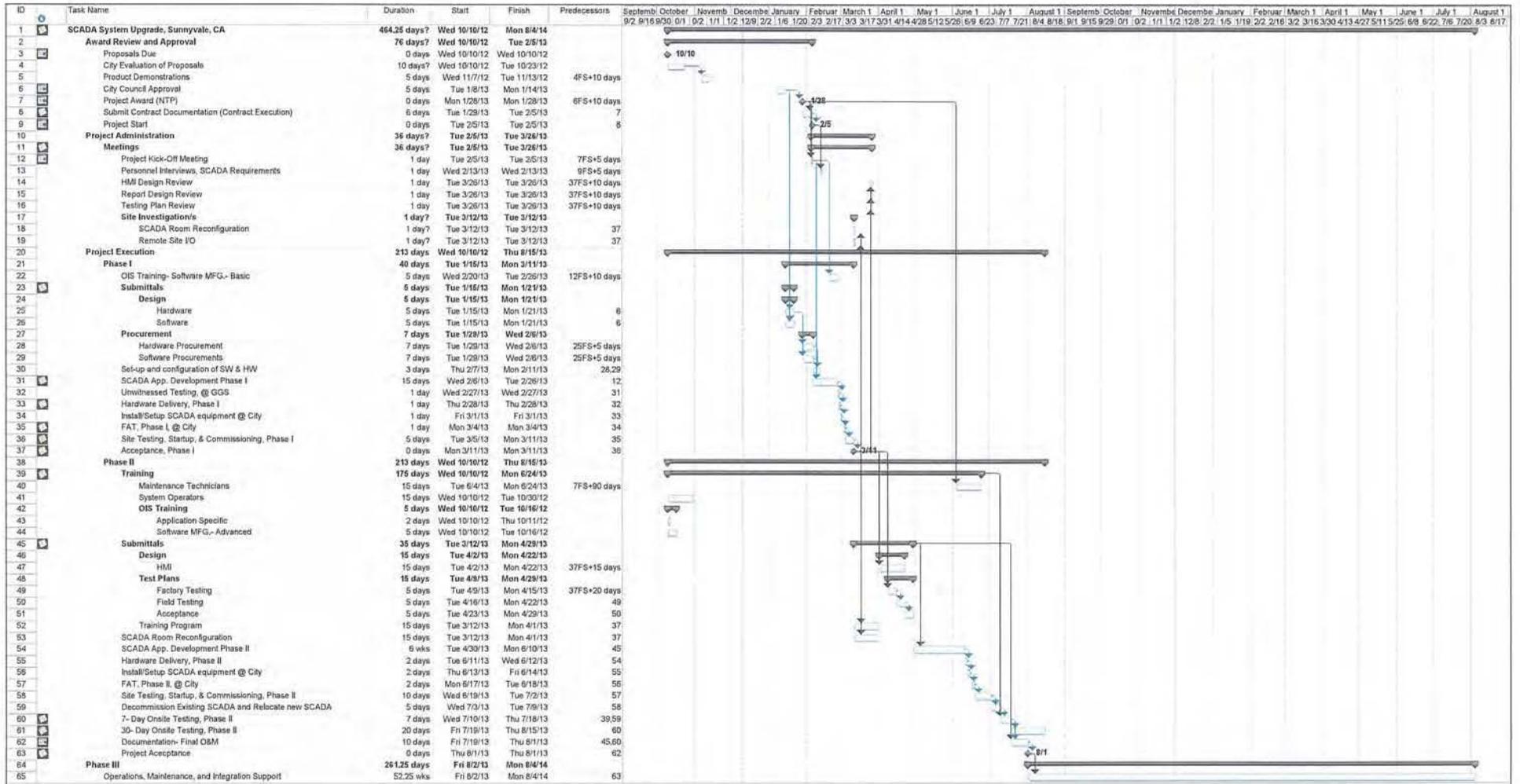


5.2 24/7, 365 Emergency Service

Per Section D. 3 we are providing contact information for customers that GGS is currently providing on-call emergency services.

Company Name:	Bank of America / KCDC
Type of Business:	Infrastructure – Central Plant Chilled Water
Customer Service Contract:	24/7, 365 Emergency Support
Address:	11155 Airworld Drive, Kansas City, MO
Contact Name:	Claus Stark – Jones Lang Lassalle
Contact Telephone:	816.531.2323
Email:	Daniel.ward@glenmountglobal.com
<hr/>	
Company Name:	British Petroleum - Houston
Type of Business:	Infrastructure – Central Plant Process
Customer Service Contract:	24/7, 365 Emergency Support
Address:	14130 1 /2 Grisby, Houston, TX
Contact Name:	Mike Hahn
Contact Telephone:	512.525.3161
Email:	mike.hahn@glenmountglobal.com

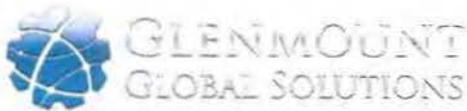
Exhibit "A-1"



Project: City of Sunnyvale SCADA Upgrade
 Date: Mon 12/10/12
 B. Goodrich, Glenmount Global Solutions

Task: Progress Summary External Tasks Split
 Milestone Project Summary External MileTask

Exhibit "B" (Compensation Schedule)



RFP: F1106-73
SCADA System Upgrade



1 COST PROPOSAL

Below is our priced proposal with a detailed list of our scope of supply..

SCHEDULE OF VALUES		
DESCRIPTION	QTY	PRICE
ENGINEERING / LABOR		
Administration, Engineering, Procurement	1	\$150,988
SCADA Room Recommendations	1	\$12,856
Testing	1	\$18,200
Startup	1	\$24,700
O&M Support		
Annual Software Support	1	\$7,602
Service (quarterly plus, 1 yr. 8- 5 M-F)	1	\$47,379
Subtotal Labor	1 Lot	\$261,725
TRAINING		
Mfg. Training Basic & Advanced	1	\$24,300
Training Plans & Expenses	1	\$11,415
Applications Training	1	\$4,160
Operator Training	1	\$15,600
Maintenance Technician Training	1	\$15,600
Video Tape Training Sessions	1	\$1,350
Subtotal Training		\$72,425
MATERIALS		
Dell Server	2	\$16,923
Dell Workstation w/Monitors (qty.6)	2	\$8,189
Server Rack	1	\$2,430
Qty. three (3), Dell Latitude E5430 Qty. one (1), Rugged Dell Latitude E6420 XFR	4	\$11,036
Qty. four (4) Clear SCADA ViewX thick Client, configuration, set-up and annual support.	1	\$14,824
UPS- 1 set of 2 ea. For Server	1	\$15,686
Win911 Software	1	\$7,987
ClearSCADA Software	1	\$21,984
PLC Spares, SCADAPack 32	3	\$4,813
I/O Module, AO Spares	4	\$2,253
I/O Module, AI Spares	1	\$990
Submittal Materials	1	\$405



Modbus to Serial Ethernet Bridge	1	\$675
Wire and Cabling for Sever relocation	1	\$810
Subtotal Materials		\$109,005
Subcontractor		
Electrical Installation, SCADA Rm. Reconfig	1	\$5,900
Subtotal Subcontractor	1 Lot	\$5,900
TOTALS		
Total Base Price		\$449,054
Taxes (Estimated Tax Added)	8.375%	\$9,766
Total		\$458,820

Cost Proposal Narrative

Per discussion with the City on 11/16/2012. The following adjustments have been made to the initial cost proposal.

Training- Our proposal complies with the requested training and training plan requirements. This budgeted amount offers flexibility to tailor a plan that meets the City’s specific requirements. Items not utilized or changes in scope can be managed through written change notices, once the project is underway. Video recording services for training events has now been included.

O&M Support- This support has been quoted to include quarterly service, plus annual on-call coverage Monday through Friday 8:00 am- 5:00 PM. This is an exception to the specified 24/7 coverage called for in the RFP.

Laptop Computers – Optional scope has been added to provide three standard laptops, one rugged laptop, and the associated ClearSCADA ViewX thick clients, along with annual software support.

UPS- Reference specifications 13453 2.02 D. 2.b. & 11. As specified, the requirements call for a UPS per Server. The minimum UPS power requirements can serve both servers adequately. Since these servers are both in the same rack, the system could be safely be back with one UPS system rather than two. Reduced pricing and additional rack space would result from an exception to this specification. The price has been reduced due to a reduction in scope by quantity one set (2 ea.) Server UPS and quantity four (4) workstation UPS.

Order of Operation – The price has been reduced to account for efficiencies for bringing on line a fully functional subset of the system first (10 of the 27 locations), versus as specified fast start up and fully functional following thereafter

Factory Testing – Included in Factory Testing is up to 50 I/O points that have been added since the City’s original SCADA project (by others) was installed. For these points, GGS will provide testing from the field equipment to SCADA workstations through the respective PLC.

2 Rate Schedule

Service	List Price	Premium/ On-Demand	Holiday
Principal Engineer / Senior Consultant	\$175.00	\$262.50	\$350.00
Project Manager	\$150.00	\$225.00	\$300.00
Senior Engineer	\$140.00	\$210.00	\$280.00
Field Service Engineer	\$135.00	\$202.50	\$270.00
IT Analyst / IT Consultant	\$130.00	\$195.00	\$260.00
Project Engineer	\$130.00	\$195.00	\$260.00
Factory Technician	\$90.00	\$135.00	\$180.00
Shop / Fabrication	\$80.00	\$120.00	\$160.00
Drafting (CAD) / Documentation	\$70.00	\$105.00	\$140.00
Project Administration	\$46.00	\$69.00	\$92.00

- **List Price:** constitutes all hours worked Monday through Friday 7:00 AM to 5:00 PM not to exceed eight (8) hours per day, and are not “On Demand” hours.
- **Premium and On Demand Rate:** constitutes all hours worked Monday through Friday with less than seventy- two (72) hours prior notice, all hours worked Monday through Friday exclusive of 7:00 AM to 5:00 PM or in excess of eight (8) hours, and all hours worked on Saturday. The on-demand time requirement is reduced to twenty-four hours/ or waived for Customers with maintenance contracts and/or blanket agreements.
- **Holiday Rate:** constitutes all hours worked on Sundays or Holidays. Glenmount Global Solutions’ observed Holidays are New Year’s Day, Good Friday, Memorial Day, July 4th, Labor Day, Thanksgiving (and the day after), and Christmas.
- **Travel:** Travel time to and from your facilities will be billed at the “List Price” Rate except for “On Demand” Travel Time. Travel time is portal to portal. Reasonable expenses associated with out of town travel will be billed to the customer on a cost plus basis. IRS approved mileage rates will apply.



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%

EXHIBIT C

INSURANCE REQUIREMENTS FOR CONSULTANTS

Consultant shall procure and maintain for the duration of the contract insurance against claims for injuries to persons or damages to property which may arise from or in connection with the performance of the work by the Consultant, his agents, representatives, or employees.

Minimum Scope and Limits of Insurance: Consultant shall maintain limits no less than:

1. **Commercial General Liability:** \$1,000,000 per occurrence and \$2,000,000 aggregate for bodily injury, personal injury and property damage. ISO Occurrence Form CG 0001 is required.
2. **Automobile Liability:** \$1,000,000 per accident for bodily injury and property damage. ISO Form CA 0001 is required.
3. **Workers' Compensation** and **Employer's Liability:** \$1,000,000 per accident for bodily injury or disease.
4. **Errors and Omissions** Liability Insurance appropriate to the Consultants Profession: \$1,000,000 per occurrence and \$2,000,000 aggregate.

Deductibles and Self-Insured Retentions

Any deductibles or self-insured retentions must be declared and approved by the City of Sunnyvale. The consultant shall guarantee payment of any losses and related investigations, claim administration and defense expenses within the deductible or self-insured retention.

Other Insurance Provisions

The **general liability** and **automobile liability** policies are to contain, or be endorsed to contain, the following provisions:

1. The City of Sunnyvale, its officials, employees, agents and volunteers are to be covered as additional insureds with respects to liability arising out of activities performed by or on behalf of the Consultant; products and completed operations of the Consultant; premises owned, occupied or used by the Consultant; or automobiles owned, leased, hired or borrowed by the Consultant. The coverage shall contain no special limitations on the scope of protection afforded to the City of Sunnyvale, its officers, employees, agents or volunteers.
2. For any claims related to this project, the Consultant's insurance shall be primary. Any insurance or self-insurance maintained by the City of Sunnyvale, its officers, officials, employees, agents and volunteers shall be excess of the Consultant's insurance and shall not contribute with it.
3. Any failure to comply with reporting or other provisions of the policies including breaches of warranties shall not affect coverage provided to the City of Sunnyvale, its officers, officials, employees, agents or volunteers.

4. The Consultant's insurance shall apply separately to each insured against whom claim is made or suit is brought, except with respect to the limits of the insurer's liability.
5. Each insurance policy required by this clause shall be endorsed to state that coverage shall not be suspended, voided, cancelled by either party, reduced in coverage or in limits except after thirty (30) days' prior written notice by certified mail, return receipt requested, has been given to the City of Sunnyvale.

Claims Made Coverage

If the General Liability and/or Errors & Omissions coverages are written on a claims-made form:

1. The retroactive date must be shown, and must be before the date of the contract or the beginning of contract work.
2. Insurance must be maintained and evidence of insurance must be provided for at least five years after completion of the contract work.
3. If coverage is canceled or non-renewed, and not replaced with another claims-made policy form with a retroactive date prior to the contract effective date, the Consultant must purchase an extended period coverage for a minimum of five years after completion of contract work.
4. A copy of the claims reporting requirements must be submitted to the City of Sunnyvale for review.

Acceptability of Insurers

Insurance is to be placed with insurers with a current A.M. Best's rating of no less than A:VII, unless otherwise acceptable to the City of Sunnyvale.

Verification of Coverage

Consultant shall furnish the City of Sunnyvale with original a Certificate of Insurance effecting the coverage required. The certificates are to be signed by a person authorized by that insurer to bind coverage on its behalf. All certificates are to be received and approved by the City of Sunnyvale prior to commencement of work.