



# ORANGE WATER AND SEWER AUTHORITY

*A public, non-profit agency providing water, sewer and reclaimed water services  
to the Carrboro-Chapel Hill community.*

## **REQUEST FOR QUALIFICATIONS**

**Orange Water and Sewer Authority  
SCADA Master Planning Support and Implementation Services  
CIP Project No. 272-49  
Issue Date: April 14, 2020**

**Submittal Deadline: May 14, 2020**

### **1. INTRODUCTION**

Your firm is hereby invited to submit a written statement of qualifications to provide professional engineering **and technology services** for the development and implementation of a SCADA Master Plan for the Orange Water and Sewer Authority. The scope of services needed includes an inventory of existing systems, recommendation on future systems, implementation assistance for near term projects and programmatic services. In general, the work will consist of recommending hardware and software upgrades, training, change management and decision-making support for operations and capital budgeting. Several more specific tasks envisioned in this project are generating inventories of existing systems, recommending upgrades and implementation strategies for PLC networks and filter panels, preparation of construction plans and specifications, development of commissioning plans and construction administration/inspection of these projects. More general duties may include advising OWASA on technology trends, hardware obsolescence, digital security and software interoperability. The selected firm will also have demonstrated ability to prepare high quality documentation, enforce standard practices and programming techniques with contractors and prepare schematic drawings of network infrastructure for IT staff review.

Examples of known near term projects include, replacement of the Water Treatment Plant (WTP) main PLC and control room, WTP software licensing and historian system refresh, SCADA HMI server and software upgrade at the WTP, mobile WWTP data acquisition (MDA) system support and failure analysis for risk mitigation. OWASA intends to negotiate a contract with a single firm with demonstrated expertise in evaluation of SCADA systems including hardware, software, personnel needs and instrument integrations in active water and wastewater treatment facilities.

OWASA will conduct a Qualification-Based Selection process to identify the best qualified firm with which to negotiate a contract and will consider firms with experience that includes technology specialists or teams that present the best solution for our needs. All firms submitting qualifications must have a proven track record in system integration and multiyear programmatic efforts for technology infrastructure. Finally, the contractor will evaluate OWASA's needs and expectations in order to develop multi-year budget estimates for capital and operational costs. These estimates will include scenarios for different hardware, software and personnel plans for OWASA's consideration.

and decision making.

**To be considered by OWASA, responses to this RFO must be received by 2:00 p.m. EST on Thursday, May 14, 2020. Refer to Section 5 – Submittal Requirements for additional details.**

## **2. OBJECTIVES**

The primary objectives of the project are to:

- a) Generate an inventory of major SCADA components in the OWASA water and wastewater treatment systems,
- b) Develop a Master Plan to guide current and future SCADA projects,
- c) Implement near term SCADA projects through a combination of direct integration contracts and as part of other construction projects, and
- d) Provide on-going support for future projects and decisions affected by the SCADA Master Plan.

## **3. BACKGROUND AND DESCRIPTION**

OWASA's vertical assets include a water plant, a wastewater plant, a reclaimed water system, an offsite biosolids storage site, two reservoirs, a raw water quarry, sewage pumping stations, ground and elevated water tanks, water booster pump stations, and finished water interconnections with neighboring utilities. OWASA has a well-built GIS system, a vertical and horizontal asset management system (MP2 and Cityworks, respectively) and an Automated Meter Reading Infrastructure. The proliferation of data and the lack of a clear strategy for the evaluation of SCADA and related technology projects has led to confusion and uncertainty about the goal of individual upgrades and concern about the coordination between current and future projects. After a recent review of resiliency and criticality for the water treatment plant, the SCADA system and various control element deficiencies were identified. Specifically, inadequate feedback loops for pump on/off and remote/local signals, equipment obsolescence, inadequate historical backup, single points of failure, are a risk for the Water Treatment Plant's reliable operation. Similar studies at the WWTP have identified deficiencies in hardware and software at the plant. These studies will be made available to the selected firm.

In the past, OWASA has executed SCADA upgrade projects through general construction projects or directly with our current Systems Integrator, CITI. The results have been satisfactory in most cases but have often lacked a coherent "look and feel". Additionally, the systems in place have accessibility limitations for historical data review or troubleshooting and are not being used to their potential.

OWASA recently replaced its SCADA server hardware and software at the WWTP and is currently using Ignition as its SCADA platform. The WTP operates on a single server that is not fully virtualized and runs an iFix application. OWASA's PLC's are generally Modicon designs with custom I/O modules, although there are some vendor specific units. Internal communication on plant sites are provided by fiberoptic loops combined with Hirschman switches managed dually by OWASA staff and the systems integrator. Off-site network communication primarily occurs over a Verizon private

network relying on 4G modems and a variety of remote I/O or remote PLC panels. Some critical systems have redundant hard copper phone lines and autodialers.

OWASA does not have written standards or protocols for programming or control system projects and has relied in the past on our engineers and technology professionals to dictate the design of each subsystem.

#### **4. SCOPE OF SERVICES**

The engineering services required for this project are expected to be completed as noted above and in general accordance with a scope of services as needed to accomplish the tasks listed below. **However, the final scope of services will be negotiated with the selected engineering firm and may include modified and/or additional tasks.**

- a) Evaluation and design services may include:
  - i) Inventorying existing systems and providing compiled schematic drawings,
  - ii) Evaluation of existing SCADA systems for interoperability and future upgrades,
  - iii) Preparation of project plans, schedules and budget estimates,
  - iv) Development of Master Plan and facilitation of workshops for scenario planning,
  - v) Documentation of existing conditions, standards and training,
  - vi) Development of construction and construction sequencing plans, and
  - vii) Development of contract documents and technical specifications for bidding.
  
- b) Construction Services may include:
  - i) Negotiation of SCADA services and contracts for software and hardware upgrades,
  - ii) Management of schedules and budgets for programmatic services including interfacing with other engineers and contractors
  - iii) Bid assistance,
  - iv) Construction Inspection/Construction Administration Service, and
  - v) Preparation of Record Drawings.
  - vi) Training assistance

The draft and final plans, reports, etc. will be provided in hard and digital formats in a manner acceptable to and usable by OWASA. The actual list and format of deliverables will be negotiated with the selected firm.

#### **5. SUBMITTAL REQUIREMENTS**

**Responses to this RFQ must be received by OWASA no later than 2:00 p.m. EST on May, 14, 2020. To be considered, please submit four (4) hard copies and one (1) electronic copy in PDF format of the required qualifications to:**

Simon Lobdell, P.E.  
Utilities Engineer

Orange Water and Sewer Authority  
400 Jones Ferry Road  
Carrboro, North Carolina 27510

Consultants' qualifications (**not including** resumes) shall be limited to a maximum of 10 double-sided pages (i.e., 20 pages printed double-sided onto 14 sheets of 8-1/2"x11" paper).

Each submittal must include the following in order to be considered:

- a) **Statement of Interest: [5 points]** This shall clearly indicate your firm's interest in performing the work on this project. Specifically, how does this project fit in with the firm's business capabilities and expertise.
- b) **Project Team: [30 points]** The submittal shall include a listing or organization chart of the proposed project team members, including sub-consultants (if any), and clearly identify their respective roles on the project. Each proposal shall include resumes of key team members. The primary contact shall be clearly identified. Teams with demonstrated past experience on similar projects will be ranked highest.
- c) **Project Approach: [30 points]** Clearly describe your proposed approach to developing the Master plan, and providing other services identified here. Provide detailed information that will allow OWASA staff to distinguish your team from other firms that may be competing for this project.
- d) **Project Schedule: [10 points]** OWASA has on-going projects that have critical decisions that will impact any SCADA plan. The ability to quickly provide high level plans and move into the detailed elements of near-term projects will be critical. OWASA intends to select a firm and award a contract by June 2020 and the selected firm shall begin work immediately thereafter.
- e) **Past Experience and References for Similar Projects: [20 points]** Provide references (including name and contact information for the client) and summaries for at least three SCADA master plans or major SCADA upgrade projects completed by the proposed team in the last (5) years for other clients. Also indicate who served as your project manager for each project, and who had key lead technical roles in those projects. Preference will be given to firms with experience evaluating and designing rehabilitation/replacement projects in active drinking water treatment facilities requiring uninterrupted operation of the facilities.
- f) **Project Concerns: [5 points]** Identify potential concerns or hindrances to successful completion of the project.
- g) **Contract Objections:** It is OWASA's intention to use a contract similar to the one included as Attachment 1. If your firm objects to any element of the contract, please state the objections in the submittal.

## **6. SELECTION PROCESS**

OWASA intends to select a firm on a qualifications within three weeks of receiving the responses to this RFQ, and expects to complete final scoping and contract negotiation in May 2020. OWASA reserves the right to reject any and all proposals, to waive any and all formalities, and to disregard all nonconforming or conditional submittals.

OWASA may elect to conduct face-to-face interviews with two or more firms being evaluated prior to making a final selection.

If OWASA cannot reach an agreement with the initially selected firm, OWASA will then proceed to negotiate with other firms that submitted qualifications, or will reissue the RFQ.

## **7. OWASA POINT OF CONTACT**

Simon Lobdell will be OWASA's primary point of contact for all consultant selection matters relating to this project. **All questions regarding this Request for Qualifications must be emailed on or before Thursday, May 7, 2020** to Mr. Lobdell at [smlobdell@OWASA.org](mailto:smlobdell@OWASA.org).

A non-mandatory digital meeting will be held on Wednesday, April 29<sup>th</sup>, 2020 at 2:00 p.m. To be included in the meeting, you must contact Simon Lobdell at [smlobdell@owasa.org](mailto:smlobdell@owasa.org) for an invitation.

## **8. SUPPLEMENTAL INFORMATION**

- Attachment 1 – Design Services Agreement
- Attachment 2 – Potential Programmatic Task Items at OWASA facilities

*Request for Qualifications  
SCADA Master Plan for Orange Water and Sewer Authority  
April 14, 2020*

**ATTACHMENT 1**

**AGREEMENT  
BETWEEN**

**ORANGE WATER AND SEWER AUTHORITY,**

a political subdivision of the State of North Carolina, its successors and assigns, hereinafter referred to as “Owner” through its Board of Directors,

and

**CONSULTANT NAME**

its successors and assigns, hereinafter referred to as “Consultant”

IN ORANGE COUNTY NORTH CAROLINA

FOR  
CONSULTING SERVICES

WITNESSETH:

WHEREAS, Owner intends to **conduct a study of the sanitary sewer system within its service area;**  
**and,**

WHEREAS, Owner requires certain consulting services in connection with the project (the Services); and,

WHEREAS, Consultant is prepared to provide the Services;

NOW THEREFORE, in consideration of the mutual terms and conditions, promises and payments contained in this Agreement, Owner and Consultant agree as follows:

ARTICLE 1 - TIME FOR PERFORMANCE

1.1 The effective date of this Agreement is \_\_\_\_\_ and shall remain in effect until terminated. Consultant shall perform the services described in Attachment B (herein, the Project Scope of Services) to this Agreement. Owner will issue a separate Notice to Proceed for the work, and the work shall proceed according to the schedule as described in the Project Scope of Services. Any work initiated by Consultant prior to the Owner’s written authorization of the Project will be at the Consultant's sole risk.

ARTICLE 2 - GOVERNING LAW

2.1 This Agreement shall be governed by the laws of the state of North Carolina. Any disputes which may arise out of this agreement shall be filed in the North Carolina Court of Justice, The Superior Court of Orange County NC.

### ARTICLE 3 - SERVICES TO BE PERFORMED

3.1 Consultant shall perform the Services described in the Project Scope of Services as authorized under this Agreement. Consultant shall provide all services as set forth in the Project Scope of Services, including the necessary, incidental and related activities and services required and contemplated in the Consultant's level of effort.

3.2 Consultant and Owner acknowledge that the Scope of Services described for the Project does not delineate every detail and minor work task required to be performed by Consultant to complete the work authorized by the Scope of Services. If during the course of the performance of the services authorized by this Agreement, Consultant determines that work should be performed to complete the Project which is in the Consultant's opinion outside the level of effort originally anticipated, whether or not the Project Scope of Services identifies the work items, Consultant shall notify Contract Administrator in writing within 30 days and wait for Owner approval before proceeding with the work. If Consultant proceeds with said work without notifying the Contract Administrator, said work shall be deemed to be within the original level of effort described in the Project Scope of Services. Notice to the Contract Administrator does not constitute authorization or approval by Owner to perform the work. Performance of work by Consultant outside the originally anticipated level of effort without prior written Owner approval is at the Consultant's sole risk.

3.3 Upon mutual written agreement, the Project Scope of Services may be modified. The Owner and the Consultant may negotiate additional scopes of services, compensation, time of performance and other matters related to the project. If the Owner and Consultant cannot contractually agree, Owner shall have the right to immediately terminate negotiations at no cost to the Owner and to procure services from another source.

### ARTICLE 4 - OWNER'S RESPONSIBILITIES

4.1 Owner shall be responsible for all matters described in the Project Scope of Services (Attachment B).

### ARTICLE 5 - COMPENSATION AND METHOD OF PAYMENT

5.1 Owner agrees to pay Consultant as compensation for performance of services as described in the Project Scope of Services. Compensation may be as a lump sum or as maximum amount not-to-exceed. The maximum amount not-to-exceed method of compensation will utilize hourly billing rates established as part of this Agreement.

5.2 Consultant shall separately invoice for services rendered each month. Each project invoice shall reflect percentage of work completed to date and for the invoiced month. Invoices shall provide a detailed breakdown of hours worked, hourly billing rates by each individual, and the expenses attributable to the project during the period.

5.3 The Owner shall assign a Project CIP Number, as well as a Purchase Order Number for the Project to facilitate internal contract administration. Each Project Invoice must reference the assigned CIP Number and the Purchase Order Number for the Project and be sent directly to the Owner's Project Manager as assigned. Payment terms shall be the net invoice amount within 30 days.

5.4 The hourly billing rates for this agreement are set forth in Attachment A to this agreement and shall be used for work compensated on a maximum not-to-exceed basis. Beginning two years from the effective date of the agreement, billing rates may be amended annually upon mutual agreement of both parties and upon execution of formal contract amendment documenting the changes to Attachment A.

5.5 The reimbursable expenses for this agreement are set forth in Attachment A to this agreement and shall be used for maximum amount not-to-exceed compensation. Consultant shall be allowed to adjust expense items in accordance with changes in IRS criteria for deductible expenses.

5.6 Consultant shall keep such records and accounts and require any and all consultants and sub-consultants to keep records and accounts as may be necessary in order to record complete and correct entries as to personnel hours charged to the project and any expenses for which Consultant expects to be reimbursed. All books and records relative to the project shall be available at all reasonable times for examination and audit by Owner and shall be kept for a period of three (3) years after completion of all work pursuant to this Agreement. Incomplete or incorrect entries in such books and records shall be grounds for Owner's disallowance of any fees or expenses based upon such entries.

#### ARTICLE 6 - STANDARD OF CARE

6.1 General: Consultant shall exercise the same degree of care and diligence in the performance of the Services as is ordinarily exercised by a professional serving under similar circumstances.

#### ARTICLE 7 - LIABILITY AND INDEMNIFICATION

7.1 General: Having considered the potential liabilities that may exist during the performance of the Scope of Services, the benefits of the project, and the Consultant's fee for the Services, and in consideration of the promises contained in this Agreement, Owner and Consultant agree to allocate and limit such liabilities in accordance with this Article.

7.2 Indemnification by Consultant: Consultant agrees to indemnify and hold harmless Owner, its agents, and its employees from and against legal liability for all claims, losses, damages, and expenses to the extent such claims, losses, damages, or expenses are caused by Consultant's negligent acts, errors, or omissions. Consultant shall also be liable to Owner for the costs of defense including but not limited to attorney's fees, litigation, mediation or arbitration, and any other expenses actually incurred by Owner in defense of third party claims arising out of damages caused by Consultant's negligence or fault.

7.3 Employee Claims: Consultant shall indemnify Owner against legal liability for damages arising out of claims by Consultant's employees to the extent such claims arise out of Consultant's negligent acts, errors or omissions.

7.4 Survival: Upon completion of all Services, obligations, and duties provided for in this Agreement, or if this Agreement is terminated for any reason, the terms and conditions of this Article shall survive.

#### ARTICLE 8 - INSURANCE

8.1 During the performance of the Services under this Agreement, Consultant shall maintain the minimum levels of insurance shown below and provide certificates of such coverage to Owner

prior to performance. All policies must provide ten (10) days advance written notice to Owner in the event of cancellation, expiration, or alteration.

8.1.1 General Liability Insurance, with a combined single limit of \$1,000,000 for each occurrence and \$1,000,000 in the aggregate.

8.1.2 Automobile Liability Insurance, with a combined single limit of \$1,000,000 for each person and \$1,000,000 for each accident.

8.1.3 Workers' Compensation Insurance in accordance with statutory requirements and Employers' Liability Insurance, with a limit of \$500,000 for each occurrence.

8.1.4 Professional Liability Insurance, with a limit of \$1,000,000 annual aggregate.

#### ARTICLE 9 - OWNERSHIP OF DOCUMENTS AND INTELLECTUAL PROPERTY

9.1 Except as otherwise provided herein, documents and reports prepared by Consultant as part of the Services shall become the property of Owner upon payment for same. All finished or unfinished documents, data studies, surveys, drawings, maps, models, photographs and reports prepared or provided by Consultant in connection with this Agreement become the property of the Owner, whether the projects are completed or not, and shall be delivered by Consultant to the Owner within ten (10) days after receipt of written notice and upon payment for same. Consultant shall retain its rights to its specifications, databases, computer software, and other proprietary property. Rights to intellectual property developed, utilized, or modified in the performance of the Services shall remain the property of Consultant. Any use by Consultant of intellectual property owned by Owner is authorized solely for the project.

#### ARTICLE 10 - TERMINATION

10.1 This Agreement may be terminated by either party upon written notice in the event of substantial failure by the other party to perform in accordance with the terms of this Agreement. The nonperforming party shall have fifteen calendar days from the date of the termination notice to cure or to submit a plan for cure acceptable to the other party.

10.2 Owner may terminate or suspend performance of this Agreement for Owner's convenience upon written notice to Consultant. Consultant shall terminate or suspend performance of the Services on a schedule acceptable to Owner. If termination or suspension is for Owner's convenience, Owner shall pay Consultant for all the Services performed and termination or suspension expenses. Upon restart, an equitable adjustment shall be made to Consultant's compensation.

#### ARTICLE 11 - DELAY IN PERFORMANCE

11.1 Neither Owner nor Consultant shall be considered in default of this Agreement for delays in performance caused by circumstances beyond the reasonable control of the nonperforming party. For purposes of this Agreement, such circumstances include: floods; earthquakes; fire; epidemics; war, riots, and other civil disturbances; strikes, lockouts, and other labor disturbances; sabotage; judicial restraint; and the inability to procure permits, licenses, or authorizations from any local, state, or federal agency for which such permits have been properly applied for in accordance with the specified Project Schedule for any of the supplies, materials, accesses, or services required to be provided by either Owner or Consultant under this Agreement.

11.2 Should such circumstances occur, the nonperforming party shall, within a reasonable time of being prevented from performing, give written notice to the other party describing the circumstances preventing continued performance and the efforts being made to resume performance of this Agreement. Consultant shall be entitled to an equitable adjustment in schedule and compensation in the event such circumstances occur.

#### ARTICLE 12 - COMMUNICATIONS

12.1 Any communication required by this Agreement shall be made in writing to the address specified in the Project Scope of Services. The Contract Administrator for the Owner shall be specified in the Project Scope of Services. Nothing contained in this Article or the Project Scope of Services shall be construed to restrict the transmission of routine communications between representatives of Owner and Consultant.

#### ARTICLE 13 - WAIVER

13.1 No waiver by either Owner or Consultant of any breach of this Agreement shall be of any effect unless it shall be written and signed by the waiving party. Such a waiver shall not affect the waiving party's rights with respect to any other or further breach.

#### ARTICLE 14 - SEVERABILITY

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

#### ARTICLE 15 - SUCCESSORS AND ASSIGNS

15.1 Owner and Consultant each binds itself and its directors, officers, partners, successors, executors, administrators, assigns, and legal representatives to the other party to this Agreement and to the directors, officers, partners, successors, executors, administrators, assigns, and legal representatives of such other party in respect to all provisions of this Agreement.

#### ARTICLE 16 - ASSIGNMENT

16.1 Neither Owner nor Consultant shall assign any rights or duties under this Agreement without the prior written consent of the other party. Unless otherwise stated in the written consent to an assignment, no assignment will release or discharge the assignor from any obligation under this Agreement. Nothing contained in this Article shall prevent Consultant from employing independent consultants, associates, and subcontractors to assist in the performance of the Services. Consultant will not employ subcontractors for the performance of the Services without the prior written approval of Owner, which approval shall not be unreasonably withheld. Consultant shall have the right to assign duties to any of Consultant's related or affiliated companies.

ARTICLE 17 - THIRD PARTY RIGHTS

17.1 Nothing in this Agreement shall be construed to give any rights or benefits to anyone other than Owner and Consultant.

ARTICLE 18 - MISCELLANEOUS

18.1 INTERPRETATION: The language of this Agreement has been agreed to by both parties to express their mutual intent and no rule of strict construction shall be applied against either party hereto. The headings contained in this Agreement are for reference purposes only and shall not affect in any way the meaning or interpretation of this Agreement. All personal pronouns used in this Agreement shall include the other gender, and the singular shall include the plural, and vice versa, unless the context otherwise requires. Terms such as “herein,” “hereof,” “hereunder,” and “hereinafter” refer to this Agreement as a whole and not to any particular sentence, paragraph, or section where they appear, unless the context otherwise requires. Whenever reference is made to a Section or Article of this Agreement, such reference is to the Section or Article as a whole, including all of the subsections of such Section unless the reference is made to a particular subsection or subparagraph of such Section or Article.

18.2 CONSULTANT'S STAFF: Consultant shall provide the key staff identified in their proposal for the Project as long as said key staff are in Consultant's employment.

18.2.1 Consultant will obtain prior written approval of Contract Administrator to change key staff members. Consultant shall provide Contract Administrator with such information as necessary to determine the suitability of proposed new key staff. Contract Administrator shall be reasonable in evaluating key staff qualifications.

18.2.2 If Contract Administrator desires to request removal of any of Consultant's staff, Contract Administrator shall first meet with Consultant and provide reasonable justification for said removal.

18.3 ENTIRE AGREEMENT: This Agreement, including all documents identified below, represents the entire understanding between the Owner and the Consultant as to this particular scope of work and shall supersede all prior and contemporaneous communications, representations, understandings, and Agreements relating to the subject matter hereof and may be amended only by written mutual Agreement of the parties.

18.4 ATTACHMENTS: Current listing of Attachments includes:

- Attachment A – Hourly Billing Rates and Reimbursable Expenses.
- Attachment B – Project Scope of Services.

ARTICLE 19 – PRE-EXISTING CONTAMINATION

19.1 Anything herein to the contrary notwithstanding, title to, ownership of, and legal responsibility and liability for any and all pre-existing contamination shall at all times remain with Owner. “Pre-existing contamination” is any hazardous or toxic substance, material, or condition present at the project site or sites concerned which was not brought onto such site or sites by Consultant.

ARTICLE 20 – LIMITATIONS OF RESPONSIBILITY

20.1 Consultant shall not be responsible for: (1) construction means, methods, techniques, sequences, procedures, or safety precautions and programs in connection with the Project; (2) the failure of any contractor, subcontractor, vendor, or other participant, not under contract to Consultant, to fulfill contractual responsibilities to Owner or to comply with federal, state, or local laws, regulations, and codes; or (3) procuring permits, certificates, and licenses required for any construction unless such responsibilities are specifically assigned to Consultant in Scope of Services.

ARTICLE 21 – NON DISCRIMINATION CLAUSE

21.1 The Consultant shall not discriminate against any person on the grounds of race, color, national origin, sex, age, or handicap in administration of this Agreement. Nor shall any person be excluded from participation in, or be denied the benefits of any project designed under this Agreement on the grounds of race, color, national origin, sex, age, or handicap.

ARTICLE 22 – MINORITY BUSINESS PARTICIPATION

22.1 It is the policy of OWASA to provide minority businesses an equal opportunity to participate in all aspects of OWASA's contract activities. Consultant shall comply with OWASA's Minority Business Participation Outreach Plan and Guidelines.

ARTICLE 23 – E-VERIFY

23.1 Consultant shall comply with the requirements of Article 2 of Chapter 64 of the General Statutes. Further, if Consultant utilizes a subcontractor, Consultant shall require the subcontractor to comply with the requirements of Article 2 of Chapter 64 of the General Statutes.

IN WITNESS WHEREOF, Owner and Consultant have executed this Agreement.

OWNER:

ORANGE WATER AND SEWER AUTHORITY

BY: \_\_\_\_\_

TITLE<sup>[VG1]</sup>:

DATE: \_\_\_\_\_

CONSULTANT:

CONSULTANT NAME

BY: \_\_\_\_\_

TITLE:

DATE: \_\_\_\_\_

APPROVED AS TO FORM AND LEGALITY:

Date	Robert Epting, Esquire Authority General Counsel <sup>[VG2]</sup>

This instrument has been pre-audited in the manner required by the Local Government Budget and Fiscal Control Act:

\_\_\_\_\_  
Date

\_\_\_\_\_  
Stephen Winters  
Director of Finance and Customer Service

## ATTACHMENT A

### HOURLY BILLING RATES AND REIMBURSABLE EXPENSES

#### INTRODUCTION

The hourly billing rates are set forth below.

<b>Billing Category</b>	<b>Individual Name and Title</b>	<b>Hourly Billing Rate for the Agreement</b>
Principal		
Senior Project Manager		
Senior Discipline Engineer		
Project Manager		
Project Engineer		
Engineer		
Engineering Associate		
Senior Technician		
Technician		
Administrative Assistant		

#### BILLING CATEGORY DEFINITIONS

The following table provides broad definitions for various Billing Categories. As a guideline, expected experience and duties for each of the categories have been included in the Billing Category Definitions. It is expected that in some instances the actual experience of an individual may be different than what is required for the corresponding Billing Category. In all such cases, Consultant will provide appropriate justification and seek approval from the Owner.

<b>Principal</b>	This is the firm's corporate officer. In some cases "Principal" may be the owner or one of the partners of the firm, and is generally in a position to make all the corporate level decision for the firm as it pertains to this Agreement.
<b>Senior Project Manager</b>	Person in this position provides senior level project management, provides high level of professional input for the project and is generally responsible for conducting high level project review. This person has a Professional Engineering license in North Carolina and professional-level experience of over 15 years.

<b>Senior Discipline Engineer</b>	Person in this position is considered the firm's expert for a particular discipline. This person will oversee Engineering work of particular discipline at the highest level for the firm. This person has a Professional Engineering license in North Carolina and professional-level experience of over 18 years. Engineering Disciplines may include, but are not limited to: Structural Engineering, Water Resources, Environmental Engineering, Transportation, Electrical Engineering, Mechanical Engineering, Pump Station Design, Instrumentation and Control, Construction Management, Power Generation, etc.
<b>Project Manager</b>	Person in this position provides day-to-day Project Management for the Project and acts as the key client contact. This person has a professional license in North Carolina and professional-level experience of over 8 years.
<b>Project Engineer</b>	Person in this position provides day-to-day engineering work for various disciplines as required by individual projects. This person has a professional license in North Carolina and professional-level experience of over 8 years.
<b>Engineer</b>	Person in this position provides day-to-day engineering support to the Project Manager, Project Engineer and other team members as required for their respective projects. This person has a professional license in North Carolina and professional-level experience of over 3 years.
<b>Engineering Associate</b>	Person in this position provides day-to-day engineering support to the Project Manager, Project Engineer, Engineer and other team members as required for their respective projects. This person is an Engineering Intern or has an Engineering Associates degree with appropriate technical experience.
<b>Senior Technician</b>	Person in this position provides senior technical-level support to the Project Team. Support may include CAD services, GIS, or other technical-level work. This person has 10 years of experience providing technical-level work.
<b>Technician</b>	Person in this position provides technical-level support to the Project Team. Support may include CAD services, GIS, or other technical-level work. This person has 4 years of experience providing technical-level work.
<b>Registered Land Surveyor</b>	This person is a North Carolina Board of Engineers and Land Surveyors certified Land Surveyor and has 4 years of professional-level experience.
<b>2 Person Survey Crew</b>	These individuals form a surveying team, acting as an Instrument Person and Rod-Person.
<b>Administrative Assistant</b>	This person performs administrative and clerical-level work for the Project Team, including data entry, word processing, and other non-technical support work as needed for the Project.

## **REIMBURSABLE EXPENSES**

Reimbursable expenses for each individual project shall be clearly itemized by the Consultant. The following guidelines shall be used to develop these expenses:

1. Overtime at straight time rates shall apply for exempt employees to the extent the employee works more than 40 hours per week on Owner's project.
2. Subcontracted services shall be based on Cost Plus 5%. Consultant shall obtain Owner's approval before authorizing such services.
3. Cost of printing and reproducing drawings and bid documents, except for those included in the lump sum cost.
4. Cost for use of field equipment, safety equipment and field sampling equipment.
5. Cost of courier and express mail services.
6. Living and traveling expenses when Consultant's employees are away from home on Owner's project assignments. The following limitations shall apply:
  - Base room charges (excluding taxes and other fees) shall not exceed \$119 per night.
  - Base rental car charges (excluding taxes and other fees) shall not exceed \$60 per day.
  - Meal charges per individual shall not exceed \$51 per day.
7. Automobile mileage to be reimbursed at rate established and updated by Internal Revenue Service.

**ATTACHMENT B**  
**PROJECT SCOPE OF SERVICES**

**Project Title: ...**

**OWASA's CIP #: ...**

**Project Contract Administrators:**

<b>OWASA</b>	...
<b>Jeremy Fireline, P.E.</b>	...
Utilities Engineer	...
Orange Water and Sewer Authority	...
400 Jones Ferry Road	
Carrboro, NC 27510	
Office: (919) 537-4249	
Fax: (919) 968-4464	

**Project Background:**

...  
...

**Project Scope:**

Task 1 – Kickoff Meeting, Flow Monitoring and Data Collection

...

Task 2 - ... ..

...

**Deliverables:**

*Specify deliverables, number of copies, and format.*

**Project Team:**

The Project Team is as follows:

Key Team Members:

...

The OWNER will be notified in writing of changes to the project team members. Other staff may participate in the project in a minor role at Consultant's discretion.

**Project Schedule:**

....

*List durations for interim milestones and final completion in total number of days from Notice to Proceed.*

**Compensation:**

...

*Provide compensation basis (lump sum, cost ceiling) and subtotals by task.  
Provide separate subtask breakdowns for projects above exemption limit, or as warranted.*

**Owner Responsibilities**

...

**Scope Exceptions, Additional Services, etc**

Attachment #2 Potential Programmatic Task Items at OWASA facilities

The following is a selection of programmatic tasks that a SCADA Master Plan engineer may assist OWASA with completing

1. **Ensure SOPs, log books, instrument manuals, and work performed, such as calibration and verification, is completed and archived.**
2. **Assist Staff developing a formalized method of storing records.**
3. **Labeling and naming conventions for IT equipment.**
4. **Store IT documentation in centralized location with the information System Integrator has on our system for easier access and reference.**
5. **Improve timely receipt of calibration and maintenance records from 3rd party contractors.**
6. **Identify and document equipment maintenance responsibilities. Where do IT responsibilities begin/end? Where do CITI responsibilities begin/end?**
7. **Develop SOP for manually operating the system without a PLC; train on the SOP; Explore "control" options if both servers go down.**
8. **Explore local and centralized control screen.**
9. **Develop an in-house instrumentation maintenance and control plan that involves all operators in implementing.**
10. **Increase inventory of critical spare parts for instrumentation and SCADA systems.**
11. **Establish when and if redundant or alternate systems for remote monitoring are necessary and assist in their implementation.**
12. **Build a server to monitor the status of plant switches; monitoring information from this system would display on the Network overview screen as part of troubleshooting.**
13. **Implement smart programming alarms, that alert operators when anomalous conditions (unchanged values, rate of change values etc.) occur.**
14. **Negotiate contract with System Integrator regarding instrumentation; document best practices; Manage program; include inventory upkeep requirements and clear expectations on software updates and equipment firmware maintenance.**
15. **Identify needs and coordinate training by manufactures on instrumentation.**
16. **Determine how often to check and test alarms and other conditions in the SCADA system.**
17. **Develop CMMS coordination as necessary and valuable using SCADA data.**
18. **Development of SCADA tools to monitor pump and other equipment health.**
19. **Custom trends to further plant operational awareness of key processes.**
20. **Generate figures and diagrams to document state and architecture of the system that compile multiple iterations of system development.**
21. **Create manuals and training modules to assist with Operator on boarding and refreshers.**
22. **Implement changes recommended by Risk and Resiliency models to eliminate single points of failure.**
23. **Design new architecture for redundant failover of critical systems.**
24. **Identify critical system components and develop secondary and independent monitoring of their state (i.e. power monitoring to back check flow signal in finished water systems).**