



REQUEST FOR PROPOSALS FOR AUTOMATED METER INFRASTRUCTURE SYSTEM PROJECT

Issued: January 26, 2018

Proposals must be received at the address below by **2:00 p.m.** on
February 23, 2018

City of Pacific
Public Works Department
1003rd Avenue S.W.
Pacific, WA 98047

CITY OF PACIFIC
PROJECT NO. WT1701
ADVANCED METERING INFRASTRUCTURE SYSTEM PROJECT
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I. Request for Proposals
Procurement of an Advanced Metering Infrastructure System

CITY OF PACIFIC

PROJECT NO. WT1701

ADVANCED METERING INFRASTRUCTURE SYSTEM

Request for Proposals

The City of Pacific (City) is issuing a request for proposals (RFP), to provide a fixed network Advanced Metering Infrastructure (AMI) system for the City's drinking water utility. The target date for full AMI system deployment is no later than December 2018. The AMI system shall have a design life of at least 20 years.

The City of Pacific is located approximately 27 miles southeast of Seattle along State Route 167 near the King / Pierce County line. The City is approximately 2.4 square miles in size with a population of approximately 6,800. The City of Pacific's water service area encompasses about 2.13 square miles. The City water system lies in a relatively flat river valley with an elevation averaging from 60 to 80 feet above mean sea level. The water system facilities consist of three wells, a 750,000 gallon reservoir, a 3,500 gpm booster pump station, and approximately twenty miles of distribution pipe. These physical assets are used to serve approximately 1,631 residential services, 109 multi-family accounts (serving approximately 835 units), and 175 commercial accounts including a motel, one elementary school, and several construction and transportation related businesses based on 2017 data.

There are approximately 1,915 service connections with meter sizes ranging from 5/8-inch to 3-inch. A majority of these meters were installed between 15 and 20 years ago and are nearing the end of their useful life. The majority of the meters are 5/8-inch to 3/4-inch installed in shallow meter boxes. The majority of these meters are for providing residential water service and are predominately located in the northern two-thirds of the City. The southern one-third of the City is largely commercial and industrial with a variety of 1 1/2-inch, 2-inch and larger meters.

The complete RFP for this project can be obtained online, at no cost, through the following website:

www.pacificwa.gov

The Project is listed under Solicitation Number WT1701. All addenda will be issued through this website under this specific solicitation number.

The City reserves the right to reject any and/or all proposals for good cause and to waive any and/or all informalities.

Questions should be directed to the Water System Manager, Jim Schunke, at email jschunke@ci.pacific.wa.us. Proposals, the requirements for which are detailed in the RFP package, are due to the Public Works Manager at City of Pacific, 100 3rd Avenue SE, Pacific, WA 98047; phone: 253-929-1113, no later than 2:00 PM on February 24, 2018.

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II. Definitions

The following are key terms used throughout this Request for Proposals.

Advanced Metering Infrastructure (AMI): Fixed network type automated meter reading system.

Contract Manager: The Contracted Respondent will designate a Contract Manager who is a direct employee of the selected firm for the duration of the contract, and who shall have the authority to handle and resolve any disputes or contract issues with the City.

Contracted Respondent: Respondent to this request for proposals whose proposal is determined to be the most advantageous to the City, and with whom the City enters into a contract for the furnishing of an AMI system for its water utility.

Cost Proposal: Respondent's proposed system costs, as presented per the instructions in Section VII of this RFP.

City: City of Pacific.

City Project Manager: Employee or agent of the City designated to manage this project.

Installation Manager: The Contracted Respondent will designate an Installation Manager, who shall be responsible for managing the entire installation project on a day-to-day basis on behalf of the Contracted Respondent.

Pilot Phase: Initial phase of AMI system deployment involving approximately 300-500 accounts in a concentrated area of the City to test the AMI system and installation services policies, procedures and control systems.

Pre-Deployment Meeting: Meeting between the City and the Contracted Respondent that will occur subsequent to a contract being fully executed but prior to commencement of contracted work, with the primary purpose of establishing the detailed AMI system deployment schedule.

Request for Proposals (RFP): This document, which will become incorporated into the contract developed between the City and the Contracted Respondent.

Respondent: Firm or company responding to the request for proposals.

III. Purpose and Scope of Work

Project Purpose/Overview

The City of Pacific (City) is issuing a request for proposals (RFP), to provide a fixed network Advanced Metering Infrastructure (AMI) system for the City's drinking water utility. The target date for full AMI system deployment is no later than December 2018. The AMI system shall have a design life of at least 20 years.

The City currently has approximately 2,060 water service meters. Of these, 95% are currently read via touch-read. Approximately 90 percent are residential (5/8x3/4-inch and 1-inch) and 5 percent are larger residential and commercial (1.5-inch and 2-inch, with only 2 meters larger than 2-inch). The current predominant meter brand is Sensus.

Scope of Work

The work involved under the terms of the contract with the Contracted Respondent shall be full and complete execution of the items noted below, and as described further throughout this RFP. This effort involves the furnishing of an AMI system, to include but not be limited to the following:

1. Furnish and install AMI system Transmitter Units (TUs) for all water service meter locations. TUs shall be capable of transmitting information to fixed location data collection units (DCUs) installed as part of this contract or to other existing collection points (e.g., existing cellular networks and their associated infrastructure). Provide, if applicable, required cabling, splice kits, and all equipment necessary to connect meter registers to TUs, in order to obtain a failure-free connection for the 20-year life of the installation.
2. Furnish and install fixed network AMI system data collection units (DCUs) and repeaters, as necessary for a fully functioning system. DCUs are to be capable of capturing signals from TUs. This element of the scope of work includes installation of DCUs and repeaters, along with required support structures, electrical power connections, and everything necessary to make them operational.
3. Evaluate the existing meter setters and identify the setters that require replacement and notify the City at least 72 hours in advance.
4. Furnish and install replacement meters and meter registers compatible with the furnished TUs, for all 3/4-inch and 1-inch meter locations where existing meters were installed prior to January 2012. Note that factory potting (i.e., direct connection, with no wire splicing) of the TUs to meter registers is preferred for those locations where replacement meters are being furnished/installed along with TUs.
5. Furnish and install the communication or data transfer ("backhaul") system capable of transferring data from DCUs to a meter reading system control computer located at City offices. All applicable AMI System Hardware (TUs, DCUs, meters and registers) shall be of one and the same manufacturer.

6. Furnish the means by which to export meter reading data to the City's customer information, billing, and hydraulic modeling platforms.
7. Obtain all Federal, State and local permits required for the installation and operation of the system and any other approvals.
8. Provide technical and installation support to the City during system deployment.
9. Provide documentation adequately describing the configuration, operation and maintenance of the AMI and metering system and its components, for use by City employees or agents.
10. Provide training sufficient to enable City personnel to configure, implement, and properly operate and maintain the AMI system.
11. Provide technical support for the system over its expected life, including on-site and telephone support for City personnel, and patches and upgrades to the system software and firmware to ensure that the system continues to perform to design criteria.
12. Enter into a service contract with the City for the on-going maintenance of the meter reading system equipment and system software for fixes and upgrades.
13. The Contracted Respondent will be the single point of contact to resolve any and all issues between meters, registers, software, etc.

The Contracted Respondent for this project shall comply with all Federal, State, County, and City codes and regulations applicable to such work and perform the work in accordance with the requirements and specifications of the contract documents.

The Contracted Respondent will first furnish and install the equipment necessary to implement the AMI system within a small portion of the City's service area, so that the City may confirm that the installed system functions appropriately and the software performs to the City's expectations. This will be considered a Pilot phase. Once the City has accepted the Pilot phase portion of the system, payment will be made for that portion of the work, and the Contracted Respondent will be given notice to proceed with the remainder of the Scope of Work.

The City's goal is to have the AMI system fully installed and operational for its entire water service area no later than the end of 2018.

Additional Background Information

1. Meter Count Estimate. The following table provides an estimate of the number of existing water service meters, based on City records as of January 2015. The current predominant meter brand is Sensus.

Meter Size	Total Quantity
5/8 x 3/4" ⁽³⁾	1,710
1"	115
1.5"	32
2"	56
3"	2
Total	1,915

- (1) Residential meters installed prior to approximately January 2012. All such meters are to be fully replaced with new meters and AMI transmitter units.
- (2) Residential meters installed after approximately January 2012, and all meters larger than 1" in size. All such meters are to be retrofitted, with existing meters retained and AMI transmitters units installed.
- (3) Includes 5/8 x 3/4" and 5/8 x 5/8" meters.

2. Current Reading System. Meter reading occurs using a cycle/route grouping system and every meter in the City is read once every month. Meter readers collect water consumption data using handheld computers. Meter route information is downloaded into the handheld devices. Water consumption data is obtained either through touch-read devices or visually read and entered by hand. When meter routes are completed, water consumption data is uploaded into the billing system. The approximate breakdown of the number of meters by the existing 16 routes are as follows:

Route	Approximate Number of Meters
1	20
2	215
3	157
4	97
5	133
6	334
7	92
8	48
9	72
10	183
11	68
12	146
13	94
14	143
15	89
25	24
Total	1,915

3. Current Billing and Customer Information Systems. The City utilizes Bias-Win 10 version 6 for utility billing.

IV. Instructions to Respondents

Item 1. Process for Proposal Evaluation and Contract Award

The City will follow the steps below in selecting the Respondent whose proposal is determined to be the most advantageous to the City for furnishing an Advanced Metering Infrastructure (AMI) system for its water utility. This process is consistent with the electronic data processing acquisition method provided for in RCW 39.04.270.

- A. **STEP 1 (Proposal Evaluation).** Respondents will submit a complete proposal in the period of time described in the Project Schedule (see Item 2 of these instructions) that follows the Proposal Response Format Requirements (see Item 3 of these instructions).

The City will evaluate the proposals submitted for Step 1 according to the evaluation criteria summarized in the table below.

The evaluation of Step 1 Criterion 1 will be based upon responses to the specific questions presented in Section V of this RFP.

The evaluation of Step 1 Criterion 2 will be based upon responses to the detailed Technical Specifications noted in Section VI of this RFP.

The evaluation of Step 1 Criterion 3 will be based upon cost proposals submitted according to the format set forth in Section VII of this RFP.

After the Step 1 evaluation, the City will proceed to either Step 2 for further evaluation of short-listed Respondents, or immediately to Step 3 for selection of the preferred Respondent.

Step 1 Proposal Evaluation Criteria	Weight
1. Qualifications (This criterion will be evaluated based upon Respondent responses to the specific questions posed in Section V of this RFP.)	25%
2. Response to Technical Specifications (This criterion will be evaluated based upon Respondent responses to each section of the Technical Specifications included in Section VI of this RFP.)	50%
3. Cost Proposals (This criterion will be evaluated based upon Respondent cost proposals prepared according to the format set forth in Section VII of this RFP.)	25%
Total	100%

- B. **STEP 2 (Further Evaluation of Short-listed Respondents, If Needed).** If deemed beneficial, the City will further evaluate up to three short-listed Respondents by field demonstration results and/or an oral presentation. Oral presentations/demonstrations shall include discussion of the Respondent’s proposed meters and AMI system, live demonstration of the AMI system user interface and process for extracting information from the system and importing into the Bias system, discussion of system flexibility to accommodate future enhancements, and deployment process.

Upon completion of the above, the City will evaluate the short-listed Respondents based upon all information provided. This evaluation will be based on the criteria described below, which includes the same criteria included in Step 1, along with criteria to evaluate the additional information obtained during Step 2.

Step 2 Evaluation Criteria	Weight
Criteria From Step 1	
1. Qualifications	17.5%
2. Response to Technical Specifications	35%
3. Cost Proposals	17.5%
Criteria From Step 2	
4. Field Demonstration (If conducted.)	10%
5. Oral Presentation	20%
Total	100%

- C. **STEP 3 (Selection of Preferred Respondent).** Based upon the results of Step 1 (or, if deemed necessary, Step 2), the City shall select the Respondent which, in its opinion, is best suited to furnish and install an AMI system to meet City needs.
- D. **STEP 4 (Negotiation).** The City may then enter into contract negotiations with the identified Preferred Respondent. At this time the details of the technical specifications will be updated to reflect the selected AMI system.
- E. **STEP 5 (Contract Award).** Once contract terms are acceptable to the City, the City may award the contract to the preferred Respondent. The award document will be a contract incorporating by reference all the requirements, terms and conditions of the solicitation and the preferred Respondent’s proposal as negotiated. The preferred Respondent shall be required to sign a Contract with the City incorporating all the legal requirements and provisions defined in this Request for Proposals. The Contract shall be the governing document for the project. The following documents shall be attached to the Contract and made a part thereof:
- i. This Request for Proposals.

- ii. The Contracted Respondent’s proposal, including any and all affirmations of compliance with the requirements contained in this Request for Proposals, cost proposals, and any exceptions or proposed alternatives to such requirements accepted by the City.
- iii. Such other supplemental written requests by the City for additional information or specificity, and the Contracted Respondent’s written responses.
- iv. Any other documents governing the project as developed by the City and the Contracted Respondent in the course of negotiations.
- v. In addition, specific schedules and procedures adopted by the City and the Contracted Respondent for managing and conducting the project and providing the required services shall be incorporated into a Detailed Statement of Work, which shall be attached to the Contract. Rules governing non-cost and non-schedule changes to the project embodied in the Detailed Statement of Work shall be defined in the Contract.

NOTE: To maintain a fair and impartial competitive selection process, the City must avoid private communication with prospective Respondents. Upon release of this RFP, all Respondent communications concerning this procurement must be directed to the City Project Manager identified in this document. Respondents may risk disqualification by contacting any City employee other than the City Project Manager, Jim Schunke.

Item 2. Schedule for Proposal Evaluation and Contract Award

- A. The anticipated schedule of key events during the proposal evaluation and contract award is summarized below.

Milestone	Date (all in 2018)
Advertise RFP	January 26
RFP Questions Received from Interested Respondents	January 29 – February 9
RFP Questions Addressed by City	February 14
Proposals Due	February 23
Evaluate Proposals (Step 1)	February 26 - March 2
Further Evaluate Short-Listed Respondents (Step 2, if needed)	March 5 – 16
Selection of Preferred Respondent and Contract Negotiations	March 19 – 23

Item 3. Proposal Response Format

Respondents shall submit a written proposal that presents their qualifications and understanding of the work to be performed. Proposals shall provide in detail all the information Respondent considers pertinent to its qualifications for this project as requested in this RFP.

- A. Respondent shall submit two (2) hard copies and one electronic version (PDF file) of the written proposal.
- B. Respondent shall include in their proposal the following:
 - i. **Table of Contents.** All pages of the proposal are to be numbered.
 - ii. **Cover Letter.** On company letterhead, signed by a person with the corporate authority to enter into contracts in the amount of the cost proposal (if selected to advance to Step 2 of the evaluation process).
 - iii. **Responses to Step 1 Evaluation Criteria 1-3.** Provide responses to address each item included within Sections V, VI, and VII of this RFP. **Respondent's narrative information regarding the Step 1 Evaluation Criteria is to be provided in the form of responses written directly into the RFP text (i.e., the entirety of the RFP text for Sections V, VI, and VII is to be retained, with responses entered following each lettered/numbered question or specification). Respondent responses are to be entered in **bold red text**, so that the responses can be clearly distinguished from the RFP text.** Additional instructions specific to each criterion are provided at the beginning of each section.
 - iv. **Appendices.** Optional for Respondents who wish to submit additional material that will clarify their response.
- C. Proposals (Step 1) will be received by the City at the location mentioned in the Request for Proposals, until the time and date specified in the Request for Proposals. Proposals shall be submitted according to the format described herein.

No proposal may be changed or withdrawn after the time set for receiving proposals.

- D. Any omissions, discrepancies or need for interpretation in the RFP should be brought, in writing, to the attention of the City Project Manager. Written addenda to clarify questions that arise may then be issued by the City, as appropriate.

No oral statements by the City or any representative of the City shall, in any way, modify the Proposal, whether made before or after acceptance of the Proposal.

- E. The scope of work is described in the "Scope of Work" and "Technical Specifications" sections of this Request for Proposals (RFP) package. The City reserves the right to add to or eliminate portions of that work, as the City deems necessary.

- F. Respondents shall familiarize themselves as to the local conditions by inspection of the site to the extent necessary to respond to Step 1 and, if selected, to participate in Step 2. The “site” is the City’s Water System Service Area, as depicted in the map provided in Attachment A.
- G. The City reserves the right to reject any and/or all proposals for good cause and to waive informalities, in the RFP process.
- H. The City shall not be responsible for any costs incurred by the Respondent in preparing, submitting or presenting their responses to the RFP.
- I. It is the sole responsibility of the Respondent to assure they have received the entire Request for Proposal.

V. Evaluation Criterion 1: Qualifications

Provide narrative responses to each item listed below. Include identification of any services or deliverables (such as hardware, software, or installation/maintenance) that will be subcontracted. Provide names, experience, contact information, and qualifications of any subcontractors. This may be referenced as an attachment.

Respond to each item below, using **bold red text**.

- a. Describe how long the Respondent has been in business.
- b. Provide a minimum of five (5) references regarding similar projects completed by the Respondent. References shall include contact names, telephone numbers, and project completion dates.
- c. Provide evidence of past cost performance and ability to meet project schedules.
- d. Describe experience of proposed Contract Manager and other key staff.
- e. Describe the ability of the Respondent to meet the City's bonding and insurance requirements, and contract general conditions, as provided in Attachment A.

VI. Evaluation Criterion 2: Technical Specifications

The following describes the technical requirements for the AMI system. The City intends to procure the best-designed and operating fixed network AMI system to meet its long-term needs. For some items listed below, the City has identified minimum requirements that must be met. All specifications incorporating “shall,” “must,” etc., are such requirements, and failure to comply with these must be specifically noted as exceptions. For other items, the City has identified desired end results and is open to various methods for achieving those results. All specifications incorporating “should,” “desires,” etc., are highly desirable features. The City is solely responsible for making judgments about the products and services being offered and whether they meet the intent of the RFP and the Project.

Provide brief narrative responses to each numbered/lettered section of these Technical Specifications. Some responses may simply note that the Respondent’s proposed approach/system “**complies with the specification**”, while other responses may require brief narrative explanation of how the approach/system meets the technical requirements. Such narrative explanations are required where the RFP language includes underlined text such as: describe, state, indicate, or note.

The Respondent shall clearly identify any exceptions. Taking exception to the City’s requirements will not necessarily adversely affect consideration. In describing any exception, the Respondent should note how the system achieves the performance and operational requirements specified and any potential benefits of the proposed system to the City.

Respond to each section below, using **bold red text**.

1. AMI/Metering System Overview

The City requires that all water service meters be equipped to communicate with an AMI system that will enable it to obtain timely, accurate, and automated meter readings. Within the items noted below, describe the proposed AMI system features and characteristics, and performance that results from the interaction of components. It shall be the Respondent’s responsibility to propose in detail any components, ancillary services, etc., not addressed in this Request for Proposal, that are required to ensure that the City obtains a complete and fully functional system.

- A. Two-Way Communication System – The proposed AMI system must be capable of true, complete two-way communication (i.e., from the TU to the control system computer, and from the computer to each TU). Describe the unique features of the proposed two-way system.
- B. System Design – Provide the following information for the AMI system being proposed. Include any charts, graphs or illustrations that will help demonstrate/show how the design meets the City’s requirements.
 - i. Mode of operation. Describe the system’s normal mode of operation (i.e., for obtaining periodic readings for billing and other purposes).

- ii. Frequency of reading. State how often meter readings are normally obtained (i.e., the default setting). Describe any options for changing the reading frequency at which meter readings may be obtained. Describe how the changes to the reading frequency are made.
- iii. System capacity. Describe the capacity of each system component, in terms of the number of meter readings stored and/or the number of meter readings that can be transmitted or received in a given time interval.
- iv. Read on demand. Describe how the system obtains "off-cycle", special or on-demand readings from a particular meter.
- v. Demand profiling. Describe the capabilities of the system to obtain short-interval readings (e.g., hourly or several times per day) to monitor and profile water consumption patterns from a particular meter or group of meters.
- vi. Communication system. Describe the system's communication technology, as prompted below.
 1. Radio-based Systems. State the radio frequencies that are used for communication between the transmitters and data collectors proposed. Describe any licensing requirements and the process of obtaining and maintaining such licenses. Describe transmission power and receiver sensitivity with respect to retransmissions and number of collectors required. Describe the radio communication mode (s) used by the system in terms of radio technology (s) used. Describe interference issues that could be encountered in the City's service area.
 2. Cellular-based Systems. State what cellular networks are utilized by the system and the nature of any agreements between cellular providers and the Respondent. Describe interference issues that could be encountered in the City's service area.
- vii. Data transmission accuracy and security. The system must include provisions to ensure data transmission accuracy, security, and protection from outside interference as well as signal degeneration, to prevent accidental loss or interception of customer or meter reading data. Describe how the proposed AMI system achieves these requirements.
- viii. Stored data system integrity and security. The system must ensure data integrity and data security. The system must ensure against loss of data. Describe how the proposed AMI system achieves these requirements.
- ix. Tamper detection. The system must contain tamper detection capability which, when the meter, transmitter or any wiring between components has been tampered with (cut wire, tilting of meter, backflow, etc.), must cause a tamper message to be indicated when the transmitter sends its data. Indicate how quickly tampering with each component will be reported and how it will be reported. State whether or not the system generates a notification if the register number of the field device changes

or there is a mismatch between the register number of the field device and the current register number in the system database.

- x. Leak detection. The system must monitor water consumption through the meter and indicate when there is a suspected leak. Describe how the system identifies and communicates leak detection information at the time reading information communicated. Note if there are any other leak detection capabilities that the system has, such as configuration of leak threshold at the individual meter level. State if distribution leaks be detected via the AMI system using additional sensors.
 - xi. Backflow detection. The system must be capable of detecting and reporting backflow conditions and events. Describe the system's backflow detection capabilities.
 - xii. Other detection / status and trend monitoring, and configuration flexibility. Describe what other detection and / or status and trend monitoring capabilities the system has, e.g., register malfunction detection (under registration, over registration, no registration), trend analysis to aid in developing policies to promote water conservation, battery power levels (replacement predictions), signal-to-noise performance of transmissions (system tuning). Describe the flexibility the system has for the user (i.e., City staff) to define and modify parameter set points or trigger thresholds (e.g., backflow detection volumes).
 - xiii. Remote disconnect. Describe what options the system provides regarding remote disconnect of service to customers, e.g., optional remote shut-off valves that are separate from, or integral to, the proposed meter. Indicate if such components fit within a standard meter lay-length.
 - xiv. System enhancements. Describe what future system enhancements are anticipated to be developed or incorporated in the next 20 years.
- C. Environmental tolerances. All system components (except the meter chamber) must operate over a temperature range of -20° F to 120° F, and a humidity range of 0% to 100% non-condensing. State the operational temperature and humidity ranges for system components.
- D. FCC Licensed. All applicable system components must be FCC licensed and approved. Describe FCC licensures and approvals associated with the proposed system, if applicable.
- E. Component firmware. Respondent must include firmware for all system components, including transmitters, data collectors and portable interrogator/programming/testing units, at no additional cost. Respondent must provide any available upgrades or patches to such firmware to correct problems, add new standard features, and ensure system compatibility and full functionality for the 20 year life of the system at no additional cost, including installation. Describe how firmware is updated.

2. Water Meters and Registers

All water service meters (smaller than 1½”) are to be replaced with new positive displacement or electronic meters of the same flow characteristics. Respondents shall describe how the proposed meters/registers meet the requirements stated below. Respondents may propose either or both positive displacement and electronic meter options.

A. Conformance to Standards

- i. All meters must meet or exceed the latest AWWA Standards for metering accuracy. Meters/Registers/Transmitter Units (TUs) shall incorporate tamper resistant features with the ability to send an alert if the meter register is removed or tampered with. Meter shall meet minimum warranty requirements listed below; there shall be a 20 year warranty on the Meter Register and TU. All Meters shall have imprinted on them, the size and direction of water flow through the meter. The body shall be completely lead-free and meet the AB1953, ANSI/NSF Standard 61 requirement.
- ii. Meters shall operate up to a working pressure of 150 pounds per square inch (psi), without leakage or damage to any parts. The accuracy shall not be affected by variation in pressure up to 150 psi.

B. General Requirements

- i. All meters shall have a unique serial number stamped or embossed on the main case.
- ii. Meters shall be packaged in cartons or crates consecutively numbered, and marked with the serial number of the meter contained therein. Such cartons or crates shall be secured on approximately 39” x 44” wooden skids or pallets to facilitate handling by forklift.
- iii. Registers shall display water consumption in units of cubic feet.
- iv. Provide warranty information for meters and registers (these are to be included in Respondent’s proposal, in Attachment B, Section 3).

C. Residential Meters (5/8x3/4 and 1-inch)

- i. If proposed, positive displacement type residential meters shall be manufactured in strict accordance with AWWA standard C700 (latest revision), for Cold-Water Meters – Displacement Type, Bronze Main Case” or AWWA standard C710 (latest revision), for Cold-Water Meters – Displacement Type, Plastic Main Case”. An affidavit of compliance shall be submitted that indicates the positive displacement meters to be furnished are in compliance with AWWA C700 or C710. For each meter furnished, a certificate shall be submitted showing that the meter has been tested for accuracy and capacity, in accordance with AWWA C700 or C710.

- ii. All positive displacement meters shall be provided with a removable stainless steel or plastic strainer in accordance with AWWA C700 or C710.
- iii. All meters shall have a magnetically coupled drive.
- iv. Bottom main case covers shall be breakable (frost protection) cast iron or thermal plastic, in accordance with AWWA C700 or C710.
- v. Describe the materials used for external fasteners and threads.
- vi. Encoder-type registration devices shall be furnished with the positive displacement meters, and manufactured in accordance with AWWA standard C707. Describe the materials used for register fabrication, number of digits displayed, and the resolution of the register.

D. Electronic Meters (5/8x3/4 and 1-inch)

- i. If proposed, electronic type residential meters shall be manufactured in accordance with AWWA standard C700 and C710, with respect to accuracy and head loss requirements.
- ii. Describe the materials used in meter fabrication, including provisions for frost protection.
- iii. Describe warranted battery life and procedures for replacing batteries.
- iv. Describe the environmental operating ranges/tolerances of the proposed electronic meter, particularly with respect to temperature.

3. Pressure Sensor

The metering system shall provide remote pressure sensors at locations to be determined by the City. Sensors shall relay the information to a central location determined by the City. The pressure sensors may be integrated into the meter units or separate units. Pressure sensor system shall be able to send an alert for pressure readings outside of a pre-set range.

4. Temperature Sensor

The metering system shall provide remote temperature sensors at locations to be determined by the City. Sensors shall relay the information to a central location determined by the City. The temperature sensors may be integrated into the meter units or separate units. Temperature monitoring system shall be able to send an alert for pressure readings outside of a pre-set range.

5. Chlorine Residual Sensor

The metering system shall have integrated remote chlorine residual monitors at locations to be determined by the City. Sensors shall relay the information to a central location determined by the City. The sensors may be integrated into the meter units or separate units. The chlorine residual monitoring system shall be able to send an alert for pressure readings outside of a pre-set range.

6. pH Sensor

The metering system shall have integrated remote pH monitors at locations to be determined by the City. Sensors shall relay the information to a central location determined by the City. The sensors

may be integrated into the meter units or separate units. The pH monitoring system shall be able to send an alert for pressure readings outside of a pre-set range.

7. Transmitter Unit

Transmitter units (TUs), designed to capture meter readings or accumulated consumption and other information from the meters and transmit this information to data collectors or a cellular network, must be furnished for all water service meter locations. The information provided by the transmitter must be sufficient to enable the AMI system to replace the routine manual reading of meters by City staff.

- A. Physical characteristics. Describe the physical characteristics of the transmitter, including height, length, width and weight.
- B. Transmitter configuration. Describe the transmitter configuration that you are proposing. Note if the transmitter will be integral to the register, remote or under the meter register. Note the features and benefits of the proposed configuration. Multiple configuration options may be proposed.
- C. Multiple meters/registers. Describe how the transmitter handles multiple meter registers and multiple meters in close proximity (i.e., state if there is a dual-port option). Note if there is a price differential for a transmitter that can handle multiple registers.
- D. Batteries. State the type of battery used by the transmitter. State the expected battery life. Indicate if the battery is removable and replaceable. If it is, state the current cost of replacement batteries. Describe the process for field battery replacement. State how the system will prevent loss of programming or data if the battery expires. Describe any special transmitter battery disposal provisions, and indicate the current cost of providing battery disposal if special handling is required. Describe the impact additional reading frequency has on battery life and at what frequencies battery life may be affected. Describe the end-of-battery-life indication of the system: a) at the battery level, and b) at the system software level.
- E. ID Number. Each transmitter must have a unique, permanent ID number that is transmitted with the meter readings. Note the length of the ID number and any other characteristics. State whether the meter register ID is also transmitted with the meter readings and how the situation of one transmitter serving two or more meters is handled.
- F. Programmability. Describe all transmitter programmability options, features and procedures. Note whether programming of the transmitter is needed due to meter register or other maintenance.
- G. Activation. Describe how a transmitter is activated and recognized by the AMI system once installed.
- H. Environmental tolerance. The transmitter must operate in conditions subject to water submergence (i.e., meter boxes or vaults) and heat. Describe features of the transmitter that prevent corrosion or degradation of mechanical or electrical performance.

- I. Labeling. The transmitter must be permanently labeled with the manufacturer’s name, model number, “City of Pacific”, a tamper warning, transmitter identification number, required FCC labeling, input/output connections, and date of manufacture. Labeling must include a bar code of the transmitter serial number.
- J. Ease of installation. Describe installation procedures. Indicate design provisions to avoid installers’ mistakes in installation, connection to meters, and programming.
- K. Ease of maintenance. Describe procedures that need to be followed to replace the transmitter should it fail. Describe procedures for the various transmitter configurations. Note any specialty tools, materials or supplies that are needed to perform this work.
- L. Meter box installation. The City’s water meters are located in a variety of enclosures: plastic boxes with plastic, concrete, aluminum, or steel plate lids; concrete boxes with cast iron or steel plate lids; and, concrete vaults with steel plate lids. Most meter boxes are Oldcastle Carson Size 1220 boxes with T-covers. Some of the meter boxes are in vehicle traffic areas, including parking areas. Describe any issues and or limitations with the meter pit installation that will affect immediate or long-term reading reliability and reading range and suggested solutions. Note if the transmitter requires a through-the-lid solution, under-the-lid solution, or can be installed in either fashion. Describe minimum height clearances needed above meter body or register for transmitter installation. Note any requirements that must be met to avoid voiding or diminishment of system warranties and guarantees.
- M. Connections to meter registers. Describe the means of connection between the transmitter and the meter register(s), and provisions to prevent misconnection, corrosion or disruption of any connections. Factory potting of the transmitter to the register is preferred. Describe such options if available.
- N. Warranty. Attach the transmitter warranty information for the transmitter and battery in Attachment B, Section 1. The warranty for the transmitters and batteries must address frequency of reads.

8. Handheld Data Collectors

The City requires handheld data collectors that are equipped with AMI capabilities for manual meter reading where only a portion of the meters on the route have been equipped with AMI transmitters, for capturing meter readings from transmitters that are in radio “weak spots,” for final and special reads, and for other purposes requiring individual readings. The handheld data collectors must enable City staff to manually read meters and key in meter readings, and must be capable of integrating or transmitting the information into the AMI system.

- A. System Functions. The City requires handheld meter reading devices, cradle/data transfer units, software, etc., to read meters equipped with transmitters as well as capture manual meter readings. The handheld device must present to the meter reader unambiguous and accurate information needed to locate a water meter. It must also inform the meter reader of the next meter to read, any upcoming hazard (e.g., dog),

special routing information, and special instructions (including the presence of an AMI-equipped meter, which is not manually read).

- i. Time stamp. The handheld device must automatically time stamp each meter reading with unalterable date and time of read.
- ii. Searching. The handheld device must allow for searching and viewing of data within the handheld meter reading device, by several fields or keys, including meter location address, meter number, unread account, sequence number and manually-entered flag/tag/bookmark.
- iii. Out-of range warning. The handheld device must visually and audibly warn the meter reader of a meter reading entry that is out of range, including no consumption for an active account, or of an inactive account that has consumption since the previous reading. The device must allow the meter reader to override an out-of-range warning, to enter an unusual reading, or skip a reading and make a notation of the fact, if a meter has been removed from service.
- iv. Data displayed. The handheld device must be capable of displaying all of the following information on the primary screen:
 - a. Route number
 - b. Meter reading sequence number
 - c. Account identification number
 - d. Customer name and number
 - e. Meter number or radio identification number
 - f. Meter address
 - g. Meter location description, hazard descriptions, additional special instructions
 - h. Previous unable-to-read code
 - i. Account status code
 - j. Current date and time
 - k. Meter reader ID
- v. Data entry by meter reader. The handheld device must allow for field entry of data, including meter readings, and information on meters that are out of sequence or that were not transferred into the handheld meter reading device. The handheld device must allow the meter reader to modify or correct certain fields, including meter location, hazard, and special instructions to update the associated billing system data.

Note if there is a tracking feature that documents when information is changed manually.

- vi. Codes and comments entry by meter reader. The handheld device must allow for entering an unable-to-read code and up to two additional special reporting codes and comments for each meter reading record. Describe if a field code book is provided for City staff use in conjunction with the handheld device.
- vii. GPS capabilities. The handheld device must be able to obtain GPS coordinates to sub-meter accuracy. Describe the GPS capabilities of the proposed device, and how GPS coordinates are assigned to meters.

B. Handheld Physical and Environmental Characteristics

- i. Size and weight. Indicate the size and weight (with batteries installed) of the handheld meter-reading device.
- ii. Resistance to dropping. The handheld unit must be able to withstand an impact of a five-foot drop onto a concrete surface without breaking or losing data and be water tight.
- iii. Display. Must have a multi-line alpha/numeric display, large enough for easy reading of route data, readable in normal daylight, and have an internal display light for reading the display under low-light conditions.
- iv. Environmental. The unit must be capable of being submerged for up to 20 seconds without loss of functionality. Indicate the temperature and humidity operating ranges for the handheld unit.
- v. Carrying. The handheld device must be able to be carried by hand (left or right hand equally) and secured by a hand strap or supported by a belt and/or shoulder strap, to free up both hands when device is not in use.
- vi. Keypad. The handheld device must have alpha/numeric/special function keys that allow a meter reader to easily enter data correctly while wearing gloves.
- vii. Batteries. Rechargeable batteries must power the handheld device. These batteries should be user-replaceable. The unit must have provisions to retain all data while the primary batteries are being replaced. The handheld device batteries must be able to be fully recharged in eight hours.
- viii. Data/meter reading capacity. Describe the capacity of the handheld device, in terms of the number of meter readings that may be captured under normal circumstances.
- ix. Data fields. The handheld meter reading device must keep the following data internally, for use in calculations and validations:
 - a. Time and date of reading

- b. Handheld meter reading device identification code
- c. Meter reader identification code
- d. High consumption reading limit
- e. Low consumption reading limit
- f. Table of utility-defined codes, with associated code descriptions

C. Handheld Device/Computer Data Transfer

- i. Data transfer method. Describe the method used to transfer data between the handheld device and a computer.
- ii. Data transfer rate. Indicate how long it normally takes to upload the data from a 200-meter route, and how long to download the next 200-meter route.
- iii. Data protection in transfer process. Data sent to the handheld meter reading device must overwrite existing data, with proper warning and the opportunity to cancel the action before the transfer begins, so as not to allow the accidental erasure of un-transferred meter reading data. The handheld meter reading device must display a message or other warning when data transfer is taking place and when the transfer is complete.
- iv. Device ID synchronization. The data transfer method must synchronize the meter reading data with the associated handheld meter-reading device, through identification validation, so that the handheld meter-reading device has the appropriate route data for its assigned meter reader.

9. Field Programming and Testing Devices

Indicate if field programming units are required to program transmitters or meter registers, and/or to diagnose problems with register or transmitters. If such functionality is *not* incorporated into the handheld data collectors discussed above, respond to the items below.

- A. Number of units. Respondent shall supply all units required for Respondent’s installation subcontractor. Indicate how many units are required for maintenance by City employees after installation. Pricing and totals for these units shall be included as part of the cost proposal.
- B. Functions/modes of operation. Describe all of the functions of each unit.

The field programmer must be capable of programming the transmitter with any information required for operation. The portable field programmer must be capable of providing instructions to the transmitter concerning the make, model and data protocol of the meter being connected, should the transmitter not be able to determine this itself.

The field tester must be able to locate and diagnose problems with a system component (meter register, transmitter or DCU) unless the system incorporates an alternate way to make such diagnoses. The field tester should be able to ascertain the condition of the battery in a transmitter. Indicate if the field test unit can simulate the functions of a transmitter.

- C. Interface to AMI control computer. Describe the mechanism and procedure for downloading data from and uploading data to the control computer.
- D. Capacity. Describe the capacity of each unit. If the unit stores work order information, how much data, or how many work orders, can it accommodate?
- E. Physical characteristics. Indicate unit weight and dimensions. Describe any features, such as shoulder or belt strap, to facilitate carrying and preventing it from being dropped.
- F. Accessories. Describe the connecting hardware and software, including cables, modem, cradle, battery, charger, etc. required for the unit to be fully functional.
- G. Bar code reader. The unit should be capable of accommodating a bar code reader to capture meter or transmitter numbers from bar codes pasted on these components.
- H. Batteries. The unit must ensure against accidental data loss in case of a dead battery. Describe the types of batteries required. If the unit uses rechargeable batteries, describe how long it takes to fully recharge a battery after a full day of normal use.
- I. User interface. Indicate the display's overall dimensions, the number of characters displayed, and the height and width of the characters. Include an illustration of the display screen and keypad. Describe how the unit enables the display to be easily readable in bright or dim light. Indicate the angular range readability. Describe any audible tones used by the unit, and their function (e.g., confirming a reading or successful programming, warning of an out-of-limits condition, low battery, etc.).
- J. Manual entry. Describe how the unit permits manual entry of meter readings and other information (for example, the information necessary to complete a meter or transmitter investigation or repair work order). Describe its capability to record notes or comments.

10. Fixed Network Radio Data Collector

The City owns a number of towers/facilities that may be used for locating fixed network data collectors. Location information is provided in Attachment A. The City prefers that, to the extent practical, these existing sites be used for the mounting of fixed radio data collector units. Fixed radio data collection units must be mounted on roofs, utility poles, towers, etc., at sufficient height and density to enable the City to collect readings from all meters in that portion of its service territory designed for use by this system. The Respondent is responsible for estimating the number and location of fixed data collectors required in the City's service territory. The City may assist the Respondent in securing sites for collectors at sites other than City owned property. The City intends to avoid locations where leasing arrangements must be made, if possible.

- A. Modes of operation. Indicate the mode of operation and schedule by which the data collector captures, stores, and re-transmits data received from transmitters back to the AMI control computer.
- B. Communication to control computer. The Respondent shall be responsible for a communication network or provisions to deliver meter readings and other AMI system data to the AMI control computer. Indicate available options and proposed method for transmitting data.
- C. Number of units. Indicate the estimated number of data collectors, noting how many are estimated to be mounted on City-owned property versus the number estimated to be mounted on non-City owned property. The Respondent is responsible for providing a sufficient number of data collectors/repeaters so that 100% of all expected reads are obtained. Note in your design if meters might be read by more than one data collector. Describe the typical operating range of the data collector and conditions that might affect that range.
- D. Mounting. Indicate options for mounting data collectors/repeaters, and recommended configuration. Indicate minimum required height.
- E. Power supply. Describe how the data collector/repeater is powered. Describe the estimated one-time and continuing costs for powering data collector/repeaters. Describe how the system preserves data and backup data, and for how long, should power to a data collector/repeater be lost.
- F. Programming. Describe any programmable features, such as reporting schedules, for data collectors/repeaters, and procedures for programming or configuring.
- G. Electrical isolation. Indicate how the data collector/repeater is protected against electrical surges such as lightning.
- H. System installation schedule. The contracted Respondent will first furnish and install the necessary components of the AMI system within a small portion of the City's service area (i.e., pilot phase), so that the City may confirm that the installed system functions appropriately. Once accepted, the Respondent will be given notice to proceed with the remainder of the Scope of Work. In accordance with the implementation schedule, the Respondent will be paid only for the installed portions of the contract accepted by the City as being fully operational. The entire AMI system will be fully deployed by the end of 2017. Describe the proposed plan for achieving this schedule. Identify significant milestones in the system installation process. Identify any assistance that might be required from the City. Describe the plan for on-site testing the design and operation of the AMI communication system prior to its final acceptance (i.e., of the initial pilot phase and at the completion of the project) by the City.
- I. Warranty. Attach warranty information in Attachment B, Section 2.

11. AMI System Radio and Other Licenses

The City requires the Respondent to secure on behalf of the City all radio or other licenses necessary to legally operate the AMI system on frequencies that will be sufficiently free of noise and interference so as to provide all proposed capabilities over the life of this system.

- A. FCC licenses. Indicate what FCC or other regulatory agency licenses, if any, the system will require. Indicate the expected length of time to acquire such licenses. Indicate what problems can occur in the process of obtaining such licenses. Note if licenses must be acquired prior to the installation of the AMI system equipment. Note if licenses have a renewal period.
- B. Obtaining licenses. Respondent must obtain all necessary licenses on behalf of the City. Licenses must be obtained and assigned radio frequencies verified as suitable for use with the AMI system before any AMI equipment may be installed. If the Respondent is unable to obtain the necessary licenses in a timely manner, the City reserves the right to cancel the contract and orders for all or part of the system, and receive a full refund from the Respondent of all amounts paid. The Respondent will be required to remove all installed AMI system equipment solely at their cost, including any AMI system equipment installed by the Respondent that cannot be operated due to the lack of a proper license.

12. Data Hosting

Data hosting services must be provided. Please describe the proposed services, including responses to the items below.

- A. Data storage. A minimum of two years of hourly data are to be stored and readily accessible by the City from the data hosting server. Describe options for increased storage time periods, up to five years worth.
- B. Access to information. Describe the user interface. Describe available internet-based presentments of the hosted information. Provide example screen shots. Indicate the maximum number of users that can access the information at a given time.
- C. Reports. Provide a list, with brief descriptions and screen shots or sample pages, of the standard reports provided for system and component performance; missing or late data; errors, anomalies and alarm conditions; data transfer, management and administration; analysis of consumption for individual customers or groups of customers; and other major report categories.
- D. Traps for questionable readings. Describe any system capabilities to validate meter readings for reasonableness, unusually high or low readings, and potential meter rollovers.
- E. Meter reading system performance assessment and diagnostic tools. Describe any tools available to assess the performance of the system and to diagnose problems; e.g., radio transmission strength / problems, battery life status, etc.

- F. Support. Provide hours of operation and level of support on major US holidays and evenings and weekends.
- G. Software documentation. Documentation shall be provided with the software and shall include at a minimum: system overview, flow charts, file descriptions and record layouts, database structure diagrams, description of program function and logic, back-up and recovery procedures, operating procedures, screen layouts, data entry procedures, report descriptions, descriptions of all user options, and descriptions of all error messages.
- H. Third-party software. Third-party software required to export information from the data hosting server (e.g., to the City's billing system) is not desired. Confirm that third-party software is not required; or if it is, please describe.
- I. Customer portal options. The City requires a customer portal option, including display of leak detection information, be developed and fully functional within six months after the AMI system is completely deployed throughout the City's existing service area. Describe customer access options (e.g., internet access) available from the data hosting server. Describe ability of customer portals to display water usage information in both cubic feet and gallons. Describe ability of customer portals to display leak detection information. Describe current and future capabilities to support access of information from other media devices (e.g., personal smartphones).

13. Interface with City Information Systems

Respondent must provide all required software and interfaces necessary for City staff to operate and manage the AMI system. This software must include interfaces to the City's customer information system (CIS) to enable transfer of meter readings, synchronization of databases, customer service functions, measures to protect data security, etc., and interfaces with the City's geographic information system (GIS) and hydraulic model. Software must be provided with all licenses, and must be maintained by the AMI Respondent over the life of the system. The City will provide the record layout for its CIS, GIS, and hydraulic model, and expects the Respondent to tailor interfaces from its AMI system software to these other systems. The City IT staff will work closely with the Respondent to ensure that this is accomplished efficiently. However, the Respondent is solely responsible for ensuring that data from its system is being transferred properly to the City's CIS, GIS, and hydraulic model.

- A. Interface to billing system. The interface to the billing system must be the file format the City is currently using. The AMI system shall automatically provide data corresponding to all the accounts in a billing cycle, meter reading route or other grouping presented to it in the CIS, in a standard, nonproprietary format. Each record provided to the CIS shall contain at a minimum: account number, transmitter ID number and/or port number, billing cycle or route number, meter number, meter readings, error codes or flags, date and time for each meter reading, unable-to-read code, and tamper indications. Indicate what information is required by the AMI system from the CIS so that the former may respond; indicate what information is provided to the meter reading database; describe

record layout, including field length and format. Describe any steps an operator must perform to initiate or schedule this process.

- B. Updating account data. Indicate arrangements for synchronizing data between the meter reading database and CIS.
- C. Multiple users. Indicate how many concurrent users the system can accommodate. Describe the licensing arrangement for concurrent users.
- D. User interface. Respondent must include menus, navigators and major screen shots in its proposals. Describe provisions and guidelines for customizing screens, menus and navigators. Indicate whether the user interface is a client that must be installed on each work station or is browser based.
- E. User access. Describe the provisions that exist for data entry and editing by users. Describe restrictions that are placed on such functions to ensure security and data integrity. The software shall include a security system, incorporating multiple levels of authorization and access to limit specific data, users, modules and/or specific tasks. The System Administrator must be able to modify the levels of security. Describe security features, logging and levels.
- F. Interface with GIS. Describe how data from the AMI system can be interfaced with the City's GIS.
- G. Interface with hydraulic model. The City is in the process of updating its hydraulic model. The City requires that an interface between the AMI system and the hydraulic model be developed and fully functional within one year after the AMI system is completely deployed throughout the City's existing service area. Describe how data from the AMI system can be interfaced with the City's hydraulic modeling software.

14. Documentation

The City must be provided with all documentation needed to install, operate, and maintain the AMI system and all of its components. Documentation must serve both for training and reference, and must be kept up to date with any system or software upgrades or corrections.

- A. System manuals. Respondent must provide manuals and customized written procedures sufficient for complete operation and maintenance – including installation, configuration, diagnostics and repair – of the system. Respondent must supply three (3) complete hard-copy sets as well as three (3) copies on CD-ROM/DVD ROM in Word format prior to the start of the Project, which will be defined at the Pre-Deployment meeting.
- B. Updates and revisions. Respondent must promptly inform the City of updates and revisions and provide replacement pages and CDs or DVDs whenever there are any revisions or additions to the manuals.

15. Training

The City requires training of all appropriate staff sufficient to enable them to effectively operate and maintain the system. To be effective, the City requires that training curriculum be provided in advance, that training be accompanied by course workbooks and materials, that training be provided by experienced instructors, and that all training be accompanied by tests or hands-on evaluation to ensure City employees or agents have absorbed the content of the training. The City will designate one or more City employees that the Respondent will train on all aspects of the AMI system and will become the lead trainer(s) for the City.

The City requires that training occur both before and after AMI system installation.

- A. Prerequisite for training. Training must be sufficient to prepare the City staff to fully and completely administer and maintain the system without further reliance on Respondent staff beyond normal assistance covered by maintenance agreement. The City requires that training occur once the system is fully operational, with the exception of TU installation training, which is to occur prior to system installation.
- B. Training on the AMI system equipment. The Respondent must provide training to City staff on any and all AMI system equipment, whether provided by the Respondent or purchased by the City (including the control computer and database) after it is installed, tested and accepted by the City. Training must use real data from the City's own system.
- C. Location. All training shall be done at the City's offices and facilities, or in the field, at City specified hours.
- D. Training curriculum. Describe the Respondent's training program, including how it addresses each of the following:
 - i. All aspects of the AMI system's operation, including obtaining reads and consumption data from the system, transferring reads and other information between the AMI system and the CIS, creating performance reports, diagnosing potential problems with system components, changing or adding customer accounts/transmitters/meter registers/meters to the system.
 - ii. Meter reading database management.
 - iii. Field diagnostics and maintenance.
 - iv. Application software administration.
- E. Training aids. User training will include detailed documentation and reference materials for each end-user. Respondent must provide trainees' workbooks, training aids (including software and CD/DVD), and system technical manuals prior to or during the training session.
- F. Supplemental training. Respondent must provide a schedule of costs for additional training beyond the initial training proposed contained in the Cost Proposal.

- G. Restore equipment. Respondent must restore, repair or replace any City equipment damaged in training, and restore any hardware or software modified during training sessions.
- H. Instructors. The Respondent must provide trained and experienced instructor(s), and ensure that they do not perform other duties during the training period that will interrupt instruction. The Respondent must provide resumes of trainers assigned to the Project for City review and approval.
- I. Evaluation. The Respondent must provide evaluation forms for each training session conducted to solicit feedback from participants regarding the training. At the City's sole discretion, training sessions that appear to be inadequate, as determined by the City, will be repeated at no additional cost to the City.
- J. User group conferences. For the period from the effective date of the AMI System contract until two years after the date of final system acceptance, the Respondent will provide the City with complementary registrations for any User Group Conferences or similar training activities designed to increase the training and proficiency in the use of the Respondent's AMI system equipment and software. The City will be responsible for all other costs of attendance. The Respondent must provide the City with sixty (60) days prior written notice of such conferences.

16. Support

The Respondent must provide on-site, online, and telephone support as needed by the City over the 20-year life of the system to ensure its proper performance. As this support will be requested when software or equipment malfunctions, response must be rapid, accurate and efficient. Local, hands-on support for necessary repairs on warranty items is to be provided with a response time of within 24 hours.

- A. Initial support periods. Respondent must provide telephone, online, and on-site support, as needed from the effective date of the AMI system contract until the date of customer acceptance of the pilot phase of installation, at no additional cost to the City. Until customer acceptance has occurred, no maintenance or support contract/agreement will be made effective.
- B. Extended support period. Respondent must provide telephone, online, and on-site support, as needed, for 20 years from the expiration of the initial support period.
- C. Telephone and online support. Respondent must provide trained persons to answer technical questions and guide City employees through the use or diagnosis of the AMI and metering system through a toll-free number and online support system. The City must have unlimited access to a 24/7 technical support line. Indicate telephone support hours proposed. Indicate the types of problems that would be addressed via telephone and online support, and the response time the City will receive. Include problems that illustrate different severities, problem management, and escalation procedures. Indicate what company(ies) will be providing the support and where their office (s) are located.

- D. On-site support. Respondent must provide on-site assistance when phone line technical support fails to timely address the issue or at the request of the City during the initial support period and extended support period noted above. Indicate the types of problems that would need to be addressed by on-site support and the response time the City will receive. Include problems that illustrate different severities, problem management, and escalation procedures. Indicate what company (ies) will be providing the support and where their office (s) are located.
- E. Preventive maintenance provisions. Describe the Respondent's recommendations and requirements for AMI system preventative maintenance, back up, archiving, etc.
- F. Loaner equipment. The City intends to procure additional AMI system equipment, based on the recommendations of the Respondent to account for product failures or repairs. Given the critical nature of utility operations, the Respondent must make available loaner equipment in a timely manner to ensure continued, seamless utility operations of the meter reading, maintenance and billing functions affected by the AMI system. Indicate the AMI system equipment that is available to be loaned to the City and the response time in which the City will receive the equipment. The costs of any loaner equipment are to be included in the annual maintenance agreement.
- G. User limits. Describe any limits to how many users can contact technical support.

17. Project Staffing

The success of this Project is critical to the operation of the City. Describe the organization structure that the Respondent will provide to supplement the City's project team and support this project. Describe how the Respondent's staff will interact with the meter/transmitter installation team. Name the personnel that are planned to be assigned to the Project, their roles and responsibilities. Provide a list of project staff's experience in delivering projects of similar size and scope. Note: The City may interview and/or review resume information about implementation team members as part of the final selection and negotiation process.

18. Deployment Plan

The City, in conjunction with the Respondent, will develop a detailed deployment plan. Describe in general terms the process that the Respondent takes in deploying a project similar to the City's Project.

The City will conduct an initial (or pilot) deployment phase of approximately 300-500 accounts in a concentrated area of the City to test the AMI system and installation services policies, procedures and control systems. The Respondent must be an integral part of this initial phase of work. The entire cost for participating in the pilot phase shall be included in the Cost Proposal. It is envisioned that this pilot phase would occur within the first three to four months after deployment has begun.

19. Quality Control

The City is expecting the Respondent to design and furnish an AMI system that has an operating life of 20 years requiring a minimum of repair, maintenance and replacement due to design, materials, and workmanship failures. Describe the quality control policies and procedures that the Respondent has adopted to ensure quality system design, manufacturing, component sourcing and any other aspect that affect the serviceability and useful life of the equipment and software that will be furnished for the Project. Describe the failure analysis process that is used when product is returned.

20. Project Administration

The Respondent will be required to participate in various on-site meetings from time to time, issue reports, establish and amend delivery schedules and other routine items to administer the Project. Describe the general plan that the Respondent will follow regarding project administration issues. Describe the project management approach you take to organizing and managing your implementation services. The City at its sole discretion may revise the project schedule and timelines or suspend the project due to funding or unforeseen implementation issues.

21. System Performance Warranty

The City expects the Respondent to design and provide an AMI and metering system that reliably and accurately transmits the reading on the water meter along with other information contained in that transmission. The Respondent must warrant that the system will achieve a 99.5% reading rate, by comparing the number of actual reads received versus the number of reading attempts made at any time reading activity is performed, when the transmitter is installed and the reading equipment is operated and maintained according to the Respondent's instructions. Provide the Respondent's plan for addressing equipment failures that result in a reading rate of less than 99.5%. Describe the support that is expected from the City to assist the Respondent in addressing such failures.

A. Failure rates. Complete the chart below regarding product failure rates

The Respondent must indicate the expected life in service of the system. If expected life is other than 20 years included in the table, then modify the table to align with Respondent's warranty included in this proposal. Respondent must provide annotation for any underlying assumptions that may reasonably be deemed necessary to explain these numbers.

Year After Unit is Installed & Accepted	Transmitter Units Expected Failure Rate (failures/1000 units/yr)	Data Collection Units Expected Failure Rate (failures/unit/yr)
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
16		
17		
18		
19		
20		

B. Product failure. List the types of failures that the Respondent considers beyond their reasonable control.

C. Failure analysis. On a quarterly basis the Respondent will provide a failure analysis report for any and all product returned by the City to the Respondent. The report will include an analysis of similar failures that have occurred on other projects, the cause of such failures, the actions that the Respondent is taking to minimize such failures and an assessment regarding the likelihood of continued failure. The Respondent will provide a proposed analysis report format and content for City approval at the Pre-Deployment meeting.

22. Installation of Water Meters, Registers, and Transmitter Units

Installation services include replacement of a portion of the City’s meters (per details provided previously), installation of the AMI system equipment (i.e., transmitter units, collectors, repeaters, control computer, etc.), project management and control by the

Contracted Respondent to ensure that all equipment is installed properly and all information about the system is correct, and field inspection of installers' work to ensure that it is performed properly. Respondent will follow the City's Standard Operating Procedure on meter change outs.

Describe the steps used in the installation sequence for a new meter/transmitter unit, including the manner in which the existing meter reading on the meter register being replaced is logged.

City requirements regarding system installation are outlined below. Narrative responses are not required for each item below. Respondents are simply to indicate whether or not their installation approach complies with the following requirements, by stating "**complies with the specification**" (as noted in the Proposal Response Format, in Section IV of this RFP). Also indicate if any exceptions are taken.

- A. Project duration. Project duration shall be less than two years from the date of Notice to Proceed.
- B. Installation sequence. The Contracted Respondent shall conduct installations in sequence to be determined by the City in discussion with Contracted Respondent. The City and Contracted Respondent shall establish an overall schedule for installation of the entire project, reflecting the City's existing billing cycles and routes. On the first workday of each week, Contracted Respondent will provide the City an updated schedule of where work is planned for the next three weeks.
- C. Work hours. No installation work shall be done between 4:30 pm and 8:00 am except where required or authorized by the City. No work shall be done on Saturdays, Sundays, and legal holidays, unless authorized by the City. The Contracted Respondent shall provide 72 hour notification to the customer before replacing or working on the meter. Legal holidays shall be defined as those holidays annually observed by the City. These are: Labor Day, Veterans Day, Thanksgiving (2 days), Christmas Eve (1 day), Christmas (1 day), New Year's Day, Martin Luther King Day, Presidents' Day, Memorial Day, and Independence Day.
- D. Daily reports. At the end of each day, Contracted Respondent shall transmit electronically to the City, information on completed work orders, as well as a listing all installation appointments to be visited by installers the next day.
- E. 24-hour customer access. The City will respond to calls from customers concerning leaks, loss of service and other problems associated with installations on a 24-hour per day basis. Those calls which are determined to pertain to the AMI project and require an after-hours site visit will be charged back to the Contracted Respondent at the City's current after-hours rate.
- F. City Project Manager. The City will designate an employee or agent who will manage the project on behalf of the City. The function of this City Project Manager is to coordinate with the Contracted Respondent and ensure compliance by the Contracted Respondent with the specifications. The designation of a City Project Manager shall not relieve the

Contracted Respondent of its full responsibility to comply with the terms of the Contract and/or all plans and specifications.

- G. Installation acceptance. After acceptance of the initial Pilot phase of the AMI system deployment, each installation will be accepted by the City conditioned upon (1) electronic submission of a list of completed installations containing for that installation the premise identification number, address, old and new meter ID numbers, old and new meter readings, transmitter ID number, location of meter and transmitter, Contracted Respondent name, inspector's name, and all other information relevant to the installation; (2) satisfactory inspection by the City; and (3) successful capture of a confirming meter reading or sequence of meter readings from that meter and transmitter by the City operating the AMI system in a normal way.
- H. Payments. The Contracted Respondent shall provide to the City on a weekly basis its list of newly completed installations and any itemized additional work. The City will approve installations within ten business days after notification that the installation has been completed and is ready for City inspection. The City shall notify Contracted Respondent of any listed items that do not meet the conditions of Paragraph G above, so that Contracted Respondent may resolve any discrepancies. The City may at its discretion reject the entirety of any list on which there are discrepancies in more than 20% of the entries. Contracted Respondent shall submit and City will pay invoices on a monthly basis, except for any disputed amounts. The City will provide payment within 60 days of receipt of acceptable invoice. Indicate in your proposal any discount for prompt payment (amount of discount and applicable number of days).
- Payments will be based on the price schedules negotiated as part of the contract by the City and the Contracted Respondent, based on prices submitted by the Respondent.
- I. Automated project control system. The Contracted Respondent shall utilize an automated installation information management process, so that little or no information has to be captured or entered manually. The system shall have a redundant backup process, so that all information is preserved in the event of a breakdown in the primary system. The system should enable the correction of any incorrect information pertaining to meter or service size, meter type, meter location, address, etc. Describe the project control system proposed, and how many times the Respondent has utilized said system in other AMI deployments.
- J. No solicitation. No Contractor, or its employees or agents, may solicit business from the City's water customers while engaged on any contract associated with this project.
- K. Contracted Respondent staff requirements.
- i. Contract Manager. The Contracted Respondent will designate a Contract Manager who is a direct employee of the selected firm for the duration of the contract, and who shall have the authority to handle and resolve any disputes or contract issues with the City. The City requires a sole point of contact for the entire project that will have direct oversight over all elements to include installation. Indicate the amount of time

(days or hours per month) the Contract Manager will be dedicated to this project, and how much of that will be spent on site. A change of Contract Manager may be made only with the approval of the City.

- ii. Installation Manager. The Contracted Respondent will designate an Installation Manager, who shall be responsible for managing the entire installation project on a day-to-day basis on behalf of the Contracted Respondent and for seeing that all installations are carried out in a professional manner and in compliance with the procedures required by the Respondent/manufacturer, the City, and all other applicable local, state and federal regulations. The Installation Manager shall be on site continuously throughout the duration of the project, except for holidays and vacations, during which the Contracted Respondent shall provide a qualified substitute. The Installation Manager shall be experienced in supervising meter installation contracts, and familiar with applicable regulations and safe and proper installation procedures. The City shall approve the Installation Manager or a change in the Installation Manager.
- iii. Installers. All AMI installations, retrofitting AMI-compatible registers on meters of any size, and meter changeouts must be performed by Contracted Respondent's employees or subcontractors who are properly trained and experienced.
- iv. Uniforms and identification. Contracted Respondent's field personnel shall wear easily recognizable uniforms containing the Contracted Respondent's name, as well as prominently displayed picture identification badges containing Contracted Respondent's name, employee name, title and signature, employee picture and employee I.D. number. Contracted Respondent's employees who are no longer employed by Contracted Respondent shall be required to return their uniforms and identification badges immediately upon termination of employment and the Contracted Respondent shall immediately notify the City of all such terminations.

L. Items to be supplied by Contracted Respondent

- i. General. Contracted Respondent will supply the following components and aspects of installation: overall project management; training and direct supervision of installers; appointment scheduling; problem solving and complaint handling; inspection, testing and quality control.
- ii. Tools and materials. The Contracted Respondent shall furnish all supplies, materials, tools and equipment necessary for the successful and timely completion of all meter and AMI installations under this contract as specified herein.
- iii. Meter box lids. The AMI system shall be configured to obtain the maximum signal strength from transmitters installed in meter pits or vaults. Contracted Respondent shall replace or retrofit all meter box lids and any other lids needed to obtain the performance requirements specified herein. Under no circumstance will a meter pit or vault be left uncovered and unsupervised. Lids may be replaced, drilled or left alone, depending on Contracted Respondent's determination of what is required to

ensure maximum signal output from transmitters installed in meter pits. Should a meter box lid need to be replaced, it must be replaced with like or equal type ensuring the lid is a secure fit.

- iv. Vehicles. Contracted Respondent shall be responsible for all vehicles it uses on the project. Contracted Respondent shall provide service vehicles on site stocked with common fittings and supplies needed for normal service restoration and/or replacement. Contracted Respondent vehicles, including private vehicles used for the work, shall have the company logo prominently displayed on both sides of the vehicle. Any employee of the Contracted Respondent or its subcontractors that drives a vehicle in connection with this project must have a valid driver's license for the class of vehicle being driven.
- v. Parking. The City desires that Contracted Respondent deploy vehicles to minimize parking problems and avoid blocking any streets. Contracted Respondent shall be responsible for all parking violations.
- vi. Field communications. The City requires that the Contracted Respondent's installers, plumbers, inspectors and supervisory personnel be equipped with cellular phones or radios so that problems or questions can be addressed immediately and that the Installation Manager can be contacted if needed.
- vii. Meter salvage. All meters removed from service shall be returned to the City for salvage.
- viii. Meter register reprogramming. For the existing meters and meter registers that are to remain in the system and be retrofitted (i.e., those installed after approximately January 2012), the meter registers are to be reprogrammed from their current status of reporting 4-5 dials to be enabled to report 8-9 digits (depending upon the resolution of information the City desires upon final system selection, which will likely be cubic foot or tenth of a cubic foot).

M. Account data and installation scheduling

- i. Account data file. Prior to the start of the installations, the City Project Manager will provide the Contracted Respondent with an electronic file containing the information necessary to create work orders for meter/AMI installation. For each meter, the data file will indicate the account number, meter reading route number, meter size, make and serial number, map and parcel number, the meter location (if known), and access notes to the meter. Any unmetered accounts that may exist are not to be addressed.
- ii. The City will provide Contracted Respondent with updates to this file for routes where the AMI system has not yet been installed every two weeks. For each meter, the data file will indicate whether the meter register only is to be removed and an AMI-compatible retrofit register installed, or whether the meter is to be completely replaced; the location of the meter (inside or outside); and any third-party (e.g., landlord) who is responsible for the account.

- iii. Customer notification. The City will prepare materials to be used for customer notification regarding installation activities. At least two weeks prior to the commencement of installations on a particular route, Contracted Respondent shall distribute such notifications (e.g., door hangers).
- iv. Appointment scheduling. Contracted Respondent shall be responsible for scheduling and handling all installation appointments. Whenever possible, Contracted Respondent shall notify customers of any changes in schedule at least one day in advance of the original appointment. The City reserves the right to impose liquidated damages of \$100 for each instance where the Contracted Respondent has failed to properly notify the customer if an appointment cannot be kept on time.
- v. Non-accessible meter. In the event a meter is obstructed or is not accessible, the Contracted Respondent will make no less than two attempts at any reasonable time to contact the customer to gain access to the meter. These attempts must be documented within the Respondent's work order system. After two documented attempts to change the meter, Installation Manager may request the City Project Manager to schedule the meter changeout. The Contracted Respondent shall only be paid for completed installations and is expected to provide all reasonable support in resolving installs that are difficult to schedule. Contracted Respondent will be responsible for installation if the City secures an appointment within 4-weeks of receiving written or electronic notice from Contracted Respondent.

N. Installation Procedures

- i. The City's water meters are located in enclosures: plastic boxes with plastic, cast iron or steel plate lids, concrete boxes with cast iron or steel plate lids, concrete vaults with steel plate lids and within mechanical rooms with a variety of exterior walls. Some of the meter pits are in vehicle traffic areas, including parking areas. Note; if the transmitter integrated in the register, supplier must provide a through-the-lid external antenna solution.
- ii. Site conditions. Before, or at the time of installation, the Contractor shall inspect the existing water meter setting, including piping and shut-off valves. If the Contractor determines that conditions are such that damage to the existing piping would result, the Installation Manager shall so inform the City, shall not attempt the installation until the site is inspected by an authorized City representative, and shall postpone installation at that site until the Project Manager authorizes the Contractor to proceed with the work.
- iii. Location of meters. The City personnel will indicate the meter box location by using a blue mark on the street or curb and be available to assist in locating meters in the field.
- iv. Geopositioning coordinates. For each meter installed in an outdoor pit, box or vault, Contractor shall capture GPS positioning with sub- meter accuracy (+/- 3 meters), using a geopositioning device.
- v. Digital photographs. The City requires that digital photographs be taken before and after installation to provide documentation of problematic pre-existing site conditions. Problematic site conditions are defined, as any condition that the Contractor believes requires some repair or City investigation before installation should proceed. The photo

should have an accurate date and time stamp and the file name of the photo shall include the applicable register number. Digital photographs should be available to the City in a database searchable by address, premises identification number, and meter number or account number.

- vi. The City requires that evidence be in the form of a digital photo clearly showing the register face.
- vii. Meter replacement. Contractor shall ensure he is at the correct location and meter, and check for running water prior to commencing meter change-out. If water is running, Installer must notify the customer before commencing meter change out. Contractor shall then replace the meter, using new gaskets or washers. Contractor shall put plastic caps on the inlet and outlet of the old meter and handle meter with care in the event of post-removal testing. All conversion bushings or other hardware necessary to install the new water meter in the customer's existing meter setup must be furnished by the Contractor.
- viii. Old piping / repairs. When old piping is leaking or deteriorated to a point that damage to it could reasonably be expected by changing the meter notify the City Project Manager and proceed to the next meter. Unless the City's Project Manager permanently remands the particular installation to the City, Contractor is still required to install the meter and AMI equipment after the piping has been repaired or replaced at any time during the installation period.
- ix. At its option, the City may authorize the Contractor to make any necessary repairs to service lines or piping at City's expense, order the customer to make such repairs, or undertake such repairs itself. If the City elects to assume responsibility for repairs, it will make the repairs within 30 days of notification by the Contractor. The City will notify the Contractor when repairs are complete.
- x. Strainers. If the meter to be replaced has a strainer, Contractor shall be responsible for replacing the strainer along with the meter, unless conditions prevent such replacement. Contractor shall otherwise be responsible for repairing or cleaning the strainer to ensure that is in good working order and will not adversely affect meter performance.
- xi. Verifying service working. Contractor shall flush water line after installing a new meter to ensure the meter is registering properly and verify service restoration to the entire premise.
- xii. Valves. If Contractor cannot shut off water using the valve at the meter (details must be documented on a work order), Contractor shall immediately notify the City's on-site inspector to arrange for repair. Contractor may not use a crimping tool to stop the flow of water, unless approved in writing by the City's on-site inspector. Contractor may use a non-Freon freezing tool.
- xiii. Plumbing irregularities. The Contractor shall report to the Project Manager, prior to the installation of a meter, any meter and/or plumbing irregularities including but not limited to meters installed backwards, registers disconnected from meters, taps located before a meter, there are unmetered connections of a customer's plumbing to a service lateral, fire pipe or water main or any other violations of the City's Regulations. The Contractor shall not proceed with the installation of a meter until the City's Project Manager has authorized such installation in writing.

- xiv. Dirt or water around meter. Contractor shall be responsible for removing and properly disposing of any reasonable amount of dirt needed to access a meter in a meter pit or vault. Dirt shall be removed only as necessary to prevent dirt from entering the line during the installation. If a water meter box or vault is flooded so that the meter is fully or partially submerged, the Installer must pump out the box before changing the meter. The Installer must ensure that the water service is not in any way contaminated, even intermittently, by standing water in the meter vault or box. All waste resulting from cleaning the meter pit as well as replacing the ring and lid must be cleaned up and hauled off by the Contractor and disposed of in a legal manner. The existing ring and lid, if replaced, shall be disposed of by the Contractor.
- xv. Service line damage. The Contractor shall be responsible for the repair of any service lines it damages at its sole cost and expense, unless Installation Manager has reported (prior to commencement of installation) a condition of antiquated or inferior plumbing to the Project Manager and the Project Manager has authorized the Contractor to proceed with the work. In the event a service line fails during the installation procedure, the Contractor will notify City's on-site inspector, who shall arrange for the repair by City. Reasonable direct labor and material costs for such repair will be deducted from Contractor's invoices for repair of service lines unless City's Project Manager authorized Contractor to proceed with the work.
- xvi. Returned work orders. Returned work orders shall include: meter size and meter type, verification or correction of existing meter and account information, old meter serial number, final reading on old meter, new meter number, new meter register number, premises identification number, transmitter ID number, reading on new meter register, date and time of installation, name of installer, notice of any problems encountered or repairs made. All information requested on the work order must be completely filled out for the installation to be considered complete and eligible for payment. An electronic copy of all the work order information must be provided to the City's Project Manager on a daily basis.
- xvii. Installation sequence. Contractor shall conduct installations in sequence to be determined by the City. The City and Contractor shall establish an overall schedule for installation of the entire project. On the first workday of each week. Contractor will provide the City an updated schedule of where work is planned for the next 3 weeks.
- xviii. 24-hour customer access. Contractor must respond to calls from customers or the City concerning leaks, loss of service and other problems associated with installations on a 24-hour per day basis. Contractor must respond within one (1) hour of receiving the call and mobilize to correct any problems within three (3) hours of receiving the call.
- xix. Installation acceptance. Each Installation will be accepted by the City conditioned upon (1) electronic submission of a list of completed installations containing for that installation the premise identification number, address, old and new meter ID numbers, old and new meter readings, transmitter ID number, location of meter and transmitter, Contractor's name, Contractor's inspector's name, and all other information relevant to the installation; (2) satisfactory inspection by the City; and (3) successful capture of a confirming meter reading or sequence of meter readings from that meter and transmitter by the City operating the AMI system in a normal way.
- xx. Meter salvage. All existing meters shall be boxed in lots of 6 and returned to the City yard located at 331 County Line Road.

- xxi. City Project Manager. The City will designate an employee or agent who will manage the project on behalf of the City. The function of this Project Manager is to coordinate with the Contractor and ensure compliance by the Contractor with the specifications. The designation of a Project Manager shall not relieve the Contractor of its full responsibility to comply with the terms of the Contract and/or all plans and specifications.
- xxii. Work hours. No work shall be done between 7:00 pm and 7:00 am except where required or authorized by the City. No work shall be done on Sundays and legal holidays. Legal holidays shall be defined as those holidays annually observed by the City. These are: Labor Day, Columbus Day, Veterans Day, Thanksgiving (2 days), Christmas (2 days), New Year's Day, Martin Luther King Day, Memorial Day, and Independence Day (a total of 12 days).

O. Quality control

- i. The Contracted Respondent shall describe its quality control program for its installation crews, including the parameters and the numbers or percentages of installations to be inspected, minimum acceptable performance and provisions for dealing with unacceptable performance.
- ii. Response to complaints. Should the Contracted Respondent receive a call or complaint from a customer or the City regarding installation, the Contracted Respondent shall immediately log the call, including caller's name, address, account number if available, date and time of call, nature of problem and the action taken. Copies of all call logs shall be forwarded to the City Project Manager Improper installations. The Contracted Respondent shall be responsible for replacing any meter, transmitter or appurtenances improperly set by its Installer. The Contracted Respondent shall correct any damage to couplings, threads, unions or meters by use of improper tools or cross threading by an Installer.
- iii. Leaks after installation. The Contracted Respondent shall be responsible for correcting any leaks at the valves, couplings or service lines that could be attributed to the meter installation if reported by the City or customers within one (1) year of installation.
- iv. Regular meetings with the City. Contract Manager shall meet with City personnel periodically and not less than monthly to update them on progress against the installation schedule.

VII. Evaluation Criterion 3: Cost Proposals

Instructions to Respondents

Respondent must provide prices for the equipment and services specified in Section IV of this RFP (Technical Specifications). All quantities are estimated, and the City may purchase more or less as indicated at the prices quoted, except for the data collectors and repeaters required to establish the communications network for a fixed network system, or any other ancillary equipment needed for a fully functional AMI system, whose quantities are to be furnished by the Respondent. **All prices and totals shall be inclusive of applicable Washington State sales tax (10.0%).**

Respondent must complete each blank cell for each line item listed in the cost proposal tables; lump sum proposals will not be accepted. Indicate “NA” (Not Applicable) if the particular equipment described is not incorporated in the Respondent’s proposed AMI system design. In addition, provide responses in the boxes provided for questions listed under the “Notes” section for each table. Respondent must include any additional equipment or service not listed in the tables that is required to provide a complete, fully operational and functional system.

All table entries and text responses shall be in **bold red text**.

Additional Notes/Requirements

1. Pricing is to be firm for the period of the contract, which is estimated to be through December 31, 2017, as well as for an additional period of three years (i.e., through December 31, 2020).
2. Future (i.e., beyond December 31, 2020) purchases of equipment, including new equipment needed to extend AMI system service to new City customers or an expanded City service area, as well as replacement products (including those replacement purchases to which pro-rated warranty coverage applies), will be based on the lesser of the following:
 - a. Published list price of the equipment in effect for the year of purchase; or,
 - b. Contract prices shown in this cost proposal, with inflation applied as calculated according to the published Consumer Price Index for All Urban Consumers (CPI-U) for the Seattle-Tacoma-Bremerton area.
3. AMI system equipment purchased under this contract will be based upon orders placed by the City. Deliveries of ordered equipment will be shipped to the City. The Respondent will pay all freight charges for such deliveries, including return of equipment that the City is submitting for warranty replacement.
4. The City will make payment on systems and equipment that meet the requirements of, and have been accepted by, the City. Acceptance will be based upon demonstration that the system components under consideration for payment have been placed into full operation to include meter reading data being successfully passed to the utility billing system (CIS) in

production mode and other monitoring / trending / alerting / analysis functions being successfully used in production / operational mode.

5. An invoicing format acceptable to the City will be determined during contract negotiations.
6. After contract award, and prior to deployment, the Respondent shall submit a preliminary cost-loaded schedule (i.e., that depicts estimated invoice costs per month over the duration of the deployment period) to the City for review and comment. Prior to deployment, the City shall provide Respondent with comments on the preliminary cost-loaded schedule. The cost-loaded schedule will be finalized and will be used as the basis of partial payments during system deployment.

Table 1. Meters and Meter Registers

Positive Displacement and/or Electronic meters may be proposed.

Respondent must complete each blank cell within the table(s) associated with all meter options proposed.

Table 1a. Positive Displacement Meters

Size	Description	Quantity ⁽¹⁾	Unit Cost	Total Cost
5/8 x 3/4"	Meter & Register	1,710		
1"	Meter & Register	115		
Total	---	1,825		

(1) Estimated, as of January 2017.

Table 1b. Electronic Meters

Size	Description	Quantity ⁽¹⁾	Unit Cost	Total Cost
5/8 x 3/4"	Meter & Register	1,710		
1"	Meter & Register	115		
Total	---	1,825		

(1) Estimated, as of January 2017.

Table 1c. Electronic Sensors

	Size	Description	Quantity ⁽¹⁾	Unit Cost	Total Cost
I	3/4" or 1"	Pressure	25		
Ii	3/4" or 1"	Temperature	25		
Iii	3/4" or 1"	Chlorine Residual	25		
Iv	3/4" or 1"	pH	25		

Notes:

1. The quantities listed above are shown for estimation purposes only. The actual requirement of the City may be more or less than the quantities specified. The City will acquire and pay for only those items which it orders during the term of the Contract.

Table 2. Transmitters

Respondent must complete each blank cell within the table.

For systems with only one port transmitters (one transmitter per meter):

Transmitters for Replaced Meters		
Quantity ⁽¹⁾	Unit Cost	Total Cost
1,825		

(1) Quantity of transmitters associated with all meters being fully replaced (as detailed in Table 1).

Notes:

1. The quantities listed above are shown for estimation purposes only. The actual requirement of the City may be more or less than the quantities specified. The City will acquire and pay for only those items which it orders during the term of the Contract.
2. Describe the standard length of wire connecting the transmitter to the register (note: must be a minimum of five feet). Are additional lengths available, and if so, at what additional cost?
3. Indicate if two-port transmitters are offered. If so, please note any difference in cost between one-port and two-port transmitters.

Table 3. AMI System Reading Equipment and Services

Respondent must complete each blank cell within the table.

*Respondent must identify recommended quantities where indicated by triple asterisks (***)*

Respondent must identify any additional items/quantities that it recommends the City purchase to operate its system, and reasons for the additional quantities.

Equipment Description	Quantity to be supplied	Unit Cost	Total Cost
Fixed data collection units, including firmware and installation	***		
Fixed network system repeaters, including installation	***		
Costs associated with leasing space on infrastructure not owned by the City that is required for installation of DCUs and/or repeaters (20-year estimated costs)	***		
Backhaul communications infrastructure, including installation and total 20-year estimated operating fees (e.g., cell service fees)	***		
Field programmers, including cradles, accessories, firmware and software	***		
Field tester/reader, including cradles, accessories, firmware and software	***		
City information system interfaces (CIS, billing, GIS, hydraulic model)	***		
Data hosting service (upfront costs)	***		
Customer portal (upfront costs)	***		
Other (describe)	***		
Total:			

Notes:

1. Describe additional quantities of items other than those specified by the City and reason for the City purchasing these additional quantities for operating the AMI system.
2. The Respondent will determine the number of data collectors and repeaters required to achieve the reading performance and frequency requirements established by the City. If additional data collectors and repeaters are required to achieve the stated requirements than originally estimated by the Respondent, the Respondent will be responsible for furnishing and installing any additional collectors and repeaters at their expense. The City will pay for additional collectors and repeaters needed to expand the original service territory, as needed.
3. Describe proposed backhaul communications methodology and basis for pricing.

Table 4. Annual Costs (Maintenance or Service Contracts/Agreements, Data Hosting Services, and Customer Portal Services/Support)

Respondent must complete each blank cell within the table.

Respondent must specify the annual cost of the system’s maintenance or service contract or agreement, for each year during the projected 20-year life of the system, inclusive of both software and hardware maintenance. Note if coverage would change during the course of this time period. Reference may be made to appended contract/agreement documents. All costs are to be in 2015 dollars (no escalation).

Year of System Life	Annual Maintenance Contract Cost	Annual Data Hosting Cost	Annual Customer Portal Cost	Total Annual Cost
Year 1				
Year 2				
Year 3				
Year 4				
Year 5				
Year 6				
Year 7				
Year 8				
Year 9				
Year 10				
Year 11				
Year 12				
Year 13				
Year 14				
Year 15				
Year 16				
Year 17				
Year 18				
Year 19				
Year 20				
Total Annual Costs over 20-Year Project Life:				

Notes:

1. Assumes the first year a maintenance/service contract/agreement will be required is 2018, after testing and mutual (i.e., City and Respondent) acceptance of the initial phase of deployment by the end of 2018. The pilot phase system elements are anticipated to include those items listed in Tables 1 through 3 that are necessary to provide a fully functioning AMI system to obtain meter readings from approximately 300-500 water service meters located within a concentrated area of the City, as noted in Section VI.14 of the RFP.

Acceptance of the initial deployment phase will be achieved when the initial system elements are installed, functioning, and providing system performance that has reached or exceeded a reading rate of 99.5% for a mutually-agreed-upon reading period (e.g., a three-day billing period), as set forth in Section VI.17 of the RFP. The reading rate is defined as the number of transmitter units installed on the AMI system that successfully provide a reading during the defined reading period, divided by the total number of transmitter units installed on the system at that time. A transmitter unit will not be included in the reading rate calculation if any of the following situations apply:

- The unit is adversely affected by a Force Majeure Event or an Act of God.
- The unit cannot communicate with the system due to an object being placed over it (e.g., a parked automobile).
- The unit is removed from service during the reading period.

By accepting the initial deployment phase, both the City and the Respondent will be acknowledging the following, with regard to all initial system elements (including transmitter units):

- The system elements have been installed in compliance with the procedures and specifications approved and provided by the Respondent.
- Their performance or functioning has not been adversely affected by a failure of the City to perform its obligations or tasks for which it is responsible relative to the initial deployment phase.

Acceptance of subsequent installation phases will involve similar acknowledgements regarding system elements installed at each phase.

2. Describe the key features/elements of the maintenance/service contract/agreement that you propose in the above table.
3. Note if other levels of service agreements are available.
4. The data hosting service must be able to readily provide at least the most recent 24 months of consumption data for analysis and customer service purposes. Note if costs are greater for data hosting services that provide for storage of hourly consumption data beyond 24 months (i.e., up to 5 years worth).

Table 5. Proposed Transmitter Unit Replacement Costs

Respondent must complete each blank cell within the table.

The City requires 20 years of useful life from the AMI system provided through regular and routine maintenance and replacement of system components to keep the system fully functional.

Since it is assumed that replacement costs are fully covered by warranty for the first 10 years, the following table begins at Year 11.

In the table below, specify the expected failure rate of transmitter units and associated replacement costs, in 2018 dollars (i.e., without considering inflation).

Year After Unit is Installed & Accepted	Expected Failure Rate (failures per year)	Warranty Pro-Rata Replacement Cost Percentage	Unit Replacement Cost (total cost less pro-rata warranty adjustment)
11			
12			
13			
14			
15			
16			
17			
18			
19			
20			

Table 6. Proposed Additional Replacement/Upgrade Costs (Years 1-20)

Respondent must complete each blank cell within the table.

This table is similar to Table 5, in that replacement/upgrade costs are requested for system components (other than transmitter units) during years 1-20 of the life of the AMI system.

In the table below, specify the expected failure rate of equipment other than transmitter units and associated replacement costs, in 2018 dollars (i.e., without considering inflation). This shall include items such as data collectors, handheld devices, interface software, and support upgrades (e.g., associated with data hosting and customer portal services) not covered by the annual costs specified in Table 4.

Year After Unit is Installed & Accepted	Item Needing Replacement	Warranty Pro-Rata Replacement Cost Percentage	Item Replacement Cost (total cost less pro-rata warranty adjustment)
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			
11			
12			
13			
14			
15			
16			
17			
18			
19			
20			

Table 7. Ancillary Operational Support, Materials & Supplies

Respondent must complete each blank cell within the table.

*Respondent must specify recommended quantities where indicated by triple asterisks (***)*

Item Description	Quantity to be supplied	Unit Cost	Total Cost
Initial and/or only on-site training, 8 hour day. Includes all travel costs.	***		
Subsequent training, 8 hour days. Includes all travel costs.	***		
Other (describe)	***		
Other (describe)	***		
Total:			

Table 8. Cost Proposal Summary

Incorporate totals shown on Tables 1 through 7.

All totals shall be inclusive of the applicable Washington State sales tax (9.5%)

Table No.	Description	Total Cost
1a	Meters and Meter Registers (Positive Displacement)	
1b	Meters and Meter Registers (Electronic)	
1ci	Pressure Sensor	
1cii	Temperature Sensor	
1ciii	Chlorine Residual Sensor	
1civ	pH Sensor	
2	Transmitters	
3	AMI System Reading Equipment & Services	
4	Annual Maintenance/Service Contract, Data Hosting, and Customer Portal Costs (Total Costs over 20-Year Project Life)	
5	Transmitter Unit Replacement Costs (Yrs 11-20)	
6	Additional Replacement/Upgrade Costs (Yrs 1-20)	
7	Ancillary Support, Materials & Supplies	
	Total (assuming 1a, Positive Displacement Meters)	
	Total (assuming 1b, Electronic Meters)	

SIGNATURE

This fixed network AMI system cost proposal is submitted by:

NAME OF RESPONDENT COMPANY: _____

SIGNATURE OF AUTHORIZED PERSON: _____

PRINTED NAME OF AUTHORIZED PERSON AND TITLE: _____

DATE: _____

Attachment A – City Mapping and Water System Information

Item 1 – City Water System Service Area Boundary

Item 2 – City Water Facility Map (e.g., reservoirs, pump stations)

Item 3 – City Engineering Standards for Meter Setter, Water Service and Meter Box Requirements, and Service Line Details

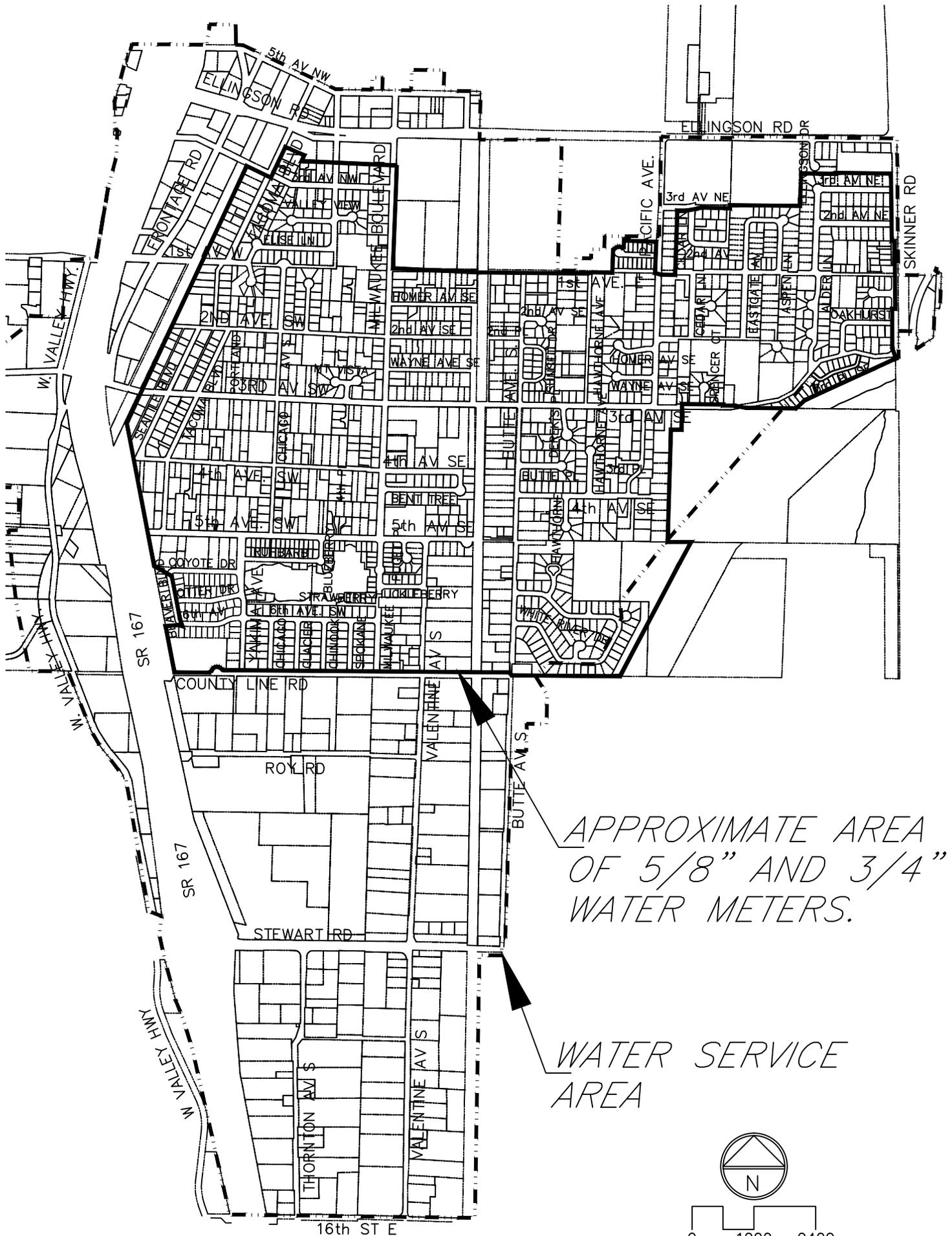
Item 4 – City Bonding and Insurance Requirements

Item 5 – City Contract General Conditions

Attachment A

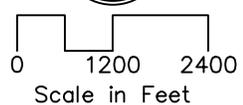
City Water System Service Area Boundary

(Placeholder Page – Insert map in PDF.)



APPROXIMATE AREA OF 5/8" AND 3/4" WATER METERS.

WATER SERVICE AREA



Attachment B

City Engineering Standards for Meter Setter, Water Service and Meter Box Requirements, and Service Line Details

6 WATER

0.1 GENERAL

The standards established by this chapter are intended to represent the **minimum** standards for the design and construction of water system facilities. Greater requirements may be mandated by the City due to localized conditions. Water system extensions, connections, or modifications to the existing system shall be in compliance with City Standards, City Ordinances, and the State Department of Health.

Off-site improvements to the existing system may be warranted based on:

- A. The condition and capacity of the existing water system, and
- B. The impacts caused by the proposed development.

These off-site improvements (in addition to “on-site improvements”) shall be completed as determined by the City Engineer to mitigate impacts caused by the development.

Any extension of the Pacific water system must be approved by the Department of Public Works, and all extensions must conform to Department of Health, the King County and/or Pierce County Coordinated Water System Plan, City of Pacific Water System Plan (WSP), and the Valley Regional Fire Authority requirements.

0.2 DESIGN STANDARDS

Except as supplemented by these standards, the Water systems shall be designed and installed in accordance with the latest edition of the following documents (including all amendments and revisions thereto):

- *Standard Specifications for Road, Bridge, and Municipal Construction* as published by Washington State Department of Transportation (referred to as the “WSDOT/APWA Standard Specifications”).
- *Standard Plans for Road, Bridge, and Municipal Construction* as published by Washington State Department of Transportation (referred to as the “WSDOT/APWA Standard Plans”).
- *The Water Design Manual* as published by Washington State Department of Health (referred to as the “Water Design Manual”).
- The Standards of the American Water Works Association
- *Recommended Standards for Water Works, (Ten State Standards)* as published by The Great Lakes Upper Mississippi Board of State Public Health and Environmental Managers.

In designing and planning for any development, it is the developer’s responsibility to see that adequate water for both domestic use and fire protection is attainable. The developer must show in the proposed plans how water will be supplied and whether adequate water volumes at acceptable pressure and velocity will be attained in case of fire. An analysis of the system may be required if it appears that the system might be inadequate.

A copy of all computations and other data used for design of the potable water system shall be submitted with the plans to the City for approval.

0.2.1 Project Plans

Detailed plans shall be submitted for the City's review which provide the locations, size, and type of the proposed water system and points of connection. These Plans can be combined with the Sewer Plans, if there is adequate space to clearly present the design and construction requirements. Project plans shall contain the following:

- A. A horizontal scale of not more than 1 inch = 50 feet. A vertical scale of not more than 1 inch = 10 feet, if required.
- B. A north arrow and scale bar.
- C. Locations and type of existing features, above and below ground, including: surfacing; rights-of-way and easements (with applicable County Recording Number); existing utility pipes with size and material; and appurtenances.
- D. Locations and type of all proposed features, above and below ground, including: station and offset or dimensions from property lines.
 - Pipe - location(s), diameter, length, material, and relevant Detail reference(s)
 - Fittings - location(s), diameter, material, joint configuration(s), and relevant Detail reference(s)
 - Valve - location(s), size, necessary appurtenances, and relevant Detail reference(s)
 - Hydrant - location(s), appurtenances and relevant Details reference(s)
 - Service meter - location(s) and relevant Details reference(s)
 - Utility Crossings – water, sewer, and storm crossings shall be shown with invert and crown elevations, as required
 - Other appurtenances with relevant Details reference(s)
- E. A copy of the City Water System Notes shall be included.

WATER SYSTEM NOTES

1. See the City of Pacific Standard Notes on Sheet ____.
2. See the Construction Sequence on Sheet ____.
3. All water system improvements shall be constructed in accordance with these approved plans. Any deviations from these plans shall require approval from the owner, engineer, and appropriate public agencies.

4. Water mains 4-inch diameter and larger will be ductile iron cement mortar-lined thickened. Materials are to conform to the latest revision of the following standards:
 - a. Ductile Iron Pipe design (AWWA C150/A21.50)
 - b. Ductile Iron Pipe manufacturing process (AWWA C151/A21.51)
 - c. Cement Mortar Lining (AWWA C104/A21.4)
 - d. Ductile Iron Pipe joints (AWWA C111/A21.11)
 - e. Ductile Iron fittings (AWWA C153/A21.53 and C110/A21.10)
5. Water Main Installation shall conform to the latest revision of Ductile Iron Pipe installation (AWWA C600)
6. Maintain a minimum 1-foot vertical separation and a 30-inch horizontal separation between the waterline and all other Utilities except Sanitary Sewer, which is to be a 10-foot horizontal separation. Waterline trench is not to be shared with other Utilities.
7. Trench excavation, bedding, and backfill for water mains shall be in accordance with section 7-10 of the current version of the WSDOT/APWA Standard Specifications for Road, Bridge and Municipal Construction and the City of Pacific Development Guidelines for Public Works Standards trench details.
8. Maximum length of open trench shall be 100 feet.
9. The waterline shall be fitted with a watertight plug at any anytime work is delayed or stopped and overnight. If newly installed waterline is contaminated with ground water, the entire length of pipe affected shall be thoroughly cleaned prior to installing additional pipe.
10. All pipe and services will be installed with continuous tracer tape installed 12 inches to 18 inches under the final ground surface. The marker will be plastic non-biodegradable, metal core, or backing marked water, which can be detected by a standard metal detector. Tape will be Terra Tape D or approved equal. In addition to the tracer tape, blue toning (tracer) wire will be installed over all pipe and services. Toning wire will be UL listed, Type UF, 14-gauge coated copper taped to the top of the pipe to prevent stretching and damage. The wire will be brought up and tied off at valve body or meter setter with the end of the wire accessible to hook up to a locator (2 feet of slack). All toning wire splices and connections will join wires both mechanically and electrically and will employ epoxy resin or heat-shrink tape insulation. Toning wire will be tested prior to acceptance of the pipe system. A written notice from the contractor to the City two days prior to the test is required.

11. Water Valves shall conform to Ductile Iron Resilient Wedge Gate Valves (AWWA C515). Acceptable manufacturers: American Flow Control, Clow, Kennedy, M&H, Mueller, or City approved equal.
12. System valves will be operated by City employees only.
13. At any connection to an existing line where a new valve is not installed, the existing valve must be pressure tested to City standards by the contractor prior to connection. If an existing valve fails to pass the test, the contractor will make the necessary provisions to test the new line prior to connection to the existing system or install a new valve.
14. At any water main tap to existing city mains where the contractor encounters a coupling or existing assemblies, the contractor will provide a minimum of 18 inches of clearance from coupling or assemblies to edge of tapping sleeve.
15. Any connection to an asbestos cement (A/C) water main shall require the replacement of at least one length of A/C water main with ductile iron pipe per Standard Detail C1C.
16. No connection to the existing mains will be allowed except by means of an approved backflow prevention device prior to satisfactory flushing, testing, disinfections, and receipt of satisfactory bacteriological test results.
17. Any persons performing Hot Taps shall be approved in advance by the City of Pacific. Spears Taps, Inc. at (425)485-4764 is an acceptable companies.
18. Fire Hydrants shall conform to the latest revision of Dry Barrel Fire Hydrants (AWWA C502). Acceptable manufacturers: AVK, M&H "Reliant" #929, Mueller, or City approved equal.
19. Fire hydrants will be bagged until system is approved. Hydrants will be painted with Parker Paint Marathon Enamel Safety Yellow paint or equal. All chains between caps and hydrants shall be cut and removed.
20. Fire Hydrants shall be set vertical plumb with the pumper port facing the street.
21. Fire Hydrants shall be set as such that the breakaway joint is no more than 6 inches above and no less than 3 inches above the finished grade.
22. There shall be 5-foot minimum clearance around the fire hydrants.
23. Fire Hydrants shall have a 5-inch Storz Rigid Female Adapter with cap and connecting cable.
24. The water services to the property line from the main line shall be 1-inch minimum copper and shall be installed in accordance with Section 7-15 of the current version of the WSDOT/APWA Standard

Specifications for Road, Bridge and Municipal Construction and the City of Pacific Development Guidelines for Public Works Standards.

25. Installation of Thrust Blocks shall conform to the City of Pacific Guidelines for Public Works Standards details, Thrust Block (TB). The Contractor shall use plastic sheeting to prevent contact between the concrete and the fittings. The City of Pacific Engineering Department shall inspect thrust Blocks prior to backfilling the trench.
26. The City will be given 10 working days' notice prior to scheduling a shutdown. The City of Pacific Water Section or City Inspector will perform the shutdown. Where connections require "field verification," connection points will be exposed by contractor and fittings verified two working days prior to scheduling City crews to distribute shutdown notices. The City will notify customers involved or affected of the water service interruption 48 hours in advance.
27. The City of Pacific Engineering Department must be notified at least 48-hours prior to commencing construction and for inspection requests. Inspections shall include pipe installation, pipe bedding, bagging, thrust blocking, pressure testing and trench backfill.
28. The Contractor shall notify and coordinate with the City of Pacific Water Department prior to the start of construction and prior to any water shut off or turn on that will affect the water system.
 - a. Scheduled waterline shut downs: 72-hours notice required. Contact Jim Schunke at (253) 929-1116 or (253) 261-5044 for scheduling. Water Department personnel will operate distribution valves.
 - b. Emergency waterline shut downs: Contact Jim Schunke at (253) 929-1116 or (253) 261-5044 or on call public works personnel at (253) 333-4522. The Water Department will be notified.
29. All mains will be disinfected conforming to Disinfections (AWWA C651).
30. All lines will be pressure and water quality tested in the presence of and under the supervision of the City of Pacific in conformance with the Specification 7-09.3. The contractor shall furnish all labor, equipment, and material to disinfect, flush, and conduct a pressure test of the completed waterline(s).
31. Dechlorination will be required of all disinfection water flushed from waterlines which cannot be conveyed to existing Sanitary Sewer Systems.

0.2.2 Water Mains

Water Mains shall meet the following criteria.

- F. Water mains shall be constructed in dedicated street or easements. Easements to be dedicated to the City will have a minimum width of 15 feet.
- G. Lines shall be sized to provide for both domestic and fire flow requirements. Fire flow requirements will be as determined by the Valley Regional Fire Authority Fire Marshal, however, in no case shall it be less than 1,500 GPM at 20 psi residual pressure.
- H. Water mains shall be installed to the farthest property line(s) of the area being served.
- I. All water lines shall have a minimum of 36 inches of cover in improved (asphalt or concrete surfaced) areas. They shall have a minimum of 42 inches of cover in unimproved (non-hard surfaced) areas.
- J. All mains shall be looped and have a minimum diameter of 8-inches, unless approved in writing by the Public Works Director or the City Engineer. Over sizing of mains may be required per the City's current Water System Plan.
- K. Located on the north or east side of the road 5 feet from the centerline, unless approved in writing by the Public Works Director or the City Engineer.
- L. All water mains shall be ductile iron pipe. Mains 4 inches to 14 inches shall be Class 52. Mains 16 inches and larger shall be Class 50.

0.2.3 Water Main Fittings

Fittings for water mains shall meet the following criteria.

- A. Fittings shall be cement lined ductile iron.
- B. They shall be provided as necessary in the field to suit the construction and in accordance with the pipe manufacturers' recommendations so as not to exceed allowable deflection at pipe joints.
- C. All fittings shall be installed with thrust blocking per the City Standard Details for horizontal bends. Vertical bends shall be provided with anchor blocking in accordance with City Standards.

0.2.4 Water Valves

Valves for water mains shall meet the following criteria.

- A. Valves will be installed in the distribution system at sufficient intervals to facilitate system repair and maintenance, but in no case will there be less than one valve every 600 feet. Generally, there will be two valves on each tee and three valves on each cross. Specific requirements for valve spacing will be made at the plan review stage.
- B. Each valve outside of asphalt or concrete surfaced areas shall be provided with a valve marker post.

0.2.5 Fire Hydrants

Fire Hydrants shall conform to the following requirements.

- A. They shall be located at 600-foot intervals in single-family and duplex residential areas and at 300-foot intervals in commercial and industrial areas, unless approved in writing by the Valley Regional Fire Authority Fire Marshal.
- B. A fire hydrant shall be located nearest to the traffic intersection.
- C. The last hydrant shall be no more than 300 feet from the last residential property.
- D. When any portion of a proposed building is in excess of 150 feet from a water supply on a public street, on-site hydrants will be required. Such hydrants will be located pursuant to the Valley Regional Fire Authority, and easements for such hydrants will be granted to the City.
- E. Requirement regarding use, size, and location of a fire department connection (FDC) and/or post indicator valve will be determined by the Building Official and the Valley Regional Fire Authority. Location of the FDC will be shown on the water plans.
- F. Where needed, the Department of Public Works or Valley Regional Fire Authority may require hydrants to be protected by two or more posts, each 4 inches in diameter by 5 feet in height, made of either reinforced concrete or steel.

0.2.6 Services

Water services shall be designed to meet the following criteria:

- A. All water services shall be located with the water meter within road right-of-way.
- B. Water services for adjacent properties shall be located at the common property line.
- C. Water service lines shall be installed perpendicular to the water main.
- D. All service connections relating to new development will be of the appropriate size as determined by industry standard and approved by the City of Pacific and installed by the developer at the time of mainline construction. After the lines have been constructed, tested, and approved, the owner may apply for a water meter. The City will install a water meter after the application has been made and all applicable fees have been paid.
- E. All new buildings and residences shall include in their water service a suitable pressure reducing valve to protect the plumbing from excessive pressures, unless waived on the application form of the City.
- F. All new construction shall comply with the "Accepted procedure and practice in Cross Connection Control Manual" as published by the Pacific Northwest Section of the American Water Works Committee", November

1985, Fourth Edition, and current amendments thereto. A copy of such is available for review at the City office.

- G. When water is desired to a parcel fronting an existing main but not served by an existing setter, an application must be made to the City. Upon approval of the application and payment of all applicable fees, the City will tap the main and install the meter, box, and setter.
- H. Master meters will not be allowed for use in the City of Pacific water system.
- I. Service lines will be domestic, high-density polyethylene pipe, minimum pressure, Class 200 psi, Grade PE 3408. Glued joints will not be accepted. Service lines will be installed a minimum of 45 degrees off the main. Tracer tape and 14-gauge blue-coated wire wrapped around the pipe will be installed on all service lines.
- J. All meters shall be installed by the City, and the Developer shall pay the current meter installation charge.

0.2.7 Water System Appurtenances

A. Blow-Off Assemblies

If a fire hydrant is not located at the end of a dead-end main, a blow-off assembly will be required. On water mains that will be extended in the future, the valve that operates the blow-off assembly will be the same size as the main and provided with a concrete thrust block. The pressure rating for blow-off assemblies will be 200 psi. Installation will be as shown on Standard Drawing WT-Blow-off.

B. Air Vacuum Valves

Where possible, pipes are to be graded to prevent the need for an air release valve. Air release valves may not be required when services are in the vicinity. The installation will be set at the high point of the line when required.

C. Pressure Control Devices

There are two uniform plumbing codes: one is prepared by the International Association of Plumbing and Mechanical Officials, another is prepared by the International Conference of Building Officials. Both codes require installation of pressure reducing valves in the water service pipe when street main pressure exceeds 80 psi.

Pressure of 45 to 60 psi will be maintained at the main during peak-day demands. A pressure of 45 psi provides adequate pressure at all the fixtures, and pressure above 65 psi results in excess water usage and is above the target level set in the City of Pacific Water Conservation Program.

When pressures reach 80 psi or above during static conditions, a pressure-reducing valve is required on the customer's side of the meter.

D. Cross Connection Control

No cross connections will be created, installed, used, or maintained within the City of Pacific water service area. All water system connections to serve buildings or properties with domestic potable water, fire sprinkler systems, or irrigation systems will comply with the minimum backflow prevention requirements as established by the DOH and the City of Pacific in its Cross Connection Program.

The installation of required backflow devices is necessary to protect the existing water system and users from possible contamination. All backflow prevention assemblies will be of a type and model pre-approved by the DOH or the City. Approved backflow prevention assemblies will be installed at the expense of the user, either at the service connection or within the premises, as determined by the City of Pacific Public Works Cross Connection Specialist in each of the following circumstances:

1. If the nature and extent of any activity on the premises, or the materials used in connection with any activity on the premises, or materials stored on the premises could contaminate or pollute the potable water supply.
2. On premises having one or more cross connections.
3. Internal cross connections that are not correctable or intricate plumbing arrangements that make it impracticable to ascertain whether or not cross connections exist.
4. A repeated history of cross connections being established or reestablished. Failure on the part of any customer to discontinue the use of all cross connections, except in accordance with the Standard, is sufficient cause for the immediate discontinuance of public water service to the premises (*Washington Administrative Code 246-290-490*). The City may install the appropriate backflow prevention device at the owner's expense.
5. Unduly restricted entry so that inspections for cross connections cannot be made with sufficient frequency or with sufficient notice to assure that cross connections do not exist.
6. Materials of a toxic, objectionable, or hazardous nature, either liquids, solids, or gases being used such that if back siphonage should occur, a health hazard could result.
7. Any mobile apparatus that uses the City of Pacific system or water from any premises within the City of Pacific system.
8. All uniform plumbing codes (UPC) must be maintained.
9. Assemblies installed at the point of delivery or on the internal plumbing system of any building shall not have galvanized piping attached to the inlet side of the assembly. Rigid piping, such as brass or copper, is allowed on the inlet side.

10. On any premise where installation of an approved backflow prevention device is deemed to be necessary to accomplish the purpose of these regulations in the judgment of the City of Pacific certified cross connection specialist.
11. Any use of radiant heat will require the installation of a reduced pressure (RP) backflow assembly at the meter.
12. A reduced pressure (RP) backflow assembly is required at all new commercial buildings and will be required to be installed when a change of use occurs at a commercial building. The RP device shall be installed at the meter.
13. On any premise where an appropriate cross-connection report form has not been filed with the office of the City of Pacific Public Works Department Water Section.
14. On any premise where a bypass arrangement is installed around a backflow assembly, a second backflow assembly of equal protection shall be installed on the bypass piping.

The City will have the authority to perform regular inspections on all backflow assemblies, both inside and outside any building connected to the City's water system and will be provided access to the premises to inspect.

The Public Works Department will get the certificate for testing of any backflow prevention assembly before releasing the Certificate of Occupancy on any building. A list of state-certified approved testers may be obtained from the City.

Backflow Prevention Assembly testers shall hold a current Washington State Department of Health Backflow Assembly Tester Certification.

The Valley Regional Fire Authority will test the fire line and obtain the certificate for underground piping. In any situation, the Valley Regional Fire Authority will not test the fire line until Public Works has tested and approved the main up to the fire line. Backflow assemblies for fire protection shall have integrated shutoff valves approved as part of the assembly and shall be separate from any post indicator valve installed on the fire service line. Double-check detector assemblies shall be required on all fire lines.

All backflow assemblies installed within the City of Pacific will be tested immediately upon installation by a Washington State certified tester and at least annually thereafter by a Washington State certified tester. All such devices found not functioning properly will be promptly repaired or replaced by the water user. If any such device is not promptly repaired or replaced, the City of Pacific may deny or discontinue water to the premise. All testing and repairs are the financial responsibility of the water user.

All testers shall use test procedures approved by the Washington State Department of Health.

All costs associated with purchase, installation, inspections, testing, replacement, maintenance, parts, and repairs of the backflow device are the financial responsibility of the water user.

E. Water Sampling Station

One water sampling station shall be provided to the City for each development in size of 1 to 10 lots. One additional sampling station shall be provided for each additional 50 lots or portion thereof. The water sampling station shall be furnished and installed at a location as determined by the City.

0.2.8 Connection to Existing Water Main

The developer’s engineer will be responsible for determining the scope of work for connection to existing water mains. The City of Pacific Water Section will be consulted regarding fittings or couplings required.

The City of Pacific Water Section will make all shutdowns on existing mains. The contractor may operate the valve under the immediate supervision of a Water Section supervisor.

0.3 MATERIALS AND METHODS

0.3.1 General

Water Main workmanship and materials will be in accordance with the *Pacific Development Standards*, the most current copy of the *State of Washington Standard Specifications for Road, Bridge and Municipal Construction*, *American Water Works Association (AWWA) Standards*, and according to the recommendations of the manufacturer of the materials.

Material and installation specifications shall contain appropriate requirements that have been established by the industry in its technical publications, such as ASTM, AWWA, WPCF, and APWA standards. Requirements shall be set forth in the specifications for the pipe and methods of bedding and backfilling so as not to damage the pipe or its joints.

All new construction shall comply with the "Accepted procedure and practice in Cross Connection Control Manual" as published by the Pacific Northwest Section of the American Water Works Committee", November 1985, Fourth Edition, and current amendments thereto. A copy of such is available for review at the City office.

Cut in connections shall not be made on Fridays, holidays or weekends. All tapping sleeves and tapping valves shall be pressure tested prior to making connection to existing mains.

Contractor shall notify City's Water Superintendent and obtain approval from him prior to any water shut-off or turn-on, affecting the water system, a minimum of 48 hours in advance.

Road restoration shall be per City, County, or State design and construction standards, as may be applicable. Developer and Contractor shall become familiar with all State, County and City conditions of required permits, and shall adhere to all conditions and requirements.

0.3.2 Materials

Materials shall meet the requirements of WSDOT/AWWA Standard Specifications:

Water Mains..... Section 7-09.2

Valves for Water Mains	Section 7-12.2
Hydrants	Section 7-14.2
Service Connections.....	Section 7-15.2

A. Pipe

All water mains shall be ductile iron pipe. Mains 4 inches to 14 inches shall be Class 52. Mains 16 inches and larger shall be Class 50.

B. Water Main Fittings

1. Fittings shall be cement lined ductile iron.
2. They shall be provided as necessary in the field to suit the construction and in accordance with the pipe manufacturers' recommendations so as not to exceed allowable deflection at pipe joints.
3. All fittings shall be installed with thrust blocking per the City Standard Details for horizontal bends. Vertical bends shall be provided with anchor blocking in accordance with City Standards.

C. Valves

1. All valves 12-inch and smaller shall generally be furnished and installed as resilient seat gate valves. The design, materials, and workmanship of all gate valves will conform to AWWA C509 or AWWA C-515, latest revision. Gate valves will be resilient wedge, nonrising stem (NRS), with two internal O-ring stem seals. Gate valves will be Mueller, M&H, Clow, Kennedy, or American Flow Control Series 500. Gate valves will be used on all 2- to 10-inch lines. Gate valves may be used on 12-inch lines.
2. All valves 14-inch and larger shall generally be furnished and installed as butterfly valves. Butterfly Valves. Butterfly valves will conform to AWWA C504- 87, Class 150B, with cast iron short body and O-ring stem seals. Butterfly valves will be Mueller, M&H, Clow, Kennedy, or American Flow. Butterfly valves may be used for 12-inch lines.
3. All valves with operating nuts located more than 42 inches below finished grade shall be equipped with extension stems to bring the operating nut to within 18 inches of the finished grade. At the top of the extension stem, there shall be a 2-inch standard operating nut, complete with a centering flange that closely fits the 5-inch pipe encasement of the extension stem.
4. Each valve shall be provided with an adjustable two-piece cast iron valve box of 5 inches minimum inside diameter. Valve boxes shall have a top section with an 18-inch minimum length.
5. The valve boxes and covers shall be Rich No. 940 or equal. The valve box shall be set in a telescoping fashion around the 5-inch pipe cut to the correct length to allow future adjustment up or down. Valve Box. All valves will have a standard Rich 940 ductile iron water valve box set to grade. The valve box shall be installed such that the lugs line up with the direction of the pipe. If valves are not set in a paved area, a 1-foot by 6-inch thick circular concrete

pad shall be placed around the valve box. In areas where the valve box falls in the road shoulder, the ditch and shoulder will be graded before placing asphalt or concrete pad. Valve box lids will be ductile iron, shall be antikickout, and marked "City of Pacific Water."

6. Valve marker posts will be 4-inch carsonite CWV-116 posts stamped with "Caution Water Valve."
7. Tapping Valves. All tapping valves will be resilient seal, full open models manufactured by Mueller, Kennedy, Clow, M&H, or American Flow Control.
8. Air and vacuum release valves (ARV) will be APCO 147C or Clay valve combination air release valve.

D. Hydrants

1. Be approved by the National Board of Fire Underwriters and conform to AWWA Specification C502. They shall be a break-way type hydrant, in which the valve will remain closed '
2. Acceptable Models are: M&H "Reliant" #929, AVK, Mueller, or City approved equal.
3. Have a holding Spool constructed of Class 53 ductile iron, 6 inches in diameter, and be less than 17 feet in length, unless approved in writing by the Public Works Director or the City Engineer.
4. Hydrants will be painted with Parker Paint Marathon Enamel Safety Yellow paint.

E. Services

1. Residential water service pipe shall be 1-inch high plastic "Poly" pipe (no joints beneath pavement areas), meeting or exceed ASTM D2239, SDR-7 as manufactured by Driscopipe (CL 200), or City approved equal. Glued joints will not be accepted. Service lines will be installed a minimum of 45 degrees off the main. Tracer tape and 14- gauge blue-coated wire wrapped around the pipe will be installed on all service lines.
2. Meter services and meter boxes shall be set to final grade and all adjustments shall be made prior to final pressure testing of the system, centerline of service inlets shall be located to match bottom elevation of meter box in such a manner that meter inlet and outlet will be the same elevation as bottom of meter box. Contractor shall furnish angle dual check valve with neoprene gaskets for outlet connections to meter at City Utilities Department Public Works Yard for each service installed. Service inlet shall be centered at inlet end of box and faced toward outlet end of box parallel with long sides.
3. Service saddle will be ductile iron with double stainless steel straps. All clamps will have rubber gaskets. Service saddles shall have tapped IP threads.
4. Corporation stops will be all US brass and will be Ford, Mueller, or AY McDonald with IP threads conforming to AWWA C800.

5. Stainless steel inserts will be used with pack joints or Mueller 110 compression joints and polyethylene pipe.

F. Meters

All meters shall be installed by the City, and the Developer shall pay the current meter installation charge.

All 3-, 4-, and 6-inch meters will be Neptune with a remote automated encoder based meter reading system. Meters must be totally field programmable, including meter number. Three- and 4-inch meters will be within a manifold system.

G. Casing

Steel casing pipe will be Schedule 20 steel or equal. Pipe spacers will be Cascade Style CC5 with 8-inch runners as available from Cascade Waterworks. Casing pipe and spacers will be sized for pipe being installed. Install minimum of three spacers per section of pipe. The casing pipe will then be sand-packed.

H. Thrust Blocking

Location of thrust blocking will be shown on the plans. Thrust block concrete will be Class B poured against undisturbed earth. A plastic barrier will be placed between all thrust blocks and fittings.

Upon approval by the Public Works Director, MJ Mega Lug retainers, restraining rods, or Romac Grip Ring Retainers can be used in lieu of concrete thrust blocking.

0.3.3 Construction Requirements

Water mains and appurtenances shall be constructed per WSDOT/AWWA Standard Specifications:

General Pipe Installation Requirements.....	Section 7-08.3
Water Mains.....	Section 7-09.3
Valves for Water Mains	Section 7-12.3
Hydrants.....	Section 7-14.3
Service Connections.....	Section 7-15.3

A. Length of Open Trench

Pipe line construction shall be conducted to reduce the length of open trenches. The trenching and shoring in advance of the pipe laying shall not exceed 100 feet unless approved in writing.

B. Trenches in Existing Streets

All utility trenches excavated in the right-of-way shall be backfilled with 5/8-inch crushed rock. The trenches shall be backfilled and compacted to 95 percent density in accordance with WSDOT 7-08.3(3).

C. Street Patching and Restoration

All utility trenches excavated in the right-of-way shall be restored and patched per Detail 21.

D. Service Interruption

Following application at Community Planning and Development for connection to the existing water main, the contractor will give the City a minimum of ten working days' notice of any planned connection to an existing pipeline. This includes all cut-ins and live taps. Notice is required so any disruptions to existing services can be scheduled. The City will notify customers involved or affected of the water service interruption 48 hours in advance. The contractor will make every effort to schedule water main construction with a minimum interruption of water service. In all situations, the City will dictate scheduling of water main shutdowns so as not to impose unnecessary shutdowns during specific periods to existing customers. The contractor is responsible for providing the necessary excavation and shoring to provide access to the existing water main for the City to make the tap. The excavating and shoring will conform to Labor and Industries (L&I) standards for worker safety. In the event the contractor does not have shoring conforming to L&I standards, the City will provide shoring at the contractor's expense.

E. Connection to Existing Water Main

A minimum of ten working days' notice following application at the Public Works Department is needed to schedule shutdowns. The City of Pacific Water Section will be consulted regarding fittings or couplings required.

It will be the Contractor's responsibility to field-verify the location and depth of the existing main and the fittings required to make the connections to the existing mains. All excavation, connections, piping, tapping, valve fittings, services, anchors, blocking, bedding, backfill, compaction, restoration, or other labor and materials required will be furnished and placed by the contractor. Any new connection to an existing City of Pacific water main will require backflow protection. A double-check assembly shall be installed between the new main and existing main for flushing and filling and shall remain in place until the new main is approved.

A list of City of Pacific-approved tapping contractors can be obtained at the Department of Community Planning and Development. The City of Pacific Water Section will be notified 48 hours (two working days) prior to the contractor performing the tap.

The City of Pacific Water Section will make all shutdowns on existing mains. The contractor may operate the valve under the immediate supervision of a Water Section supervisor.

F. Abandonments

At time of abandonment for any service line, the corporation shall be removed and a full circle stainless steel repair band shall be installed.

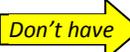
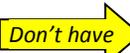
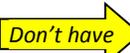
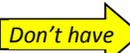
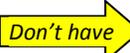
When a main line is abandoned, the abandonment shall occur back to the closest tee or cross, removing the valve and installing a blind flange or plug. In areas where the tees are lead-in fittings, the whole tee will be removed along with a small section of main.

Fire hydrants shall be abandoned by removing the hydrant and lateral back to the main. A blind flange shall be installed on the tee.

G. Required Separation Between Water Lines and Sanitary Sewers

The basic separation requirements apply to all gravity and pressure sewers of 24-inch diameter or less; larger sewers may create special hazards because of flow volumes and joint types and accordingly require additional separation requirements. The required separation between water lines and sanitary sewer lines shall comply with Section C1-9.1 of the latest edition of *Criteria for Sewage Works Design*, Washington State Department of Ecology (Publication 98-37WQ).

LIST OF STANDARD DETAILS
CHAPTER 6 – WATER

	Water Main Trench Section	WT-Trnch
	Water Main Depth Requirements	WT-Main-Dpth
	Typical Utility Crossing.....	WT-Util-Xng
	Thrust Restrain for Ductile Iron Pipe.....	WT-Thrst-Res
	Anchor Block	WT-Anch-Blck
	Thrust Blocks	WT-Thrst-Blck
	Wet Tap Connection	WT-Wet-Tap
	Cut In Connection	WT-Cut In
	Fire Hydrant Assembly	WT-FHA
	Fire Hydrant Assembly - Relocated.....	WT-FHA-Rel
	Fire Hydrant Assembly in Cut or Fill	WT-FHA-C/F
	Water Service - ¾” and 1” Plan and Section	WT-Srvc-3/4-1-P&S
	Water Service - ¾” and 1” Notes.....	WT-Srvc-3/4-1-Nts
	Water Service - 1 ½” and 2”	WT-Srvc-1.5-2
	Water Service Vault - 3” Through 10” Plan and Section	WT-Srvc-3-10-P&S
	Water Service Vault - 3” Through 10” Notes.....	WT-Srvc-3-10-Nts
	Blow-Of Assembly	WT-BOA
	Blow Off Assembly – End of Line	WT-BOA-End
	Air and Vacuum Release Assembly	WT-AVRA
	Water Sampling Station	WT-Smpl-Sta-1
	Water Sampling Station	WT-Smpl-Sta-2
	Pressure Reducing Station – Plan and Section	WT-PRS-P&S
	Pressure Reducing Station - Notes.....	WT-PRS-Nts
	Valve Stem Extension.....	WT-Vlv-Ext
	Valve Box Adjustment.....	WT-Vlv-Adj
	Double-Check Detector with Fire Connection	WT-DCDFC
	Detector Double-Check Valve Assembly	WT-DDCVA
	Double Check Detector Assembly - Residential	WT-DCDA-Res
	Reduced Pressure Backflow Device	WT-RPBD
	Fire Riser.....	WT-Fire Riser

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MATERIAL LIST

- ① 2-FLEX CPLG TO FIT ROCKWELL
441 (4" X 3" REDUCER, M.J. FOR
3" METER
- ② 2-DOUBLE STRAP SERVICE CLAMPS,
ROMAC 101 WITH IPS TAP, OR EQUAL
- ③ 3-STRAIGHT CPLG. BRASS TO OUTSIDE
I.P. THREAD MUELLER H-15425,H-15428
110 COMP., OR EQUAL
- ④ 1 1/4" BEND CPLG BRASS TO BRASS
MUELLER H-15525.
- ⑤ 1 1/4" BEND CPLG, BRASS TO OUTSIDE
I.P. THREAD MUELLER H-15530, OR EQUAL.
- ⑥ 1 BALL VALVE WITH PADLOCK WING OR
LOCK CAP, FORD B21-444W OR B21-666
WITH LOCK CAP OR B21-777 WITH LOCK CAP.
- ⑦ 2-RESILIENT SEAT GATE VALVE, FL X FL, (RISING STEM)
- ⑧ 1-3" TO 10" COMPOUND METER ("SENSUS" TOUCH READ) - SIZE TO BE
AS SPECIFIED BY CITY AND FURNISHED BY CONTRACTOR/DEVELOPER
- ⑨ 1 C.I. ADPT. FL X PE (LENGTH TO FIT)
- ⑩ 1-CPLG. ADAPT., FL ROCKWELL 912,
OR OWNER APPROVED EQUAL
- ⑪ CAST IN PLACE OR PRECAST CONCRETE VAULT
WITH (H2O) BILCO (HATCH SIZE AND
LOCATION TO BE APPROVED BY CITY)
- ⑫ WELDED FL RESTRAINT OR SHAKLE TO THRUST
BLOCK TO PREVENT MOVEMENT IF METER IS
REMOVED
- ⑬ INSULATED CPLG. TO 3" CU SERVICE.
- ⑭ UNION
- ⑮ INSTALL ALUMINUM LADDER WITH TELESCOPIC RISER FASTEN TO WALL
WITH STAINLESS STEEL FASTENER AT MAXIMUM THREE FOOT INTERVALS.
- ⑯ PROVIDE 4" DRAIN PIPE TO DAYLIGHT
(MIN. SLOPE = 2%) OR CITY
APPROVED SUMP PUMP SYSTEM
AS REQUIRED.

City of Pacific

**Water Meter Vault
3 Inches thru 10 Inches**

APPROVED: _____			DATE: _____	DRAWING NO. WT- Mtr 3-10 Nts
DATE: 8/96	DRAWN: JH	CHECKED: TJO	SCALE: None	

LEGEND

SINGLE AND DOUBLE WATER SERVICE DETAIL

- ① 3/4" METER YOKE END CONNECTION EQUAL TO MUELLER H-14222
- ② 1" IPTxIPS INSTA-TITE CORP STOP EQUAL TO MUELLER B-25005
- ③ 5/8"x3/4"x12" COPPER SETTER EQUAL TO MUELLER B-2404
- ④ ROMAC SADDLE (1" IPT) SINGLE STAINLESS STEEL STRAP FOR PIPE DIAMETERS LESS THAN 10" AND DOUBLE STAINLESS STEEL STRAP FOR PIPE DIAMETERS 10" AND GREATER.
- ⑤ 1" (DOUBLE) OR 3/4" (SINGLE) HIGH MOLECULAR (200 PSI, SIDR 7) "POLY" PIPE (LENGTH AS REQUIRED)
- ⑥ 14 GAUGE WIRE FROM MAINLINE TAP TO METER BOX AND EXPOSE 6" MINIMUM IN BOX (RUN INSIDE 2" PVC GUARD CONDUIT WHERE APPLICABLE)
- ⑦ METER BOX - CARSON 1419 OR EQUAL (SET FLUSHED WITH FINISHED GRADE, PIT LID ADAPTER HOLE IN LID)
- ⑧ INSTALL SERVICE LINE IN 2" PVC GUARD PIPE (SCH-80) WHEN CROSSING ROADWAY (3' MINIMUM BEYOND AND BENEATH PAVEMENT SECTION) NOT REQ'D WHEN WATER MAIN IS UNDER STREET PAVEMENT
- ⑨ TOP ENTRY VERTICAL LOCKING BALL ANGLE METER VALVE
- ⑩ ANGLE DUAL CHECK VALVE
- ⑪ 1" IPSxPE INSTA-TITE CURB VALVE EQUAL T MEULLER H-15191
- ⑫ 3/4" IPSx12" LONG BRASS NIPPLE
- ⑬ 3/4" IPSx12" LONG BRASS NIPPLE W/CAP

DOUBLE SERVICE

- ⑭ 3/4" IPSx18" LONG BRASS NIPPLE
- ⑮ 3/4"x3/4"x1" BRASS BULLHAD TEE
- ⑯ 3/4"x3/4"x1" BRASS ELBOW

Approved by Public Works
Sub-Committee on 1/30/01

City of Pacific			
Water Service 3/4 Inches and 1 Inch			
APPROVED: _____			DRAWING NO. WT- Srcv 1
DATE: 12/00	DRAWN: EH	CHECKED: DB	SCALE: None

3/4" SINGLE WATER SERVICE DETAIL

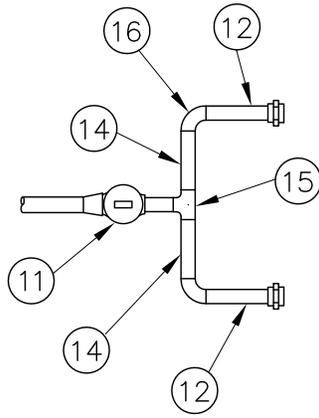
LEGEND

- ① 3/4" METER YOKE END CONNECTION EQUAL TO MUELLER H-14222
- ② 3/4" IPTxIPS INSTA-TITE CORP STOP EQUAL TO MUELLER H-15026
- ③ 5/8"x3/4"x12" COPPER SETTER EQUAL TO MUELLER B2404
- ④ ROMAC SADDLE (3/4" IPT) SINGLE STAINLESS STEEL STRAP FOR PIPE DIAMETERS LESS THAN 10" AND DOUBLE STAINLESS STEEL STRAP FOR PIPE DIAMETERS 10" AND GREATER.
- ⑤ 3/4" HIGH MOLECULAR (200 PSI, SIDR 7) "POLY" PIPE (LENGTH AS REQUIRED)
- ⑥ 14 GAUGE WIRE FROM MAINLINE TAP TO METER BOX AND EXPOSE 6" MINIMUM IN BOX (RUN INSIDE 2" PVC GUARD CONDUIT WHERE APPLICABLE)
- ⑦ METER BOX - CARSON 1419 OR EQUAL (SET FLUSHED WITH FINISHED GRADE, PIT LID ADAPTER HOLE IN LID)
- ⑧ INSTALL SERVICE LINE IN 2" PVC GUARD PIPE (SCH-80) WHEN CROSSING ROADWAY (3' MINIMUM BEYOND AND BENEATH PAVEMENT SECTION)
- ⑨ TOP ENTRY VERTICAL CHECK VALVE
- ⑩ ANGLE DUAL CHECK VALVE

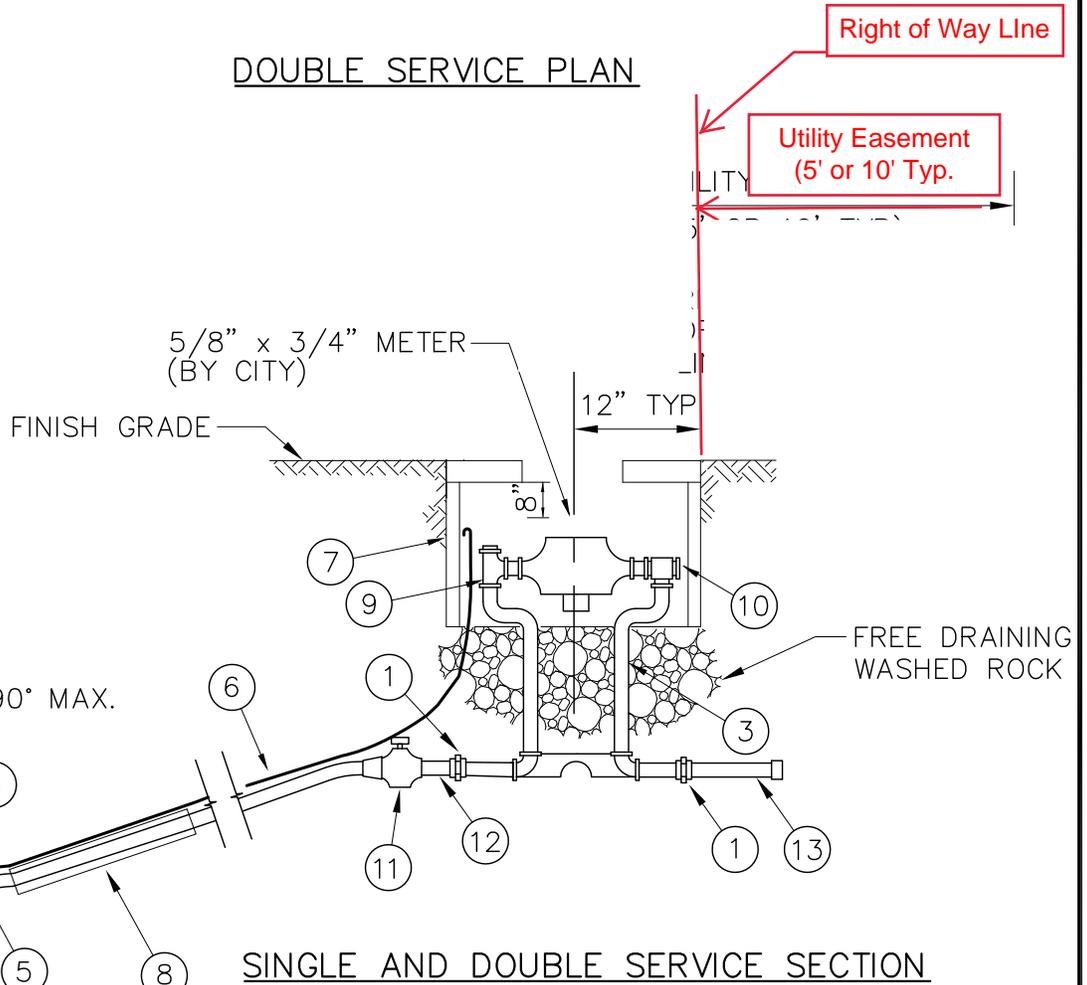
City of Pacific

Water Service Notes 2

APPROVED: _____			DATE: _____	DRAWING NO. WT- Srcv Nts 2
DATE: 8/96	DRAWN: JH	CHECKED: TJO	SCALE: None	



DOUBLE SERVICE PLAN



SINGLE AND DOUBLE SERVICE SECTION

NOTES:

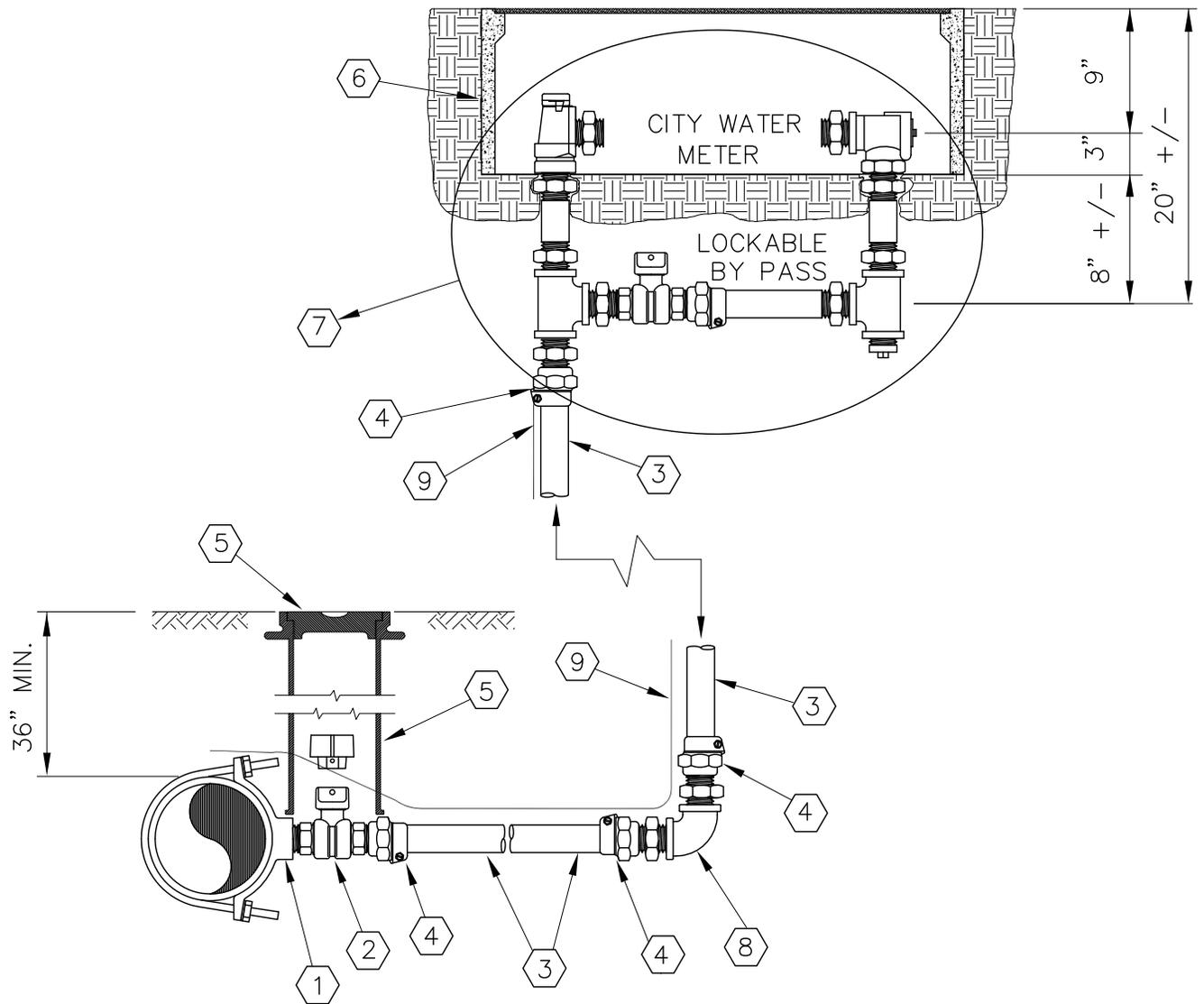
- 1. Provide a 2' wide sidewalk panel centered at each meter for maintenance and repair.
- 2. Meter boxes in sidewalks can be concrete or plastic.

Approved by Public Works
Sub-Committee on 1/30/01
PAGE 1 OF 2

City of Pacific

Water Services
3/4 Inches and 1 Inch

APPROVED: _____			DATE: _____	DRAWING NO. WT- Res Srvc
DATE: 12/00	DRAWN: EH	CHECKED: DB	SCALE: None	



DESCRIPTION	MAKER OR RATING	1-1/2"	2"
1. Double Stainless Steel Strap Saddle	Romac or Equal	202 S IPT	202 S IPT
2. Corporation Valve	Mueller or Equal	H-9969	H-9969
3. Pipe - High Molecular Polyethylene	AWWA C901	SDR9	SDR9
4. Compression Couplings	Mueller or Equal	Female: H-15457 Male: H-15428	Female: H-15457 Male: H-15428
5. Valve Box	Rich or Equal	1730	1730
6. Meter Box	Carson or Equal	1730	1730
7. Meter Setter w/Lockable Bypass	Mueller or Equal	H-1423	H-1423
8. 90° Brass Street Elbow		1-1/2"	2"
9. Tracer Wire	14 Gauge Copper Wire	Solid	Solid

City of Pacific

Water Service 1-1/2 Inches and 2 Inches

APPROVED: _____			DRAWING NO. WT- Service 2
DATE: 8/96	DRAWN: JH	CHECKED: TJO	SCALE: None

Attachment C

City Contract General Conditions

(NOTE: These are provided as example materials, so the Respondents are familiar with City contract general conditions.)

**CONTRACT
CITY OF PACIFIC
ADVANCED METERING INFRASTRUCTURE SYSTEM
CONTRACT NO. WT1701**

THIS AGREEMENT made and entered into this _____ month _____ day, 2018, by and between the City of Pacific, a municipality incorporated and existing under the laws of the State of Washington, by its City Council and Mayor, hereinafter called the "City," and _____, hereinafter called the "Contractor."

WITNESSETH:

Contractor Services. The Contractor shall furnish at its own cost and expense all labor, tools, materials and equipment required to construct and complete in a good workmanlike manner, and to the satisfaction of the City, the public works project known as ADVANCED METERING INFRASTRUCTURE SYSTEM PROJECT.

1. The Contract Documents, duly identified, together with the Instructions to Bidders, a confirmed copy of the Proposal made by the Contractor on _____, and the 2018 WSDOT Standard Specifications for Road, Bridge, and Municipal Construction, as modified by Amendments and Special Provisions, The WSDOT Standard Plans, and the City of Pacific Development Guidelines and Standard Details are hereby made a part of this Contract and are mutually cooperative therewith. Time is of the essence of this Contract. It is agreed that the work covered by this Contract shall start within 14 calendar days after Notice to Proceed is issued and that all construction shall be complete by December 31, 2018.

ADVANCED METERING INFRASTRUCTURE SYSTEM PROJECT ("Project"). The Project is detailed in the Scope of Work, Exhibit A, and the following documents, which are attached hereto and incorporated herein by reference:

- Project Specifications
- Plans and Contract Drawings
- Selection of Retainage Option
- Payment and Performance Bonds (if not waived by City)
- Statement of Intent To Pay Prevailing Wages
- Affidavit of Wages Paid

2. **Notice to Proceed; Time of Completion.** The Contractor shall commence work within fourteen (14) days after the City issues a written Notice to Proceed, and shall complete the work by February 28, 2018. The time of beginning, rate of progress and time of completion are essential conditions of this Contract.

3. **Payment.**

3.1 Payment amount and procedures. The City shall pay the Contractor for all work and services covered by this Contract in an amount that shall not exceed _____ Dollars (\$ _____), including applicable sales tax. The payment amount shall exclude approved change orders, in accordance with the quantity and unit prices shown on the attached

bid proposal. The Contractor shall submit monthly invoices for work and services performed in a previous calendar month in a format acceptable to the City. The City shall pay for the portion of the work described in the invoice that has been completed by Contractor and approved by the City. The City's payment shall not constitute a waiver of the City's right to final inspection and acceptance of the work.

3.2 Defective or Unauthorized Work. If during the course of the Contract, the work rendered does not meet the requirements set forth in the Contract, the Contractor shall correct or modify the required work to comply with the requirements of the Contract. The City shall have the right to withhold payment for such work until it meets the requirements of the Contract. If the Contractor is unable, for any reason, to satisfactorily complete any portion of the work, the City may complete the work by contract or otherwise, and the Contractor shall be liable to the City for any additional costs incurred by the City. "Additional costs" means all reasonable costs incurred by the City, including legal costs and attorneys' fees, beyond the maximum contract price under this Contract. The City further reserves the right to deduct the cost to complete the work, including any additional costs, from any amounts due or to become due to the Contractor.

3.3 Final Payment; Waiver of Claim. Thirty (30) days after completion and final acceptance of the Project by the City as complying with the terms of this Contract, the City shall pay to the Contractor all sums due as provided by this Contract except those required to be withheld by law or agreed to in special contract provisions. THE CONTRACTOR'S ACCEPTANCE OF FINAL PAYMENT (EXCLUDING WITHHELD RETAINAGE) SHALL CONSTITUTE A WAIVER OF CLAIMS, EXCEPT THOSE PREVIOUSLY AND PROPERLY MADE AND IDENTIFIED BY THE CONTRACTOR AS UNSETTLED AT THE TIME REQUEST FOR FINAL PAYMENT IS MADE.

3.4 Retainage. The City shall hold back a retainage in the amount of five percent (5%) of any and all payments made to the Contractor for a period of sixty (60) days after the date of final acceptance, or until receipt of all necessary releases from the State Department of Revenue and the State Department of Labor and Industries, and until settlement of any liens filed under Chapter 60.28 RCW, whichever is later.

4. Prevailing Wage. The Contractor shall comply with and pay prevailing wages as required by Chapter 39.12 RCW, as it may be amended in the future. Prevailing rate shall be paid on public works and building service maintenance contracts, funded in part or in whole with Federal funds. Federal wage laws and regulations shall be applicable. No worker, laborer or mechanic employed in the performance of any part of this Contract shall be paid less than the prevailing rate of wage as determined by the Industrial Statistician of the Department of Labor and Industries for the State of Washington.

Prior to making any payment under this Contract, the Contractor must submit to the City an approved copy of the "Statement of Intent to Pay Prevailing Wages" from the Department of Labor and Industries. It is the Contractor's responsibility to obtain and file the Statement. The Contractor shall be responsible for all filing fees. Notice from Contractor and all subcontractors of intent to pay prevailing wages and prevailing wage rates for the Project must be posted for the benefit of the workers. Each invoice shall include a signed statement that prevailing wages have been paid by the Contractor and all subcontractors. Following the final acceptance of services rendered, Contractor shall submit a "Minimum Wage Affidavit" for themselves and any subcontractors.

In case any dispute arises as to what are the prevailing rates of wages for work of a similar nature and such dispute cannot be adjusted by the parties of interest, including labor and management representatives, the matter shall be referred for arbitration to the Director of the Department of Labor and Industries of the State and his/her decision therein shall be final and conclusive and binding on all parties involved in the dispute as provided for by RCW 39.12.060, as it may be amended in the future.

5. Indemnification and Hold Harmless. The Contractor shall protect, defend, indemnify and hold harmless the City, its officers, officials, employees, agents and volunteers from any and all claims, risks, injuries, damages, losses, suits, judgments, and attorney's fees or other expenses of any kind arising out of or in any way connected with the performance of this Contract, except for injuries and damages caused by the sole negligence of the City. The City's inspection or acceptance of any of the work shall not be grounds to avoid any of these covenants of indemnification.

Should a court of competent jurisdiction determine that this Contract is subject to RCW 4.24.115, then, in the event of liability for damages arising out of bodily injury to persons or damages to property caused by or resulting from the concurrent negligence of the Contractor and the City, its officers, officials, employees, agents and volunteers, the Contractor's liability under this section shall be only to the extent of the Contractor's negligence.

It is further specifically and expressly understood that the indemnification provided under this section constitutes the Contractor's waiver of immunity under Industrial Insurance, Title 51 RCW, solely for the purposes of this indemnification. This waiver has been mutually negotiated by the parties.

The provisions of this section shall survive the expiration or termination of this Contract.

6. Compliance with Laws. The Contractor shall comply with all federal, state and local laws and regulations applicable to the work done under this Contract. Any violation of the provisions of these applicable laws and regulations shall be considered a violation of a material provision of this Contract and shall be grounds for cancellation, termination or suspension of the Contract by the City, in whole or in part, and may result in ineligibility for further work for the City.

7. Job Safety.

7.1 Work Site Safety. Contractor shall take all necessary precaution for the safety of employees on the work site and shall comply with all applicable provisions of federal, state and local regulations, ordinances and codes. Contractor shall erect and properly maintain, at all times, as required by the conditions and progress of the work, all necessary safeguards for the protection of workers and the public and shall post danger signs warning against known and unusual hazards.

7.2 Trench Safety. All trenches shall be provided with adequate safety systems as required by Chapter 49.17 RCW and WAC 296-155-650 and 655. Contractor is responsible for providing the competent person and registered professional engineer required by WAC 296-155-650 and 655.

8. Utility Location. Contractor is solely responsible for locating any underground utilities affected by the work and is deemed to be an "excavator" for the purposes of Chapter 19.122 RCW, as amended. Contractor shall be responsible for compliance with Chapter 19.122 RCW

including utilization of the “one call” locator system, before commencing any excavation activities.

9. Warranty and Guarantee. Contractor shall warrant and guarantee the materials and work to be free of defects for a period of two (2) years after the City's final acceptance of the entire Project. Contractor shall be liable for any costs, losses, expenses or damages including consequential damages suffered by the City resulting from defects in the Contractor's work including, but not limited to, cost of materials and labor expended by the City in making emergency repairs and cost of engineering, inspection and supervision by the City. The Contractor shall hold the City harmless from any and all claims, which may be made against the City as a result of any defective work, and the Contractor shall defend any claims at its own expense. Where materials or procedures are not specified in the Contract, the City will rely on the professional judgment of the Contractor to make the appropriate selections.

10. Correction of Defects. Contractor shall be responsible for correcting all defects in workmanship and/or materials discovered after the acceptance of this work. When corrections of defects are made, Contractor shall be responsible for correcting all defects in workmanship and/or materials in the corrected work for one year after the acceptance of the corrections of the City. The Contractor shall start work to remedy such defects within seven (7) days of the City's mailed notice of discovery, and shall complete such work within a reasonable time agreed to by both parties. In emergencies where damage may result from delay or where loss of service may result, such corrections may be made by the City, in which case the Contractor shall pay all costs incurred by the City to perform the correction. In the event the Contractor does not accomplish corrections within the time specified, the correction work will be otherwise accomplished by the City and all costs of same shall be paid by the Contractor.

11. Change Order/Contract Modification.

11.1 Amendments. This Contract, together with attachments and/or other addenda, represents the entire and integrated Contract between the parties hereto and supersedes all prior negotiations, representations, or agreements, either written or oral. This Contract may be amended, modified or added to only in writing, signed by the duly authorized representatives of both parties.

11.2 Change orders. The City may issue a written change order for any change in the work during the performance of this Contract. If the Contractor determines, for any reason, that a change order is necessary, the Contractor must submit a written change order request to the City within fourteen (14) calendar days of the date the Contractor knew or should have known of the facts and events giving rise to the requested change. If the City determines that the change increases or decreases the Contractor's costs or time for performance, the City will make an equitable adjustment. The City will attempt, in good faith, to reach agreement with the Contractor on all equitable adjustments. If the parties are unable to agree, the City will determine the equitable adjustment as it deems appropriate. The Contractor shall proceed with the change order work upon receiving the written change order. If the Contractor fails to require a change order within the time frame allowed, the Contractor waives its right to make any claim or submit subsequent change order requests for that portion of the work. If the Contractor disagrees with the equitable adjustment, the Contractor must complete the change order work; however, the Contractor may elect to protest the adjustment as provided below.

11.3 Procedure and Protest by Contractor. If the Contractor disagrees with anything required by a change order, another written order, or an oral order from the City, including any direction, instruction, interpretation, or determination by the City, the Contractor shall, within fourteen (14) calendar days, provide a signed written notice of protest to the City that states the date

of the notice of the protest, the nature and circumstances that caused the protest, the provisions of the Contract that support the protest, the estimated dollar cost, if any, of the protested work and how the estimate was determined, and an analysis of the progress schedule showing the schedule change or disruption, if applicable. The Contractor shall keep complete records of extra costs and time incurred as a result of the protested work. The City shall have access to any of the Contractor's records needed to evaluate the protest. If the City determines that a protest is valid, the City will adjust the payment for work or time by an equitable adjustment.

11.4 Failure to Protest or Follow Procedures Constitutes Waiver. By not protesting or failing to follow procedures as this section provides, the Contractor waives any additional entitlement or claims for protested work, and accepts from the City any written or oral order (including directions, instructions, interpretations, and determinations).

11.5 Contractor's Duty to Complete Protested Work. In spite of any protest, the Contractor shall proceed to promptly complete work that the City has ordered.

11.6 Contractor's Acceptance of Changes. The Contractor accepts all requirements of a change order by: (1) endorsing the change order; (2) writing a separate acceptance; or (3) not protesting in the manner this section provides. A change order that is accepted by the Contractor as provided herein shall constitute full payment and final settlement of all claims for contract time and for direct, indirect, and consequential costs, including costs of delays related to any work, either covered or affected by the change.

12. Claims. The Contractor shall give written notice to the City of all claims other than change orders within thirty (30) days of the occurrence of events giving rise to the claim, but in no event later than the time of approval by the City for final payment. Any claim for damages, additional payment for any reason, or extension of time shall be conclusively deemed to have been waived by Contractor unless a timely written claim is made in strict accordance with the applicable provisions of this Contract. At a minimum, a Contractor's written claim must include the information required in Section 11.3 regarding protests.

FAILURE TO PROVIDE A COMPLETE, WRITTEN NOTIFICATION OF CLAIM IN THE TIME ALLOWED SHALL BE AN ABSOLUTE WAIVER OF ANY CLAIMS ARISING IN ANY WAY FROM THE FACTS OR EVENTS SURROUNDING THAT CLAIM.

The Contractor must, in any event, file any claim or bring any suit arising from or connected to this Contract within 120 calendar days from the date the work is completed. Contractor, upon making application for the final payment, shall be deemed to have waived its right to claim for any other damages for which application has not been made, unless such claim for final payment includes notice of additional claim and fully describes such claim.

13. Contractor's Risk of Loss. It is understood that the whole of the work under this Contract is to be done at the Contractor's risk, and that he/she has familiarized himself/herself with all existing conditions and other contingencies likely to affect the work, and has made his/her bid accordingly, and that Contractor shall assume the responsibility and risk of all loss or damage to materials or work which may arise from any cause whatsoever prior to completion.

14. Insurance. The Contractor shall procure and maintain for the duration of the Contract, insurance against claims for injuries to persons or damage to property which may arise from or in connection with the performance of the work hereunder by the Contractor, its agents, representatives, employees or subcontractors.

A. Minimum Scope of Insurance. Contractor shall obtain insurance of the types described below:

1. Automobile Liability insurance covering all owned, non-owned, hired and leased vehicles. Coverage shall be written on Insurance Services Office (ISO) form CA 00 01 or a substitute form providing equivalent liability coverage. If necessary, the policy shall be endorsed to provide contractual liability coverage.

2. Commercial General Liability insurance shall be written on ISO occurrence form CG 00 01 and shall cover liability arising from premises, operations, independent contractors and personal injury and advertising injury, and liability assumed under an insured contract. The Commercial General Liability insurance shall be endorsed to provide the Aggregate per Project Endorsement ISO form CG 25 03 11 85. There shall be no endorsement or modification of the Commercial Liability insurance for liability arising from explosion, collapse or underground property damage. The City shall be named by endorsement as an insured under the Contractor's Commercial General Liability insurance policy with respect to the work performed for the City using ISO additional endorsement CG 20 10 01 and CG 20 37 10 01 or substitute endorsements providing equivalent coverage.

3. Workers' Compensation coverage as required by the Industrial Insurance laws of the State of Washington.

B. Minimum Amounts of Insurance. Contractor shall maintain the following insurance limits:

1. Automobile Liability insurance with a minimum combined single limit for bodily injury and property damage of \$1,000,000 per accident.

2. Commercial General Liability insurance shall be written with limits no less than \$1,000,000 each occurrence, \$2,000,000 general aggregate and a \$2,000,000 products-completed operation aggregate limit.

3. Employer's Liability insurance each accident \$1,000,000, Employer's Liability Disease each employee \$1,000,000, and Employer's Liability Disease – Policy Limit \$1,000,000.

C. Other Insurance Provisions. The insurance policies are to contain, or be endorsed to contain, the following provisions for Automobile Liability, Commercial General Liability, and Builders Risk insurance:

1. The Contractor's insurance coverage shall be primary insurance as respect to the City. Any insurance, self-insurance, or insurance pool coverage maintained by the City shall be in excess of the Contractor's insurance and shall not contribute with it.

2. The Contractor's insurance shall be endorsed to state that coverage shall not be cancelled by either party, except after thirty (30) days' prior written notice by certified mail, return receipt requested, has been given to the City.

3. The City will not waive its right to subrogation against the Contractor. The Contractor's insurance shall be endorsed acknowledging that the City will not waive its right to subrogation. The Contractor's insurance shall be endorsed to waive the right of subrogation against the City, or any self-insurance, or insurance pool coverage maintained by the City.

4. If any coverage is made on a “claims made” basis, then a minimum of a three (3) year extended reporting period shall be included with the claims made policy and proof of this extended reporting period provided to the City.

D. Acceptability of Insurers. Insurance is to be placed with insurers with a current A.M. Best rating of not less than A: VII.

E. Verification of Coverage. Contractor shall furnish the City with original certificates and a copy of the amendatory endorsements, including but not necessarily limited to the additional insured endorsement, evidencing the Automobile Liability and Commercial General Liability insurance of the Contractor before commencement of the work.

F. Subcontractors. The Contractor shall include all subcontractors as insured under its policies or shall furnish separate certifications and endorsements for each subcontractor. All coverage for subcontractors shall be subject to all of the same insurance requirements as stated herein for the Contractor.

The Contractor’s insurance shall contain a clause stating that the coverage shall apply separately to each insured against whom claim is made or suit is brought, except with respects to the limits of the insured liability. The Contractor’s insurance shall be primary insurance with respect to the City, and the City shall be given thirty (30) days’ prior written notice of any cancellation, suspension or material change in coverage.

15. Payment and Performance Bonds. (City must check and initial above one of the following boxes.) The City waives does not waive the bond/surety provisions of this section pursuant to RCW 39.04.155(3). If the City waives these provisions then Contractor need not complete this section. If the City does not waive these provisions then Contractor shall provide the following:

Payment and Performance bonds shall be received by the City in the amount of 100% of the Contract price and no less. The bonds must be accepted by the City prior to the execution of the Contract, and shall be in a form approved by the City. The bonds shall be released thirty (30) days after the date of final acceptance of the work performed under this Contract and receipt of all necessary releases from the Department of Revenue and Department of Labor and Industries in settlement of any liens filed under Chapter 60.28 RCW, whichever is later.

16. Termination.

A. Termination without cause. This Agreement may be terminated by the City at any time for public convenience, for the Contractor’s insolvency or bankruptcy, or the Contractor’s assignment for the benefit of creditors.

B. Termination upon completion of the work. This Contract shall terminate upon satisfactory completion of the work described in the Scope of Work (Exhibit A) and final payment by the City.

C. Rights Upon Termination.

1. Upon termination for any reason, all finished or unfinished reports or documents of the Contractor relating to this Contract shall be submitted to the City, and the Contractor shall be entitled to just and equitable compensation for any satisfactory work performed prior to the date of termination, not to exceed the total compensation in Section 3 of this Agreement

(together with any approved Change Orders). Contractor shall not be entitled to any reallocation of cost, profit or overhead. Contractor shall not in any event be entitled to anticipated profit on work not performed because of such termination. Upon termination, the City may take over the work and prosecute the same to completion, by contract or otherwise.

2. Termination for Cause or Default. In the event this Contract is terminated by the City for cause, Contractor shall not be entitled to receive any further amounts due under this Contract up to the termination date, until the work specified in the Scope of Work (Exhibit A) is satisfactorily completed, as scheduled. At such time, if the unpaid balance of the amount to be paid under the Contract exceeds the expense incurred by the City in finishing the work, and all damages sustained by the City or which may be sustained by the City or which may be sustained by the reason of such refusal, neglect, failure or discontinuance of employment, such excess shall be paid by the City to the Contractor. If the City's expense and damages exceed the unpaid balance, Contractor and his surety shall be jointly and severally liable therefore to the City and shall pay such difference to the City. Such expense and damages shall include all legal costs incurred by the City to protect the rights and interests of the City under the Contract, provided such legal costs shall be reasonable.

17. **Attorney's Fees and Costs.** If any legal proceeding is brought for the enforcement of this Contract, or because of a dispute, breach, default, or misrepresentation in connection with any of the provisions of this Contract, the prevailing party shall be entitled to recover from the other party, in addition to any other relief to which such party may be entitled, reasonable attorney's fees and other costs incurred in that action or proceeding.

18. **General Administration.** The Project Manager of the City shall have primary responsibility for the City under this Contract to oversee and approve all work performed as well as all financial invoices.

19. **Ownership of Documents.** On payment to the Contractor by the City of all compensation due under this Contract, all finished or unfinished documents and material prepared by the Contractor with funds paid by the City under this Contract shall become the property of the City and shall be forwarded to the City upon its request. Any records, reports, information, data or other documents or materials given to or prepared or assembled by the Contractor under this Contract will be kept confidential and shall not be made available to any individual or organization by the Contractor without prior written approval of the City or by court order.

20. **Subletting or Assigning of Contracts.** Neither the City nor the Contractor shall assign, transfer, or encumber any rights, duties or interests accruing from this Contract without the prior written consent of the other. If subcontract work is needed, prior to approval by the City, the Contractor must verify that their first tier subcontractors meet the bidder responsibility criteria as written in Chapter 39.04.350 RCW.

21. **Relationship of Parties.** The parties intend that an independent contractor - client relationship will be created by this Contract. As Contractor is customarily engaged in an independently established trade which encompasses the specific service provided to the City hereunder, no agent, employee, representative or subcontractor of Contractor shall be or shall be deemed to be the employee, agent, representative or subcontractor of the City. None of the benefits provided by the City to its employees, including, but not limited to, compensation,

insurance and unemployment insurance, are available from the City to the Contractor or his employees, agents, representatives or subcontractors. Contractor will be solely and entirely responsible for his acts and for the acts of Contractor's agents, employees, representatives and subcontractors during the performance of this Contract. The City may, during the term of this Contract, engage other independent contractors to perform the same or similar work that Contractor performs hereunder.

22. Nonwaiver of Breach. The failure of the City to insist upon strict performance of any of the terms and rights contained in this Contract, or to exercise any option contained in this Contract in one or more instances, shall not be construed to be a waiver or relinquishment of those terms and rights and such terms and rights shall remain in full force and effect.

23. Written Notice. All communications regarding this Contract shall be sent to the Parties at the addresses listed below in the Contact information, unless otherwise notified. Any written notice shall become effective on delivery, but in any event on the date three (3) calendar days after the date of mailing by registered or certified mail, and shall be deemed sufficiently given if sent to the addressee at the address stated in this Contract.

24. Discrimination. The Contractor agrees not to discriminate against any employee or applicant for employment or any other person in the performance of this Agreement because of race, creed, color, national origin, marital status, sex, sexual orientation, age, disability, or other circumstance prohibited by federal, state or local law or ordinance, except for a bona fide occupational qualification.

25. Term. This Contract shall be effective from the date of Contract execution through expiration of the warranty period as described in Section 9.

26. Severability. The provisions of this Contract are declared to be severable. If any provision in this Agreement is for any reason held by a court of competent jurisdiction to be invalid or unconstitutional, such invalidity or unconstitutionality shall not affect the validity or constitutionality of any other provision.

27. Public Disclosure. Contractor understands that his bid response documents and any contract documents may be subject to release under the Public Records Act Chapter 42.56 RCW and the City may be required to be disclosed upon a request. Contractor acknowledges that he has advised to mark any records believed to be trade secrets or confidential in nature as "confidential." If records marked as "confidential" are found to be responsive to the request for records, the City as a courtesy to the Contractor, may elect to give notice to Contractor of the request so as to allow Contractor to seek a protective order from a Court. Contractor acknowledges and agrees that any records deemed responsive to a public records request may be released at the sole discretion and without notice by the City.

With this Contract, Contractor is furnishing a Corporate Surety Bond in the amount of _____ Dollars (\$ _____) with _____ as Surety, to insure full compliance, execution and performance of this Contract by the Contractor in accordance with all its terms and provisions. In the event of litigation, venue shall be within King County, Washington. IN WITNESS WHEREOF the parties hereto have caused these presents to be duly executed.

CITY OF PACIFIC:

Signature: _____
MAYOR, Leanne Guier

Date: _____

CITY CONTACT:

Print Name: _____

CONTRACTOR:

[INSERT NAME OF CONTRACTOR]

Signature: _____

Print Name: _____

Title: _____

Date: _____

Taxpayer ID #: _____

CONTRACTOR CONTACT:

Print Name: _____

Address: _____

: _____

—

Contractor License #: _____

(if this is a new contractor or if Contractor has never conducted work with the City, a W-9 form must be attached to this agreement)

Attachment D – Warranties and Maintenance Contracts

(Respondents are to supply the following)

Section 1 – Transmitters (including batteries)

Section 2 – Fixed Network Data Collectors

Section 3 – Other Warranties

Section 4 – Maintenance Contracts/Agreements