

**REQUEST FOR PROPOSALS (“RFP”)
FOR EQUIPMENT, SOFTWARE, INTEGRATION, AND INSTALLATION FOR A
COMPREHENSIVE ADVANCED METERING INFRASTRUCTURE PROJECT**

TITLE: Scope of Work

A. Project Background

In order to modernize infrastructure within the Brownsville Public Utilities Board metering system, the City is seeking to implement an AMI solution. BPUB has a variety of goals for instituting an AMI program, including:

- a. Capture interval data to improve customer service, trend usage history, and identify demand/usage spikes
- b. Institute a customer portal
- c. Identify abnormal usage—high, low, and unusual patterns of consumption—and notify customers
- d. Key accounts management—identify usage and demand spikes, and give large customers this information
- e. Identify system water losses—where we may have losses in the system, time of day, etc.
- f. Identify customer water losses—when they started, patterns, etc.
- g. Offer additional services—pay as you go, demand response, TOU, DER/solar/net metering, etc.
- h. Provide security features—tamper resistant screws (water), seals (electric), temperature (socket), tamper detection, etc.
- i. Consolidate electric meter inventory/vendors to simplify support, maintenance, programming, etc.
- j. Support unplanned and planned outage management
- k. Perform voltage monitoring (under- and over-volting)
- l. Measure line losses
- m. Control quality of water meters
- n. Implement remote disconnects/reconnects
- o. Support rolling blackout management
- p. Add and sustain new technology/applications

A breakdown of meters by size is given in the following pair of tables:

Electric Meter Form	Estimated Replacements
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1S	133
2S	50,870
2SE CL320	208
3S	10
4S	195
5S / (45S)	225
6S	5
9S (8S, 10S)	849
12S	578
16S (14S, 15S)	1,954
16S CL320	40
35S	5

Water Meter Size	Estimated Replacements	Estimated Retrofits
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3/4"	16,830	37,356
1"	489	1,013
1.5"	86	388
2"	234	899
3"	32	62
4"	7	24

Water Meter Size	Estimated Replacements	Estimated Retrofits
6"	0	21
8"	0	8
10"	0	2

B. IT Background

While BPUB typically prefers an on-premise solution suite and reserves the right to preferentially evaluate proposals that accommodate this preference, it is also open to a hosted, vendor-managed software as a service ("SaaS") solution. This RFP is providing Proposers two options for its software:

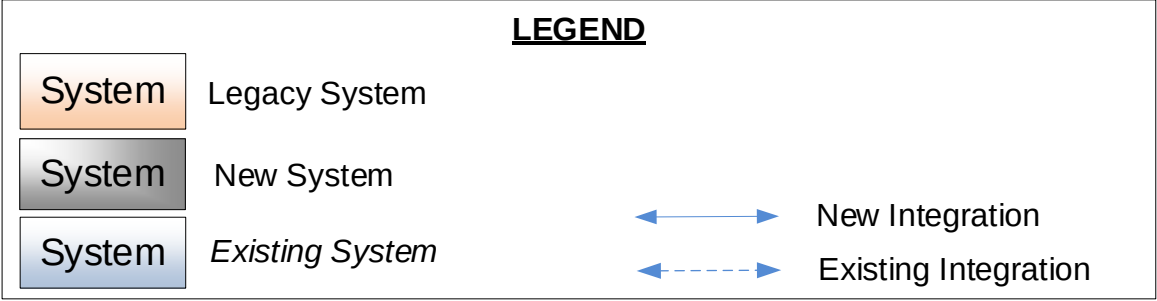
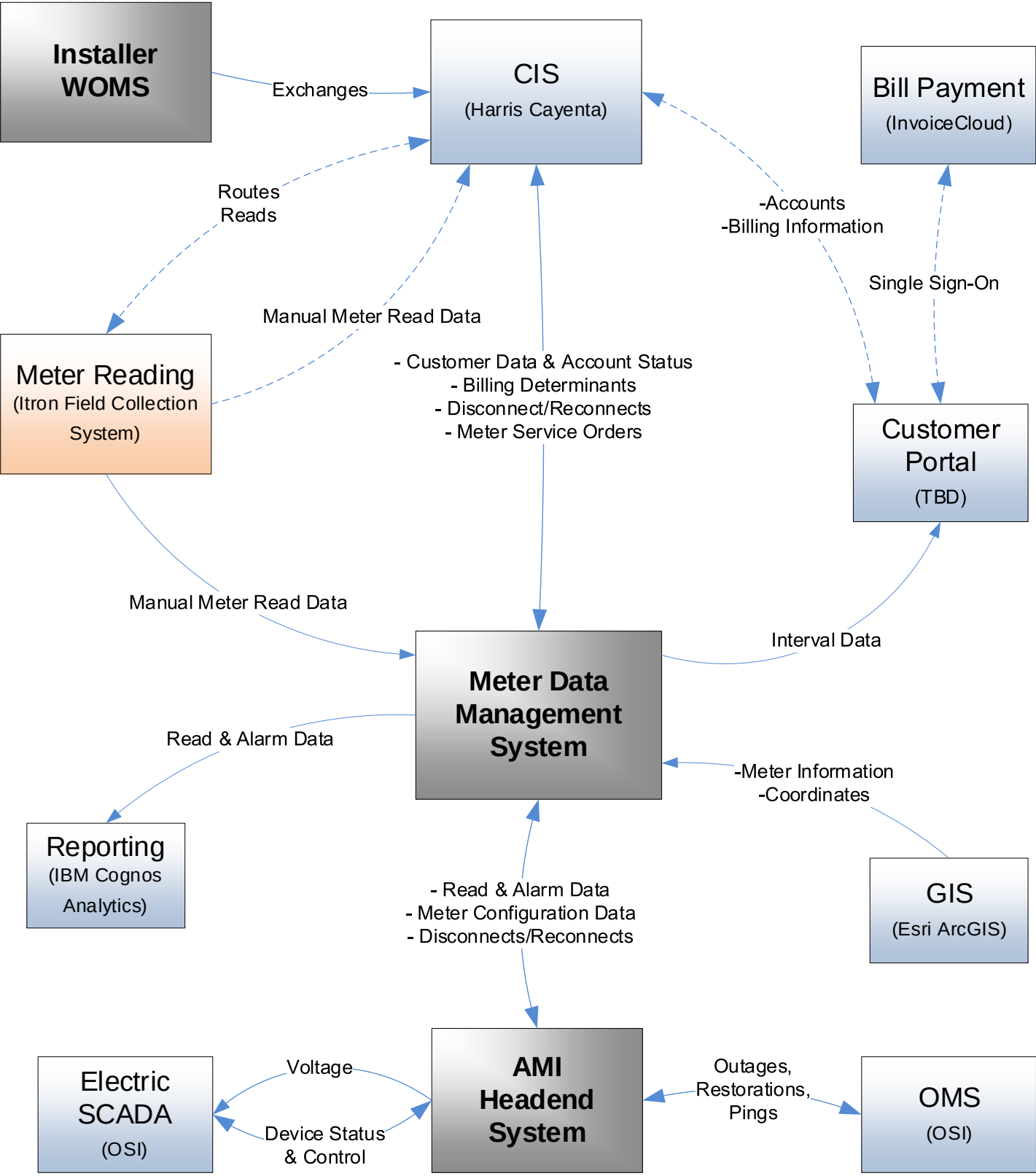
- Propose a hosted, vendor-managed SaaS solution
- Propose a traditional on-premise solution

Separate worksheets have been provided for each strategy under Attachment B.

BPUB has a robust IT function, and almost all operational systems are supported in its on-premise environment. Systems are deployed on virtual environments, with BPUB making extensive use of VMWare. Three separate sites are used for support and backup of systems, with critical systems being replicated every five minutes to assure business continuity. Backups are also performed daily on database and application servers. Staff possesses a high level of expertise to support a variety of operating systems and databases, including Microsoft Server 2016 and above, RHEL, Oracle Database, and Microsoft SQL Server.

At this time, BPUB does not foresee any competing projects that will require significant IT resources.

A high-level dataflow and integrations systems context diagram is provided on the subsequent page for context, denoting integrations to be performed within the scope of the Project.



C. Field Background

Currently, the utility reads meters manually. As of the time of developing this RFP, BPUB takes about 57,600 water reads and 63,300 electric reads every month. Meters are read on 20 billing cycles; 11 of these cycles are composed of 13 routes, while the remaining 9 cycles have 12 routes each, for a total of 251 routes. A single cycle takes a full day to read for BPUB's meter reading staff. The maximum blackout time is 2 days prior and 7 days after the read.

BPUB's service territory spans 100 square miles, though the city is over 140 square miles. For a map of the service territory, see Exhibit 1. Of the customers serviced by BPUB, about 15,000 accounts are water-only, about 14,200 are electric-only, and about 37,900 are served water and electric. Approximately 15-18% of meter locations are "hard to access," primarily as a result of dogs at the premises or gate locks. For additional details on the meter population, see Exhibit 2. There is not an expectation for substantial growth outside the periphery of the service territory, though services continue to expand at a rate of about 1% annually.

BPUB may be able to in-house several services or resources sometimes provided by the installation vendor for similar types of AMI projects; however, BPUB cannot make any assurances or guarantees as to the availability of these resources. As a result, BPUB is mandating that Proposers provide optional pricing for several aspects that may or may not be within the scope of the final contract. These services include:

- Warehousing space for the staging of the Project
- English- and Spanish-language communications materials, including: colored, double-sided pre-installation postcards to be sent in advance to customers; colored, double-sided post-installation door hangers; call center scripts to be used by the vendor's call center to field customer questions about the Project, address complaints, and schedule appointments, as necessary
- Testing of removed water and electric meters (either with onsite testing apparatus or sent offsite to a third party—whichever is most cost-effective)
- Disposal of dirt, spoils, and meters (including providing a credit for brass)
- Miscellaneous installation services, including in-advance pit cleaning of dirt and debris using a vacuum truck, meter box servicing (lowering service line for shallow sets, as well as meter box repositions and replacements), lid drilling and replacements, and large commercial/industrial customer AMI conversion

BPUB is currently considering an opt-out policy for those customers who are hesitant about the migration to new metering technology; however, this policy is tentative and, if instituted, is not anticipated to have any material impact on the Project or the services being requested under this RFP.

BPUB is unaware of any special licenses or permits required for performing installation work, aside from standard business licenses.

In addition to these conditions, Proposers should be aware of the following circumstances appertaining to the utility's field conditions when developing a response to this RFP:

1. Water
 - a. BPUB has currently standardized around low-lead brass Badger PD meters for its current water meter population.
 - b. Valves are located inside the meter box and inside meter vaults; however, they are not marked on the outside.
 - c. Small meters have an inline valve, while large meters have both inline and outlet valves; valves are owned by BPUB.
 - d. It should be assumed that no meter pits contain multiple water meters.
 - e. It should be assumed that no meters are indoors or located within basements. Pits are typically located in the front yard of homes, in the sidewalk, or in the right-of-way, depending on the area.
 - f. Meter sets of standard residential pits have a typical depth of 6"-8".
 - g. Most meter pits are clean and readily accessible, though some have partial dirt around the meter.
 - h. About 30% of meters are on re-setters, while the remaining 70% are on straight pipe.
 - i. Though BPUB does not have a breakdown of material for service lines, the utility-side line is typically brass or poly, while the customer-side is typically PVC or copper. Some limited galvanized pipe may be present on the customer-side in the older parts of town (downtown), but these instances are rare.
 - j. Every large meter vault will require a special key to open the vault, and BPUB will provide keys.
 - k. Large meter vaults will be in OSHA-defined confined space and have a typical depth of 3'-5'.
 - l. BPUB will be responsible for providing consumables (gaskets, washers, etc.) to facilitate the installation process.
 - m. Soil is generally soft and sandy within the service territory.
2. Electric
 - a. Most commercial meters have bypasses, though some do not. Meters without bypasses are periodically flagged during service orders and are scheduled for upgrades to BPUB's service standard.
 - b. There are approximately 600-900 A-base and K-base meters in the population, but these meters are not within scope of this project.
 - c. Locking rings are used on meters serving apartment buildings.
 - d. It should be assumed that there are not any hazardous materials of note in the current meter population. Approximately 5%-10% of electric meters contain glass, while the rest are plastic. Approximately 30% of electric meters are analog, while the rest are digital.

D. Project Implementation Phases and Timeline

The AMI project will commence with an Initial Deployment Area (IDA) before proceeding to Full Deployment. Performing work in this manner reduces overall project risk and ensures that all systems, processes, and people are in a state of readiness to move into mass meter deployment. The IDA will have quality gates to ensure readiness prior to Full Deployment.

The overall implementation period is expected to span 24 months following Project approval and formal Notice to Proceed, with the IDA encompassing 12 months of this period. This timing is tentative and subject to change. A final schedule will be developed between the selected Proposer and the City, which will provide a reliable approach to the installation of the Project, integrations and testing, and functional compliance.

E. Services and Performance Conditions

Conditions for each of the Project Components, relative to the Project Implementation Phases and Timeline, are set forth below and should be reviewed along with corresponding Requirements.

1. AMI Field Area Network

- a. Provision and install representative Network Infrastructure, meter(s), and endpoint(s) to test communications during IDA.
- b. Configure the AMI headend system to comply with the design requirements.
- c. Perform integration of the AMI headend system to/from the noted systems to exchange all meter event data, reads, and initiation of remote commands.
- d. Provide adequate documentation of the solution, comprising at least: user manual; training materials; standard system report samples, with descriptions of input/output parameters, and explanations of how reports are built and executed; error code and troubleshooting documentation; system documentation concurrent with the software environment; network hardware technical specifications, installation guides, and troubleshooting guides; and system acceptance test plans.
- e. Conduct a final propagation/coverage study and obtain any and all approvals necessary for any final Network Infrastructure.
- f. Provision and install any and all remaining Network Infrastructure.
- g. Conduct training with staff on the AMI headend system and hardware.
- h. Deliver endpoints and electric metering hardware on an as-requested-basis.
- i. Participate in and perform any systems acceptance testing.

2. MDMS

- a. Configure the MDMS to comply with the design requirements.
- b. Perform integration of the MDMS to/from the noted systems to provide exchange of all meter event data, reads, and initiation of remote commands.
- c. Provide adequate documentation of the solution, comprising at least: user manuals; training plan and materials; standard system report samples, with descriptions of input/output parameters, and explanations of how reports are built and

executed; system documentation concurrent with the software environment; and system acceptance test plan.

- d. Conduct training.
- e. Participate in and perform any systems acceptance testing.

3. Installation

- a. Configure the installation WOMS to comply with the design requirements and the installation workflow set forth in the Agreement.
- b. Set up information exchange between the WOMS to/from the noted systems to provide work order and meter exchange information.
- c. Provide adequate documentation of the WOMS, including guides on information access and key performance indicators or reports generated.
- d. Hire adequate numbers of qualified personnel to staff installation services in accordance with the requirements and the IDA and Full Deployment timeframes.
- e. Acquire and set up adequate heavy equipment, space, and office/staging/warehousing facilities to facilitate the installation services to be provided.
- f. Manage and maintain inventory of endpoints and metering hardware from the awarded Proposer(s).
- g. Provide installation services in accordance with the requirements.

4. Water Metering

Deliver any equipment specified as requested, in accordance to the lead time specified in the Proposal.