

**REVISED PER ADDENDUM # 1
TASK ORDER AGREEMENT
SUPERVISORY CONTROL & DATA ACQUISITION (SCADA)
WATER POLLUTION CONTROL FACILITY (WPCF)**

THIS AGREEMENT is being entered into this _____ day of _____, 2010, by and between the CITY OF LAS VEGAS (hereinafter the "City"), a municipal corporation within the State of Nevada having its principal office at 400 Stewart Avenue, Las Vegas, Nevada 89101, and Wunderlich-Malec Engineering, Inc. (hereinafter the "Company") having its principal office located at 5501 Feltl Road, Minnetonka, MN 55343.

SECTION A – Contract Form

The subject matter of this Contract is the performance of Control System Integration and Support Services which include, but are not limited to:

- Interfacing with the Design Engineer, Contractor, and City of Las Vegas to provide SCADA Development, Database Modifications, and Testing/Acceptance/Inspection criteria and plan review.
- Preparation of SCADA Specifications, Plans, and/or Drawings for assigned projects. This also includes the preparation, or review, of Requests for Information (RFI's).
- SCADA changes associated with minor plant upgrades and modifications, Operations & Maintenance Training associated with any changes made, After Hours support as required, and other Control Systems support necessary for normal plant operations.

SECTION B – Basic Terms

B-1 Definitions

The following definitions apply to this Contract:

- (a) "*Award Date*" means the date that a Contract becomes effective. It is the date that is entered into the first paragraph of a Contract upon execution by an authorized representative of the City.
- (b) "*City*" means the City of Las Vegas.
- (c) "*City Council*" means the governing body of the City of Las Vegas.
- (d) "*Company*" means the individual, partnership, or corporation responsible for the performance of services under this Contract.
- (e) "*Company Representative*" means the individual authorized to act on behalf of the Company regarding routine matters arising under or relating to this Contract.
- (f) "*Contract*" means this document, consisting of Sections A through F, which is binding and effective only upon execution by the City.
- (g) "*Deliverable*" means any report, software, hardware, data, documentation, or other tangible item that the Company is required to provide to the City under the terms of the Contract.
- (h) "*Individual Task Order*" means the individual work assignments issued by the Project Manager for services to be performed as outlined in the Exhibit A, Statement of Work.
- (i) "*Non-exclusive Contract*" means a Contract under which the City agrees to obtain some, but not necessarily all, of the City's requirements for a particular service.
- (j) "*Project Manager*" means the City representative who is responsible for the coordination of Contract performance between the City and the Company

B-2 Contract Type

The Contract type is TASK ORDER AGREEMENT. This is a Non-Exclusive Contract.

B-3 Prices/Costs

(a) The City will pay the following hourly rates on individual task orders:

<u>Item No.</u>	<u>Description</u>	<u>Amount/Hour</u>
0001	Project Manager	\$135
0002	Senior Controls Specialist	\$120
0003	Senior HMI Developer	\$105
0004	Controls Specialist	\$120
0005	Senior PLC Programmer	\$115
0006	HMI Developer	\$98

(b) Individual task orders will be issued by the City's Project Manager on as needed basis and billed at the hourly rates shown above, which shall remain in effect for the first year of the Task Order Agreement.

(c) Reimbursable Travel Expenses. If travel is required in performance of services under this Contract, reasonable travel expenses will be paid when services are performed in Las Vegas. Reimbursement is subject to certain limitations. The City will reimburse airfare up to the cost of a coach fare, with 7-day advance purchase. Reimbursement for all other expenses including, but not limited to, lodging, meals, transportation, rental cars, parking, and incidental expenses, will be paid at a per diem rate of \$189 per day. This per diem rate will start concurrently with the first day of work performed on site at the City and end with the last day of scheduled on site work at the City. The Company must complete a minimum of six (6) hours of work for every day a per diem is paid. Company shall coordinate all travel in advance with the City's Project Manager. The City will not reimburse personal entertainment expenses, alcoholic beverages, travel expenses for family members, use of health facilities (unless included in the basic price of hotel accommodations), movies in a hotel, or other non-business related costs. The City's Purchasing and Contracts Manager must approve any deviations to these procedures.

B-4 Invoices

(a) The Company shall submit an invoice to the City in accordance with the payment schedule set forth in Paragraph B-3 (Prices/Costs) above. All invoices should identify the following items:

- (i) the date of the invoice;
- (ii) the Contract Item against which charges are made;
- (iii) performance dates covered;
- (iv) the associated purchase order number;
- (v) receipts for Reimbursable Expenses/Travel Expenses; and
- (vi) copy of the Progress Report, signed/approved by City's Project Manager.

Upon reconciliation of all errors, corrections, credits, and disputes, payment to the Company will be made in full within 30 calendar days. **Invoices received without a valid purchase order number will be returned unpaid.** The Company shall submit an original invoice to:

Department of Finance and Business Services
ATTN: Accounts Payable
City of Las Vegas
400 Stewart Ave.
Las Vegas, NV 89101 – 2986

- (b) A representative of the Company shall sign and certify the invoice in the following manner: "I hereby certify, under penalty of perjury, that the above invoice is just and correct and that reimbursement for such expenses listed on this invoice has not been previously received from the City of Las Vegas or any other source."
- (c) The Company shall forward a copy of the original invoice to the City's Project Manager identified in Paragraph D-2 (Project Manager/Company Representative).

B-5 Performance Period

- (a) The performance period commences from Award Date and continues for a two year period with the option to extend two – two year periods.

SECTION C – Statement of Work

C-1 Scope of Services

The Company shall provide the services to accomplish the following:

- (a) Provide Integration Services for all Environmental Division Construction Contracts that include SCADA additions or modifications.
- (b) Provide Design Services for specific Environmental Division Control System Contracts as assigned.
- (c) Provide Plant Support Services for all Environmental Division Facilities.
- (d) Provide Design and Integration Services for minor Environmental Division SCADA modifications.
- (e) Provide a minimum of two (2) on-site personnel and one (1) project manager. It is not a requirement for the project manager to remain on-site. The City of Las Vegas will provide furnished office space for the on-site staff, up to five (5), but the successful bidder is responsible for any phone and/or network services/connectivity. The City of Las Vegas will also provide Server hardware and software for use in HMI Development & Testing and the client software for HMI and PLC Programming.

SECTION D – Special Clauses

D-1 Legal Notice [CAO-7/24/08]

- (a) All legal notices required pursuant to the terms and conditions of this Contract shall be in writing, unless an emergency situation dictates otherwise. Any notice required to be given under the terms of this Contract shall be deemed to have been given when:
- (i) received by the party to whom it is directed by hand delivery or personal service, or
 - (ii) transmitted by facsimile with confirmation of transmission, or
 - (iii) sent by U.S. mail via certified mail-return receipt requested at the following addresses:

FOR THE CITY: City of Las Vegas
 Manager, Purchasing and Contracts
 City Hall, First Floor
 400 Stewart Avenue
 Las Vegas, Nevada 89101-2986
 Fax: (702) 384-9964

FOR THE COMPANY: Wunderlich-Malec Engineering, Inc.
 Attn: Neal K. Wunderlich
 5501 Feltl Road
 Minnetonka, Minnesota 55343
 Fax: (952) 933-0608

- (b) The parties shall provide written notification of any change in the information stated above.
- (c) An original signed copy, via U. S. Mail, shall follow facsimile transmissions.
- (d) For purposes of this Contract, legal notice shall be required for all matters involving potential termination actions, litigation, indemnification, and unresolved disputes. This does not preclude legal notice for any other actions having a material impact on the Contract.
- (e) Routine correspondence should be directed to the Project Manager or the Company Representative, as appropriate.

D-2 Project Manager/Company Representative [CAO-7/24/08]

- (a) The City designates Jay Karvonen as the Project Manager for this Contract. The City will provide written notice to the Company, should there be a subsequent Project Manager change. The Project Manager will be the Company's principal point of contact at the City regarding any matters relating to this Contract, will provide all general direction to the Company regarding Contract performance, and will provide guidance regarding the City's goals and policies. The Project Manager is not authorized to waive or modify any material scope of work changes or terms of the Contract.
- (b) The Company designates Jason Moore as the Company Representative for this Contract. The Company will provide written notice to the City, should there be a subsequent Company Representative change. The City has the right to assume that the Company Representative has full authority to act for the Company on all matters arising under or relating to this Contract.

D-3 Warranty – Services [CAO-7/24/08]

The Company warrants that the services shall be performed in full conformity with this Contract, with the professional skill and care that would be exercised by those who perform similar services in the commercial marketplace, and in accordance with accepted industry practice. In the event of a breach of this warranty and/or in the event of non-performance and/or failure of the Company to perform the services in accordance with this Contract, the Company shall, at no cost to the City, re-perform or perform the services so that the services conform to the warranty.

D-4 Intellectual Property Rights [CAO-7/24/08]

All deliverables produced under this Contract, as well as all data, notes, and documentation collected on behalf of the City are exclusively the property of the City.

D-5 Licenses/Registrations [CAO-7/24/08]

During the entire performance period of this Contract, the Company shall maintain all federal, state, and local licenses, certifications and registrations applicable to the work performed under this Contract, including maintaining an active City of Las Vegas business license.

D-6 Order of Precedence [CAO-7/24/08]

In the event of a conflict between the specific language set forth in Sections B through E of this Contract and any Attachment or Exhibit set forth in Section F, the specific language in Sections B through E shall prevail. Any exception to this order of precedence will be addressed through specific language elsewhere in Sections B through E.

SECTION E – General Clauses

E-1 Disputes [CAO-7/25/08]

- (a) For each claim or dispute arising between the parties under this Contract, the parties shall attempt to resolve the matter through escalating levels of management. In the event the matter cannot be successfully resolved in this manner, the City is granted the right, regardless of which party is asserting the claim or dispute, to determine between arbitration or litigation as the forum in which the party desiring to proceed further shall file to resolve the claim or dispute. For any and all claims or disputes asserted by the Company, the Company shall notify the City of its intent to proceed further with the claim or dispute, and in response thereto, the City shall notify the Company as to its selected forum for resolution. For any and all claims or disputes asserted by the City, the City shall notify the Company in the notice of its intent to proceed with further resolution and in the same notice as to whether it has selected arbitration or litigation as the forum to resolve the claim or dispute. In the event arbitration is the designated forum, such arbitration shall be binding on the parties.

- (b) If arbitration is selected by the City as the forum for further resolution, the claim or dispute shall be filed with the Nevada Arbitration Association or the American Arbitration Association under its then current Commercial Arbitration Rules, Expedited Procedures, regardless of the amount of the claim or dispute.
- (c) The laws of the State of Nevada shall govern this Contract and the venue for purposes of such litigation or arbitration shall be in the City.

E-2 Notice of Delay [CAO-7/24/08]

- (a) Should the timely performance of this Contract be jeopardized by the non-availability of City provided personnel, data, or equipment, the Company immediately shall notify the City in writing of the facts and circumstances that are contributing to such delay. Upon receipt of this notification, the City will advise the Company in writing of the action which will be taken to remedy the situation.
- (b) The Company shall advise the City in writing of an impending failure to meet established milestones or delivery dates based on the Company's failure to perform. Notice shall be provided as soon as the Company is aware of the situation; however, such notice shall not relieve the Company from any existing obligations regarding performance or delivery.

E-3 Termination for Convenience [CAO-7/24/08]

The City shall have the right at any time to terminate further performance of this Contract, in whole or in part, for any reason whatsoever (including no reason). Such termination shall be effected by written notice from the City to the Company, specifying the extent and effective date of the termination. On the effective date of the termination, the Company shall terminate all work and take all reasonable actions to mitigate expenses. The Company shall submit a written request for incurred costs for services performed through the date of termination, and shall provide any substantiating documentation requested by the City. In the event of such termination, the City agrees to pay the Company within 30 days after receipt of a correct, adequately documented written request. The City's sole liability under this Paragraph is for payment of the costs for the services requested by the City and actually performed by the Company.

E-4 Termination for Default [CAO-7/24/08]

- (a) The City may, by written notice of default to the Company, terminate this Contract in whole or in part if the Company fails to:
 - (i) Perform the services under Section C (Statement of Work), including, if applicable, delivering any required software, goods, or documentation within the time specified in this Contract or any extension;
 - (ii) Make progress, so as to endanger performance of this Contract; or
 - (iii) Perform any of the other provisions of this Contract.
- (b) The City's right to terminate this Contract under (a)(ii) and (a)(iii) above, may be exercised if the Company does not cure such failure within ten calendar days (or more if authorized by the City) after notice, specifying the failure, is provided pursuant to the Paragraph D-1 (Legal Notice) of this Contract.
- (c) If the City terminates this Contract for default in whole or in part, it may acquire, under reasonable terms and in the manner the City considers appropriate, services or goods similar to those terminated, and the Company shall be liable to the City for any excess costs for those services or goods. However, the Company shall continue the work not terminated.
- (d) The Company shall not be liable for any excess costs if the failure to perform the Contract arises from circumstances beyond the control and without the fault or negligence of the Company. These circumstances are limited to such causes as (1) acts of God or of the public enemy, (2) acts of governmental bodies, (3) fires, (4) floods, (5) epidemics, (6) quarantine restrictions, (7) labor strikes, (8) freight embargoes, or (9) unusually severe weather. The time of performance of the Company's obligations under this Contract shall be extended by such period of enforced delay; provided, however, that such reasonably extended time period shall not exceed 60 days. If the foregoing circumstances result in a delay greater than 60 days, the City may terminate the affected portion of the Contract pursuant to the terms of Paragraph E-3 (Termination for Convenience).

- (e) Either party may terminate this Contract, in whole or in part, if the other party becomes insolvent or bankrupt or makes an assignment for the benefit of creditors, or if a receiver or trustee in bankruptcy is appointed for the other party, or if any proceeding in bankruptcy, receivership, or liquidation is instituted against the other party and is not dismissed within 30 days following commencement thereof.
- (f) The City retains the right to terminate for default immediately should the Company fail to maintain the required levels of insurance, fail to comply with applicable local, state, and Federal statutes governing performance of these services, or fail to comply with statutes involving health or safety.

E-5 Insurance:[CAO-1/12/09]

- (a) The Company shall procure and maintain, at its own expense, during the entire term of the Contract, the following coverage(s):

- (i) Industrial/Workers' Compensation Insurance protecting the Company and the City from potential Company employee claims based upon job-related sickness, injury, or accident, during performance of this Contract, and must submit proof of such insurance to the City on a certificate of insurance issued by an insurer qualified to underwrite workers' compensation insurance in the State of Nevada, in accordance with NRS 616A-616D, inclusive. If Company is a sole proprietor, it will be required to submit an affidavit indicating that the company has elected not to be included in the terms, conditions and provisions of NRS 616A-616D, inclusive, and is otherwise in compliance with those terms, conditions and provisions.

Sole Proprietorships must execute the Affidavit - Declaration of Sole Proprietor, Attachment 2 in lieu of providing said insurance.

- (ii) Commercial General Liability Insurance (bodily injury, property damage) with respect to the Company's agents assigned to the activities performed under this Contract in a policy limit of not less than \$1,000,000.00 per occurrence and \$2,000,000.00 in the aggregate, for bodily injury (including death), personal injury and property damages. Such coverage shall be on an "occurrence" basis and not on a "claims made" basis, and be provided on either a Commercial General Liability or a Broad Form Comprehensive General Liability (including a Broad form CGL endorsement) insurance form. The form must be written on an ISO Form CG 00 01 10 01, or an equivalent form.
 - (iii) Commercial Automobile Liability Insurance of limits no less than \$1,000,000 combined single limit per occurrence for bodily injury and property damage to include, but not be limited to, coverage against all insurance claims for injuries to persons or damages to property which may arise from services rendered by Company and any auto used to the performance of services under this Contract. The policy must insure all vehicles **owned** by the Company and include coverage for **hired** and **non-owned** vehicles.

If the services requested do not require the use of vehicle to perform, Commercial Automobile Liability Insurance requirements, as described in (iii) above, do not apply.

- (iv) Professional Liability Insurance (only if the contract is for professional services) of limits no less than \$1,000,000, combined single limit and in the aggregate. If coverage is on a "claims made" basis, then it must continue for a period of two years beyond the completion or termination of this Contract. Any retroactive coverage must coincide with or predate the beginning of this Contract and may not be changed without the consent of the City.
- (b) The Company shall deliver certificate(s) of insurance in ACORD form, and endorsements indicating that such coverage required by this Contract is in effect shall be delivered to the City within three days after the Award Date of this Contract, or before work commences, whichever is earliest. All policy certificates and endorsements are required to be an agent authorized by that insurer and who is licensed by the State of Nevada. All required aggregate limits must be disclosed and amounts entered on the certificate(s) of insurance. The certificates must identify the Contract number and the Contract description. The Company shall maintain coverage for the duration of this Contract, and any renewal periods, if applicable. The Company shall annually provide the City with a certificate of insurance as evidence that all insurance requirements have been met. The Company and/or insurance carrier shall provide the City with a 30 day advance notice of policy modification, cancellation or erosion of insurance limits, sent by certified mail "return receipt requested".

- (c) The City, its officers and employees shall be named as additional insureds and such notation shall appear on the certificate of insurance furnished by the Company's insurance carrier. The certificates and endorsements for each insurance policy are to be signed by a person authorized by that insurer and licensed by the State of Nevada. Each insurance carrier's rating as shown in the latest Best's Key Rating Guide shall be fully disclosed and entered on the required certificate of insurance. The City requires insurance carriers to maintain a Best's Key rating of A VII, or higher. The adequacy of the insurance supplied by the Company, including the rating and financial health of each insurance carrier providing coverage, is subject to the approval of the City.
- (d) All deductibles and self-insurance retentions shall be fully disclosed in the certificate of insurance. No deductible or self-insured retention may exceed \$10,000.00 without the prior written approval of the City.
- (e) If the Company fails to carry the required insurance, the City may (i) order the Company to stop further performance hereunder, declare the Company in breach, pursuant to Paragraph E-4, terminate the Contract if the breach is not remedied and, if permitted, assess liquidated damages, or (ii) purchase replacement insurance and withhold the costs or premium payments made from the payments due to the Company or charge the replacement insurance costs back to the Company.
- (f) Any subcontractor or subconsultant approved by the City shall be required to procure, maintain and submit proof of insurance to the City of the same insurance requirements as specified above, and as required in this paragraph.
- (g) The Company is encouraged to purchase any additional insurance as it deems necessary.
- (h) The Company is required to remedy all injuries to persons and damage or loss to any property of the City, caused in whole or in part by the Company, its subcontractors or anyone employed, directed or supervised by the Company.
- (i) The policies required in E-5 (a) i-iii shall have a Waiver of Subrogation provision endorsement in favor of the City of Las Vegas.

E-6 Indemnification [CAO-7/24/08]

- (a) In addition to the insurance requirements set forth in Paragraph E-5 (Insurance), the Company shall protect, indemnify and hold harmless the City, its officers, employees, agents, and consultants (collectively herein the "City") harmless from any and all claims, liabilities, damages, losses, suits, actions, decrees, and judgments including, attorney's fees, court costs or other expenses of any and every kind or character (collectively herein the "Liabilities") which may be recovered from or sought against the City, as a result of, by reason of, or as a consequence of, any act or omission, negligent or otherwise, on the part of the Company, its officers, employees, or agents in the performance of the terms, conditions and covenants of the Contract, regardless of whether the Liabilities were caused in part by the City.
- (b) If a third party claim against the City for negligent performance by the Company is within the limits of its liability insurance and the insurance company has accepted the City's tender of defense, then the City will pay the Company what is due and owing to them, within the payment method specified in this Contract. However, if the claim is greater than the coverage amount, the City, for its protection, may retain any money due and owing the Company under this Contract, until the claim has been resolved. In the event no money is due and owing, the surety, if required, of the Company, may be held until all of the Liabilities have been settled and suitable evidence to that effect furnished to the City.
- (c) It is expressly agreed that the Company shall defend the City, against the Liabilities and in the event that the Company fails to do so, the City shall have the right, but not the obligation, to defend the same and to charge all direct and incidental costs, including attorney's fees and court costs, to the Company.

E-7 Assignment [CAO-7/24/08]

Neither party may assign their rights nor delegate their duties under this Contract without the written consent of the other party. Such consent shall not be withheld unreasonably. Any assignment or delegation shall not relieve any party of its obligations under this Contract.

E-8 Waiver [CAO-7/24/08]

Waiver of any of the terms of this Contract shall not be valid unless it is in writing signed by each party. The failure of the City to enforce any of the provisions of this Contract, or to require performance of any of the provisions herein, shall not in any way be construed as a waiver of such provisions or to affect the validity of any part of this Contract, or to affect the right of the City to thereafter enforce each and every provision of this Contract. Waiver of any breach of this Contract shall not be held to be a waiver of any other or subsequent breach of this Contract.

E-9 Taxes/Compliance with Laws [CAO-7/24/08]

- (a) The City is exempt from paying Sales and Use Taxes under the provisions of Nevada Revised Statutes 372.325(4), and Federal Excise Tax, under Registry Number 88-87-0003k. The Company shall pay all taxes, levies, duties and assessments of every nature and kind, which may be applicable to any work under this Contract. The Company shall make any and all payroll deductions required by law. The Company agrees to indemnify and hold the City harmless from any liability on account of any and all such taxes, levies, duties, assessments and deductions.
- (b) The Company in the performance of the obligations of this Contract shall comply with all applicable laws, rules and regulations of all governmental authorities having jurisdiction over the performance of this Contract including, but not limited to, the Federal Occupational Health and Safety Act, and all state and federal laws prohibiting and/or relating to discrimination by reason of race, sex, age, religion or national origin.

E-10 Audit of Records [CAO-8/5/08]

- (a) The Company agrees to maintain the financial books and records (including supporting documentation) pertaining to the performance of this Contract according to standard accounting principles and procedures. The books and records shall be maintained for a period of three (3) years after completion of this Contract, except that books and records which are the subject of an audit finding shall be retained for three (3) years after such finding has been resolved. If the Company goes out of business, the Company shall forward the books and records to the City to be retained by the City for the period of time required herein.
- (b) The City, or its designated representative(s), shall have the right to inspect and audit (including the right to copy and/or transcribe) the books and records of the Company pertaining to the performance of this Contract during normal business hours. The City will provide prior written notice to the Company of the audit and inspection. If the books and records are not located within Clark County, the Company agrees to deliver them to the City, or to the address, designated by the City, within Clark County. In lieu of such delivery, the Company may elect to reimburse the City for the cost of travel (including transportation, lodging, meals and other related expenses) to inspect and audit the books and records at the Company's office. If the books and records provided to the City are incomplete, the Company agrees to remedy the deficiency after written notice thereof from the City, and to reimburse the City for any additional costs associated therewith including, without limitation, having to revisit the Company's office. The Company's failure to remedy the deficiency shall constitute a material breach of this Agreement. The City shall be entitled to its costs and reasonable attorney fees in enforcing the provisions of this Paragraph.
- (c) If, at any time during the term of this Contract, or at any time after the expiration or termination of the Contract, the City or the City's designated representative(s) finds the dollar liability is less than payments made by the City to the Company, the Company agrees that the difference shall be either: (a) repaid immediately by the Company to the City or (b) at the City's option, credited against any future billings due the Company.

E-11 Independent Contractor [CAO-7/24/08]

In the performance of services under this Contract, the Company and any other person employed by it shall be deemed to be an independent contractor and not an agent or employee of the City. The Company shall be liable for the actions of any person, organization or corporations with which it subcontracts to fulfill this Contract. The City shall hold the Company as the sole responsible party for the performance of this Contract. The Company shall maintain complete control over its employees and all of its subcontractors. Nothing contained in this contract or any subcontract awarded by the Company shall create a partnership, joint venture or agency with the City. Neither party shall have the right to obligate or bind the other party in any manner to any third party.

E-12 Severability [CAO-7/24/08]

The invalidity, illegality, or unenforceability of any provision of this Contract or the occurrence of any event rendering any portion or provision of this Contract void shall in no way affect the validity or enforceability of any other portion or provision of this Contract. Any void provision shall be deemed severed from this Contract, and the balance of this Contract shall be construed and enforced as if this Contract did not contain the particular portion or provision held to be void. The parties further agree to amend this Contract to replace any stricken provision with a valid provision that comes as close as possible to the intent of the stricken provision. The provisions of this clause shall not prevent this entire Contract from being void should a provision which is of the essence of this Contract be determined void.

E-13 Conforming Services [CAO-7/24/08]

The services performed under this Contract shall conform in all respects with the requirements set forth in this Contract. The Company shall furnish the City with sufficient data and information needed to determine if the services performed conform to all the requirements of this Contract.

E-14 Modification/Amendment [CAO-7/24/08]

This Contract shall not be modified or amended except by the express written agreement of the parties, signed by a duly authorized representative for each party. Any other attempt to modify or amend this Contract shall be null and void, and may not be relied upon by either party.

E-15 Entire Agreement, Section and Paragraph Headings [CAO-7/24/08]

- (a) This Contract represents the entire and integrated agreement between the City and the Company. It supersedes all prior and contemporaneous communications, representations, and agreements, whether oral or written, relating to the subject matter of this Contract.
- (b) The section and paragraph headings appearing in this Contract are inserted for the purpose of convenience and ready reference. They do not purport to define, limit or extend the scope or intent of the language of the sections and paragraphs to which they pertain.

E-16 Conflict of Interest (City Officials) [CAO-7/24/08]

- (a) An official of the City, who is authorized in such capacity and on behalf of the City to negotiate, make, accept or approve, or take part in negotiating, making, accepting, or approving this Contract, payments under this Contract, or work under this Contract, shall not be directly or indirectly interested personally in this Contract or in any part hereof. No officer, employee, architect, attorney, engineer or inspector of, or for the City, who is authorized in such capacity and on behalf of the City to exercise any legislative, executive, supervisory or other similar functions in connection with this Contract, shall become directly or indirectly interested personally in this Contract or in any part hereof, any material supply contract, subcontract, insurance contract, or any other contract pertaining to this Contract.
- (b) Each party represents that it is unaware of any financial or economic interest of any public officer or employee of the City relating to this Contract. Notwithstanding any other provision of this Contract, if such interest becomes known, the City may immediately terminate this Contract for default or convenience, based on the culpability of the parties.
- (c) The Company represents and warrants that it has, in accordance with the current policy of the City, disclosed the ownership and principals of the Company on Attachment 1 (Certificate – Disclosure of Ownership/Principals), and that it has a continuing obligation to update this disclosure whenever there is a material change in the information contained therein.

E-17 Public Records [CAO-7/24/08]

The City is a public agency as defined by state law. As such, it is subject to the Nevada Public Records Law (Chapter 239 of the Nevada Revised Statutes). The City's Records are public records, which are subject to inspection and copying by any person (unless declared by law to be confidential). This Contract, all supporting documents, and proposals submitted under the original Request for Proposal are deemed to be public records.

E-18 Confidentiality – City Information [CAO-7/24/08]

- (a) All information, including but not limited to, oral statements, computer files, databases, and other material or data supplied to the Company is confidential and privileged. The Company shall not disclose this information, nor allow to be disclosed to any person or entity without the express prior written consent of the City. The Company shall have the right to use any such confidential information only for the purpose of providing the services under this Contract, unless the express prior, written consent of the City is obtained. Upon request by the City, The Company shall promptly return to the City all confidential information supplied by the City, together with all copies and extracts.

- (b) The confidentiality requirements shall not apply where (i) the information is, at the time of disclosure by the City, then in the public domain; (ii) the information is known to the Company prior to obtaining the same from the City; (iii) the information is obtained by the Company from a third party who did not receive the same directly or indirectly from the City; or (iv) the information is subpoenaed by court order or other legal process, but in such event, the Company shall notify the City. In such event the City, in its sole discretion, may seek to quash such demand.
- (c) The obligations of confidentiality shall survive the termination of this Contract.

E-19 Marketing Restrictions [CAO-7/24/08]

The Company may not publish or sell any information from or about this Contract without the prior written consent of the City. This restriction does not apply to the use of the City's name in a general list of customers, so long as the list does not represent an express or implied endorsement of the Company or its services.

E-20 Limitation of Funding [CAO-7/24/08]

The City reserves the right to reduce estimated or actual quantities, in whatever amount necessary, without prejudice or liability to the City, if funding is not available or if legal restrictions are placed upon the expenditure of monies for the services required under this Contract.

E-21 Changes – Fixed-Price Services [CAO-7/24/08]

- (a) The City may at any time, by written order, and without notice to the sureties, if any, make changes within the general scope of this Contract in any one or more of the following:
 - (i) Description of services to be performed.
 - (ii) Time of performance (i.e., hours of the day, days of the week, etc.).
 - (iii) Place of performance of the services.
- (b) If any such change causes an increase or decrease in the cost of, or the time required for, performance of any part of the work under this Contract, whether or not changed by the order, the City shall make an equitable adjustment in the Contract price, the delivery schedule, or both, and shall modify the Contract.
- (c) The Company must assert its right to an adjustment under this clause within 30 days from the date of receipt of the written order; however, if the City decides that the facts justify, the City may receive and act upon a proposal submitted before final payment of the Contract.
- (d) If the Company's proposal includes the cost of property made obsolete or excess by the change, the City shall have the right to prescribe the manner of the disposition of the property.
- (e) Failure to agree to any adjustment shall be a dispute under Paragraph E-1 (Disputes); however, nothing in this clause shall excuse the Company from proceeding with the Contract as changed.

The Company shall provide current, complete, and accurate documentation to the City in support of any equitable adjustment. Failure to provide adequate documentation, within a reasonable time after a request from the City, will be deemed a waiver of the Company's right to dispute the equitable adjustment proposed by the City, where such equitable adjustment has a reasonable basis at the time it is determined by the City.

E-22 Counterpart Signatures [CAO-9/24/08]

This Contract may be executed in counterparts, all such counterparts will constitute the same contract and the signature of any party to any counterpart will be deemed a signature to, and may be appended to, any other counterpart. Executed copies hereof may be delivered by facsimile or e-mail and upon receipt will be deemed originals and binding upon the parties hereto, regardless of whether originals are delivered thereafter.

REVISED PER ADDENDUM #1
SECTION F – List of Attachments/Exhibits

The following attachments are hereby incorporated into this contract:

<u>Identifier</u>	<u>Title/Text Reference</u>	<u>Date</u>	<u>Pages</u>
Attachment 1	Certificate – Disclosure of Ownership/Principals [Paragraph E-16(c)]		2
Attachment 2	Task Order/Procedures		2
Exhibit A	Statement of Work Revised per Addendum # 2		17

IN WITNESS WHEREOF, the parties hereto have caused this Contract to be executed by their duly authorized representatives.

CITY OF LAS VEGAS

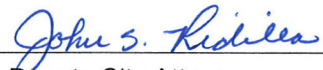
KATHLEEN C. RAINEY, Manager
Purchasing and Contracts

"City"

ATTEST:

BEVERLY K. BRIDGES, CMC
City Clerk

APPROVED AS TO FORM:


Deputy City Attorney

12/31/09

Date

Wunderlich-Malec Engineering, Inc.

NEAL K. WUNDERLICH, President

"Company"

ATTACHMENT 1 - CERTIFICATE - DISCLOSURE OF OWNERSHIP/PRINCIPALS
 (FOR CONSULTING SERVICES ONLY)

1. Definitions

"City" means the City of Las Vegas.

"City Council" means the governing body of the City of Las Vegas.

"Contracting Entity," means the individual, partnership, or corporation seeking to enter into a contract or agreement with the City of Las Vegas.

"Principal" means, for each type of business organization, the following: (a) sole proprietorship – the owner of the business; (b) corporation – the directors and officers of the corporation; but not any branch managers of offices which are a part of the corporation; (c) partnership – the general partner and limited partners; (d) limited liability company – the managing member as well as all the other members; (e) trust – the trustee and beneficiaries.

2. Policy

In accordance with Resolution 79-99 and 105-99 adopted by the City Council, Contracting Entities seeking to enter into certain contracts or agreements with the City of Las Vegas must disclose information regarding ownership interests and principals. Such disclosure generally is required in conjunction with a Request for Proposals (RFP). In other cases, such disclosure must be made prior to the execution of a contract or agreement.

3. Instructions

The disclosure required by the Resolutions referenced above shall be made through the completion and execution of this Certificate. The Contracting Entity shall complete Block 1, Block 2, and Block 3. The Contracting entity shall complete either Block 4 or its alternate in Block 5. Specific information, which must be provided, is highlighted. An Officer or other official authorized to contractually bind the Contracting Entity shall sign and date the Certificate, and such signing shall be notarized.

4. Incorporation

This Certificate shall be incorporated into the resulting contract or agreement, if any, between the City and the Contracting entity. Upon execution of such contract or agreement, the Contracting Entity is under a continuing obligation to notify the City in writing of any material changes to the information in this Certificate. This notification shall be made within fifteen (15) days of the change. Failure to notify the City of any material change may result, at the option of the City, in a default termination (in whole or in part) of the contract or agreement, and/or a withholding of payments due the Contracting Entity.

Block 1 Contracting Entity	Block 2 Description
Name Wunderlich-Malec Engineering, Inc.	Subject Matter of Contract/Agreement
Address 5501 Feltl Road, Minnetonka, MN 55343	Services for SCADA Integration Services provided to the Water Pollution Control Facility
Telephone 952-933-3222	
EIN or DUNS 41-1412464	RFP# 100047-LD

Block 3 Type of Business
☐ Individual ☐ Partnership ☐ Limited Liability Company ☒ Corporation ☐ Trust ☐ Other:

**CERTIFICATE – DISCLOSURE OF OWNERSHIP/PRINCIPALS
(CONTINUED)**

Block 4 Disclosure of Ownership and Principals

In the space below, the Contracting Entity must disclose all principals (including partners) of the Contracting Entity, as well as persons or entities holding more than one-percent (1%) ownership interest in the Contracting Entity.

	FULL NAME/TITLE	BUSINESS ADDRESS	BUSINESS PHONE
1.	Neal K. Wunderlich, Pres/Sec	5501 Feltl Road Minnetonka, MN 55343	952-933-3222
2.	Deborah A. Wunderlich, Treas.	5501 Feltl Road Minnetonka, MN 55343	952-933-3222
3.	Wunderlich-Malec Engineering Employee Stock Ownership Plan (ESOP)	5501 Feltl Road Minnetonka, MN 55343	952-933-3222
4.			
5.			
6.			

The Contracting Entity shall continue the above list on a sheet of paper entitled "Disclosure of Ownership/Principals – Continuation" until full and complete disclosure is made. If continuation sheets are attached, please indicate the number of sheets: none _____

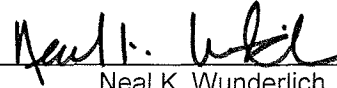
Block 5 Disclosure of Ownership and Principals – Alternate

If the Contracting Entity, or its principals or partners, are required to provide disclosure (of persons or entities holding an ownership interest) under federal law (such as disclosure required by the Securities and Exchange Commission or the Employee Retirement Income Act), a copy of such disclosure may be attached to this Certificate in lieu of providing the information set forth in Block 4 above. A description of such disclosure documents must be included below.

Name of Attached Document: Not applicable _____

Date of Attached Document: _____ Number of Pages: _____

I certify under penalty of perjury, that all the information provided in this Certificate is current, complete and accurate. I further certify that I am an individual authorized to contractually bind the above named Contracting Entity.

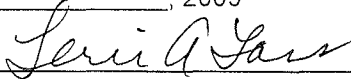


Neal K. Wunderlich, President

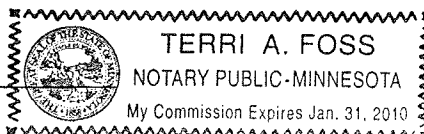
December 29, 2009

Subscribed and sworn to before me this 29th day of

December, 2009



Notary Public



ATTACHMENT 2 TASK ORDER PROCEDURES

Step 1 - Task Order Initiation

The City Project Manager sends a Task Order Form to the Company that states the task name, location, and description of the services to be performed.

Step 2 - Task Order Scope and Budget

The Company creates a detailed scope and budget estimate for the Task in question and fills in the Budget line and Sections A to F of the Task Order Form, as appropriate.

Step 3 - Task Order Review and Approval

The City Project Manager and Company representative will review and sign the Task Order Form with a final approval signature from the Environmental Division Manager.

Step 4 - Task Completion

The Company prepares a Task Order completion letter. This letter details the objectives achieved and/or missed, performance to budget comparison, invoicing history, delivery of Task Order documentation and any other pertinent documents received or created in the performance of services for the Task Order. This letter will be reviewed and signed by the City Project Manager and Company Representative. The Task Order completion letter will then be signed by the Environmental Division Manager. Once this process is finished the Task Order is considered CLOSED

SCADA Integration Task Order

Whereas the City and Consultant have signed a Task Order Agreement for the Consultant to provide professional services described in the Agreement and the City desires to utilize the Task Order Agreement to provide services for the following particular specific Task:

Task Name:
Location:
Description:
Task Cost Budget:

The parties do hereby agree to the follow terms and conditions for this Project Task Order:

Section A - Scope of Services:

Section B – Required Submittals:

Section C – Performance Schedule:

Section D – Fee Breakdown:

Section E – Additional Compensation:

Section F – Key Personnel List:

Reviewed and recommended by:
City Project Manager

Signature: _____
Name and Title

Date: ____/____/____

Company Representative

Signature: _____
Name and Title

Date: ____/____/____

Division Manager Approval

Dated this _____ day of _____, _____.

By: _____
Name, Environmental Division Manager

Upon execution hereof, this Project Task Order shall be attached to the Task Order Agreement.

REVISED PER ADDENDUM #2
EXHIBIT A - STATEMENT OF WORK

Scope of Work
Environmental Division SCADA Integration Services

Background and Definitions:

The Environmental Division currently encompasses a 91 MGD Water Pollution Control Facility (WPCF), a 1 MGD Re-Use Facility (BOMO), and a 10MGD Re-Use Facility (DHWRC). The environment includes 4 SCADA servers running Factorylink 7.x as an HMI, 3 Oracle servers running Oracle 10.x for data storage, and 79 Modicon Quantum PLC's programmed using Concept 2.6.

SCADA is defined as a complete system encompassing Instrumentation, Programmable Logic Controller (PLC) Hardware, PLC Software, Human-Machine Interface (HMI) Programming, and Database Configuration.

Integration Services include interfacing with the Design Engineer, Contractor, and City of Las Vegas to provide SCADA Development, Database Modifications, and Testing/Acceptance/Inspection criteria and plan review.

Design Support Services include the preparation of SCADA Specifications and the review of associated Plans, Drawings, and Specifications for assigned projects. This also includes the preparation, or review, of Requests for Information (RFI's) when required.

Plant Support Services include SCADA changes associated with minor plant upgrades and modifications, Operations & Maintenance Training associated with any changes made, After Hours support as required, and other Control Systems support necessary for normal plant operations.

Scope of Work:

1. Provide Integration Services for all Environmental Division Construction Contracts that include SCADA additions or modifications.
2. Provide Design Support Services for specific Environmental Division Control System Contracts as assigned.
3. Provide Plant Support Services for all Environmental Division Facilities.
4. Provide Design Support and Integration Services for minor Environmental Division SCADA modifications.
5. Provide a minimum of two (2) on-site personnel and one (1) project manager. It is not a requirement for the project manager to remain on-site. The City of Las Vegas will provide furnished office space for the on-site staff, up to five (5), but the successful bidder is responsible for any phone and/or network services/connectivity. The City of Las Vegas will also provide Server hardware and software for use in HMI Development & Testing and the client software for HMI and PLC Programming.

Plant Support

Plant support is a form of staff augmentation. It is intended to fund the staffing for unforeseen problems or needed improvements in support of day-to-day operations. It is intended to follow a work flow of request and approval. The owner will request an estimate for a given scope; the integrator will provide the estimate and then wait for approval before commencing work.

1.1. Integration Support

Phase	Type	Hours
1.1 Plant Support	PM-1	300
1.1 Plant Support	CS-1	400
1.1 Plant Support	HMI-1	400
Total		1100

1.2. Controls Design Support

Phase	Type	Hours
1.1 Design Support	PM-1	400
1.1 Design Support	CS-1	500
1.1 Design Support	HMI-1	200
Total		1100

1.3. Emergency Support

Phase	Type	Hours
1.1 Emergency Support	PM-1	-
1.1 Emergency Support	CS-1	200
1.1 Emergency Support	HMI-1	200
Total		400

**** Legend – PM-Project Manager; CS-1 Senior Controls Specialist; CS-2 Controls Specialist; PLC-1 Senior Controls Systems Programmer; HMI-1 Senior Human Machine Interface Developer – These designations are an indication of discipline and capabilities for the roles. These should not be considered a headcount of project staff**

The following section is provided to give respondents an idea of the types of tasks and scope normally performed by an Integrator. The staffing and hours are an estimate provided by the City as an aid. Actual tasks, staffing, etc. will be negotiated per task.

Facility Plan

1.4. Description

This task will baseline current SCADA hardware, software and practices, review new and emerging technologies and create a new standard for hardware, software and practices to support the owner's SCADA requirements for the next 10 years. The facility plan should be able to support new projects and contain plans to upgrade existing installations in a timely and safe manner.

1.5. Duties

The Integrator is to act in the best interests of the City in its role. The integrator reviews, develops and performs tests for the City. The Integrator reports its findings, test results and information updates through the City's appointed liaison.

Baseline Study

The Integrator will inventory all SCADA related hardware, software and practices. Contact all manufactures and confirm product lifecycles. Review operational history and create set of requirements from the strengths and weaknesses of the existing systems, derive from this a set of general requirements for all systems.

New and Emerging Technology Review

Using current automation industry trends and forecasts, define a set of products for further review and testing. The Integrator will work with industry OEM's to provide demonstrations and literature for the Owner's review. Both current and soon to be released products and technologies are to be considered. Both an aggressive and moderate model should be considered here and evaluated in the future.

Design

The Integrator will model the architectures for both the moderate and aggressive selections here. A hybrid of new and old, as well as a final design of a fully converted WPCF should be presented to the Owner for review and comment. Once a working copy of all architectures is complete the Integrator will assist the owner in a risk review of both the aggressive and moderate model. A final model will be chosen and the project will move on to testing.

Testing

The integrator will assemble a bill of materials for creating a simulated SCADA system based on the selected model. The owner will procure this BOM and the Integrator will assemble the simulation system. This simulation will include an old and new hybrid as well as a new technology only branch. The simulation should contain as much relative function as possible, (I/O, networking, Controllers, HMI, database, trending, setup, alarming, recipe, reporting, web, Etc.). The Integrator will create a testing requirement and submit to the Owner for approval. Upon approval, the simulation will be witness tested and scored on the results.

Documentation

The Integrator will document the new SCADA architecture and develop design documents to support the new installation on a moderate size capital project for deployment.

1.5.1. Labor Tables

Phase	Type	Hours
1.1 Baseline Study	PM-1	160
1.1 Baseline Study	CS-1	200
1.1 Baseline Study	HMI-1	200
1.2 Technology Review	PM-1	240
1.2 Technology Review	CS-1	240
1.2 Technology Review	HMI-1	240
1.3 Design	PM-1	280
1.3 Design	CS-1	280
1.3 Design	HMI-1	240
1.4 Testing	PM-1	200
1.4 Testing	CS-1	300
1.4 Testing	HMI-1	240
1.5 Documentation	PM-1	80
1.5 Documentation	CS-1	200
1.5 Documentation	HMI-1	200
Total Hours		3300

*** Legend – PM-Project Manager; CS-1 Senior Controls Specialist; CS-2 Controls Specialist; PLC-1 Senior Controls Systems Programmer; HMI-1 Senior Human Machine Interface Developer – These designations are an indication of discipline and capabilities for the roles. These should not be considered a headcount of project staff*

2. I&C Specification Standards Development

2.1. Description

This task will audit all existing device installations and catalogue the various types of measurement methods, devices and installation practices. Then determine BKM (best known methods) for the various applications and document those in a "design catalogue" which future projects can make use of to reduce development time and keep consistency with BKM. Once the catalogue is complete, a design package will be created to remediate any existing installations that do not comply with the new standards or involve obsolete devices.

2.2. Duties

The Integrator is to act in the best interests of the City in its role. The integrator reviews, develops and performs tests for the City. The Integrator reports its findings, test results and information updates through the City's appointed liaison.

Design

The Integrator will assist in the review and delivery of the design by the Engineer. Ensuring that best know methods and City practices are followed. Attending design meetings as required.

The Integrator will maintain the MEX(equipment) database and assign I/O from and update the COEX(PLC/HMI) database.

The Integrator will data mine the existing SCADA data for relative information to assist in and validate design assumptions.

The Integrator will make available to the Engineer the electronic format for P&ID, Loop and Control Cabinet drawings. This version will support data mining and be consistent with the accepted standard of drawings the City currently approves.

Contract / Bid

The Integrator will provide support through the bid package creation, bidding process and any post bid activities as required to assist the contractor in understanding contract requirements.

The Integrator will produce all documents required for the testing portion of the contract to support ORT, CORT ISAT and RAT. The Integrator will be the keeper of these documents until completion and turnover to the City at completion.

Construction

The Integrator will provide inspection services to ensure the constructed meets the control specifications, is capable of performing the control strategies and will function as the design intends.

Startup, Testing and Commissioning

The Integrator will provide a pivotal role in startup. After the entire system has passed ORT then the Integrator will work with the City and Contractor to complete CORT testing before moving on to ISAT testing.

All coordination through the City to ensure safe operation of existing equipment and facilities is the responsibility of the Integrator as it pertains to these startups and testing. The Integrator will make available to the City and the Engineer any and all data from the SCADA system to support the RAT when needed.

Training

The Integrator will provide operations training on the function of the control strategies, HMI process screens and HMI setup screens to the various shifts and departments as needed.

2.2.1. Labor Tables

Phase	Type	Hours
1.1 Discovery	PM-1	200
1.1 Discovery	CS-1	300
1.1 Discovery	CS-2	400
1.2 Design	PM-1	240
1.2 Design	CS-1	400
1.2 Design	CS-2	400
1.3 Contract / Bid	PM-1	240
1.3 Contract / Bid	CS-1	240
1.4 Construction	PM-1	50
1.4 Construction	CS-1	50
1.4 Construction	CS-2	200
1.5 Integration	PM-1	-
1.5 Integration	CS-1	-
1.5 Integration	CS-2	-
1.6 Start-up / Testing	PM-1	-
1.6 Start-up / Testing	CS-1	80
1.6 Start-up / Testing	CS-2	120
1.7 Training	PM-1	10
1.7 Training	CS-1	120
1.7 Training	CS-2	120
Total Hours		3170

**** Legend – PM-Project Manager; CS-1 Senior Controls Specialist; CS-2 Controls Specialist; PLC-1 Senior Controls Systems Programmer; HMI-1 Senior Human Machine Interface Developer – These designations are an indication of discipline and capabilities for the roles. These should not be considered a headcount of project staff**

3. Projects: Controls and SCADA (Planned Capital Projects)

The Integrator will support the successful delivery of the following existing projects. Each project has some scope for the integrator but not all the same roles, each project should be reviewed as a standalone project. It is expected that the Integrator enter into contractual agreement with the design Engineer and the Construction Manager for the respective projects. The terms and conditions are expected to be consistent with the terms and conditions agreed upon in the Integrator's Master Agreement. (See boilerplate contract in package)

3.1. WPCF Odor Control Upgrades

3.1.1. Description

This task will support the design contracts and the construction contracts for the Odor Control upgrade to the WPCF Facility. Assumes 320 I/O points

3.1.2. Duties

The Integrator is to act in the best interests of the City in its role. The integrator reviews, develops and performs tests for the City. The Integrator reports its findings, test results and information updates through the City's appointed liaison.

Design

The Integrator will assist in the review and delivery of the design by the Engineer. Ensuring that best know methods and City practices are followed. Attending design meetings as required.

The Integrator will maintain the MEX(equipment) database and assign I/O from and update the COEX(PLC/HMI) database.

The Integrator will data mine the existing SCADA data for relative information to assist in and validate design assumptions.

The Integrator will make available to the Engineer the electronic format for P&ID, Loop and Control Cabinet drawings. This version will support data mining and be consistent with the accepted standard of drawings the City currently approves.

Contract / Bid

The Integrator will provide support through the bid package creation, bidding process and any post bid activities as required to assist the contractor in understanding contract requirements.

The Integrator will produce all documents required for the testing portion of the contract to support ORT, CORT ISAT and RAT. The Integrator will be the keeper of these documents until completion and turnover to the City at completion.

Construction

The Integrator will provide inspection services to ensure the constructed meets the control specifications, is capable of performing the control strategies and will function as the design intends.

Integration

The integrator will produce HMI, PLC and Simulation software to control and simulate the project's I/O, screens and functionality. This software will comply with the currently approved for deployment standards. This new software must be integrated into the existing HMI and PLC architecture with little planned downtime and no unplanned downtime.

When completed the software will be tested in a SSDT(Staged Software Demonstration Test) and feedback solicited from the City. Changes stemming from the SSTD will be communicated to the Engineer for evaluation of impact.

Startup, Testing and Commissioning

The Integrator will provide a pivotal role in startup. After the entire system has passed ORT then the Integrator will work with the City and Contractor to complete CORT testing before moving on to ISAT testing.

All coordination through the City to ensure safe operation of existing equipment and facilities is the responsibility of the Integrator as it pertains to these startups and testing. The Integrator will make available to the City and the Engineer any and all data from the SCADA system to support the RAT when needed.

Training

The Integrator will provide operations training on the function of the control strategies, HMI process screens and HMI setup screens to the various shifts and departments as needed.

Labor Tables

Phase	Type	Hours
1.1 Discovery	PM-1	80
1.1 Discovery	CS-1	80
1.1 Discovery	HMI-1	80
1.2 Design	PM-1	150
1.2 Design	CS-1	200
1.2 Design	HMI-1	100
1.3 Contract / Bid	PM-1	120
1.3 Contract / Bid	CS-1	120
1.4 Construction	PM-1	100
1.4 Construction	CS-1	120
1.4 Construction	HMI-1	200
1.5 Integration	PLC-1	100
1.5 Integration	CS-1	200
1.5 Integration	HMI-1	200
1.6 Start-up / Testing	PM-1	100
1.6 Start-up / Testing	PLC-1	100
1.6 Start-up / Testing	HMI-1	200
1.7 Training	PLC-1	20
1.7 Training	CS-1	80
1.7 Training	HMI-1	60
Total Hours		2410

*** Legend – PM-Project Manager; CS-1 Senior Controls Specialist; CS-2 Controls Specialist; PLC-1 Senior Controls Systems Programmer; HMI-1 Senior Human Machine Interface Developer – These designations are an indication of discipline and capabilities for the roles. These should not be considered a headcount of project staff*

3.2. Dewatering Renovations

3.2.1. Description

This task will support the design contracts and the construction contracts for the upgrades to the dewatering system at the WPCF Facility. Assumes 300 I/O points

3.2.2. Duties

The Integrator is to act in the best interests of the City in its role. The integrator reviews, develops and performs tests for the City. The Integrator reports its findings, test results and information updates through the City's appointed liaison.

Design

The Integrator will assist in the review and delivery of the design by the Engineer. Ensuring that best know methods and City practices are followed. Attending design meetings as required.

The Integrator will maintain the MEX(equipment) database and assign I/O from and update the COEX(PLC/HMI) database.

The Integrator will data mine the existing SCADA data for relative information to assist in and validate design assumptions.

The Integrator will make available to the Engineer the electronic format for P&ID, Loop and Control Cabinet drawings. This version will support data mining and be consistent with the accepted standard of drawings the City currently approves.

Contract / Bid

The Integrator will provide support through the bid package creation, bidding process and any post bid activities as required to assist the contractor in understanding contract requirements.

The Integrator will produce all documents required for the testing portion of the contract to support ORT, CORT ISAT and RAT. The Integrator will be the keeper of these documents until completion and turnover to the City at completion.

Construction

The Integrator will provide inspection services to ensure the constructed meets the control specifications, is capable of performing the control strategies and will function as the design intends.

Integration

The integrator will produce HMI, PLC and Simulation software to control and simulate the project's I/O, screens and functionality. This software will comply with the currently approved for deployment standards. This new software must be integrated into the existing HMI and PLC architecture with little planned downtime and no unplanned downtime.

When completed the software will be tested in a SSDT(Staged Software Demonstration Test) and feedback solicited from the City. Changes stemming from the SSTD will be communicated to the Engineer for evaluation of impact.

Startup, Testing and Commissioning

The Integrator will provide a pivotal role in startup. After the entire system has passed ORT then the Integrator will work with the City and Contractor to complete CORT testing before moving on to ISAT testing.

All coordination through the City to ensure safe operation of existing equipment and facilities is the responsibility of the Integrator as it pertains to these startups and testing. The Integrator will make available to the City and the Engineer any and all data from the SCADA system to support the RAT when needed.

Training

The Integrator will provide operations training on the function of the control strategies, HMI process screens and HMI setup screens to the various shifts and departments as needed.

3.2.3. Labor Tables

Phase	Type	Hours
1.1 Discovery	PM-1	40
1.1 Discovery	CS-1	80
1.1 Discovery	HMI-1	80
1.2 Design	PM-1	150
1.2 Design	CS-1	200
1.2 Design	HMI-1	50
1.3 Contract / Bid	PM-1	120
1.3 Contract / Bid	CS-1	120
1.4 Construction	PM-1	100
1.4 Construction	CS-1	120
1.4 Construction	CS-2	160
1.5 Integration	PM-1	100
1.5 Integration	PLC-1	200
1.5 Integration	HMI-1	200
1.6 Start-up / Testing	PM-1	100
1.6 Start-up / Testing	PLC-1	100
1.6 Start-up / Testing	HMI-1	180
1.7 Training	PM-1	20
1.7 Training	PLC-1	80
1.7 Training	HMI-1	60
Total Hours		2260

**** Legend – PM-Project Manager; CS-1 Senior Controls Specialist; CS-2 Controls Specialist; PLC-1 Senior Controls Systems Programmer; HMI-1 Senior Human Machine Interface Developer – These designations are an indication of discipline and capabilities for the roles. These should not be considered a headcount of project staff**

Bar Screens

3.2.4. Description

This task will support the design contracts and the construction contracts for the upgrade to the bar screen system at the WPCF Facility. Assumes XXX I/O points

3.2.5. Duties

The Integrator is to act in the best interests of the City in its role. The integrator reviews, develops and performs tests for the City. The Integrator reports its findings, test results and information updates through the City's appointed liaison.

Design

The Integrator will assist in the review and delivery of the design by the Engineer. Ensuring that best know methods and City practices are followed. Attending design meetings as required.

The Integrator will maintain the MEX(equipment) database and assign I/O from and update the COEX(PLC/HMI) database.

The Integrator will data mine the existing SCADA data for relative information to assist in and validate design assumptions.

The Integrator will make available to the Engineer the electronic format for P&ID, Loop and Control Cabinet drawings. This version will support data mining and be consistent with the accepted standard of drawings the City currently approves.

Contract / Bid

The Integrator will provide support through the bid package creation, bidding process and any post bid activities as required to assist the contractor in understanding contract requirements.

The Integrator will produce all documents required for the testing portion of the contract to support ORT, CORT ISAT and RAT. The Integrator will be the keeper of these documents until completion and turnover to the City at completion.

Construction

The Integrator will provide inspection services to ensure the constructed meets the control specifications, is capable of performing the control strategies and will function as the design intends.

Integration

The integrator will produce HMI, PLC and Simulation software to control and simulate the project's I/O, screens and functionality. This software will comply with the currently approved for deployment standards. This new software must be integrated into the existing HMI and PLC architecture with little planned downtime and no unplanned downtime.

When completed the software will be tested in a SSDT(Staged Software Demonstration Test) and feedback solicited from the City. Changes stemming from the SSTD will be communicated to the Engineer for evaluation of impact.

Startup, Testing and Commissioning

The Integrator will provide a pivotal role in startup. After the entire system has passed ORT then the Integrator will work with the City and Contractor to complete CORT testing before moving on to ISAT testing.

All coordination through the City to ensure safe operation of existing equipment and facilities is the responsibility of the Integrator as it pertains to these startups and testing. The Integrator will make available to the City and the Engineer any and all data from the SCADA system to support the RAT when needed.

Training

The Integrator will provide operations training on the function of the control strategies, HMI process screens and HMI setup screens to the various shifts and departments as needed.

Labor Tables

Phase	Type	Hours
1.1 Discovery	PM-1	20
1.1 Discovery	CS-1	80
1.1 Discovery	CS-2	40

Phase	Type	Hours
1.2 Design	PM-1	20
1.2 Design	CS-1	120
1.2 Design	HMI-1	20
1.3 Contract / Bid	PM-1	40
1.3 Contract / Bid	CS-1	120
1.4 Construction	PM-1	40
1.4 Construction	CS-1	80
1.4 Construction	HMI-1	80
1.5 Integration	PM-1	80
1.5 Integration	PLC-1	120
1.5 Integration	HMI-1	120
1.6 Start-up / Testing	PM-1	40
1.6 Start-up / Testing	PLC-1	40
1.6 Start-up / Testing	HMI-1	120
1.7 Training	PM-1	20
1.7 Training	PLC-1	40
1.7 Training	HMI-1	40
Total Hours		1280

*** Legend – PM-Project Manager; CS-1 Senior Controls Specialist; CS-2 Controls Specialist; PLC-1 Senior Controls Systems Programmer; HMI-1 Senior Human Machine Interface Developer – These designations are an indication of discipline and capabilities for the roles. These should not be considered a headcount of project staff*

3.3. Gas System

3.3.1. Description

This task will support the design contracts and the construction contracts for the upgrade to the digester gas handling system at the WPCF Facility. The project will incorporate new gas scrubbing and refining systems to produce a more usable feed gas for the combustion engines used to drive the plants 2 engine blowers. Assumes 240 I/O points

3.3.2. Duties

The Integrator is to act in the best interests of the City in its role. The integrator reviews, develops and performs tests for the City. The Integrator reports its findings, test results and information updates through the City's appointed liaison.

Design

The Integrator will assist in the review and delivery of the design by the Engineer. Ensuring that best know methods and City practices are followed. Attending design meetings as required.

The Integrator will maintain the MEX(equipment) database and assign I/O from and update the COEX(PLC/HMI) database.

The Integrator will data mine the existing SCADA data for relative information to assist in and validate design assumptions.

The Integrator will make available to the Engineer the electronic format for P&ID, Loop and Control Cabinet drawings. This version will support data mining and be consistent with the accepted standard of drawings the City currently approves.

Contract / Bid

The Integrator will provide support through the bid package creation, bidding process and any post bid activities as required to assist the contractor in understanding contract requirements.

The Integrator will produce all documents required for the testing portion of the contract to support ORT, CORT ISAT and RAT. The Integrator will be the keeper of these documents until completion and turnover to the City at completion.

Construction

The Integrator will provide inspection services to ensure the constructed meets the control specifications, is capable of performing the control strategies and will function as the design intends.

Integration

The integrator will produce HMI, PLC and Simulation software to control and simulate the project's I/O, screens and functionality. This software will comply with the currently approved for deployment standards. This new software must be integrated into the existing HMI and PLC architecture with little planned downtime and no unplanned downtime.

When completed the software will be tested in a SSDT(Staged Software Demonstration Test) and feedback solicited from the City. Changes stemming from the SSTD will be communicated to the Engineer for evaluation of impact.

Startup, Testing and Commissioning

The Integrator will provide a pivotal role in startup. After the entire system has passed ORT then the Integrator will work with the City and Contractor to complete CORT testing before moving on to ISAT testing.

All coordination through the City to ensure safe operation of existing equipment and facilities is the responsibility of the Integrator as it pertains to these startups and testing. The Integrator will make available to the City and the Engineer any and all data from the SCADA system to support the RAT when needed.

Training

The Integrator will provide operations training on the function of the control strategies, HMI process screens and HMI setup screens to the various shifts and departments as needed.

3.3.3. Labor Tables

Phase	Type	Hours
1.1 Discovery	PM-1	40
1.1 Discovery	CS-1	80
1.1 Discovery	HMI-1	40
1.2 Design	PM-1	40
1.2 Design	CS-1	160
1.2 Design	HMI-1	40
1.3 Contract / Bid	PM-1	80
1.3 Contract / Bid	CS-1	160
1.4 Construction	PM-1	40
1.4 Construction	CS-1	120
1.4 Construction	CS-2	120
1.5 Integration	PM-1	80
1.5 Integration	PLC-1	200
1.5 Integration	HMI-1	200
1.6 Start-up / Testing	PM-1	40
1.6 Start-up / Testing	PLC-1	80
1.6 Start-up / Testing	HMI-1	120
1.7 Training	PM-1	20
1.7 Training	PLC-1	80
1.7 Training	HMI-1	80
Total Hours		1820

**** Legend – PM-Project Manager; CS-1 Senior Controls Specialist; CS-2 Controls Specialist; PLC-1 Senior Controls Systems Programmer; HMI-1 Senior Human Machine Interface Developer – These designations are an indication of discipline and capabilities for the roles. These should not be considered a headcount of project staff**

Durango Headworks / Disinfection System

3.3.4. Description

This task will support the design contracts and the construction contracts for the upgrade to the headworks and disinfection systems at the DRWRC Facility. The project will incorporate new bar screens and other supporting systems. The current disinfection system is UV based. Assumes 140 I/O points

3.3.5. Duties

The Integrator is to act in the best interests of the City in its role. The integrator reviews, develops and performs tests for the City. The Integrator reports its findings, test results and information updates through the City's appointed liaison.

Design

The Integrator will assist in the review and delivery of the design by the Engineer. Ensuring that best know methods and City practices are followed. Attending design meetings as required.

The Integrator will maintain the MEX(equipment) database and assign I/O from and update the COEX(PLC/HMI) database.

The Integrator will data mine the existing SCADA data for relative information to assist in and validate design assumptions.

The Integrator will make available to the Engineer the electronic format for P&ID, Loop and Control Cabinet drawings. This version will support data mining and be consistent with the accepted standard of drawings the City currently approves.

Contract / Bid

The Integrator will provide support through the bid package creation, bidding process and any post bid activities as required to assist the contractor in understanding contract requirements.

The Integrator will produce all documents required for the testing portion of the contract to support ORT, CORT ISAT and RAT. The Integrator will be the keeper of these documents until completion and turnover to the City at completion.

Construction

The Integrator will provide inspection services to ensure the constructed meets the control specifications, is capable of performing the control strategies and will function as the design intends.

Integration

The integrator will produce HMI, PLC and Simulation software to control and simulate the project's I/O, screens and functionality. This software will comply with the currently approved for deployment standards. This new software must be integrated into the existing HMI and PLC architecture with little planned downtime and no unplanned downtime.

When completed the software will be tested in a SSDT(Staged Software Demonstration Test) and feedback solicited from the City. Changes stemming from the SSTD will be communicated to the Engineer for evaluation of impact.

Startup, Testing and Commissioning

The Integrator will provide a pivotal role in startup. After the entire system has passed ORT then the Integrator will work with the City and Contractor to complete CORT testing before moving on to ISAT testing.

All coordination through the City to ensure safe operation of existing equipment and facilities is the responsibility of the Integrator as it pertains to these startups and testing. The Integrator will make available to the City and the Engineer any and all data from the SCADA system to support the RAT when needed.

Training

The Integrator will provide operations training on the function of the control strategies, HMI process screens and HMI setup screens to the various shifts and departments as needed.

Labor Tables

Phase	Type	Hours
1.1 Discovery	PM-1	40
1.1 Discovery	CS-1	80
1.1 Discovery	HMI-1	40
1.2 Design	PM-1	120
1.2 Design	CS-1	120
1.2 Design	HMI-1	40
1.3 Contract / Bid	PM-1	40
1.3 Contract / Bid	CS-1	80
1.4 Construction	PM-1	40
1.4 Construction	CS-1	40
1.4 Construction	HMI-1	40
1.5 Integration	PM-1	80
1.5 Integration	PLC-1	120
1.5 Integration	HMI-1	120
1.6 Start-up / Testing	PM-1	40
1.6 Start-up / Testing	PLC-1	40
1.6 Start-up / Testing	HMI-1	80
1.7 Training	PM-1	20
1.7 Training	PLC-1	40
1.7 Training	HMI-1	40
Total Hours		1260

**** Legend – PM-Project Manager; CS-1 Senior Controls Specialist; CS-2 Controls Specialist; PLC-1 Senior Controls Systems Programmer; HMI-1 Senior Human Machine Interface Developer – These designations are an indication of discipline and capabilities for the roles. These should not be considered a headcount of project staff**

3.4. SCOP Reach 1 project

3.4.1. Description

This task will support the design contracts and the construction contracts for the support and integration of the Clean Water Coalition's pipeline projects. The clean water coalition has 9 projects whose combined construction cost is estimated at \$650 million. As one of the member agencies and one of the connection points for the project, The City provides review and support for the project. Design for 3 other projects are about complete and ready to bid. Other projects are still under design. Assumes 75 I/O points (possible gateway or other non-direct communication will be used to share information in both directions)

3.4.2. Duties

The Integrator is to act in the best interests of the City in its role. The integrator reviews, develops and performs tests for the City. The Integrator reports its findings, test results and information updates through the City's appointed liaison.

Design

The Integrator will assist in the review and delivery of the design by the Engineer. Ensuring that best know methods and City practices are followed. Attending design meetings as required.

The Integrator will maintain the MEX(equipment) database and assign I/O from and update the COEX(PLC/HMI) database.

The Integrator will data mine the existing SCADA data for relative information to assist in and validate design assumptions.

The Integrator will make available to the Engineer the electronic format for P&ID, Loop and Control Cabinet drawings. This version will support data mining and be consistent with the accepted standard of drawings the City currently approves.

Contract / Bid

The Integrator will provide support through the bid package creation, bidding process and any post bid activities as required to assist the contractor in understanding contract requirements.

The Integrator will produce all documents required for the testing portion of the contract to support ORT, CORT ISAT and RAT. The Integrator will be the keeper of these documents until completion and turnover to the City at completion.

Construction

The Integrator will provide inspection services to ensure the constructed meets the control specifications, is capable of performing the control strategies and will function as the design intends.

Integration

The integrator will produce HMI, PLC and Simulation software to control and simulate the project's I/O, screens and functionality. This software will comply with the currently approved for deployment standards. This new software must be integrated into the existing HMI and PLC architecture with little planned downtime and no unplanned downtime.

When completed the software will be tested in a SSDT(Staged Software Demonstration Test) and feedback solicited from the City. Changes stemming from the SSTD will be communicated to the Engineer for evaluation of impact.

Startup, Testing and Commissioning

The Integrator will provide a pivotal role in startup. After the entire system has passed ORT then the Integrator will work with the City and Contractor to complete CORT testing before moving on to ISAT testing.

All coordination through the City to ensure safe operation of existing equipment and facilities is the responsibility of the Integrator as it pertains to these startups and testing. The Integrator will make available to the City and the Engineer any and all data from the SCADA system to support the RAT when needed.

Training

The Integrator will provide operations training on the function of the control strategies, HMI process screens and HMI setup screens to the various shifts and departments as needed.

3.4.3. Labor Tables

Phase	Type	Hours
1.1 Discovery	PM-1	20
1.1 Discovery	CS-1	40
1.1 Discovery	HMI-1	20
1.2 Design	PM-1	20
1.2 Design	CS-1	40
1.2 Design	HMI-1	20
1.3 Contract / Bid	PM-1	40
1.3 Contract / Bid	CS-1	80
1.4 Construction	PM-1	20
1.4 Construction	CS-1	20
1.4 Construction	HMI-1	40
1.5 Integration	PM-1	20
1.5 Integration	PLC-1	60
1.5 Integration	HMI-1	60
1.6 Start-up / Testing	PM-1	20
1.6 Start-up / Testing	PLC-1	20
1.6 Start-up / Testing	HMI-1	40
1.7 Training	PM-1	20
1.7 Training	PLC-1	40
1.7 Training	HMI-1	40
Total Hours		680

**** Legend – PM-Project Manager; CS-1 Senior Controls Specialist; CS-2 Controls Specialist; PLC-1 Senior Controls Systems Programmer; HMI-1 Senior Human Machine Interface Developer – These designations are an indication of discipline and capabilities for the roles. These should not be considered a headcount of project staff**

Effluent Channel

3.4.4. Description

This task will support the design contracts and the construction contracts for the support and integration of the Clean Water Coalition's pipeline projects. The clean water coalition has 9 projects whose combined construction cost is estimated at \$650 million. As one of the member agencies and one of the connection points for the project, The City provides review and support for the project. Design for 3 other projects are about complete and ready to bid. Other projects are still under design. Assumes 75 I/O points (possible gateway or other non-direct communication will be used to share information in both directions)

3.4.5. Duties

The Integrator is to act in the best interests of the City in its role. The integrator reviews, develops and performs tests for the City. The Integrator reports its findings, test results and information updates through the City's appointed liaison.

Design

The Integrator will assist in the review and delivery of the design by the Engineer. Ensuring that best know methods and City practices are followed. Attending design meetings as required.

The Integrator will maintain the MEX(equipment) database and assign I/O from and update the COEX(PLC/HMI) database.

The Integrator will data mine the existing SCADA data for relative information to assist in and validate design assumptions.

The Integrator will make available to the Engineer the electronic format for P&ID, Loop and Control Cabinet drawings. This version will support data mining and be consistent with the accepted standard of drawings the City currently approves.

Contract / Bid

The Integrator will provide support through the bid package creation, bidding process and any post bid activities as required to assist the contractor in understanding contract requirements.

The Integrator will produce all documents required for the testing portion of the contract to support ORT, CORT ISAT and RAT. The Integrator will be the keeper of these documents until completion and turnover to the City at completion.

Construction

The Integrator will provide inspection services to ensure the constructed meets the control specifications, is capable of performing the control strategies and will function as the design intends.

Integration

The integrator will produce HMI, PLC and Simulation software to control and simulate the project's I/O, screens and functionality. This software will comply with the currently approved for deployment standards. This new software must be integrated into the existing HMI and PLC architecture with little planned downtime and no unplanned downtime.

When completed the software will be tested in a SSDT(Staged Software Demonstration Test) and feedback solicited from the City. Changes stemming from the SSTD will be communicated to the Engineer for evaluation of impact.

Startup, Testing and Commissioning

The Integrator will provide a pivotal role in startup. After the entire system has passed ORT then the Integrator will work with the City and Contractor to complete CORT testing before moving on to ISAT testing.

All coordination through the City to ensure safe operation of existing equipment and facilities is the responsibility of the Integrator as it pertains to these startups and testing. The Integrator will make available to the City and the Engineer any and all data from the SCADA system to support the RAT when needed.

Training

The Integrator will provide operations training on the function of the control strategies, HMI process screens and HMI setup screens to the various shifts and departments as needed.

Labor Tables

Phase	Type	Hours
1.1 Discovery	PM-1	20
1.1 Discovery	CS-1	40
1.1 Discovery	HMI-1	20
1.2 Design	PM-1	20
1.2 Design	CS-1	40
1.2 Design	HMI-1	20
1.3 Contract / Bid	PM-1	40
1.3 Contract / Bid	CS-1	40
1.4 Construction	PM-1	20
1.4 Construction	CS-1	20
1.4 Construction	HMI-1	40
1.5 Integration	PM-1	20
1.5 Integration	PLC-1	40
1.5 Integration	HMI-1	40
1.6 Start-up / Testing	PM-1	20
1.6 Start-up / Testing	PLC-1	20
1.6 Start-up / Testing	HMI-1	40
1.7 Training	PM-1	20
1.7 Training	PLC-1	20
1.7 Training	HMI-1	20
Total Hours		560

**** Legend – PM-Project Manager; CS-1 Senior Controls Specialist; CS-2 Controls Specialist; PLC-1 Senior Controls Systems Programmer; HMI-1 Senior Human Machine Interface Developer – These designations are an indication of discipline and capabilities for the roles. These should not be considered a headcount of project staff**

4. Project Controls and SCADA (Integrator Projects)

4.1. Reporting Improvements

4.1.1. Description

This task will review the manually generated reports and the SCADA generated reports in active use in the operation of the treatment plants. The integrator will then work with the owner to determine which reports will be automated based on criticality and efficiency. These reports will then be created in the SCADA environment, tested and then the users will be trained on their use. This task assumes approximately 10 reports and/or 800 unique data points.

4.1.2. Duties

The Integrator is to act in the best interests of the City in its role. The integrator reviews, develops and performs tests for the City. The Integrator reports its findings, test results and information updates through the City's appointed liaison.

Design

The Integrator will assist in the review and delivery of the design by the Engineer. Ensuring that best know methods and City practices are followed. Attending design meetings as required.

The Integrator will maintain the MEX(equipment) database and assign I/O from and update the COEX(PLC/HMI) database.

The Integrator will data mine the existing SCADA data for relative information to assist in and validate design assumptions.

The Integrator will make available to the Engineer the electronic format for P&ID, Loop and Control Cabinet drawings. This version will support data mining and be consistent with the accepted standard of drawings the City currently approves.

Integration

The integrator will produce HMI, PLC and Simulation software to control and simulate the project's I/O, screens and functionality. This software will comply with the currently approved for deployment standards. This new software must be integrated into the existing HMI and PLC architecture with little planned downtime and no unplanned downtime.

When completed the software will be tested in a SSDT(Staged Software Demonstration Test) and feedback solicited from the City. Changes stemming from the SSTD will be communicated to the Engineer for evaluation of impact.

Startup, Testing and Commissioning

The Integrator will provide a pivotal role in startup. After the entire system has passed ORT then the Integrator will work with the City and Contractor to complete CORT testing before moving on to ISAT testing.

All coordination through the City to ensure safe operation of existing equipment and facilities is the responsibility of the Integrator as it pertains to these startups and testing. The Integrator will make available to the City and the Engineer any and all data from the SCADA system to support the RAT when needed.

Training

The Integrator will provide operations training on the function of the control strategies, HMI process screens and HMI setup screens to the various shifts and departments as needed.

4.1.3. Labor Tables

Phase	Type	Hours
1.1 Discovery	PM-1	120
1.1 Discovery	CS-1	120
1.1 Discovery	HMI-1	120
1.2 Design	PM-1	120
1.2 Design	CS-1	160
1.2 Design	HMI-1	160
1.5 Integration	PM-1	80
1.5 Integration	PLC-1	80
1.5 Integration	HMI-1	400
1.6 Start-up / Testing	PM-1	40
1.6 Start-up / Testing	PLC-1	40
1.6 Start-up / Testing	HMI-1	120
1.7 Training	PM-1	20
1.7 Training	PLC-1	40
1.7 Training	HMI-1	40
Total Hours		1660

**** Legend – PM-Project Manager; CS-1 Senior Controls Specialist; CS-2 Controls Specialist; PLC-1 Senior Controls Systems Programmer; HMI-1 Senior Human Machine Interface Developer – These designations are an indication of discipline and capabilities for the roles. These should not be considered a headcount of project staff**

4.2. Alarm System Renovation

4.2.1. Description

This task will review all the existing alarms, alarm classifications, alarm responses, alarm reporting and uses of historical alarm data. Conduct workshops and educate on best known methods with in the industry and similar industries. Develop a new alarm standard and implement and educate the Owner's representatives. This task assumes approximately 3000 alarms.

4.2.2. Duties

The Integrator is to act in the best interests of the City in its role. The integrator reviews, develops and tests as if it were a City agent. The Integrator reports its findings, test results and information updates through the City's appointed liaison.

Design

The Integrator will assist in the review and delivery of the design by the Engineer. Ensuring that best know methods and City practices are followed. Attending design meetings as required.

The Integrator will maintain the MEX(equipment) database and assign I/O from and update the COEX(PLC/HMI) database.

The Integrator will data mine the existing SCADA data for relative information to assist in and validate design assumptions.

The Integrator will make available to the Engineer the electronic format for P&ID, Loop and Control Cabinet drawings. This version will support data mining and be consistent with the accepted standard of drawings the City currently approves.

Integration

The integrator will produce HMI, PLC and Simulation software to control and simulate the project's I/O, screens and functionality. This software will comply with the currently approved for deployment standards. This new software must be integrated into the existing HMI and PLC architecture with little planned downtime and no unplanned downtime.

When completed the software will be tested in a SSDT(Staged Software Demonstration Test) and feedback solicited from the City. Changes stemming from the SSTD will be communicated to the Engineer for evaluation of impact.

Startup, Testing and Commissioning

The Integrator will provide a pivotal role in startup. After the entire system has passed ORT then the Integrator will work with the City and Contractor to complete CORT testing before moving on to ISAT testing.

All coordination through the City to ensure safe operation of existing equipment and facilities is the responsibility of the Integrator as it pertains to these startups and testing. The Integrator will make available to the City and the Engineer any and all data from the SCADA system to support the RAT when needed.

Training

The Integrator will provide operations training on the function of the control strategies, HMI process screens and HMI setup screens to the various shifts and departments as needed.

Labor Tables

Phase	Type	Hours
1.1 Discovery	PM-1	120
1.1 Discovery	CS-1	120
1.1 Discovery	HMI-1	120
1.2 Design	PM-1	120
1.2 Design	CS-1	160
1.2 Design	HMI-1	160
1.5 Integration	PM-1	80
1.5 Integration	PLC-1	200
1.5 Integration	HMI-1	400
1.6 Start-up / Testing	PM-1	40
1.6 Start-up / Testing	PLC-1	120
1.6 Start-up / Testing	HMI-1	120
1.7 Training	PM-1	20
1.7 Training	PLC-1	40
1.7 Training	HMI-1	40
Total Hours		1860

**** Legend – PM-Project Manager; CS-1 Senior Controls Specialist; CS-2 Controls Specialist; PLC-1 Senior Controls Systems Programmer; HMI-1 Senior Human Machine Interface Developer – These designations are an indication of discipline and capabilities for the roles. These should not be considered a headcount of project staff**