

**CITY OF DELRAY BEACH**  
**CONSULTING SERVICE AUTHORIZATION**

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

SERVICE AUTHORIZATION NO. \_\_\_\_\_ 12-27 \_\_\_\_\_ FOR CONSULTING SERVICES

CITY P.O. NO. \_\_\_\_\_ CITY EXPENSE CODE: \_\_\_\_\_

CITY PROJECT NO. \_\_\_\_\_ Baxter & Woodman/Mathews. PROJECT NO. 170074.30

TITLE: \_\_\_\_\_ 2017 SCADA System Evaluation \_\_\_\_\_

This Service Authorization, when executed, shall be incorporated in and shall become an integral part of the Contract.

TITLE: \_\_\_\_\_ Agreement for General Consulting Engineering Services \_\_\_\_\_

**I. PROJECT DESCRIPTION**

This service authorization provides for the review and reporting of the City's existing SCADA and related telemetry and software systems for the purpose of evaluating upgrade options and the preparation of a short-term and long-term SCADA upgrade planning document.

**II. SCOPE OF SERVICES**

**Study and Report**

Consultant shall provide study and report phase services in accordance with Article III.A of the Agreement for Engineering Services with the City, dated January 24, 2012.

**Task 1 - Review Existing SCADA System and Related Components**

1. Consultant shall review information provided by the City as well as conduct a field investigation of representative SCADA related components. It is anticipated the review will consist of the following components:
  - a. Staff SCADA Vision – Consultant shall meet with City Environmental Services staff for a Kickoff meeting to discuss and brainstorm on SCADA and related information management vision for total water management objectives.
  - b. SCADA Sites Overview – City to provide feedback on water, lift station, and related Public Utilities site locations including equipment overview, addresses, and/or GPS coordinates and descriptions of all related SCADA sites.

- c. SCADA Hardware Review – Consultant shall review the City’s existing Dataflow SCADA master site and representative RTU hardware, including controllers and related communications and backup communications equipment. A comparison and review of the existing equipment capabilities and features compared with an open-architecture PLC-based system will be completed. Key features and capabilities will be presented in a comparison matrix, as well as manufacturer demonstrations or site visits to assist City staff in making a SCADA architecture decision.
- d. SCADA HMI and OIT Review – Consultant shall review the City’s existing Human Machine Interface (HMI) software and Operator Interface Terminals (OIT, or touchscreen).
- e. SCADA Network Communications & Server Infrastructure – Consultant will review the City’s network communications and Server/Virtualization infrastructure as they apply to the SCADA system including fiber, CAT5/6, radios, and other digital communications protocols, as well as server hypervisor and storage area networks.
- f. Alarming and Management – Consultant shall review the City’s SCADA alarming and alarm management software and hardware used for staff notification of SCADA issues or conditions.
- g. Information Management Software – Consultant shall review with the City the integration of SCADA with the following related information management software.
  - i. Process Data Historians
  - ii. ESRI Geographic Information System design
  - iii. Asset Management
  - iv. Laboratory Information Management Systems (LIMS)
  - v. Data Visualization, Efficiency, and Dashboarding applications

## **Task 2 - Draft Report & SCADA Workshop**

- 1. Consultant shall submit an 80% draft review report to the City that will include a summary and evaluation of existing facilities (including a communications overview diagram) and a summary of recommendations shown in the following sections. An onsite review/workshop will be conducted to review findings, evaluations, and recommendations. Draft report to include:
  - a. Executive Summary
  - b. Introduction & Overview
  - c. Sites Overview
  - d. SCADA Hardware
    - i. SCADA Security
    - ii. SCADA Controllers and PLCs
    - iii. Operator Interface Terminals (OITs)
    - iv. SCADA Computers
  - e. Visualization (HMI) Software
  - f. Network/Communications
  - g. Critical Infrastructure Cyber Security

- h. Alarming and Alarm Management
- i. Information Management Software
- j. Remote Access
- k. Process Control
- l. System Operation, Training, and Ongoing Education
- m. Implementation Budget and Recommended Phasing

### **Task 3 -SCADA System Evaluation Report & Presentation**

1. Consultant shall provide a final report after the workshop is completed that summarizes all existing conditions and final recommendations for SCADA system upgrade and implementation. An onsite presentation summarizing final budget recommendations and next steps will be conducted.

### **ASSUMPTIONS**

Work described herein is based upon the assumptions listed below. If conditions differ from those assumed in a manner that will affect schedule of Scope of Work, Consultant shall advise City in writing of the magnitude of the required adjustments. Changes in completion schedule or compensation to Consultant will be negotiated with City.

1. City will provide Consultant access to SCADA facilities as required during Task 1.

### **ADDITIONAL SERVICES**

Consultant may provide additional engineering services that are not covered under this Service Authorization. These additional services may be required due to uncertainties discovered during implementation of the scope of services. Additional services may also include:

1. Services to prepare a draft and final RFP document for the first phase of improvements, provide bidding assistance to the City, evaluate Phase 1 (implementation) proposals as submitted by prospective Suppliers/Contractors, assist the City with evaluation and optional interviews, and provide observation during Phase 1 improvements.

Services performed under this task will be on as-directed basis in accordance with a written Notice-to-Proceed from the City Manager. The Notice-to-Proceed issued shall contain the following information and requirements.

- A detailed description of the work to be undertaken.
- A budget establishing the amount of the fee to be paid in accordance with the Agreement.
- A time established for completion of the work.

### III. TIME OF PERFORMANCE

The completion dates for this work will be as follows (starting at time Consultant receives executed contract).

<u>Engineering Services</u>	<u>Time per Phase</u>	<u>Cumulative Time</u>
Task 1 – Review Existing	4 weeks	4 weeks
Task 2 – Draft Report & Workshop	4 weeks	8 weeks
Task 3 – Final Report & Presentation	2 weeks	10 weeks

### VI. COMPENSATION

The compensation for services provided shall be billed on an hourly basis plus reimbursable expenses for each phase of work in accordance with Article VII, Method II, up to the following not to exceed cost for each phase. Refer to Attachment A for budget summary.

<u>Engineering Services</u>	<u>Estimated Fees</u>
Task 1 – Review Existing	\$ 13,399.00
Task 2 – Draft Report & Workshop	\$ 16,198.00
Task 3 – Final Report and Presentation	\$ 8,985.00
<u>Reimbursables</u>	<u>\$ 300.00</u>
<b>TOTAL PROJECT COST</b>	<b>\$ 38,855.00</b>

Notes:

<sup>(1)</sup>*Out-of-Pocket Expenses include the following: printing/reproduction and postage.*

### DELIVERABLES

TASKS	DELIVERABLES	QUANTITY
Task 2 – Draft Report & Workshop	Draft Report	• Five (5) Hard Copies + 1 PDF
Task 3 – Final Report & Presentation		• Five (5) Hard Copies + 1 PDF

This Service Authorization is approved contingent upon the City's acceptance of and satisfaction of the completion of the services rendered in the previous phase whereas encompassed by the previous Service Authorization. If the City in its sole discretion is unsatisfied with the services provided in the previous phase or Service Authorization, the City may terminate the contract without incurring any further liability. The Consultant shall commence work upon City Commission approval and this Service Authorization to be included as part of the contract without any further notice to proceed.

Approve by:

CITY OF DELRAY BEACH:

Date: \_\_\_\_\_

\_\_\_\_\_  
Cary D. Glickstein, Mayor

MATHEWS CONSULTING, a  
BAXTER & WOODMAN COMPANY

Date: \_\_\_\_\_ 1-31-17

\_\_\_\_\_  
Rene Mathews, P.E., President

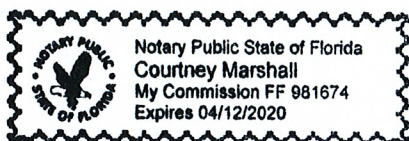
\_\_\_\_\_  
Witness

Attest:

\_\_\_\_\_  
R. Max Lohman  
City Attorney

STATE OF FLORIDA  
COUNTY OF PALM BEACH

The foregoing instrument was acknowledged before me this 31 day of January 2017 by Rene Mathews, Vice President of Mathews Consulting, a Baxter & Woodman Company, an Illinois corporation, on behalf of the corporation. He/She is (personally known to me) or (has produced identification), Florida Driver's License \_\_\_\_\_ and (did/did not) take an oath.



Courtney Marshall  
Signature of \_\_\_\_\_ person taking  
Acknowledgement

**ATTACHMENT A**  
*City of Delray Beach 2017 SCADA System Evaluation*

**Budget Summary**

Phase No.	Task Description	Labor Classification and Hourly Rates								
		Principal Engineer \$166.40	Principal Engineer \$161.17	Project Manager \$161.17	Senior Engineer \$144.86	Sr. Eng. Tech. \$115.13	Cadd \$88.07	Clerical \$70.58	Total Labor	Sub-Consultant Services
Task 1	Review Existing SCADA System	5	30	30	20				\$13,399	
Task 2	Draft Report & Scada Workshop	5	32	47	15	4			\$16,198	
Task 3	Final Report & Presentations	5	20	20	10	2			\$8,958	
	Subtotal	15	82	97	45	6	0	0	\$38,555	
	Labor Subtotal Hours	15	82	97	45	6	0	0	\$38,555	\$0.00
	Labor Subtotal Costs	\$2,496	\$13,216	\$15,633	\$6,519	\$691	\$0	\$0		
	Labor Total Costs	\$38,555								
	Subconsultant Costs Total	\$0								
	Subconsultant Multiplier	1.1								
	Subconsultant Total	\$0								
	Reimbursable Expenses	\$300								
	Project Total	\$38,855								