



Specifications



LG314/1185/16/004

**Support and ongoing
enhancement of sewer and
water SCADA systems**

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1 General

Within the City of Gold Coast (Council) Gold Coast Water (GCW) is responsible for providing safe drinking water and safe sewerage collection, treatment, reuse and disposal.

GCW operates within the geographical boundaries of the City of Gold Coast. Facilities owned and operated by GCW include, but are not limited to the following:

- | | |
|--|------------------------------------|
| A. Four sewerage treatment plants | D. 57 water pump stations |
| B. One advanced recycled water treatment plant | E. 58 water supply reservoirs |
| C. 529 sewerage pump stations ¹ | F. Five re-chlorination facilities |

GCW ensures the protection of the natural and built environment, and that workplaces are safe not only for workers but also for others by, as far as possible, the elimination of avoidable risks and the control and mitigation of unavoidable risks to the health or safety of workers, and the community.

2 Introduction – Current Status

Council has an existing SCADA network that monitors, and in some instances, controls the sewer and water networks for the whole of the City of Gold Coast.

ClearSCADA is utilised throughout the water and sewer network, with Plant Control Systems using Siemens PCS7 (various versions) at three of the sewerage treatment plants and Yokogawa Centrum VP R5 at the remaining (fourth) plant (A and B above).

Council currently has an existing arrangement in place to undertake support and enhancement activities across the existing Sewer SCADA network. These incorporate a broad range of support functions across the 529 active sites (C above)

Council also has an existing arrangement in place to upgrade the water SCADA network across approximately 120 sites, comprising a mix of pumping stations, reservoirs and re-chlorination facilities (D, E and F above).

At this point in time there is only minimal information which is captured on the ClearSCADA Platform, with most of the data being held at the relevant plant site, including various reports captured in the SCADA servers / system.

This tender is for the provision of system engineering support and related services to enable Council to extract maximum value from their SCADA system(s) ensuring maintainability and availability of the systems application over the life of the contract and comprises two Separable Portions (SP):

1. Treatment Facilities – A and B above
2. Outstations (Water and Sewer Network) – C, D, E and F above.

The contractor may submit a tender for one or both portions in their entirety.

It should be noted that these services will be effective from the Commencement Date, however the Water Outstations portion of SP 2 will be effective from the end of the current defect and liability period, which is due to terminate no later than 30 June 2017.

3 Scope

This tender is for the appropriate and timely delivery of SCADA enhancement and support services for each of the Separable Portions e.g. the Water and Sewer Network and Sewage / Recycled Treatment plant

¹ Note: the number of stations/ reservoirs will constantly change with the addition and removal of stations as the business requires.

facilities. As above the scope of Outstation portion will also incorporate support of the water network at the conclusion of the current defect and liability period, which is due to end no later than 30 June 2017.

Support services will include planned and/or unplanned support services, assessment, evaluation, design, installation/implementation and testing/commissioning of all necessary software and field hardware, for all systems as required in the field to ensure maintainability and availability and reliability of the systems and applications.

The Contractor may be required to deliver one or more of the following service outcomes during the period of the contract. This is not by any means an exhaustive list, therefore, there may be other requirements directly related to control system engineering not listed below.

- Field asset migration from one polling loop to another;
- Field asset from one MTU to another MTU;
- Development of switchboard base type (general);
- HMI installation for a field asset not currently on SCADA;
- HMI migration for a field asset switchboards from one base type to a new base type;
- HMI field asset removal;
- HMI fault diagnosis;
- HMI development;
- Supply of RTU code / PLC code for all assets including version control;
- RTU code loading into new/replacement switchboards;
- Switchboard RTU trouble shooting, factory acceptance and site acceptance testing;
- Network design;
- Network implementation;
- Network support, repair and maintenance;
- Effluent SCADA system design;
- Effluent system implementation and support;
- Historian support and development;
- Training;
- Operations and maintenance manual support;
- Supply of PLC/ RTU equipment;
- Support for Tide Time software;
- Server - SOE support and development;
- Software and firmware version change support;
- Report creation for SCADA;
- Telephone support;
- Control systems engineering support;
- Radio path surveys and documented report;
- Server relocation / replacement in conjunction with CoGC IT Department.

Separable Portions are identified as follows:

Separable Portion 1 (Outstations)	Required	Separable Portion 2 – (Sewage TP)	Required
Field asset migration from one polling loop to another;	✓	Supply of RTU / PLC / DCS code for all assets including version control	✓
Field asset from one MTU to another MTU	✓	HMI field asset removal	✓
Development of switchboard base type (general)	✓	HMI fault diagnosis	✓
HMI installation for a field asset not currently on SCADA	✓	HMI installation for a field asset not currently on SCADA	✓
HMI migration for a field asset switchboards from one base type to a new base type	✓	Control systems engineering support	✓
HMI field asset removal	✓	Software and firmware version upgrade / change / support	✓
HMI fault diagnosis	✓	Server - SOE support and development	✓
Supply of RTU code for all assets including version control	✓	Operations and maintenance manuals / support	✓
RTU code loading into new/replacement switchboards as part of commissioning.	✓	Telephone support	✓
Switchboard RTU trouble shooting, factory acceptance and site acceptance testing	✓		
Network design	✓		
Network implementation	✓		
Network support, repair and maintenance	✓		
Effluent SCADA system design	✓		
Supply of PLC/ RTU equipment	✓		
Software and firmware version change support	✓		
Support for Tide Time software	✓		
Radio path surveys and documented report	✓		
Historian support and development	✓		
Training	✓		
Operations and maintenance manuals / support	✓		
Control systems engineering support	✓		
Telephone support	✓		

4 Statement of Requirements

This section defines the services required to be undertaken:

4.1 General

The Contractor is to make available the appropriately qualified technical resources and knowledgebase to provide the necessary support for the implemented and/or operational systems.

The Contractor is also responsible for providing the support systems for organising, documenting and controlling the level of support.

GCW will provide reasonable technical support related to hardware issues in resolving any issues not covered by the contract works as they arise. This includes but is not limited to the Operating System and IT support.

- a) Engage and coordinate all necessary specialist services and/or subcontractors necessary to undertake and complete the support service requirements following receipt of Work Directions from the CCR / Representative in accordance with the Schedule of Rates.
- b) Where the contractor is unable to undertake the works required in the work direction, the CCR / Representative may direct the contractor to engage a nominated subcontractor to perform the works. The Contractor shall be solely responsible for all the work undertaken by themselves or subcontractors (including a nominated subcontractor where agreed with Council).

4.2 Critical Events

A critical event is defined as for the purpose of this contract: An event that exposes GCW and the broader community to environmental and safety risks due to the system of the Clear SCADA Platform, failed hardware and or loss of control system at a sewerage treatment plant, allowing an uncontrolled release of contaminated water to the natural environment.

Therefore, to mitigate the risk of unplanned failures and outages, the Contractor will be required to undertake the following:

- a) Provision for qualified engineering support to be available to receive and respond to notification of faults 24 hours per day, 365 (or 366) days a year, including gazetted public holidays.
- b) Respond to a fault notification by providing on-line remote support within one (1) hour of receipt of notification in a critical event.
- c) Where on-line remote support is unable to resolve the fault the Contractor shall attend site within two (2) hours, unless otherwise agreed by GCW, and subject to the criticality / severity of the event.

The Contractor shall nominate a fixed price loading that shall be applied to out of business hours critical events, which shall be included in item 1.02 of the Schedule of Rates Price Submission form.

4.3 Non- Critical Events

Response times shall be negotiated and agreed at the time of notification to the contractor, depending on environmental and health risk, asset damage risk and system availability risk. However in all cases this shall be a maximum of time shown in the Work Direction, or as agreed between the parties.

4.4 Work Directions

The Contractor shall within 24 hours of receipt of a Work Direction issue a confirmation to the requesting CCR or nominated representative.

The Contractor shall within three (3) working days of receipt of a request for quote, shall provide a written quote to the CCR or nominated representative, if a quotation is required for works not identified within this contract.

The Contractor shall notify the CCR and / or nominated representative if any planned completion date issued on the Work Direction cannot be achieved. The CCR or nominated representative shall then make a decision on the prioritization of work to be completed.

4.5 Contractual, planning and management requirements

The Contractor shall also be responsible for the following contractual, planning and management requirements in respect of the in-scope equipment:

- a) Design management, planning and programme management;
- b) Project management;
- c) Site supervision;
- d) O H & S and quality management, to be a deliverable under the contract deliverables;
- e) Procurement management, delivery and disposal;
- f) Risk management and mitigation;
- g) Progress reporting and attendance at meetings and workshops.

4.6 Non-technical requirements

The Contractor shall also be responsible for the following non-technical requirements

- a) Documentation, schedules, reports, data sheets and drawings;
- b) Transfer of ownership of all software and licenses and new radio licences (if applicable) to Council;
- c) Onsite and off-site training on the in scope equipment and software as required by Council.

4.7 Resources

The Contractor is to make available the appropriate qualified technical resources and knowledgebase to provide the necessary support for the implemented and/or operational system(s). The Contractor is also responsible for providing the support systems for organising, documenting and controlling the level of support required for the work direction given. Where the contractor does not have the specific resource required, then a sub-contractor may be engaged to complete the required works under the direction of the contractor. Any sub-contractors engaged will need to be identified in the tender response and the proposed personnel will be required to undertake the necessary inductions as outlined in 7.3 Principals Site Inductions.

4.8 Contract specific requirements / constraints

Council advises that the following requirements and/or constraints exist with respect to the execution of this contract, (the following list may not be comprehensive):

- a) When working on HMI, the sewage pump stations may overflow and cause environmental damage if the backup Sever and Radio network is not maintained in an operational state when the Contractor is working on the HMI at/or on one of the Server Masters;
- b) The Contractor shall ensure that any person attending a sewerage pumping station, at any time, carries out the following procedure:
 - Where it is a planned event - notify the CCR or Principal's representative of the intended entry and advise the purpose for the entry;
 - Contact the Principal's 24 Hour Operations Centre on (07) 5581 7949 before entering the pumping station and/or accessing any part of the pumping station facilities;
 - Advise the Principal's 24 Hour Operations Centre when final entry has been completed for that day or night time event;
 - Contact the Principal's 24 Hour Operations Centre to confirm that the pump station is operating normally and correctly;
 - Repeat the above procedure for each subsequent day or night entry.

Failure to carry out the above procedure will result in an 'Intruder Alarm' being activated which will result in the Contractor charged for the cost of responding unnecessarily to the alarms. Payment for any infringements by the Contractor shall be made through Council's Recoverable Private Works Process (typical costs range from \$400 day time to \$600 at night time, depending on location and time of the infringement).

- c) No road closures shall be permitted. Road opening permits are to be obtained from Council.
- d) Existing sewerage system to remain operational unless approved otherwise by the CCR or representative.

Sewage Treatment Plants

All works are to be carried out with the minimum disruption to plant operation or access. If it is necessary to take the system off-line for maintenance or other prescribed works, the duration of these shut downs must be kept to a minimum. Plant Supervisors must be kept informed of the job status and be advised in advance of any activity that may cause interference to the operation of the SCADA and/or its associated equipment.

Licences

Floating licenses shall allow wide use throughout the council. However, it's preferable that the licenses can be allocated to users of the system through their SCADA user accounts with an ability to prioritise the distribution of licenses to specific users.

Fixed Licenses shall be a dongle or serial based license that can be allocated to a specific PC/User, however, it's preferable that the specific licenses can be allocated to specific users of the system through their SCADA user accounts.

5 Technical Requirements

The Contractor will at times, be required to undertake detailed design requirements under this contract at the direction of GCW. The Detailed Design / Functional Description shall include, as a minimum specific to the relevant projects, the following information as applicable:

5.1 Design and performance criteria

- a) Detailed Design documentation, presented in a complete and concise report format;
- b) Verification of the hardware/software design and configuration;
- c) Verification of the Construction plan and Methodology;
- d) Project migration plan;
- e) Verification of all technical or site issues that require clarification and resolution;
- f) Verification of all industry standards applicable to the design and construction.

The Detailed Design Report shall include the requirements defined above, together with all necessary health and safety documentation, specifications, data sheets, drawings and reference material/documentation necessary for the complete construction of the Detailed Design solution for the Works.

5.2 Functional characteristics

The functionality to be provided to the SCADA network shall include, but not be limited to the following:

- a) Software management and upgrades shall be capable of being updated without affecting system security and overall performance;
- b) The SCADA network shall have the ability to be enhanced by adding new functionality with minimal effort and/or interruption/degradation of service.

- c) Shall be fully maintainable by GCW technicians/engineers;

5.3 Performance characteristics

The undertaking of all works related to the SCADA system and sub-systems shall consider and make all necessary arrangements and provisions to ensure that all existing systems and sub-systems continue to operate and function, without loss and/or degradation of performance or interruption. This requirement shall reflect a required level of availability of no less than 99.95%, whilst under the direct supervision/control of the Contractor.

5.4 Operational – availability/uptime

The following availability requirements must be adhered to by the Contractor, in conjunction with Council's ICT Department. If, in the event that the issue is outside of the control of the Contractor, the City's point of contact must be advised immediately to enable the assistance of the Gold Coast City ICT Support. **The CCR must be advised in writing of the reasoning as to why incident was outside of the control of the contractor for auditing purposes.**

Availability requirements

System, subsystem or equipment	Availability (A)	Down time per annum (based on 365 days pa)
PLC/RTU/MTU (localised control function)	A > 99.95%	4.38 hours
Operator access to SCADA Application (effective availability of redundant servers)	A > 99.95%	4.38 hours
Historian and reporting functionality (for operator use)	A > 99.75%	21.90 hours
Historian and reporting functionality (for corporate use)	A > 99.00%	87.60 hours

Data integrity

Data shall be retrieved from the RTU without corruption or loss. Data integrity must be demonstrated to the CCR and or principal representatives upon request. Data will need to be validated for the period in question, eg un-planned outages.

For existing sites a data sample shall be extracted and compared once the necessary modifications / changes have been completed. It is envisaged that the Contractor will make sufficient allowance in their response to carry out an integrity test on both water and sewer SCADA systems. The contractor will review this requirement and in consultation with the CCR, implement the validation of a data sample once per annum using 3 sites from each separable portion.

5.5 Technical characteristics

The SCADA sewer and water operational systems comprise of the following technical components:

- Kingfisher RTU's:
 - > PC1 Processors
 - > CP11 Processors
 - > CP12 Processors
 - > CP21 Processors
 - > LP1 Processor
 - > Toolbox Software

- SCADA-Pack RTU's:
 - > 334E
 - > 535E
- Omron PLC and HMI's:
 - > CJ1 Processors
 - > CJ2 Processors
 - > NS8 HMI
- Siemens S7 PLC units – PCS7 Software
 - > S7-400H Processors
 - > Version 7
 - > Version 8
- Yokogawa:
 - > Centrum VP R5
 - > CP345 Processors
- Licensed 400MHz radio network:
 - > Icom 6023 radios
 - > Trio M/S/E/Q series radios
 - > Tait 2000 radios
- Licenced 20Mb/s Microwave bandwidth network:
 - > Ceregon IP-10
 - > Moxa Switches'
- Hot standby ClearSCADA servers:
 - > Three Sewer servers
 - > Two Water servers

NOTE: All Servers are managed through the Principal's Business Innovation and Technology Services (ICT) team.

- OSi Pi Historian application that is linked into both sewer and water networks.

5.6 Acceptance testing

FAT – Factory acceptance testing

The aim of the Factory Acceptance Test (FAT) following an upgrade or the addition of a new site is to verify that the software is written to comply with GCW requirements, and functions as requested in Work Directions, and to verify that the Telemetry/SCADA software is complete in every respect.

The Contractor shall ensure that all system, together with all equipment offered for factory inspection and testing is fully complete and in a state considered ready for dispatch to the site. Any incomplete software offered for factory inspection shall be rejected as not in accordance with the Contract.

The FAT shall be witnessed by GCW or its elected representative and test sheets signed and approved during the test.

A FAT document shall be produced by the Contractor, this shall be reviewed and permission to proceed provided by City of Gold Coast.

Factory Acceptance Testing shall (where applicable) comprise the following activities as a minimum:

- Normal process functional testing of the software (in accordance with the FAT test documentation).
- Failure mode testing of the software.
- Recovery mode testing of the software.
- Confirmation of SCADA status and alarms.

- Testing of any network communications software (if possible).

SAT – Site acceptance testing

SAT will be completed upon commissioning of the station.

A comprehensive commissioning document will be utilised for verification of data being received into the Clear SCADA system

A copy of the commissioning documentation will be passed to the Principal upon successful commissioning of the site. Refer to the GCW Supplementary Mechanical and Electrical Specification.

6 Performance Measures

The following measures will be used to assess contractor performance against the achievement of objectives for the duration of the contract:

The purpose is to ensure both parties cooperatively focus on a common objective; to achieve an outcome for the desired service level and appropriate support of the system in a timely manner.

- Time to respond (General requests)
- Time to respond (Emergency situations)
- Compliance to completion times (as agreed in work direction)
- Adherence to availability / uptime

What to measure	How to measure
Quantity	
Major deliverables:	Responses times to be monitored and reviewed as per 4.2, 4.3, and 4.4
Quality	
Major deliverables; Percentage of availability of the SCADA system(s) at various sites across CoGC that meet agreed standards;.	Quality assurance systems put into place. Availability and Uptime measured against 5.4 Operational Availability.
Operational Reliability	
Major deliverables;	Key deliverables for the Principal are System Reliability and Response to Critical events.as defined in this Section 6. Reliability is defined as a measure of an equipment or system to perform its intended function under specified conditions for a specified period of time. It is a probability figure, based on failure data and length of operating time. Reliability is expressed in Mean Time Between Failures (MTBF), and can be calculated on the individual system components.
Timeliness	
Delivery or response times within agreed timeframes or completion dates. These might include diaries, time sheets and/or work plans.	<u>Critical Event:</u> <ol style="list-style-type: none"> Number of events in total , Number of response times <1hr, Number of response time2 >1hr

	<p><u>Non-Critical Event</u></p> <ul style="list-style-type: none"> a) Number of events in total , b) Number of responses within agreed timeframe, c) Number of responses outside of agreed timeframe, <p><u>Work Direction requirements:</u></p> <ul style="list-style-type: none"> a) Number of work directions in total b) Number of work directions receipt times <24hrs, c) Number of work directions receipt times >24hrs, d) Quotations received from work directions <3days e) Quotations received from work directions >3days
User Satisfaction	
Customer Satisfaction.	Regular meetings to be held in relation to the performance measures and minutes distributed in a timely manner. Frequency to be determined during the start-up meeting. It is envisaged initially to be bi-monthly with a review held post the second meeting.
Continuous Improvement	
Identify opportunities for continuous improvement and implementation of programs for continuous improvement.	Six monthly meetings to assess any improvements to the operation of the contract.

Performance measures will be discussed during the support agreement against the following:

- Monitoring all aspects of contract performance and facilitate discussions at performance meetings
- Improving service level offerings through achievement of performance targets.
- Monitoring any issues encountered and solutions identified to rectify these.
- Making informed decisions regarding activation of contract extensions.

Allowance should be made for regular meetings as described in User Satisfaction and Continuous Improvement, post the contract initiation meeting, which should incorporate a transitioning in/out meeting.

Access to an online database is required to capture all work requests, including any defects that may arise. This database shall be capable of recording commencement dates and estimated completion dates, detailing current stage of work. This database to be reviewed with contractor on a regular timeframe to ensure Operational – Availability / Uptime limits are within tolerance.

7 Work Health and Safety (WHS)

Be responsible for the performance of the functions of the Principal Contractor within the meaning of the Work Health and Safety Act 2011 and Regulation 2011 (collectively known as 'the Act').

All costs associated with identified or unidentified hazards / risks, compliance and contingency items for the specified Contract Works are the responsibility of the Contractor and should be itemised and included in the item 2.10 (SP1) and 2.09 (SP2) of the Schedule of Rates Price Submission form

7.1 Known hazards

In accordance with the Work Health and Safety Act 2011 the known hazards for this project identified by the Principal are listed below. This assessment is not exhaustive and may exclude risks that are typical of work practices. Perform a risk assessment of the hazards at each work site prior to the execution of the Works.

Contractor is to provide the Safe Work Method Statements (SWMS) and risk assessment to the CCR / representative showing how potential hazards will be mitigated. The contractor can identify additional hazards prior to works commencing and report to Councils representative.

- Animals including insects, snakes and spiders that bite or sting.
- UV radiation exposure longer than 15 minutes.
- Hazardous atmosphere – H₂S, Methane, and fuel vapours.
- Working on or near fuel lines.
- Working on or near electrical installations - Electric shocks.
- Working around microwave and radiation associated with transmitting and receiving towers.
- Extremes of heat, or cold (extreme in temperature caused by operating machinery or artificial environments such as cold rooms).
- Confined spaces (work that will be carried out in or near a confined space).
- Slips, trips and falls.
- The presence of asbestos.
- Under ground or overhead utilities (gas, water, electricity etc).
- Use, handling and storage of hazardous chemical / dangerous goods.
- Working near water or liquid that poses a risk of drowning.
- Working on or adjacent to moving traffic.

7.2 Sun protection requirements

The minimum WHS standard must be maintained at all times. Diligent adherence is required to all legislative WHS requirements for all persons on all work sites at all times. UV exposure is a hazard and suitable controls, which, at a minimum, will include personal protection equipment (PPE) standards such as broad brimmed hats, long sleeves and trousers for any worker that is exposed to UV for greater than 15 minutes, unless a risk assessment exemption is approved.

It is the Contractors responsibility to identify all hazards associated with the service. The Contractor must identify any additional hazards prior to works commencing and implement the necessary controls to ensure work health and safety, and provide the Safe Work Method Statements (SWMS) and risk assessments to the Council Contract Representative showing how potential hazards will be mitigated. This is to be at no additional cost to Council.

Management and control of the workplace is as per Conditions of Contract unless otherwise advised by Council or the CCR in writing.

7.3 Principal's site inductions

Prior to commencement of works, all contractors' personnel including subcontractors must complete contractor inductions provided by the Principal or the Council Contract Representative as appropriate for the specific work site.

The inductions will inform workers of potential risks that they may encounter the required safety expectations and the responsibilities of workers when undertaking works under this contract.

Complete relevant inductions applicable to the area of work before starting work on any site.

The induction process uses an online system called “Rapid Induct” whereby separate induction processes apply:

General Induction to GCW (compulsory for all of the Principal's operational sites)

- Induction to Sewage Treatment Plants
- Induction to Itinerant and Construction Sites (Principal controlled)
- Induction to Reservoirs, Pump Stations and other sites (i.e. re-pump stations, manholes and valve pits)
- Induction to Waste Treatment Plants
- Induction to Council Depots and administration sites.

The inductions will inform workers of potential risks that they may encounter when undertaking work at a Principal's operational sites. They also outline the required safety expectations and the responsibilities of workers when on a Principal's operational site.

To arrange for the on-line induction process to be completed, contact is through GCWtraining@goldcoast.qld.gov.au the following information should be provided in the email:

- Your company name
- The names and email addresses of all the relevant workers that are required to attend site (including any sub-contractors that will be utilised on any works)
- Which inductions the workers will be required to undertake

Individual passwords will be provided for each of the workers to then complete the inductions required. A record of the induction completed will be then printable for each worker. It may be advantageous to have all workers complete the inductions that may visit an operational site. This will facilitate a faster provision of access for your workers if your resourcing requirements suddenly need to change. Induction generally takes one hour.

If the required inductions have not been completed and copies supplied to the Principal prior to the date of attending the operational site to complete any works, then access to the operational site may be restricted until the relevant inductions have been completed.

8 Quality Assurance

The Contractor shall maintain a Quality Assurance System (QAS) for the duration of the Contract and ensure that the necessary site conditions, plant and delivery requirements are provided and maintained to ensure prescribed quality outcomes are achieved throughout the contract works period. Council prefers that this QAS be in accordance with AS/NZS ISO 9001.

The Contractor's QAS shall include Inspection and Test Plans (ITPs) and Hold Points appropriate to the deliverables specified in the Contract.

All Inspection and Test Procedures (ITP's) shall be submitted to the Principal / CCR within twenty-eight (28) calendar days of the date of the Letter of Acceptance, or not less than fourteen (14) calendar days prior to any proposed testing whichever is the earlier, to allow the Superintendent and Principal, via the superintendent, to comment. Any additional testing required will, as a result of the Superintendent's or Principal's, via the superintendent, comments, be reflected in the testing and shall be at no additional cost to the Principal.

Factory Acceptance Test and Site Acceptance Test procedures shall as a minimum comply with relevant and current Australian Standard test requirements. The Contractor shall submit details and procedures for FAT and SAT testing as part of the ITP submission and within the time frames specified above.

The Contractor shall be responsible for the quality of all products and services supplied under the Contract, and shall provide all necessary facilities and resources to perform the inspection and tests required to achieve the specified quality.

9 Compliance with Laws and Standards

The Contractor must comply with all relevant laws in performing its obligations under this contract.

Works must comply with all relative legislation, in particular, environmental and safety implications of the works.

Works must comply with the Principal's Standard Specification General Requirements for Electrical Installations or any subsequently revised edition of GCCC Supplementary Mechanical and Electrical Specification SEQ1(2) applicable at the time and must also comply with relevant Australian and industry standards (for example WSA 04-2005-2.1).

The following published standards shall form part of the Contract:

- GCW Supplementary mechanical and electrical specification;
- AS/NZS 3000:2007 Electrical Wiring Regulations;
- AS/NZS 4836:2011 Safe working on low-voltage electrical installations and equipment
- IEEE 829 Software test documentation;
- IEC 61131-3 Programmable controllers , programming languages;
- IEC 62381 Automation systems in the process industry – factory acceptance test (FAT), site acceptance test (SAT) and site integration test (SIT);
- ISO 27002 Information technology – Security techniques – Code of practice for information security management.
- ISO 9001: 2008 Quality management systems.
- AS 1000 International system of units (S.I) and its application.
- AS1768 Lightning protection
- Reference to appropriate ACMA licencing / requirements

In addition to the above the Contractor shall satisfy that all relevant statutory requirements, regulations, codes or guidelines have been identified and adhered to.

Such statutory requirements, regulations, codes or guidelines include the following:

- The Electricity Safety Act 2002
- The Electrical Safety Regulation 2013
- Commonwealth of Australia Radio Communications Act (1992)
- Local Authority Conditions of Supply and Consumer Metering
- Queensland Workplace Health and Safety Regulations 2011.
- Compliance with published standards relevant to the assessment, evaluation, design, installation/implementation, testing and commissioning of any works that have not been referenced above shall also form part of the Contract.

The following information is publicly available and should be also considered within this tender:

- GCCC Supplementary Mechanical and Electrical Specification SEQ1(2) available on the CoGC website.

- SEQ Water *Supply and Sewerage Design and Construction Code* available at <http://www.seqcode.com.au>

10 Reporting

A three (3) monthly report is proposed to capture all changes made to the SCADA systems, including any modification of RTU / PLC program changes that the contractor or its sub-contractor has completed on behalf of the client. This report may be in the form of a spreadsheet outlining the changes made, by who, verification of all documentation has been updated and the reason for change. Final design and layout may be agreed between the parties at the awarding of the contract.

11 Training

The training of operational and maintenance staff shall be required but not limited to the following instances:

- Alternative SCADA equipment is utilised;
- New Gold Coast Water staff associated with the SCADA system are employed;
- Operational modifications are made to SCADA systems.

Appropriately skilled / trained personnel shall be tasked with delivering the training at GCW premises situated at Molendinar within the Gold Coast. The content of the relevant training will be discussed and agreed upon before finalisation of the training package to be delivered. It is envisaged this will be delivered on a class by class basis and not person by person training as per the pricing submission on an hourly or daily rate as applicable. The class size will be held at a maximum of 12 personnel.

12 Costs and Expenses to be Borne by Parities

A party lodging an ITO response must bear its own costs and expenses of preparing and lodging its response and responding to any further requests from the Principal in connection with the evaluation of the response..

13 System Security

Access to the system will be monitored at all times through User ID. Where remote access is required, the Vendor and its representative(s) will be issued with VPN access according to the City of Gold Coast ICT Policy. GCW System Administrator shall manage User ID's and passwords to minimise the risk of unwanted access to the system. SCADA passwords will be set in accordance with the current ICT Policy at the relevant point in time.

A confidentiality agreement will be in place for the period of the contract. This will be agreed to by all parties, and not limited to this, the Principal may require non-disclosure and background checks will be necessary on the personnel accessing the SCADA system, where there is business risk determined.

14 Glossary of Terms

The following table lists the common terms and acronyms used within this document and their meaning.

Term	Definition
CCR	Council Contract Representative, the person nominated by Council to exercise the functions of the Principal relating to the operation and governance of the Contract.

Term	Definition
ClearSCADA	SCADA application currently in use. The current version of ClearSCADA is version 2014
CoGC	City of Gold Coast or Council
FAT	Factory Acceptance Test
GUI	Graphical User Interface
HMI	Human Machine Interface
HYDSYS	This is a range of software packages that provide storage, analysis and presentation of environmental monitoring data.
LAN	Local Area Network
MTU	Master RTU
PAT	Performance Acceptance Test
Responsible Authority	“Responsible authority” means a local government or any government (state or federal) department or other agency charged with the responsibility of administering or enforcing legislation
RTU	Remote Telemetry Unit
SAT	Site Acceptance Test
SCADA	Supervisory Control And Data Acquisition
SOE	Standard Operating Environment
SWMS	Safe work method statement
WAN	Wide Area Network