

**NORTH BEACH
WATER METERS & AMR/AMI SYSTEMS
INSTALLATION**

1.0 GENERAL SCOPE

Under this specification a single Contract Installation Company (CIC) shall supply all equipment and labor necessary to install **763** Water Meters, Automated Meter Reading (AMR) endpoints, and/or Advanced Metering Infrastructure (AMI) system endpoints. While the primary function shall be to provide labor for the installation of meters and endpoints, the installation company shall also provide project management, data integration services, and a field service software with a Utility Portal allowing electronic data uploads to billing software, and full transparency of project progress as described herein.

1.1 TECHNICIANS

- 1.1.1** The CIC shall employ competent, efficient employees skilled in the work assigned to them. The CIC shall provide the Water Utility with a list of names, photo identification, background checks, vehicle information and other required information for the employees performing work.
- 1.1.2** The CIC employees shall, at all times display in a clear manner, photo identifications. Each photo identification shall have the CIC name, employee's name, title, and signature.
- 1.1.3** All service staff, technicians, drivers and field supervisors will be equipped with smart phones and/or tablets. Electronic and Wireless Communication, through a cellular network, must be available to the installation team.
- 1.1.4** All the CIC employees shall be neat and presentable always to present a professional appearance. All Employees shall have the same color uniforms including shirts, pants, and jackets. The CIC logo shall be permanently attached to shirts and jackets.
- 1.1.5** The CIC vehicles used for work shall have company logos prominently displayed and shall be registered with the Water Utility.
- 1.1.6** All work shall be performed by competent, skilled personnel, to be conducted in accordance with good trade practices and all applicable codes.
- 1.1.7** CIC must be skilled in handling both small and large water meters, both indoors and outdoors, including confined space meter vaults, ranging in size from 5/8" to 2"
- 1.1.8** The CIC shall be responsible for the proper care and protection of the work site, for all materials and articles delivered to the site where the CIC will perform the work, until completion and final acceptance of the work. The CIC shall exercise proper precautions and safety measures in performing the work, which shall be in accordance with all applicable laws, rules and regulations. The CIC shall be responsible for the protection of all persons and/or property at the location in which the work will take place.

1.1.9 The CIC shall keep the work site free from unnecessary accumulations of waste materials. Upon the completion of all work, the CIC installers will be instructed to remove all tools, equipment and surplus materials, as well as all rubbish and waste resulting from the work. Upon the completion of the work, the work area shall be left “broom clean” or its equivalent, to the reasonable satisfaction of the Water Utility.

1.2 FIELD TOOLS

1.2.1 All CIC technicians must be equipped with tablets/mobile devices that communicate through a cellular network providing a real time paperless solution in the field for every installation.

1.2.2 Tablets/mobile devices must be capable of capturing: pictures, meter data, endpoint data, customer information, bar code data, and any other required information through the use of the field service software.

1.2.3 The mobile application on the tablet must allow the installation technicians to access all information including: installers schedule, office calendar, existing meter and radio data, all account information, and material inventory.

1.2.4 CIC technicians must be equipped with all equipment and software required by AMR/AMI Manufacturer to program radio endpoints.

1.3 FIELD SERVICE SOFTWARE

1.3.1 The Field Service Software must provide the capability to record, manage, store, retrieve, and access all relevant data for each customer location, including customer signatures.

1.3.2 The Field Service Software must allow for scheduling of all appointments, logging all customer interactions, and handling of service requests.

1.3.3 The Field Service Software shall send an email or text message to customer when appointment is scheduled as a confirmation as shown in figure 1 below. Another email or text message shall be sent to the customer the day before the appointment as a reminder. Finally, a third email shall be sent to the customer day of the appointment, when technician is en-route to location, and must contain a picture of the technician that will be completing their installation as shown in figure 2 below.

FIGURE 1

From: CIC
Sent: Friday, April 2 2018 2:12PM
To: Resident
Subject: your installation has been Assigned

Dear XXXX Customer,

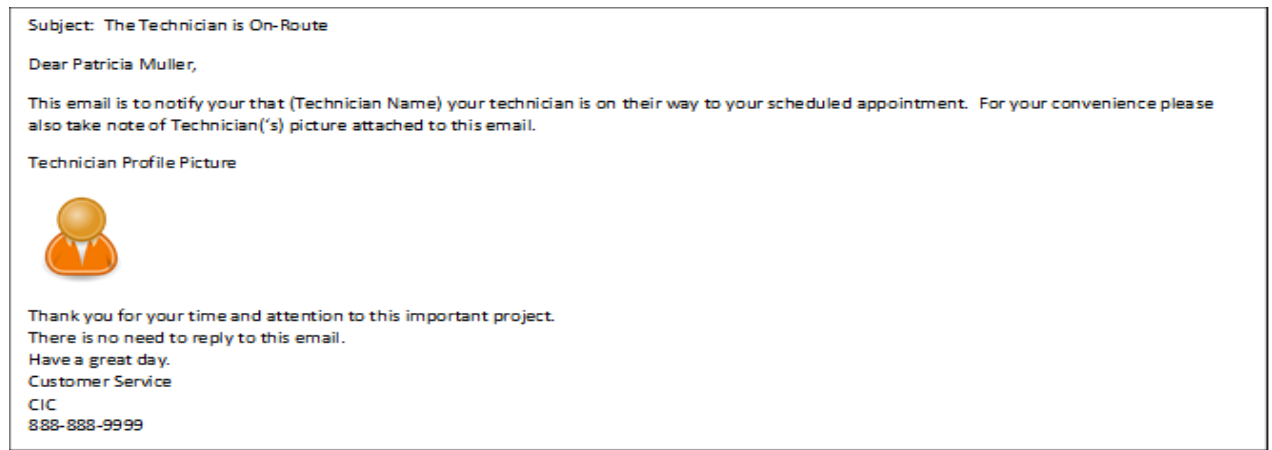
Please use this email from CIC as a reminder for your scheduled appointment tomorrow XX-XX-2018 between the hours of 12pm – 4pm at 8916 Chesapeake Avenue, North Beach. You will be receiving another notification tomorrow when your technician is on his way with his picture attached to the email for your safety and security reasons.

Thanks in advance for your time and attention to this important project.
There is no need to reply to this email.

Have a great day.

Customer Service
CIC
800-888-9999

FIGURE 2



1.3.4 The CIC Shall provide the ability for Water Utility customers to schedule appointments online at their convenience. Once the appointment is scheduled, the customer shall receive an email confirmation of their appointment. The email confirmation shall contain informational video explaining the installation process

1.3.4 All account management is to be completed through the Field Service Software. All relevant customer account information and new product data collected after installation must be accessible by all Utility personnel, and project management through the use of a Utility Portal.

1.4 UTILITY PORTAL

1.4.1 CIC must have a cloud-based Utility Portal made accessible, by secure invitation only, for the Water Utility to monitor in real time the complete installation process.

1.4.2 Field Service Software utilized by the technicians must be completely integrated with the Utility Portal to provide the Water Utility real-time updates on the progress of installations.

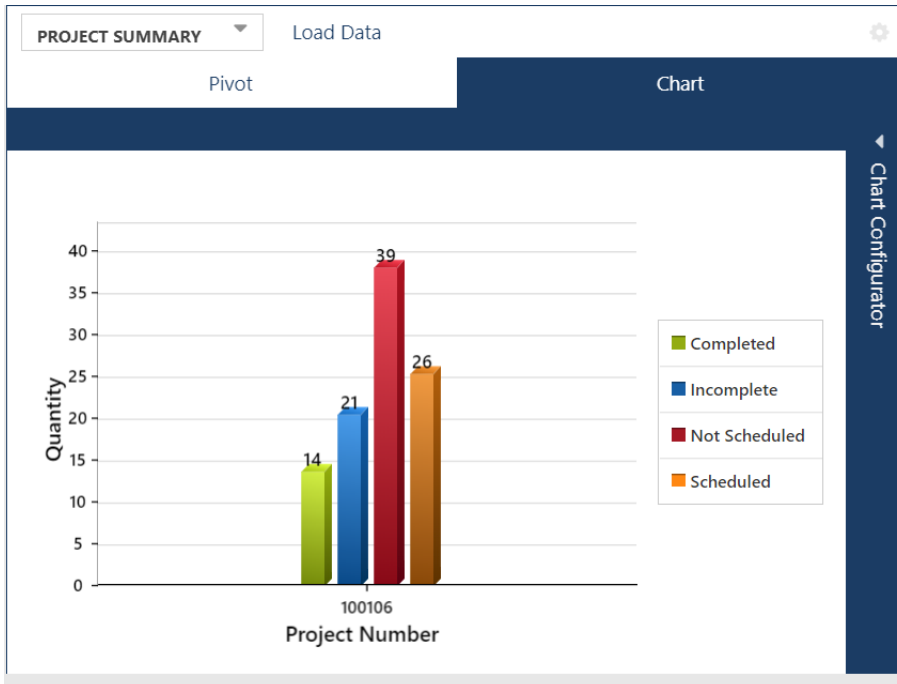
1.4.3 The Utility Portal must have built in search/filter capabilities to provide a status of each individual account in figure 3 as shown below. The Utility Portal must be able to filter account statuses by day, week, month, etc. to monitor the project

FIGURE 3

Work Order	Status	Account #	Address	New Meter Size	New Meter ID	New Radio ID	New Radio Location	Download Link	Images
100998	Completed	1388123	48 Meadow Vale Parkway	1"	15688351	100194504	RIGHT FRONT	PDF	IMAGES
100999	Completed	1403795	67 Butternut Parkway	5/8"	16068829	100194706	LEFT SIDE	PDF	IMAGES
101003	Completed	1500045	3324 Mandrake Alley	5/8"	15690162	100185781	LEFT FRONT	PDF	IMAGES
101005	Completed	1509491	282 Meadow Vale Drive	5/8"	15393461	100157476	REAR	PDF	IMAGES
101006	Completed	1520701	07 Morningstar Trail	5/8"	15891978	100162244	RIGHT FRONT	PDF	IMAGES
101009	Completed	1577058	3422 Scofield Hill	5/8x3/4"	15898746	100198548	LEFT FRONT	PDF	IMAGES
101021	Completed	1780771	90 Upham Road	5/8"	15973882	100181956	RIGHT SIDE	PDF	IMAGES
101023	Completed	1790301	26 Debs Park	5/8"	16072903	100186764	LEFT SIDE	PDF	IMAGES
101026	Completed	1907263	96 Monica Terrace	5/8"	16381466	100245714	REAR	PDF	IMAGES
101027	Completed	1911133	5879 Milwaukee Park	1"	15693994	100197191	LEFT SIDE	PDF	IMAGES

1.4.4 There must be five statuses available on the Utility Portal as shown in figure 4 below -

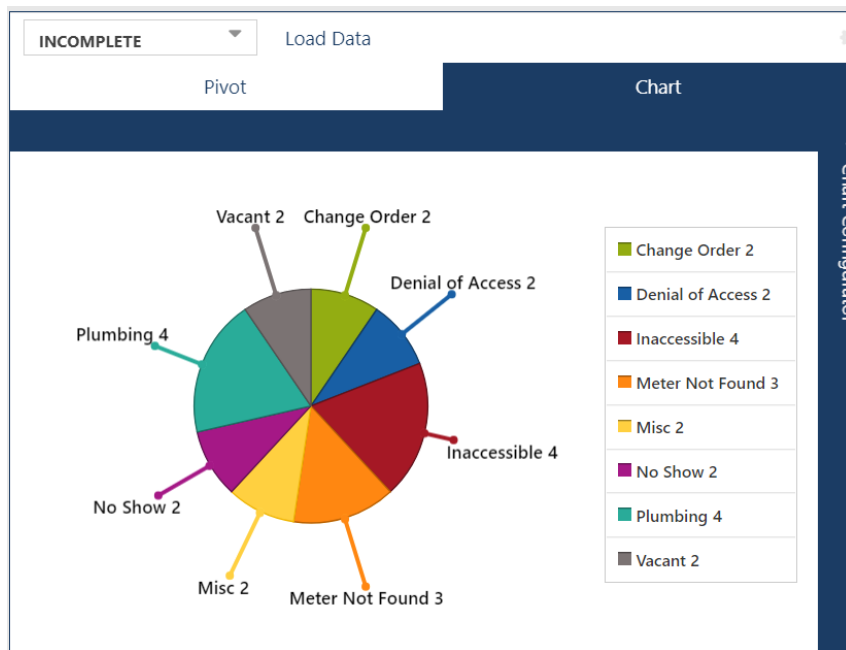
- Completed- Job Done
- Validating - Job done awaiting data validation process
- Scheduled - Job scheduled in the future
- Not Scheduled - Jobs not scheduled
- Incomplete - Jobs that cannot be completed



1.4.5 The Utility Portal must be able to provide a list of accounts that are incomplete and indicate the reasons why they cannot be completed as shown below in figure 5. The reasons for an account being incomplete shall include:

- Denial of Access
- Meter not Accessible
- Meter not Found
- Plumbing Conditions
- Vacant Property
- Change Order
- No Show
- Miscellaneous

FIGURE 5



Field technicians must have the capability to enter the reason for an account being on hold through the mobile application of the field service software.

Existing

Meter Tag



Meter #



Meter Set



Meter Read (HI)



Remote



New

Meter # (HI)



Meter Read (HI)



Meter Set



Remote ID (HI)



Handheld Programming Success



Handheld SNR / Base Station



Remote



- 1.4.7 The Utility Portal must be able to create a CSV file with all data to be exported to the Water Utility's billing software. CIC shall work with the Water Utility billing software company to ensure the format of the export file from the Utility Portal is compatible with the billing software. This shall allow for the electronic transfer of all new meter data, collected in the field and uploaded to the Utility Portal, to the billing software.
- 1.4.8 Utility Portal must provide a view to the Water Utility of the product inventory throughout the project. Water meter and endpoint quantities shall be monitored by the Water Utility in real-time through the Utility Portal.
- 1.4.9 The Utility Portal must provide a location and Water Utility access to project documents such as contracts, Invoices, prevailing wage payroll, and any other documents required by the Water Utility.

1.5 PROJECT MANAGEMENT

- 1.5.1 Installation CIC shall provide inventory management through the Field Service Software in conjunction with the Utility Portal, as shown in figure 7. Field Technicians shall use bar code scanning technology to enter meter and radio endpoint data into the Field Service Software. As meters and endpoints are marked installed through the field technician's mobile app, they shall be deducted from the inventory levels.

FIGURE 7

Radio	Received	Remaining
Radio	1940	1940

Meter	Received	Remaining
5/8"	1559	1559
3/4"	35	35
1"	4	4

- 1.5.2 Installation CIC shall be responsible for receiving material deliveries from AMR/AMI and Meter Manufacturer.
- 1.5.3 Routing of product installation shall be coordinated with Water Utility to avoid interruption of billing schedules.
- 1.5.4 Video conferencing on tablets/mobile device shall be available to field technicians for onsite communication and troubleshooting to ensure quality.
- 1.5.5 CIC must have dedicated call center (not outsourced) to be able to schedule appointments daily. Call center shall be responsible for contacting customers that Water Utility is able to provide phone numbers for.
- 1.5.6 Regular project progress meetings shall be conducted by the CIC with all project constituents to update everyone on project status.

1.6 DATA INTEGRATION

- 1.6.1 Installation CIC is responsible for providing file to transfer all field data captured by the technicians, electronically to the Water Utility billing software. No manual data entry by Utility personnel shall be acceptable.
- 1.6.2 Installation CIC is responsible for uploading existing Water Utility account data base into the project Field Service Software.
- 1.6.3 Work orders shall be generated by the Utility Portal, based on information provided from the Field Service Software. All work orders shall contain existing account information from the Water Utility data base, new meter and endpoint data, before and after pictures,

and any other pertinent account data. Work orders shall be stored on the Installation Contractor's servers for an agreed upon period of time after project completion.

1.7 QUALITY ASSURANCE

- 1.7.1** CIC must provide a data validation team responsible for confirming information from the Water Utility data base matches the information field technician finds on location. This is accomplished by data validation team comparing data in field pictures to the data entered by the field technician.
- 1.7.2** CIC shall be responsible for confirming AMI endpoints successfully communicate back to the head end of the AMI system.
- 1.7.3** CIC must conduct mandatory monthly workshops incorporating revised safety procedures, municipality updates, reinforcing Occupational Safety Health Administrative (OSHA) standards in the field and confined space rules and regulations
- 1.7.4** Field Technician must spend 40 hours in the field and home office including the call center to be cross trained in all functional areas of the business
- 1.7.5** Field Supervisors must have 30 hours of Occupational Safety Health Administration (OSHA) training and 8 hours specifically in confined space entry training
- 1.7.6** Field technicians must have minimally 10 hours of Occupational Safety Health Administration (OSHA) training and 8 hours specifically in confined space entry training
- 1.7.7** To assure quality, CIC must randomly call customers and conduct field inspections on completed installations