



7777 E. Paradise Lane, Suite 104, Scottsdale, AZ 85260 Tel: (480) 596-8600 Fax: (480) 596-8606

## **Contract # FIT16-034-01**

### **Master Agreement**

Between

**National Meter and Automation, Inc.**

and

**The City of Tempe, AZ**

This Master Agreement/Contract (“**Agreement**”) sets forth the terms and understanding between National Meter and Automation, Inc., (“NMAAI”), and the City of Tempe, AZ (“**City**”). This Agreement will take effect on the date this Agreement is signed by both parties. NMAAI and City are sometimes referred to herein individually as a “**Party**” and collectively as the “**Parties**”. It should be noted that anywhere the term “Itron” is referenced in this document or the Statement of work is for reference purposes only and does not supersede or change the Itron agreement with The City of Tempe.

**Whereas**, the City issued a Request for Proposal (RFP) 16-034 for an Advanced Metering Infrastructure System (the “**RFP**”) for the supply and installation of a fixed network automatic meter reading system and infrastructure (the “**Project**”) and NMAAI submitted a prime NMAAI bid in response to the RFP, which is incorporated into this Agreement by reference; and

**Whereas**, NMAAI developed the statement of work attached hereto as Attachment A (the “**Statement of Work**”) to be performed during a timeframe as detailed in Attachment B (the “**Project Schedule**”); and

**Whereas** the City desires to engage the services of NMAAI to fulfill the requirements for the Project under this Agreement;

**NOW, THEREFORE**, the Parties agree as follows:

#### **Article 1**

##### **Applicable Law:**

1. **Applicable Law:** This Agreement shall be governed by, and the City and NMAAI shall have all remedies afforded each by the Uniform Commercial Code as adopted in the State of Arizona, except



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as otherwise provided in the RFP and resultant Agreement, and all statutes or ordinances pertaining specifically to the City. This Agreement shall be governed by State of Arizona law and suits pertaining to this Agreement may only be brought in courts located in Maricopa County, Arizona.

2. **Arizona Climate Action Compliance:** NMAAI or any of its subcontractors shall comply with all applicable standards, laws, rules, orders and regulations issued pursuant to A.R.S. §49-101, et seq., including but not limited to, Arizona Executive Orders Nos. 2006-13 and 2005-02, with regard to reducing GHG emissions, increasing energy efficiency, conserving natural resources and developing renewable energy sources.
3. **Availability of Funds for the Next Fiscal Year:** The City's obligation for performance of the Agreement is contingent upon the availability of City, state and federal funds that are allocated or appropriated for payment obligations of the Agreement. If funds are not allocated by the City or available for the continued use or purchase of services, work and/or materials set forth herein, the City may terminate this agreement. The City will use reasonable efforts to notify NMAAI of such non-allocation affecting the obligations of NMAAI and/or City. The City shall not be penalized or adversely affected for exercise of its termination rights. Further, the City shall in no way be obligated or liable for additional payments or other damages as a result of such termination. No legal liability on the part of the City for any payment may arise for performance under this Agreement.
4. **Certification:** By its signing the RFP form 201-B in its original response, NMAAI certifies that it:
  - A. will comply with section 2-603(5) of the Tempe City Code ("TCC"), and will not refuse to hire or employ or bar or discharge from employment any person or discriminate against such person in compensation, conditions, or privileges of employment because of race, color, gender, gender identity, sexual orientation, religion, national origin, familial status, age, disability, or United States military veteran status.
  - B. has not given, offered to give, nor intends to give at any time hereafter any economic opportunity, future employment, gift, loan, gratuity, special discount, trip, favor, or service to a public servant in connection with this Agreement..
  - C. expressly warrants that it has and will continue to comply in all respects with Arizona law concerning employment practices and working conditions, pursuant to A.R.S. § 23-211, et seq., and all laws, regulations, requirements and duties relating thereto. NMAAI further warrants that to the extent permitted by law, it will fully indemnify the City for any and all losses arising from or relating to any violation thereof.
  - D. agrees and covenants that it will comply with any and all applicable governmental restrictions, regulations and rules of duly constituted authorities having jurisdiction insofar as the performance of the work and services pursuant to the Agreement, and all applicable safety and employment laws, rules and regulations, including but not limited to, the Fair Labor Standards Act, the Walsh-Healey Act, and the Legal Arizona Workers Act (LAWA),



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and all amendments thereto, along with all attendant laws, rules and regulations. NMAAI acknowledges that a breach of this warranty is a material breach of this Agreement and NMAAI is subject to penalties for violation(s) of this provision, including termination of this Agreement. City retains the right to inspect the documents of any and all NMAAIs, subcontractors and sub-subcontractors performing work and/or services relating to this Agreement to ensure compliance with this warranty. Any and all costs associated with City inspection of items in this section are the sole responsibility of NMAAI. NMAAI hereby agrees to indemnify, defend and hold City harmless for, from and against all losses and liabilities arising from any and all violations of this section thereof.

5. **Commencement of Work:** NMAAI is cautioned not to commence any work or provide any materials or services under the Contract until and unless NMAAI receives a purchase order, Notice to Proceed, or is otherwise directed in writing to do so, by the City.
6. **Confidentiality of Records:** NMAAI shall establish and maintain procedures and controls that are acceptable to the City for the purpose of assuring that no information contained in its records or obtained from the City or from others in carrying out its functions under the Agreement shall be used by or disclosed by it, its agents, officers, or employees, except as required to efficiently perform duties under the Agreement. Persons requesting such information should be referred to the City. NMAAI also agrees that any information pertaining to individual persons shall not be divulged other than to employees or officers of NMAAI as needed for the performance of duties under the Agreement, unless otherwise agreed to in writing by the City.
7. **Agreement:** This Agreement shall consist of the RFP and NMAAI's proposal Offer submitted. In the event of a conflict in language between the documents, the provisions of the City's RFP shall govern. The City's RFP shall govern in all other matters not otherwise specified by the Agreement between the parties. All previous Agreement between NMAAI and the City are not applicable to this Agreement or other resultant contracts.
8. **Administration:** NMAAI must notify the designated Procurement Officer from the City's Procurement Office for guidance or direction of matters of Agreement interpretation or problems regarding the terms, conditions or scope of this Agreement.
9. **Cooperative Use of Contract:** This Agreement shall be for the use of the City of Tempe. In addition, public and nonprofit agencies that have entered into a Cooperative Purchasing Agreement with the City of Tempe's Department of Procurement are eligible to participate in this Agreement. Additionally, this Agreement is eligible for use by the Strategic Alliance for Volume Expenditures (SAVE) cooperative. See <http://www.maricopa.gov/Materials/SAVE/save-members.pdf> for a listing of participating agencies. The parties agree that these lists are subject to change. Any such usage by other municipalities and government agencies must be in accord with the ordinance, charter and/or rules and regulations of the respective political entity.



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Any orders placed to, or services required from, the successful Contractor(s) will be requested by each participating agency. Payment for purchases made under this agreement will be the sole responsibility of each participating agency. The City shall not be responsible for any disputes arising out of transactions made by others. Contractor shall be responsible for correctly administering this Agreement in accordance with all terms, conditions, requirements, and approved pricing to any eligible procurement unit.

**10. Dispute Resolution:** This Agreement is subject to arbitration to the extent required by law. If arbitration is not required by law, the City and NMAAI agree to negotiate with each other in good faith to resolve any disputes arising out of the Agreement.

**11. Billing:** All invoices submitted by NMAAI for the City's review and approval shall be in itemized form to identify the specific item(s) being billed. Items must be identified by the name, model number, and/or serial number most applicable. Any purchase/delivery order issued by the City shall refer to the Agreement (FIT16-034-01) number. Separate itemized invoices are required for each milestone. Only invoices with items resulting from this Agreement will be accepted for review and approval by the City.

**12. Estimated Quantities:** The RFP referenced quantities as a general indication of the City's needs. The City anticipates considerable activity resulting from the Agreement; however, the quantities shown are estimates only and the City reserves the right to increase or decrease any quantities actually acquired, in its sole discretion. No commitment of any kind is made concerning quantities and NMAAI hereby acknowledges and accepts same.

**13. Events of Default and Termination:**

- A. The occurrence of any or more of the following events shall constitute a material breach of and default under the Agreement. The City reserves the right to terminate the whole or any part of the Agreement due to NMAAI's failure to fully comply with any term or condition herein.
  - i. Any failure by NMAAI to pay funds or furnish materials, services and/or goods that fail to conform to any requirement of this Agreement or provide personnel that do not meet Agreement requirements;
  - ii. Any failure by NMAAI to observe, perform or undertake any provision, covenant or condition of this Agreement to be observed or performed by NMAAI herein, including but not limited to failing to submit any report required herein;
  - iii. Any failure to make progress in the performance required pursuant to the Agreement and/or gives the City reason to believe that NMAAI cannot or will not perform to the requirements of the Agreement; or,



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- iv. Any failure of NMAAI to commence work or services within the time specified herein, and to diligently undertake NMAAI's work to completion.
- B. Upon and during the continuance of an event of default, the City, at its option and in addition to any other remedies available by law or in equity, without further notice or demand of any kind to NMAAI, may do the following:
  - i. Terminate the Agreement;
  - ii. Pursue and/or reserve any and all rights for claims to damages for breach or default of the Agreement; and/or,
  - iii. Recover any and all monies due from NMAAI, including but not limited to, the detriment proximately caused by NMAAI's failure to perform its obligations under the Agreement, or which in the ordinary course would likely result there from, including, any and all costs and expenses incurred by the City in: (a) maintaining, repairing, altering and/or preserving the premises (if any) of the Project; (b) costs incurred in selecting and retaining substitute NMAAI for the purchase of services, materials and/or work from another source; and/or (c) attorneys' fees and costs in pursuing any remedies under the Agreement and/or arising there from.
- C. The exercise of any one of the City's remedies as set forth herein shall not preclude subsequent or concurrent exercise of further or additional remedies. In addition, the City shall be entitled to terminate this Agreement at any time, in its discretion. The City may terminate this Agreement for default, non-performance, breach or convenience, or pursuant to A.R.S. § 38-511, or abandon any portion of the project for which services have not been fully and/or properly performed by NMAAI.
- D. Termination shall be commenced by delivery of written notice to NMAAI by the City personally or by certified mail, return receipt requested. Upon notice of termination, NMAAI shall immediately stop all work, services and/or shipment of goods hereunder and cause its suppliers and/or subcontractors to cease work pursuant to the Agreement. NMAAI shall not be paid for work or services performed or costs incurred after receipt of notice of termination, nor for any costs incurred that NMAAI could reasonably have avoided.
- E. The City, in its sole discretion, may terminate or reduce the scope of this Agreement if available funding is reduced for any reason.

#### **14. Force Majeure:**

- A. Except for payment of sums due, neither party shall be liable to the other nor deemed in default under the Agreement only in the event that and to the extent that such party's performance of the Agreement is prevented by reason of force majeure. Force majeure means an occurrence that is beyond the control of the party affected and occurs without its



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fault or negligence. Without limiting the foregoing, force majeure includes acts of God, acts of the public enemy, war, riots, mobilization, labor disputes, civil disorders, fire, floods, lockouts, injunctions, failures or refusal to act by government authority, and other similar occurrences beyond the control of the party declaring force majeure which such party is unable to prevent by exercising reasonable diligence.

B. Force majeure shall not include the following occurrences:

- i. Late delivery of equipment or materials caused by congestion at a manufacturer's plant or elsewhere, an oversold condition of the market, inefficiencies, or similar occurrences.
- ii. Late performance by a subcontractor.

C. If either party is delayed at any time in the progress of the work by force majeure, then the delayed party shall notify the other party in writing of such delay within forty-eight (48) hours of the commencement thereof and shall specify the causes of such delay in the notice. Such notice shall be hand delivered or sent via certified mail and shall make a specific reference to this clause, thereby invoking its provisions. The delayed party shall cause such delay to cease as soon as practicable and shall notify the other party in writing by hand delivery or certified mail when it has done so. The time of completion shall be extended by Agreement modification for a period of time equal to the time that the results or effects of such delay prevent the delayed party from performing in accordance with the Agreement.

15. **Gratuities:** The City may elect to terminate this Agreement t, if it is found that gratuities in any form were offered or given by NMAAI or agent thereof, to any employee of the City. In event the Agreement is terminated by the City pursuant to this provision, the City shall be entitled, in addition to any other rights and remedies, to recover or withhold from NMAAI the amount of gratuity.

16. **Indemnification:** To the fullest extent permitted by law, NMAAI shall defend, indemnify and hold harmless the City, its agents, officer, officials, and employees from and against all claims, damages, losses and expenses (including but not limited to attorney's fees, court costs, and the costs of appellate proceedings), arising out of, or alleged to have resulted from the acts, errors, mistakes, omissions, work, services, or professional services of NMAAI, its agents, employees, or any other person (not the City) for whose acts, errors, mistakes, omissions, work, services, or professional services NMAAI may be legally liable in the performance of this Agreement. NMAAI's duty to hold harmless and indemnify the City, its agents, officers, officials and employees shall arise in connection with any claim for damage, loss or expenses that is attributable to bodily injury, sickness disease, death, or injury to, impairment, or destruction of any person or property, including loss of use resulting from, caused by any acts, errors, mistakes, omissions, work, services, or professional services in the performance of this Agreement by NMAAI or any employee of NMAAI or any other person (not the City) for whose acts, errors, mistakes, omissions, work, or services NMAAI may be legally liable. The amount and type of insurance coverage requirement set forth herein will in no



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way be construed as limiting the scope of indemnity in this paragraph. This provision shall survive the term of this Agreement.

17. **Interpretation of Parole Evidence:** This Agreement is intended as a final expression of the agreement between the parties and as a complete and exclusive statement of the Contract. No course of prior dealings between the parties and no usage of the trade shall be relevant to supplement or explain any term used in the Agreement. Acceptance or acquiescence in a course of performance rendered under this Agreement shall not be relevant to determine the meaning of the Agreement, even though the accepting or acquiescing party has knowledge of the nature of the performance and opportunity to object.

NMAAI shall respond within five (5) calendar days after notice by the City of any defects and/or maintenance requests of products or services covered under this Agreement to immediately remedy the condition of the job site. Should NMAAI fail to respond promptly as set forth herein, the City shall correct the job site at the expense of NMAAI, and recover all attendant costs.

18. **Key Personnel:** NMAAI shall provide adequate experienced personnel, capable of and devoted to the successful accomplishment of work to be performed under this Agreement during the Agreement term and any renewal periods. NMAAI must agree to assign specific individuals to the key positions.

- A. NMAAI agrees that, once assigned to work under this Agreement, key personnel shall not be removed or replaced without prior written notice to the City.
- B. If key personnel are not available for work under this Agreement for a continuous period exceeding thirty (30) calendar days, or are expected to devote substantially less effort to the work than initially anticipated, NMAAI shall immediately notify the City, and shall replace each person with personnel of substantially equal ability and qualifications upon prior City approval.

19. **Licenses and Permits:** NMAAI shall maintain in current status all federal, state and local licenses and permits required for the operation of the business conducted by NMAAI, at its sole expense.

20. **No Assignment:** No right or interest in this Agreement shall be assigned by NMAAI and no delegation of any duty of NMAAI shall be made without prior written permission of the City.

21. **No Waiver:** No breach of default hereunder shall be deemed to have been waived by the City, except by written instrument to that effect signed by an authorized agent of the City. No waiver of any such breach or default shall operate as a waiver of any other succeeding or preceding breach or default or as a waiver of that breach or default after demand by the City for strict performance of this Agreement. Acceptance of partial or delinquent payments or performance shall not constitute the waiver of any right of the City. Acceptance by the City for any materials or services shall not bind the City to accept remaining materials or services, future shipments or deprive the City of the right to return materials already accepted. Acceptance by the City of delinquent or late delivery shall not



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constitute a waiver of a later claim for damages and/or bind the City for future or subsequent deliveries.

22. **Overcharges by Antitrust Violations:** The City maintains that, in actual practice, overcharges resulting from antitrust violations are borne by the City. Therefore, to the extent permitted by law, NMAAI hereby assigns to the City any and all claims for such overcharges as the goods and/or services used fulfill the Agreement.
23. **Performance Standards:** Equipment shall operate in accordance with the performance criteria specified in the RFP, this agreement and the manufacturer's published specifications applicable to the equipment/products involved. Each equipment/product is expected to be available for productive use, as provided in the procurement documents. Penalties and/or bonuses applicable to equipment/product and system performance, if any, shall be calculated as specified in the RFP.
24. **Provisions By Law:** Each and every provision of law and any clause required by law to be in this Agreement will be read and enforced as though it were included herein, and if through mistake or otherwise any such provision is not inserted, or is not correctly inserted, then upon the application of either party the Agreement will forthwith be physically amended to make such insertion or correction.
25. **Records:** Pursuant to provisions of Title 35, Chapter 1, Article 6 Arizona Revised Statutes §§ 35-214 and 36-215, NMAAI shall retain, and shall contractually require each subcontractor to retain, all books, accounts, reports, files and other records relating to the acquisition and performance of the Agreement for a period of five (5) years after the completion of the Agreement. All such documents shall be subject to inspection and audit at reasonable times. Upon request, a legible copy of any or all such documents shall be produced at the offices of the City Attorney or City Procurement Office.
26. **Relationship of Parties:** It is clearly understood that each party to this Agreement will act in its individual capacity and not as an agent, employee, partner, joint venture, or associate of the other party. NMAAI is an independent company and shall be solely responsible for any unemployment or disability insurance payments, or any social security, income tax or other withholdings, deductions or payments that may be required by federal, state or local law with respect to any compensation paid to NMAAI. An employee or agent of one party shall not be an employee or agent of the other party for any purpose whatsoever.
27. **Rights and Remedies:** No provisions of this Agreement or RFP shall be construed, expressly or by implication, as a waiver by the City of any existing or future right and/or remedy available by law in the event of any claim of default or breach of Agreement. The failure of the City to insist upon strict performance of any term or condition of the Agreement or to exercise or delay the exercise of any right or remedy provided in the Agreement, or by law, shall not release NMAAI from any responsibilities or obligations imposed by the Agreement or by law, and shall not be deemed a waiver of any right of the City to insist upon the strict performance of the Agreement.



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28. **Safety Standards:** All items supplied on this Agreement must comply with the current applicable Occupational Safety and Health Standards of the State of Arizona Industrial Commission, the National Electric Code and the National Fire Protection Association Standards.
29. **Serial Numbers:** All equipment shall include the original manufacturer's serial number has not been altered in any way. The City reserves the right to reject any and all equipment which the serial number appears or has been altered.
30. **Severability:** The provisions of this Agreement are severable to the extent that any provision or application held to be invalid shall not affect any other provision or application of the Agreement which may remain in effect without the invalid provision or application.
31. **Specially Designated Nationals and Blocked Persons List:** NMAAI represents and warrants to the City that neither NMAAI nor any affiliate or representative of NMAAI:
  - A. Is listed on the Specially Designated Nationals and Blocked Persons List maintained by the Office of Foreign Asset Control, Department of the Treasury (OFAC) pursuant to Executive Order no. 13224, 66 Fed. Reg. 49079 (“Order”);
  - B. Is listed on any other list of terrorists or terrorist organizations maintained pursuant to the Order, the rules and regulations of OFAC or any other applicable requirements contained in any enabling legislation or other related Order(s);
  - C. Is engaged in activities prohibited in the Order; or,
  - D. Has been convicted, pleaded nolo contendere, indicted, arraigned or custodially detained on charges involving money laundering or predicate crimes to money laundering.
32. **Time of the Essence:** Time is and shall be of the essence in this Agreement. If the delivery date(s) specified herein cannot be met, NMAAI shall notify the City using an acknowledgment of receipt of order and intent to perform without delay, for instruction. The City reserves the right to terminate this Agreement and to hold NMAAI liable for any cost of cover, excess cost(s) or damage(s) incurred as a result of delay.
33. **Unauthorized Firearms & Explosives:** No person conducting business on City property is to carry a firearm or explosive of any type. All NMAAI employees and subcontractors under its control shall honor this requirement at all times and failure to honor this requirement shall result in Agreement termination and additional penalties. This requirement also applies to any and all persons, including those who maintain a concealed weapons permit. In addition to Agreement termination, anyone carrying a firearm or explosive device will be subject to further legal action.
34. **Warranties:** NMAAI expressly warrants that all materials and/or goods delivered under the Agreement shall conform to the manufacturer’s warranties submitted with its RFP response. NMAAI expressly warrants the following:



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- A. All workmanship shall be finest and first-class;
- B. All materials and goods utilized shall be new and of the highest suitable grade for its purpose; and,
- C. All services will be performed in a good and workmanlike manner. NMAAI's warranties shall survive inspection, acceptance and/or payment by the City, and shall run to the City, its successors, agents and assigns.

NMAAI agrees to make good by replacement and/or repair, at its sole expense and at no cost to the City, any defects in materials or workmanship which may appear in products and services NMAAI supplies or installs during the period ending on a date twelve (12) months after acceptance by the City, unless otherwise specified herein. Should NMAAI fail to perform said replacement and/or repair to City's satisfaction within a reasonable period of time, City may correct or replace said defective or nonconforming materials and recover the costs thereof from NMAAI. This warranty shall not operate to reduce the statute of limitations period for breach of contract actions or otherwise, or reduce or eliminate any legal or equitable remedies.

NMAAI's surety guarantees that the work will be free of defective materials and workmanship for a period of Twelve (12) months following completion of the contract. Any additional warranty or guarantee, whether expressed or implied, is extended by NMAAI or the equipment manufacturer only, and NMAAI's surety assumes no liability for such a guarantee. Any system performance warranty design or efficiency guarantees, whether expressed or implied, are guaranteed solely by NMAAI and the surety assumes no liability for such guarantees.

- 35. **Ordering Process:** Upon award of Agreement by the City Procurement Office, the City may procure the specific material and/or service awarded by the issuance of a contract award notice or purchase order to NMAAI. Each purchase order must cite the correct Agreement/Contract number.
- 36. **Shipping Terms:** Prices shall be F.O.B. Destination to the delivery location(s) designated herein. NMAAI shall retain title and control of all goods until they are delivered and the Agreement of coverage has been completed. All risk of transportation and all related charges shall be the responsibility of NMAAI. The City will notify NMAAI promptly of any damaged materials and shall assist NMAAI in arranging for inspection. Shipments under reservation are prohibited. No tender of a bill of lading shall operate as a tender of the materials.

## **Article 2**

### **Background and Definitions:**

Itron Inc. ("Itron") is a technology company that offers products and services on energy and water resource management with NMAAI as an Authorized distributor. The City has agreed to purchase from NMAAI the supply and integration of an Itron AMI Hosted Solution. Specifically, NMAAI will supply



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and install all associated Itron Infrastructure hardware necessary to the AMI system and provide all local support services for the Project. Itron shall provide the web-hosted portion of the project including software access, storage and remote assistance when needed. The City will be responsible for installation of the Itron ERTs to send reading data from metering locations through infrastructure hardware to Itron's software.

**Definitions:**

**Advanced Metering Infrastructure (AMI)** – Process by which a meter is read via a radio or wireless signal emitted from a meter (two-way) to a fixed-based system of collectors, repeaters and towers.

**Agreement** means the written contract between the City and NMAAI stipulating the Labor, Material, Equipment, Services and Work to be performed that include other documents attached to the Agreement and/or included by reference.

**Amendment** means a written order signed by NMAAI and the City authorizing a change in the Work constituting an addition, deletion, or revision, which also may adjust the Contract Price and/or the Contract Time. The Contract Price and/or Contract Time may be changed only by an Amendment.

**Applicable Laws** means all laws, Codes, ordinances, rules and regulations of governmental authorities having jurisdiction over the Site and/or the Services and Work.

**Application for Payment** means the document prepared by NMAAI which is submitted to the City showing NMAAI's entitlement to progress payments.

**Authorized Representatives** means those individuals or contractors (SL-serco) appointed by the City and NMAAI in writing to act on their behalf in an official capacity.

**Backflow Detection** – Backflow detection is considered to be the detection of water moving backward through the meter and into the public distribution network. True backflow detection is based on identifying instantaneous occurrences of backwards flow and not the method of net aggregate directional basis over a period of time. Minimum backward flow identification shall be 1 gallon of instantaneous backwards flow. The event must be transmitted during a normal remote reading process in order to be considered meeting this definition. AMI systems not meeting this definition cannot state that their AMI system achieves Backflow Detecting. Term is used interchangeably throughout this agreement with the term "Reverse Flow Detection".

**Beneficial Use** means use of the installed work by the City after Substantial Completion but prior to Final Acceptance.

**Bonds** means Performance Bond and other instruments which protect the City against loss due to inability or refusal of NMAAI to perform its obligation as set forth in the Agreement.



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**BSD** - A business requirements document (BRD) details the business solution for a project including the documentation of customer needs and expectations.

**Business Day** means Day other than weekend, national or local holiday in which the City of Tempe is open for business. Any reference to a Working Day is the same as a Business Day.

**Certificate of Substantial Completion** means a certificate prepared by NMAAI and forwarded to the City, for approval, stating that NMAAI believes in good faith that the entire Project is sufficiently complete so it can be used for its intended purpose.

**CIS** - Customer Information System (Oracle Customer Care and Billing)

**City** means the City of Tempe.

**City Agent and/or City Representative** means an entity authorized in writing to act on behalf of the City.

**City Project Manager** refers to the Tempe employee designated by the City to represent the best interests of the City for this Project.

**Change Proposal** means a Proposal for an Amendment submitted by NMAAI to the City, either at the request of the City, or at NMAAI's own initiative.

**Claim** means a written demand by NMAAI seeking an adjustment in Agreement/Contract Price and/or an extension or shortening in Agreement/Contract Time, and/or other relief arising under or relating to the Agreement/Contract following denial of a Vendor/Installer's request in a City's initial determination.

**Codes** means the terms Government Code, Labor Code, etc., referring to codes and regulations of the Federal, Local and State of Arizona.

**Competent Person** as defined by Arizona/OSHA for all Confined Spaces Work or any other regulated work requiring a Competent Person.

**Concurrent Delay** means a delay that occurs when a City caused delay and a Vendor/Contractor/Installer caused delay occur simultaneously and affect completion of the work within contract time or any contract Milestones or Hold Points.

**Contract** Refers to an agreement executed by the City and the AMI Proper for all or part of the services covered by this Scope of Work.

**Contract Award** means a written notice issued by the City authorizing NMAAI to proceed with the Services and Work thereby establishing the date of commencement of the Contract Time. Any work



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performed or expenses incurred by NMAAI prior to the Contract Award shall be entirely at NMAAI's risk.

**Contract Price** means the total monies payable to NMAAI by the City under the terms and conditions of the Contract Documents.

**Contract Time** means the period of time, including authorized adjustments, allotted in the Schedule from Notice to Proceed to Final Acceptance/Final Completion of the entire project inclusive of all software/hardware interfaces as well as all installed Services and Work.

**Customer Portal** – A web browser or mobile application that provides access to customer-specific water usage and other related data. Some portals provided additional functionality such as bill payments alert settings, notifications, and/or usage profiling.

**CPM** means a critical path method progress schedule in the form of precedents, networks and time sequences.

**Data Collection Unit (DCU)/Repeater Installation Work** – Often called a Collector. Defined as a unit that receives data from radio transmitting units (endpoints) on the meters and transmits data to the meter reading system control computer or Head End System. Collectors often speak to endpoints in a two-way mode, providing commands and collecting responses.

**Day** means a calendar day of 24 hours measured from midnight to the next midnight.

**Default** means failure to perform to the requirements of the RFP, RFP Response or the Master Agreement.

**Defective Work** means Work that is unsatisfactory, faulty, or deficient; or does not conform to the Contract Documents; or that does not meet the requirements of any inspection, reference standard, test, or approval referred to in the Contract Documents; or Work that has been damaged by anyone other than City prior to Final Acceptance.

**Delay Costs** means those items of the Services and/or Work attributable to an Excusable Delay for which the City is responsible and which are payable to NMAAI by the City pursuant to an Amendment as provided in Article 6.

**Deliverables** – Refers to all tasks, reports, information, designs, plans, equipment, software, firmware, training, and other items which is required to complete and deliver to the City in connection with the Contract.

**Demobilization** means the complete dismantling, removal and withdrawal by NMAAI of all of NMAAI's temporary facilities, equipment and personnel from the project sites.



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**Design Work** means that portion of the Work consisting of the computer IT services, inclusive but not limited to Network propagation studies, DCU and Repeater attachment structures, and complete implementation as set forth in the Contract Documents. This work also includes the Civil Engineer certified work for DCU and repeater installations.

**Disputed Work** means Work that is the subject of disagreement between NMAAI and the City Representative until the City renders an Initial Determination. If the issue is unresolved after the Initial Determination, it becomes a Claim.

**Effective Date of the Agreement** means the date indicated in the Agreement on which it becomes effective, but if no such date is indicated it means the date on which the Agreement is signed and delivered by the last of the Parties to sign and deliver.

**Endpoints** – A meter interface unit (sometimes with acronym MIU or ERT), typically a radio or cellular transmitter, that records and stores meter readings at prescribed intervals and transmits them to a data collection unit. Endpoints can be programmed to calculate and trigger alarms based on consumption or operational conditions such as, but not limited to battery life, zero consumption, backflow and meter tampering.

**ERT(s)** see Endpoint

**Field Collection System (FCS)** meter reading software solution for data collection and route management for Itron handheld computers, mobile collection systems, optical probes and touch probes.

**Final Acceptance/Final Completion** means the point at which the Services and Work have been completed in accordance with the terms and conditions of the Contract Documents, including Punch List items if applicable, and a Notice of Completion Certification is recorded by the City.

**Handheld – (FC300)** – A programming, initialization, and troubleshooting device capable of manually reading meters via touch read/manual touch pad entry or receiving radio signalized reads automatically.

**Head End System (HES)** – Receives data from Collectors. Manages the Collectors and sends data to other systems, such as the CIS, MDM, and Customer Portal.

**Holidays** means The City of Tempe’s legal Holidays which occur on:

- New Year's Day - January
- Martin Luther King's Birthday - Third Monday in January
- President's Day - Third Monday in February
- Cesar Chavez Day - March
- Memorial Day - Last Monday in May



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- Independence Day - July
- Labor Day - First Monday in September
- Veteran's Day - November
- Thanksgiving - Fourth Thursday and Friday in November
- Christmas Day - December

If requested by NMAAI, the City will provide a City calendar which includes all City observed holidays.

**Hold Points** means a specified event in the Contract Documents whereby NMAAI shall seek approval of the event prior to proceeding to the next event. Hold Points shall be specified in the CPM Schedule by NMAAI as outlined in Section 9 of the Performance Standards, titled “Acceptance Testing.”

**Indemnified Parties** means the City, its elected officials, legally designated officials, appointee, Agents, and employees.

**Installation Documents** means the plans, product data, shop drawings, working drawings, other design drawings, and all other necessary documents prepared, stamped and signed by and under the direct responsible charge of a City of Tempe Civil Engineer, duly licensed in the State of Arizona. Installation Documents are required for Data Collection Units, Towers, Poles, Repeaters and other similar structures or equipment being installed. These are also included in the definition of Design Material.

**Interface** – Is considered to the written code (or conversation software) which translates vendor information into file formats compatible with the existing City of Tempe billing system, other Tempe software and database systems such as CIS, MDM, and Customer Portal.

**IT** – Information Technology

**Laws and Regulations** means any and all Applicable Laws, rules, regulations, ordinances, and/or orders of any and all governmental bodies, agencies, authorities and courts having jurisdiction.

**Latency** – Is considered to be the period of time it takes the radio to transmit, or “bubble up”, an updated water consumption value intended to be read by the Handheld, Laptop or Fixed Base.

**Leak Detection (Customer Side)**– Is considered to be the tracking of a continuous flow of water going through the meter over a minimum 24-hour period. Event must be transmitted during the normal remote reading process in order to be considered meeting this definition.

**Leak Detection (Distribution System)** – Is considered to be the tracking of acoustics prior to the customer meter to the proactively monitor and predict distribution system leakage.

**Measure and Verify (M&V)** –Measurement and verification.



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**Management Plan** means the strategy, disposition, approach and organization established in a report from NMAAI explaining their plan to accomplish the project objectives. The Management Plan shall include, but not be limited to, the Communications Plan, Inventory Management Plan, Propagation Study Plan, Submittals of all material and equipment to be used, Schedule, Installation and Acceptance Testing plans, Project Control Manual and all details necessary to carry out the project outlined in the Contract Documents.

**Meter** – Is considered to be a water meter only and defined as a device used to measure the volume of water used by residential and non-residential customers of the utility. Proposed water meters must be tested and guaranteed to meet or exceed all applicable American Water Works Association (“AWWA”) C-700+ series standards for specific meter types and sizes. Acceptable standards include ANSI/AWWA C700, C710, C708, C712, C713, C701, C704, C702, and C703, subject to acceptance by the City.

**Meter Data Management (MDM)** – - Collects and stores meter data from an AMI system of DCU’s and process that meter data into information that can be used by other utility application including billing, customer information, asset management, computerized maintenance management and other relevant utility management systems. MDM is a key resource for managing large quantities of meter interval read data.

**MIU** – Meter Interface Unit. Same as Endpoint or ERT.

**MGD** – Million Gallons per day

**Milestone** means a principal event specified in the Contract Documents relating to a completion date of a portion of the Work, or a period of time within which the portion of the work should be performed prior to Substantial Completion of all the Work.

**Mobilization** means the establishment by NMAAI of equipment and personnel, thereby enabling the Work to commence. NMAAI shall be required to prepare a Mobilization Plan for City approval that will describe and govern NMAAI’s mobilization activities.

**Must** - Used throughout this document to indicate mandatory requirements. Same as “shall.”

**MV-RS** means meter reading software solution for data collection and route management for Itron handheld computers, mobile collection systems, optical probes and touch probes.

**NAA** - Network Administration Application - runs automatic diagnostics on the current status of the ChoiceConnect fixed network and allows the system administrator to keep the system running smoothly.

**NMAAI** – Means National Meter and Automation, Inc.

**Notice of Completion Certification** means a certificate prepared by NMAAI and forwarded to the City stating that NMAAI believes in good faith that the entire Project is complete, and that NMAAI is entitled to Invoice. After acceptance of the Work by the City, thereby fixing the date of completion, the form is



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signed by the City and returned to NMAAI for their records. After the Notice of Completion is filed, recorded for 25 business days, and there are no claims filed, then the City will release the final retention.

**O&M** – Operations and Maintenance.

**Party (or Parties)** means the City and/or NMAAI, their respective permitted successors and/or assigns, and any other future signatories to this Agreement.

**Performance Measures** – Quantifiable and measurable AMI system and AMI component standards of operation desired by the City. Examples include meter read intervals, read success rate, read accuracy, alert communication time, failure numbers and frequency, out-of-service timeframes, etc.

**Performance Bonds** means the performance bond issued by the Surety, covering the faithful performance and completion of the Services and Work, including payment for all materials and labor furnished or supplied in connection with the Services and Work, by NMAAI and Sub-consultants.

**Process** – Refers to the procurement process.

**Product Data** means illustrations, standard schedules, performance charts, instructions, calculations, product composition, brochures, diagrams and other information furnished by NMAAI to illustrate materials or equipment for some portion of the Service and/or Work.

**Project** means the project, the City's Request for Proposal (RFP), NMAAI's Response to Proposal, and as stipulated in this agreement and the Contract Documents.

**Proposal** means the document submitted by any individual, firm, partnership, corporation or combination thereof, for the consideration by the City with reference to the Work contemplated under the Contract Documents.

**PTP** – Point to point communications from towers and repeaters

**Punch List** means those minor items of Work to be completed by NMAAI after Substantial Completion and prior to Final Completion, which do not prevent the Project from being used for the purpose for which it is intended, but which needs to be completed prior to retention being released and the Notice of Completion being certified.

**Radio** – Is considered to be the radio frequency sending and receiving unit, including the battery, antenna, and all the necessary appurtenances, which sends the data taken from the register to the handheld, laptop or fixed base and receives requests from the head end. Term is used interchangeably with the term "meter interface unit" and "endpoint".

**Register** – Is considered to be the reading unit situated on top of the meter. Registers have a two-fold purpose: (1) to record the water flow measured by the meter and (2) to convey that information to the endpoint. Registers also show visibly to the utility worker and customer how much water has gone



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through or is going through the meter. The term is used interchangeably with terms “encoder” or “absolute encoder”

**Repeater** – Repeaters act similar to collectors in that they collect data from endpoints. Instead of passing data directly to the Head End System, they collect data from endpoints and transmit to a collector. Repeaters are often used in outlying areas where a full collector is not necessary.

**Remote Reading** – See AMI definition. Not manual, walk-by, or touch pad meter reading.

**Retention** means the amount of monies withheld from progress payments by the City from NMAAI.

**Reverse Flow Detection** – See “Backflow Detection”.

RMA means Return Material Authorization

**Samples** means physical examples of materials, equipment, or workmanship that are representative of some portion of the Work and which establish the standards by which such portion of the Work will be judged.

**SAT** means System Acceptance Testing.

**Safety** includes health and security.

**SCADA** is an acronym for Supervisory Control and Data Acquisition. SCADA generally refers to an industrial computer system that monitors and controls a process.

**Schedule** means the schedule pursuant to which NMAAI has agreed to substantially complete the Work. The Schedule may be adjusted pursuant to the provisions of the Contract Documents.

**Scope Change Costs** means those items of Work attributable to changes in the Scope of Work and payable to NMAAI by the City pursuant to an Amendment.

**Services** – Refers to all materials, labor, equipment, software and other goods and services requested in the RFP and specified in the Scope of Work for the Tempe AMI Program.

**Separate Vendor/Installers** means those individuals or entities, including who have entered into arrangements with the City for the provision of labor, materials or other services in connection with the Project, who are not under contract with NMAAI.

**Shop Drawings** means all drawings, diagrams, illustrations, schedules and other data which are specifically prepared by or for NMAAI and submitted by NMAAI to illustrate some portion of Work and



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all illustrations, brochures, standard schedules, performance charts, instructions, and diagrams to illustrate material or equipment for some portion of the Work.

**Site** means the real property on which the Software/Hardware Services, Data Collection Unit/Repeater Installations, and AMI equipment Installation Work will be performed, which is more fully described in of the “Scope of Services.”

**Solution** – Refers to the totality of systems and services. The term “Program” may also be used in this manner.

**Sub consultant/Subcontract Agreement** means an agreement between NMAAI and a sub consultant/subcontractor.

**Subcontract** means an agreement between NMAAI and another person or entity engaged to perform a portion of the Work.

**Subcontractor** means an individual or entity that has entered into an arrangement with NMAAI for the provision of labor, materials or other services required to be performed by NMAAI under the Contract Documents.

**Submittal** means any direction in the Contract Documents that requires NMAAI to provide a document to the City with for acceptance and/or approval: Examples are, but not limited to, product data, shop drawings, as-builts, licensed drawings for AMI equipment attachment, schedules, monthly reports, management and testing plans, etc.

**Substantial Completion** means the stage in the progress of the Work when the Work or designated portion thereof is sufficiently complete in accordance with the Contract Documents so that it may be used by the City for its intended purpose. Liquidated Damages and Vendor/Installer’s right to Extended Overhead, if applicable, shall cease at the acceptance of Substantial Completion.

**Supplier** means a manufacturer, fabricator, supplier, distributor, material-man, or vendor.

**Surety** means one or more issuers of the Performance Bonds, each of which shall be (a) on the Treasury List for the amount of its responsibility; (b) licensed to do business in the State of Arizona; and (c) as further specified and defined.

**TAD** – (Technical Architectural Document) - An architecture document is intended to layout the technical architecture that will be deployed as part of a project. The TAD should include all Hardware, Web Servers, Software, Interfaces, Databases, Schedules, Network, Authentication, Security for a complete system.

**Tamper Detection** – Is considered to be the identification of unauthorized modifications of the meter/register/radio, prolonged no flow periods, or any other event detectable by the equipment. Event



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must be transmitted during the normal remote reading process in order to be considered meeting this definition.

**Vendor/Installer** means the entity by which the City has entered into this Agreement to provide the Labor, Material, Services and/or Work to perform the stipulations in this Contract Agreement. A reference in the Contract Documents to a Vendor, Proposer, Bidder, Responder, Installer, shall also refer to NMAAI.

**Walk-Through** means an inspection by the City upon receiving a Notice of Completion Certification by NMAAI whereby the project is either accepted or a Punch List is developed.

**Work** means all labor, materials, installations, and services required to be performed or provided by NMAAI to complete the entire Project or the various separately identifiable parts thereof pursuant to the provisions of the Contract Documents, as more fully described in Attachment A, the RFP, NMAAI's Response to RFP, and General Conditions and stipulations in this Agreement.

### **Article 3**

#### **Scope:**

NMAAI is to oversee the installation of all necessary software, interfaces and network infrastructure hardware for this project. Full Time Project Management will be provided. During times of project activity, NMAAI will provide project management and on-site support during the project duration. If issues arise during non-activity periods the Project Manager/Support shall be on-site within 1 Hour. NMAAI will liaison with the City of Tempe, SL-serco and Itron to ensure all items are substantially completed by December 31, 2018. NMAAI cannot be responsible for any Project delays resulting from the activities of the City's ERT installation contractor.

**AMI System Requirements Non-Disclosure/Personal Information.** The City data, designs, plans, reports, investigations, materials, and documents prepared or acquired by Vendor/Installer pursuant to this Agreement (including any duplicate copies kept by NMAAI) shall not be shown or disclosed to any other public or private person or entity to include but not be limited to Vendor/Installer's clients, directly or indirectly, except as authorized by the City. NMAAI shall not disclose to any other public or private person or entity either directly or indirectly any information regarding the activities of the City except as authorized by the City. In the event that a request for disclosure is made of Vendor/Installer by any entity or individual, Vendor/Installer shall immediately notify in writing the City of the requested disclosure and include a copy of the request in the notification correspondence.

NMAAI acknowledges that some of the material and information that may come into its possession or knowledge in connection with the Agreement or its performance may consist of information that is exempt from disclosure to the public or unauthorized persons under city, state or Federal statues ("Personal Information"). Personal Information includes, but is not limited to, names addressed, Social



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Security numbers, e- mail addresses, telephone numbers, financial profiles, credit card information, driver's license numbers, health information, law enforcement records, birthdates, or other information indefinable to an individual that relates to any of these types of information. Vendor/Installer agrees to hold Personal Information in confidence and not to make use of Personal Information for any purpose other than the performance of the Agreement, to release it only to authorized personnel or subcontractors who require such information for the purposes of carrying out this Agreement, and not to release, divulge, publish, transfer, sell, disclose, or otherwise make the information known to any other party without City's written consent or as provided by applicable law, rule, or regulation.

#### **Article 4**

#### **Documentation, Training, Testing, Inspection and Acceptance:**

Testing and Inspection for this project is an on-going process and will happen concurrently to all other processes. City of Tempe acceptance(s) shall occur as each aspect of the system is demonstrated to be functional and operational as outlined in NMAAI's response, to the City of Tempe, Request for Proposal 16-034. (Hereafter-Incorporated by reference).

#### **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.

NMAAI must supply manuals and customized written procedures sufficient for complete operation and maintenance – including installation, configuration, diagnostics and repair – of the system.

ITRON must supply three (3) complete hard-copy sets as well as three (3) copies on CD-ROM/DVD ROM in Microsoft Word format prior to the start of the Project.

#### **Training**

The AMI Provider must provide training to City staff on any and all AMI system equipment, whether supplied by the Provider 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. All training shall be done at the City's offices and facilities, or in the field, during City-specified hours. Ongoing training will be provided, if needed.

Comprehensive Training and testing will be performed by NMAAI Itron certified support personnel. Training curriculum will be provided in advance and training will typically be One-on-One hands-on style. The length of instruction time is dependent upon the demonstrated level of comprehension by the student. If needed, personal, individualized ongoing training will be provided at no additional costs.



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- Training will be performed by the Proposer
- Training will be conducted at a City facility to be determined.
- The City requires user manuals, plus any other materials that are typically distributed during training.
- The City requires that manuals be available in electronic format with unlimited distribution within the City, and shall be supplied free of charge.
- The City requires unlimited interaction with the Proposer's sales staff and technical support staff during installation planning, the installation phase, and follow-up immediately after such installation.
- Introductory operator/user/staff training shall be provided at no charge.

Training on all included systems will be performed prior to and during implementation. Ongoing training will be provided, if needed. End-to-end testing and training will be done using real data from City's systems.

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.

- NAA Operations
- NAA Administrator
- NPA Operations and Administrator
- Itron Analytics Operations and Administrator
- Technical Administration
- FCS
- M-log Online Operations

Training must be sufficient to prepare the City staff to fully and completely administer and maintain the system without further reliance on AMI Provider staff beyond normal assistance covered by maintenance agreement. The City requires that training occur once the system is fully operational, with the exception of endpoint installation training, which is to occur prior to system installation. Endpoint and operations training will include:

- Installation and Maintenance in coordination with KONA
- FDM Tools
- Tamper Detection
- Leak Sensors
- Backflow Detection
- Remote Disconnects



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- Register malfunction detection
- Network Device Installation and Maintenance
- Mobile Collector Operations
- FC 300 Handhelds

NMAAI must provide training to City staff on any and all AMI system equipment, whether supplied by the Provider 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. All training shall be done at the City's offices and facilities, or in the field, during City-specified hours.

NMAAI's training program shall include the following:

- 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.
- Meter reading database management.
- Field diagnostics and maintenance. Application software administration.

NMAAI must provide trained and experienced instructor(s), and ensure that they do not perform other duties during the training period that will interrupt instruction.

### **Testing**

The Testing Process will consist of a Unit Test, Integrations Test and Systems Test by NMAAI/ITRON, followed by a User Acceptance Test. City is responsible for performing User Acceptance Testing. NMAAI will provide test plan and scripts for this testing. 10 Days Prior to any test, NMAAI will provide test scripts to the City of Tempe for review.

NMAAI/ITRON will perform Unit, Integrations, Systems Test and validation of each (including plan & scripts)

The Test Plan will provide guidance to how the Tests will be conducted utilizing the testing model of Unit Test; Integration Test; Systems Test and Users Acceptance Test. NMAAI will be responsible for providing all scripts to the Project Manager for the City up to 10 business days prior to the start of the test. NMAAI will conduct Unit Test; Integration Test and System test providing the City Project Manager the results for each test. The City of Tempe will be responsible for conducting Users Acceptance Test. The Test scripts for Users Acceptance Test (UAT) will be provided to the City of Tempe Project Manager 2 weeks prior to the schedule for test start. The Users Acceptance Test scripts will be based on the system functions and business cases defined in the BSR providing guidance on login, application and menu guidance for the tester to navigate to the proper screens allowing the tester to validate the functions of the application defined in the scripts.



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The City of Tempe will have 10 business days to review the test for comments / acceptance. In the event that the test scripts have critical errors / omissions, NMAAI will have 5 days for provide updated / corrected test scripts. This cycle will repeat until critical errors no longer exist where by testing can commence.

Tests will include responsiveness of system. Customer requests will be returned 10 seconds or less for any web interface application.

Tests will include multi-user system access. The systems should allow for no less than 10 concurrent users and still maintain the same 10 second response time.

Users Acceptance and Systems testing and training will be done using real data from City's systems.

City of Tempe will facilitate Endpoint Acceptance Testing per the process outlined in Exhibit A of this Agreement. This testing will begin once 98% of endpoints for the designated phase are installed and NMAAI has submitted a request to proceed to City of Tempe. This testing will be run once a week and validate the performance of installed and operating endpoints. This testing will continue through SAT until all endpoints have been accepted. NMAAI will be responsible for submitting a valid exceptions definition list that is agreed upon and signed off by NMAAI, City of Tempe and Metering Services, Inc. NMAAI will be responsible for identifying and validating exceptions prior to submittal. To pass Endpoint Acceptance Testing, the endpoint must deliver 1 valid reading in the local time zone per day for two consecutive days. Testing will begin on Monday of each week (or the next business day after a valid Holiday) and be reviewed on Wednesday. Changes to the testing baseline will be uploaded via MDI on Thursday and reflect in testing reports on Friday. If baseline numbers do not match a call will be tentatively scheduled at testing start for Friday's to work out any discrepancies.

NMAAI will facilitate system acceptance testing (SAT) utilizing the process outlined in Exhibit A of this Agreement. This testing will begin once NMAAI has submitted a request to proceed to City of Tempe. NMAAI and Itron will provide necessary personnel and expertise as required by the process in Exhibit A. Prior to testing start, all percentages must be within 10% of each testing requirement. SAT will include the following tests performed daily over 30 consecutive days (including holidays):

- Redundancy – 100% of meters must display minimum redundancy of 2 collection devices for the previous day
- Interval and Register Daily Reads – 97.5% of all interval and register reads should be present from the previous day
- 4 Day SLA Test – 99.5% of all interval and register reads should be present from the previous 4 days
- Billing Test – 99.5% of all billable meters must have at least 1 billable reading from the previous 2 days



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If any test fails, SAT will be invalid and testing will restart. After testing has completed, NMAAI must submit a request for acceptance to City of Tempe with copies of the daily reports. Baseline updates resulting in significant changes will be reviewed on Friday's discrepancy discussion calls (see Endpoint Acceptance Testing paragraph above). If process differences that result in a delay in NMAAI reporting matching City of Tempe reporting are found it will not reset SAT. If a discrepancy within 0.5% is found, it will not interrupt testing as long as it does not exceed 3 continuous days on any test.

SAT will be performed at the end of each project phase.

## Article 5

### **Project Schedule and Timing:**

The project should be structured utilizing the following methodology:

- a. **Define:** Itron and National Meter will work with the City to develop mutually agreed upon solution requirements through a kickoff meeting and a set of requirement workshops. The output of the Define phase is a Project Governance, a set of Solution Design documents, as well as an integrated project plan and schedule.
- b. **Design:** The project team will finalize the design documents and create the test plan, test cases, training plan and other key planning documents. An integrated project plan will be finalized so that all stakeholders understand the project schedule.
- c. **Build:** The project team will use the design documents to install, configure and test key components of the solution that will enable business objectives. The National Meter/Itron team will also provide training to key stakeholders. Applications and/or servers will be installed/configured at City or Itron's hosting facility and administrative staff will be trained, facilities will be set up, and system users will be trained. To ensure proper operation of the solution before go-live, components, integration, and solution testing will be performed using mutually agreed upon test plans. To move on to the Deploy phase, the project team signs off on the solution and confirms readiness to cutover and go live.
- d. **Deploy/Operate:** During this phase, the Collection system is put in place, meters and 100W+ ERT modules are deployed, and an end-to-end system test is run. Training occurs simultaneously, allowing utility employees to participate in real time in the deployment and testing so they are ready for any install being handled by the utility and for operation and maintenance of the system immediately upon Go Live.
- e. **Transfer:** National Meter and Itron will provide additional training to the City on system operations and maintenance to ensure long-term system performance. We will also work with the City project team to perform project closeout activities such as inventory reconciliation, closure of facilities, final billing, and project lessons learned. The final step of the project will be for



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Itron to transition the City to our long-term support services team, which is available to help with any needs that arise.

The project will consist of the following phases:

**Mobilization Phase:**

The mobilization phase incorporates the Design and Define phase of the project methodology. Activities will include but not limited to:

- A “Kick-off” meeting will be scheduled within 2 weeks after Contract Award Notice. During this meeting workshops will be scheduled to develop business needs and scenarios.
- Site surveys will commence and are expected to be completed within 45 days of Contract Award Notice.
- Upon completion of site surveys, NMAAI will place initial hardware order(s) with Itron, with typically a 6 to 8 week lead time for delivery.

**Submittals**

Within 15 Business Days of the Contract Award, NMAAI and/or ITRON shall provide a register of all Submittals that are approved in the Scope of Work. Also the accompanying the Submittal List, shall be supporting information for all project systems including all manufactured items. Supporting information shall consist of the following and is required unless otherwise specified in the Contract Documents:

- List of Materials
- Documentation Users Guides
- Management Plans/Testing Plans/Resource Plans (NMAAI, Itron and City resource plans), etc.
- Specifications: Data including, but not limited to, catalog sheets, manufacturer’s brochures, technical bulletins, specifications diagrams product samples and other information necessary to describe a system, product of item.
- Sample As-Built
- Detailed Propagation Study with location and installation specifics including height, Type of Product (Tower / Collector / Repeater)
- TAD
- BSD
- System Architectural Design Diagram

**Project Plan**

Within 5 Business Days after the workshops NMAAI shall provide a comprehensive project schedule as defined in the SOW definitions. In addition, the schedule shall contain:



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- Contract Award Date to the end of the Contract Time.
- Submittal Review
- Walk through or approval reviews
- Acceptance testing
- Coordination meetings with owner
- Network device installation (inclusive of material and equipment procurement)
- Accounts accepted by the Client/DCUs established, etc.
- Work completed and uncompleted to date
- Areas projected to be completed
- Material procurement
- Equipment procurement
- Holidays observed by the City
- Completion of shop drawings (where applicable)
- Completion of as-builts

### **Demonstration of Technology of Increment/Phase 1:**

The intent of Phase I is to provide, install and fully implement all hardware firmware, and software components for approximately 5,000 metered services required for a fully functional AMI program achieving the goals and performance measures. The Demonstration phase will incorporate the Deploy / Operate phases of the Methodology. Opportunities for improved Customer Service and other benefits shall be identified and evaluated.

Evaluation/testing should include but not be limited to:

- Alarms (endpoints)
- Idles, leaks, 0 consumption (workflows)
- Customer portal: usage lookup, available reports, consumption comparisons
- Remote disconnect
- Ability to build customer reports
- Test existing reports, report delivery less than 30 seconds
- Endpoint installation record
- Endpoint communication route (collector/repeater info, last communication information)
- On demand reads; turn around less than 2 minutes
- Mlog online/distribution, leak detection/noise loggers
- AMR/FCS functionality; reads
- Handheld testing (manual reads)

During the Demonstration Phase NMAAI shall utilize highly experienced professionals to the following but not limited to:



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- 1) Provide and install all hardware, firmware and software required for demonstrating achievements of the City's AMI Program goals for approximately 5,000 meter services including Leak Detection.
- 2) Install Network equipment to support the 5,000 metered installations to meet expected performance metrics
- 3) Provide As-Built diagrams for each installation
- 4) City has the option to conduct Quality Auditing on Each installation
- 5) City is to install the approximately 5,000 MIU's in the agreed upon Demonstration Area.
- 6) Design and develop interfaces for CIS, HES, MDM, FCS and Customer Portal as a minimum to meet the defined business needs
- 7) Collaborate with the City to develop and monitor the AMI system Expected Performance Measures
- 8) Test and evaluate performance measures including IT interfaces, (Note: Submittal of Test completion with supporting information clearly showing the system has met the Expected Performance Measures followed by City Acceptance of the submittal will be the basis to proceed to the subsequent Phase II).
- 9) Collaborate with the City to develop a Customer Communications and Public Relations Program, including mailings and internet information, which describes program goals, detailed steps for implementation and customer installation and post-installation procedures agreed to by the City.
- 10) Provide staff training on all hardware, firmware and software
- 11) Provide training documentation
- 12) Respond to service calls on AMI installed network infrastructure

Upon completion of the Demonstration Phase a submittal will be provided to the City of Tempe for review and acceptance of Milestone Completion.

**Installation and Start Up of Full-Scale AMI Program Phase/Increment 2 (Approximately 13,000 metered services):**

Upon acceptance of the Demonstration test NMAAI may invoice the individual network installations provided they have met the Network Acceptance Criteria. Each installation is to have the As-Builts provided within the number of days agreed upon in the SOW.



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During the Increment 2 Phase NMAAI shall utilize highly experienced professionals to complete but not limited to:

- 1) Review of project schedule for this phase measuring tasks, resources and costs
- 2) Receive AMI equipment for this phase
- 3) City to Install and activate 13,000 metered services in agreed upon area for performance in this phase.
- 4) Install Network equipment to support the 13,000 metered services
- 5) Provide As-Built diagrams for each installation
- 6) City to is to conduct Quality Audits on each installation
- 7) Conduct performance metrics for Increment 2
- 8) Respond to service calls on AMI installed network equipment.
- 9) Design and develop interfaces for GIS, SCADA, and hydraulic model to meet the defined business needs
- 10) Complete integrations and testing for GIS, SCADA, and hydraulic model

Upon completion of the Increment 2 Phase a submittal will be provided to the City of Tempe for review and acceptance of Milestone completion

**Complete Deployment of Full-Scale AMI Program on Increment/Phase 3 (Approximately 26,000 metered services):**

During the Increment 3 Phase NMAAI shall utilize highly experienced professionals to:

- 1) Review of project schedule for this phase measuring tasks, resources and costs
- 2) Continue deployment of the AMI Network System for Increment 3
- 3) Evaluate and submit a report that final performance measure is achieved
- 4) Provide ongoing planning and support to assist the City with Day-to-day management of the AMI Implementation
- 5) Respond to service calls on AMI installed Network infrastructure.
- 6) Provide all Infrastructure and software warranties and final documentation
- 7) Train identified Tempe employees



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- 8) Inventory reconciliation and Transfer of equipment as agreed upon between NMAAI and City of Tempe Project Manager with clear identification of each part of equipment.
- 9) Transfer of the project to support.
- 10) Project Lessons Learned

Upon completion of the Increment 3 phase NMAAI will provide notification of substantial completion. The City of Tempe will have 10 business days to provide a punch list of open issues. NMAAI will have 10 days to resolve the actions on the punch list prior to Final Completion notification. If NMAAI is unable to resolve the punch list items, the project will return to pre-substantial completion reinstating any liquidated damage timelines. This will continue until Final Completion is accepted by the City.

Upon documented acceptance of Final Completion by the City, NMAAI may provide final invoicing.

Other concurrent items include:

- Installation and configuration of the hosted software at Itron's site
- Development of City's CIS Interface
- Installation of water meter endpoints, (ERTs) by the City.
- Training City personnel on the use of the System

## **Article 6**

### **Payment and Completion:**

Retainage will be 5%

A performance bond is required through the project covering the faithful performance and completion of the Services and Work, including payment for all materials and labor furnished or supplied in connection with the Services and Work, by NMAAI and Sub-consultants. If the project exceeds the defined completion date, NMAAI will retain the performance bond throughout the completion at its own expense. Should the project extend beyond the defined completion data the Performance Bond will be retained until project completion at the expense of NMAAI.

Payment for endpoints and their accessories will be made full to NMAAI within thirty (30) days after receipt of the inventory and approval of an itemized invoice.

The remaining payment schedule will be based upon the completion of the individual phases. Prior to acceptance of a phase, submittals must be provided to the City and agreed upon by the City. Upon acceptance of the submittal, a sample invoice is to be provided to the City for review and agreement. Payment will be based at the following percentages for each phase: (Note: these percentages are after retainage has been reduced from the total for the Agreement.)



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Demonstration of Technology of Increment 1

- Network Collection Devices (DCU or Repeater) installed to satisfy the performance Requirements for this phase.
- Handhelds and cradles received as agreed upon during this phase.
- 15.0% of total remaining funds less retainage. Total remaining funds are equal to the contract bid less endpoint, network devices, handhelds and cradles.

Installation and Start Up of Full-Scale AMI Program Increment 2 29.4%

- Network Collection Devices (DCU or Repeater) installed to satisfy the performance Requirements for this phase.
- 22.4% of total remaining funds less retainage. Total remaining funds are equal to the contract bid less endpoint, network devices, handhelds and cradles.

Complete Deployment of Full-Scale AMI Program on Increment 3, (including Final Holdback payment) 55.6%

- Remaining Network Collection Devices (DCU or Repeater) to satisfy the network performance and quantity as defined within this agreement.
- 55.6% of total remaining funds.

Upon documented accepted submittals for the completion of the following phases an invoice can be submitted to the City for payment at the following percentages: (Note: these percentages are after retainage has been reduced from the total for the Agreement.)

| Items                 | Phase 1    | Phase 2    | Phase 3      | Totals All Phases |
|-----------------------|------------|------------|--------------|-------------------|
| ERT's                 | 302,850.00 | 787,410.00 | 1,574,820.00 | \$2,665,080.00    |
| Handhelds / Docks     | 37,198.00  |            |              | \$37,198.00       |
| CCU's                 | 5,564.00   | 29,528.00  | 23,000.00    | \$58,092.00       |
| Repeaters             | 3,388.00   | 33,880.00  | 91,476.00    | \$128,744.00      |
| FCS License           | 6,100.00   |            |              | \$6,100.00        |
| AMI Network Head      | 14,118.00  |            |              | \$14,118.00       |
| MDM Interface         | 7,708.00   |            |              | \$7,708.00        |
| Onsite h/w training   | 32,400.00  |            |              | \$32,400.00       |
| Onsite support        | 3,000.00   | 3,500.00   | 5,000.00     | \$11,500.00       |
| Network Prj Mgmt.     | 10,000.00  | 10,950.00  | 20,000.00    | \$40,950.00       |
| CCU/Repeater Instll.  | 7,560.00   | 40,320.00  | 78,120.00    | \$126,000.00      |
| Integration s/w inst. | 49,560.00  |            |              | \$49,560.00       |
| Prj.Adm/QC            | 19,815.00  | 19,815.00  | 19,815.00    | \$59,445.00       |
| System Perf. Warr.    | 2,100.00   | 4,176.00   |              | \$6,276.00        |
| Travel Expnses        | 2,000.00   | 2,000.00   | 2,000.00     | \$6,000.00        |



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|                         |              |            |                        |                |
|-------------------------|--------------|------------|------------------------|----------------|
| Less 5% Holdback        | -25,168.05   | -46,578.95 | -90,711.55             | -162,458.55    |
| 1/3 of Holdback Release |              | 54,147.43  | 54,147.43              | 54,147.43      |
| TOTALS                  | 478,192.95   | 939,147.48 | 1,777,666.88           | \$3,195,007.32 |
|                         |              |            | Final Holdback release | \$54,163.68    |
| Grand Total             | 3,249,171.00 |            |                        |                |

Payment in full shall be made by the City to NMAAI within thirty (30) days after receipt and approval of an itemized invoice.

**Article 7**

**Project General Requirements:**

**General Requirements**

- 1) The Network Software will provide functions and reports required to effectively manage the AMI system including monitoring the health of the network. Diagnostic and network status reports are provided. Standard reports and sample screen shots are included in the system overview provided.
- 2) For the period from the effective date of the AMI System Agreement until two years after the date of final system acceptance, Itron 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 Itron’s AMI system equipment and software. The City will be responsible for all other costs of attendance. Itron must give notice to the City within sixty (60) days prior to such conferences. Notice is given far in advance of the conference. Complementary Conference registration is available for up to 5 attendees at no charge, additional attendees would be required to pay a registration fee.

**System Design**

- 1) A baseline technical architecture document (TAD) is to be constructed during the mobilization phase and updated as needed throughout the project.
- 2) The City requires an interface between Itron’s MDM and the City’s (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. The City will provide the record layout for its CIS, CMMS, GIS, SCADA, and hydraulic model, and expects NMAAI/Itron to tailor interfaces from its AMI system software to these other systems. The City IT staff will work closely with the AMI Provider to ensure that this is accomplished efficiently. However, Itron/NMAAI is solely



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responsible for ensuring that data from its system is being transferred properly to the City's CIS, CMMS, GIS, SCADA, and hydraulic model databases.

- 3) NMAAI will provide the MDI Adapter for interface to Billing system. During the workshops additional information will be defined to fully scope the required interfaces between all systems mentioned. These requirements will be documented in the TAD
- 4) The System will be designed to perform at a minimum:
  - a. 97.5% of intervals and registers from the previous day collected and available to the MDMS or other utility systems by 6:00 AM next day
  - b. 99.5% of intervals and registers collected and available within 4 days
  - c. The network has been designed to meet or exceed the City's requirements for Billing reads of a least 99.5% of all meters within the previous 2 days
  - d. 95% on-demand read successfully executed within one hour or less
  - e. 100% of meters must display a minimum redundancy of 2 collection devices per day
- 5) All of NMAAI's installation employees or subcontractors shall be fully trained by NMAAI in the installation of the network infrastructure and customer service training, which is to be approved by the City in advance. NMAAI shall bond installers in a manner appropriate for the City. All installation employees shall submit to a criminal offense background check. The City reserves the right to review all background checks and prevent any such employee from working on City projects.

### **Network Installation**

- 1) Collectors and Repeaters will be mounted on the arm of existing street lights as the "Standard" installation. Prior to any Non-standard installation an installation design is to be submitted to the City Engineer for approval.
- 2) The City has 10 business days to respond or accept the drawings. If the City does not respond within 10 business days, the drawings can be assumed accepted allowing installation. If the drawings are not accepted, NMAAI has to correct and resubmit prior to installation of the network equipment.
- 3) All Engineering drawings are included in the installation price.
- 4) NMAAI must obtain all Federal, State and local permits and any other approvals for the installation prior to the drawing submittal.
- 5) All permits and approvals are the responsibility of NMAAI to identify and secure at their own expense



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- 6) The installations are to 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.

Network redundancy is built into the system with all of the 100W+ ERTs being read by more than one Repeater or Collector, and all Repeaters being heard by multiple Collectors. Limit to 10% additional network infrastructure devices above the latest 2:1 propagation study provided by Itron and NMAAI. No more than 10% of network devices may be moved from their originally identified location per the propagation study. Should the need exceed 10% of the devices, NMAAI will inform the City of the both the reason and effect of the variance. No further hardware will be installed prior to receiving written consent for the variance from the City.

The fixed network equipment and software will be installed first, then collection hardware installed and configured. After which end to end “use” case testing will occur and system functionality proven. Once the testing has been successfully completed the initial billing for the installed components will occur. The ERT’s can be installed during or after this period, however a minimal number of ERT’s must be installed for testing purposes. From that point ERTs can be installed at the rate determined by the city and any individual ERT communication issues will be mitigated as they arrive.

### **FCS**

As part of the project, FCS software will be installed so that meter readers can continue to collect reads manually. These reads can be combined with other routes that are either partially, or fully automated and be sent back for normal billing without interruption. FCS and the Choice Connect Network software are designed to work together for seamless operation.

### **Itron Analytics**

Configurations are specified for up to 35 City of Tempe users at the same time. The Customer Portal will have the ability for 50 concurrent customer user logins.

Itron Analytics captures and stores all of the data types listed as will be defined in TAD. The City also has the ability to add custom user-defined data type fields to the Analytics database schema should they be needed to support any kind of advanced analysis or future application.

The City requires that a customer portal option, including display of leak detection information, be developed and fully functional upon completion of Demonstration Phase.

Itron Analytics offers consumers access to their own consumption through an optional Customer Web Portal. - Customers can log-on and view their own reads for the past year on a monthly basis, the last 30 days on a daily basis, and any 24 hours on an hourly basis. - Customers can see if there has been or still exists continued usage that would indicate a leak. - Consumption is comparable against pre-selected groups, such as similar lot size or zip code. - Customers can set target consumption limits, and are



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notified via email/text when that limit is within a certain percentage (20% default). Please refer to the overview for more information and sample screen shots of the Customer Web Portal. The Web Portal is available to customers through a PC or through their mobile devices, such as iPhones, iPads, and Androids

**Article 8**  
**Changes:**

Any changes that affect personnel, the nature and scope of this project, and any associated costs will need to be agreed upon in writing prior to commencement or implementation of the change as stated in NMAAI's response to the City of Tempe, Request for Proposal 16-034. The City Procurement Office reserves the right to execute change orders reflecting a quantity increase within ninety (90) days from NMAAI's initial delivery date. No change order will be executed outside of the scope of the City's RFP and NMAAI's Proposal and price response. This Agreement may only be modified by a written modification issued by the City Procurement Office and counter-signed by NMAAI. NMAAI is not authorized to modify any portion of this Agreement without the written approval of the City Procurement Office and issuance of an official modification notice.

**Article 9**  
**Sub-Consultants and Subs:**

Subcontractors shall be approved by the City of Tempe, if required. NMAAI is responsible for subcontractor actions and performance. Subcontractors shall name NMAAI as additional insured, in addition to the City of Tempe on all required insurance documents. Subcontractors shall be required to comply with NMAAI's response to the City of Tempe, RFP 16-034, AMI System Overview, Item 14.

**Article 10**  
**Insurance:**

Insurance Required: Prior to commencing services under this Agreement, NMAAI shall procure and maintain for the duration of the Agreement insurance against claims for injuries (including death) to persons and damages to property, which may arise from or in connection with the performance of the work hereunder by NMAAI, its agents, representatives, employees, or subcontractors.

NMAAI will submit required insurance within ten (10) calendar days after request by the City Procurement Office.

NMAAI, at its sole expense, shall purchase and maintain the minimum insurance specified below with companies duly licensed or otherwise approved by the State of Arizona, Department of Insurance and



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with forms satisfactory to the City. Each insurer shall have a current A.M. Best Company, Inc., rating of not less than A-VII. Use of alternative insurers requires prior approval from the City.

Minimum Limits of Insurance. NMAAI shall maintain limits no less than:

a. Commercial General Liability

Commercial general liability insurance limit of not less than \$1,000,000 for each occurrence, with a \$2,000,000 general aggregate limit. The general aggregate limit shall apply separately to the services under this Agreement or the general aggregate shall be twice the required per occurrence limit. The policy shall be primary and include coverage for bodily injury, property damage, personal injury, products, completed operations, and blanket Contractual coverage.

In the event the general liability policy is written on a "claims made" basis, coverage shall extend for two (2) years past completion and acceptance of the services as evidenced by annual certificates of insurance.

Such policy shall contain a "severability of interests" provision.

b. Worker's Compensation

NMAAI shall carry worker's compensation insurance to cover obligations imposed by federal and state statutes having jurisdiction of NMAAI employees engaged in the performance of services; and employer's liability insurance of not less than \$100,000 for each accident, \$100,000 disease for each employee and \$500,000 disease policy limit.

In case services are subcontractor, NMAAI will require the subcontractor to provide worker's compensation and employer's liability to at least the same extent as provided by NMAAI.

c. Automobile Liability

Commercial business automobile liability insurance with a combined single life or bodily injury and property damages of not less than \$1,000,000 per accident regarding any owned, hired, and non-owned vehicles assigned to or used in performance of NMAAI services. Coverage will be at least as broad as coverage Code 1 "any auto". The Insurance Service Office policy form used will be the CA0001 3/10 edition. Such coverage shall include coverage for loading and unloading hazards.

Additional Insured. The insurance coverage, except for workers compensation and professional liability coverage, required by this Agreement, shall name the City, its agents, representatives, directors, officials, employees, and officers, as additional insureds, and shall specify that insurance afforded



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NMAAI shall be primary insurance. This provision and the naming of the City as an additional insured shall in no way be construed as giving rise to responsibility or liability of the City for applicable deductible amounts under such policy(s).

Coverage Term. All insurance required herein shall be maintained in full force and effect until all work or service required to be performed under the terms of the Agreement is satisfactorily completed and formally accepted by the City. Failure to do so shall constitute a material breach of this Agreement.

Primary Coverage. NMAAI's insurance shall be primary insurance to the City only under the General Liability policy.

Claim Reporting. Any failure to comply with the claim reporting provisions of the policies or any breach of a policy warranty shall not affect coverage afforded under the policy to protect the City.

Waiver. The policies, including workers' compensation, shall contain a waiver of transfer rights of recovery (subrogation) against the City, its agents, representatives, directors, officers, and employees for any claims arising out of the work or services of NMAAI.

Deductible/Retention. The policies may provide coverage which contain deductibles or self-insured retentions. Such deductible and/or self-insured retentions shall be disclosed by NMAAI and shall not be applicable with respect to the coverage provided to the City under such policies. NMAAI shall be solely responsible for deductible and/or self-insurance retention and the City, at its option, may require NMAAI to secure the payment of such deductible or self-insured retentions by a surety bond or an irrevocable and unconditional letter of credit.

Certificates of Insurance. Prior to commencing work or services under this Agreement, NMAAI shall furnish the City with certificates of insurance, or formal endorsements as required by the Agreement, issued by NMAAI's insurer(s), as evidence that policies providing the required coverages, conditions, and limits required by this Agreement are in full force and effect. Such certificates shall identify this Agreement number or name. As insurance expires annually, if NMAAI does not renew coverage at the Agreement levels, it will notify the City within ten (10) days of expiration. Such certificates shall be sent directly to: Agreement Administrator, City of Tempe, P. O. Box 5002, Tempe, AZ 85280.

Professional Liability. NMAAI shall maintain professional liability insurance covering Technology/Software errors and omissions..

## **Article 11**

### **Notices:**

All written notices provided for in this Agreement will be deemed given if delivered personally, sent by , e-mailed, fax with fax acknowledgment with hard copy mailed same day, or by regular mail to the Party at its address specified herein. Either Party may from time to time, by notice to the other as herein



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provided, designate a different address to which notices to it should be sent. All notices will be sent to the following, as appropriate:

|   |  |
|---|--|
| <p>National Meter and Automation, Inc.</p> <p>Frank Milliron, Vice President of Operations<br/>7220 S. Fraser St.<br/>Centennial, Colorado 80112<br/>P – 303-339-9100<br/><a href="mailto:fmilliron@badgermeter.com">fmilliron@badgermeter.com</a></p> <p>John Bjorklund, Account Manager<br/>7777 E. Paradise Lane, Suite 104<br/>Scottsdale, Arizona 85260<br/>P – 480-323-6096<br/>F - 480-596-8606<br/><a href="mailto:bjorklund@badgermeter.com">bjorklund@badgermeter.com</a><br/>CC: Assistant General Counsel<br/>Badger Meter, Inc.<br/>4545 W Brown Deer Rd<br/>Milwaukee, WI 53223</p> | <p>City of Tempe</p> <p>Ted Stallings, Procurement Officer<br/>20 E. 6<sup>th</sup> St.<br/>Tempe, Arizona 85281<br/>P – 480-350-8617<br/><a href="mailto:ted_stallings@tempe.gov">ted_stallings@tempe.gov</a></p> |
|---|--|

**Article 12**  
**Conflict of Interest:**

This Agreement is subject to the cancellation provisions of A.R.S. § 38-511.

**Article 13**  
**Liquidated Damages:**

The City reserves the right to assess liquidated damages in the sum \$400 per calendar day for failure to comply with the conditions of the Agreement, including but not limited to, failure of NMAAI to complete the work and/or services by December 31, 2018, except if the failure is due to a condition outside NMAAI’s control, such as a delay on ERT installation by the City. This sum may be deducted from NMAAI’s payment or anticipated payment for failure to deliver and/or perform as specified. No premium will be awarded to NMAAI for delivery and/or performance by the specified time. Permitting NMAAI to complete work and/or services pursuant to the Agreement, or by extension thereof, shall in no way be deemed to waive or diminish the City’s rights available by law or in equity.



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Where applicable, and at the sole discretion of the City, the City reserves the right to accept, for stated periods of time, approved loaner materials as a temporary substitution for payment of liquidated damages if NMAAI is found to be in a default for delivery of specified, ordered products.

**Article 14**

**Traffic Operations on Roadways/Thoroughfares:**

Any and all work carried out on adjacent roadways and thoroughfares will use the appropriate traffic barricading as set forth in the City of Phoenix TRAFFIC BARRICADE MANUAL published by the Street Transportation Department as adopted by the City of Tempe. Any and all pruning operations must comply with the safety standards set forth in ANSI 133. 1. All traffic control and lane closures shall be presented as a written plan to City of Tempe Traffic Engineering (480-350-8219) of the Transportation Division.

Short term operations are allowed under Chapter 9 of the City of Phoenix Traffic Barricade Manual; however, the City of Tempe has revised this policy to allow for short duration work up to thirty (30) minutes. Non-compliance of any safety or related items within this Agreement will result in a deficiency of performance deduction of a minimum of \$100 from the City payment made to NMAAI.

**IN WITNESS WHEREOF**, the parties have caused this Agreement to be executed by their duly authorized representatives.

|  |                          |
|--|--------------------------|
| <b>NATIONAL METER AND AUTOMATION,<br/>INC.</b> | <b>CITY OF TEMPE, AZ</b> |
|--|--------------------------|

By: Frank Milliron  
 Print: Frank Milliron  
 Title: Director of Operations  
 Date: 6/16/2016

By: \_\_\_\_\_  
 Print: \_\_\_\_\_  
 Title: \_\_\_\_\_  
 Date: 06/23/2016

ATTEST:

By: \_\_\_\_\_  
 Print: Brigitta M. Kuiper, City Clerk  
 Date: 6/23/2016

APPROVED AS TO FORM:

By: \_\_\_\_\_  
 Print: Judith R. Baumann, City Attorney  
 Date: 06/23/2016



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## **ATTACHMENT A**

### **STATEMENT OF WORK**

# **CHOICECONNECT FIXED NETWORK SOLUTION**

## **CITY OF TEMPE ARIZONA**

*SOW Point of Contact: John Bjorklund*

*Date: May 3, 2016*

*Version: 1.1*



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## A. About this Document

This Statement of Work ("*SOW*") document defines the activities ("*SERVICES*") to be performed by NMAAI for City for the ChoiceConnect Fixed Network Solution ("*PROJECT*").

This document will describe agreed upon scope, services to be provided, deliverables, assumptions, responsibilities, timeline and completion criteria. NMAAI is an Authorized Itron Distributor and is working in conjunction with Itron for the duration of this project.

Any updates to this SOW shall only be considered as documented through the change control process (see Appendix) throughout the duration of the project. These SERVICES shall be governed by the following ("Agreements") and their related terms and conditions, as executed between the City and NMAAI.

- Pricing Summary Reference NMAAI's City of Tempe RFP 16-034 Response
- For full Project Details Reference NMAAI's City of Tempe RFP 16-034 Response.

No work will commence until the Itron Direct Sales Agreement and Maintenance Agreement are signed by the City.



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## **B. Project Overview**

### **B.1. Project Summary**

NMAAI and Itron will implement a hosted ChoiceConnect Fixed Network solution over approximately 44,000 ERTs in Tempe. As part of the solution, a custom software interface will be developed for data transfer, and CCUs and Repeaters will be utilized for network coverage. An FCS meter reading system will also be implemented to manage daily meter reading.

### **B.2. SOW Definitions**

SOW specific acronyms and solution specific terms are shown below, additional definitions can be found in Appendix A:

**Advanced Metering Infrastructure (AMI)** – Process by which a meter is read via a radio or wireless signal emitted from a meter (two-way) to a fixed-based system of collectors, repeaters and towers.

**Active Directory Federated Services** – ADFS.

**CCFN** – Means ConnectChoice Fixed Network.

**CIS** - Customer Information System (Oracle Customer Care and Billing).

**City** means the City of Tempe.

**Customer Portal** – A web browser or mobile application that provides access to customer-specific water usage and other related data. Some portals provided additional functionality such as bill payments alert settings, notifications, and/or usage profiling.

**CPM** means a critical path method progress schedule in the form of precedents, networks and time sequences.

**CCU** - (Cell Control Unit) (CCUs) are neighborhood concentrators that collect meter reading information, provide advanced metering functions and send metering data to the host processor via a wide area communications network.

**CY** – Calendar Year

**DCU** means Data Collection Unit

**Data Reads Export (DRE)** means is the file produced from the Itron Collection Engine providing the Reading.



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**Endpoints** – A meter interface unit, sometimes with acronym MIU, ERT or ERTs, typically a radio or cellular transmitter, that records and stores meter readings at prescribed intervals and transmits them to a data collection unit. Endpoints can be programmed to calculate and trigger alarms based on consumption or operational conditions such as, but not limited to battery life, zero consumption, backflow and meter tampering.

**ERT** – Endpoint or MIU

**FCS** - Field Collection Software

**FTP** – File Transfer Protocol

**GIS** – geographic information system or geographical information system.

**Head End System (HES)** – Receives data from Collectors. Manages the Collectors and sends data to other systems, such as the CIS, MDM, and Customer Portal.

**IT** – Information Technology

**JUA** – Joint use Agreement

**M&V** – Measurement and verification.

**MDI file** - Microsoft Document Imaging File

**Meter Data Management (MDM)** – - Collects and stores meter data from an AMI system of DCU's and process that meter data into information that can be used by other utility application including billing, customer information, asset management, computerized maintenance management and other relevant utility management systems. MDM is a key resource for managing large quantities of meter interval read data.

**MIU** – Meter Interface Unit. Same as Endpoint or ERT.

Network Administration Application (NAA) - runs automatic diagnostics on the current status of the ChoiceConnect fixed network and allows the system administrator to keep the system running smoothly.

NAA - (SLSerco to Define)

**NMAAI** – Means National Meter and Automation, Inc.

**NRW** – Means Non-revenue water.

**O&M** – Operations and Maintenance.



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**PCD** – Portable Computing Device, such as a laptop or tablet.

**Repeater** – Repeaters act similar to collectors in that they collect data from endpoints. Instead of passing data directly to the Head End System, they collect data from endpoints and transmit to a collector. Repeaters are often used in outlying areas where a full collector is not necessary.

**RF** – Radio Frequency.

**RPD file** - Roleplay Designer Data File.

**SCADA** – Supervisor Control and Data Acquisition.

**SaaS** – Software as a Service.

**Services** – Refers to all materials, labor, equipment, software and other goods and services requested in the RFP and specified in the Scope of Work for the Tempe AMI Program.

**SFTP** - Secure File Transfer Protocol

**SLA (service-level agreement)** is a part of a standardized service contract where a service is formally **defined**. Particular aspects of the service – scope, quality, responsibilities – are agreed between the service provider and the service user.

**SLS** – SL Serco

**SOW** – Means Statement of Work.

**SOP** – Means Standard Operating Procedures.

**SSH** - Secure Socket Shell, (File format),

**SSL** - Secure Sockets Layer, (File format)

**SWT** – System Test

**TAD** – (Technical Architectural Document) - An architecture document is intended to layout the technical architecture that will be deployed as part of a project. The TAD should include all Hardware, Web Servers, Software, Interfaces, Databases, Schedules, Network, Authentication, Security for a complete system.

**TBD** – To be determined



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**UI** – User Interface.



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## C. Project Scope

### C.1. Over All Scope

This section summaries -specific goals for of AMI program/project:

- A. Leverage AMI water demand data to improve water conservation effectiveness and monitoring.  
Specific elements of this goal include:
  - i. Improve customer consumption metering and logging
  - ii. Increase data availability and accuracy to improve reporting
  - iii. Perform water restriction monitoring
  - iv. Perform water efficiency program monitoring
  - v. Improve synchronization between purchased water (supply) and billed demand
  - vi. Improve Non-Revenue Water (NRW) understanding and monitoring
- B. Enhance Customer Relations.  
Specific elements of this goal include:
  - i. Provide customers access to their own data to help customers better understand their water use, set individual consumption alerts, and act on these alerts
  - ii. Provide tools to utility Customer Service staff to better assist customers
  - iii. Provide ease of access to data to respond to customer billing issues
  - iv. Identify potential customer-side leaks
- C. Provide Revenue Enhancement Opportunities.  
Specific elements of this goal include:
  - i. Increase accuracy of billed water and wastewater charges
  - ii. Reduce customer-side leak adjustments
  - iii. Identify consumption at Inactive Accounts and other water theft activities
  - iv. Provide better demand-side calibration for Hydraulic Modeling
  - v. Provide integrated distribution-system-side noise logging and potential leak detection
- D. Improve Customer Services.  
Specific elements of this goal include:
  - i. Manage growth
  - ii. Reduce truck rolls (labor, fuel, carbon footprint)
  - iii. Provide remote or more efficient soft shut-offs
  - iv. Perform proactive workload leveling through access to better data
  - v. Monitor large meters for inaccuracy and longevity



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## **C.2. NMAAI Services**

This section summarizes the services NMAAI will perform and/or support in conjunction with Itron. These services are further described throughout the rest of the SOW.

1. Project Management
2. Software interface development
3. FCS meter reading software installation
4. Training
  - CCFN software training
  - Itron Analytics software training
  - FCS software training
  - Handheld user training
  - Endpoint installation and troubleshooting training
5. Network hardware installs
6. Support Project Closeout



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## D. General Project Requirements

Below are general PROJECT comments and clarifications in which both NMAAI and the CITY agree will be adhered to for the duration of the PROJECT. Changes to any of these comments and clarifications will be agreed in accordance with the Change Order process defined in the SOW.

|    |  |
|----|--|
| 1. | Scope, effort, price and timeline may change. Any changes will be documented and managed via Change Control Process and require mutual acceptance.   |
| 2. | NMAAI personnel will be furnished access while being accompanied by authorized city employees.   |
| 3. | CITY and NMAAI will provide the Services under this SOW during normal business hours, 7:00 AM to 5:00 PM local time Monday through Friday, including travel time. CITY and NMAAI will agree on holiday schedules as part of project planning.  |
| 4. | ITRON will deliver and provide CITY team members with an electronic copy of a standard set of system documentation which shall include user guides, training materials, troubleshooting, standard operational procedures (SOP) and where applicable, designs for CITY's use in preparing for and executing the project.  |
| 5. | <p>NMAAI is expected to effectively collaborate and communicate with the City to provide comprehensive services, as necessary, to achieve specific Tempe program/project goals for its new AMI program. NMAAI is required to have a full-time program manager throughout the duration of the Program. The City intends to implement the full AMI program within three years or less, beginning in 2016. Such services will include, but are not limited to, three specific major annual program phases, as described below:</p> <p><u>Phase I: Demonstration of Technology on Increment 1 (CY 2016)</u></p> <p>Phase I is to provide, install, and fully implement all hardware, firmware, and software components for approximately 5000 metered services required for a fully functional AMI program achieving the goals and performance measures established by the City. Opportunities for improved customer service and other benefits shall be identified and evaluated.</p> <p>The following are tasks associated with this project phase:</p> <ul style="list-style-type: none"> <li>Task 1 – Provide and install all hardware, firmware, and software required for demonstrating achievement of the City's AMI program goals for approximately 5,000 metered services. Excluding Endpoints. Include IT interfaces for CIS, HES, and MDM as a minimum.</li> <li>Task 2 – Collaborate with the City to develop and monitor the AMI system Expected Performance Measures.</li> <li>Task 3 – Test and evaluate Performance Measures, including IT interfaces (will be the basis to proceed to the subsequent Phase II).</li> <li>Task 4 – Collaborate with the City to develop a Customer Communications and Public Relations Program, including mailings and internet information, which describes program goals, detailed steps for implementation, and customer installation and post-installation procedures agreed to by the AMI Proposer and the City.</li> <li>Task 5 – Provide staff training on all hardware, firmware, and software provided in Task 1.</li> <li>Task 6 – Respond to service calls on AMI installed end points and associated infrastructure.</li> </ul> <p><u>Phase II: Installation and Start Up of Full-Scale AMI Project on Increment 2 (CY 2017)</u></p> <p>The following tasks are associated with this project phase:</p> <ul style="list-style-type: none"> <li>Task 1 – Receive AMI equipment for Increment 2 (approximately 13,000 metered services). Excluding Endpoints.</li> </ul> |



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- Task 2 – Develop implementation plans for Phase III – Deployment of Increment 3 of AMI system.
- Task 3 – Respond to service calls on AMI installed end points and associated infrastructure.

Phase III: Complete Deployment of Full-Scale AMI Project on Increment 3 (CY 2018)

- Task 1 – Continue deployment of AMI system for Increment 3 (approximately 26,000 metered services) in accordance with the approved implementation plan. Excluding Endpoints.
- Task 2 – Evaluate Performance Measure achievement.
- Task 3 – Provide ongoing planning and support to assist the City with day-to-day management of the AMI Implementation.
- Task 4 – Respond to service calls on AMI installed end points and associated infrastructure.
- Task 5 – Provide AMI system clean up and confirm benefits.
- Task 6 – Provide all infrastructure and software warranties and documentation.
- Task 7 – Provide training documentation.
- Task 8 – Train identified Tempe employees.

The following AMI requirements apply to all Phases above:

- Installation, construction (if applicable), and management services, including procurement and installation of new equipment and retrofitting existing equipment, as needed and where applicable.
- Startup, integration, commissioning and testing of the equipment and systems.
- Preventive and emergency maintenance and servicing of the equipment installed, if applicable.
- Tempe staff training on Operations and Maintenance (“O&M”) of new or modified equipment, systems, software, and procedures.

Measurement and Verification (“M&V”) services and project management needed to confirm performance and ensure Project success.



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## E. Project Resources – Roles & Responsibilities

The section below identifies NMAAI and CITY roles and responsibilities required for this project delivery and the associated work as identified in this SOW.

### E.1. Requirements

|    |   |
|----|---|
| 1. | NMAAI and CITY will provide suitably trained and skilled resources to support the Project to the effort and timeline agreed upon by both parties.   |
| 2. | Should any named resources become unavailable due to any reason or need to be changed, a suitable and trained alternative will be provided as quickly as possible. Effort will be taken to minimize any schedule delay or impact in any resource transitions. |
| 3. | CITY will name all resources for the roles identified. Any additional or changes to resources, including 3 <sup>rd</sup> party contractors/consultants, may impact this SOW and require agreement through a Change Order process.                             |
| 4. | NMAAI will identify and be responsible for any 3 <sup>rd</sup> party contractors/resources contracted by NMAAI for PROJECT.   |

### E.2. NMAAI Project Resources

| NMAAI Role  | Responsibilities   | Name                                     |
|---|--|--|
| Executive Sponsor<br>(Director or Solution<br>Delivery Manager) | <ul style="list-style-type: none"> <li>– Project sponsorship at Executive Level</li> <li>– Responsible for overall executive communications</li> <li>– Point of escalation for Issue/Risk resolution</li> </ul>  | John Bjorklund                           |
| Project Manager   | Responsible for overall onsite NMAAI Project delivery management as it relates to NMAAI deliverables and responsibilities described in the SOW including: <ul style="list-style-type: none"> <li>– Management and Scheduling of NMAAI Project resources involved in the Project</li> <li>– Securing of NMAAI resources for work</li> <li>– Project planning &amp; scope</li> </ul> | Richard MacKendrick                      |
| Technical Consultant<br>(TC)                                    | <ul style="list-style-type: none"> <li>– Provides technical services, support and assistance related to NMAAI System:</li> <li>– IT Product Implementation Lead</li> <li>– Provides Project technical evaluation / architecture input.</li> <li>– Testing and Integration Lead</li> </ul>  | Richard MacKendrick                      |
| Field Engineer /<br>Technician                                  | <ul style="list-style-type: none"> <li>– Support for development of RF Network device installation standards and maintenance planning.</li> <li>– Supports initial CCU field site surveys for locations as identified in the validated preliminary network design</li> <li>– Provides support for field training of CITY resources for</li> </ul>                                  | Dan Haptonstall /<br>Richard MacKendrick |



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| NMAAI Role | Responsibilities   | Name |
|------------|--|------|
|            | installation and mitigation maintenance activities<br>– Field support for network and meter investigations, troubleshooting, mitigation. |      |

### E.3. Itron Project Resources

| Itron Role      | Responsibilities  | Name        |
|-----------------|---|-------------|
| Project Manager | Responsible for overall onsite Itron Project delivery management as it relates to Itron deliverables and responsibilities described in the SOW including:<br>– Management and Scheduling of Itron Project resources involved in the Project<br>– Securing of Itron resources for work<br>– Project planning & scope | Cam Paulson |

### E.4. CITY Project Resources

| CITY Role             | Responsibilities  | Name  |
|-----------------------|---|---|
| Project Sponsor       | – Drives project goals for CITY<br>– Provides suitably trained and skilled resources for the project delivery<br>– Issue/Risk oversight<br>–  | Jerry Hart                                      |
| Project Manager       | – Works collaboratively with NMAAI Project Manager in:<br>– Managing and achieving overall project deliverables<br>– Tracking progress and managing schedule  | Rajani Kondury                                  |
| Technical Resource    | Technical resource who:<br>– Acts as the technical lead on the project for CITY<br>– Has access to other CITY technical or support resources and systems as may be necessary to support the project work or to troubleshoot systems                       | Rajani Kondury and other City staff as assigned |
| Field Deployment Lead | – Manages field device and meter related activities including , configurations, field deployment, and field mitigation efforts for CITY.<br>– Manages deployment and hardware device related staff.<br>– Key contact for NMAAI Implementation Manager and | Ken Crossland                                   |



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| CITY Role               | Responsibilities   | Name  |
|-------------------------|--|---|
|                         | input/review of Deployment Plan.   |   |
| Other Roles             | <ul style="list-style-type: none"> <li>- City Service Representative – participates in process change discussions</li> <li>- Network Administrator – Provides system access. Understands and provides expertise on the interfaces between the various data systems on the network.</li> <li>- Testers – Perform CITY specific testing requirements (i.e. Integration testing, SWT, etc.) as agreed in SOW.</li> <li>- Quality Auditor – Conducts quality audit on network devices.</li> <li>- Logistics – Coordinates order entry, forecasting, RMA, etc.</li> <li>- System Operators – Resources who will be responsible for system operation post Regional completion testing. Includes operation upon transition to billing.</li> </ul> | Ken Crossland and IT staff as assigned (quality Auditor). |
| Project Main Contact    | - Customer Services Manager or designee  | Tarja Nummela   |
| Contract Administration | - Procurement Officer or designee  | Ted Stallings   |



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## F. Deliverable: Project Management

### F.1. Project Management

#### F.1.1. Description

Project Management will be performed throughout the project to ensure a successful project.

#### F.1.2. Requirements

|    |  |
|----|--|
| 1. | NMAAI will act as the coordinator and facilitator of the deliverables in this SOW unless stated otherwise. Delivery quality and schedule is dependent on all parties meeting task schedules and delivering quality content.            |
| 2. | NMAAI PM assigned to this project is responsible for management of all NMAAI resources and the associated work schedule used for this project. This may include onsite and/or remote activity delivery, schedule and responsibilities. |
| 3. | NMAAI methodologies,(Develop, Verify, Test and implement each system component), tools and templates will be used for the delivery of the Project unless CITY and NMAAI agree otherwise.   |
| 4. | Should the Project fall behind schedule by ten percent (10%) at any time NMAAI shall develop a corrective action plan to be reviewed and approved by CITY.   |

#### F.1.3. Deliverables/Activities

| #  | Project Deliverables  | NMAAI   | CITY or City's Representative  |
|----|---|---|--|
| 1. | Resource Plan - Establish, assign, and document the resources for the Project Teams. Gain organizational commitment of each resource and each resource's role on the Project Team.  | NMAAI will identify its NMAAI Project Team resources.   | CITY will identify its Project Team.   |
| 2. | Project Schedule - Create and maintain a Work Breakdown structure appropriate for project complexity. NMAAI to provide a baseline schedule draft at project kickoff meeting and final within 15 business days from project kickoff meeting (July, 7, 2016).   | Primary responsibility  | Support creation and participate in updates  |
| 3. | Project Finances - Reconciliation of completed work for invoicing.  | Track and submit invoices in accordance with Agreement.   | Review, validate and approve invoices within 10 business days or provide reasons for rejection.      |
| 4. | Scope Management – To monitor and maintain control over the scope of the Project (e.g. nature of the Work) including reviewing any new work requirements and associated deliverables which were not provided for in the original Agreement, for the duration of the Project.<br><br>Any or all changes to the Deliverables set forth in the | NMAAI Project Manager will participate in review and approval of any changes in the scope of the Work | CITY Project Manager will participate in review and approval of any changes in the scope of the Work |



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| #  | Project Deliverables  | NMAAI  | CITY or City's Representative                   |
|----|---|--|---|
|    | Agreement shall be addressed in accordance with the Change Control process detailed in the Agreement. |  |   |
| 5. | Project Meetings - Facilitate and hold regular project meetings.                                      | <p>Schedule and facilitate meetings. Track actions.</p> <p>Provide meeting notes within 2 business days after the meeting.</p> | CITY will make appropriate resources available. |

Project meetings will be held weekly upon Notice of Award to properly coordinate the Project. As the Project progresses, the City may determine and reduce meeting attendance to biweekly. NMAAI's field supervisor, superintendent, Project Managers and any other relevant employees shall attend all scheduled progress meetings and others as required by the City Representative as necessary to coordinate the Work.

If meeting content dictates smaller members are needed, adjustments will be made to maintain efficiency. For example, if the issues at hand are primarily installation the City Representative will adjust the meeting attendance to mainly NMAAI's Field Staff.

The City Representative will determine the date, time and location of the meetings. The City Representative will be responsible for the meeting agendas. If any of NMAAI's staff cannot attend, NMAAI shall provide the City Representative 24 hours advanced notice. Failure to do so will result in financial responsibility by NMAAI for two hours of time from each City Official present.

The objective of the meetings are to discuss: 1) the status of submittals, 2) request for information, 3) progress on installation schedule; Vendor/Installer shall provide sample layouts of all anticipated reports for managing the project to ensure the contract is completed, on time, within budget, and meets all performance requirements as outlined in this RFP, 4) disputes, if any, 5) new business or items important to any participant, and project coordination, 6) installation procedures, process, problems, schedule, status, etc. The City will manage the meetings and NMAAI will complete Meeting Minutes and provide the City electronic copies within 48 hours of meeting completion.



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## G. System Design and Planning

### G.1. Software Design

#### G.1.1. Description

NMAAI will facilitate meetings to confirm project requirements, project goals, develop a schedule and review technical details.

It is important that the City uses these meetings to evaluate and plan for process changes in order to fully realize the benefits of the ChoiceConnect Fixed Network (CCFN) system.

#### G.1.2. Requirements

|    |  |
|----|--|
| 1. | Completed technical and process documents will be reviewed by NMAAI and CITY to form the basis for design decisions. |
| 2. | Appropriate NMAAI, Itron and CITY staff must attend meetings to drive timely decisions.                              |
| 3. | Interface between system of record and CCFN will successfully pass appropriate information between systems.          |

#### G.1.3. Deliverables/Activities

| #  | Project Deliverables  | NMAAI                              | CITY or City's Representative   |
|----|---|------------------------------------|---|
| 1. | As Is Processes & System Architecture: document outlines CITY's current business processes and system architecture.   | Meet with CITY to review document. | Update NMAAI provided template or provides similar information required by NMAAI project team to maximize project planning success. |
| 2. | Kick-off Meeting - First on-site meeting of the Project Team. The sessions will include: <ul style="list-style-type: none"> <li>Review of SOW / Project Charter (NMAAI &amp; CITY PMs)</li> <li>Review of Project Schedule (NMAAI PM)</li> <li>Review As Is Process &amp; System Architecture Overview (CITY PM)</li> <li>Introduction to Define Phase: Solution Capability Overview, Workshops, etc. (NMAAI)</li> <li>Meetings held to discuss project plans and technical details.</li> </ul> | Co-leads sessions                  | Co- leads sessions  |
| 3. | Complete Product Configuration Design document that provides information on design and configuration of system  | Prepares and submits for review.   | Reviews and approved.   |



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## G.2. Network Design

### G.2.1. Description

NMAAI Project Team will provide the Network Design based on data provided by CITY. Site surveys and installation of network equipment will be performed by NMAAI and NMAAI designated and Tempe approved sub-contractors.

### G.2.2. Requirements

|    |  |
|----|--|
| 1. | Installation of all CCUs and Repeaters must be installed at the elevations of existing City poles and facilities, and coordinates specified in the final network design to be provided by Itron.   |
| 2. | Unanticipated obstructions or other issues found during site surveys and installation that may reduce RF performance may require a re-evaluation of network design. Any additional equipment required to meet the contracted redundancy or performance will be provided at no cost to City of Tempe. |
| 3. | All devices specified in the network design must be installed according to the guidelines provided in the CCU installation guide and training sessions.  |
| 4. | Site specific designs and drawings to be included and approved by the City.  |
| 5. | The network design has not taken into account any unexpected RF interference from other devices. If RF interference is detected, additional equipment required to meet the contracted redundancy or performance will be provided at no cost to City of Tempe.  |

### G.2.3. Deliverables/Activities

| #  | Project Deliverables   | NMAAI                        | CITY  |
|----|--|------------------------------|---|
| 1. | Clearly define baseline prop study   | Supply requirements document | Supply meter and pole (mounting location) following guidelines. |
| 2. | Create Systems Engineering Network Design for NMAAI systems  | ITRON will provide.          |   |
| 3. | Secure Joint Use Agreements (JUA), permits and other agreements for sites which may include buildings, streetlights, towers, poles and other structures  | Support                      | Primary   |
| 4. | Procure backhaul services for communications.  | ITRON will provide.          |   |
| 5. | Site Surveys: Fine tune collector locations, identify locations by coordinates, height, asset description, power availability site ownership, etc.   | Primary                      | Support   |
| 6. | Provide final network design document including at minimum the following details for each device: type, location, elevation, serial #, configurations, login credentials, access requirements, and backhaul details (type, provider, IP info, service plan description, communications protocol) | Primary                      | Support   |
| 7. | System Performance Warranty design - system will   | NMAAI and Itron              |   |



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| #  | Project Deliverables  | NMAAI | CITY |
|----|---|-------|------|
|    | 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 instructions.  |       |      |
| 8. | Security requirements documentation - Information Security features to be included with software/hardware along with any security audits or certification levels for restricted data and data that passes from trusted to untrusted networks (SFTP, RDP, SSL, SSH, etc.), common authentication (Active Directory) and Active Directory Federated Services (ADFS for single sign-on functionality). | Itron |      |



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## H. System Implementation

### H.1. Software

#### H.1.1. Description

Based on the system design created and confirmed by NMAAI and the CITY, hosted ChoiceConnect Fixed Network and Analytics software will be installed on Itron hosted environment, configured and tested.

The proposed AMI system shall:

- Have the capacity to record meter reads with a frequency of at least one read per hour.
- Collect and store raw collected meter data in digital format with capacity to perform data analysis and preparation of reports.
- Compile consumption data files to be integrated into Tempe's existing CIS for bill generation (following batch interface format).
- Identify unsuccessful reads with trouble codes.
- Provide continuous flow, reverse flow, zero flow, leak, and tamper alarms.
- Detect unauthorized consumption.
- Have the capacity to generate reports for consumption and incidents (i.e., leaks, tampering, reverse flow, and zero flow) analysis corresponding to all accounts, billing cycles, meter reading routes, or other applicable groupings.
- Tempe shall retain ownership of all data.
- The AMI solution shall include firmware for all system components warranted for a 15 plus years life.

Upon completion and acceptance of the installation, NMAAI shall provide manuals and customized written documents including user's guides and standard operating procedures for installation, configuration, operation, diagnostics, troubleshooting and repair.

This agreement shall include all standard national warranty for all infrastructure (including the warranties provided by the manufacturer of the equipment and technology) and work/installation services provided.

### **Web Application for Customers to Access Consumption Data**

NMAAI/Itron shall provide an interactive and secure web application (should have logical security access levels) that provides customers continuous access to their current and historical consumption and billing data (Customer Portal). The web application shall be either hosted by Itron, communicate through the MDM, and shall be made available to customers through the internet. Tempe shall have unlimited licensing to use the web application unless a proprietary solution is proposed. The web application shall be fully developed, functional, and online within the first six months of the Agreement Term. At that point, data for all customers with approved AMI system installations shall be accessible to the customers. Customers integrated into the AMI system subsequent to



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the acceptance of the web application should be given access to the web application within one week of Tempe acceptance of that customer's installation.

A driver for Tempe is to obtain a web application as part of this solution with the following attributes:

- Be fully integrated with the AMI system.
- Allow customers to access (view and download) historic and current consumption and billing data in tabular and graphical forms, in a commercially accepted format.
- Allow customers to specify the time period and the time interval of the data to be viewed and/or downloaded.
- Allow customers to set and modify, as desired, individual consumption alerts, with notices of exceedances.
- Allow customers to digitally access billing statements, notices, etc., sent by Tempe.

### **FCS/Handheld Data Collectors**

Handheld data collectors shall be equipped with AMI capabilities for manual meter with the following requirements:-

- A. System Functions.** The City requires handheld meter reading devices, cradle/data transfer units, software, etc., to read meters equipped with endpoints as well as
- capture manual meter readings.
  - handheld device must present to the meter reader unambiguous and accurate information needed to locate a water meter.
  - must 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).The handheld device must automatically time stamp each meter reading with unalterable date and time of read. 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. 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. The handheld device with a touch screen must be configurable to be capable of displaying information below:
    - Route number



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- Meter reading sequence number
- Account identification number
- Customer name and number
- Meter number or radio identification number
- Meter address
- Meter location description, hazard descriptions, and additional special instructions
- Previous unable-to-read code
- Account status code
- Current date and time
- Meter reader ID
- 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. If there is a tracking feature that documents when information is changed manually, this should be noted.
- *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. If a field code book is provided for City staff use in conjunction with the handheld device, this shall be stated.
- *Data fields.* The handheld meter reading device must keep the following data internally for use in calculations and validations:
  - Time and date of reading
  - Handheld meter reading device identification code
  - Meter reader identification code
  - High consumption reading limit
  - Low consumption reading limit
  - Table of utility-defined codes, with associated code descriptions

**Mobile collection** – Mobile Collectors are not needed in Fixed Network Hosted Solution and were not included in our RFP response. Typically Hand-held units are used for ERT Troubleshooting and as a collection system back up.

### **Interfaces with City Information Systems**

All required software and interfaces in Phase I necessary for City staff to operate and manage the AMI system. Additionally, it is the City's intent to ultimately have interfaces to the City's mobile work order management system, SCADA, and hydraulic modeling software and associated databases. A table of existing and proposed AMI-related software for integration is provided below. Required integration to be demonstrated in Phase I is indicated in the table. A diagram of the conceptual interfaces ultimately required by the City follows the table.



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**Table of Existing and Proposed AMI-Related Software for Integration**

| Software System                              | Software Proposer/Version   | Integration Required  | AMI Proposer Schedule |
|--|---|---|-----------------------|
| AMI Network Head End (HES)                   | TBD   | HES-MDM data sync<br>HES-CIS  | Phase I               |
| Meter Data Management System(MDM)            | TBD   | MDM-CIS billing read,<br>real time read, data sync<br>MDM-Customer Portal | Phase I               |
| Customer Information System (CIS)            | Oracle Utilities CC&B<br>Version 2.3.1, SPL<br>Framework<br>Version 2.2, SP 13          | CIS-HES<br>CIS-Customer Portal  | Phase I               |
| Meter Installer Work Order Management System | KONA  | CIS-KONA  | City IT               |
| Mobile Work Order Management System          | KONA  | CIS-KONA  | City IT               |
| Computerized Maintenance Management System   | Hansen's Version 8.2.3,<br>upgrade to Version 8.4 is in<br>process.                     | TBD   | TBD                   |
| SCADA  | CitectSCADA Version 7.40  | SCADA-MDM   | TBD                   |
| Hydraulic Modeling                           | Water: InfoWater Suite 11.5,<br>Update #1<br>Sewer: Info SWMM Suite<br>13.0, Update # 7 | Model-MDM   | TBD                   |
| GIS  | ESRI ArcGIS Version 10  | GIS-CIS   | TBD                   |
| MDM Customer Service Web Interface           | TBD   | MDM-CIS   | Phase I               |
| MDM Customer Portal                          | TBD   | MDM-Customer Portal   | Phase I               |

**AMI/Metering System**

The City requires that all customer water service meters be equipped to communicate with an AMI system that will enable it to obtain, at minimum, timely, accurate, and automated meter readings and ancillary other information as new technology allows and as benefits justify costs. It shall be the Proposer'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. The City desires a flexible read system in which it may employ drive-by AMR and/or manual reading during the three-year full AMI system deployment term and should there be a failure in any AMI component post deployment precluding a fixed network read.

- A. Two-Way Communication System** – The proposed AMI system must be capable of true, complete two-way communication (i.e., from the Endpoint to the control system computer (Head End) and from the



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Head End computer to each Endpoint).

**B. System Design** – The proposed AMI system must achieve the following requirements:

- i. *Modes of operation.* The system shall have a normal mode of operation, an on-demand mode of operation, and an emergency mode of operation. In the case of endpoint, repeater, or DCU failure, the system shall have an emergency mode of operation which provides for drive-by AMR and manual reading alternatives.
- ii. *Frequency of reading.* The system shall provide a sufficient number of data collectors and repeaters to obtain at least one reading within 4 days of the scheduled reading date for billing purposes from at least 99.5 percent of all meters on which the system is installed, to obtain at least one read per day from at least 97.5 percent of meters on which the system is installed, and to obtain at least 95 percent of all readings taken hourly or at more frequent intervals, unless there are temporary physical barriers beyond the control of the City or the AMI Proposer. The AMI Proposer shall describe in detail the proposed collector and repeater configuration being proposed and should define in detail any qualifiers to these requirements. The normal mode of operation shall be the collection of hourly interval reads from all endpoints. The system shall provide for changes in how often meter readings are obtained (i.e., the default setting).
- iii. *System capacity.* 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 shall be provided. The system shall be designed for a build-out capacity of 60,000 endpoints.
- iv. *Read on demand.* The system shall provide for "off-cycle", special, or on-demand readings from a particular meter.
- v. *Demand profiling.* The system shall have capabilities to obtain short-interval readings (e.g., at minimum, hourly) to monitor and profile water consumption patterns from a particular meter, customer class, geographic area, or group of meters.
- vi. *Communication system.* The system's communication technology shall be described, as prompted below.
  1. *Radio-based Systems.* The radio frequencies that are used for communication between the endpoints and the repeaters and data collectors proposed shall be provided. Any licensing requirements and the process of obtaining and maintaining such licenses shall be stated. Transmission power and receiver sensitivity with respect to retransmissions and number of collectors required shall be described. The radio communication mode (s) used by the system in terms of radio technology (s) used shall be described. Any potential interference issues that could be encountered in the City's service area shall be discussed.
- 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.
- viii. *Stored data system integrity and security.* The system must ensure data integrity and data security. The system must ensure against loss of data. The City has read only access to data.



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- 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.
  - x. *Leak detection.* The system must monitor water consumption through the meter and indicate when there is a suspected customer-side leak. The system must be compatible with fixed and movable distribution system noise loggers to be able to predict potential distribution system leaks.
  - xi. *Backflow detection.* The system must be capable of detecting and reporting backflow conditions (reverse flow) and events.
  - xii. *Desirable other detection, status and trend monitoring, and configuration flexibility.* The City desires other detection, status and trend monitoring capabilities, such as register malfunction detection (under registration, over registration, no registration), trend analysis to aid in developing policies to promote water conservation, battery power levels and remaining battery life indicator (replacement predictions), and signal-to-noise performance of transmissions (system tuning). The City desires flexibility to remotely define and modify parameter set points or trigger thresholds (e.g., backflow detection volumes).
  - xiii. *Remote disconnects.* The City desires the option of a remote disconnect of service to specific customers, e.g., optional remote shut-off valves that are separate from, or integral to, the proposed meter.
- 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.
- D. FCC Licensed.** Any applicable system components requiring or having FCC licenses shall be disclosed. Proposer shall indicate perceived advantages and disadvantages of FCC-licensing.
- E. Component firmware.** Proposer must include firmware for all system components, including transmitters, data collectors and portable interrogator/programming/testing units, at no additional cost. Proposer 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 a presumed 15-year-life of the system at no additional cost, including installation.
- F.** The file format for system synchronization between CIS and the Network Collection Engine (NCE) commonly referred to as the Master Data Interface (MDI) is a CSV file format with specific data in specific columns. City will be provided with documentation adequate to create file.
- G.** The Hosted Solution Database is a “Read Only” format to insure data integrity. Only authorized ITRON personnel are allowed Administrator Access

The City has contracted with a local firm to provide meter and endpoint installation services. The City expects that NMAAI shall work with the City and its’ contractor regarding endpoint installation, programming, and trouble shooting and resolution management.



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### H.1.2. Requirements

|     |  |
|-----|--|
| 1.  | CITY will provide a unique location ID for each service point, and the attributes (address, meter setting location when there is more than one meter, etc.) of that location ID.   |
| 2.  | CITY will identify any multiple meter service points.  |
| 3.  | CITY is responsible for data cleansing   |
| 4.  | No data migration is included  |
| 5.  | CITY will be responsible for managing the credentials for each user accessing the Choice Connect Application via web presentment functionality (password and user name).   |
| 6.  | The input file for the ITRON Fixed Network software will be in the format required by the ITRON software.  |
| 7.  | ITRON will support configuration of a single Production environment. Test and/or QA environments are not included in this scope of work.   |
| 8.  | No customization of ITRON software will occur unless otherwise stated in the SOW or modified by Change Order. (For example, User Interface (UI) changes, reports, extracts, interfaces, etc.)  |
| 9.  | ITRON will be solely responsible for disaster recovery (DR) and disaster recovery processes on hosted applications and City will be responsible for locally installed applications   |
| 10. | City will complete requests made by NMAAI or ITRON for changes to network configurations (opening firewall ports, changes to SQL Server parameters, Windows OS, etc.) within reasonable timeline.  |
| 11. | NMAAI will provide test plans and scripts  |
| 12. | NMAAI and City will jointly develop Tempe standard operating procedures (Os), utilizing the Itron SOP's as a starting point. The requirements, nature and coverage of the SOPs shall be agreed upon during the initial "Kick-off" meeting. |



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### H.1.3. Deliverables/Activities

| #   | Project Deliverables   | NMAAI   | CITY   |
|-----|--|---|--|
| 1.  | Create Master Data Interface (MDI) file.   | Primary   | Support  |
| 2.  | Validate format and content of Master Data Interface file and City configuration files   | Primary   | Support  |
| 3.  | Install and configure ChoiceConnect software on ITRON hosted based on Portable Computing Device, (PCD)   | Performed by ITRON  |  |
| 4.  | Provide login credentials for authorized CITY employees to the ChoiceConnect Application and access to a FTP site during implementation                        | Request initial setup using user information provided by employee                     | Provide authorized users                                       |
| 5.  | Create automated SSH File Transfer Protocol (SFTP) process for transferring files  | Primary   | Support  |
| 6.  | Provide target meter location file: Used to define meters included in performance testing  | Primary   | Support  |
| 7.  | Functional Testing of Fixed Network software which will test basic operations of the software and MDI file. (To be further defined during "Kick-off" meeting.) | Primary   | Support  |
| 8.  | Fixed Network software training for Operations and Admin users. Usually a 2-3 day training session.  | Primary – will create agenda and provide training using live system data              | Support – provide facilities and key participants for training |
| 9.  | Update Software to latest version and adjust system for use with Fixed Network (assumes active maintenance agreement is in place)                              | ITRON Support Services will walk through upgrade process on phone – usually 2-4 hours | Support  |
| 10. | Install and configure Analytics module in ITRON Hosted environment   | ITRON will provide  | Support  |
| 11. | Load data from Fixed Network system and perform functional testing of Analytics  | Primary   | Support  |
| 12. | Configure web portal   | ITRON will provide  | Support  |
| 13. | Analytics / Web Portal training for Operations and Admin users. Usually a 1-2 day training session.  | ITRON will provide  | Support – provide facilities and key participants for training |
| 14. | Solution testing of business cases, business processes and system functionality  | Support   | Primary  |

## H.2. Network Installations

### H.2.1. Description

Based on the Network design created in the planning phase, NMAAI will install network devices for the Fixed Network system.



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### H.2.2. Requirements

|    |  |
|----|--|
| 1. | For Total AMI SaaS agreements, backhaul Cell service - Verizon(GPRS or other) is the responsibility of ITRON.  |
| 2. | Network location access, permits, and approvals are the responsibility of CITY.  |
| 3. | Network drawing are the responsibility of NMAAI  |
| 4. | At the City's approval/discretion, City will provide access to street lamp poles and other infrastructure they own. NMAAI will support CITY to gain access to non-owned locations if needed.                               |
| 5. | Installation of the 100W ERT module must follow the proper installation guidelines as outlined in the ERT installation guide, and according to the network design provided for CITY  |
| 6. | ITRON is responsible for all Network Device maintenance, post acceptance, per ITRON's "Network Infrastructure Managed Services" agreement.   |
| 7. | Prior to acceptance, ITRON / NMAAI will be responsible for diagnosing whether a communications failure between Choice Connect Application and the network is caused by a Network Device, the backhaul or Endpoint problem. |

### H.2.3. Deliverables/Activities

| #   | Project Deliverables   | NMAAI                     | CITY                                       |
|-----|--|---------------------------|--|
| 1.  | Activate backhaul services   | ITRON to provide          | Support as requested                       |
| 2.  | Order Network Devices and ancillary equipment  | Primary                   | Provide PO for items and quantities needed |
| 3.  | Receive Network Devices and ancillary equipment  | Support                   | Primary                                    |
| 4.  | Complete Collector configuration (Initial Collector Set-up) – note that this may need to be done inside the firewall and the location of the software servers. | Primary                   | Support and provide access                 |
| 5.  | Provide training materials and installation / operation guides   | Primary                   |  |
| 6.  | Install collectors and repeaters per the network design and according to procedures as defined in the CCU100 Installation Guide.                               | Primary                   | Support as requested                       |
| 7.  | Verify connectivity between Collection Engine and network infrastructure and resolve any communications issues   | Primary (NMAAI and Itron) |  |
| 8.  | Conduct quality auditing to validate acceptance of installation  | Primary                   | Support as requested                       |
| 9.  | Manage and Track Network Device deployment   | Primary                   | Support as requested                       |
| 10. | Complete Network Device installation and maintenance training – usually 2-4 hours of Hands On Training performed at site locations by NMAAI Field Engineer     | Primary                   | Participate                                |
| 11. | Provide as-built construction documentation (Provided by Sub-contractor)   | Primary                   |  |



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### **Job Site Requirements and Clean-Up:**

NMAAI agrees and covenants to adequately protect the work site, adjacent property and the public in all phases of the work and/or services provided herein. NMAAI shall be solely responsible for all damages or injuries due to action or neglect pursuant to this section. NMAAI shall maintain access to all phases of the Project pending inspection by the City or its agent. NMAAI hereby agrees to the following as to the job site:

- A. Continually keep the job site free from debris, waste and accumulation of materials;
- B. Immediately clean up any oil, fuel or chemical spills and take any and all remediation necessary;
- C. Keep machinery clean and free of weeds and debris;
- D. Remove all construction stains, smears and debris from finished surfaces;
- E. Perform site preparation to limit the spread of weeds, debris and other nuisances prior to submission of final invoice to the City; and,
- F. Remove all equipment, materials, tools and NMAAI's personal property prior to submission of final invoice to the City.

### **Confined Space Work**

NMAAI shall comply with all applicable federal, state, local health and safety regulations, ordinances, and requirements. In addition, the following requirements are applicable for City construction projects. NMAAI shall implement a permit-required confined space program as specified under 29 CFR 1910.146 for all work that encompasses a space that 1) is large enough and so configured that an employee can bodily enter and perform assigned work; 2) has limited or restricted means for entry or exit (for example, tanks, vessels, silos, storage bins, hoppers, vaults, and pits are spaces that may have limited means of entry); and 3) is not designed for continuous employee occupancy.

### **Conduct and Dress Code**

NMAAI's employees shall maintain proper conduct at all times while on City property. Employees shall respect other personnel at the work site. Abusive language, ethnic and racial slurs, sexual comments and jokes, shouting, and gestures toward other personnel will not be tolerated. Any occurrence will result in immediate action with possible dismissal of that employee.

NMAAI's field personnel shall wear easily recognizable uniforms containing NMAAI's name, as well as prominently displayed picture identification badges containing NMAAI's name, employee name, title and signature, employee picture, and employee I.D. number. NMAAI employees who are no longer employed by NMAAI shall be required to return their uniforms and identification cards immediately upon termination of employment, and NMAAI shall immediately notify the City of all such terminations and if identification cards were received from terminated employee. In addition, all personnel shall drive vehicles that are clearly marked with NMAAI's name and logo. Temporary magnetic stickers are acceptable.



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### **Safety, Health and Sanitation**

NMAAI shall provide and maintain in a neat, sanitary condition such facility accommodations for the use by their employees as may be necessary to comply with the requirements and regulations of the Arizona State Department of Health or as specified by the Maricopa County Health Department, Sanitary Code.

NMAAI shall be fully responsible for the safety of their employees, the public and property in connection with the performance of the work covered by this Agreement. NMAAI shall provide all safeguards, safety devices and protective equipment and be responsible for taking any needed actions to protect the life and health of their employees and the public during work activity. NMAAI shall also take any necessary actions as directed by the City of Tempe Project Manager to reasonably protect the life and health of employees on this job and others coming into contact with the job site.

Precaution shall be exercised by NMAAI at all times for the protection of persons (including employees) and property. NMAAI shall comply with the provisions of all applicable laws, pertaining to such protection including all Federal and State Occupational Safety and Health Acts, and Standards and Regulations promulgated there under.

### **Protection and Restoration of Property and Landscape**

NMAAI shall be responsible for all damage or injury to public or private property of any character, during the prosecution of the work resulting from any act, omission, neglect, or misconduct in its manner or method of executing the work or at any time due to defective work or materials. NMAAI's responsibility will not be released until the project has been completed and accepted.

If damage is caused by NMAAI, NMAAI shall restore at no cost to the City of Tempe, such property to a condition similar or equal to that existing before such damage or injury was done, by repairing, rebuilding or otherwise restoring as may be directed, or they shall make good such damage or injury in an acceptable manner. Further payments will be withheld until the City of Tempe has inspected the corrected damage or injury and has signed-off the completion and acceptance.

NMAAI shall not dump spoils or waste material on private or private public property without first obtaining from the owner written permission for such dumping.

### **Responsibility for Work**

NMAAI shall properly guard, protect, and take every reasonable precaution necessary against damage or injury to all finished or partially finished work due to weathering action by the elements or from any other cause, until the entire portion of their respective Agreement obligation is completed and accepted by the City of Tempe. NMAAI shall rebuild, repair, restore, and make good all injuries or damages to any portion



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of the work before final acceptance at no cost to the City of Tempe. Partial payment for any completed portion of work shall not release NMAAI from such responsibility.

**Employees of NMAAI**

No one except authorized employees of NMAAI is allowed on the premises of the City of Tempe. NMAAI employees are NOT to be accompanied in their work area by acquaintances, family members, assistants, or any other person unless said person is an authorized employee of NMAAI. Failure of NMAAI to meet this requirement will result in permanent removal of employee performing work at the City of Tempe sites. NMAAI must, however, furnish the City a current employee register on the issuance of this Agreement and updated every six (6) months thereafter. This register must contain the Name, Phone Number, and Address.

**Sub-Contractor(s)**

The City reserves the right to approve all sub-contractors. NMAAI is responsible for all actions of sub-contractors. NMAAI shall name sub-contractors as additionally insured, in addition to the City of Tempe on all required insurance documents.

**Safety Apparel Used by NMAAI Employees/Staff**

NMAAI’s employees/staff shall be required to wear safety apparel (i.e., eye, ear, face, protection, etc.) and appropriate clothing like long pants, long sleeve shirts, when performing contracted services. Monitoring of safer work performance will be performed by City staff.

NMAAI will follow the City code on the use of high visibility vests and clothing as per Tempe City Code Section 29-4. Working within right-of-way.

**H.3. Operations**

**H.3.1. Description**

Upon software, network testing and training completion, CITY will begin operating the system.

**H.3.2. Requirements**

|    |   |
|----|---|
| 1. | Upon operational acceptance of endpoints and network, operations of the ChoiceConnect solution and Itron Analytics will be responsibility of CITY |
|----|---|



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### H.3.3. Deliverables/Activities

| #  | Project Deliverables  | ITRON                  | NMAAI                | CITY                   |
|----|---|------------------------|----------------------|------------------------|
| 1. | Post – Acceptance Performance Reporting of Endpoints and routes |                        | Support as requested | Primary Responsibility |
| 2. | System updates: Choice Connect Application updates as required  | Primary Responsibility | Support as requested | Support as requested   |
| 3. | Investigation of non-responding Endpoints                       |                        | Support as requested | Primary Responsibility |
| 4. | Investigation of network performance issues                     | Primary Responsibility | Support as requested | Support as requested   |
| 5. | Normal meter maintenance  |                        |                      | Primary Responsibility |

#### **Frequency of reading.**

The system shall provide a sufficient number of data collectors and repeaters to obtain at least one reading within 4 days of the scheduled reading date for billing purposes from at least 99.5 percent of all meters on which the system is installed, to obtain at least one read per day from at least 97.5 percent of meters on which the system is installed, and to obtain at least 95 percent of all readings taken hourly or at more frequent intervals, unless there are temporary physical barriers beyond the control of the City or NMAAI. The normal mode of operation shall be the collection of hourly interval reads from all endpoints. The system shall provide for changes in how often meter readings are obtained (i.e., the default setting).

#### **Remote Disconnect and Leak Detection**

Remote Disconnect and Leak Detection options are available, however, they were only stated as an option in our RFP response and not included in the proposal. Any addition of either of these items would require a separate agreement.

#### **Documentation**

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



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System manuals. ITRON and NMAAI shall supply manuals and customized written procedures sufficient for complete operation and maintenance – including installation, configuration, diagnostics and repair – of the system.

Updates and revisions. ITRON and NMAAI will 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.

### **Quality Control**

ITRON and NMAAI to design and furnish an AMI system that has an operating life of 15 years requiring a minimum of repair, maintenance and replacement due to design, materials, and workmanship failures. The quality control policies and procedures, and failure analysis as discussed in our RFP response, have been adopted to ensure quality system design, manufacturing, component sourcing and any other aspect that affects the serviceability and useful life of the equipment and software that will be furnished for the Project.

### **Training**

NMAAI will perform training of all appropriate staff to enable them to effectively operate and maintain the system. The training curriculum will be provided in advance and all training will be accompanied by tests or hands-on evaluation to ensure City employees or agents have absorbed the content of the training. The training will follow the requirements as stated in the RFP.

### **Transition to Maintenance (Support) plan**

RIVA – As RIVA is not a released product, we do not have enough information to discuss it's compatibility with the Proposed system. We believe there will be compatibility and capabilities within the proposed system, but they have not yet been published.

Software maintenance and support shall commence after one (1) year warranty period ends. The City expects that all maintenance and support services shall be included as part of the annual fees offered. Maintenance and support will be paid annually after the one (1) year warranty period ends.



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**Project Completion**

**H.4. Project Closeout Activities**

**H.4.1. Description**

All deliverables identified in the project have been provided to the CITY and the project will be closed, transitioning the City to ITRON long-term support based on the terms of the maintenance agreement.

**H.4.2. System Acceptance**

System Acceptance will be achieved when tasks within this Statement of Work are completed and the following acceptance criteria is met:

1. Collector Acceptance – will occur after communications between the Collection Engine and each Collector is validated and are communicating through the Collector.
2. Repeater Acceptance – will occur after communications between a Collector and each Repeater is validated through the Collection Engine and ERTs are communicating through the Repeater.
3. Meter Coverage Acceptance – ERTs will be deployed by route with a defined number of ERTs per route. As each route installation is completed, NMAAI will perform a coverage test and provide a report on read rate (actual reads as compared to attempted reads). Once a read rate of 99.5% is achieved, the route will be considered accepted. Endpoint mitigation is the responsibility of the CITY. After endpoint mitigation has been completed, NMAAI will retest the route. If the route will be still not meeting the 99.5% read rate, NMAAI will provide system engineering services to analyze the missed reads and provide recommended actions to meet the 99.5% daily read rate. If it is determined that additional network equipment is needed, NMAAI and ITRON will provide said equipment and the CITY will have the responsibility to provide site access, and power.

**4. Final System Acceptance will be achieved when:**

- All network devices have been installed as per the original Network design and are operating properly per #1 and #2 above.
- The ChoiceConnect software platform is functioning properly and has passed functional testing with no Severity 1 issues.

| Severity Level | Response Times | Effort Level and Escalation Path |
|----------------|----------------|----------------------------------|
|----------------|----------------|----------------------------------|



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|   |   |   |
|---|---|---|
| <p><b>Severity Level 1. Critical Business Impact / System Down:</b> An Error for which there is no work-around, which causes the Product / Software or a critical business function / process of the Itron system to be unavailable. System use and operation cannot continue.</p> <p>*Severity 1 errors must be reported by phone to initiate the Severity 1 response process. SRs initiated by email or web interface are logged as a Severity 3 until reviewed by Itron Technical Support Services and validated as a higher priority.</p> | <p>During after-hour periods, Itron will respond to a critical support voice messages within 15 minutes by a return call to Customer, which will validate receipt of the critical support call and begin the SR process. During regular business-hours Itron will begin the SR process during Customer's initial call.</p> <p>Following the start of the SR process Itron will respond to Customer's SR within 2 business hours with an investigation response.</p> <p>Following the investigation response, Itron will update Customer at three hour intervals during each day the SR remains unresolved, or as otherwise agreed by the Parties.</p> | <p>Itron will make diligent efforts on a 24x7 basis*, or as otherwise agreed by the Parties. A SR shall be escalated to Itron's TSS Management Team if a Fix is not provided within 1 business day of Itron's receipt of the Customers call and creation of the SR.</p> <p>*24X7 support for Severity Level 1 Errors is not currently available for Itron Meter Products, Energy Forecasting and Load Research Products, and Distribution Products.</p> |
|---|---|---|



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|  |  |   |
|--|--|---|
| <p><b>Severity Level 2. Moderate Business Impact / Degraded Operation:</b> An Error other than a Severity Level 1 Error, for which there is no work-around, which limits access or use of the software or a business function, causing the system to miss required business interface or deadlines. The system remains available for operation but in a restricted fashion.</p> <p>*Severity 2 errors must be reported by phone to initiate the Severity 2 response process. SRs initiated by email or web interface are logged as a Severity 3 until reviewed by Itron Technical Support Services and validated as a higher priority.</p> | <p>Itron will respond to Customer SR within 1 business day and will update the SR at least every other day.</p> <p>Customer will respond to an Itron inquiry or request within 1 business day.</p> | <p>Itron will make diligent efforts during normal business hours. SRs shall be escalated to Itron's TSS Management Team if a Fix is not provided within 3 business days of Itron's receipt of Customer's call and creation of the SR.</p> |
|--|--|---|

- All integration has been tested and data is flowing to and from the ChoiceConnect platform properly.
- All routes are completed and tested per #3 above. If delays in ERT installs requires that the project schedule goes beyond eight months from project start (one month longer than expected project duration), an additional 4 hours a week of project management plus technical and field services as required will be billed to CITY at our standard rates in section K J.
- System Acceptance Testing (SAT) is completed per (Article 4 – Testing) of the Agreement.

H.4.3. Deliverables/Activities

| #  | Project Deliverables   | NMAAI   | CITY                |
|----|--|---------|---------------------|
| 1. | Inventory reconciled.  |         | Primary             |
| 2. | Return or transfer of inventory and installation materials.    |         | Primary             |
| 3. | Release of project facility and resources.                     |         | Primary             |
| 4. | Final project invoices will be processed.                      | Primary |                     |
| 5. | CITY has been formally transitioned to ITRON Support Services. | Primary | Participate in call |
| 6. | PCD and Network "As Built" documentation provided,             | Primary | Review              |



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## I. Service Fees & Related Details

### I.1. Services Fees

Total fees and estimated expenses for the Project including travel are identified in the BMR# 16-034. Invoicing of services will occur monthly based on the milestone listed in section D.3.

The below rate card will be applicable for any additional labor identified through the Change Order Process.

| #  | Resource             | Hourly Rate |
|----|----------------------|-------------|
| 1. | Project Sponsor      | \$190       |
| 2. | Project Management   | \$190       |
| 3. | Business Consultant  | \$190       |
| 4. | Technical Consultant | \$190       |

### I.2. Billing Information

To ensure that NMAAI has all the correct billing information, please verify the following:

| Requested                                 | CITY Data  |
|---|--|
| Billing Contact Name                      | Lisa Ernst                                       |
| Billing Contact Phone # (s)               | 480-858-2263                                     |
| Billing Contact Email Address             | lisa_ernst@tempe.gov                             |
| Physical Location Address (if applicable) | 120 East 5 <sup>th</sup> Street, Tempe, AZ 85281 |
| Billing Address (if different from above) | P.O. Box 5002, Tempe, AZ 85280                   |
| Special Billing Requirements?             | Please e-mail invoices to Lisa Ernst             |
| Purchase Order #                          | N/A  |



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## J. Appendix A – SOW Definitions

This section lists and defines SOW terms. These definitions are for clarification and do not supersede any definitions or terms stated in our original RFP Response.

| Term                       | Definition  |
|----------------------------|---|
| Acceptance Testing Plan    | Used to validate components of the overall System to meet the requirements outlined in the Test Plan. Acceptance Test Plan will also include Final System Acceptance testing activities.  |
| Available Endpoint or ERT  | Water Endpoint: (i) accepted Endpoint; (ii) that is not damaged or vandalized by a third party; (iii) for which the CITY has provided NMAAI with accurate and up-to-date account information to the Choice Connect Application; (iv) for CITY installed Endpoints, they are installed according to specifications; (v) Endpoint without a pending investigation or maintenance work order (previously reported non-responding Endpoint); (vi) GPRS backhaul is available and functioning as expected; (ix) exclusion of Endpoints in which unanticipated RF blocking has occurred since acceptance of the Endpoint; examples include building and other permanent or semi-permanent structures; temporary signal block impacting communications capability of the Endpoint. |
| Billing Read               | Is defined as delivering one standard consumption meter read to the Choice Connect Application over the two calendar day billing window; with the billing window being defined by the CITY's meter reading and billing schedule.  |
| Choice Connect Application | Together the Collection Engine and <del>DataMart</del> -Analytics make up the Choice Connect Application.   |
| CIS                        | City Information System.  |
| Collector or CCU           | Device used in a ChoiceConnect solution to collect data directly from Endpoints or Repeaters, and then forward the data to a host processor via the WAN.  |
| Communications Plan        | Plan developed by the CITY with input from NMAAI to assist the Project Team in communicating the Project and Project benefits with the CITY's customers.  |



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|  | Term                               | Definition   |
|--|------------------------------------|--|
|  | Collection Engine                  | Also referred to as Network Software. Collection Engine initiates, receives and processes messages to/from the Collectors and stores 40 days of information to its transitory database. In addition, performance statistics are provided through the Collection Engine.  |
|  | Daily Read                         | Is defined as delivering one standard consumption meter read to the Choice Connect Application over a calendar day.  |
|  | Deployment Plan                    | The plan developed by NMAAI and reviewed and approved by the CITY defining the schedule, duration and priority for installing Network Devices and Endpoints. The Deployment Plan schedule will be planned on an area by area basis and will require Network Devices to be installed prior to Endpoints being installed.                    |
|  | Device Maintenance Interface (DMI) | An XML configuration document generated daily by CITY's CIS and delivered to ITRON ChoiceConnect applications to synchronize endpoint and City data within ChoiceConnect Fixed Network and Data Analytics applications.  |
|  | FDM                                | Field Deployment Manager work order system is the tool used to manage work orders for the Project. Work order types in FDM include installation, quality assurance and maintenance. FDM is also the tool used to manage inventory and for the purpose of the Project, provide access to NMAAI's Project Tracking and Reporting tool (PTR). |
|  | GPRS                               | General Packet Radio Service. Cell phone carriers offer this service. Packet-based, always-on, Internet Protocol (IP) based, data service utilized by Water Choice Connect and OpenWay systems.  |
|  | Interval Read                      | Is defined as hourly message received at the Choice Connect Application. Each Available 100W Endpoint is expected to deliver 24 Interval Read messages daily..   |
|  | NMAAI Project Team                 | Includes all NMAAI and ITRON Project resources under the responsibility of NMAAI.  |
|  | Network Device                     | Is defined as a Collector or Repeater.   |



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|  | Term                         | Definition  |
|--|------------------------------|---|
|  | Network Design Plan          | Is the detailed plan outlining locations in which Network Devices will be installed. ITRON will develop and review the initial design with the CITY for facility availability and validation. Updates to the Network Design Plan will be formally reviewed with the CITY as required. Both CITY NMAAI and ITRON will be required to approve the final Network Design.   |
|  | Project Charter              | Summarizes the purpose, objectives, and justification of the project. It includes a summary of the business drivers and benefits, along with the success criteria and how success/benefits will be measured and tracked. This is not a legally binding document.  |
|  | Project Control Manual (PCM) | Detailed process and procedure document used by the Project Team to manage the Project. The document will be developed by NMAAI with comment and acceptance by the CITY. In addition to detailed processes and procedures, the Project Control Manual will define roles and responsibilities, Project methodology and other key Project deliverables consistent with the terms and conditions of the Agreement. |
|  | Project Team                 | Consists of representatives from both the CITY and NMAAI, and their subcontractors, responsible to deliver on the requirements of the Project. Job responsibilities and resource names are defined in the Project Control Manual.   |
|  | Project Schedule             | Schedule of resources and time identifying the various tasks associated with the Project. It includes dependencies, staff requirements and critical path. Microsoft® Project will be the planning tool used to create and manage the Project Schedule. Additional details on the Project Schedule can be found in herein.   |
|  | Quality Assurance Plan       | The plan developed by NMAAI and reviewed and approved by the CITY highlighting the quality assurance activities to be utilized by NMAAI to manage the Project. Quality assurance will focus on all aspects of the Project. Regular review on compliance and effectiveness of the Quality Plan will be conducted by the Project Team.  |



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|  | Term                            | Definition  |
|--|---------------------------------|---|
|  | Repeater                        | Used in a Water Choice Connect solution to collect data directly from Endpoints and relay it to the Collectors. At Agreement execution, the Repeater provided by NMAAI for this Project will be the Repeater100.                                |
|  | RMA                             | Return Material Authorization is an approval received from ITRON’s City support group to return ITRON product if thought to be defective or ordered in error.   |
|  | RTU                             | Return to Utility work order. This is a work order that is returned to the CITY because the install was not able to be completed. Process to code and return an RTU is defined in the Project Control Manual.                                   |
|  | Safety Plan                     | The plan developed by NMAAI outlining the safety measures to be utilized by the Project Team. Regular review on compliance and effectiveness of the Safety Plan will be conducted by the Project Team as defined in the Project Control Manual. |
|  | System                          | Means the Equipment (including firmware), Software and Services to be provided to CITY by ITRON to meet the requirements for this Project.  |
|  | TAD                             | Technical Architecture Design. A document used by Itron to help define the Project requirements.  |
|  | Uniform System Performance Test | The test to validate that the System performance is substantially uniform or consistent throughout the CITY service territory as defined in the Test plan.  |



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## ATTACHMENT B

### PROJECT SCHEDULE

Below is a basic schedule, the full schedule is to be discussed and defined during the “Kick-off” meeting. A detailed schedule will be created and published within 15 working days of the “Kick-off” meeting.

| ID | Task Mod | Task Name                             | Duration        | Start              | Finish             | 2017 |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|----|----------|---------------------------------------|-----------------|--------------------|--------------------|------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
|    |          |                                       |                 |                    |                    | Apr  | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec | Jan | Feb | Mar | Apr | May | Jun |
| 1  |          | <b>Tempe Fixed Network Project</b>    | <b>275 days</b> | <b>Thu 5/12/16</b> | <b>Wed 5/31/17</b> |      |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
| 2  | ★        | Project Award Date                    | 1 day           | Thu 5/12/16        | Thu 5/12/16        |      |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
| 3  | ★        | Order Material                        | 15 days         | Thu 5/12/16        | Wed 6/1/16         |      |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
| 4  | ★        | Kick Off Meeting                      | 1 day           | Thu 5/26/16        | Thu 5/26/16        |      |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
| 5  | ★        | Perform Data Analysis                 | 24 days         | Thu 6/2/16         | Tue 7/5/16         |      |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
| 6  | ★        | Develop Work Plan                     | 23 days         | Mon 5/16/16        | Wed 6/15/16        |      |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
| 7  | ★        | Install CCU/Repeaters                 | 42 days         | Tue 7/5/16         | Wed 8/31/16        |      |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
| 8  | ★        | Work Back Office Software File        | 24 days         | Mon 5/16/16        | Thu 6/16/16        |      |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
| 9  | ★        | ERTs Installed by Contractor          | 235 days        | Tue 7/5/16         | Mon 5/29/17        |      |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
| 10 | ★        | Complete 1st Year Demonstration Phase | 1 day           | Wed 5/31/17        | Wed 5/31/17        |      |     |     |     |     |     |     |     |     |     |     |     |     |     |     |

|  |                    |  |                       |  |                    |  |
|--|--------------------|--|-----------------------|--|--------------------|--|
| Project: Tempe Fixed Network P<br>Date: Tue 5/3/16 | Task               |  | Inactive Summary      |  | External Tasks     |  |
|  | Split              |  | Manual Task           |  | External Milestone |  |
|  | Milestone          |  | Duration-only         |  | Deadline           |  |
|  | Summary            |  | Manual Summary Rollup |  | Progress           |  |
|  | Project Summary    |  | Manual Summary        |  | Manual Progress    |  |
|  | Inactive Task      |  | Start-only            |  |                    |  |
|  | Inactive Milestone |  | Finish-only           |  |                    |  |

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## **ATTACHMENT C**

### **NMAAI Standard Terms & Conditions**

#### **Returns**

Any, (New/Unused) products to be returned must be pre-approved and evidenced by a copy of a Return Authorization issued by NMAAI. All products must be in new condition and in the original packaging.

All products to be returned due to defects will be returned to the manufacturer for inspection before credit will be approved. Manufacturer will provide shipping instructions and their Return Authorization numbers before material can be returned.



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## **EXHIBIT A**

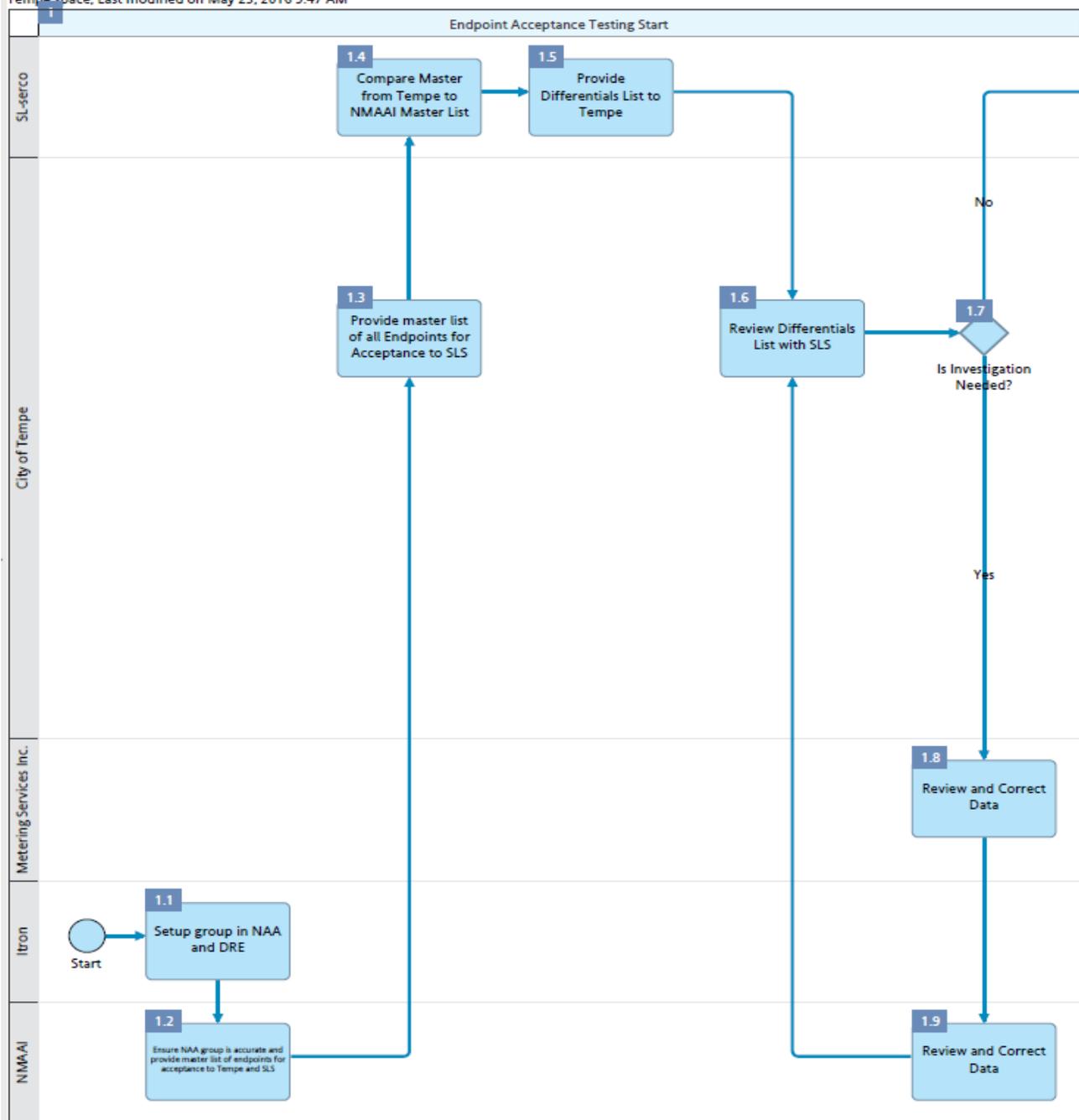
### **ENDPOINT ACCEPTANCE PROCESS**

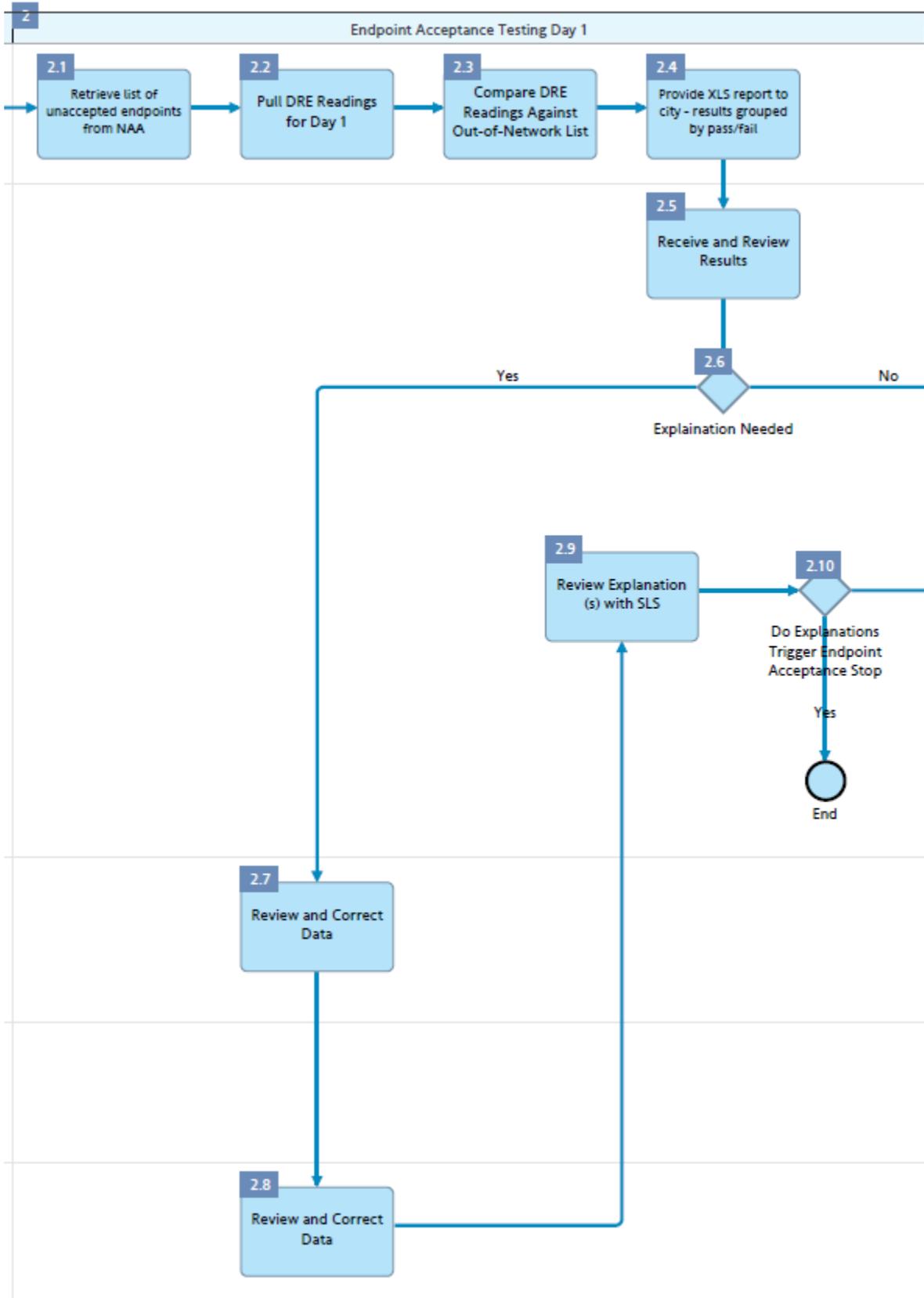
**&**

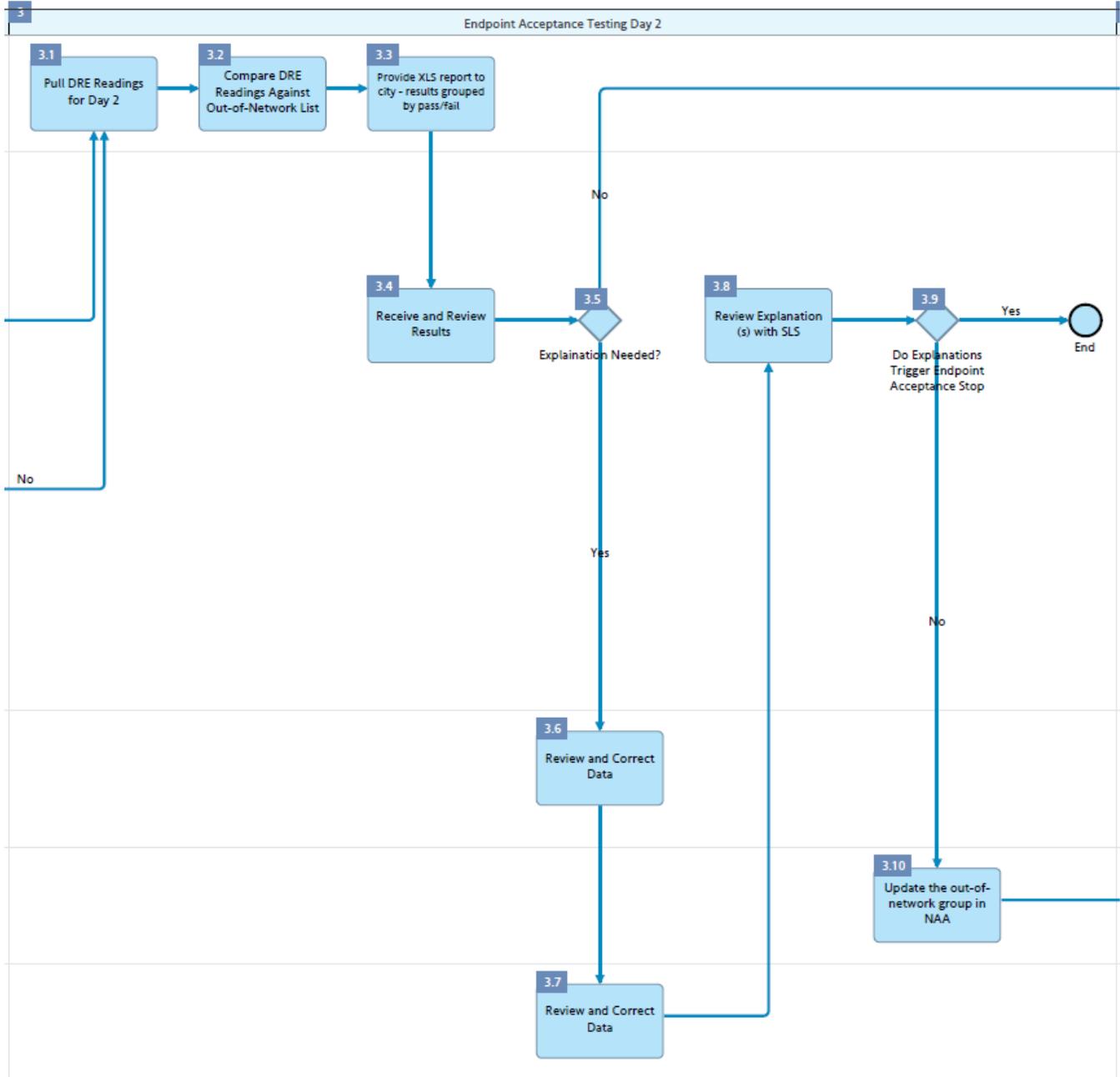
### **SYSTEM ACCEPTANCE TESTING PROCESS**

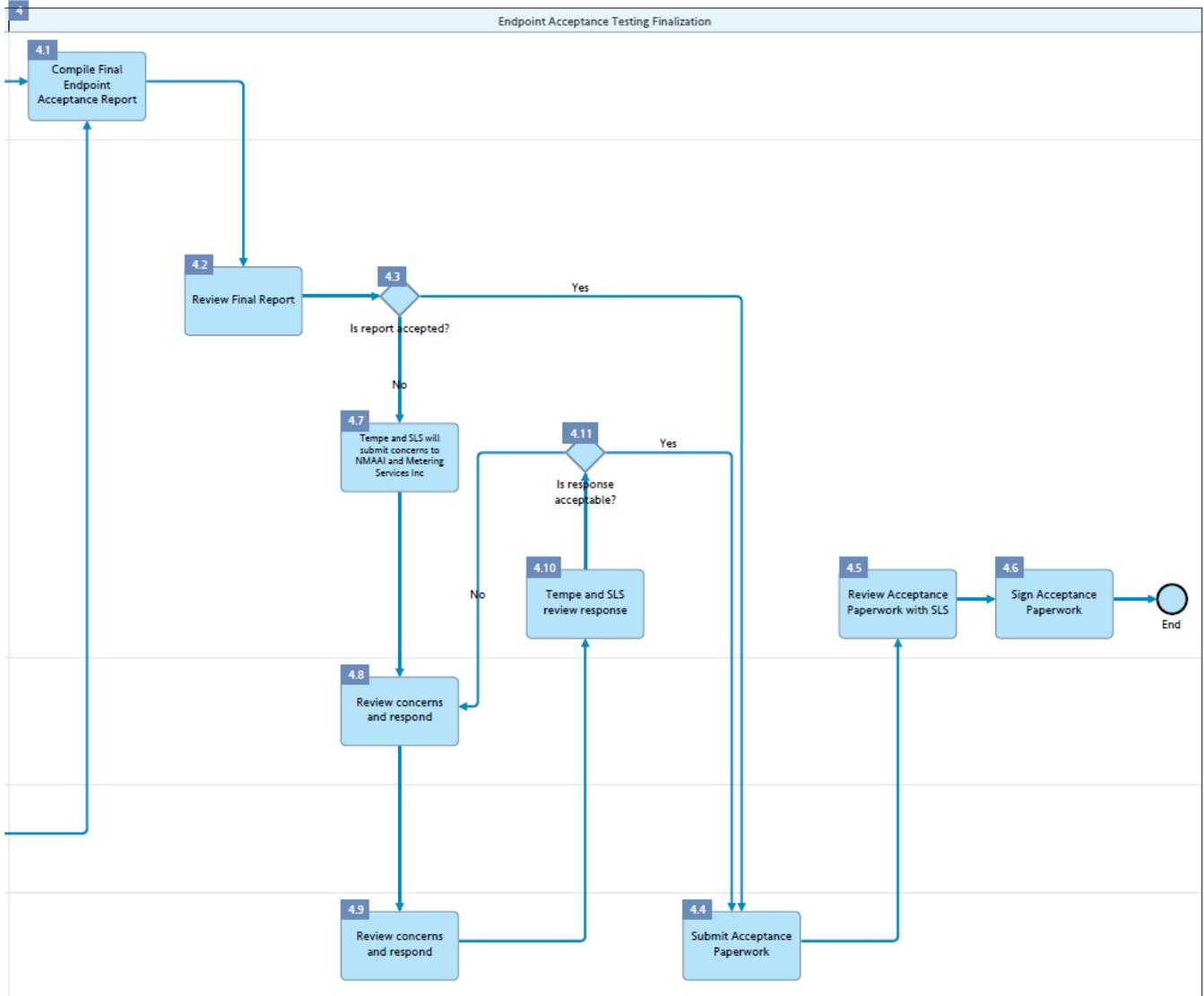
## ENDPOINT ACCEPTANCE PROCESS

Endpoint Acceptance (ID: 1e9d247739) <https://www.blueworkslive.com/scr/processes/1e9d247739>  
 Tempe space, Last modified on May 23, 2016 9:47 AM









## Endpoint Acceptance

|   |          |    |     |     |      |      |          |
|---|----------|----|-----|-----|------|------|----------|
| Glossary: SLS   | -        |    |     |     |      |      | SL-serco |
| Tempe   |          |    |     |     |      |      | space    |
| <a href="https://us001.blueworkslive.com/scr/processes/1e9d247739">https://us001.blueworkslive.com/scr/processes/1e9d247739</a> |          |    |     |     |      |      |          |
| Last  | modified | on | May | 23, | 2016 | 9:47 | AM       |

### 1. Endpoint Acceptance Testing Start

#### 1.1. Setup group in NAA and DRE

Setup out-of-network/unaccepted group in NAA and corresponding daily DRE export for this group. Provide FTP information to SLS and Tempe.

#### Participants



#### 1.2. Ensure NAA group is accurate and provide master list of endpoints for acceptance to Tempe and SLS

A week before acceptance testing is to start, NMAAI will provide the proposed list of endpoints for acceptance to Tempe and SLS. This list should originate from, and be an exact match to the list of out-of-network/unaccepted from Itron's NAA software.

#### Participants



### 1.3. Provide master list of all Endpoints for Acceptance to SLS

The City of Tempe Assistant Engineer will provide the SL-serco Project Manager a master list of pilot meters from the CIS system for acceptance a week before acceptance testing is to start. This will be used to validate the list provided by NMAAI.

#### Participants

 City of Tempe

### 1.4. Compare Master from Tempe to NMAAI Master List

1. The SL-serco Technician will compare the two Master Lists using SL-serco's database and create a third list of endpoints that are found on both lists.
2. Those meters not on both lists labeled the "Differentials" will be created and sent to the SL-serco Project Manager for review and delivery. The Differential list will identify the list each endpoint is on.
3. The new list created in bullet 1 will be used for the testing.

#### Participants

 SL-serco

### 1.5. Provide Differentials List to Tempe

SL-serco Project Manager will review the list and pass it on to the Tempe Representative via email.

#### Participants

 SL-serco



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#### 1.6. Review Differentials List with SLS

The Tempe and SL-serco Project Manager will review the list and decide if it is appropriate to go forward with the testing.

##### Participants

 City of Tempe

#### 1.7. Is Investigation Needed?

The Tempe Representative will decide if any of those on the Differential list require further investigation. If they do, SL-serco's Project Manager will engage the NMAAI and Metering Services Inc Project Managers for feedback.

#### 1.8. Review and Correct Data

Metering Services will offer explanations and corrections to data discrepancies under their ownership. The explanation will include an owner and an action plan for each endpoint.

##### Participants

 Metering Services Inc.

#### 1.9. Review and Correct Data

NMAAI will offer explanations and corrections to data discrepancies under their ownership. . The explanation will include an owner and an action plan for each endpoint.

##### Participants

 NMAAI



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## 2. Endpoint Acceptance Testing Day 1

The dependencies to starting this process relate to the creation of the two master lists and one differential list. It also depends on the Tempe Representative allowing the test to go forward based on the number on the differential list, and agreement that the data in the NAA out-of-network group accurately reflects the list of mutually unaccepted endpoints.

### 2.1. Retrieve list of unaccepted endpoints from NAA

The SL-serco Technician will export a list of the current out-of-network endpoints from Itron's NAA application to use as a baseline for testing.

#### Participants

 SL-serco

### 2.2. Pull DRE Readings for Day 1

The SL-serco technician will FTP and process the current DRE file for the unaccepted group, accounting for proper timezone offset.

#### Participants

 SL-serco



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### 2.3. Compare DRE Readings Against Out-of-Network List

The SL-serco technician will take the list and put the reading value in a day 1 column of the list for each endpoint. The reading data will come from export of reads in step 2.1 from the DRE. The SL-serco Technician will place "Pass" or "Fail" and an explanation if needed into each endpoints "day 1 results" column based on their understanding of the endpoint. Once the list is updated, the technician will email the list to the SL-serco Project Manager for approval.

#### Participants

 SL-serco

### 2.4. Provide XLS report to city - results grouped by pass/fail

The SL-serco Technician will export the list to an Excel spreadsheet and email it to the SL-serco Project Manager. The SL-serco Project Manager will edit any "Pass" or "Fail" as needed.

The SL-serco Project Manager will provide a summary and recommendation to the Tempe Representative as it relates to the results.

#### Participants

 SL-serco

### 2.5. Receive and Review Results

The Tempe Representative will direct the SL-serco Project Manager if additional action is required.

#### Participants

 City of Tempe



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### 2.6. Explanation Needed

The Tempe Representative will receive the evaluation and recommendation from the SL-serco Project Manager and direct the SL-serco Project Manager to demand an explanation of the results if needed.

### 2.7. Review and Correct Data

Metering Services will offer explanations and corrections to data discrepancies under their ownership. The explanation will include an owner and an action plan for each endpoint.

#### Participants

 Metering Services Inc.

### 2.8. Review and Correct Data

NMAAI will offer explanations and corrections to data discrepancies under their ownership. . The explanation will include an owner and an action plan for each endpoint.

#### Participants

 NMAAI

### 2.9. Review Explanation(s) with SLS

The SL-serco Project Manager will receive the explanation from NMAAI and provide a recommendation for action to the Tempe Representative.

#### Participants

 City of Tempe



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### 2.10. Do Explanations Trigger Endpoint Acceptance Stop

The Tempe Representative will direct the SL-serco Project Manager on how to respond to NMAAI.

## 3. Endpoint Acceptance Testing Day 2

### 3.1. Pull DRE Readings for Day 2

The SL-serco technician will FTP and process the current DRE file for the unaccepted group, accounting for proper timezone offset.

#### Participants

 SL-serco

### 3.2. Compare DRE Readings Against Out-of-Network List

The SL-serco technician will take the list and put the reading value in a day 2 column of the list for each endpoint. The reading data will come from export of reads in step 3.1 from the DRE. The SL-serco Technician will place "Pass" or "Fail" and an explanation if needed into each endpoints "day 2 results" column based on their understanding of the endpoint. Once the list is updated, the technician will email the list to the SL-serco Project Manager for approval.

#### Participants

 SL-serco



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### 3.3. Provide XLS report to city - results grouped by pass/fail

The SL-serco Technician will export the list to an Excel spreadsheet and email it to the SL-serco Project Manager. The SL-serco Project Manager will edit any "Pass" or "Fail" as needed.

The SL-serco Project Manager will provide a summary and recommendation to the Tempe Representative as it relates to the results.

#### Participants

 SL-serco

### 3.4. Receive and Review Results

The Tempe Representative will direct the SL-serco Project Manager if additional action is required.

#### Participants

 City of Tempe

### 3.5. Explanation Needed?

The Tempe Representative will receive the evaluation and recommendation from the SL-serco Project Manager and direct the SL-serco Project Manager to demand an explanation of the results if needed.

### 3.6. Review and Correct Data

Metering Services will offer explanations and corrections to data discrepancies under their ownership. The explanation will include an owner and an action plan for each endpoint.

#### Participants

 Metering Services Inc.



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### 3.7. Review and Correct Data

NMAAI will offer explanations and corrections to data discrepancies under their ownership. The explanation will include an owner and an action plan for each endpoint.

#### Participants

 NMAAI

### 3.8. Review Explanation(s) with SLS

The SL-serco Project Manager will receive the explanation from NMAAI and provide a recommendation for action to the Tempe Representative.

#### Participants

 City of Tempe

### 3.9. Do Explanations Trigger Endpoint Acceptance Stop

The Tempe Representative will direct the SL-serco Project Manager on how to respond to NMAAI.

### 3.10. Update the out-of-network group in NAA

Itron will remove all formally accepted endpoints from the out-of-network/unaccepted group in NAA within 2 days of receiving the approved list.

#### Participants

 Itron

## 4. Endpoint Acceptance Testing Finalization

### 4.1. Compile Final Endpoint Acceptance Report

SL-serco Project Manager will create a final Endpoint Acceptance Report outlining results of testing and a complete list of which endpoints will be accepted by Tempe.

#### Participants

 SL-serco

### 4.2. Review Final Report

Tempe Representative and SL-serco Project Manager will review the Final Endpoint Acceptance Report

#### Participants

 City of Tempe

### 4.3. Is report accepted?

Does Tempe have questions that need to go back to NMAAI?

### 4.4. Submit Acceptance Paperwork

NMAAI Project Manager will submit their Acceptance Paperwork to Tempe Representative.

#### Participants

 NMAAI



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#### 4.5. Review Acceptance Paperwork with SLS

Tempe Representative and SL-serco Project Manager will review the Acceptance Paperwork from NMAAI Project Manager

##### Participants

 City of Tempe

#### 4.6. Sign Acceptance Paperwork

Tempe Representative to sign the Acceptance Paperwork finalizing the Endpoint Acceptance Testing.

##### Participants

 City of Tempe

#### 4.7. Tempe and SLS will submit concerns to NMAAI and Metering Services Inc

After review, Tempe and SL-serco will compile and submit concerns on acceptance findings to NMAAI and Metering Services Inc (as necessary).

##### Participants

 City of Tempe

#### 4.8. Review concerns and respond

Metering Services Inc will review the Tempe/SL-serco concerns and respond appropriately.

##### Participants

 Metering Services Inc.

#### 4.9. Review concerns and respond

NMAAI will review the Tempe/SL-serco concerns and respond appropriately.

##### Participants

 NMAAI

#### 4.10. Tempe and SLS review response

Tempe and SL-serco will review the NMAAI and Metering Services Inc response and either accept the response or submit further questions.

##### Participants

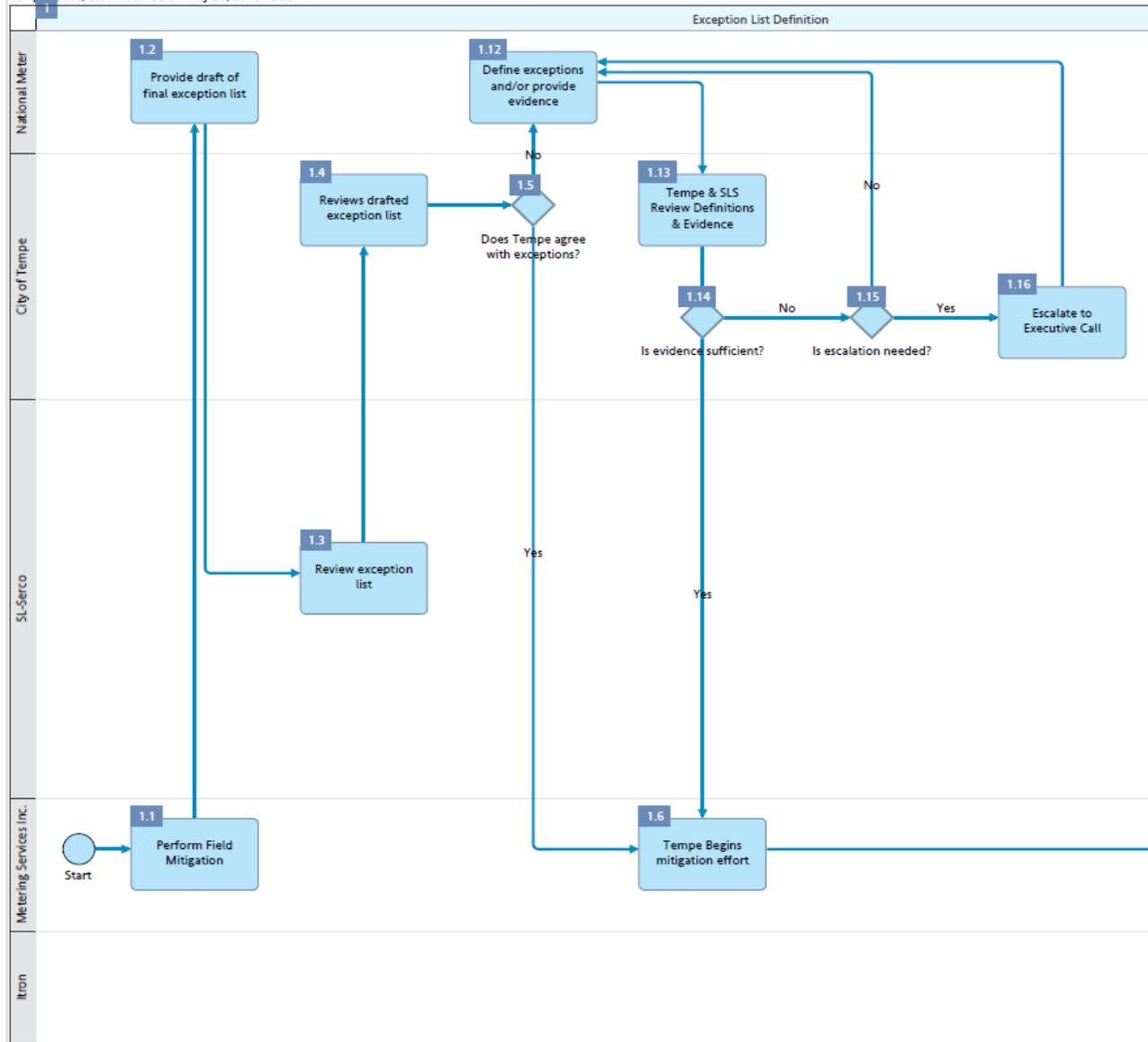
 City of Tempe

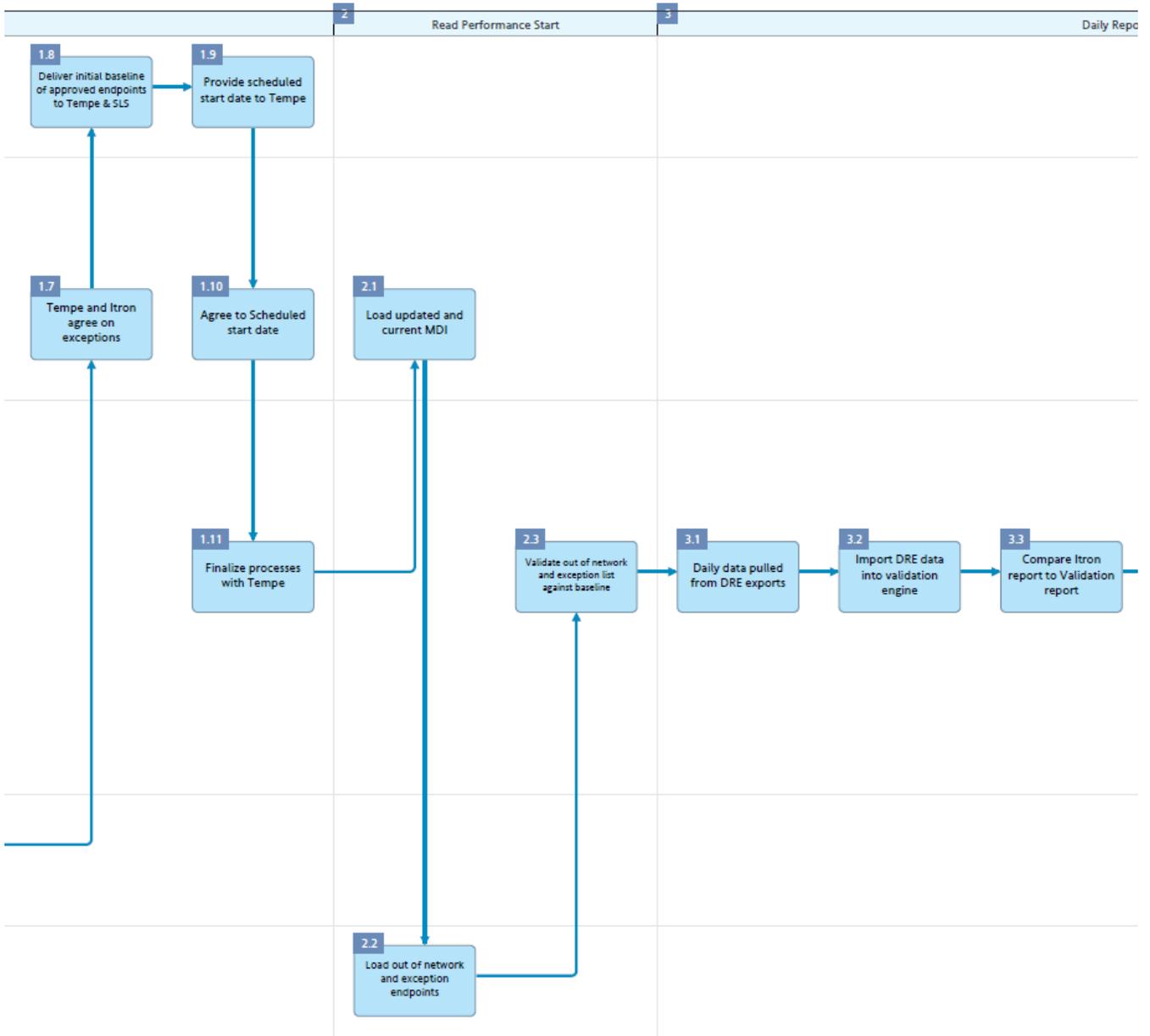
#### 4.11. Is response acceptable?

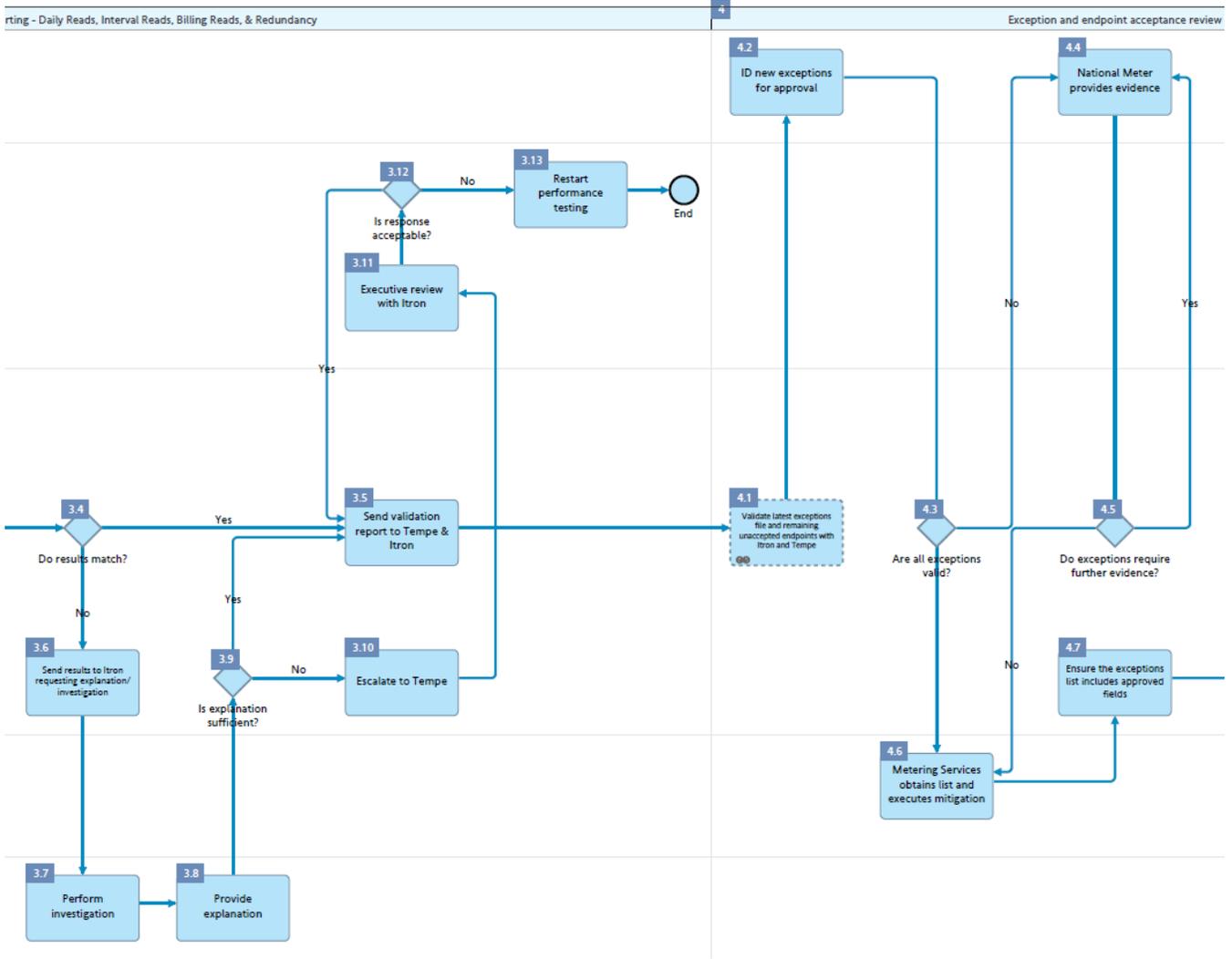
If the responses are acceptable then Tempe and NMAAI will proceed to the signing of Endpoint Acceptance documentation.

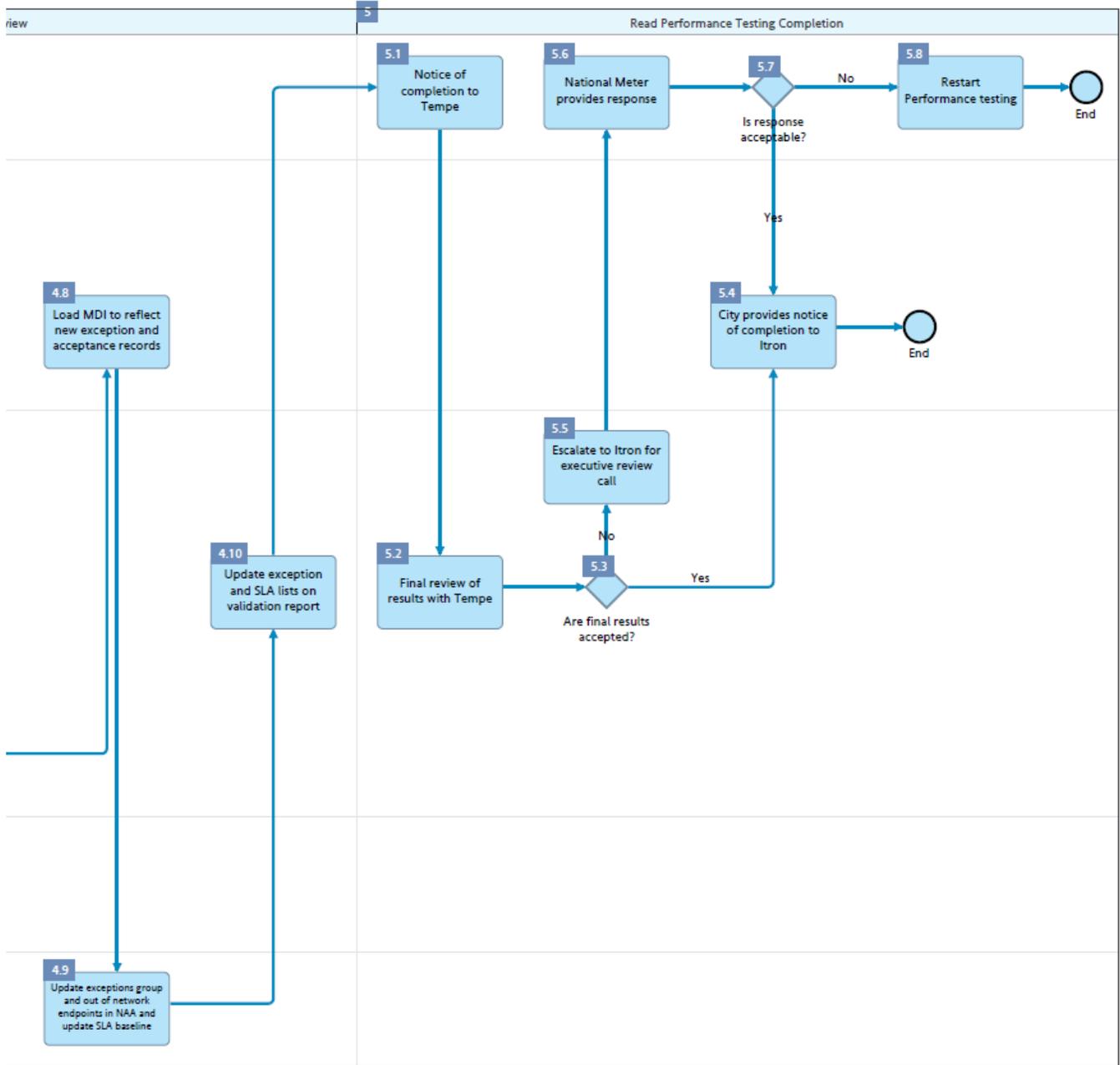
## SYSTEM ACCEPTANCE TESTING PROCESS

Read Performance (ID: 400001b9d1dba55) <https://www.blueworkslive.com/scr/processes/400001b9d1dba55>  
 Tempe space, Last modified on May 20, 2016 12:26 PM











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## Read Performance

This process is set up to document Tempe's Read Performance Test outlined in the Statement of Work.

Glossary: SLS - SL-serco, NMAAI - National Meter

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### 1. Exception List Definition

#### 1.1. Perform Field Mitigation

Metering Services Inc., as part of their contracted work, performed the installation of the endpoints. They are responsible for completing field mitigation of ERT and meter issues.

#### Participants



Metering Services Inc.

#### 1.2. Provide draft of final exception list

A small number of endpoints will not be included in the list because they have known issues which can not be addressed prior to the test but have issues identified and owners who agreed to take full responsibility for the endpoint.

1. A complete list of exceptions will be provided at least seven days prior to the beginning of the test.
2. The format and status of the list will be provided twice a week until the final list is provided.
3. The list of allowable exceptions is limited to the following:
  - a. Missed Reads with Cut Cable
  - b. Missed Reads with Binary Digit Error
  - c. Endpoints under Metal Lids
  - d. Replaced or Removed ERTS requiring MDI Updates
  - e. Endpoint with Pending Investigation
  - f. RF blocked Endpoints
  - g. Endpoints unable to communicate due to network device outage due to Metering Service Inc.



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The Exception List will be delivered by the NMAAI Project Manager to the SL-serco Project Manager.

### Participants

 National Meter

### 1.3. Review exception list

SL-serco Project Manager will review the list to make sure it meets the format and complete expectations of the project. If the list requires additional information the list will be sent back to NMAAI for editing.

### Participants

 SL-Serco

### 1.4. Reviews drafted exception list

The SL-serco Project Manager will evaluate and provide a recommendation to the Tempe Representative about how to respond to the list.

### Participants

 City of Tempe

### 1.5. Does Tempe agree with exceptions?

The Tempe Representative will direct how to respond to NMAAI with the SL-serco Project Manager.

### 1.6. Metering Services Inc. Begins mitigation effort

Those items on the list with Metering Services listed as the owner will be evaluated, and recommendations for each item will be provided to the Metering Services Inc Representative.

The Metering Services Inc Representative will identify their plan of action on each of the City owned exceptions with the SL-serco Project Manager.



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The Metering Services Inc Representative will delegate to the crews to address each issue.

The Metering Services Inc Representative will provide progress reports to the SL-serco Project Manager each morning.

#### Participants

 Metering Services Inc.

#### 1.7. Tempe and NMAAI agree on exceptions

The day prior to the test: the NMAAI and SL-serco project managers, as well as the Tempe Representative will agree on the list to use for the test.

#### Participants

 City of Tempe

#### 1.8. Deliver initial baseline of approved endpoints to Tempe & SLS

#### Participants

 National Meter

#### 1.9. Provide scheduled start date to Tempe

NMAAI will send the Tempe Representative the notification letter, outlining it intends to proceed with Read Performance

**Participants**

 National Meter

1.10. Agree to Scheduled start date

**Participants**

 City of Tempe

1.11. Finalize processes with Tempe

Review and finalize the Read Performance Testing processes that SL-serco will follow with Tempe.

**Participants**

 SL-Serco

1.12. Define exceptions and/or provide evidence

Based on the agreed upon exceptions in 1.8, the exceptions will be noted with evidence by NMAAI, and provided to the SL-serco Project Manager.

**Participants**

 National Meter

### 1.13. Tempe & SLS Review Definitions & Evidence

SL-serco Project Manager will provide the Tempe Representative a response to the list and a recommendation as to whether the evidence is sufficient.

#### Participants

 City of Tempe

### 1.14. Is evidence sufficient?

Tempe Representative will decide if evidence is sufficient and direct action.

### 1.15. Is escalation needed?

If the action requires escalation to the NMAAI Executive Team and further discussion, the escalation will be performed at this step.

### 1.16. Escalate to Executive Call

If individual items or the entire list is escalated to the NMAAI Executive Team, the reason and items of concern will be outlined.

#### Participants

 City of Tempe

## **2. Read Performance Start**

### 2.1. Load updated and current MDI

The Tempe Assistant Engineer will load the read performance MDI and let the SL-serco Project Manager know this is complete by 9am on the first day of the test.

#### Participants

 City of Tempe

## 2.2. Load out of network and exception endpoints

Itron will load the final exceptions endpoints prior to start as well as the out of network endpoints that were not accepted.

### Participants

 Itron

## 2.3. Validate out of network and exception list against baseline

### Participants

 SL-Serco

## **3. Daily Reporting - Daily Reads, Interval Reads, Billing Reads, & Redundancy**

Testing will be performed daily over the course of 30 days. For each day the system must meet the following performance targets:

- 100% of meters must display minimum redundancy of 2 collection devices for the previous day
- 97.5% of all interval and register reads must be present from the previous day
- 99.5% of all interval and register reads must be present from the 4 previous days
- 99.5% of all meters must have at least 1 billable reading, within the previous 2 days

### 3.1. Daily data pulled from DRE exports

SL-serco Technician will pull data from the daily DRE files for import into the SL-serco validation engine.

### Participants

 SL-Serco

### 3.2. Import DRE data into validation engine

SL-serco Technician will import the data into the validation engine to prepare for reporting and analysis.

#### Participants

 SL-Serco

### 3.3. Compare Itron report to Validation report

SL-serco Technician will compare the Itron reports to the results of the validation each day.

#### Participants

 SL-Serco

### 3.4. Do results match?

A decision point based on the results of the comparison to NAA.

### 3.5. Send validation report to Tempe & Itron

If the results match then the daily validation report will be sent to Tempe and Itron project team members.

#### Participants

 SL-Serco

### 3.6. Send results to Itron requesting explanation/ investigation

If the results of the comparison do not match then the results with related questions will be escalated to Itron for response.

#### Participants

 SL-Serco

### 3.7. Perform investigation

Itron/NMAAI will perform investigation on the discrepancies that were escalated.

#### Participants

 Itron

### 3.8. Provide explanation

Itron/NMAAI will provide the results of their investigation with explanations for the discrepancies.

#### Participants

 Itron

### 3.9. Is explanation sufficient?

Tempe and SL-serco will review to determine if the response makes sense and answers all questions.

### 3.10. Escalate to Itron

If the response is not sufficient SL-serco and Tempe will escalate the issue to an executive review with Itron.

**Participants**

 SL-Serco

**3.11. Executive review with Itron**

This review will cover any explanations that were not deemed acceptable.

**Participants**

 City of Tempe

**3.12. Is response acceptable?**

If the responses during the executive review escalation with Itron are deemed acceptable we will continue with Read Performance Testing.

**3.13. Restart performance testing**

If the response during the executive review escalation with Itron are deemed unacceptable we will restart Read Performance Testing after:

- 1.) Proper process and documentation is provided by Itron in relation to the discrepancies that triggered the issues
- 2.) A new start date has been determined

**Participants**

 City of Tempe

#### 4. Exception and endpoint acceptance review

##### 4.1. Validate latest exceptions file and remaining unaccepted endpoints with Itron and Tempe

This process will be followed for continued network acceptance testing for endpoints that failed initial acceptance testing and are deemed "Out of Network" until they pass acceptance.

To pass acceptance each ERT must provide at least 1 read per day over 2 consecutive days. Testing will take place each week for Monday and Tuesday.

##### 4.2. ID new exceptions for approval

###### Participants

 National Meter

##### 4.3. Are all exceptions valid?

SL-serco Project Manager and Tempe Representative to decide if all exceptions are valid.

##### 4.4. National Meter provides evidence

NMAAI will respond to the list and will provide an owner and action for each endpoint.

###### Participants

 National Meter

##### 4.5. Do exceptions require further evidence?

If the exceptions do not meet expectations, they will be returned to NMAAI for further evidence.

##### 4.6. Metering Services obtains list and executes mitigation

###### Participants

 Metering Services Inc.

#### 4.7. Ensure the exceptions list includes approved fields

SL-serco Project Manager to ensure exceptions file includes only approved records

##### Participants

 SL-Serco

#### 4.8. Load MDI to reflect new exception and acceptance records

This will occur only once per week. MDI file will be uploaded Thursday and testing reports will reflect the new ERT changes on Friday.

##### Participants

 City of Tempe

#### 4.9. Update exceptions group and out of network endpoints in NAA and update SLA baseline

Itron will update the exceptions group in NAA with the latest valid exceptions based on the exceptions list.

Itron will move out of network endpoints into the general endpoint population in NAA if any endpoints become accepted during the weekly endpoint acceptance test. This will occur such that changes are reflected Friday of each week.

##### Participants

 Itron

#### 4.10. Update exception and SLA lists on validation report

Changes will be reflected by Friday of each week.

##### Participants

 SL-Serco

### **5. Read Performance Testing Completion**

If all the read performance meets or exceeds the acceptable performance standards, the system will be accepted by Tempe.

#### 5.1. Notice of completion to Tempe

NMAAI will provide a notice of completion to Tempe.

##### Participants

 National Meter

#### 5.2. Final review of results with Tempe

SL-serco will review the results of the Read Performance Testing with Tempe.

##### Participants

 SL-Serco

#### 5.3. Are final results accepted?

During the review Tempe and SL-serco will determine if the final Read Performance Testing results are accepted.



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If any discrepancies are discovered they will be raised to NMAAI.

#### 5.4. City provides notice of completion to NMAAI

If no discrepancies are found and Tempe accepts the results then Tempe will provide NMAAI with a notice of completion.

##### Participants

 City of Tempe

#### 5.5. Escalate to NMAAI for executive review call

Discrepancies after final review will be raised to NMAAI.

##### Participants

 SL-Serco

#### 5.6. National Meter provides response

NMAAI will provide a response to all discrepancies brought forward.

##### Participants

 National Meter

#### 5.7. Is response acceptable?

Tempe and SL-serco will review the NMAAI response and determine if it is acceptable.

If it is acceptable then Tempe will provide a notice of completion to NMAAI.

If the response is unacceptable then Read Performance Testing will finish uncompleted.



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#### 5.8. Restart Performance testing

If the response was unacceptable, Tempe will begin Read Performance Testing again when the following occurs:

- 1.) NMAAI provides an acceptable response to discrepancies and a process to ensure the discrepancies do not occur again
- 2.) Tempe and NMAAI agree to an acceptable new start date

#### Participants



National Meter