

# RESOLUTION

No. 14-148

Date of Adoption

**APR 03 2014**

Approved as to Form and Legality

City Attorney

Factual content certified by

Title: LUIS MOLLINEDO, DIRECTOR OF PUBLIC WORKS

Councilman /woman

presents the following Resolution:

**RESOLUTION AWARDING A CONTRACT THROUGH FAIR & OPEN PROCESS IN ACCORDANCE WITH N.J.S.A. 19:44 A-20.4 ET SEQ TO HATCH MOTT MACDONALD, 111 WOOD AVENUE SOUTH, ISELIN, NEW JERSEY 08830-4112 FOR CONSULTING SERVICES TO REVIEW, EVALUATE AND PREPARE RECOMMENDATION AND PRELIMINARY DESIGN FOR THE SUPERVISORY CONTROL AND DATA ACQUISITION (SCADA) SYSTEM FOR THE DEPARTMENT OF PUBLIC WORKS DIVISION OF TRENTON WATER WORKS IN AN AMOUNT NOT TO EXCEED \$161,650.00 - RFP2013-50**

**WHEREAS**, the City has a need for Consulting Services to Review, Evaluate and Prepare Recommendations and Preliminary Design for the Supervisory Control and Data Acquisition (SCADA) System for the Department of Public Works, Division of Trenton Water Works; and

**WHEREAS**, a request for proposal was advertised, and one (1) proposal was received on December 17, 2013, and were evaluated by a committee based on criteria that included experience, understanding of requirements and cost; and

**WHEREAS**, the proposal of Hatch Mott MacDonald, 111 Wood Avenue South, Iselin, New Jersey 08830-4112 was deemed to include the necessary qualifications and expertise for the performance of the services at the rates listed in the proposal; and

**WHEREAS**, funds in the amount not to exceed \$161,650.00 have been certified to be available in the following account number C-06-13-55-019f-398; and

**NOW, THEREFORE IT IS RESOLVED**, by the City Council of the City of Trenton, as follows:

1. The Mayor is hereby authorized to enter into a contract with Hatch Mott MacDonald, 111 Wood Avenue South, Iselin, New Jersey 08830-4112.
2. This contract is awarded pursuant to the authority set forth in the Local Public Contracts Law at N.J.S.A. 40A:11-4.1.
3. A notice of this action shall be printed once in the official newspaper for the City of Trenton and the Resolution and contract shall remain on file in the City Clerk's Office.

	Aye	Nay	Abstain	Absent		Aye	Nay	Abstain	Absent		Aye	Nay	Abstain	Absent
BETHEA	✓				HOLLY WARD	✓				MUSCHAL	✓			
CALDWELL WILSON	✓				MCBRIDE	✓								
CHESTER	✓				REYNOLDS JACKSON	✓								

This Resolution was adopted at a Meeting of the City Council of the City of Trenton on

**APR 03 2014**

President of Council

City Clerk

**PROFESSIONAL SERVICES CONTRACT**

**RFP # 2013-50**

**RESOLUTION #14-148**

**THIS CONTRACT**, made this 3<sup>rd</sup> day of APRIL 2014 by and between the City of Trenton, a municipal corporation of the State of New Jersey, ("City") and **HATCH MOTT MCDONALD, 111 WOOD AVENUE SOUTH, ISELIN, NEW JERSEY 08830 ("CONTRACTOR")**.

**WHEREAS**, the City has need for **PROFESSIONAL CONSULTING SERVICES** to review, evaluate and prepare recommendation and preliminary design for the supervisory control and data acquisition (SCADA) system for the Department of Public Works, Division of Trenton Water Works.

**WHEREAS**, Contractor agrees to perform **Professional Consulting Services** in terms and conditions as set forth hereinafter, and the City being agreeable thereto;

**NOW THEREFORE**, the parties mutually agree as follows:

1. **PROFESSIONAL SERVICES:** The City agrees to retain **HATCH MOTT MCDONALD, 111 WOOD AVENUE SOUTH, ISELIN, NEW JERSEY 08830** for the City of Trenton, Department of Public Works, Division of Trenton Water Works.
2. **SCOPE OF SERVICES:** The contractor warrants that the representations made by it regarding its ability and skill level to carry out these services are true. Contractor shall, in a good, professional and workmanlike manner, in conformity with the responsibilities, demands and ethics of their profession, perform all reasonable and necessary services as described as follows:

**A. Hardware**

The firm shall review and evaluate all components of the SCADA system. This shall include, but not necessarily be limited to, flow meters, online analyzers, pressure transmitters, etc. The review shall include whether the equipment is obsolete, has been replaced by a newer version, is factory supported, no longer supports the intended use, serviceability, stability, maintenance requirements, etc. This shall be compared to new available equipment with a determination on whether existing equipment should be replaced.

Evaluate and provided recommendations for improvement and/or corrective measures for the following existing equipment:

1. Flow meters, online analyzers, pressure transmitters, etc. The review shall include, but not necessarily be limited to, the equipment's condition, determine if the installation is correct for maximum efficiency, reliability, ease of maintenance/serviceability, appropriateness for application, has it been replaced by a newer model, etc.
2. SCADA Server hardware condition.
3. SCADA Workstation condition in Control Room and other plant locations including remote locations.
4. SCADA System communications network design to determine level of fault tolerance and redundancy required.
5. Plant HMI Server/Workstation Ethernet Network Communications system hardware, cabling and transmitters.
6. PLC Ethernet Network Communications system hardware, cabling and transmitters.
7. Control Net system hardware and cabling.
8. Fieldbus Network Communications system hardware, cabling and transmitters.
9. Rockwell PLC to Bristol Babcock RTU Network Communications system hardware, cabling and transmitters.
10. Unlicensed spread spectrum radio communications. Recommend options for improved communications by improving existing spread spectrum system or use of alternate communications methods such as licensed radio, cellular, satellite, cable, hardwired Telco circuits or other and reliable back-up.
11. Feasibility of secure, wireless portable Operator Workstation to replace existing fixed filter console workstations.
12. Effects of corrosion due to chlorine and other fumes in existing control system equipment including control panel hardware, enclosure cabinets, IT hardware, communications cabling and connector hardware, field wiring and related equipment. Provide recommendations to correct conditions with existing hardware or replacement hardware.
13. Rockwell PLC-5 condition.
14. Rockwell SLC-500 PLC's condition.
15. MDF Building Bristol Babcock 33XX PLC'.
16. GE Fanuc GE-9030 PLC's condition on three Belt Filter Press systems in MDF Building.
17. Physical design and construction of the existing SCADA System IT Hardware, network hardware and cabling systems. Existing equipment construction design and placement are difficult to access for diagnostics, maintenance and repair.

18. All system communication infrastructure equipment and cabling for proper identification and labeling.
19. Control Room environmental conditions including ventilation, cooling, humidity control and air filtering equipment and design.
20. Control Room Control Room IT Rack design and condition.
21. Control panel construction and environmental effects due to dust, moisture, corrosive fumes, and etc. Test Cl<sub>2</sub> levels in air to determine needs to clean up using Positive Pressure on cabinets.
22. Process value data logging needs, data integrity, sample rates, data storage and need for redundancy.
23. Historian package.
24. Report Generation package. Provide recommendations for improvements and corrective measures.
25. Remote Access method for City employees.
26. System Security requirements for protection from internal threats and external threats.
27. Spare parts status, requirements, and availability.
28. Methods to eliminate loss of data upon communications failure at remote sites.
29. Backup Power for all PLC system at plant and remote sites and determine if backup time is sufficient for extended outages such as Hurricane Sandy.
30. Emergency Generator system design to determine failures of control system equipment and faulting of CPU's during Generator switchover during power failures and generator testing.
31. Make recommendations on new or replacement backup power solutions for any sites required including permanent Emergency Generators, portable Emergency Generator provisions, Standard UPS backup, solar power, hydrogen cell and others technology. This became evident during Hurricane Sandy when there were control issues with Jones Farm Tank and Hopewell Tank in providing operational signals to operate booster stations.
32. Backup Power for all communications equipment at all sites including switches, routers, modems, radios, etc.
33. Condition of present system O&M Manual documentation furnished under past system additions, modifications and upgrade projects to determine if it reflects as-built condition of the system and if proper level of detail is provided.
34. Condition of existing system drawings furnished under past system additions, modifications and upgrade projects to determine if it reflects as-built condition of the system and if proper level of detail is provided.
35. System O&M Manual to determine if existing Description of Operation and Operation Instructions are correct for present system

configuration. Confirm that O&M contains correct and complete descriptions for system operation including orderly startup and shutdown of system, routine functions, archiving, reports, etc.

36. Existing alarm system to determine if proper alarms are provided for all process I/O. Both the quantity and frequency shall be reviewed as part of the evaluation.
37. Existing network communications system diagnostic software and alarm systems to determine if proper alarms are generated for communication equipment faults and failures to alert operations and maintenance personnel and pinpoint failure points in communications system.

## **B. Software**

All software used by the SCADA and/or equipment/instruments that connect to the SCADA system shall be evaluated. This shall include, but not necessarily be limited to, Accol, Fieldbus, Internet Explorer, Microsoft Products including Office and Windows, RSLinx, RSView (including patches and utilities), RSKiller, RSTrendX, Active Display, BizWare, etc. The evaluation shall include, but not necessarily be limited to, the date, version, patches, license status, suitability to application, compared to the current available applications and improvements available. Prepare a list of software versions & year with a comparison to the current versions & year available as part of the evaluation.

Evaluate existing software's suitability for the application at Trenton Water Works and provide recommendations for improvements and corrective measures:

1. SCADA server software.
  2. SCADA System software versions, licensing and support for HMI Server/Workstation and all other SCADA System applications software and Operating Systems software.
  3. PLC Ethernet Network Communications system software.
  4. Equipment firmware.
  5. Existing ControlNet system software.
  6. Existing Fieldbus Network Communications system software.
  7. Existing Rockwell PLC to Bristol Babcock RTU Network Communications system software.
  8. All other Rockwell Automation software products.
3. **DURATION OF THE CONTRACT:** This contract shall remain in full force effective beginning **April 3, 2014 through April 2, 2015.**

4. **COMPENSATION:**

(a) All work performed by Contractor according to the attached scope of services shall not exceed **\$161,650.00**.

(b) Contractor shall submit monthly bills complete with appropriate support documentation to justify said billing;

(c) In no event during the terms of this Contract, Contractor's billings shall hereunder exceed the amount set forth in **Resolution No. 14-148**, which is incorporated herein by reference. In the event Contractor anticipates exceeding the aforesaid contract amount, the Independent Contractor, shall give prior written notice to the City of Trenton, Department of Public Works, Trenton Water Works.

5. **STATUS OF CONTRACTOR:** It is expressly understood by and between the parties hereto that the status of the Contractor retained to carry out the services set forth in this agreement is that of an Independent Contractor. It is further understood by and between the parties that is not intended nor shall it be construed, that the contractor is an agent, employee, or officer of the City of Trenton.

6. **NOTICES:** Any notices required to be delivered to either party pursuant to this Contract shall be in writing to their respective addresses. The parties shall be responsible for notifying each other of any change of address.

7. **INTEGRATION:** **RFP2013-50** and this contract constitutes the entire agreement between the parties and any representation that may have been made prior to the execution of this Contract are nonbonding, void, and of no effect and neither party has relied on any such prior representations in entering into this Contract.

8. **ENFORCEABILITY:** If any term or condition of this Contract or its application to any party or circumstances shall be deemed invalid or unenforceable, the remainder of the Contract and its application to other parties and circumstances shall not be affected.

9. **GOVERNING LAW:** This Contract shall be governed by the laws of the State of New Jersey.

10. **MISCELLANEOUS PROVISIONS:**

Contractor, will not discriminate against any employee or applicant for employment because of age, race, creed, color, national origin, ancestry, marital status, sex, gender identity or expression, affectional or sexual orientation, disability or nationality. Contractor will take affirmative action to ensure that such applicants are recruited and employed and that employees are treated during employment, without regard to their age, race, creed, color, national origin, ancestry, marital status, sex, affectional, gender identity or expression, sexual orientation. Such action shall include, but is not limited to the following: employment, upgrading, demotion or transfer; recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship. Contractor agrees to post in conspicuous places, available to employees and applicants for employment, notices to be provided by the Public Agency Compliance Officer setting forth provisions of this nondiscrimination clause;

Contractor, where applicable will, in all solicitations or advertisements for employees placed by or on behalf of the Contractor, state that all qualified applicants will receive consideration for employment without regard to age, race, creed, color, national origin, ancestry, marital status, sex, gender identity or expression, affectional or sexual orientation.

Contractor, where applicable, agrees to comply with the regulations promulgated by the Treasurer pursuant to P.L. 1975, c. 127, as amended and supplemented from time to time and the American with Disabilities Act.

Contractor, where applicable, agrees to attempt to schedule minority and female workers consistent with the applicable county employment goals prescribed by N.J.A.C. 17:27-5.2 promulgated by the Treasurer pursuant to P.L. 1975, c. 127, as amended and supplemented from time to time or in accordance with a binding determination of the applicable county employment goals determined by the Affirmative Action Office pursuant to N.J.A.C. 17:27-5.2, amended and supplemented from time to time.

Contractor, where applicable, agrees to inform in writing appropriate recruitment agencies in the area, including employment agencies, placement bureaus, colleges, universities, labor unions that it does not discriminate on the basis of age, creed,

color, national origin, ancestry, marital status, sex, gender identity or expression, affectional, sexual orientation, disability or nationality and that it will discontinue the use of any recruitment agency which engages in direct or indirect discriminatory practices.

Contractor, where applicable, agrees to review all procedures relating to transfer, upgrading, downgrading and layoff to ensure that all such actions are take without regard to age, race, creed, color, national origin, ancestry, marital status, sex, gender identity or expression, affectional, sexual orientation, disability or nationality. Contractor will conform these employment goals consistent with statutes and court decisions of the State of New Jersey, and applicable Federal law and Federal court decisions.

Contractor, where applicable, shall furnish such reports or other documents to the Affirmative Action Office as may be requested by the office from time to time in order to carry out the purposes of these regulations. Contractor shall furnish such information as may be requested by the Affirmative Action Office for conducting a compliance investigation pursuant to Subchapter 10 of the Administrative Code (N.J.A.C. 17:27).

Contractor, shall submit along with the signed contract one of the following as evidence of compliance with N.J.A.C. 17-27:

1. Appropriate evidence that the Independent contractor is operating under an existing Federally approved or sanctioned affirmative action program.
2. A certificate of employee information report approval issued in accordance with N.J.A.C. 17:27-4.
3. An initial employee information report (Form AA#302) provided by the Affirmative Action Office and completed by the contractor in accordance with N.J.A.C. 17:27-4



Al Benito

Albert Benito, EVP

Hatch Mott McDonald, LLC  
111 Wood Avenue South  
Iselin, New Jersey 08830

Seal

Attest: Joseph G Stanley, VP

**IN WITNESS WHEREOF**, the parties have hereunto set their hands and seals the day and year above written.

ATTEST:

CITY OF TRENTON

Richard M. Kachmar  
RICHARD M. KACHMAR  
CITY CLERK

George P. Muschal  
HONORABLE GEORGE P. MUSCHAL  
MAYOR