

**LINKING AGREEMENT
BETWEEN
THE CITY OF GLENDALE, ARIZONA
AND
QUANTUM INTEGRATED SOLUTIONS, INC.**

THIS LINKING AGREEMENT (this "Agreement") is entered into as of this _____ day of _____, 2022, between the City of Glendale, an Arizona municipal corporation (the "City"), and Quantum Integrated Solutions, Inc., a(n) Arizona Corporation authorized to do business in Arizona ("Contractor"), collectively, the "Parties."

RECITALS

- A. On July 7, 2020 under (S.A.V.E Cooperative Purchasing Agreement), the City of Avondale entered into a contract with Contractor to purchase the goods and services described in the SCADA Professional Engineering Services, City of Avondale Agreement No. 20-168C, ("Cooperative Purchasing Agreement"), which is attached hereto as Exhibit A. The Cooperative Purchasing Agreement permits its cooperative use by other governmental agencies including the City.
- B. Section 2-149 of the City's Procurement Code permits the Materials Manager to procure goods and services by participating with other governmental units in cooperative purchasing agreements when the best interests of the City would be served.
- C. Section 2-149 also provides that the Materials Manager may enter into such cooperative agreements without meeting the formal or informal solicitation and bid requirements of Glendale City Code Sections 2-145 and 2-146.
- D. The City desires to contract with Contractor for supplies or services identical, or nearly identical, to the supplies or services Contractor is providing other units of government under the Cooperative Purchasing Agreement. Contractor consents to the City's utilization of the Cooperative Purchasing Agreement as the basis of this Agreement, and Contractor desires to enter into this Agreement to provide the supplies and services set forth in this Agreement.

AGREEMENT

NOW, THEREFORE, in consideration of the foregoing recitals, which are incorporated by reference, and the covenants and promises contained in this Linking Agreement, the parties agree as follows:

1. Term of Agreement. The City is purchasing supplies and/or services from Contractor pursuant to the Cooperative Purchasing Agreement. According to the Cooperative Purchasing Agreement, purchases can be made by governmental entities from the date of award, which was July 7, 2020, until the date the contract expires on July 6, 2022 unless the term of the Cooperative Purchasing Agreement is extended by the mutual agreement of the original contracting parties. The Cooperative Purchasing Agreement, however, may not be extended beyond July 6, 2025. The initial period of this Agreement, therefore, is the period from the Effective Date of this Agreement until July 6, 2022. The City may renew the term

of this Agreement for (3) three additional (1) one year terms until the Cooperative Purchasing Agreement expires on July 6, 2025. Glendale renewals are not automatic and shall only occur if the City gives the Contractor notice of its intent to renew. The City may give the Contractor notice of its intent to renew this Agreement 30 days prior to the anniversary of the Effective Date to effectuate such renewal.

2. Scope of Work; Terms, Conditions, and Specifications.

- A. Contractor shall provide City the supplies and/or services identified in the Scope of Work attached as Exhibit B.
- B. Contractor agrees to comply with all the terms, conditions and specifications of the Cooperative Purchasing Agreement. Such terms, conditions and specifications are specifically incorporated into and are an enforceable part of this Agreement.

3. Compensation.

- A. City shall pay Contractor compensation at the same rate and on the same schedule as provided in the Cooperative Purchasing Agreement, which is attached hereto as Exhibit C.
- B. The total purchase price for the supplies and/or services purchased under this Agreement shall not exceed Three hundred & fifty thousand dollars (\$350,000) for the entire term of the Agreement (initial term plus any renewals).

4. Cancellation. This Agreement may be cancelled pursuant to A.R.S. § 38-511.

5. Non-discrimination. Contractor must not discriminate against any employee or applicant for employment on the basis of race, color, religion, sex, national origin, age, marital status, sexual orientation, gender identity or expression, genetic characteristics, familial status, U.S. military veteran status or any disability. Contractor will require any Sub-contractor to be bound to the same requirements as stated within this section. Contractor, and on behalf of any subcontractors, warrants compliance with this section.

6. Insurance Certificate. A certificate of insurance applying to this Agreement must be provided to the City prior to the Effective Date.

7. E-verify. Contractor complies with A.R.S. § 23-214 and agrees to comply with the requirements of A.R.S. § 41-4401.

8. No Boycott of Israel. To the extent A.R.S § 35-393 through § 35-393.03 are applicable, the parties hereby certify that they are not currently engaged in, and agree for the duration of the Agreement to not engage in, a boycott of goods or services from Israel, as that term is defined in A.R.S § 35-393.

9. Attestation of PCI Compliance. When applicable, the Contractor will provide the City annually with a Payment Card Industry Data Security Standard (PCI DSS) attestation of compliance certificate signed by an officer of Contractor with oversight responsibility.
10. Notices. Any notices that must be provided under this Agreement shall be sent to the Parties' respective authorized representatives at the address listed below:

City of Glendale
c/o Julie Ossege
7070 W. Northern Avenue
Glendale, AZ 85303

And

Quantum Integrated Solutions, Inc.
c/o Mark Reski
2141 E. Broadway Rd., Suite 217
Tempe, AZ 85282

IN WITNESS WHEREOF, the parties hereto have executed this Agreement as of the date and year set forth above.

"City"

City of Glendale, an Arizona
municipal corporation

By: _____
Kevin R. Phelps
City Manager

"Contractor"

Quantum Integrated Solutions, Inc.,
an Arizona Corporation

By:  _____
Name: Mark Reski, P.E.
Title: Authorized Representative

ATTEST:

Julie K. Bower (SEAL)
City Clerk

APPROVED AS TO FORM:

Michael D. Bailey
City Attorney

**LINKING AGREEMENT
BETWEEN
THE CITY OF GLENDALE, ARIZONA
AND
QUANTUM INTEGRATED SOLUTIONS, INC.**

EXHIBIT A

(City of Avondale, SCADA Professional Engineering Services Agreement No. 20-168C)

**PROFESSIONAL SERVICES AGREEMENT
BETWEEN
THE CITY OF AVONDALE
AND
QUANTUM INTEGRATED SOLUTIONS, INC.**

THIS PROFESSIONAL SERVICES AGREEMENT (this "Agreement") is entered into as of July 7, 2020, between the City of Avondale, an Arizona municipal corporation (the "City") and Quantum Integrated Solutions, Inc., a(n) Arizona Corporation (the "Consultant").

RECITALS

A. The City issued a Request for Statements of Qualifications, PW20-048 "SCADA PROFESSIONAL ENGINEERING SERVICES" (the "RFQ"), a copy of which is on file in the City's Finance Office and incorporated herein by reference, seeking statements of qualifications from vendors for SCADA PROFESSIONAL ENGINEERING SERVICES (the "Services").

B. The City of Avondale incorporated in 1946 and is located in the west valley of the greater Phoenix metropolitan area north of the Estrella Mountains. With a population of about 85,000, Avondale provides water and wastewater utility service to approximately 25,000 metered locations. Avondale is currently 47 square miles in size, with a planning area of over 90 square miles. The City of Avondale operates and maintains a water system that includes 15 potable wells, three groundwater treatment facilities, six reservoirs, and booster pump station sites along with over 300 miles of distribution and transmission pipe. The wastewater system includes a 9.0 MGD water reclamation facility, ten (10) wastewater lift stations, 6.5 miles of sewer force main, and 235 miles of gravity sewer.

C. The Consultant responded to the RFQ, SCADA Professional Engineering Services and by submitting a Statement of Qualifications (the "SOQ"), attached hereto as Exhibit A and incorporated herein by reference, and the City desires to enter into an Agreement with the Consultant for the Services.

D. During the term of the Agreement, work will be conducted after the issuance of a Task Order. The City will issue a Request for Statement of Work request the Consultant to prepare a statement of work ("SOW") consist of scope of work, fee schedule, task order schedule, and deliverables for the project to be included in a task order. If the Consultant's statement of work is acceptable, the City and the Consultant will execute a task order, and the City will direct the Consultant to proceed with the work.

AGREEMENT

NOW, THEREFORE, in consideration of the foregoing introduction and recitals, which are incorporated herein by reference, the following mutual covenants and conditions, and other good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, the City and the Consultant hereby agree as follows:

ARTICLE 1 SCOPE OF WORK

The Consultant shall provide professional consulting services for the 2020/2021 Fiscal Year related to the City of Avondale's SCADA & Electrical systems. Per A.R.S. 34-604 multiple contracts for professional services may or will be executed through fiscal years 2024/2025. The Consultant will provide professional electrical engineering services, including but not limited to conducting studies, planning, design services, construction documentation and specifications, cost estimates, value engineering, advertisement and bidding support, construction management, software integration and programming, emergency support services, and other related services pertaining to the City's SCADA and Electrical systems. At the sole discretion of the City, more than one respondent may be selected and awarded a contract as a result of this Request for Qualifications.

ARTICLE 2 CONTRACT TIME

1. Term of Agreement.

1.1 Initial Term. This Agreement shall be effective as of the date first set forth above and shall remain in full force and effect until July 6, 2021 (the "Initial Term"), unless terminated as otherwise provided in this Agreement.

1.2 Renewal Terms. After the expiration of the Initial Term, this Agreement shall automatically renew for up to four successive one-year terms (each, a "Renewal Term") so long as the fund is available and appropriated in each subsequent year, unless the Consultant notifies the City in writing of its desire to terminate the Contract. If extended, the then-current prices shall be applicable during the subsequent Renewal Term unless the Consultant notifies the City 90 days prior to contract expiration date in writing of any rate increase and the City approves the increase with an authorized signature, prior to the end of the then-current term. The Initial Term and any Renewal Term(s) are collectively referred to herein as the "Term." Upon renewal, the terms and conditions of this Agreement shall remain in full force and effect.

1.3 Non-Default. By requesting extension for a Renewal Term as set forth above, or by consenting to a Renewal Term in any manner, Consultant shall be deemed to affirmatively assert that (i) the City is not currently in default, nor has been in default at any time prior to the Renewal Term, under any of the terms or conditions of the Agreement and (ii) any and all Consultant claims, known and unknown, relating to the Agreement and existing on or before the commencement date of the Renewal Term are forever waived.

ARTICLE 3 TASK ORDER

1. Task Order/Purchase Order Issuance. A Task Order/Purchase Order shall be issued as follows:

1.2 Request for Statement of Work (SOW). When the City determines Work is needed, the City shall notify the Consultant of an existing requirement.

1.3 Response. Upon the receipt of the Request for SOW, the Consultant shall respond within two (2) working days, or as otherwise agreed, by visiting the proposed site in the company of the City Representative or establishing contact with the City Representative to further define the scope of the requirement.

1.4 Preparation of Statement of Work. After mutual agreement on the scope of the Work to be performed, the Consultant shall then prepare an SOW, unless Consultant, in its sole discretion, elects not to undertake the Work. If the Work is declined, the Consultant will so notify the City within four (4) working days.

1.5 SOW Deadline. The Consultant shall submit SOW to the City within 15 days unless otherwise agreed.

1.6 Review. Upon receipt of SOW, the City will review the SOW for completeness and will reach an agreement with the Consultant on all terms prior to issuance of a Task Order/Purchase Order.

1.7 No Obligation. If the City does not issue a Task Order/Purchase Order after receipt of the Consultant's SOW, the City is not obligated to reimburse the Consultant for any costs incurred in the preparation of the SOW.

1.8 Written Task Order/Purchase Order. Performance of the Work shall be undertaken only upon the issuance of written Task Order/Purchase Order by the City setting forth the following: (A) contract number along with Consultant's name; (B) Task Order/Purchase Order number and date; (C) the agreed-upon SOW and applicable technical specifications and/or drawings; (D) the agreed-upon period of performance and Work schedule (Task Order Schedule), if required by the City Representative; (E) the place of performance; (F) the agreed total price in SOW; (G) submittal requirements; (H) the City Representative who will accept the deliverable; (I) signatures by the Parties hereto signifying agreement with the specific terms of the Task Order/Purchase Order; and (J) such other information as may be necessary to perform the Work.

1.9 Task Order/Purchase Order Amendment. A Task Order/Purchase Order may be amended by the City in accordance with Article 6 Section 1 Change Order.

ARTICLE 4 PERFORMANCE OF THE WORK

1. Preliminary Phase. The Consultant shall review the City's Request for SOW, and return to the City a written SOW stating the scope of the project, names of sub-consultants, and the number of days to complete the project, the Consultant's fee, anticipated reimbursable, and other requested information.

When the City issues a Notice to Proceed to the Consultant, the Consultant shall prepare an Outline of the Services, leading to a recommended solution, together with a general description of the project, for approval by the City, and Consultant shall submit to the City one PDF copy of the outline and the Estimate of Probable Total Project Cost, based on current unit costs.

Based on the approved Outline and Estimate of Probable Total Project Cost, the Consultant shall perform the Services. The Consultant shall submit to the City one PDF copy of the completed Project Documents and a revised Estimate of Probable Project Cost.

For the purpose of payment to the Consultant, the Preliminary Phase shall be considered complete upon approval by the City of the Outline of the Services and the Estimate of Probable Total Project Cost.

2. Study and Report Phase. Identify and analyze requirements of governmental authorities having jurisdiction to approve portions of the Project.

Evaluate various alternate solutions available to the City if described in the Request for SOW. After consultation with the City, recommend to City those solutions which, in Consultant's professional judgment, best meet City's requirements for the Project.

Prepare the Report. This Report will be accompanied by Consultant's estimate of Total Project Cost for each solution which is recommended for the Project, itemized as follows: an estimate of Total Construction Cost, allowances for contingencies, the total cost of services provided by Consultant, and allowances for other items and services included within the definition of Total Project Costs and identified by the City.

Furnish the Report to and review it with the City.

Revise the report in response to the City's comments, as appropriate. Submit to the City a copy of the Report in PDF format in quantity specified by the City within the stipulated period indicated in the Request for SOW and SOW.

For the purpose of payment to the Consultant, services under the Study and Report Phase will be considered complete when the Study or Report has been accepted by the City as complete, which acceptance will not be unreasonably withheld.

3. Preliminary Design Phase: On the basis of selection by the City of the recommended solution, or modified solution agreed upon by City and Consultant, prepare Preliminary Design documents consisting of final design criteria, preliminary drawings, outline specifications, and written descriptions of the Project.

Based on the information contained in the Preliminary Design documents, submit a revised estimate of Total Construction Cost, and any adjustment to Total Project Cost known to Consultant.

Furnish Preliminary Design documents to and review them with the City within the stipulated period indicated in the Request for SOW and SOW.

For the purpose of payment to the Consultant, services under the Preliminary Design Phase will be considered complete when the Preliminary Design documents have been accepted by the City as complete.

4. Final Design/Construction Documents Phase: If the project involves construction or demolition, the consultant shall prepare, from the approved preliminary design, modifications or changes, and revised estimated construction cost, construction documents consisting of working drawings and specifications set forth in detail the work required for the architectural, civil, transportation, structural, mechanical, electrical, site, and other work, and the necessary bidding information, general conditions, supplementary conditions and SOW forms. The consultant shall submit to the city one copy of the construction documents in PDF format, and a further revised estimate of the total construction cost.

Consultant shall include in construction documents requirement that construction contractor provides a final survey of the project by a registered surveyor, and provide marked up construction drawings to the consultant so the consultant can prepare and deliver to the city the as-built in the form required by the city.

Prior to final approval of the construction documents by the city, the consultant shall conduct a preliminary check of any work products to ensure compliance with requirements of any county, city, state, or federal agency from which a permit or other approval is required. The Consultant shall prepare all support documents to accompany any necessary permit applications. The Consultant shall respond to all technical questions from regulatory agencies. The Consultant shall modify at no additional cost to the city, construction documents in order to acquire the necessary permits.

The consultant shall signify his responsibility for the construction documents prepared pursuant to this agreement by affixing his signature, date, and seal. If requested, the consultant shall review and analyze the bids received by the city, and shall make a recommendation for an award based on the city's purchasing ordinance.

Should any component of the design or report not meet applicable regulations or codes in effect at the time of completion of the design, the consultant shall redesign with no additional cost to the city.

Consultant shall provide to the city, and fee shall include specifications on a disc or flash drive, and drawings and as-built on the latest version of AutoCAD or other media as required by the city.

Consultant's services under the construction document phase will be considered partially complete when the bid documents are delivered to and accepted by the city, and finally, complete when the CAD drawings in. Dxf Format are delivered to and accepted by the city.

Estimates of construction costs provided for herein are to be made on the basis of industry-recognized publications, historical price lists, or services estimating the current cost of comparable construction in Arizona.

5. Bidding Phase: If requested, the consultant shall provide the city with a list of recommended prospective bidders. The consultant shall attend all pre-bid conferences, prepare and

distribute minutes. The consultant shall issue addenda through the city's purchasing agent as appropriate to clarify, correct, or change bid documents.

If pre-qualification of bidders is required as set forth in the request for SOW, the Consultant shall assist the city in developing qualification criteria, review qualifications of prospective bidders, and recommend acceptance or rejection of the prospective bidders.

If requested, the Consultant shall evaluate bids and bidders, and recommend award to the city.

For the purpose of payment to the consultant, the bidding phase will terminate and the services of the consultant will be considered complete upon signing of an agreement with a contractor, or cancellation of the project by the city prior to the signing of the agreement with a contractor. Rejection of bids by the city does not constitute cancellation of the project.

6. Construction/Demolition Phase: To the extent provided by the contract for any project between the city and the contractor, the consultant shall make recommendations to the city on all claims of the city and contractor regarding the interpretation of the construction documents, and on all other matters relating to the execution and progress of the work. The consultant shall check and approve samples, schedules, shop drawings, and other submissions for conformance with the concept of the project, and for compliance with the information given by the construction documents, prepare change orders, assemble written guarantees required of the contractor, and approve progress payments to the contractor based on the project schedule of values and percent of completion of work.

The consultant shall carefully review and examine the contractor's schedule of values, together with any supporting documentation. The purpose of such review and examination is to protect the city from an unbalanced schedule of values which allocates greater value to certain elements of the services that is indicated by industry standards, supporting documentation, or data.

If the schedule of values is not found to be appropriate, it shall be returned to the contractor for revision or supporting documentation. After making such examination, when the schedule of values is found to be appropriate, the consultant shall sign the schedule of values thereby indicating their informed belief that the schedule of

Values constitute a reasonable, balanced basis for payment of the contract price to the contractor.

The consultant shall conduct a pre-construction meeting with the contractor(s), the city, and utility companies; prepare and distribute minutes of the meeting.

The consultant shall make inspections of the work based on the type and frequency defined in the Statement of Work on which the consultant provided. The Consultant's inspections shall determine the progress and quality of the work, and whether the work is proceeding in accordance with the construction documents. The Consultant will provide the city with a written report of each inspection in order to inform the city of the progress of the work.

The Consultant shall endeavor to guard the city against defects and deficiencies in the work of contractors and make a written recommendation to the city that work fails to conform to the construction documents. Based on such inspections, and the contractor's applications for payment, he will recommend the amount owing to the contractor, and will issue certificates for payment in such amount. These certifications will constitute a representation to the city, based on such inspections and the data comprising the application for payment that the work has progressed to

the point indicated. By issuing a certificate for payment, the consultant will also represent to the city that, to the best of his knowledge, information, and belief, based on what his inspections have revealed, the work is in accordance with the construction documents. He/She will conduct inspections to determine the dates of substantial and final completion and recommend the issuance of a final certificate for payment. All inspections and certificates of payment provided by the Consultant shall be sufficient to provide all certifications required by city, county, state, and federal agencies.

The consultant shall revise the construction drawings and submit as-built or corrected CAD drawings to the city to show those changes made during the construction process, based on the marked-up prints, drawings, and other data furnished by the contractor.

The consultant shall attend regularly scheduled progress meetings on-site, if included in the scope of work, prepare and distribute minutes.

The consultant shall prepare construction change orders for the city's approval. Consultant shall not authorize any changes in services or time, no matter how minor, without the prior written approval of the city.

Should consultant approve progress payments to the contractor in excess of the value of the work performed, and the contractor defaults. Leaving insufficient funds to complete the work, the Consultant shall reimburse the city for the difference between the amount of the progress payment actually approved and the amount which should have been approved.

If any portion of the work is covered, based on approval of the Consultant, without the City's and building official's inspection and approval, the city's representative may direct that portion of the work uncovered for inspection. If that portion of the work uncovered is not defective and is in accordance with the plans and specifications, the Consultant shall bear the cost of uncovering and covering the work. If that portion of the work uncovered is defective or not in accordance with the plans and specifications, the contractor shall bear the cost of uncovering, repairing, and covering the work.

For the purpose of payment to the Consultant, the construction demolition phase shall be considered complete upon the compilation of punch list by the Consultant, written notification to the contractor by the Consultant of all documents, training, as-built, releases of lien, and a written recommendation by the Consultant of final payment.

7. Errors and Omissions: The consultant shall be responsible for technically deficient designs, reports, or studies due to his errors and omissions, and shall promptly correct or replace all such deficient design work due to his/her errors and omissions without cost to the city upon the request of the city for five years after the date of acceptance of the services by the city when judged to have been in error by a court of competent jurisdiction. The Consultant shall also be responsible for the cost of correcting deficient construction which was built from technically deficient designs. Payment in full by the city for work performed does not constitute a waiver of this guarantee.

8. Additional Services: The consultant will, upon written request of the city, provide any and all other services normally falling within the scope of services offered by the consultant through their in-house staff.

If any of the following or other, additional services are authorized in writing by the city, they may be paid for by the city, plus reimbursable expenses, with a negotiated upset limit.

8.1 Additional services due to significant changes in the general scope of the project or its requirements.

8.2 Making measured drawings of existing construction.

8.3 Providing programming services in connection with defining project scope or budget, including implications of ADA and building code requirements.

8.4 Revising previously approved drawings or specifications to accomplish changes.

8.5 Making an inspection of the project prior to the expiration of the guarantee period, and reporting observed discrepancies under guarantees provided by the construction contracts.

ARTICLE 5 COMPENSATION

The consultant agrees to perform the professional services for either:

The hourly labor rate as set forth, with a negotiated upset limit. The consultant shall be entitled to receive reimbursement for expenses at the consultant's exact cost, which costs have been included in the Consultant's SOW for each project and approved by the city; or,

A negotiated lump sum fee based on the rates set forth plus approved reimbursable expenses.

Approved reimbursable expenses shall be paid to the consultant at exact cost, and upon proof of payment by the Consultant. Anticipated reimbursable expenses shall be included with the Consultant's SOW.

Consultant agrees to keep, furnish, and support statements with copies of invoices, statements of times expended, and other supporting documentation as the city may require. Statements for fees based on hourly rates will be rendered monthly as the work progresses or as otherwise agreed upon. Reimbursable expenses will be invoiced monthly at cost, as the work progresses, or as otherwise agreed upon. Such documentation and records will be available at all reasonable times for examination and audit by the city. Incomplete or incorrect entries in such books and records shall be immediately corrected or completed upon being called to the attention of the consultant. Any loss caused to the city by such incorrect or incomplete entries will be grounds for disallowance by the city of any fees or expenses based upon such entries. Said books and records for each project shall be kept for a period of three years after the completion of all work to be performed on such project, pursuant to the agreement.

Compensation to the consultant shall include the following. No claim for reimbursement for these expenses shall be made to the city.

1.1. All travel and vehicle expenses within State of Arizona.

1.2. Three sets of signed and sealed permitting plans.

1.3. Computer usage, telephone expenses, postage.

ARTICLE 6 ADDITIONAL PROVISIONS

1. Change Order. Changes in the Work shall only be made by a written Change Order to this Contract signed by the City and the Consultant. Changes involving increases to the Consultant's compensation or an extension of the Task Order Schedule shall be considered a Change Order and must be approved as an amendment to the Task Order and executed by the City and the Consultant. The Consultant shall not: (A) perform any additional Work; or (B) eliminate any duties included in the Work until a written amendment addressing the Change Order has been properly approved and executed by both Parties.

2. Payment: The city will make monthly payments to the consultant based on the percentage of completion of the Consultant's work, or as otherwise agreed upon. The consultant shall submit an original invoice and one copy to the city. This will be considered the official request for payment by the city.

The invoice shall include the following information: Invoice number for the PO number, Task Order number, name of project, and date;

- 2.1. The consultants lump sum or negotiated upset limit fee;
- 2.2. Percent of work completed, or employees name, titles, direct labor rates, and multiplier;
- 2.3. Amount earned;
- 2.4. Amount previously billed;
- 2.5. Amount due this invoice;
- 2.6. Retention, if applicable;
- 2.7. Balance remaining;
- 2.8. Attached list of reimbursable with appropriate receipts;
- 2.9. Summary of work done this billing period.

When the project involves bidding and construction or demolition, the project, and subsequent payments shall be divided into a minimum of three components; design, bidding, and construction.

3. Safety Plan. The Consultant shall provide the Services in accordance with a safety plan that is compliant with Occupational Safety and Health Administration ("OSHA"), American National Standards Institute and National Institute for Occupational Safety and Health Standards. If in the Consultant's sole determination, the Services to be provided do not require a safety plan, Consultant shall notify the City in writing, describing the reasons a safety plan is unnecessary. The City reserves the right to request a safety plan following such notification.

4. Documents. All documents, including any intellectual property rights thereto, prepared and submitted to the City pursuant to this Agreement shall be the property of the City.

5. Consultant Personnel. Consultant shall provide adequate, experienced personnel, capable of and devoted to the successful performance of the Services under this Agreement.

Consultant agrees to assign specific individuals to key positions. Consultant agrees that, upon commencement of the Services to be performed under this Agreement, key personnel shall not be removed or replaced without prior written notice to the City. If key personnel are not available to perform the Services for a continuous period exceeding 30 calendar days or are expected to devote substantially less effort to the Services than initially anticipated, Consultant shall immediately notify the City of same and shall, subject to the concurrence of the City, replace such personnel with personnel possessing substantially equal ability and qualifications.

6. Inspection; Acceptance. All work shall be subject to inspection and acceptance by the City at reasonable times during the Consultant's performance. The Consultant shall provide and maintain a self-inspection system that is acceptable to the City.

7. Licenses; Materials. Consultant shall maintain in current status all federal, state, and local licenses and permits required for the operation of the business conducted by the Consultant. The City has no obligation to provide Consultant, its employees, or subcontractors any business registrations or licenses required to perform the specific services set forth in this Agreement. The City has no obligation to provide tools, equipment, or material to the Consultant.

8. Performance Warranty. Consultant warrants that the Services rendered will conform to the requirements of this Agreement and with the care and skill ordinarily used by members of the same profession practicing under similar circumstances at the same time and in the same locality.

9. Indemnification.

To the fullest extent permitted by law, the Consultant shall indemnify and hold harmless the City and each council member, officer, employee or agent thereof (the City and any such person being herein called an "Indemnified Party"), for, from and against any and all losses, claims, damages, liabilities, costs and expenses (including, but not limited to, reasonable attorneys' fees, court costs and the costs of appellate proceedings) to which any such Indemnified Party may become subject, under any theory of liability whatsoever ("Claims") to the extent that such Claims (or actions in respect thereof) are caused by the negligent acts, recklessness or intentional misconduct of the Consultant, its officers, employees, agents, or any tier of subcontractor in connection with Consultant's work or services in the performance of this Agreement. The amount and type of insurance coverage requirements set forth below will in no way be construed as limiting the scope of the indemnity in this Section.

10. Insurance.

10.1. General.

A. Insurer Qualifications. Without limiting any obligations or liabilities of Consultant, Consultant shall purchase and maintain, at its own expense, hereinafter stipulated minimum insurance with insurance companies authorized to do business in the State of Arizona pursuant to ARIZ. REV. STAT. § 20-206, as amended, with an AM Best, Inc. rating of A- or above with policies and forms satisfactory to the City. Failure to maintain insurance as specified herein may result in termination of this Agreement at the City's option.

B. No Representation of Coverage Adequacy. By requiring insurance herein, the City does not represent that coverage and limits will be adequate to protect Consultant. The City reserves the right to review any and all of the insurance policies and/or endorsements cited in this Agreement, but has no obligation to do so. Failure to demand such evidence of full compliance with the insurance requirements set forth in this Agreement or failure to identify any insurance deficiency shall not relieve Consultant from, nor be construed or deemed a waiver of, its obligation to maintain the required insurance at all times during the performance of this Agreement.

C. Additional Insured. All insurance coverage, except Workers' Compensation insurance and Professional Liability insurance, if applicable, shall name, to the fullest extent permitted by law for claims arising out of the performance of this Agreement, the City, its agents, representatives, officers, directors, officials and employees as Additional Named Insured as specified under the respective coverage sections of this Agreement.

D. Coverage Term. All insurance required herein shall be maintained in full force and effect until all work or services required to be performed under the terms of this Agreement are satisfactorily performed, completed and formally accepted by the City, unless specified otherwise in this Agreement.

E. Primary Insurance. Consultant's insurance shall be primary insurance with respect to performance of this Agreement and in the protection of the City as an Additional Insured.

F. Claims Made. In the event any insurance policies required by this Agreement are written on a "claims made" basis, coverage shall extend, either by keeping coverage in force or purchasing an extended reporting option, for three years past completion and acceptance of the services. Such continuing coverage shall be evidenced by submission of annual Certificates of Insurance and necessary endorsements citing applicable coverage is in force and contains the provisions as required herein for the three-year period.

G. Waiver. All policies, except for Professional Liability, including Workers' Compensation insurance, shall contain a waiver of rights of recovery (subrogation) against the City, its agents, representatives, officials, officers and employees for any claims arising out of the work or services of Consultant. Consultant shall arrange to have such subrogation waivers incorporated into each policy via formal written endorsement thereto.

H. Policy Deductibles and/or Self-Insured Retentions. The policies set forth in these requirements may provide coverage that contains deductibles or self-insured retention amounts. Such deductibles or self-insured retention shall not be applicable with respect to the policy limits provided to the City. Consultant shall be solely responsible for any such deductible or self-insured retention amount.

I. Use of Subcontractors. If any work under this Agreement is subcontracted in any way, Consultant shall execute written agreements with its subcontractors containing the indemnification provisions set forth above and insurance requirements set forth herein protecting the City and Consultant. Consultant shall be responsible for executing any agreements with its subcontractors and obtaining certificates of insurance verifying the insurance requirements.

J. Evidence of Insurance. Prior to commencing any work or services under this Agreement, Consultant will provide the City with suitable evidence of insurance in the form of certificates of insurance and a copy of the declaration page(s) of the insurance policies as required by this Agreement, issued by Consultant's insurance insurer(s) as evidence that policies are placed with acceptable insurers as specified herein and provide the required coverages, conditions and limits of coverage specified in this Agreement and that such coverage and provisions are in full force and effect. Confidential information such as the policy premium may be redacted from the declaration page(s) of each insurance policy, provided that such redactions do not alter any of the information required by this Agreement. The City shall reasonably rely upon the certificates of insurance and declaration page(s) of the insurance policies as evidence of coverage but such acceptance and reliance shall not waive or alter in any way the insurance requirements or obligations of this Agreement. If any of the policies required by this Agreement expire during the life of this Agreement, it shall be Consultant's responsibility to forward renewal certificates and declaration page(s) to the City 30 days prior to the expiration date. All certificates of insurance and declarations required by this Agreement shall be identified by referencing the RFQ number and title or this Agreement. A \$25.00 administrative fee shall be assessed for all certificates or declarations received without the appropriate RFQ number and title or a reference to this Agreement, as applicable. Additionally, certificates of insurance and declaration page(s) of the insurance policies submitted without referencing the appropriate RFQ number and title or a reference to this Agreement, as applicable, will be subject to rejection and may be returned or discarded. Certificates of insurance and declaration page(s) shall specifically include the following provisions:

(1) The City, its agents, representatives, officers, directors, officials and employees are Additional Insureds as follows:

(a) Commercial General Liability – Under Insurance Services Office, Inc., ("ISO") Form CG 20 10 03 97 or equivalent.

(b) Auto Liability – Under ISO Form CA 20 48 or equivalent.

(c) Excess Liability – Follow Form to underlying insurance.

(2) Consultant's insurance shall be primary insurance with respect to performance of this Agreement.

(3) All policies, except for Professional Liability, including Workers' Compensation, waive rights of recovery (subrogation) against City, its agents, representatives, officers, officials and employees for any claims arising out of work or services performed by Consultant under this Agreement.

(4) ACORD certificate of insurance form 25 (2014/01) is preferred. If ACORD certificate of insurance form 25 (2001/08) is used, the phrases in the cancellation provision "endeavor to" and "but failure to mail such notice shall impose no obligation or liability of any kind upon the company, its agents or representatives" shall be deleted. Certificate forms other than ACORD form shall have similar restrictive language deleted.

K. Endorsements. Consultant shall provide the City with the necessary endorsements to ensure City is provided the insurance coverage set forth in this Section.

10.2. Required Insurance Coverage.

A. Commercial General Liability. Consultant shall maintain "occurrence" form Commercial General Liability insurance with an unimpaired limit of not less than \$1,000,000 for each occurrence, \$2,000,000 Products and Completed Operations Annual Aggregate and a \$2,000,000 General Aggregate Limit. The policy shall cover liability arising from premises, operations, independent contractors, products-completed operations, personal injury and advertising injury. Coverage under the policy will be at least as broad as ISO policy form CG 00 010 93 or equivalent thereof, including but not limited to, separation of insured's clause. To the fullest extent allowed by law, for claims arising out of the performance of this Agreement, the City, its agents, representatives, officers, officials and employees shall be cited as an Additional Insured under ISO, Commercial General Liability Additional Insured Endorsement form CG 20 10 03 97, or equivalent, which shall read "Who is an Insured (Section II) is amended to include as an insured the person or organization shown in the Schedule, but only with respect to liability arising out of "your work" for that insured by or for you." If any Excess insurance is utilized to fulfill the requirements of this subsection, such Excess insurance shall be "follow form" equal or broader in coverage scope than underlying insurance.

B. Vehicle Liability. Consultant shall maintain Business Automobile Liability insurance with a limit of \$1,000,000 each occurrence on Consultant's owned, hired and non-owned vehicles assigned to or used in the performance of the Consultant's work or services under this Agreement. Coverage will be at least as broad as ISO coverage code "1" "any auto" policy form CA 00 01 12 93 or equivalent thereof. To the fullest extent allowed by law, for claims arising out of the performance of this Agreement, the City, its agents, representatives, officers, directors, officials and employees shall be cited as an Additional Insured under ISO Business Auto policy Designated Insured Endorsement form CA 20 48 or equivalent. If any Excess insurance is utilized to fulfill the requirements of this subsection, such Excess insurance shall be "follow form" equal or broader in coverage scope than underlying insurance.

C. Professional Liability. If this Agreement is the subject of any professional services or work, or if the Consultant engages in any professional services or work in any way related to performing the work under this Agreement, the Consultant shall maintain Professional Liability insurance covering negligent errors and omissions arising out of the Services performed by the Consultant, or anyone employed by the Consultant, or anyone for whose negligent acts, mistakes, errors and omissions the Consultant is legally liable, with an unimpaired liability insurance limit of \$2,000,000 each claim and \$2,000,000 annual aggregate.

D. Workers' Compensation Insurance. If Consultant employs anyone who is required by law to be covered by workers' compensation insurance, Consultant shall maintain Workers' Compensation insurance to cover obligations imposed by federal and state statutes having jurisdiction over Consultant's employees engaged in the performance of work or services under this Agreement and shall also maintain Employers Liability Insurance of not less than \$500,000 for each accident, \$500,000 disease for each employee and \$1,000,000 disease policy limit.

10.3. Cancellation and Expiration Notice. Insurance required herein shall not expire, be canceled, or be materially changed without 30 days' prior written notice to the City.

11. Termination; Cancellation.

11.1. For City's Convenience. This Agreement is for the convenience of the City and, as such, may be terminated without cause after receipt by Consultant of written notice by the City. Upon termination for convenience, Consultant shall be paid for all undisputed services performed to the termination date.

11.2. For Cause. If either party fails to perform any obligation pursuant to this Agreement and such party fails to cure its nonperformance within 30 days after notice of nonperformance is given by the non-defaulting party, such party will be in default. In the event of such default, the non-defaulting party may terminate this Agreement immediately for cause and will have all remedies that are available to it at law or in equity including, without limitation, the remedy of specific performance. If the nature of the defaulting party's nonperformance is such that it cannot reasonably be cured within 30 days, then the defaulting party will have such additional periods of time as may be reasonably necessary under the circumstances, provided the defaulting party immediately (A) provides written notice to the non-defaulting party and (B) commences to cure its nonperformance and thereafter diligently continues to completion the cure of its nonperformance. In no event shall any such cure period exceed 90 days. In the event of such termination for cause, payment shall be made by the City to the Consultant for the undisputed portion of its fee due as of the termination date.

11.3. Due to Work Stoppage. This Agreement may be terminated by the City upon 30 days' written notice to Consultant in the event that the Services are permanently abandoned. In the event of such termination due to work stoppage, payment shall be made by the City to the Consultant for the undisputed portion of its fee due as of the termination date.

11.4. Conflict of Interest. This Agreement is subject to the provisions of ARIZ. REV. STAT. § 38-511. The City may cancel this Agreement without penalty or further obligations by the City or any of its departments or agencies if any person significantly involved in initiating, negotiating, securing, drafting or creating this Agreement on behalf of the City or any of its departments or agencies is, at any time while this Agreement or any extension of this Agreement is in effect, an employee of any other party to this Agreement in any capacity or a consultant to any other party of this Agreement with respect to the subject matter of this Agreement.

11.5. Gratuities. The City may, by written notice to the Consultant, cancel this Agreement if it is found by the City that gratuities, in the form of economic opportunity, future employment, entertainment, gifts or otherwise, were offered or given by the Consultant or any agent or representative of the Consultant to any officer, agent or employee of the City for the purpose of securing this Agreement. In the event this Agreement is canceled by the City pursuant to this provision, the City shall be entitled, in addition to any other rights and remedies, to recover and withhold from the Consultant an amount equal to 150% of the gratuity.

11.6. Agreement Subject to Appropriation. The City is obligated only to pay its obligations set forth in this Agreement as may lawfully be made from funds appropriated and budgeted for that purpose during the City's then current fiscal year. The City's obligations under this Agreement are current expenses subject to the "budget law" and the unfettered legislative discretion of the City concerning budgeted purposes and appropriation of funds. Should the City elect not to appropriate and budget funds to pay its Agreement obligations, this Agreement shall be deemed terminated at the end of the then-current fiscal year term for which such funds were appropriated and budgeted for such purpose and the City shall be relieved of any subsequent obligation under this Agreement. The parties agree that the City has no obligation or duty of good faith to budget or appropriate the payment of the City's obligations set forth in this Agreement in any budget in any fiscal year other than the fiscal year in which this Agreement is executed and delivered. The City shall be the sole judge and authority in determining the availability of funds for its obligations under this Agreement. The City shall keep Consultant informed as to the availability of funds for this Agreement. The obligation of the City to make any payment pursuant to this Agreement is not a general obligation or indebtedness of the City. Consultant hereby waives any and all rights to bring any claim against the City from or relating in any way to the City's termination of this Agreement pursuant to this section.

12. Miscellaneous.

12.1. Independent Contractor. It is clearly understood that each party will act in its individual capacity and not as an agent, employee, partner, joint venturer, or associate of the other. An employee or agent of one party shall not be deemed or construed to be the employee or agent of the other for any purpose whatsoever. The Consultant acknowledges and agrees that the Services provided under this Agreement are being provided as an independent contractor, not as an employee or agent of the City. Consultant, its employees and subcontractors are not entitled to workers' compensation benefits from the City. The City does not have the authority to supervise or control the actual work of Consultant, its employees or subcontractors. The Consultant, and not the City, shall determine the time of its performance of the services provided under this Agreement so long as Consultant meets the requirements of its agreed Scope of Work as set forth in Article 1 above. Consultant is neither prohibited from entering into other contracts nor prohibited from

practicing its profession elsewhere. City and Consultant do not intend to nor will they combine business operations under this Agreement.

12.2. Applicable Law; Venue. This Agreement shall be governed by the laws of the State of Arizona and suit pertaining to this Agreement may be brought only in courts in Maricopa County, Arizona.

12.3. Laws and Regulations. Consultant shall keep fully informed and shall at all times during the performance of its duties under this Agreement ensure that it and any person for whom the Consultant is responsible abides by, and remains in compliance with, all rules, regulations, ordinances, statutes or laws affecting the Services, including, but not limited to, the following: (A) existing and future City and County ordinances and regulations; (B) existing and future State and Federal laws; and (C) existing and future Occupational Safety and Health Administration standards.

12.4. Amendments. This Agreement may be modified only by a written amendment signed by persons duly authorized to enter into contracts on behalf of the City and the Consultant.

12.5. Provisions Required by Law. Each and every provision of law and any clause required by law to be in this Agreement will be read and enforced as though it were included herein and, if through mistake or otherwise any such provision is not inserted, or is not correctly inserted, then upon the application of either party, this Agreement will promptly be physically amended to make such insertion or correction.

12.6. Severability. The provisions of this Agreement are severable to the extent that any provision or application held to be invalid by a Court of competent jurisdiction shall not affect any other provision or application of this Agreement which may remain in effect without the invalid provision or application.

12.7. Entire Agreement; Interpretation; Parol Evidence. This Agreement represents the entire agreement of the parties with respect to its subject matter, and all previous agreements, whether oral or written, entered into prior to this Agreement are hereby revoked and superseded by this Agreement. No representations, warranties, inducements or oral agreements have been made by any of the parties except as expressly set forth herein, or in any other contemporaneous written agreement executed for the purposes of carrying out the provisions of this Agreement. This Agreement shall be construed and interpreted according to its plain meaning, and no presumption shall be deemed to apply in favor of, or against the party drafting this Agreement. The parties acknowledge and agree that each has had the opportunity to seek and utilize legal counsel in the drafting of, review of, and entry into this Agreement.

12.8. Assignment; Delegation. No right or interest in this Agreement shall be assigned or delegated by Consultant without prior, written permission of the City, signed by the City Manager. Any attempted assignment or delegation by Consultant in violation of this provision shall be a breach of this Agreement by Consultant.

12.9. Subcontracts. No subcontract shall be entered into by the Consultant with any other party to furnish any of the material or services specified herein without the prior, written approval of the City. The Consultant is responsible for performance under this Agreement whether or not subcontractors are used. Failure to pay subcontractors in a timely manner pursuant to any subcontract shall be a material breach of this Agreement by Consultant.

12.10. Rights and Remedies. No provision in this Agreement shall be construed, expressly or by implication, as waiver by the City of any existing or future right and/or remedy available by law in the event of any claim of default or breach of this Agreement. The failure of the City to insist upon the strict performance of any term or condition of this Agreement or to exercise or delay the exercise of any right or remedy provided in this Agreement, or by law, or the City's acceptance of and payment for services, shall not release the Consultant from any responsibilities or obligations imposed by this Agreement or by law, and shall not be deemed a waiver of any right of the City to insist upon the strict performance of this Agreement.

12.11. Attorneys' Fees. In the event either party brings any action for any relief, declaratory or otherwise, arising out of this Agreement or on account of any breach or default hereof, the prevailing party shall be entitled to receive from the other party reasonable attorneys' fees and reasonable costs and expenses, determined by the court sitting without a jury, which shall be deemed to have accrued on the commencement of such action and shall be enforced whether or not such action is prosecuted through judgment.

12.12. Liens. All materials or services shall be free of all liens and, if the City requests, a formal release of all liens shall be delivered to the City.

12.13. Offset.

A. Offset for Damages. In addition to all other remedies at law or equity, the City may offset from any money due to the Consultant any amounts Consultant owes to the City for damages resulting from breach or deficiencies in performance or breach of any obligation under this Agreement.

B. Offset for Delinquent Fees or Taxes. The City may offset from any money due to the Consultant any amounts Consultant owes to the City for delinquent fees, transaction privilege use taxes and property taxes, including any interest or penalties.

12.14. Notices and Requests. Any notice or other communication required or permitted to be given under this Agreement shall be in writing and shall be deemed to have been duly given if (A) delivered to the party at the address set forth below, (B) deposited in the U.S. Mail, registered or certified, return receipt requested, to the address set forth below or (C) given to a recognized and reputable overnight delivery service, to the address set forth below:

If to the City: City of Avondale
 11465 West Civic Center Drive
 Avondale, Arizona 85323
 Attn: Charles A. Montoya, City Manager

With copies to: City of Avondale
11465 West Civic Center Drive
Avondale, Arizona 85323
Attn: Jill Lin, Procurement Officer

City of Avondale
11465 West Civic Center Drive
Avondale, Arizona 85323
Attn: Michael Wawro, City Attorney

If to Consultant: Quantum Integrated Solutions, Inc.
2141 E Broadway Rd Ste 217 ,
Tempe, AZ 85282, USA
Attn: Mark Reski, P.E.
mark.reski@quantumengr.com

or at such other address, and to the attention of such other person or officer, as any party may designate in writing by notice duly given pursuant to this subsection. Notices shall be deemed received (A) when delivered to the party, (B) three business days after being placed in the U.S. Mail, properly addressed, with sufficient postage or (C) the following business day after being given to a recognized overnight delivery service, with the person giving the notice paying all required charges and instructing the delivery service to deliver on the following business day. If a copy of a notice is also given to a party's counsel or other recipient, the provisions above governing the date on which a notice is deemed to have been received by a party shall mean and refer to the date on which the party, and not its counsel or other recipient to which a copy of the notice may be sent, is deemed to have received the notice.

12.15. Confidentiality of Records. The Consultant shall establish and maintain procedures and controls that are acceptable to the City for the purpose of ensuring that information contained in its records or obtained from the City or from others in carrying out its obligations under this Agreement shall not be used or disclosed by it, its agents, officers, or employees, except as required to perform Consultant's duties under this Agreement. Persons requesting such information should be referred to the City. Consultant also agrees that any information pertaining to individual persons shall not be divulged other than to employees or officers of Consultant as needed for the performance of duties under this Agreement.

12.16. Records and Audit Rights. To ensure that the Consultant and its subcontractors are complying with the warranty under subsection 12.17 below, Consultant's and its subcontractor's books, records, correspondence, accounting procedures and practices, and any other supporting evidence relating to this Agreement, including the papers of any Consultant and its subcontractors' employees who perform any work or services pursuant to this Agreement (all of the foregoing hereinafter referred to as "Records"), shall be open to inspection and subject to audit and/or reproduction during normal working hours by the City, to the extent necessary to adequately permit (A) evaluation and verification of any invoices, payments or claims based on Consultant's and its subcontractors' actual costs (including direct and indirect costs and overhead allocations) incurred, or units expended directly in the performance of work under this Agreement and (B) evaluation of the Consultant's and its subcontractors' compliance with the Arizona

employer sanctions laws referenced in subsection 12.17 below. To the extent necessary for the City to audit Records as set forth in this subsection, Consultant and its subcontractors hereby waive any rights to keep such Records confidential. For the purpose of evaluating or verifying such actual or claimed costs or units expended, the City shall have access to said Records, even if located at its subcontractors' facilities, from the effective date of this Agreement for the duration of the work and until three years after the date of final payment by the City to Consultant pursuant to this Agreement. Consultant and its subcontractors shall provide the City with adequate and appropriate workspace so that the City can conduct audits in compliance with the provisions of this subsection. The City shall give Consultant or its subcontractors reasonable advance notice of intended audits. Consultant shall require its subcontractors to comply with the provisions of this subsection by insertion of the requirements hereof in any subcontract pursuant to this Agreement.

12.17. E-verify Requirements. To the extent applicable under ARIZ. REV. STAT. § 41-4401, the Consultant and its subcontractors warrant compliance with all federal immigration laws and regulations that relate to their employees and their compliance with the E-verify requirements under ARIZ. REV. STAT. § 23-214(A). Consultant's or its subcontractors' failure to comply with such warranty shall be deemed a material breach of this Agreement and may result in the termination of this Agreement by the City.

12.18. Israel. For Contracts in excess of One Hundred Thousand (\$100,000) Dollars, Consultant certifies that it is not currently engaged in and agrees for the duration of this Agreement that it will not engage in a "boycott," as that term is defined in ARIZ. REV. STAT. § 35-393, of Israel.

12.19. Conflicting Terms. In the event of any inconsistency, conflict or ambiguity among the terms of this Agreement, any amendments, the Scope of Work, any City-approved Task Order, Purchase Order, the Fee Schedule, the RFQ and the Consultant's SOQ, the documents shall govern in the order listed herein. If the Agreement is renewed pursuant to Article 2 Subsection 1.2 above and such renewal includes any conflicting terms, other than price, those terms will be null and void.

12.20. Non-Exclusive Contract. This Agreement is entered into with the understanding and agreement that it is for the sole convenience of the City. The City reserves the right to obtain like goods and services from another source when necessary.

13. Record Retention Schedule. Engineering reports, plot plans, permits and application relating to SCADA systems shall be maintained for the life of the facility.

14. Rights of Decisions. All services shall be performed by the consultant to the reasonable satisfaction of the city. In cases of disagreement or ambiguity, the city shall decide all questions, difficulties, and disputes of whatever nature which may arise under or by reason of this agreement, the prosecution and fulfillment of the services hereunder and the character, quality, amount and value thereof, and the city's decisions on all claims, questions, and disputes shall be final, conclusive and binding upon the parties hereto unless such determination is clearly arbitrary or unreasonable.

15. Cooperative Purchasing. Specific eligible political subdivisions and nonprofit educational or public health institutions ("Eligible Procurement Unit(s)") are permitted to utilize

procurement agreements developed by the City, at their discretion and with the agreement of the awarded Consultant. Consultant may, at its sole discretion, accept orders from Eligible Procurement Unit(s) for the purchase of the Materials and/or Services at the prices and under the terms and conditions of this Agreement, in such quantities and configurations as may be agreed upon between the parties. All cooperative procurements under this Agreement shall be transacted solely between the requesting Eligible Procurement Unit and Consultant. Payment for such purchases will be the sole responsibility of the Eligible Procurement Unit. The exercise of any rights, responsibilities or remedies by the Eligible Procurement Unit shall be the exclusive obligation of such unit. The City assumes no responsibility for payment, performance or any liability or obligation associated with any cooperative procurement under this Agreement. The City shall not be responsible for any disputes arising out of transactions made by others.

[SIGNATURES ON FOLLOWING PAGES]

IN WITNESS WHEREOF, the parties hereto have executed this Agreement as of the date and year first set forth above.

“City”

CITY OF AVONDALE,
an Arizona municipal corporation

Charles A. Montoya |
for Charles A. Montoya, City Manager

Date: 7/8/2020

ATTEST:

Marcella Carrillo
for Marcella Carrillo, City Clerk



“Consultant”

QUANTUM INTEGRATED SOLUTIONS, INC.
a(n) Arizona Corporation

By: *Thomas Reski*

Name: THOMAS RESKI

Title: PRESIDENT 7/7/2020

EXHIBIT A
TO
SAMPLE PROFESSIONAL SERVICE AGREEMENT
BETWEEN
THE CITY OF AVONDALE
AND
QUANTUM INTEGRATED SOLUTIONS, INC.

[SOQ]

See following pages.

Avondale

Aspiring. Achieving. Accelerating.



Engineering. Design. Automation. SCADA.

May 26, 2020

City of Avondale
Jill Lin
Senior Buyer

RE: RFQ PW 20-048 Request for Statement of Qualification for SCADA Professional Engineering Services
Quantum Submittal #: 20-01047

Selection Panel Members:

Thank you for allowing Quantum Integrated Solutions (Quantum) the opportunity to submit on this Request for Statement of Qualification for SCADA Professional Engineering Services. The Quantum team is excited for the opportunity to continue working with the City of Avondale and to further the already valuable professional relationships we have established over the past several years.

Quantum is an Arizona corporation founded in 2001. Quantum employs roughly 15 controls engineers, programmers and Professional Engineers (P.E.) who all work out of our Tempe, Arizona office.

The Quantum team has over 200 years of combined experience designing SCADA and PLC systems, including configuration and programming for our municipal and commercial customers worldwide. We employ resources with both a breadth and depth of knowledge in all aspects of SCADA and PLC control system design including the implementation of the most advanced hardware and software applications.

Quantum maintains a commitment to professional certifications and training on both a corporate and individual employee basis. Evidence of that commitment can be found in multiple recognitions discussed within our solicitation response, most notably our Wonderware Certified System Integrator Partner and Schneider Alliance Integration Partner statuses.

We feel we are exceptionally qualified to provide the services outlined in this solicitation and believe Quantum's engineers have the skill sets to exceed the City's expectations for this scope of work.

We look forward to the opportunity to work the City of Avondale on this project!



Mark Reski, P.E.
Quantum Integrated Solutions/Engineering – Vice President of Engineering
P | 480.699.7124
C | 480.213.2866
E | mark.reski@quantumengr.com

*Quantum is in receipt and
acknowledges addendum 1*

A. GENERAL INFORMATION – QUANTUM

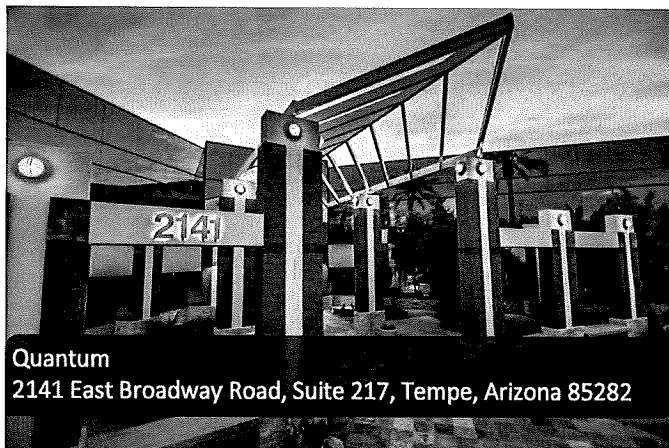
Quantum Integrated Solutions and Quantum Engineering, better known as Quantum, is an extremely specialized integration and engineering firm. *Quantum was established in 2001 with a specific emphasis on supplying a variety of industries, including water, with a focused skillset in the design, consulting, implementation, commissioning, upgrading and support of Industrial Control Systems (ICS) and SCADA systems.* Since the company's inception, Quantum and its engineers have delivered more than 2,000 PLC, SCADA and control system projects to clients throughout the United States.

To ensure superior services within the ICS industry, Quantum employs licensed Professional Engineers (P.E.) and exceptionally qualified automation engineers.

Our Focused Engineering and Integration Skillset

- ✓ PLCs
- ✓ Networking/Security
- ✓ OPC Connectivity
- ✓ SCADA Consulting
- ✓ Control Design/Support
- ✓ SCADA
- ✓ Historian
- ✓ CAD Drafting
- ✓ Arc Flash Assessments
- ✓ Reporting and Alarming

Our principal office is in Tempe, Arizona, approximately 35-miles for the City of Avondale.



Firm Information

Quantum Integrated Solutions, Inc.
 2141 E. Broadway Rd. Ste 217, Tempe, AZ 85282
 Ownership: Privately Owned
 Type: Corporation
 FEIN: 26-0009406
 Founded: 2001

Contact Information

Connor Mackenzie
 Project Engineer
 O: 480.699.7124
 C: 602.826.6075
 E: connor.mackenzie@quantumengr.com

Neither Quantum nor its officers have had any contracts or subcontracts canceled within the last five years.

Quantum has not had a contract result in litigation or arbitration within the last five years.

CERTIFICATIONS, LICENSES & RECOGNITIONS

As a highly trusted and respected industrial automation and engineering firm, Quantum holds numerous certifications, licenses, recognitions, and training certifications.

Integration, PLC, and SCADA Specific Certifications

Within the PLC and SCADA industry, there are various certifications and recognitions a firm or employees may achieve. Quantum holds numerous certifications and recognitions, but several are specific to the City of Avondale.

The city uses Wonderware System Platform for its SCADA system both on the fresh and wastewater sides which Quantum is certified in. To achieve this status, Quantum engineers must attend manufacturer training classes, pass three tests around the core components of System Platform, and successfully deploy a Wonderware installation validated by the manufacturer. Below are two certification numbers issued by Wonderware to the primary engineers for this project.

Name	Type	Certification
Kevin Terlecki	Wonderware	CSI304954
Mark Reski, PE	Wonderware	CSI4920

From past projects with the City of Avondale, Quantum knows the city has standardized on the Schneider Electric PLC platform, which includes the M340, M580, Momentum and Quantum PLC platforms. Schneider Electric has recognized Quantum as one of its Alliance System Integrators for its PLC products.

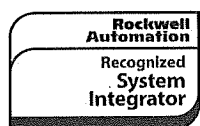
Quantum has invested in specialized staff training through the Department of Homeland Security (DHS) Industrial Control System Cyber Emergency Responses Team (ICS-CERT). This specialized training provides

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our team with the knowledge to prepare for, mitigate, detect, and report cyber-attacks on control systems. Quantum is actively helping SCADA owners to improve their security methods and update their master SCADA plans to incorporate the seven DHS ICS-CERT strategies to defend industrial control systems.



Additional certifications and recognitions that attest to Quantum's commitment and expertise within the industry include being a Rockwell Automation Recognized System Integrator, Inductive Automation Ignition Certified Integrator, VTScada Certified Integrator and many more.



Engineering Specific Licenses and Trainings

Quantum is a unique engineering firm that specifically focuses on electrical, SCADA and control systems. We do not perform civil, geotechnical, or environmental engineering services. If this type of engineering work is necessary, Quantum hires other engineering firms, like WestLand Resources or CVL Consultants, as subconsultants to perform that work.

Below are key engineering licenses that apply to the City of Avondale. The licenses below include both the firm and engineering staff. Quantum is a registered electrical and controls engineering firm within the State of Arizona. The primary professional engineer for the City of Avondale will be Mark Reski, P.E., who is a licensed electrical engineer in the State of Arizona.

Firm/Name	Type	License
Quantum	Elec. & Controls Eng.	16939
Mark Reski, PE	Electrical Engineer	58525

Infrastructure and Network Certifications

As control systems join the IoT world, along with becoming more geographically separated, networking and security are a serious factor in any design and support effort. For this reason, Quantum employs a Cisco CCNA technician to augment our network expertise. Our network technician, Tyler Davis, has numerous certifications and trainings as outlined below.



Name	Description	Certification
Tyler Davis	Cisco CCNA	CSCO13273617
Tyler Davis	CompTIA Linux+	COMP001021172701
Tyler Davis	CompTIA Security+	COMP001021172701
Tyler Davis	CompTIA A+	COMP001021172701

B. EXPERIENCE AND QUALIFICATIONS

As outlined in the previous section, Quantum and its engineers hold professional engineering licenses, system integration certifications, and network certifications that illustrate Quantum's commitment to exceptional professional services for electrical and SCADA systems. The following example projects highlight Quantum's ability to fulfill the requirements outlined in the City's RFQ.

City of Avondale

Electrical Consulting and SCADA Services

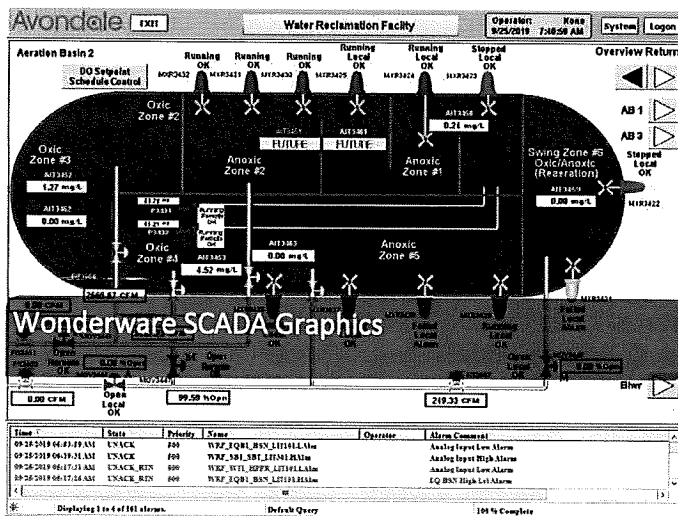
Over the years, Quantum has provided countless SCADA and electrical consulting and support services to the City. This includes items like arc flash assessments, system wide SCADA upgrades, PLC programming services and assistance with emergency response requests.

SCADA and PLC Services

In 2017, Quantum upgraded the entire Wonderware System Platform application to the latest version. This upgrade required Quantum to create a strategy that would allow the existing SCADA application to be operational while the new system was being deployed. The strategy Quantum implemented ensured that operational staff could monitor and control the required systems while still receiving alarm messages via email. Quantum engineers Mark Reski and Kevin Terlecki executed this plan flawlessly and were able to move

operators over to the new system within one day. After completing this migration, training was provided to operational staff on small improvements that were made and to ensure they were comfortable with the upgraded system.

Recently, Mr. Terlecki performed all the PLC programming and SCADA modifications necessary to add or modify controls for a new clarifier, blower, aeration basin and RAS to the WRF facility. This required Mr. Terlecki to use Schneider Electric's UnityPro to program the existing PLC. This work was completed in 2018.



On rare occasions, the city has contacted Quantum for emergency or weekend support. When these circumstances arose, Quantum was able to respond and rectify the issue within two hours or less. Approximately one month ago, the city reached out to Quantum because the Wonderware system was acting unusual and performance was appearing to degrade as time went on. It was assumed the issue may have occurred during a hardware upgrade on the servers, but it was determined by Quantum that it was a network issue. Quantum worked with Wesley Harris and Michael Reese, from the city's IT department, and they were able to locate a security appliance that was experiencing difficulties. The issue was rectified within a few hours.

Engineering Services

Quantum was hired to perform a five-year update to the arc flash assessment and labels for the City of Avondale Water Reclamation Facility (WRF). This project required Mark Reski, P.E. and Seth Warnke to

inspect wiring, breakers and equipment. Mr. Reski contacted Salt River Project (SRP) to retrieve the available fault current for all three transformers at the WRF.

After inspecting the site and contacting SRP, Mr. Reski utilized SKM Power Tools to perform an arc flash analysis and generate new arc flash labels. According to NFPA 70E, the labels supplied by Quantum are valid for five years. The City of Avondale was also supplied with an updated engineering report and copies of the equipment labels (arc flash labels) that were supplied. The report included the methodology for the analysis and noticeable safety deficiencies. The intent of this report was to provide documentation to the city and future electrical engineers that may update their arc flash labels.

The work outlined for the City of Avondale was completed within the last 5-years.

Project Highlights

- ✓ SCADA Programming / Consulting
- ✓ PLC Programming
- ✓ Electrical Arc Flash (Professionally Sealed)
- ✓ Windows Security Updates

Due to a Non-Disclosure Agreement (NDA), Quantum

Energy Drink Wastewater

Electrical/Control Design and Programming Services

is unable to disclose the name of the energy drink manufacturer.

Haskell, a large civil engineering firm with over 25 offices globally, directly selected Quantum to be the Electrical, Instrumentation & Controls (E,I&C) firm to design the electrical, P&IDs, conduit schedules, and select the instrumentation for a pH adjustment system prior to discharging into the City of Phoenix's wastewater system.

The manufacturing facility for this energy drink was an existing water bottling manufacturing facility that needed to be retrofitted for the new process. This required existing RTUs, disconnects and VFDs to be repurposed for the new process. Quantum performed

WARNING

Arc Flash and Shock Risk
Appropriate PPE Required

24 in	Arc Flash Boundary
1.9 cal/cm ²	Incident Energy at 18 in
PPE	AR Shirt & Pants
480 VAC	Shock Risk when cover is removed
00	Glove Class
42 in	Limited Approach
12 in	Restricted Approach
1 in	Prohibited Approach

Location: **MCO-11**

QUANTUM

2141 East Broadway Street Suite 217
Tempe, AZ 85282
(480) 699-7124

Job#: **P17-01-0018** Prepared on: **07/07/17**

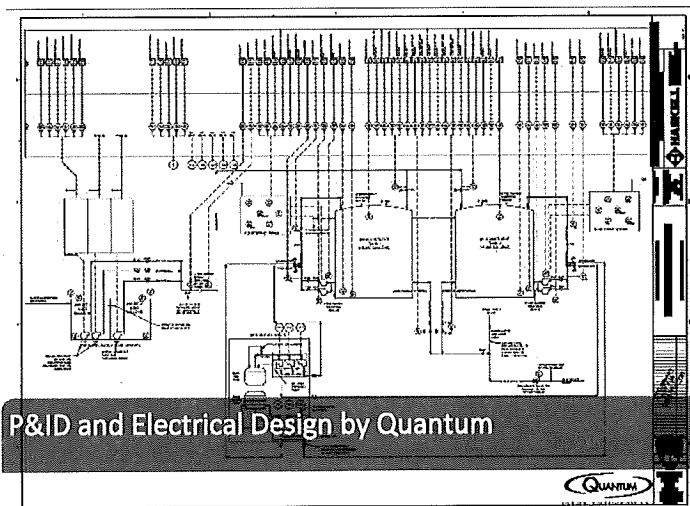
Warning: Changes in equipment settings or system configuration will invalidate the calculated values and PPE requirements.

all the electrical design to repurpose the existing equipment for the wastewater facility.

Quantum engineer Mark Reski is currently approving contractor and vendor submittals. Submittal reviews include installation methods, supplied equipment and material details. Senior systems engineer, Kevin Terlecki, inspected newly constructed RTU and pump panels built by Felix Construction and Southwest Controls.

Tools like Bluebeam, Procore and Microsoft Teams are currently being leveraged for tracking submittal reviews, communications, and project scheduling.

Haskell amended Quantum's scope to later include PLC and integration services for the Quantum design. This required Seth Warnke and Kevin Terlecki to program one OIT and PLC to automate all the necessary controls required for pH balancing.



Project Highlights

- ✓ P&ID Design (Professionally Sealed)
- ✓ Conduit Design (Professionally Sealed)
- ✓ Electrical One-Line Design (Professionally Sealed)
- ✓ PLC / RTU Panel Design (Professionally Sealed)
- ✓ Instrumentation Selection and Procurement
- ✓ Electrical and Vendor Submittal Reviews
- ✓ PLC and OIT Programming
- ✓ Commissioning and Training

Central Arizona Project

Engineering, Consulting, and Assessment Services

Quantum was selected to provide engineering, consulting and assessment services for the Central

Arizona Project process control system at the Waddell Dam. The dam and control system were designed and constructed by the Bureau of Reclamation in the late 1980's as a turn-key system for CAP. The dam consists of four pumping units and four pump/generating units that allow CAP to add water to, or remove water from, Lake Pleasant. This dam is critical to the overall delivery of fresh drinking water throughout the State of Arizona. Automation at the dam is controlled by thirteen obsolete PLC controllers, contains over 80 racks of I/O modules for various instrumentation and is monitored by two independent SCADA systems. This enormous and critical process control system was assessed by Mr. Reski as a precursor to an anticipated automation upgrade.



After a thorough assessment of the control system, Quantum provided a report to CAP detailing risks resulting from obsolescence of their PLC platform. Quantum provided consulting services to CAP to develop conversion strategies for eliminating both the discontinued hardware, software and instrumentation. Multiple meetings were conducted with CAP engineering staff and management to refine the potential conversion methods into one hardware and software upgrade strategy.

With a conversion strategy selected, an anticipated phasing plan was developed. The phasing plan outlined the order in which the control system would be converted. A draft of the phasing plan was presented to the CAP engineering and operations departments. Feedback from these departments was critical and was included into an initial revision of the phasing plan. Based on the phasing plan and selected conversion strategy, an Opinion of Probable Construction Cost (OPCC) was developed. The CAP engineering department then held a meeting with their project steering committee to discuss the assessment, consultation and project estimates provided by Quantum.

Project Highlights

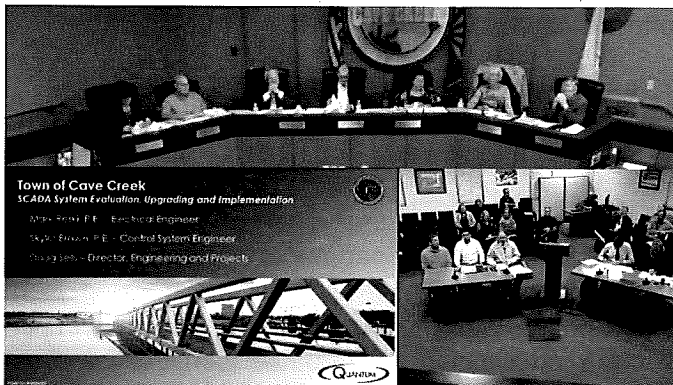
- ✓ Assessed over 1,000 E,I&C drawings
- ✓ Inspected control panels and instrumentation
- ✓ Delivered a 200-page inspection report
- ✓ All work performed at CAP's headquarters

- ✓ Provided general control system consulting
- ✓ Detailed migration plans
- ✓ Regularly presented on findings

Town of Cave Creek

Engineering, Consulting, and Assessment Services

The Town of Cave Creek selected Quantum to conduct the Phase 1 portion of a SCADA system evaluation, upgrade and implementation project. Phase 1 required Quantum to assess, categorize and evaluate current Town SCADA assets. During the inspection stage, Quantum engineers inspected over 40 sites including one water reclamation facility and two water treatment plants. After completion of these assessments, Quantum provided two deliverables to the Town. The first deliverable was an assessment report that outlined each site and provided individual risk scores. The risk score was determined by current SCADA capabilities, equipment obsolescence and infrastructure importance. Sites presenting a higher risk to overall operations were assigned a higher score than sites with less risk. The second deliverable Quantum provided compared alternative SCADA packages against the Town's existing SCADA system while considering factors such as capabilities, cost, support, history, uniqueness and overall ability to meet the needs of the town.



Quantum has recently completed Phase 2 of this project. Quantum's scope for Phase 2 included development of a thorough specification and drawings for electrical instrumentation and control (EI&C) and SCADA upgrades. Quantum engineer, Mark Reski P.E., worked directly with the Town to ensure all instrumentation, control equipment, panel designs, and communication protocols adhered to the Town's goals moving forward. This specification was used for Solicitation No.: PW 20-048

competitive bid early next year, with an estimated construction phase of three years.

Quantum was recently awarded phase 3 of this contract. For phase 3, Quantum will oversee construction and installation that will be carried out by another contractor.

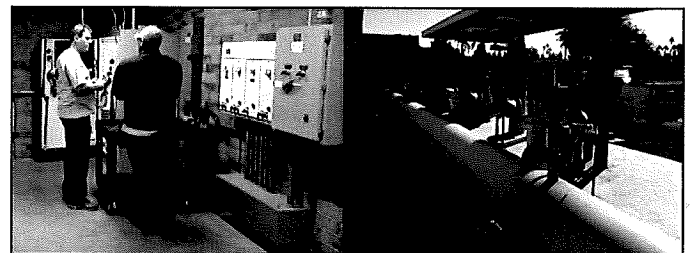
Project Highlights

- ✓ SCADA and instrumentation system assessment
- ✓ Specification development
- ✓ Electrical drawing development
- ✓ Risk assessment
- ✓ Construction oversight
- ✓ Town Council presentation on findings

Town of Gilbert

PLC and SCADA Programming Services

Quantum entered into a Job Order Contract (JOC) with the Town of Gilbert in September of 2018 to provide "Water and Wastewater Treatment Plant Controls Construction and or Equipment" services. This contract has been renewed as of July 2019, and Quantum is currently completing work under this JOC. Along with the work currently being performed, Quantum has completed several other projects with varying scope and budget via this JOC. The scope of the projects completed under this JOC typically involve PLC and SCADA programming, but have also included tasks such as VFD configuration and radio path surveys. Notable projects that have been completed as part of this JOC are listed below.



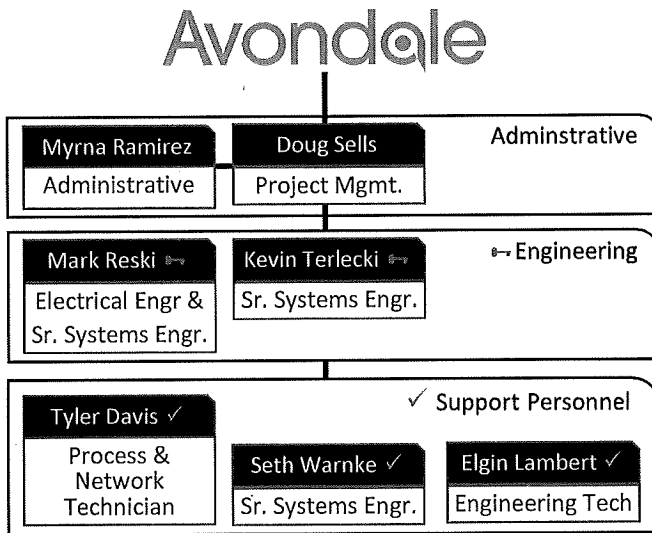
Quantum engineering, Kevin Terlecki, consulting with Town of Gilbert employee, Sergio Ysko, about booster pump sequencing

- Booster Site 12 PLC Upgrade
- Freeman Farms PLC and OIT Upgrades
- Wonderware/TOP Server communication troubleshooting
- Freeman Farms additional booster pump programming
- North Water Treatment Plant booster pump VFDs
- Wireless Path Studies



C. KEY POSITIONS

Quantum intends to self-perform all the professional services outlined in the solicitation. Below is a high-level organizational chart outlining the key personnel and support personnel the City of Avondale can expect to perform all the SCADA professional engineering services for this contract. *The team assembled is exceptionally skilled and consists of licensed Professional Engineers, certified SCADA engineers, and certified Cisco network personnel.* Furthermore, everyone outlined in the organizational chart works in our Tempe office.



Quantum employs additional internal resources but does not anticipate the need to assign them to this effort.

ADMINISTRATIVE



Myrna Ramirez – Admin. Assistant

Myrna Ramirez is responsible for all administrative project tasks. These include assigning project information for time sheets and expenses. Once a project begins, Ms. Ramirez handles all the billing and general business compliance requirements to provide services to the City of Avondale.



Doug Sells – V.P. Operations

As the designated project manager for the City of Avondale, Doug Sells, is responsible for assigning appropriate resources for each job or task. Mr. Sells is also responsible for generating project schedules,

schedules of values, setting up meetings, and managing Quantum personnel.

ENGINEERING



Mark Reski, P.E. – V.P. Engineering

Mark Reski, P.E. will be responsible for all the necessary Professional Engineering services the City of Avondale may require. Mr. Reski is a licensed Professional Engineer (Electrical) within the State of Arizona and three other states. He is extremely well rounded and recently completed a two-year consulting project for the Central Arizona Project. This project required him to review nearly 1,000 sheets of P&IDs, electrical control schematics, SCADA network diagrams, and general control philosophies for the Waddell hydro dam located at Lake Pleasant.

As the primary design engineer and senior system engineer, the City of Avondale can expect Mr. Reski to perform the tasks outline below.

- | | |
|-----------------------|-------------------------------|
| ✓ SCADA Consulting | ✓ Electrical Design |
| ✓ RTU & MCC Design | ✓ Arc Flash Assessments |
| ✓ Cyber Security | ✓ Technical Expert |
| ✓ P&ID Design | ✓ Devise Control Philosophies |
| ✓ Specialized Systems | ✓ Network Design |
| ✓ PLC Programming | ✓ SCADA Programming |



Kevin Terlecki – Sr. Systems Engineer

Kevin Terlecki is a Senior Systems Engineer at Quantum and has performed SCADA and PLC work for the City of Avondale since the early 2000's. Mr. Terlecki has extensive PLC and SCADA programming experience within the water and wastewater industry. His professional SCADA experience dates to 1996 with automated high-speed control systems for the United States Postal Service. Mr. Terlecki is extremely skilled and trained. He is Wonderware System Platform certified and was the primary engineer that upgraded the current SCADA application for the City of Avondale.

Mr. Terlecki's primary role will be to support the City of Avondale's SCADA and PLC systems. Outlined below are the core professional services Mr. Terlecki will supply to the City of Avondale.

- | | |
|-----------------------|------------------------|
| ✓ SCADA Programming | ✓ PLC Programming |
| ✓ RTU Troubleshooting | ✓ SCADA Enhancements |
| ✓ System Upgrades | ✓ Personnel Training |
| ✓ Emergency Support | ✓ Hardware Support |
| ✓ General Consulting | ✓ SCADA Communications |

SUPPORT PERSONNEL



Seth Warnke – Sr. Systems Engineer

Seth Warnke has been active in the automation world since 1981. Mr. Warnke served in the United States Navy where he was an Electrician's Mate, Third Class. While in the Navy, his work required him to perform the installation and maintenance of electrical systems in conjunction with the inspection of federal contractors performing work on United State Naval ships. Mr. Warnke has experience in the rewinding of electrical motors for the US Navy and motor control centers. His responsibilities at Quantum include PLC/SCADA programming, HMI development, and control panel layout. He also assists in arc flash assessment, including the one recently conducted at the Avondale WRF.

Mr. Warnke recently completed an expansion project for the City of Douglas WWTP. This project required him to program seven new PLCs and develop all the SCADA graphics.

The city can anticipate Mr. Warnke to provide the City of Avondale with the following professional services.

- ✓ SCADA Programming
- ✓ RTU Troubleshooting
- ✓ Hardware Support
- ✓ Panel Design
- ✓ PLC Programming
- ✓ Control System Inspections
- ✓ Personnel Training
- ✓ Arc Flash Assessments



Tyler Davis – Process & Network Technician

Prior to acquiring his CCNA certification, Mr. Davis worked regularly with VFDs, industrial controllers and OITs. While working with these systems, he realized that networking is becoming extremely critical within the industrial community. He went to school to expand his skillset in industrial networks and is now responsible for Quantum's clients that require Layer 3 connectivity. He has worked on industrial control system networks that leverage both Allen-Bradley and Schneider Electric PLCs. He understands the difference between OT and IT, and the critical nature of keeping industrial control system networks operational and resilient.

The city can rely on Mr. Davis to provide the following professional services.

- ✓ Network Design
- ✓ Telemetry Support
- ✓ Security Analysis
- ✓ Network Validation
- ✓ Operating System Support
- ✓ PLC Troubleshooting



Elgin Lambert – Engineering Tech

Elgin Lambert is experienced in Allen-Bradley SLC and CompactLogix PLCs, both of which are comparable to the PLC-5 and ControlLogix platforms, respectively. He also has experience in TIAPortal which is used to program Siemens PLCs. Also, his experience with HMIs includes Wonderware InTouch, FactoryTalk SE and Ignition by Inductive Automation. His PLC communication background includes Modbus TCP, EtherNet/IP, CIP and PROFIENT. Mr. Lambert is skilled in the wiring and calibration of industrial instrumentation.

Mr. Lambert will provide the City of Avondale with the following professional services.

- ✓ SCADA Programming
- ✓ AutoCAD
- ✓ Loop Tuning
- ✓ Panel Design
- ✓ PLC Programming
- ✓ Instrumentation Support
- ✓ Troubleshooting
- ✓ RTU Diagnostics

D. PROJECT APPROACH

PLANNING

Effective planning is key to ensuring both the overall success of any project and for the strategic alignment with the city's overall SCADA and electrical goals. A lack of planning, regardless of the project size and scope, increases the probability of ineffective project execution. This can lead to potential financial overruns, scheduling impacts, inefficient sequencing of tasks and even impacts to other city projects. For these reasons, Quantum leverages the planning guidelines listed below to prevent those potential negative impacts.

Successful planning guidelines for any project

- ✓ Outline all the tasks with milestone dates
- ✓ Quantify and minimize potential risks
- ✓ Establish realistic objectives and goals
- ✓ Assess capabilities of resources and personnel
- ✓ Assign the proper resources and personnel
- ✓ Prepare for potential changes
- ✓ Implement effective communication channels

ESTIMATING

Estimating can be challenging but is a critical component to any project. Quantum understands this and has a unique approach to accurately gauging market conditions. Our engineers and business development staff regularly communicate with local general contractors, electrical contractors, vendors, and suppliers to create a holistic approach to estimating. By connecting with trade and craft specialists, Quantum is able to anticipate market trends within the industry including labor rates, resource availability, supply chain challenges, manufacturer price increases and much more. This approach, in conjunction with evaluating general economic conditions, allows Quantum to generate realistic design and construction estimates.

COST CONTROLS

In a perfect world, costs would not be a factor; however, in the real-world, cost is always a factor. For this reason, it is critical to define the main objectives and goals of any project.

For this project solicitation, the City can expect all personnel working on this project to be based in the Phoenix metropolitan area. This includes all engineering and programming service resources. In leveraging local resources, Quantum has already implemented a major cost control by minimizing travel and per-diem costs.

Another cost control measure that has become better utilized within the past few months is virtual meetings. Quantum was an early adopter of virtual meetings because it allowed our engineers, programmers, and administrative staff the ability to streamline internal communications. In the past, scheduling internal or external meetings was more challenging due to project travel times or existing scheduling conflicts, but by leveraging virtual meetings, availability has increased, and overall meeting costs have declined. All Quantum personnel can schedule virtual meetings and utilize screen sharing capabilities with the use of Microsoft Teams.

Cloud computing and remote connectivity is another important measure that can reduce costs while increasing reaction time. For instance, Quantum engineers Mark Reski and Kevin Terlecki have utilized the City of Avondale's Cisco VPN connection numerous times to remotely assist with SCADA and PLC problems. By utilizing the City's VPN client, Quantum is able to eliminate travel time and costs.

Nearly 3-years ago, Quantum implemented Microsoft Office365, which has allowed engineers and staff the ability to use Microsoft office tools within the cloud. Additionally, Office365 has provided Quantum the capability to transfer large files via Microsoft OneDrive. This includes items like SCADA backups, design packages, photos, and other items that are too large for emails.

Software-as-a-Service (SaaS) is another method that Quantum has adopted to reduce overall project costs. SaaS allows for Quantum to expand and contract specialized software packages based on the project needs and requirements. In short, SaaS is a mechanism that allows engineering firms to rent software packages at lower entry cost.

Below are some of the key cost control measures Quantum implements for its various projects.

Cost control measures

- ✓ Use local resources
- ✓ Implement vendor controls
- ✓ Resource planning
- ✓ Virtual meetings
- ✓ Cloud tools, virtual meetings, & remote access
- ✓ Software-as-a-Service (SaaS)
- ✓ Implement standards
- ✓ Explore for hidden costs

PROJECT MANAGEMENT & TEAM ORGANIZATION

As previously discussed in section C. Key Positions, Doug Sells will act as project manager for all City of Avondale work. Mark Reski will be the lead electrical engineer for any necessary electrical design work. Kevin Terlecki will be the primary SCADA and PLC programmer for work associated with this solicitation and additional support will be provided by Mr. Reski.

Over the last 8 years, Mr. Sells has overseen the work performed by both Mr. Reski and Mr. Terlecki. Additionally, Mr. Sells has an outstanding working relationship with Randy Ziolkowski and the City of Avondale.

Depending on the scope and scale of a task, additional staff located in Tempe are also available to assist both Mr. Reski and Mr. Terlecki.

BID PACKAGE MANAGEMENT

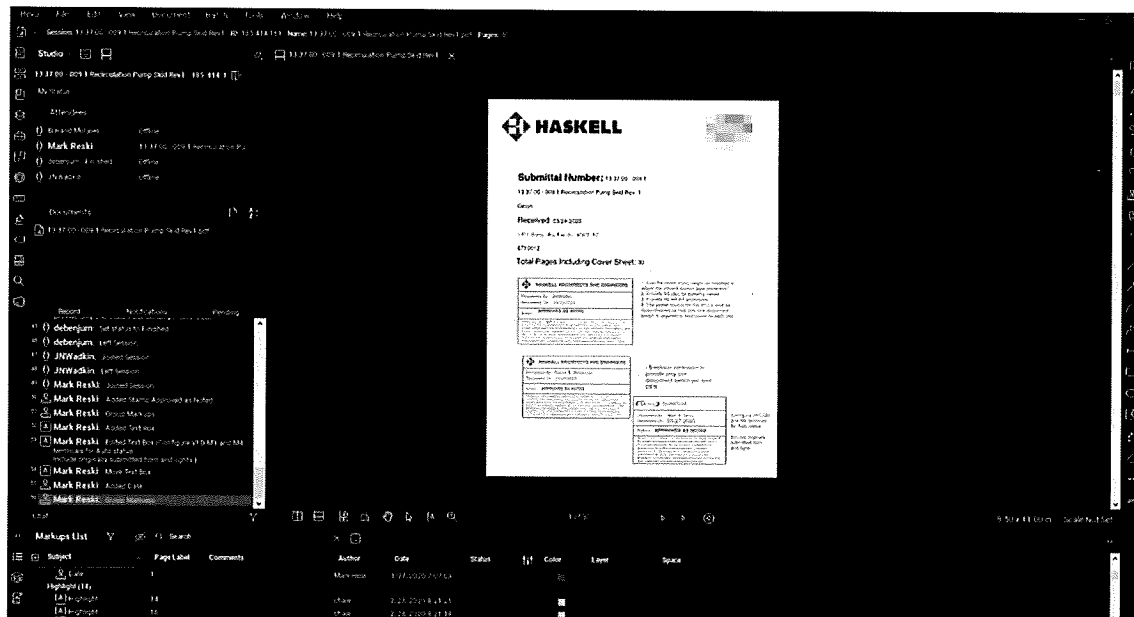
It is understood that the City of Avondale uses VendorRegistry to issue notices for bid and to receive bid or solicitation responses. To supplement the City's existing bid methods, Quantum can implement the use of Procore and Bluebeam. Both packages are for streamlining owner, designer, and contractor communications and coordination. The packages are also ideal for tracking and notifying appropriate personnel of necessary actions to complete a task.

MANAGEMENT OF OVERHEAD COSTS

Overhead costs come in several variations, including fixed, variable, and semi-variable. Quantum has always had the approach that the fixed overhead costs that can be controlled by Quantum, like rent, should be reasonable enough that it provides both a professional and cost-effective facility for both its employees and clients. Several other fixed rates, like internet and telecommunications contracts are reviewed annually to ensure these costs are affordable and are keeping up with current industry expectations.

A variable overhead cost that was significant in previous years was printing and shipping costs. With a massive shift toward electronic delivery methods, to both reduce waste and improve convenience, Quantum has seen this variable cost start to become negligible. Occasionally, this variable cost can become relevant, but this is typically captured upfront in the proposal by clearly defining how many copies of a printed document will be supply and if any shipping costs are necessary.

As a professional services firm, Quantum has very little semi-variable overhead compared to a general contracting firm. The minimal amount of variable overhead that Quantum has is due to company vehicle usage and maintenance. The cost for vehicle maintenance is typically captured in a fee and scope proposal Quantum provides. The vehicle fee cost Quantum utilizes is the current GSA mileage rate.



Shown to the left is Quantum using Bluebeam with Haskell to review contractor submittals and costs.

SECTION A

PART IV. VENDOR INFORMATION FORM

By submitting a Statement of Qualifications, the submitting Vendor certifies that it has reviewed the administrative information and draft of the Professional Services Agreement's terms and conditions and, if awarded the Agreement, agrees to be bound thereto.

Quantum Integrated Solutions, Inc.

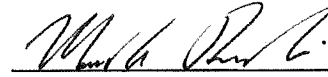
26-0009406

VENDOR SUBMITTING SOQ

FEDERAL TAX ID NUMBER

Mark Reski, Vice President of Engineering

PRINTED NAME AND TITLE



AUTHORIZED SIGNATURE

2141 East Broadway Road, Suite 217

ADDRESS

(480) 699-7124

TELEPHONE

FAX #

Tempe AZ 85282

CITY STATE ZIP

May 26, 2020

DATE

WEB SITE: quantumengr.com

E-MAIL ADDRESS: mark.reski@quantumengr.com

ARIZONA CORPORATION COMMISSION FILE NO. 10115938

SMALL, MINORITY, DISADVANTAGED AND WOMEN-OWNED BUSINESS ENTERPRISES (check appropriate item(s):

- ☐ Small Business Enterprise (SBE)
☐ Minority Business Enterprise (MBE)
☐ Disadvantaged Business Enterprise (DBE)
☐ Women-Owned Business Enterprise (WBE)

Has the Vendor been certified by any jurisdiction in Arizona as a minority or woman-owned business enterprise? () Yes () No

If yes, please provide details and documentation of the certification.

EXHIBIT A

PAST PERFORMANCE VERIFICATION EVALUATION SUBMITTALS

LIST OF THOSE AGENCIES OR FIRMS WHO WILL BE SUBMITTING EVALUATIONS
TO CITY

Please list the agency or firm name, address, phone number and contact information for the firms that will be providing the Past Performance Verification Form. It is the **responsibility of the firm** to ensure that the City receives all of the Past Performance Verification Forms prior to the SOQ submittal deadline. Failure to provide evaluations by date and time specified will result in zero points for that specific evaluation.

(NOTE: Only agencies or firms listed as 1, 2, or 3 will be accepted. Do not add lines to this form.)

1. Central Arizona Project
23636 North 7th Street, Phoenix, AZ 85024
Craig Truax, P.E.
ctruax@cap-az.com, (480)292-6239
2. Haskell
111 Riverside Avenue, Jacksonville, FL 32202
Jacob Wadkins, P.E.
Jacob.Wadkins@haskell.com, (706)773-0099
3. City of Avondale
399 East Lower Buckeye Road, Avondale, AZ 85323
Randy Ziolkowski
rziolkowski@avondale.org, (623)333-4455

Mark Reski, P.E. – Vice President of Engineering

Education	Arizona State University Bachelor of Science in Electrical Engineering – Cum Laude	
Years with Quantum	Ten (10) years	
Industry Experience	Ten (10) years	
Professional Engineer	AZ – Registered Professional Engineer (P.E.) – Electrical Engineer (License: 58525) ID – Registered Professional Engineer (P.E.) – Electrical Engineer (License: 17676)	
Memberships	International Society of Automation (ISA) – Member No.: 33676406	
Responsibilities	Provide engineering services to water and wastewater industrial clientele. Scope of services includes design, review and validation of Electrical, Instrumentation and Controls (EI&C) systems for asset owners. This includes SCADA software, PLC programs, network architectures, Motor Control Centers (MCC) and instrumentation. Highlights include: • Development of written control strategies for the Palo Verde Nuclear Power Plant wastewater treatment facility • Development of written control strategies for the City of Tempe's injection wells • Regularly contracted to witness and inspect the commissioning of EI&C equipment for water and wastewater systems at the NXP semiconductor plant in Chandler, AZ • Conducts design review meetings to oversee engineering processes including: ○ Construction, Administration & Inspection (CA&I) ○ Specification and CAD Drawing Development ○ Engineering Estimations ○ Maintaining of Plant Operations (MOPO) development ○ Witness Factory Acceptance Testing (FAT) – Acceptance of Equipment ○ EI&C installation inspection ○ Witness Site Acceptance Testing (SAT) – Operational Functional Acceptance	
SCADA & PLC Experience	• Allen-Bradley PLCs • Inductive Automation Ignition • Wonderware Systems Platform Certified • Dream Reports • GE MDS Radio • GE iFix SCADA • Foxboro DCS	• Rockwell Automation Software • Wonderware InTouch Certified • Wonderware Historian Certified • PanelView Plus • ThinManager Certified • Schneider-Electric PLCs • Prosoft Hardware
Additional Projects Completed	• Lake Havasu City SCADA Upgrade • Gila River Indian Community Booster Site • Avondale SCADA Upgrade • City of Phoenix PLC Specification Design	• City of Goodyear Arsenic Filtration • Simplot Building Management System • Town of Gilbert Lift Station • City of Mesa Centrifuge Upgrades

Kevin Terlecki – Senior Systems Engineer

Education Arizona State University
Bachelor of Science in Electrical Engineering

Years with Quantum Thirteen (13) years

Industry Experience Twenty-four (24) years

Responsibilities Provide engineering and programming services within the industrial automation sector.

Expected to support clients by providing expertise on a wide variety of automation engineering tasks including, but not limited to:

- Client consultation
- Instrumentation & Control (I&C) design
- Sequence of Operations (SOO) development
- PLC/PAC programming
- HMI/SCADA development
- Factory and Site Acceptance Testing (FAT/SAT)

Maintain expertise in legacy automation platforms as well as update training for relevant new hardware and software technologies.

Prior Employment Experience Control Logic, Inc. – Project Engineer (1996 – 2007)

Large scale automation system integration focusing on material handling, water/wastewater and pharmaceutical industry clients. Successfully completed approximately 50 automation projects nationwide.

Responsibilities included:

- Three-phase power distribution design
- Motor control circuit design
- Network infrastructure design – Data Highway +, DH-485, ControlNet, DeviceNet, Ethernet
- Programmable Logic Controller (PLC) control design and programming
- Human Machine Interface (HMI/SCADA) programming
- Control system commissioning
- Client acceptance testing
- Extensive client operational and maintenance training

Additional Projects Completed

- | | |
|--|--|
| • Lake Havasu City Wonderware Upgrade | • City of Tucson CNG Plant Integration |
| • Sierra Vista Environmental Operations Park | • Intel Ocotillo Blended Reclaim Water |
| • Skanska/Intel PSSS Commissioning Rep | • Avondale SCADA Upgrade |
| • Intel Outfall Monitoring | • Haskell Wastewater Treatment |
| • Tolleson Water Booster Station #7 | • City of Flagstaff Lake WWTP |
| • Progress Solutions Command Center SCADA | • FritoLay MBR Water Treatment |
| • Avondale WRF Expansion | • USPS Springfield Processing Center |
| • Town of Gilbert Site 3 Well & Reservoir | • USPS Atlanta Bulk Mail Center |

Doug Sells – Vice President of Operations

Education	Arizona State University Bachelor of Arts in Psychology		
Years with Quantum	Eight (8) years		
Industry Experience	Twenty-six (26) Years		
Responsibilities	Overall engineering team management and resource coordination. Individual responsibilities include project technical oversight, schedule management and client relations. Support clients by providing project management and oversight throughout the project life cycle: • Client Consultation • Customer Relations • Project Management • Standards Compliance • Engineering Best Practices • PLC/PAC Programming Techniques • HMI/SCADA Development Methodologies • Contractor Coordination • Vendor Relations		
SCADA & PLC Experience	• Allen-Bradley PLCs • Wonderware InTouch • Schneider-Electric PLCs • Red Lion Components	• Rockwell Automation Software • Ge Cimplicity • PanelView Plus • GE MDS Radios	
Prior Employment Experience	Control Logic, Inc. Vice President (2003-2012) - Senior Project Engineer (1997-2003) Project Engineer (1994-1997) Progressive project, technical and commercial responsibilities including engineering team management, customer relations and business development and strategy. Successfully completed over 300 automation projects nationwide in varied fields including water/wastewater, material handling, warehouse management and package sortation.		
Additional Projects Completed	• Lake Havasu City Wonderware Upgrade • Intel Ocotillo Blended Reclaim Water • Intel Ocotillo Outfall Monitoring • Rentech Cogeneration Plant • Tolleson Water Booster 6 THM Removal • Progress Solutions Command Center SCADA • Mitsubishi Carbon Fiber Processing	• Resolution Copper Mine Shaft Cooling • McKesson SoCal Distribution Center • Army Corp of Engineers Rio Salado • USPS San Francisco Air Mail Center • USPS Kansas City Processing Center • USPS Los Angeles Bulk Mail Center • USPS Atlanta Bulk Mail Center	

STATE OF ARIZONA



Board of Technical Registration

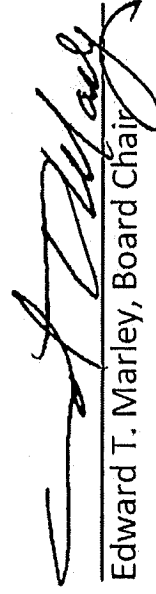
Mark Andrew Reski

Having exhibited to the Arizona State Board of Technical Registration satisfactory evidence of good moral character and of qualifications and proficiency, is hereby authorized to practice professionally in the state of Arizona and use the title of

ENGINEER/ELECTRICAL

In witness thereof, the Board grants certificate number 58525, and affixes the seal of this board at Phoenix, Arizona this 26th day of August, 2014




Edward T. Marley, Board Chair


Robert M. Stanley, Board Secretary



Cisco Certifications

Tyler Davis

has successfully completed the Cisco certification exam requirements and is recognized as a

Cisco Certified Network Associate Routing and Switching



Date Certified July 2, 2018
Valid Through July 2, 2021
Cisco ID No. CSC013273617

Validate this certificate's authenticity at
www.cisco.com/go/verify/certificate
Certificate Verification No. 432873383794JODF

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Chuck Robbins
Chief Executive Officer
Cisco Systems, Inc.

7091339725
0710



Cisco Certifications

Tyler Davis

has successfully completed the Cisco certification exam requirements and is recognized as a

Cisco Certified Entry Networking Technician



Date Certified March 21, 2018
Valid Through March 21, 2021
Cisco ID No. CSC013273617

Validate this certificate's authenticity at
www.cisco.com/go/verifycertificate
Certificate Verification No. 431845123569DMWJ

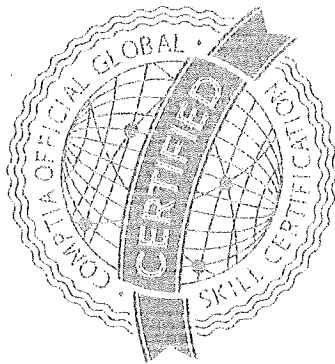
© 2018 Cisco and/or its affiliates

Chuck Robbins
Chief Executive Officer
Cisco Systems, Inc.

7089979419
0329

Tyler John Davis

has successfully completed the requirements to be recognized as



COMP001021172701

CANDIDATE ID

October 01, 2018

CERTIFICATION DATE

October 01, 2018

RENEWAL DATE

October 01, 2021

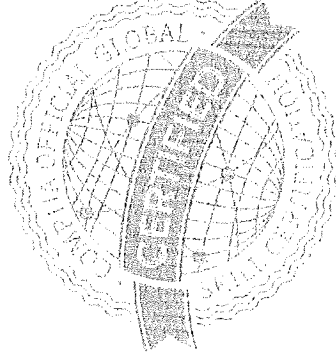
EXPIRATION DATE

Todd Thibodeaux

TODD THIBODEAUX, PRESIDENT & CEO

Tyler John Davis

has successfully completed the requirements to be recognized as



COMP001021172701

CANDIDATE ID

September 18, 2018

CERTIFICATION DATE

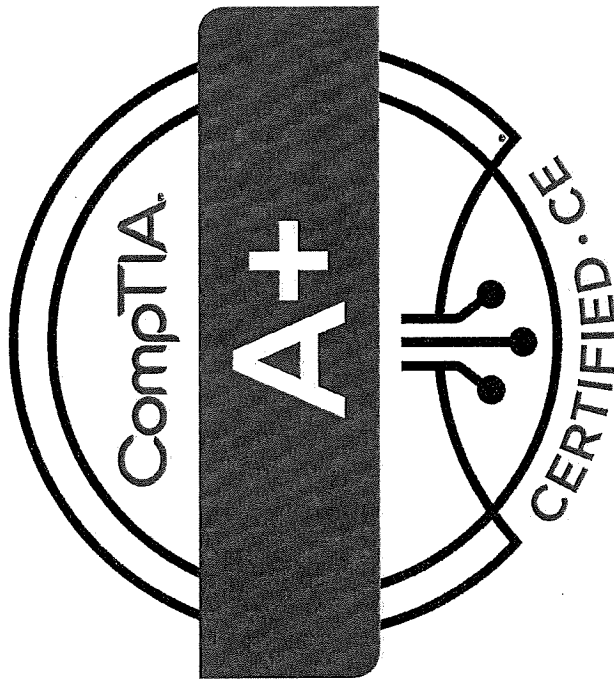
This certification is valid through 09/18/2021

A handwritten signature in black ink, appearing to read "TTh".

TODD THIBODEAUX, PRESIDENT & CEO

Tyler John Davis

has successfully completed the requirements to be recognized as



COMP001021172701

CANDIDATE ID

May 15, 2017

CERTIFICATION DATE

This certification is valid through 05/15/2020

A handwritten signature in black ink.

TODD THIBODEAUX, PRESIDENT & CEO



Certificate of Achievement

Awarded to

Mark Reski

of

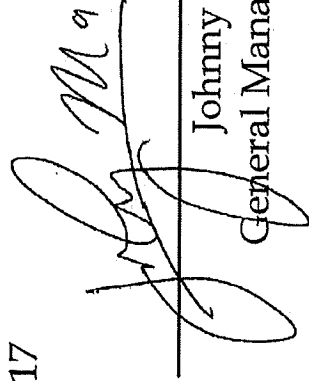
Quantum Integrated Solutions

for attending the

*Intro 1 & 2 to SKM Power*Tools (101 & 102) Courses*

August 14 through August 18, 2017

40 Credit Hours


Johnny Ma
General Manager

Certificate of Training

Presented by the

**Industrial Control Systems Cyber Emergency Response Team
U.S. Department of Homeland Security**

To

Mark Reski

For completion of the following course:

Industrial Control Systems Cyber Security (301) Training

December 16, 2016



**Homeland
Security**

Certificate of Training

Presented by the

**Industrial Control Systems Cyber Emergency Response Team
U.S. Department of Homeland Security**

To

Mark Reski

For completion of the following online course:

210W-02 Cybersecurity for Industrial Control Systems - Influence of Common IT Components on ICS

4/10/2017



ICS-CERT VLP
VIRTUAL LEARNING PORTAL

Certificate of Training

Presented by the

**Industrial Control Systems Cyber Emergency Response Team
U.S. Department of Homeland Security**

. To

Mark Reski

For completion of the following online course:

210W-01 Cybersecurity for Industrial Control Systems - Differences in Deployments of ICS

4/10/2017



ICS-CERT VLP
VIRTUAL LEARNING PORTAL

Certificate of Training

Presented by the

**Industrial Control Systems Cyber Emergency Response Team
U.S. Department of Homeland Security**

To

Mark Reski

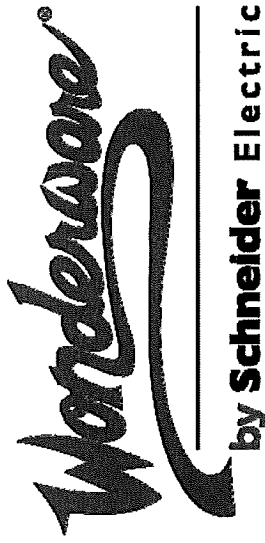
For completion of the following online course:

100W - Operational Security (OPSEC) for Control Systems

9/28/2016



ICS-CERT VLP
VIRTUAL LEARNING PORTAL



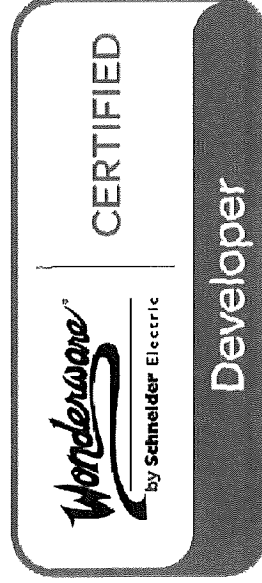
This is to Certify that

Mark Reski

Quantum Integrated Solutions

Is an Authorized

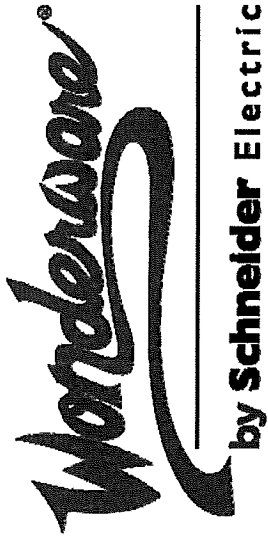
Wonderware Application Developer
for
Application Server 4.0 - 2014



Rashesh Mody
SVP Delivery & Partner Ecosystem
Schneider Electric Software Business

Developer ID: CSI4920

Effective date: 1/30/2015



This is to Certify that

Mark Reski

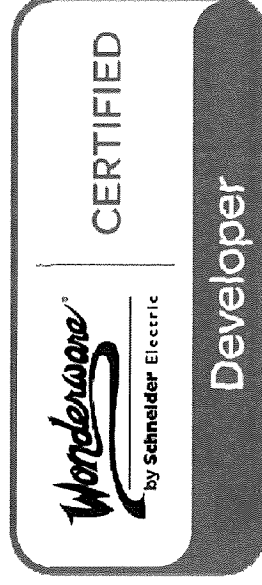
Quantum Integrated Solutions, Inc.

Is an Authorized

Wonderware Application Developer

for

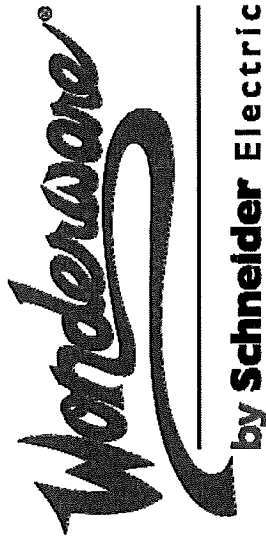
Historian Server 11.5 - 2014



Developer ID: CSI4920

Effective date: 3/27/2015

Rashesh Mody
SVP Delivery & Partner Ecosystem
Schneider Electric Software Business



This is to Certify that

Mark Reski

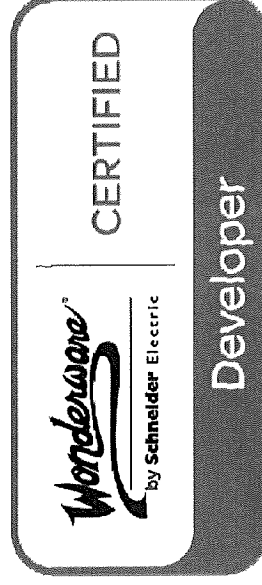
Quantum Integrated Solutions

Is an Authorized

Wonderware Application Developer

for

InTouch 11.0 - 2014



Developer ID: CSI4920

Effective date: 2/26/2015

Rashesh Mody
SVP Delivery & Partner Ecosystem
Schneider Electric Software Business



This certifies that

Mark Reski

has successfully completed the course

Skelta BPM 2014 Overview

as prescribed by Wonderware

this 10th day of July 2015

1.95 Awarded CEU's

A handwritten signature in black ink, appearing to read "Ravi Gopinath".

Ravi Gopinath
President

A handwritten signature in black ink, appearing to read "Eric Enet".

Eric Enet
Technical Instructor

This is to Certify

Kevin Terlecki

Quantum Integrated Solutions, Inc.

is a

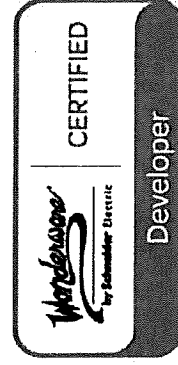
Schneider Electric - Wonderware Certified
Application Developer

In

Application Server 4.0 - 2014

as of

8/5/2014



A handwritten signature in black ink, appearing to read 'Scott Kiser'.

Scott Kiser
Director, System Integrator Program
Schneider Electric - Wonderware



This is to Certify that

Kevin Terlecki

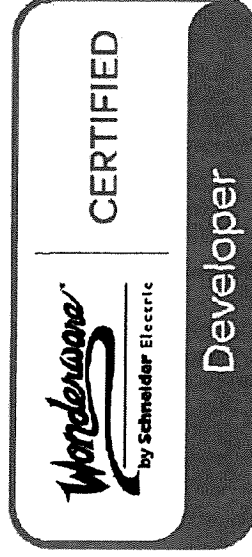
Quantum Integrated Solutions, Inc.

Is an Authorized

Wonderware Application Developer

for

Historian Server 11.6 - 2014 R2



Developer ID: csi0119

Effective date: 6/11/2015

Rashesh Mody
SVP Delivery & Partner Ecosystem
Schneider Electric Software Business

This is to Certify

Kevin Terlecki

Quantum Integrated Solutions, Inc.

is a

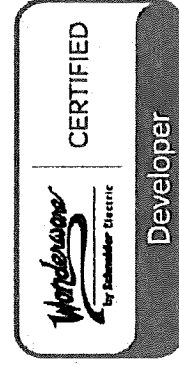
Schneider Electric - Wonderware Certified
Application Developer

In

InTouch 11.0 - 2014

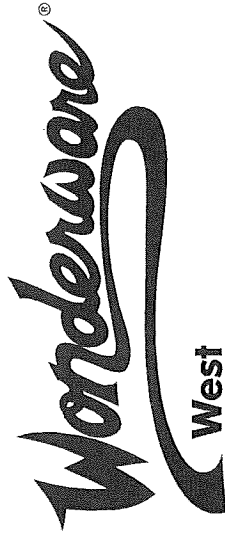
as of

8/5/2014



A handwritten signature in black ink, appearing to read 'Scott Kiser'.

Scott Kiser
Director, System Integrator Program
Schneider Electric - Wonderware



CERTIFICATE OF ATTENDANCE

This certifies that

Doug Sells

of

Quantum Integrated Solutions

HAS SUCCESSFULLY COMPLETED FOUR (4)
PROFESSIONAL DEVELOPMENT HOURS FOR ATTENDING THE

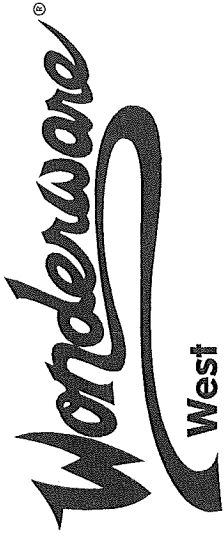


**WONDERWARE WEST CONNECT
USER CONFERENCE**

Tuesday, July 25, 2017 | Arizona Grand Resort | Phoenix, Arizona

A handwritten signature in black ink, appearing to read "Scott Spencer", written over a horizontal line.

Scott Spencer
President and General Manager, Wonderware West



CERTIFICATE OF ATTENDANCE

This certifies that

Doug Sells

of

Quantum Integrated Solutions

HAS SUCCESSFULLY COMPLETED FOUR (4.5)
PROFESSIONAL DEVELOPMENT HOURS FOR ATTENDING THE

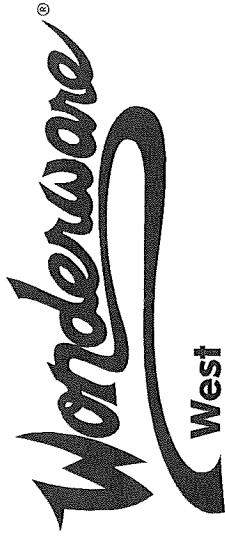


**WONDERWARE WEST CONNECT
USER CONFERENCE**

Tuesday, June 19, 2018 | Phoenix Airport Marriott | Phoenix, Arizona

A handwritten signature in black ink, appearing to read "Scott Spencer", written over a horizontal line.

Scott Spencer
President and General Manager, Wonderware West



CERTIFICATE OF ATTENDANCE

This certifies that

Kevin Terlecki

of

Quantum Integrated Solutions

HAS SUCCESSFULLY COMPLETED FOUR (4)
PROFESSIONAL DEVELOPMENT HOURS FOR ATTENDING THE

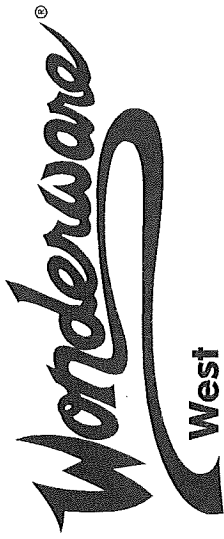


**WONDERWARE WEST CONNECT
USER CONFERENCE**

Tuesday, July 25, 2017 | Arizona Grand Resort | Phoenix, Arizona

A handwritten signature in black ink, appearing to read "Scott Spencer", written over a horizontal line.

Scott Spencer
President and General Manager, Wonderware West



CERTIFICATE OF ATTENDANCE

This certifies that

Mark Reski

of

Quantum Integrated Solutions

HAS SUCCESSFULLY COMPLETED FOUR (4)
PROFESSIONAL DEVELOPMENT HOURS FOR ATTENDING THE

 **WONDERWARE WEST CONNECT
USER CONFERENCE**

Tuesday, July 25, 2017 | Arizona Grand Resort | Phoenix, Arizona

A handwritten signature in black ink, appearing to read "Scott Spencer", written over a horizontal line.

Scott Spencer
President and General Manager, Wonderware West

This is to certify that

Quantum

is an

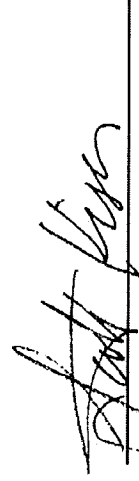
Archestra Certified

System Integrator

Effective as of:

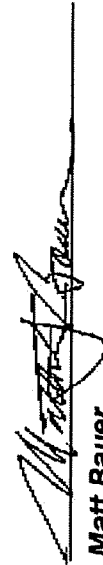
July 4, 2009





Scott Kiser

Director, Systems Integrator Programs
Wonderware



Matt Bauer

Vice President Ecosystems
Wonderware

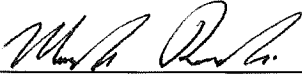
**CITY OF AVONDALE
ACKNOWLEDGMENT OF ADDENDA RECEIVED
REQUEST FOR QUALIFICATION**

SCADA Professional Engineering Services

PW 20-048

Addendum No. 1

Quantum Integrated Solutions, Inc., affirms that ADDENDUM No. 1 has been
(Name of Vendor/Designee)
received and that the information contained in ADDENDUM No. 1 has been incorporated in
formulating the Vendor's Offer.


_____, May 26, 2020
Signed Date

Mark Reski

Print Name

Vice President of Engineering

Title

Quantum Integrated Solutions, Inc

Company Name

2141 East Broadway Road, Suite 217

Address

Tempe, AZ 85282

City, State, Zip Code

END OF ADDENDUM No. 1

SECTION C - PPVF

PAST PERFORMANCE VERIFICATION FORM (PPVF)

Directions: Request Public/Private Agencies, for which you have **substantially completed** (Professional Services, CM@R or Design-Build projects) **similar work**, to fill out a copy of the PPVF for three (3) similar projects. Provide this form to the Owner or Owner's representative **directly responsible** for oversight of the project to complete and submit to the City via mail or fax prior to the date and time listed below. If the form is received after the date and time specified it will not be accepted. If your firm has completed previous similar work for the City, it is recommended that you utilize this experience. If your firm has not completed prior projects with City you will not be penalized.

SOQ Due Date and Time: [ENTER HERE] May 27, 2020 5:00 P.M.

PROJECT NAME & VALUE: CIP and Wastewater System design-build; \$163,000

PROJECT ROLE SUBMITTING FOR: (select one) ☐ PROFESSIONAL ☐ CM@R ☒ DB

NAME OF COMPANY TO BE EVALUATED: Quantum Engineering

NAME OF AGENCY OR FIRM SUBMITTING EVALUATION: Haskell

NAME/PHONE NUMBER OF PERSON SUBMITTING EVALUATION: Jacob Wadkins, (904) 357-4874

DATE PROJECT WAS SUBSTANTIALLY COMPLETED: Ongoing

QUESTIONS:

1. Has the above referenced project reached substantial completion? (select one) ☐ Yes ☒ No
2. What project delivery method was utilized? (select one) ☐ Design-Bid-Build ☐ CM@R ☒ DB

What type of services did this firm provide on the project referenced? _____

P&ID design, instrumentation specification, submittal reviews, PLC programming, and OIT programming

3. On a scale of 1 to 10 (1 being lowest, 10 highest), rate this company's performance on the following:
 - a. How would you rate work performed by this firm on your project? 10
 - b. Was the project completed on time? 10
 - c. Was the project completed within budget? 9
 - d. What was the quality of the work performed? 10
 - e. Was staff proactive in solving problems that may have occurred on your project? 10
 - f. What was the extent of staff turnover? (10 = low turnover, 1 = high turnover) 10
 - g. Would you be willing to contract with this firm again? (10 = Yes, 1 = No) 10

4. If it's over budget, please explain: _____

5. Any additional comments. _____

Please email to (JLIN@avondaleaz.gov) by the date and time shown above.

SECTION C - PPVF

PAST PERFORMANCE VERIFICATION FORM (PPVF)

Directions: Request Public/Private Agencies, for which you have **substantially completed** (Professional Services, CM@R or Design-Build projects) **similar work**, to fill out a copy of the PPVF for three (3) similar projects. Provide this form to the Owner or Owner's representative **directly responsible** for oversight of the project to complete and submit to the City via mail or fax prior to the date and time listed below. If the form is received after the date and time specified it will not be accepted. If your firm has completed previous similar work for the City, it is recommended that you utilize this experience. If your firm has not completed prior projects with City you will not be penalized.

SOQ Due Date and Time: [ENTER HERE] May 27, 2020 5:00 P.M.

PROJECT NAME & VALUE: Arc Flash and SCADA services, \$120,000

PROJECT ROLE SUBMITTING FOR: (select one) ☒ PROFESSIONAL ☐ CM@R ☐ DB

NAME OF COMPANY TO BE EVALUATED: Quantum Engineering

NAME OF AGENCY OR FIRM SUBMITTING EVALUATION: City of Avondale

NAME/PHONE NUMBER OF PERSON SUBMITTING EVALUATION: Randy Ziolkowski, (623) 333-4455

DATE PROJECT WAS SUBSTANTIALLY COMPLETED: June 30, 2019

QUESTIONS:

1. Has the above referenced project reached substantial completion? (select one) ☒ Yes ☐ No
2. What project delivery method was utilized? (select one) ☐ Design-Bid-Build ☒ CM@R ☐ DB

What type of services did this firm provide on the project referenced?

Quantum provided an Arc Flash study and report for the WRF facility, as well as various SCADA services throughout the duration of Quantum's JOC with the City

3. On a scale of 1 to 10 (1 being lowest, 10 highest), rate this company's performance on the following:
 - a. How would you rate work performed by this firm on your project? 10
 - b. Was the project completed on time? 10
 - c. Was the project completed within budget? 10
 - d. What was the quality of the work performed? 10
 - e. Was staff proactive in solving problems that may have occurred on your project? 10
 - f. What was the extent of staff turnover? (10 = low turnover, 1 = high turnover) 10
 - g. Would you be willing to contract with this firm again? (10 = Yes, 1 = No) 10
4. If it's over budget, please explain: No

5. Any additional comments, work performed was done in a professional and timely manner.

Please email to (JLIN@avondaleaz.gov) by the date and time shown above.

SECTION C - PPVF

PAST PERFORMANCE VERIFICATION FORM (PPVF)

Directions: Request Public/Private Agencies, for which you have **substantially completed** (Professional Services, CM@R or Design-Build projects) **similar work**, to fill out a copy of the PPVF for three (3) similar projects. Provide this form to the Owner or Owner's representative **directly responsible** for oversight of the project to complete and submit to the City via mail or fax prior to the date and time listed below. If the form is received after the date and time specified it will not be accepted. If your firm has completed previous similar work for the City, it is recommended that you utilize this experience. If your firm has not completed prior projects with City you will not be penalized.

SOQ Due Date and Time: [ENTER HERE] May 27, 2020 5:00 P.M.

PROJECT NAME & VALUE: Waddell Dam PLC 5 Assessment and Consulting, \$200,000

PROJECT ROLE SUBMITTING FOR: (select one) ☒ **PROFESSIONAL** ☐ **CM@R** ☐ **DB**

NAME OF COMPANY TO BE EVALUATED: Quantum Engineering

NAME OF AGENCY OR FIRM SUBMITTING EVALUATION: Central Arizona Project (CAP)

NAME/PHONE NUMBER OF PERSON SUBMITTING EVALUATION: Craig Truax, (623) 869-2163

DATE PROJECT WAS SUBSTANTIALLY COMPLETED: December 31, 2019

QUESTIONS:

1. Has the above referenced project reached substantial completion? (select one) ☒ **Yes** ☐ **No**

2. What project delivery method was utilized? (select one) ☐ **Design-Bid-Build** ☐ **CM@R** ☐ **DB**

What type of services did this firm provide on the project referenced? _____

Quantum completed an assessment of CAP's PLC 5 control system controlling Waddell Dam. After the assessment was complete, Quantum providing a report outlining risks resulting from the system's age. Quantum provided consulting services to form phasing plans for system migration to a non-obsolete control system.

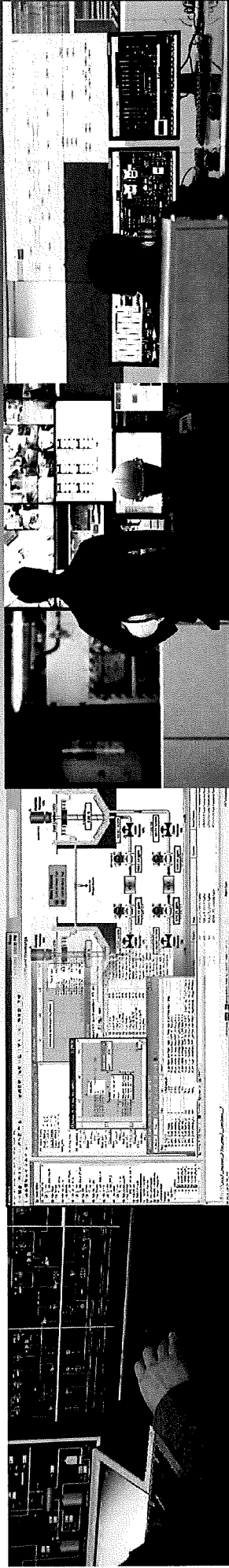
3. On a scale of 1 to 10 (1 being lowest, 10 highest), rate this company's performance on the following:

- | | |
|--|-----------|
| a. How would you rate work performed by this firm on your project? | <u>10</u> |
| b. Was the project completed on time? | <u>10</u> |
| c. Was the project completed within budget? | <u>10</u> |
| d. What was the quality of the work performed? | <u>10</u> |
| e. Was staff proactive in solving problems that may have occurred on your project? | <u>10</u> |
| f. What was the extent of staff turnover? (10 = low turnover, 1 = high turnover) | <u>10</u> |
| g. Would you be willing to contract with this firm again? (10 = Yes, 1 = No) | <u>10</u> |

4. If it's over budget, please explain: _____

5. Any additional comments. _____

Please email to (JLIN@avondaleaz.gov) by the date and time shown above.



ENGINEERING • DESIGN • AUTOMATION • SCADA

Avondale

Aspiring. Achieving. Accelerating.

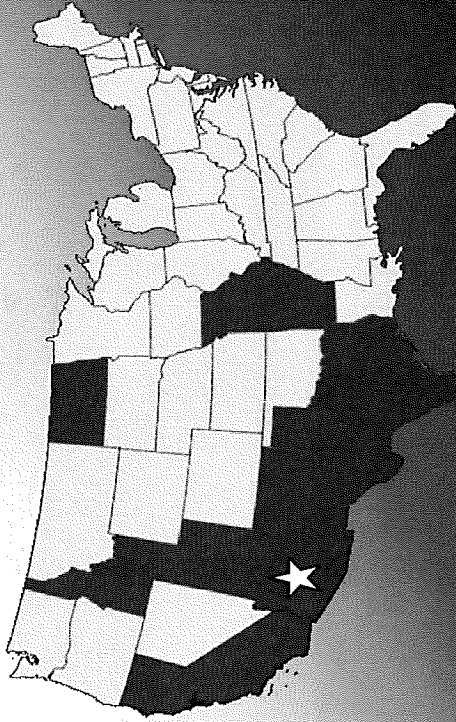
City of Avondale

RFQ PW 70-048

City of Avondale

SCADA Professional Engineering Services

Doug Sells - Vice President, Operations
Mark Reski, P.E. - Vice President, Engineering
Kevin Terlecki - Senior Process Systems Engineer



INDUSTRIES



Water / Wastewater

Mining

Semiconductor

Manufacturing

Food & Beverage

Oil and Gas

Virtual Business Cards



SCAN ME

SCAN ME

SCAN ME

Doug

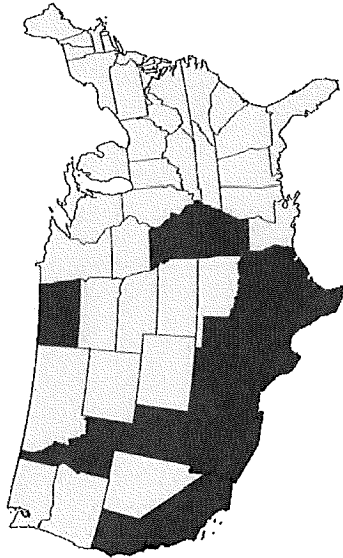
Mark

Kevin



Experienced • Trusted • Committed • Successful

CLIENT LOCATIONS



ENGINEERING

- Licensed P.E.
- Design
 - Electrical
 - Process Design
 - Arc Flash
 - Networking
 - Standards
- Specification Design
- Consulting
- Administration
- Inspection
- Commissioning
- Procurement
- Training

PROCESS & CONTROLS

- Programming
- SCADA
- System Integration
- Infrastructure
- Building Management Systems
- Data Acquisition
- Analytics
- Cyber Security



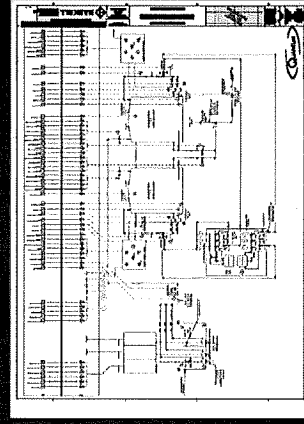
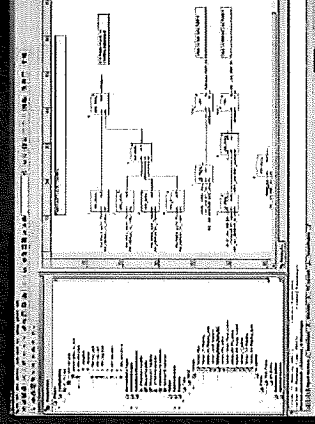
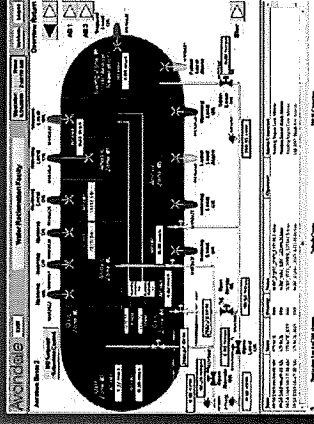
1.1 Please elaborate your past SCADA related project experiences in the past two (2) years.

ENGINEERING SCADA SERVICES

- **Town of Cave Creek (2-years)**
 - Phase 1 – SCADA Assessment
 - Phase 2 – Design
 - Phase 3 – Construction Services
- **Central Arizona Project (1.5 years)**
 - PLC and Controls Assessment
- **Abbott Labs (0.5 years)**
 - Design of Upgraded PLC and VFD Cabinets for SCADA
- **Town of Gilbert – SCADA (1.5 years)**
 - Network Architecture Design
 - SCADA Architecture and Implementation
- **Town of Gilbert – Candlewood (Current)**
 - Preconstruction Design Engineering Services for Electrical, Instrumentation, Controls and SCADA
- **Undisclosed Energy Drink Manufacturer**
 - P&ID and Electrical Design
 - PLC and SCADA Design
 - Instrumentation Specification
 - Submittal Review

INTEGRATION SCADA SERVICES

- **City of Avondale**
 - Wonderware SCADA Upgrade
 - PLC Programming for WRF Expansion
 - Emergency Support
- **City of Phoenix**
 - Sky Harbor Airport Baggage Handling System PLC and SCADA
 - Sky Train Power Monitoring SCADA
- **City of Boise, ID**
 - BACnet Integration for Wonderware SCADA
- **Town of Gilbert**
 - PLC and SCADA Programming
 - Wastewater Cellular Network and VPN Implementation
- **Liberty Utilities**
 - PLC Programming Improvements
 - PLC Hardware Upgrades
 - SCADA Improvement
- **Frito Lay**
 - PLC and SCADA Programming
 - Emergency Support



1.2 Please give us one (1) example of any conflict or problem you have encountered on SCADA related projects in the past two (2) years, describe what it is and how you resolved it.

PROBLEM

A local municipality operates an 11-mile pipeline, which crosses two other cities to deliver water to a treatment facility. Four pump station RTU cabinets sit along the pipeline, controlling and monitoring the flow of water.

To provide communications throughout the 11 miles, six 900MHz radios were in use to allow the individual RTU PLCs and water treatment plant to be in touch. Since the initial communication process was put in place, urban growth has begun to affect the performance of the wireless radios. Additional obstacles were also present, including a 650' elevation difference between the first RTU and treatment facility. Inconsistent and unreliable communication made it almost impossible to control the four pump stations remotely.

The communication issues were critical enough that it represented a significant risk regarding water production and delivery.

CASE STUDY QUANTUM

ABOUT QUANTUM
Quantum is a leading provider of SCADA and RTU solutions for water and wastewater utilities. Our solutions are designed to meet the unique needs of each client, ensuring reliable and secure communication for their critical infrastructure.

CUSTOMER
City of Red Lion, PA

LOCATION
York, PA

CHALLENGES
• Inconsistent and unreliable communication between the four pump stations and the treatment facility.
• Limited range of the existing 900MHz radios due to urban growth and elevation differences.

RESULTS
• Improved communication reliability and range.
• Reduced risk of communication failure during critical operations.

PRODUCTS
• Quantum RTU and PLC solutions.
• Wireless communication systems.

ADDITIONAL INFORMATION
Quantum was selected as the preferred vendor for this project due to its extensive experience in providing reliable and secure communication solutions for water and wastewater utilities.

RL

Red Lion, PA

Quantum

Definition of Problem

Customer

Location

Challenges

Results

Products

Additional Information

STEPS TO RESOLUTION

1. Quantum met with owner stakeholders to assess the details and urgency of the problem
2. Quantum consulted with our technology partners about solution feasibility and delivery timeline
3. Recommended solution and alternatives were presented to owner
4. Quantum engaged with the owner's wireless carrier to create a custom 4G LTE data plan and architecture
5. Executed RTU panel field modifications and installation of Red Lion RAM units
6. Commissioning and configuration of wireless solution
7. Reliable wireless communication confirmed



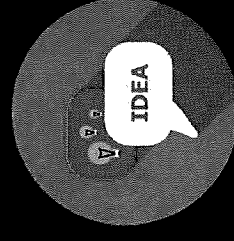
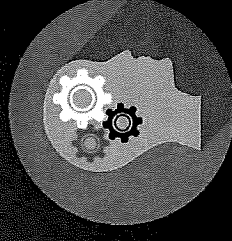
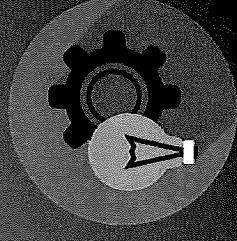
1.3 Please address what you envision as the challenges and the opportunities for the SCADA to be with City of Avondale.

TOP 5 CHALLENGES

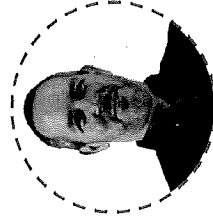
1. Legacy PLC hardware and communication protocols
2. Obsolete operating systems and mature Wonderware SCADA version
3. Cyber security requirements in accordance with America's Water Infrastructure Act (AWIA) – Oct. 2018
4. Existing plans and specifications that are not current with industry standards or expectations
5. Networking and connectivity challenges as more devices can be connected to SCADA

GOOD NEWS

- All of these challenges or opportunities can be addressed
- Quantum attends industry conferences and training
 - Fun fact: We traveled to Nice, France for a Schneider Electric conference
- We employ professionals that specialize in SCADA consulting, design and implementation services



2.1 Please indicate the roles and responsibilities of each key position who will be assigned to the City.



Doug Sells – Project Manager

- Scheduling
- Project Coordination
- Contract Requirements



Mark Reski, P.E. – Lead Engineer

- P&ID and Electrical Design
- Consulting and Inspections
- Control Strategies
- Complex SCADA Applications



Kevin Terlecki – Senior Systems Engineer

- SCADA Development
- PLC Programming
- Historical database work
- Control System Commissioning



Seth Warnke – Senior Systems Engineer

- SCADA Graphics Work
- PLC Programming
- Troubleshoot Wiring
- Instrument Configuration



Tyler Davis – Process & Network Tech.

- Control System Networking
- Computer Operating System Support
- Control System Cyber Security



Everett Pennington – Engineering Tech.

- AutoCAD
- Instrumentation Calibration
- Commissioning Support



Additional Resources

Quantum has other additional local resources to scale up or down according to the City's needs.

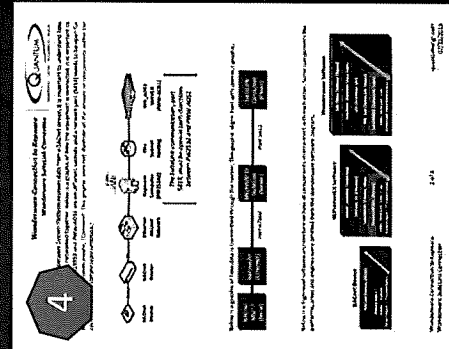
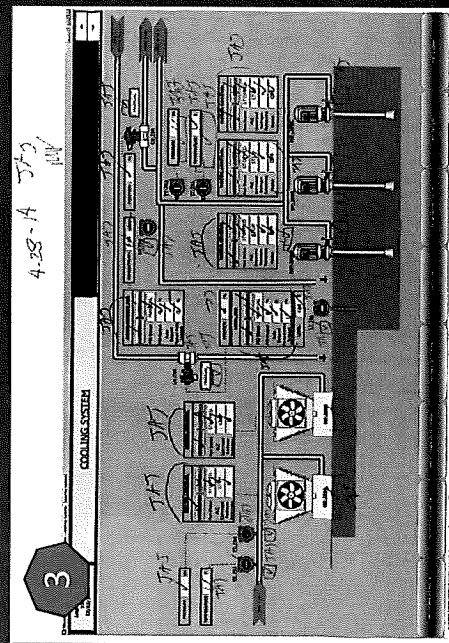
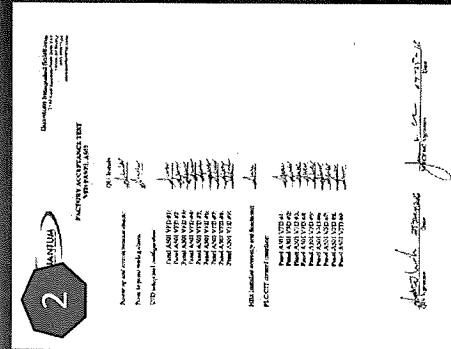
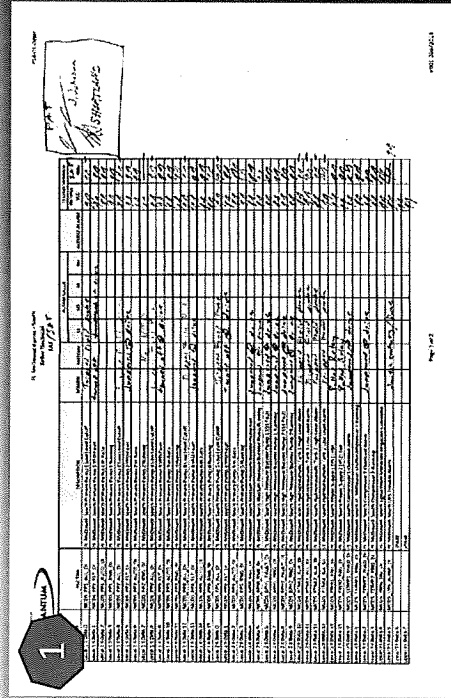
ALL STAFF RESOURCES WORK IN OUR TEMPE OFFICE



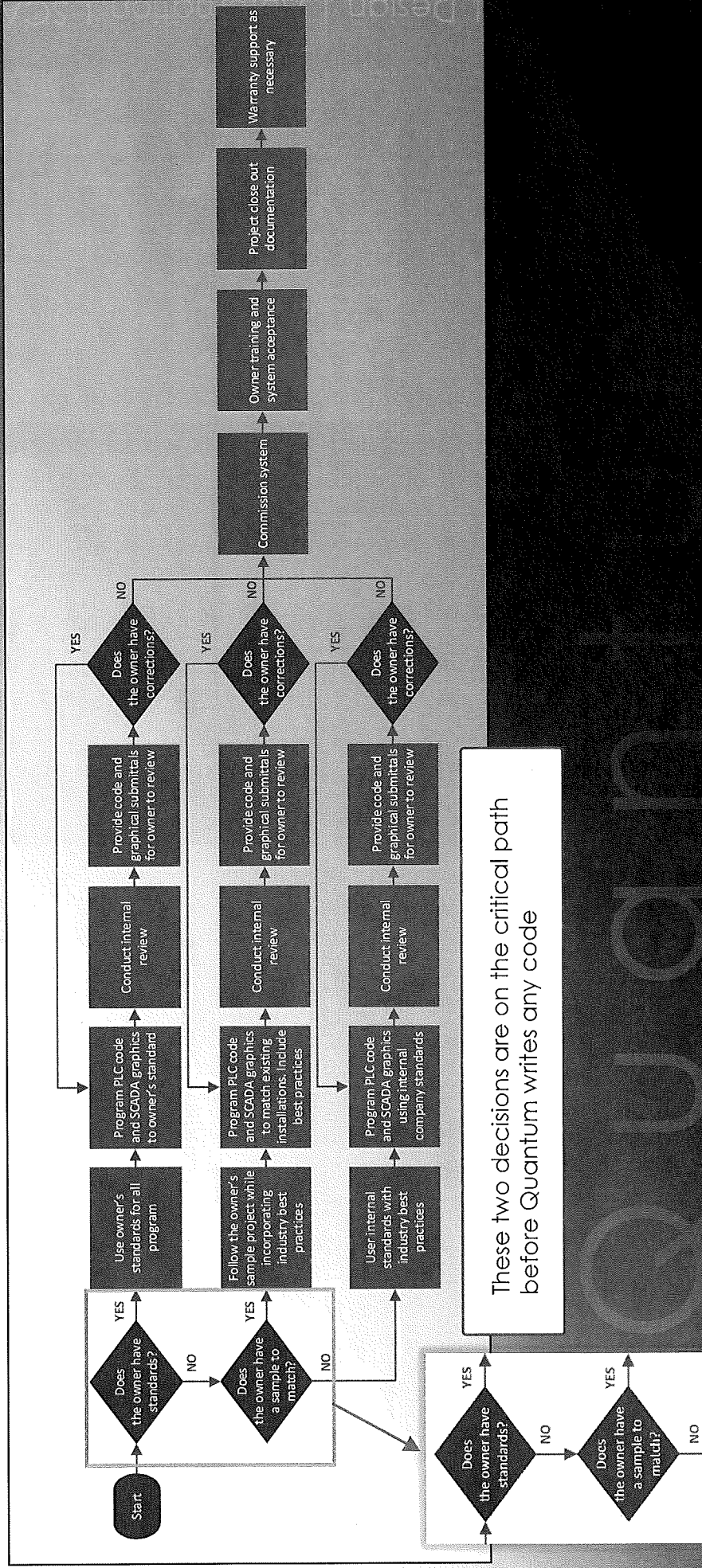
2.2 Please explain what checks and balances do you use to ensure quality control for your product/programming.

INTERNAL QUALITY CONTROL

- Documentation
 1. Factory Acceptance Test conducted with the panel fabricator
 2. A general factory assembly check list
 3. Internal sign off for SCADA screens prior to Factory Acceptance Test and Site Acceptance Test
 4. A 'How-to-Guide' for engineers to follow to ensure consistency and minimize errors.
- Weekly staff meeting including Quality Assurance review and emphasis
- Additionally, Quantum fosters an internal culture of team collaboration to identify errors or mistakes



2.3 Please describe the process you use for writing a piece of code, from requirements to delivery.



2.4 Describe the most challenging written technical proposal or report that you've had to complete.

CENTRAL ARIZONA PROJECT

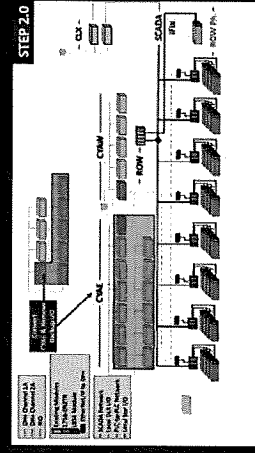
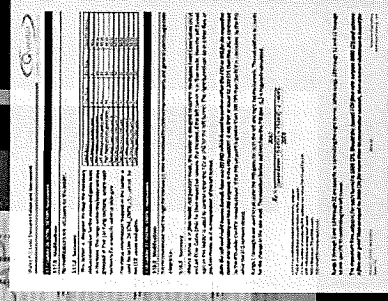
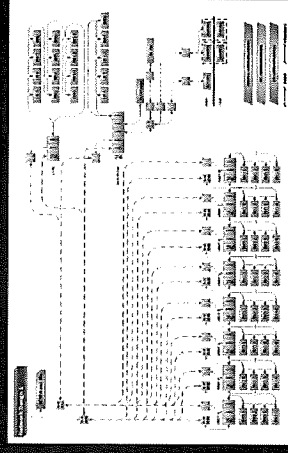


Report Highlights

- Completed in 2019 by Mark Reski, P.E.
- Report was nearly 200 pages
- Assessment of Waddell Dam
 - Located at Lake Pleasant
- Reviewed over 1,000 electrical and PLC schematics
- One and a half years of detailed work
- Reviewed and evaluated 10 PLC programs
- Presented phasing plans
- Generated cost estimates
- Provided design and construction alternatives

Challenges

- Documentation was handwritten from the 1980's
- Limited historical knowledge of the hydro dam
- Out-of-business hardware and component manufacturers presented documentation issues
- Facility was currently undergoing electrical circuit breaker upgrades
- Legacy SCADA components and network
- Two different SCADA manufacturers



3.1 Please address how you will handle an emergency support service, from the moment you receive a notification from the City to the end. Be specific about the process and time to respond.

SCADA SUPPORT

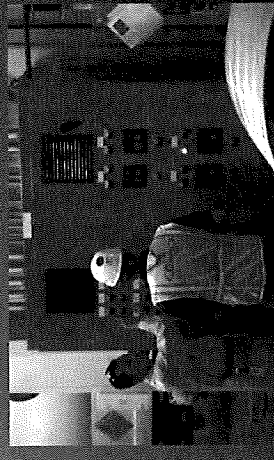
- Quantum already supports the City of Avondale for emergency PLC and SCADA needs
- Response times during normal business hours are usually **under an hour**
- We pride ourselves on being responsive to SCADA owners with emergency issues
- A recent response was in late April 2020, to support an issue with the Wonderware SCADA system
 - Matter resolved within **3-hours**
 - Incident report supplied to the City

ENGINEERING SUPPORT

- Emergency engineering support requests are rare
- Able to mobilize a response within hours
- Depending on the type of engineering work necessary, deliverable times will vary

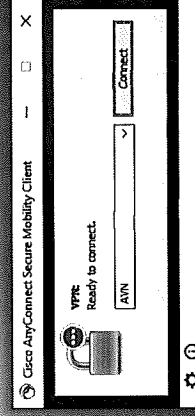
SCADA VS. ENGINEERING SUPPORT

- Emergency support for SCADA and PLC programming is typically within 4 hours
- Engineering emergency support varies depending on the type of design services necessary



**EMERGENCY-
CRITICAL RESPONSE
IS WITHIN 4 HOURS**

Quantum utilizes Microsoft 365 with Teams and Business Voice to quickly route support inquiries to on-call staff and client content experts.



We use the Avondale VPN client for fast response times



3.2 The selected firm shall be required to participate in Pre-Bid meetings as needed. How would you handle conflict if someone disagrees with your vision on the design?

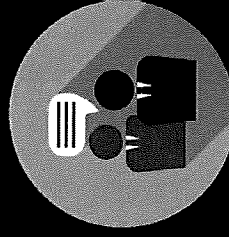
At all times, it is important to remember the goal of any design should be to further the best interests of the City and its residents

MAJOR DESIGN CHANGE

- Listen to the person's concern
- Request notification in writing so that a formal response can be provided
- Determine if there is cost impact
- Discuss the concern with the City
- Hold a meeting with all parties (if necessary)
- Make a decision with the City's best interest in mind
- Issue a formal response

MINOR DELIVERY METHOD CHANGE

- Listen to the person's delivery concern
- Request notification in writing so that a formal response can be provided
- Discuss with the City (if necessary)
- If the delivery method achieves the same end goal without design changes, cost impacts, schedule delays or safety concerns, issue a formal response to allow the person to implement their delivery method. Otherwise issue a directive that the current methods stands.



THANK YOU



FEE SCHEDULE

UPON CITY'S REQUEST, THE CONSULTANT SHALL PROVIDE A QUOTE WITH A LUMP SUM PRICE FOR A PROJECT OR A QUOTE WITH TIME AND MATERIALS, BASED ON THE FOLLOWING HOURLY RATES WITH A NOT-TO-EXCEED TOTAL PRICE. THE CITY WILL PAY THE CONSULTANT IN FULL WITHIN 30 CALENDAR DAYS OF WHEN THE SERVICE WERE FULLY PROVIDED.



LABOR CLASSIFICATIONS - AVONDALE			
Position Title	Position Description	Unit	Labor Cost
Project Manager	Project oversight, scheduling and coordination	Hours	\$ 161.00
Professional Engineer	Licensed professional engineering (P.E.) services required for, but not limited to, development of stamped design drawings and specifications, submittal reviews and inspection services	Hours	\$ 159.00
Network Engineer	Network infrastructure design, implementation and troubleshooting	Hours	\$ 147.00
Systems or Process Engineer	PLC/SCADA programming, testing and commissioning	Hours	\$ 141.00
Technician/Drafter	Support personnel for services such as AutoCAD design, equipment submittal development, project documentation	Hours	\$ 108.00
Administrative Assistant		Hours	\$ 75.00
*Any emergency or T&M work that requires overtime will be billed at 1.5 times the listed Unit Prices.			

SAMPLE TASK ORDER/PURCHASE ORDER NO. ____
BETWEEN
THE CITY OF AVONDALE
AND
QUANTUM INTEGRATED SOLUTIONS, INC.

THIS TASK ORDER ____ (this "Task Order") is entered into as of _____, 2020, between the City of Avondale, an Arizona municipal corporation (the "City"), and QUANTUM INTEGRATED SOLUTIONS, INC., a(n) Arizona Corporation ("Consultant").

RECITALS:

A. The City and the Consultant entered into an Professional Service Agreement, No. _____, dated _____ (the "PSA"), for Consultant to be considered for _____. All capitalized terms not otherwise defined in this Task Order have the same meanings as set forth in the PSA.

B. The PSA contemplated the City would request Statement of Work ("SOW") for Task Orders when Work was deemed necessary.

C. The City has requested SOW, Consultant has provided, a SOW to _____ (the "Work"), attached hereto as Exhibit A consist of scope of work, fee schedule, task order schedule and deliver.

D. The Consultant shall turn in all deliverables to City Representative in the required format specified by the City within the Task Order Schedule.

AGREEMENT

NOW, THEREFORE, in consideration of the foregoing introduction and recitals, which are incorporated herein by reference, the following mutual covenants and conditions, and other good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, the City and the Consultant hereby agree as follows:

1. Scope of Work; Technical Specifications and Drawings. The Consultant will perform the Work in accordance with the SOW attached hereto as part of Exhibit A.

2. Additional Services. (If applicable)

3. Period of Performance and Work Schedule. The agreed-upon period of performance for the Work will be specified in Task Order Schedule attached hereto as part of Exhibit A.

5. Compensation. The City shall pay Consultant an amount not to exceed \$_____ for the Work at the rates set forth in the Fee Schedule of applicable unit prices, attached hereto as part of Exhibit A.

6. Allowances. A list of allowances related to the Work and a statement of their basis is attached hereto as part of Exhibit A.

8. Assumptions. A list of the assumptions and clarifications made by the Consultant in the preparation of the SOW is attached as part of Exhibit A.

9. City Representative. The City Representative who will accept the completed Work is _____.

10. Acceptance Period. The time limit for acceptance of the SOW is 60 days unless extended by mutual, written agreement of the City and the Consultant.

11. Effect of Task Order. During the term of the PSA, the Consultant shall perform the work after issuance of a Task Order, all terms and conditions of the PSA shall remain in full force and effect in this Task Order. In the event of any inconsistency, conflict or ambiguity among the terms of this Task Order, any amendments, the Statement of Work, Task Order, Purchase Order, the Fee Schedule, the contract clauses in PSA and the Consultant's SOQ, the documents shall govern in the order listed herein.

12. Non-Default. By executing this Task Order, the Consultant affirmatively asserts that (i) the City is not currently in default, nor has been in default at any time prior to this Task Order, under any of the terms or conditions of the PSA, including any Task Orders related thereto, and (ii) any and all Consultant claims, known and unknown, relating to the PSA or any related Task Order and existing on or before the date of this Task Order are forever waived.

13. Conflict of Interest. This Task Order and the PSA may be canceled by the City pursuant to ARIZ. REV. STAT. § 38-511.

[SIGNATURES ON FOLLOWING PAGES]

IN WITNESS WHEREOF, the parties hereto have executed Task Order No. X as of the date and year first written above.

“City”

CITY OF AVONDALE,
an Arizona municipal corporation

Charles A. Montoya, City Manager

Date: _____

ATTEST:

Marcella Carrillo, City Clerk

“Consultant”

QUANTUM INTEGRATED SOLUTIONS, INC.
a(n) Arizona Corporation

By: _____

Name: _____

Title: _____

EXHIBIT A
TO
TASK ORDER ____
TO
TASK ORDER CONTRACT
BETWEEN
CITY OF AVONDALE
AND
QUANTUM INTEGRATED SOLUTIONS, INC.

[SOW]

See the following pages.

**LINKING AGREEMENT
BETWEEN
THE CITY OF GLENDALE, ARIZONA
AND
QUANTUM INTEGRATED SOLUTIONS, INC.**

EXHIBIT B
Scope of Work

PROJECT

Consultant will provide professional consulting services of the City's Supervisory Control & Data Acquisition (SCADA) and Electrical Systems as needed.

**LINKING AGREEMENT
BETWEEN
THE CITY OF GLENDALE, ARIZONA
AND
QUANTUM INTEGRATED SOLUTIONS, INC.**

EXHIBIT C

METHOD AND AMOUNT OF COMPENSATION

Consultant will be compensated per Task Fee Schedules agreed upon by both parties for SCADA and electrical services as needed.

NOT TO EXCEED AMOUNT

The total amount of compensation paid to Contractor for full completion of all work required by the Project must not exceed \$350,000 for the entire term of the Agreement.

DETAILED PROJECT COMPENSATION

Detailed individual project compensation will be outlined in the Task Fee Schedule provided by the Consultant for SCADA and electrical services as requested by the City.