

BPSA BILLING METER SERVICE CONTRACT

TECHNICAL SCOPE OF WORK

(TechSc Endorsed; Final Draft, 2/22/18)

ATTACHMENT A: BACKGROUND AND SCOPE OF WORK

Background

The District of Columbia Water and Sewer Authority (DC Water), Department of Engineering and Technical Services (DETS) is soliciting proposals for professional services providers with demonstrated expertise in wastewater billing meters, specifically for:

- Development and maintenance of a web portal for management of meter and other ancillary equipment data
- Routine calibration of meters and other ancillary equipment
- Operation and maintenance of meters and other ancillary equipment

These services are intended to provide critical technical support to DC Water in overseeing the overall billing meter system for the Blue Plains Service Area (BPSA). Any contract(s) will be issued with a Mid-Atlantic Purchasing Team (MAPT) Rider Clause¹ that would enable the other Blue Plains Users² to use the Rider Clause to issue their own contracts. Those contracts would be based on this common Scope of Work (SOW) and pricing schedule, and used to address the Blue Plains Users' own billing meter needs. Staff from the Metropolitan Washington Council of Governments (COG) will assist in coordination activities among the Blue Plains Users.

The services to be provided by the Contractor shall include Core Services and Supplemental Services as detailed below. Additional detailed performance requirements will be defined in a Service Level Agreement (SLA).

Definitions of Technical Terms:

1. **Data**
 - a. **Raw Data** – recorded data that has not undergone any processing and has been collected in Eastern Standard Time format;
 - b. **Final Data** – recorded data that has been reviewed, analyzed and processed to ensure that the data is comprehensive and meaningful.
2. **Billing Meter(s)/System** – a defined set of meters that are used by the Blue Plains Users to measure the flows that are sent to Blue Plains for treatment, which are subsequently used by DC Water to determine how much flow each User should be billed for.

¹ COG has a partnership with the Baltimore Metropolitan Council and their members called the Mid-Atlantic Purchasing Team (MAPT), which provides opportunities to participate in cooperative purchases and to ride on the contracts of the participating jurisdictions.

² "Blue Plains Users" (or, the "Users") are defined as: DC Water, Fairfax County, Washington Suburban Sanitary Commission (WSSC), Loudoun Water, Town of Vienna, and Dulles Airport (i.e., Metropolitan Washington Airports Authority).

BPSA BILLING METER SERVICE CONTRACT

TECHNICAL SCOPE OF WORK

(Preliminary Final Draft, 1/29/18)

3. **Ancillary Equipment** - May include, but is not limited to meters, temporary meters, telemetry devices, surcharge gauges, and rain gauges.
4. **Meter Uptime** – percent of time that meters provide accurate and reliable flow data.
5. **Service Level Agreement (SLA)** - A detailed list of specific activities and performance requirements to be part of any contract(s) resulting from this solicitation.

Types of Services

- I. **Core Services** - These are the mandatory services that each BPSA Agency/Jurisdiction intends to participate in to provide consistency for monitoring the BPSA Billing Meters and ensure the integrity of the overall BPSA Billing Meter System. The specific meters and services are defined in **Appendix 1 and Appendix 2**.
 - A. **Develop and Maintain a Centralized Web Portal for all BPSA Billing Meter Data and other Ancillary Equipment Data**
 - B. **Upload and Review BPSA Data**
 - C. **Conduct Standardized Calibration of all BPSA Billing Meters and Generate Reports**
- II. **Supplemental Services** - These are services provided by the Contractor that specific Blue Plains Users may choose to take advantage of to address their own meter and equipment needs through their own contracts and utilization of the MAPT Rider Clause. The meters to be serviced are designated in **Appendix 1** and listed in **Appendix 3**, while the Ancillary Equipment to be serviced is listed in **Appendix 3**.
 - A. **Maintain Meters and/or other Ancillary Equipment**
 - B. **Conduct Standardized Calibrations of Meters and/or other Ancillary Equipment and Generate Reports**
 - C. **Install, Maintain and Calibrate Temporary Meters**
 - D. **Upload and Analyze Data from Meters and/or Ancillary Equipment to Appropriate Web Portal**

The specific meters and ancillary equipment that are to be addressed under the Core Services or Supplemental Services, are specified in various Appendices that are listed at the end of this document and referenced in the technical scope of work that follows.

BPSA BILLING METER SERVICE CONTRACT

Scope of Work: Core Services

Scope of Work

I. Core Services

These are the mandatory services that each BPSA Agency/Jurisdiction intends to participate in to provide consistency for monitoring the BPSA Billing Meters and ensure the integrity of the overall BPSA Billing Meter System.

A. Develop and Maintain a Centralized Web Portal for all BPSA Billing Meter Data and other Ancillary Equipment

1. Objectives:

- a. Provide a secure centralized web accessible data software system (i.e. Web Portal);
- b. Streamline uploading and processing of all the BPSA Billing Meter data; and
- c. Provide transparency and ease of use/access of the data by the Blue Plains Users.

2. Features and Requirements - The Contractor shall develop a BPSA Web Portal that shall:

- a. Communicate with the BPSA permanent Billing Meters, as well as any identified temporary meters, surcharge gauges, rain gauges within the BPSA as needed to support the overall BPSA Billing Meter System;
- b. Utilize a browser that has the documented ability to support all functions needed to support all the Users of the Web Portal;
- c. Be accessible by laptops, tablets, smart phones, personal computers or other monitoring devices at all locations specified by the Blue Plains Users;
- d. Include a monitoring location database with site sheets, basin network diagrams, and a dynamic GPS Map Interface as part of the web access system for each monitoring device;
- e. Be operationally available and usable twenty-four hours a day, seven days a week, except as otherwise arranged by the Contractor and agreed to by DC Water for scheduled maintenance outages;
- f. Be regularly upgraded at no additional cost, throughout the life of the Contract;
- g. Have back-up capabilities and procedures in place to ensure that the system and data are not corrupted or lost.
- h. Have the capability to:
 - 1) View data in tabular, hydrograph and scattergraph format; and
 - 2) Convert and export data into Excel/csv format.

BPSA BILLING METER SERVICE CONTRACT

Scope of Work: Core Services

- 3. Development Process** - The Contractor shall work with DC Water and COG to coordinate meetings and collaboration with the other Blue Plains Users to provide input on the development of the Web Portal, and to regularly monitor its effectiveness. Specifically, the Contractor shall:

 - a. Present concepts and review the features and functions of the proposed Web Portal to the Blue Plains Users before it is implemented;
 - b. Gather information on the overall BPSA Billing Meter System in order to develop and maintain a monitoring location database (as defined in 2.d above);
 - c. Coordinate security, access, and training for staff of the Blue Plains Users that will be using the Web Portal (as defined in I.A.5 & 6 and 7 below); and
 - d. Provide an annual summary regarding the overall performance of the Web Portal.

- 4. Hosting** – In hosting the Web Portal, the Contractor shall:

 - a. Have at a minimum the following staff, experienced in providing these services:
 - 1) A Data Analyst to run data analysis, editing, and cleanup for data stored in the Web Portal and to generate reports; and
 - 2) An IT Coordinator to run the Web Portal and provide software system support.
 - b. Provide the ability for the Blue Plains Users to communicate with the Contractor's technical support staff during regular business hours – as defined in the SLA;
 - c. Host the Web Portal in a highly resilient, state-of-the-art data center, as well as at an alternate site for back-up purposes:
 - 1) Provide locations of the host site and alternate site;
 - 2) The host site and alternate site must be available for inspection by authorized DC Water personnel; and
 - 3) Provide all equipment for both sites, including at a minimum, servers, backup devices, alarms, UPS devices, relays, security, and power feeds.
 - d. Host all data in a central database and ensure that records of any data modifications are readily available to all the Blue Plains Users;
 - e. Schedule regular maintenance and upgrades performed during off-peak hours to ensure that the Web Portal is available during normal business hours and during inclement weather when wastewater flows are high:
 - 1) Planned maintenance and upgrades shall be scheduled in advance;
 - 2) E-mail notice of proposed maintenance or upgrades shall be broadcast 10 minutes before the system is taken down, and then again once the system is back up; and

BPSA BILLING METER SERVICE CONTRACT

Scope of Work: Core Services

- 3) In case of inclement weather in the BPSA, maintenance and upgrades of the Web Portal shall be postponed until the inclement weather has passed.
 - f. Provide daily data backups and provide a copy of this data backup monthly to DC Water;
 - g. Provide an alternate location for data storage in case of an emergency; and
 - h. Test and certify all software and application to be error-free prior to delivery:
 - 1) In the event the software fails, the Contractor shall provide the necessary assistance to correct the problem at no additional cost and per SLA terms.
 - 2) Provide regular updates of the associated software to all the Blue Plains Users at no additional cost.
- 5. Web Portal Users** - In providing active support for all the Blue Plains Users' use of the Web Portal, the Contractor shall provide access to the Web Portal that will allow Users' staff (Web Portal Users) to view data, perform queries, export data, and create reports based on the uploaded monitoring data.
- 6. Security** – To ensure the integrity of the data and the overall Web Portal system, the Contractor shall:
- a. Develop a protocol that will allow each Blue Plains User to submit a list of authorized staff that will be allowed to access the Web Portal. Those lists will define the specific data and equipment, by category, that they are authorized to have access to.
 - b. Provide a unique password security for each Web Portal User;
 - c. Limit each Web Portal User's access and ability to perform functions consistent with their authorized category;
 - d. Establish written security protocols and permissions to address, at a minimum: data collection, alarm acknowledgement, reporting, viewing specific data types, allowing viewing data and information from specified locations, telecommunications, as well as how to address changes in system configurations; and
 - e. Provide those security protocols to DC Water and the Blue Plains Users.
- 7. Training** – The Contractor shall:
- a. Provide three (3) one-half (1/2) day initial training events at sites agreed to by DC Water and the Blue Plains Users;
 - b. Provide pricing for additional training events on a per unit basis;
 - c. Cover dynamic display, web access system, alarms, tools, options, reports, and all other applications – as defined in the Contractor's software;

BPSA BILLING METER SERVICE CONTRACT

Scope of Work: Core Services

- d. Conduct additional training monthly, as defined in the SLA, whenever necessary to implement a software upgrade. Provide this training throughout the duration of the contract.

8. Rights to Data:

- a. The data shall be owned by DC Water. The Contractor has no rights to use the data for any purpose other than for purposes described in this Scope of Work; to develop or test the Web Portal, including any updates, in support of the Web Portal Users; or to train the Web Portal Users;
- b. A record of all the data shall be transmitted quarterly to the respective Blue Plains Users; and
- c. Upon termination of this contract, the Contractor shall transmit all the Web Portal data to DC Water.

- 9. Capability to Generate Reports** – The Contractor shall provide the capability for the Blue Plains Users to generate various reports from the Web Portal consistent with the requirements defined in A.2.h.

B. Upload and Analyze BPSA Data

1. Objectives - The Contractor shall:

- a. Regularly upload all data;
- b. Regularly perform basic data validations; and
- c. Provide the capability to generate reports.

2. Uploading Method – The Contractor shall be responsible for uploading all the Billing Meter flow data (defined in B.4. below) from all the BPSA Billing Meters listed in **Appendix 1 and Appendix 2**. The method for how that uploading will occur is also defined in **Appendix 1 and Appendix 2**, and will be completed through one of two methods:

- a. **Remote Uploading** – The Contractor will establish means for the meters to be linked for remote uploading of the data to the Web Portal; or
- b. **Manual Uploading** - The Contractor shall be responsible for coordinating with the respective Blue Plains Users to obtain the data, and then uploading it to the Web Portal. Meters that are so designated will generally be on SCADA systems or have other similar operational/security needs that must be protected.

3. Reviews Prior to Display on the BPSA Web Portal - All flow data shall be reviewed and approved by the corresponding Blue Plains Users. The Contractor will work with each Blue Plains User to agree on protocols and procedures so that all data will be reviewed and approved for release by the 15th business day of the following month in advance of being displayed to be viewed by all Parties on the BPSA Web Portal.

BPSA BILLING METER SERVICE CONTRACT

Scope of Work: Core Services

4. **Data to be Uploaded** – The following data shall be uploaded to the Web Portal, at a minimum:
 - a. **General Meter Information and Data:**
 - 1) Meter location;
 - 2) Date;
 - 3) Time;
 - 4) **Daily Data:**
 - i. Total Flow (Million Gallons);
 - ii. Minimum Flow (Million Gallons per Day);
 - iii. Maximum Flow (Million Gallons per Day);
 - iv. Minimum Depth (in) and Velocity (fps);
 - 5) **Monthly Data:**
 - i. Total Flow (Million Gallons);
 - ii. Minimum Flow (Million Gallons per Day);
 - iii. Maximum Flow (Million Gallons per Day);
 - b. **Raw Flow Data:**
 - 1) Flow data will be recorded at a 5-minute frequency;
 - 2) Flow data will be uploaded to a data logger;
 - 3) The 5-minute flow-data will be totalized and an average daily flow calculated; and
 - 4) 5-minute and average daily flow data will be uploaded at a minimum daily.
 - c. **Final Flow Data:**
 - 1) Flow data will be uploaded monthly, by the 20th business day of the following month and include:
 - i. Individual flows for each Blue Plains User's meter;
 - ii. Summary flows for each Blue Plains User; and
 - iii. Summaries of the monthly flows for the entire BPSA.
5. **Analyze Data** - The Contractor shall:
 - a. Review data and identify issues that may require meter maintenance or other actions at a minimum weekly frequency;
 - b. Have the Data Analyst perform preliminary analysis of all data, document anomalies, note any data gaps, and report meter uptime;
 - c. As needed, analyze and correct the monthly flow and rainfall data to ensure that the data is comprehensive and meaningful prior to submission; and
 - d. Regularly report such issues to DC Water and Blue Plains Users within a week of the issues being noted.

BPSA BILLING METER SERVICE CONTRACT

Scope of Work: Core Services

- C. Conduct Standardized Calibration of all BPSA Billing Meters and Generate Reports**
- 1. Objective** - To ensure that all BPSA Billing Meters are calibrated on a consistent basis to ensure the accuracy and integrity of the overall BPSA System;

 - 2. Calibration Requirements** – The Contractor shall:
 - a. Submit written calibration procedures and protocols to reflect the range of meter types being calibrated. All aspects of the agreed upon calibration procedures and protocols shall be documented and updated as needed, or at least annually.
 - b. Coordinate with the respective Blue Plains User at least one business day in advance to arrange for meter access;
 - c. Conduct routine calibrations and assessments of all BPSA Billing Meters listed in **Appendix 1**;
 - d. Frequency of calibrations shall be as defined in **Appendix 1**, i.e.:
 - 1) Quarterly;
 - 2) Semi-Annually; or
 - 3) Annually.
 - e. Document those calibrations and assessments submitted with the reports outlined below;
 - f. If meters are found to be out of calibration the Contractor shall:
 - 1) Report those issues to DC Water and the respective Blue Plains User within a week of the calibration or inspection;
 - 2) Coordinate with the respective Blue Plains User to:
 - i. Address any required maintenance,
 - i. Conduct additional calibrations and assessments, and
 - ii. Document those updated results.
 - g. Calibration requirements shall be based on procedures and protocols submitted by the Contractor and as agreed by DC Water and other Blue Plains Users;
 - h. Prepare documentation for each calibration visit with field and digital information that includes at a minimum the following information:
 - 1) Date, time, and weather conditions;
 - 2) Field crew name(s)
 - 3) Manhole identification number;
 - 4) Field measured depth and velocity readings; and
 - 5) Record any significant actions that are known to have taken place at the site.
 - i. Submit findings and documentation within five (5) working days of the site visit; and
 - j. Provide proper data analysis, Quality Analysis and Quality Control (QA/QC) reports, and data summary.

BPSA BILLING METER SERVICE CONTRACT
Scope of Work: Core Services

3. **Generate Billing Meter Calibration Reports** – Contractor shall:
 - a. Prepare an annual summary report;
 - b. Include in that report all meter calibrations for the prior year -whether conducted quarterly, semi-annually, or annually;
 - c. Submit that report to DC Water no later than 60-days after completion of the annual calibrations; and
 - d. Meet with the Blue Plains Users to review calibration results and assess the accuracy of the overall Billing Meter System.

BPSA BILLING METER SERVICE CONTRACT

Scope of Work: Supplemental Services

II. SUPPLEMENTAL SERVICES

These are services provided by the Contractor that specific Blue Plains Users may choose to take advantage of to address their own meter and equipment needs through their own contracts and utilization of the MAPT Rider Clause.

A. Maintain Meters and/or other Ancillary Equipment

The Contractor shall provide unit pricing to:

1. Develop a **Maintenance Plan** with each of the respective Blue Plains Users for the meters designated in **Appendix 1** and listed in in **Appendix 3**, and for the Ancillary Equipment listed in **Appendix 3**.
2. **Operate and Maintain** those meters and Ancillary Equipment by:
 - a. Performing corrective and preventative maintenance, in accordance with the manufacturer's design specifications or through best practices developed by the Contractor through experience with the manufacturer's equipment;
 - b. Operating the meter maintenance program/procedures in such a manner to ensure a minimum uptime of 95% of quality data for each meter;
 - c. Cleaning, repairing, and replacing malfunctioning meter and surcharge gauge data canisters, electronics, and sensors;
 - d. Cleaning, repairing, and replacing malfunctioning meter and rain/surcharge gauge data canisters, electronics, sensors, and collector hardware; and
 - e. Conducting site visits to address communication issues and data anomalies. Meters that are missing two scheduled data collections in sequence shall be visited within 24-hours for servicing and data collection.
3. **Address Defective Equipment** - If any meter or Ancillary Equipment, or associated components are found defective, the Contractor shall:
 - a. Remove, clean, and replace the equipment as necessary;
 - b. Submit a written report for each defective item indicating the date, time, and nature of the trouble with the item;
 - c. Install replacement equipment and calibrate the flow monitoring system within twenty-four (24) hours from the time the issue is detected.

B. Conduct Standardized Calibrations of Meters and/or other Ancillary Equipment and Generate Reports

The Contractor shall provide unit pricing to conduct standardized calibrations for the meters and Ancillary Equipment designated in **Appendix 3**. That work shall be conducted consistent with the requirements outlined under **I. Core Services, C**.

BPSA BILLING METER SERVICE CONTRACT

Scope of Work: Supplemental Services

C. Install, Maintain and Calibrate Temporary Meters

The Contractor shall:

1. Provide unit pricing to install, maintain, and calibrate Temporary Meters and/or Ancillary Equipment designated in **Appendix 3**. That work shall be consistent with the requirements outlined under **I. Core Services, C**.
2. Include pricing for all labor, materials, equipment, and tools required to perform this work for the duration of the contract.

D. Review and Analyze Data from Meters and/or Ancillary Equipment, and Upload to Users' Web Portal

The Contractor shall provide unit pricing to upload and analyze data for the meters and Ancillary Equipment designated in **Appendix 3**. That work shall be conducted consistent with the requirements outlined under **I. Core Services, B**. The Contractor will work with the respective Blue Plains Users to agree on protocols and procedures for reviewing and analyzing data; and as appropriate, uploading that data to the Users' own web portal.

E. Other Related Projects

From time to time, DC Water may issue a task order with an incremental project for the contractor to complete. In such cases, DC Water will issue a Statement of Work, and the Contractor will quote the work at rates consistent with other aspects of the contract. The contractor may begin work on these incremental projects when a purchase order for it has been received.

BPSA BILLING METER SERVICE CONTRACT

Scope of Work: Other Contract Requirements

Other Contract Requirements- For Core Services

Project Deliverables for Core Services: The Contractor shall at a minimum:

1. Within two weeks of the issuance of the contract and working with COG staff, schedule a kick-off meeting with DC Water and the rest of the Blue Plains Users. At a minimum, the Contractor shall provide at the kick-off meeting:
 - a. A draft schedule for developing and implementing the Web Portal;
 - b. A draft schedule and plan for connecting all BPSA Billing Meters to the Web Portal (**Appendix 1**); and
 - c. A draft schedule for conducting calibrations defined in **Appendix 1**; and
 - d. Within a week after the kick-off meeting, provide final schedules for items 1 a-c.
2. Submit monthly progress report and invoices to DC Water.
3. Schedule and conduct quarterly progress meetings with DC Water to review, at a minimum:
 - a. Billing Meter uptime,
 - b. Web Portal access,
 - c. Rain gauge uptime,
 - d. Service crew response time to identified meter issues, and
 - e. Spare parts availability and/or concerns.

NOTE: *Per DC Water's Procurement staff, these criteria will not be part of the Technical SOW, but addressed elsewhere in DC Water's RFP instructions. In addition, it is the intention that the criteria be limited in detail, and that detailed assessment of an Offeror's credentials shall be conducted via an RFP Score Card and detailed evaluation questions.*

Evaluation Criteria: Respondents will be selected based on the Evaluation Criteria factors included in this solicitation, including:

1. Offeror must demonstrate a minimum of five (5) years of specialized experience working with flow monitoring and sanitary sewer collection systems.
2. Project Manager shall have a minimum of five (5) years of flow monitoring installation and evaluation experience.
3. Compliance with objectives, scope of work and requirement specifications outlined in this document
4. Project plan proposal: Implementation, training and support
5. Pricing proposal
6. Financial stability of the Contractor
7. Overall value/benefit (i.e., cost versus level of service provided)

BPSA BILLING METER SERVICE CONTRACT

Scope of Work: Appendices

Appendices

Note: All meter lists to be confirmed with the Blue Plains Users and included in the RFP and resulting contract. Lists are organized and labeled to define services to be provided and responsible jurisdiction/agency.

I. CORE SERVICES

These are the mandatory services that each BPSA Agency/Jurisdiction intends to participate in to provide consistency for monitoring the BPSA Billing Meters and ensure the integrity of the overall BPSA Billing Meter System. The specific meters for these services are listed in **Appendix 1 and Appendix 2**.

Appendix 1 – BPSA Billing Meters (*meters that will be calibrated by the Contractor, and the data uploaded to the BPSA Web Portal by the Contractor*)

Appendix 2 – Additional BPSA Meters (*meters that will not be calibrated by the Contractor, but will have their data uploaded to the BPSA Web Portal by the Contractor*)

II. SUPPLEMENTAL SERVICES

These are services provided by the Contractor that specific Blue Plains Users may choose to take advantage of to address their own meter and equipment needs through their own contracts and utilization of the MAPT Rider Clause. The meters to be serviced are designated in **Appendix 1** and listed in in **Appendix 3**, while the Ancillary Equipment to be serviced is listed in **Appendix 3**.

Appendix 1 – BPSA Billing Meters (*meters that will also be maintained by the Contractor are specifically identified*)

Appendix 3 – Additional Meters and Ancillary Equipment (*list of meters and equipment that are not part of the formal BPSA Billing Meter System; however, the Blue Plains Users may wish to have the Contractor provide the specific services listed*)