



# SAINT PAUL REGIONAL WATER SERVICES AGREEMENT

**Purchaser (Referred to as “The Board”)**

Board of Water Commissioners  
of the City of Saint Paul  
1900 Rice Street  
Saint Paul, MN 55113  
Phone: 651-266-6530

**CONTRACTOR**

Ferguson Enterprises, LLC  
751 Lakefront Commons  
  
Newport News, VA 23606

Contract No: 4758

Effective Date: October 1, 2024

Expiration Date: October 1, 2027

Contract Description: IRFQ-SPRWS-MC-SPRWS METERS PARTS AND COMPONENTS-FERGUSON

**Contacts**

Buyer Contact Information:

Queenie Tran - Queenie.Tran@ci.stpaul.mn.us

City Project Manager Contact Information:

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Contractor Project Manager Contact Information:

Mike Fries - michael.fries@ferguson.com  
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**CONTRACT LINES**

Item	Item Description	Unit of Measure	Base Cost
CONTRACT LIST	CONTRACT LIST	8P	0.00000

# **Board of Water Commissioners of Saint Paul**

## **Terms and Conditions**

### **Professional Services Agreement (PSA)**

This “**Agreement**,” made and entered into on the effective date contained herein by and between the Board of Water Commissioners of the City of Saint Paul, hereinafter referred to as “The Board,” d/b/a Saint Paul Regional Water Services (“SPRWS”) and the above-named Contractor, hereinafter referred to as “Contractor.” The Board and the Contractor are each a “**Party**” and collectively the “**Parties**.” References to the “**City**” shall mean the City of Saint Paul. The Board and Contractor, in consideration of the mutual terms and conditions, promises, covenants, and payments hereinafter set forth, agree as follows:

#### **Section 1. Time For Completion.**

Contractor will provide the services comprised of the tasks, deliverables, and timeline(s) (the “**Work**”) articulated in Exhibit A, which is attached and incorporated into this Agreement by reference. The services rendered by Contractor will commence upon execution of the Agreement and with the specific prior agreement of the Board or its designated representative to proceed. The Work will be completed in accordance with the written schedule mutually agreed upon with the Board, but no later than the expiration date as provided in this Agreement. No claim for labor, services, or products provided by the Contractor not specifically provided for in this Agreement, will be honored by the Board.

In the event that there are delays caused by actions of the Board or which may be reasonably requested by the Contractor which might require change to the completion date, Contractor must request in writing an extension of time for completion of the Services. The Project Manager will review the request and, if an extension is required, grant to the Contractor such extensions of contract time as may be reasonable in the Board’s discretion. A request shall not be deemed approved unless the Project Manager has provided approval to the Contractor in writing.

#### **Section 2. Project Management.**

The Board requires the Contractor to assign specific individuals as principal project members and to assure that the major work and coordination will remain the responsibility of these individuals during the term of the Agreement. Removal of any principal project member without replacement by equally qualified individuals or without the prior written approval of the Saint Paul Regional Water Services General Manager is grounds for termination of the Agreement by the Board.

The Board has designated the individual on Page 1, as the Board's Project Manager for this Agreement, and the individual to whom all communications pertaining to the Agreement will be addressed. The Project Manager will have the authority to transmit instructions, receive information, and interpret and define the Board’s policy and decisions pertinent to the work covered by this Agreement.

#### **Section 3. Billings and Payment.**

The amounts articulated herein will fully compensate Contractor for all Work and associated costs. The Board will not honor any claim for services and/or costs that the Contractor has not specifically provided for in this Agreement. Notwithstanding anything to the contrary in this Agreement, total costs for the Work must not exceed the amount referenced herein.

Contractor must submit an itemized invoice monthly or after Work is complete. Invoices should clearly itemize all goods and/or services provided. Upon receipt of the invoice and verification of the charges by the Project Manager, the Board and/or the City will make payment to Contractor within thirty-five (35) days in accordance with Minnesota Statutes Section 471.425, or as the same may be amended, supplemented or superseded. Contested invoices will not be paid until the billing issue is resolved to the Board's satisfaction, and the Board and/or City will have thirty-five (35) days from that date to make payment.

#### **Section 4. Board Responsibilities**

The Board agrees to provide Contractor with access to any information from Board documents, staff, and other sources under the control of the Board needed by Contractor to complete the work and/or Services to the extent permitted by law. Upon the request of the Board, the Contractor agrees to sign any Confidentiality or Non-Disclosure Agreement that the Board reasonably requires before releasing any information that is deemed confidential or private pursuant to Chapter 13, Minnesota Government Data Practice Act.

#### **Section 5. Amendment or Changes to Agreement.**

Board or Contractor may request changes that would increase, decrease, or otherwise modify the Scope of Services. Such changes and method of compensation must be authorized in writing in advance by the Board. Any alterations, amendments, deletions, or waivers of the provisions of this Agreement are valid only when reduced to writing and duly signed by the Parties. Amendments, modifications or additional schedules may not be construed to adversely affect vested rights or causes of action which have accrued prior to the effective date of such amendment, modification, or supplement. The term "this Agreement" as used herein is deemed to include any future amendments, modifications, and additional schedules made in accordance herewith.

#### **Section 6. Notices.**

Except as otherwise stated in this Agreement, any notice or demand to be given under this Agreement must be delivered in person, sent by certified United States mail, or via electronic mail with Return Receipt Requested. Any notices or other communications should be addressed to the individuals and addresses listed on page one (1) of this Agreement.

#### **Section 7. Survival of Obligations.**

The respective obligations of the Board and Contractor under these terms and conditions, which by their nature would continue beyond the termination, cancellation, or expiration of the Agreement will survive such termination, cancellation, or expiration.

If a court or governmental agency with proper jurisdiction determines that this Agreement, or a provision herein is unlawful, this Agreement or that provision, will terminate. If a provision is so terminated but the Parties legally, commercially, and practicably can continue this Agreement without the terminated provision, the remainder of this Agreement will continue in effect.

#### **Section 8. Records, Dissemination of Information.**

For purposes of this Agreement, the following words and phrases have the meanings set forth in this section, except where the context clearly indicates that a different meaning is intended.

**“Work Product”** means any report, recommendation, paper, presentation, drawing, demonstration, or other materials, whether in written, electronic, or other format that results solely from Contractor’s Services under this Agreement.

**“Supporting Documentation”** means any surveys, questionnaires, notes, research, papers, analyses, whether in written, electronic, or in other formats which result solely from Contractor’s Services under this Agreement, and which are used to generate any and all work performed and work products generated under this Agreement.

**“Business Records”** means any books, documents, papers, account records and other evidences, whether written, electronic, or in other format, belonging to Contractor and pertaining to the Services under this Agreement.

A. All Work Products and Supporting Documentation must be delivered to the Board and will become the property of the Board after final payment is made to the Contractor with no right, title, or interest in said Work Products or Supporting Documentation vesting in Contractor, except as provided in this section. Contractor retains the right to all its software, intellectual property and templates that are not Work-specific deliverables, as well as to individual features of the design which Contractor would reasonably expect to be able to recreate in whole or in part in other projects. Contractor is not liable for any unauthorized use or reuse of any plans or specifications by the Board or any third party.

B. The Contractor agrees not to release, transmit, or otherwise disseminate information associated with or generated as a result of the Work performed under this Agreement without prior knowledge and written consent of the Board.

C. In the event of termination, all Work Product finished or unfinished, and supporting documentation prepared by the Contractor under this Agreement, must be delivered to the Board by Contractor by the termination date without further obligation of the Board to Contractor except for payment of amounts due and owing for Work performed and costs incurred as of the date and time of termination.

D. The Contractor must maintain all Business Records relating to this Agreement in such a manner as will readily conform to the terms of this Agreement and to make such materials available at its office at all reasonable times during this Agreement period and for six (6) years commencing after the later of the date of the final payment under the Agreement or resolution of all audit findings, for audit or inspection by the Board, appropriate federal agency or agencies, the Auditor of the State of Minnesota, or other duly authorized representative.

E. The Contractor agrees to abide strictly by Chapter 13, Minnesota Government Data Practice Act, and in particular Minn. Stat. §§ 13.05, subd. 6 and 11; and 13.37, subd. 1 (b) and Minn. Stat §§ 138.17 and 15.17. All of the data created, collected, received, stored, used, maintained, or disseminated by the Contractor in performing functions under this Agreement is subject to the requirements of the Minnesota Government Data Practices Act and Contractor must comply with those requirements as if it were a governmental entity. If any provision of this Agreement conflicts with the Minnesota Government Data Practices Act or other Minnesota state laws, state law shall control. The Contractor agrees to hold the City and the Board, its officers, and employees harmless from any claims resulting from the Contractor’s unlawful disclosure or use of data protected under state or federal laws, regardless of the limits of insurance coverage. Further, the Contractor must ensure that all applicable notices are provided consistent with Minn. Ch. 13, including Tennessee warnings.

## **Section 9. Human Rights/Affirmative Action/Economic Opportunity Requirements and Specifications.**

### **A. Requirements**

Contractor must comply with the City of Saint Paul's Affirmative Action Requirements in Employment pursuant to Section 183.04 of the Saint Paul Legislative Code, the Rules Governing Affirmative Requirements in Employment, and Chapter A-12 of the Saint Paul Administrative Code governing workplace conduct. Contractor also must comply with the City of Saint Paul's Vendor Outreach Program pursuant to Chapter 84 of the Saint Paul Administrative Code. The Contractor agrees to comply with all federal, state and local laws, resolutions, ordinances, rules, regulations and executive orders pertaining to unlawful discrimination on account of race, creed, religion, color, sex, sexual or affectional orientation, national origin, ancestry, familial status, age, disability, marital status, or status with regard to public assistance and will take affirmative steps to ensure that applicants are employed and employees are treated during employment without regard to the same. By signing this Agreement, Contractor agrees to abide by these requirements for contracts issued in the name of the Board.

### **B. Specifications**

When applicable, the Contractor must comply with the Affirmative Action and Vendor Outreach Specifications attached to this Agreement and incorporated by reference herein.

## **Section 10. Affirmative Action Plan.**

Pursuant to City of Saint Paul Administrative Code § 86.06 and City of Saint Paul Legislative Code §183.04, every contractor and/or subcontractor whose total accumulated contract awards from the City of Saint Paul over the preceding twelve months have met or exceeded \$50,000 must complete and submit to the Department an Affirmative Action Program Registration form along with a \$75 dollar registration fee. This requirement also applies to contracts issued in the name of the Board of Water Commissioners of Saint Paul. By signing this Agreement, Contractor agrees to abide by these requirements for contracts issued in the name of the Board.

## **Section 11. Compliance with Applicable Law.**

The Contractor agrees to comply with all federal, state and local laws or ordinances, and all applicable rules, regulations and standards established by any agency of such governmental units, insofar as they relate to the Contractor's performance of the provisions of this Agreement. The Contractor must at Contractor's expense apply for and obtain all permits and/or licenses required and keep such in force during Contractor's performance of this Agreement.

## **Section 12. Conflict of Interest.**

Contractor's acceptance of this Agreement indicates compliance with Chapter 24.03, City of Saint Paul Administrative Code: "Except as permitted by law, no city official or employee shall be a party to or have a direct financial interest in any sale, lease, or contract with the City." The Contractor also affirms that to the best of the Contractor's knowledge, Contractor's involvement in this Agreement does not result in a conflict of interest with any party or entity which may be affected by the terms of this Agreement. The Contractor agrees that should any conflict or potential conflict of interest become known to the Contractor, it will immediately notify the Procurement Manager (or equivalent) of the situation so that a determination can be made about Contractor's ability to continue performing services under this Agreement. Contractor agrees to be bound by these requirements for contracts issued in the name of the Board.

### **Section 13. Hold Harmless.**

The Contractor will bear all losses, expenses (including attorney's fees) and damages resulting from any negligent act or omission by the Contractor, or any person employed by Contractor in carrying out the terms of this Agreement. The Contractor will defend, indemnify, and hold harmless, to the extent allowed by law, the City and the Board and its officers, agents and employees from all liabilities, claims, damages, costs, judgments, lawsuits, and expenses, including court costs and reasonable attorney's fees, regardless of the Contractor's insurance coverage, resulting from any negligent act or omission by the Contractor or any person employed by Contractor in carrying out the terms of this Agreement. This indemnification shall not be construed as a waiver on the part of the City or the Board of any immunities or limits on liability provided by Minnesota Statutes Chapter 466 or other applicable state or federal law. This obligation of the Contractor shall survive the termination or expiration of this Agreement.

### **Section 14. Assignment.**

The Board and Contractor each binds itself and its successors, legal representatives, and assigns, with respect to all covenants of this Agreement; and neither the Board nor the Contractor will assign or transfer its interest in this Agreement without the written consent of the other.

### **Section 15. Termination.**

#### **A. With Cause.**

The Board reserves the right to terminate this Agreement if the Contractor violates any of the terms or does not fulfill, in a timely and proper manner, its obligations under this Agreement. If the Board exercises its right to terminate under this Section, it will submit written notice to the Contractor, specifying the nature of the breach and the date by which such breach must be cured.

#### **B. In the Event of Termination.**

In the event of termination, the Board will pay Contractor for all Work, Services and/or products, received by the Board up to the receipt of the notice of termination and thereafter until the date of termination. Upon receipt of such notice, the Contractor must take all actions necessary to discontinue further commitments of funds to the extent that they relate to the terminated portions of this Agreement. Prior to the Board rendering final payment for service, the Contractor must deliver all work products and supporting documentation developed up to the time of termination.

### **Section 16. Interpretation of Agreement, Venue, Conflicts.**

#### **A. Interpretation of Agreement and Venue.**

This Agreement will be interpreted and construed according to the laws of the State of Minnesota. All litigation regarding this Agreement must be venued in Ramsey County District Court, Second Judicial District, State of Minnesota, or the United States District Court, District of Minnesota, where applicable.

#### **B. Conflicts.**

Any ambiguities related to the terms and conditions set forth in this Agreement will be construed in favor of the Board. If any provision of this Agreement conflicts with federal laws or regulations, the federal laws and regulations will control.

### **Section 17. Independent Contractor.**

It is agreed by the Parties, that at all times and for all purposes related to the solicitation and performance of this Agreement, the relationship of the Contractor to the City and the Board is that of independent contractor and not that of employee. No statement contained in the specifications or this resulting Agreement will be construed so as to find the Contractor an employee of the City or the Board, and Contractor is entitled to none of the rights, privileges, or benefits of City or Board employees.

### **Section 18. Waiver.**

Lack of enforcement by the City or the Board of any breach of this Agreement does not constitute a waiver of the City or Board's right to enforce any subsequent breach or default.

### **Section 19. Subcontracting.**

#### **A. Written Approval Required.**

The Contractor agrees not to enter into any subcontracts for any of the Work contemplated under this Agreement without obtaining prior written approval of the Board/SPRWS. As required by Minnesota Statutes Section 471.425, Subd. 4a, the Contractor must pay any subcontractors within ten (10) days of the Contractor's receipt of payment from the City and/or the Board for undisputed services provided by the subcontractors, and the Contractor must comply with all other provisions of that statute.

#### **B. Subcontractor Agreements.**

The Contractor agrees to incorporate these terms and conditions, exhibits, attachments, specifications, and all related contract documents and materials into all subcontractor agreements and agrees to cause its subcontractors to do the same in any subordinate subcontractor agreements.

#### **C. Subcontractor Payment.**

Prime contractors are required to pay any subcontractor pursuant to paragraph A of this section and applicable Minnesota Statutes. The prime contractor will be required to pay interest of 1.5 percent per month or any part of a month to the subcontractor on any undisputed amount not paid on time to the subcontractor. The minimum monthly interest penalty payment for an unpaid balance of \$100 or more is \$10.00. For an unpaid balance of less than \$100, the prime contractor shall pay the actual penalty due to the subcontractor. A subcontractor who prevails in a civil action to collect interest penalties from a prime contractor must be awarded its costs and disbursements, including attorney's fees, incurred in bringing the action. Ref: Minnesota Statutes 1995, amending Section 471.425, effective 8-1-95.

### **Section 20. Force Majeure.**

Neither the Board, nor the Contractor will be held responsible for performance if performance is prevented by acts or events beyond the Party's reasonable control, including, but not limited to: severe weather, earthquake or other natural occurrences, strikes and other labor unrest, power failures, electrical power surges or current fluctuations, nuclear or other civil military emergencies, or acts of the legislature, judiciary, or executive.

### **Section 21. Entire Agreement.**

Specifications and other solicitation materials specifically referenced and incorporated into this Agreement and these General Terms and Conditions constitute the entire Agreement between the parties and supersede all prior oral or written negotiations.

## Section 22. Insurance.

### A. Contractors

Contractors must carry insurance of the kind and in the amounts shown below during the term of this Agreement and any extension periods. Certificates for General Liability Insurance must state that the City of Saint Paul, its officials, employees, agents, and representatives are Additional Insureds, and the Board of Water Commissioners of Saint Paul, its officials, employees, agents, and representatives are Additional Insureds. Contractor must submit the corresponding “additional insured” endorsement outlining policy coverage for the City. The policy must include an “all services, products, or completed operations endorsement as a sublimit to the General Liability Policy. Errors and omissions coverage must be included if the Contractor will be providing services for the City as a sublimit of the General Liability policy. Agent must state on the certificate if company carries errors and omissions coverage.

### B. Subcontractors or Independent Contractors.

If the City or the Board gives written approval for Contractor to utilize subcontractors or other independent contractors to fulfill the terms and conditions of this Agreement, each subcontractor or independent contractor is required to have and secure for the duration of this Agreement and any extension periods (or the period of time during which said contractor is working on this Agreement) to have and maintain their own general liability, auto liability and workers compensation insurances that provide coverage for their own employees. If requested by the City or the Board, subcontractors and independent contractors must certify that they are not entitled to receive employee benefits of any type because their contractual relationship with the City or the Board is of that of a subcontractor or independent contractor, not a City or Board employee.

### C. Insurance Limits.

#### 1. General or Business Liability Insurance

\$1,500,000 per occurrence

\$2,000,000 aggregate per project

\$2,000,000 products/completed operations total limit

\$1,500,000 personal injury and advertising

Errors and Omissions

\$1,000,000 per occurrence

\$1,000,000 aggregate

#### 2. Automobile Insurance.

a. Commercial Vehicles. When commercial vehicles will be used in connection with the Agreement, these minimum coverage amounts are required:

Bodily Injury

\$750,000 per person

\$1,000,000 per accident

Property Damage

Not less than \$50,000 per accident

Coverage must include: hired, non-owned and owned auto

b. Personal Vehicles. When personal vehicles are used in connection with the Agreement, neither the City nor the Board is required to be named as Additional Insureds, but proof of insurance is required prior to commencement of activities. Contractor must provide the City and the Board with Endorsements from the insurance company.

Bodily Injury

\$30,000 per person

\$60,000 per accident

Property Damage

\$20,000 per accident



c. Rental Vehicles. When rental vehicles are used in connection with the Agreement, the Contractor must either purchase insurance from the rental agency or provide the City and the Board with proof of insurance as stated above.

d. In the event that the Contractor will not use a vehicle in to complete the tasks described in Exhibit A - Scope of Work pursuant to this Agreement, the Contractor must provide a statement to that fact in the form of an email or a letter (on business letterhead) prior to beginning work on the contract. In such a case, proof of automobile insurance will not be required.

3. Worker's Compensation and Employer's Liability. Worker's Compensation coverage is required per Minnesota Statutes. Employer's Liability must have a minimum of:

\$500,000 per accident

\$500,000 per employee;

\$500,000 per disease policy limit.

a. Contractors with 10 or fewer employees who do not have Worker's Compensation coverage are required to provide the City and the Board with a completed "Certificate of Compliance" (State of Minnesota form MN LIC 04) verifying their number of employees and the reason for their exemption.

#### D. General Insurance Requirements

1. All policies must be written on an occurrence basis or as acceptable to the City and the Board. Certificates of insurance must indicate that the policy is issued on an occurrence basis.

2. The Contractor may not commence any work until the Certificate(s) of Insurance including all required insurance coverage for the project is approved, and the Project Manager has issued a notice to proceed. Contractor must carry valid insurance for the duration of the original Agreement and any extension periods.

3. The City and the Board reserve the right to review Contractor's insurance policies at any time, with reasonable notice provided, to verify that City requirements have been met.

4. Nothing precludes the City or the Board from requiring Contractor to purchase and provide evidence of additional insurance if the scope of services requires changes, if the amount of the Agreement is significantly increased, or if the exposure to the City, the Board, or Saint Paul residents is deemed to have increased.

5. Satisfaction of policy limits required above for General Liability and Automobile Liability Insurance, may be met with the purchase of an umbrella or excess policy. Any excess or umbrella policy must be written on an occurrence basis, and if such policy is not written by the same insurance carrier, the proof of underlying policies (endorsement) will be provided with any certificate of insurance.

### **Section 23. Counterparts.**

The Parties may sign this Agreement in counterparts, each of which constitutes an original, but all of which together constitute one instrument.

### **Section 24. Electronic Signatures.**

The Parties agree that the electronic signature of a Party to this Agreement will be as valid as an original signature of such Party and will be effective to bind such Party to this Agreement. The Parties further agree that any document (including this Agreement and any attachments or exhibits to this Agreement) containing, or to which there is affixed, an electronic signature will be deemed (i) to be "written" or "in writing," (ii) to have been signed and (iii) to constitute a record established and maintained in the ordinary

course of business and an original written record when printed from electronic files. For purposes hereof, “electronic signature” also means a manually signed original signature that is then transmitted by any electronic means, including without limitation a faxed version of an original signature or an electronically scanned and transmitted version (e.g., via PDF) of an original signature. Any Party’s failure to produce the original signature of any electronically transmitted signature will not affect the enforceability of this Agreement.

**Section 25. Additional Terms and Conditions Incorporated by Reference, City/Board Terms and Conditions Supreme.**

The City or the Board may incorporate by reference Federal, State, and/or City Department project specific specifications or proposals. Except as otherwise provided in this Agreement, if any provision contained in the Federal, State, or project specific specifications or proposal conflicts with, or inconsistent with, any provision in the general City/Board Terms and Conditions, the more restrictive provision will control. Notwithstanding the foregoing, the City/Board Terms and Conditions and the included attachments supersede Contractor proposals or attachments.

**Section 26. Exhibits.**

As so referenced in these terms and conditions, the Exhibits and Addenda attached to this Agreement, and all obligations and duties articulated and certifications made therein, are incorporated into and made part of this Agreement.

Exhibit A:        Scope of Work

**Section 27. Additions.**

During the contract period, the City reserves the right to request pricing for and add to the contract a limited number of like services or items to accommodate the need for any services or items that may have been inadvertently omitted from the scope of work included in Exhibit A.

**Section 28. Non-Exclusive Services/ Scope of Work.**

The Board reserves the right to establish additional Master Contracts and/or do competitive solicitations for needed products or services deemed to be in their interest.

**Section 29. Term**

The initial term of this agreement will be for three (3) years from the time of execution. Upon mutual agreement of the Parties, this Agreement may allow for up to three (3) additional extension of three (3) years each, provided that all terms and conditions, remain the same or are more favorable to the Board. In the event the contract is renewed for an additional period, allowable price increases would be allowed as described in exhibit B.

During the contract period, the Board reserves the right to request pricing for and add to the contract a limited number of like items to accommodate the need for any parts that may have been inadvertently omitted from the lists included in this request.

**Section 30. Pricing**

Pricing shall remain fixed for the length of the contract period. However, if the contract is to be renewed, the vendor may request an adjustment in pricing. The vendor must submit a written request accompanied with a letter from the manufacturer substantiating the increase before the increase is to take place. Any increase in pricing will be allowed once during any contract period. The Board reserves the right to reject the increase and rebid the contract.

## **EXHIBIT A**

### **Scope of Work**

The purpose of this SOW is to describe the work, services, tasks and/or deliverables that Contractor will provide to [the Board] under the Board Terms and Conditions agreed upon by the Parties, (the “**Agreement**”). Additional terms and conditions may be set forth in this SOW. To the extent the terms and conditions of this SOW are inconsistent with those of the Agreement, the terms of this SOW will control with respect to the work, services, tasks and/or deliverables described herein. Capitalized terms used herein shall have the same meaning as those used in the Agreement. This SOW is an attachment to and is incorporated by this reference into the Agreement as if fully set forth therein and made a part thereof. This SOW, together with the Agreement, represents the complete and total understanding of the parties regarding the Services to be provided by Contractor hereunder.

#### **I. Technical Specification/Usage**

##### **Material Standards Incorporated by Reference**

The following specifications and standards shall be incorporated by reference in this specification and shall mean the latest published edition available on the date of this contract.

1. C700 AWWA Standard Specifications for Cold Water Meters
2. C701 AWWA Standard Specifications for Cold Water Meters
3. C707 AWWA Standards Specifications for Encoder-Type Remote Registration Systems for Cold Water Meters
4. C715 AWWA Standard Specifications for Cold Water Meters
5. Minnesota Plumbing Code.

#### **Part I: Cold Water Meters/ Displacement Type (5/8” – 2”)**

##### **GENERAL**

All cold-water meters (displacement type - magnetic drive 5/8” - 2”) furnished shall be produced from a manufacturing facility whose QMS is ISO 9001 certified, conform to the “Standard Specifications for Cold Water Meters” C700 latest revision issued by AWWA.

##### **LEAD FREE LEGISLATION**

There have been federal changes to the acceptable amount of lead in the drinking water system. Knowing that water meters have a life expectancy of approximately twenty (20) years, the utility wishes to ensure that meters purchased today will meet the Safe Drinking Water Act (SDWA) per NSF 372:

The utility wishes to assure the safety of its drinking water.

The utility wishes to safeguard its investment in metering infrastructure.

- Meter inventory that does not meet the SDWA (NSF/ANSI 372) lead free requirements will have to be returned to the manufacturer or scrapped at a cost that the utility is not willing to incur.
- Any meters not in compliance with these requirements that are physically removed from service for testing or repair cannot be reinstalled and will have to be scrapped at a cost that the utility is not willing to incur.

As a result, the utility requires that all water meters submitted in this proposal be compliant with NSF/ANSI 61 and NSF/ANSI 372. Specifically:

Meters shall be made of “lead free” alloy as defined by NSF/ANSI 61 and NSF/ANSI 372.

Manufacturer shall provide a copy of a letter from NSF International on NSF letterhead documenting compliance with NSF/ANSI 61 and NSF/ANSI 372.

##### **TYPE**

Only magnetic-driven, positive displacement meters of the flat nutating disc type will be accepted because of enhanced low flow accuracy performance.

#### SIZE, CAPACITY, LENGTH

The size, capacity, and meter lengths shall be as specified in AWWA Standard C700 (latest revision). The maximum number of disc nutations is not to exceed those specified in AWWA C700 latest revision.

The meter maincase and cover shall be cast from NSF/ANSI 61 and NSF/ANSI 372 certified lead free alloy containing a minimum of 85% copper. The serial number should be stamped between the inlet or outlet port of the maincase and the register. Maincase markings shall be cast raised and shall indicate size, model, direction of flow, and NSF/ANSI 61 certification. Plastic maincases are not acceptable.

Maincases for 5/8", 3/4", and 1" meters shall be of the removable bottom cap type with the bottom cap secured by four (4) bolts on 5/8" and 3/4" sizes and six (6) bolts on the 1" size. Intermediate meter maincases shall also be made of the same lead free brass material in sizes 1 1/2" and 2" with a cover secured to the maincase with eight (8) bolts. Meters with a frost plug, a screw-on design, or no bottom cap shall not be accepted in 5/8"- 1" sizes. The 5/8" meters shall have a synthetic polymer or cast iron bottom cap option.

All lead free maincases shall be guaranteed free from manufacturing defects in workmanship and material for the life of the meter.

All meters must be adaptable to a field programmable absolute encoder register without interruption of the customer's service.

#### BOLTS

All maincase bolts shall be of three hundred (300) series non-magnetic stainless steel to prevent corrosion.

#### DIRECT READ STANDARD REGISTER

The register shall be of the straight reading sealed magnetic drive type and shall contain six (6) numeral wheels. Registers must be roll sealed and dry. All direct reading register cups shall be copper to prevent corrosion and be covered with a high-strength, impact-resistant flat glass lens to prevent breakage. The lens shall be positioned above the register box to allow for runoff of debris. The register lid shall overlap the register box to protect the lens. The register retaining ring shall be designed to absorb impact from the register. Register boxes and lids shall be of high-strength synthetic polymer or approved equivalent. All registers shall have the size, model, and date of manufacture stamped on the dial face. The dial shall have a red center sweep hand and shall contain one hundred (100) equally divided graduations at its periphery.

The register must contain a low flow indicator with a 1:1 ratio to disc nutations to provide leak detection.

Registers shall be secured to the maincase by means of a plastic tamperproof seal to allow for inline service replacement. Register seal screws are only accepted when supplied with attached sealing wire to at least one bottom cap bolt with seal wire holes of not less than 3/32" in diameter.

Registers shall be guaranteed for at least ten (10) years. All meters will be guaranteed for one (1) year on material and workmanship.

#### MEASURING CHAMBER

The measuring chamber shall be of a two-piece, snap-joint type with no fasteners allowed. The chamber shall be made of a non-hydrolyzing synthetic polymer.

The control block shall be the same material as the measuring chamber and be located on the top of the chamber. The control block shall be located after the strainer.

The measuring chamber outlet port shall be sealed to the maincase outlet port by means of an O-ring gasket.

The flat nutating disc shall be a single piece made from non-hydrolyzing synthetic polymer and shall contain a type 316 stainless steel spindle. The nutating disc shall be equipped with a synthetic polymer thrust roller located within the disc slot. The thrust roller head shall roll on the buttressed track provided by the diaphragm.

E chamber shall be warranted for ten (10) years against freeze damage if the meter has been equipped with a frost-proof cast iron.

**STRAINERS**

All meters shall contain a removable polypropylene plastic strainer screen. The strainer shall be located near the maincase inlet port, before the measuring chamber. The strainer shall also function as the device that holds the measuring chamber in place within the maincase. Straps or other types of fasteners shall not be accepted.

**PERFORMANCE**

To ensure accuracy, each meter must be accompanied by a factory test tag certifying the accuracy at the flows required by AWWA C700.

All meters shall be warranted as follows:

<b>Size</b>	<b>Low Flow</b>	<b>Low Flow New Meter Accuracy</b>	<b>Low Flow Repaired Meter Accuracy</b>
5/8"	1/8 gpm @ 95%	5 yrs or 500,000 gallons	15 yrs or 1,500,000 gallons
3/4"	1/4 gpm @ 95%	5 yrs or 750,000 gallons	15 yrs or 2,250,000 gallons
1"	3/8 gpm @ 95%	5 yrs or 1,000,000 gallons	15 yrs or 3,000,000 gallons
1 1/2"	3/4 gpm @ 95%	2 yrs or 1,600,000 gallons	12 yrs or 5,000,000 gallons
2"	1 gpm @ 95%	2 yrs or 2,700,000 gallons	12 yrs or 8,000,000 gallons

Normal meter operating range shall be as follows:

<b>Size</b>	<b>Accuracy Range ± 1.5%</b>
5/8"	1/2 - 20 gpm
3/4"	3/4 - 30 gpm
1"	1 - 50 gpm
1 1/2"	2 - 100 gpm
2"	2 1/2 - 160 gpm

**MANUFACTURER**

Meters and meter parts shall be manufactured, assembled, and tested within the United States. Manufacturers may be required to provide proof of where and what percentage of the meter register, chamber, and maincase is manufactured in the United States.

Manufacturers shall have a minimum of fifteen (15) years of field and production experience with all sizes and models quoted.

**SYSTEMS GUARANTEE**

All meters shall be guaranteed upgradeable to the following Neptune systems without interruption of the customer's service.

ProRead™ (ARB® VI) AutoDetect Absolute Encoder  
 E-CODER® (ARB VII) Solid State Absolute Encoder  
 R900®  
 FLOSEARCH® II  
 TRICON/E®3  
 TRICON®  
 ProCoder™

**REMOTE CAPABILITY OPTIONS**

All meters shall be equipped with encoder remote registers per AWWA C707 and meet all AWWA C700 performance standards.  
 Acceptable meters shall be Neptune T-10® or approved equal.

**Part II: Cold Water Meters/ Class II Turbine Type 1.5”-10”**

**GENERAL**

All meters furnished shall be produced in a manufacturing facility whose QMS is ISO 9001 certified. Acceptable meters shall have a minimum of fifteen (15) years of successful field use. All specifications meet or exceed the latest revision of AWWA C701.

**LEAD FREE LEGISLATION**

There have been federal changes to the acceptable amount of lead in the drinking water system. Knowing that water meters have a life expectancy of approximately twenty (20) years, the Utility wishes to ensure that meters purchased meet the Safe Drinking Water Act (SDWA) per NSF/ANSI 372 for the following reasons:

The Utility wishes to assure the safety of its drinking water.

The Utility wishes to safeguard its investment in metering infrastructure.

- Meter inventory that does not meet the SDWA (NSF 372) lead free requirements will have to be returned to the manufacturer or scrapped at a cost that the Utility is not willing to incur.
- Any meters not in compliance with these requirements that are physically removed from service for testing or repair, cannot be reinstalled and will have to be scrapped at a cost that the Utility is not willing to incur.

As a result, the Utility requires that all water meters submitted in this proposal be compliant with NSF/ANSI 61, and NSF/ANSI 372. Specifically:

- Meters shall be made of “lead free” alloy as defined by NSF/ANSI 61 and NSF/ANSI 372.
- Manufacturer shall provide a copy of a letter from NSF International on NSF letterhead documenting compliance with NSF/ANSI 61.
- Manufacturer shall provide a copy of a letter from NSF International on NSF letterhead documenting compliance with NSF/ANSI 372.
- Manufacturer will provide documentation that its US-based foundry uses only lead free materials in the manufacture of its water meters. This documentation shall be signed by an authorized officer of the company.

**TYPE**

Meters shall be of the inline horizontal-axis type per AWWA Class II. Meters shall be certified to NSF/ANSI 61 and NSF/ANSI 372 requirements.

**CAPACITY**

The capacity of the meters in terms of normal operating range, maximum continuous flow, maximum loss of head, and maximum intermittent flow shall be as shown below:

Size	Normal Operating Range (gpm)	Maximum Continuous Flow (gpm)	Maximum Loss of Head at Max. Cont. Flow (psi)	Maximum Intermittent
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				<b>Flow (gpm)</b>
1½"	4 - 160	160	4	200
2"	4 - 200	200	4.5	250
3"	5 - 450	450	5	560
4"	10 - 1200	1200	5.5	1500
6"	20 - 2500	2500	5	3100
8"	35 - 4000	4000	5	5000
10"	50 - 6500	6500	3.5	8000

**SIZE**

The size of the meters shall be determined by the nominal size (in inches) of the opening in the inlet and outlet flanges. Overall lengths of the meters shall be as follows:

<b>Size</b>	<b>Laying Length</b>	<b>Meter/Strainer Combined Length</b>
1½"	10" (13" w/test spool)	—
2"	10"	17"
3"	12"	18"
4"	14"	21½"
6"	18"	27"
8"	20"	30"
10"	26"	41"

**CASE AND COVER**

The maincase and cover shall be cast from NSF/ANSI 61 and NSF/ANSI 372 certified lead free alloy containing a minimum of 85% copper. The size, model, NSF certification and arrows indicating direction of flow shall be cast in raised characters on the maincase or cover. The cover shall contain a calibration vane for the purpose of calibrating the turbine measuring element while the meter is inline and under pressure. The calibration vane shall be mounted under the register or shall be covered by a protective cap that is attached in a tamper-resistant device.

**EXTERNAL BOLTS**

Casing bolts shall be made of AISI Type 316 stainless steel.

**CONNECTIONS**

Maincases shall be flanged 15" and 2" sizes shall be oval flanged and 3" through 10" sizes shall be round flanged per Table 3, AWWA C701.

**REGISTERS**

Registers shall be permanently roll-sealed, straight reading, indicating in cubic feet, gallons, or cubic metres. Registers shall allow for in-line serviceability.

**REGISTER BOX SEALING**

The register box shall be affixed to the top cover by means of a plastic tamper proof seal pin that must be destroyed in order to remove the register.

**METER SERIAL NUMBER**

The meter serial number shall be imprinted on the meter maincase or cover as well as the register box



cover.

#### MEASURING CHAMBER

The turbine measuring chamber shall be a self-contained unit attached to the cover for easy removal. The turbine spindles shall be stainless steel; turbine shafts shall be tungsten carbide.

#### UNITIZED MEASURING ELEMENT

AUME is a complete assembly, factory-calibrated to AWWA standards, that includes the cover, registers, and both a turbine measuring element assembly. It shall be easily field-removable from the meter body without the requirement of unbolting flanges.

#### INTERMEDIATE GEAR TRAIN

The intermediate gear train shall be directly coupled to the turbine rotor and magnetically coupled to the register through the meter cover. All moving parts of the gear train shall be made of a self-lubricating polymer or stainless steel for operation in water.

#### REGISTRATION ACCURACY

Registration accuracy over the normal operating range shall be 98.5% to 101.5%.

#### REMOTE CAPABILITY OPTIONS

All meters shall be equipped with encoder remote registers per AWWAC707 and meet all AWWAC701 performance standards.

Acceptable meters shall be Neptune<sup>®</sup> HP Turbine or approved equal.

### **Part III: Cold Water Meters/ Solid State Meters (5/8"-2")**

#### GENERAL

All cold-water meters (solid state type 5/8" - 2") furnished shall be produced in a manufacturing facility whose QMS is ISO 9001 certified.

#### LEAD FREE LEGISLATION

The utility requires that all water meters submitted in this proposal be compliant with NSF/ANSI 61, which exceeds the requirements of NSF/ANSI 372 that became effective January 2014:

- The utility wishes to ensure the safety of its drinking water.
- The utility wishes to safeguard its investment in metering infrastructure.
- Meters shall be made of lead free high-copper alloy as defined by NSF/ANSI 61.

#### TYPE

Only meters featuring solid state metrology will be accepted because of enhanced low-flow accuracy performance and extended accuracy over meter life.

#### MEASUREMENT TECHNOLOGY

The measurement technology shall be based on ultrasonic sensing featuring no moving parts.

#### SIZE, CAPACITY, LENGTH

The meter's size, capacity, and length shall be as specified in AWWA Standard C715 (latest revision).

#### MAINCASE

The meter maincase shall be cast from NSF/ANSI 61 certified lead-free alloy containing a minimum of 85% copper. Plastic maincases or flow tubes are not acceptable as the spuds are susceptible to cross-threading or breaking during installation, or from pipe stress over time. The serial number should be

displayed in a permanent location on the register. Meter markings shall indicate size, model, direction of flow, and NSF 61 certification.

All lead free maincases shall be guaranteed free from manufacturing defects in workmanship and material for the warranted life of the meter.

All maincase screws or bolts shall be made of 300 series non-magnetic stainless steel to prevent corrosion.

#### ELECTRONIC REGISTER

The solid state meter electronic enclosure shall be constructed of a durable engineered composite designed to last the life of the meter. The meter shall provide a fully potted wire connection for use with AMR/AMI devices.

#### ENVIRONMENTAL

The solid state meter must feature fully potted electronics and battery and be IP-68 rated for submersion in flooded meter pits.

#### REGISTRATION

The register shall provide at least a 9-digit visual registration at the meter.

The register shall provide an 8-digit meter reading for transmission through the RF AMR/AMI endpoint.

The register shall employ a visual LCD leak detection indicator as well as provide remote leak detection to the RF AMR/AMI endpoint.

The register shall provide reverse flow detection, communicated to the RF AMR/AMI endpoint.

The register shall indicate days of zero consumption, communicated to the RF AMR/AMI endpoint.

The register should accumulate and register consumption without connecting to a receptacle or RF AMR/AMI endpoint.

The register shall display flow rate information (interleaved with the current meter reading).

The register shall subtract reverse flow from the total registration.

#### STRAINERS

Solid state meters shall not require a strainer for accurate operation.

#### PERFORMANCE

Meter manufacturer's solid state meters shall exceed AWWA C715 accuracy standards and warrant their published accuracy levels for the life of their meters. Each meter shipment must be accompanied by factory test data showing the accuracy of the meter as tested at their factory.

#### MANUFACTURER

Manufacturers shall be a member of AWWA with a minimum of twenty-five (25) years of field and production experience in water measurement technologies and serving water utilities in the United States.

#### SYSTEMS GUARANTEE

All solid-state meters shall be guaranteed compatible with the Neptune® R900® AMR/AMI System without special programming of the meter.

#### TECHNOLOGY PREFERENCE

It is the utility's preference that the solid-state meter technology provided be ultrasonic-based technology featuring continuous measurements, preferably at least 4 times per second, to ensure desired accuracy at low-end flows and during typical start/stop conditions.

It is desired that the residential ultrasonic meter (sizes 5/8" to 1") measure and communicate the service water temperature. Temperature data should be available via both direct and remote read.

It is desired that the residential ultrasonic meter (sizes 5/8" to 1") support the optional capability to measure and communicate service line pressure. Pressure data should be available via both direct and remote read.

Acceptable meters shall be Neptune MACH 10® or approved equal.

#### **Part IV: Cold Water Meters/ Solid State Meters (3"-12")**

##### GENERAL

All cold water meters (solid state meters 3" - 12") furnished shall be produced in a manufacturing facility whose QMS is ISO 9001 certified and meets or exceeds the accuracy requirements specified in the "Standard Specifications for Cold Water Meters" C715 latest revision issued by AWWA.

##### LEAD FREE LEGISLATION

The utility requires that all solid state water meters submitted in this proposal be compliant with NSF/ANSI 61, which exceeds the requirements of NSF/ANSI 372 and became effective January 2014.

- The utility wishes to ensure the safety of its drinking water.
- The utility wishes to safeguard its investment in metering infrastructure.
- Meters shall be made of "lead free" alloy as defined by NSF/ANSI 61 and NSF/ANSI 372.

##### TYPE

Only meters featuring ultrasonic solid state metrology will be accepted because of enhanced low flow accuracy performance and extended accuracy over meter life.

##### MEASUREMENT TECHNOLOGY

The measurement technology shall be based on ultrasonic sensing featuring no moving parts.

##### MAINCASE

- The meter maincase shall be cast from NSF/ANSI 61 certified lead free bronze alloy containing a minimum of 85% copper. Maincases such as coated steel that are susceptible to corrosion over time are not acceptable. Maincases that do not accommodate inline piping stresses, such as stainless steel or coated steel are not acceptable.
- The serial number should be displayed in a permanent location on the meter maincase and register.
- Meter markings shall indicate size, model, direction of flow, and NSF 61 certification.
- All lead free maincases shall have a lifetime warranty and be free from manufacturing defects in workmanship and material.
- All maincase bolts shall be 316 non-magnetic stainless steel to prevent corrosion.

##### ELECTRONIC ENCLOSURE

The solid state meter electronic enclosure shall be constructed of a durable engineered composite designed to last the life of the meter. The meter register shall provide a fully potted wire connection for use with AMR/AMI devices.

##### ENVIRONMENTAL

The solid state meter must feature fully potted electronics and battery, meet IP-68 standard, and be suitable for submersion in flooded pits.

The meter shall operate at a water temperature range of +33°F to +122°F (+0.5°C to +50°C) and meet AWWA C715 accuracy specifications for water temperatures from 33° F to 122° F (0.5° to 50° C).

The meter shall operate at an ambient temperature range of +14°F to +149°F (-10°C to +65°C) and with a storage temperature of -40°F to +158°F (-40°C to +70°C).

## SIZE, LENGTH, AND INSTALLATION

The meter size and length shall meet AWWA Standard C715 (latest revision).

The meter shall be of common lay lengths to easily retrofit to existing installed turbine and compound meters. It is required that 3" meters shall be available in 12" and 17" lay lengths, 4" meters shall be available in 14" and 20" lay lengths, and 6" meters shall be available in 18" and 24" lay lengths. The 8", 10", and 12" shall be available in 20", 26", and 19.7" lay lengths, respectively.

The meter shall support replacing the electronic measurement assembly without having to recalibrate the meter or remove the meter from service.

Solid state meters shall not require a strainer for accurate operation.

## REGISTRATION

- The register shall provide at least a 9-digit visual registration at the meter to facilitate testing.
- The register shall provide an 8-digit meter reading for transmission through the RF AMR/AMI - endpoint.
- The register shall employ a visual LCD leak detection indicator as well as provide remote leak detection through an ASCII format to the RF AMR/AMI endpoint.
- The register shall provide and display reverse flow detection on the LCD and communicated as ASCII format data to the RF AMR/AMI endpoint.
- Reverse flow detection shall be calculated based on 15-minute interval consumption.
- The register shall provide an indication of days of zero consumption, communicated as ASCII format data to the RF AMR/AMI endpoint.
- The register should accumulate and register consumption whether or not it is connected to a receptacle or RF AMR/AMI endpoint.
- The register shall provide empty pipe detection that is visibly displayed on the meter's LCD register.
- The register shall display flow rate information (interleaved with the current meter reading).
- The register shall subtract reverse flow from the total registration.
- The register shall provide and display low battery detection on the LCD and communicated as ASCII format data to the RF AMR/AMI endpoint.
- The meter endpoint shall provide a minimum of 96 days of downloadable consumption data.

## PERFORMANCE

Meter manufacturers' solid state meters shall exceed AWWA Standard C715 accuracy and warrant their published accuracy levels for the life of their meters. Each meter shipment must be accompanied by factory test data showing the accuracy of the meter as tested at their facility.

The meter(s) shall have an Extended Low Flow measured at 100% +/- 3% which exceeds AWWA Standard C715 extended low flow accuracy requirements.

## MANUFACTURER

Solid state meters shall be assembled and tested within the United States. Manufacturers may be required to provide proof of where and what percentage of the meter is manufactured in the United States

Meter Size	Extended Low Flow @ 100% Accuracy (U.S. gpm, ± 3%)	Normal Operating Range @ 100% Accuracy (U.S. gpm ± 1.5%)	Safe Maximum Operating Capacity (U.S. gpm)	
			Normal Operation (Non-Fire Service)	Fire Service
3"	0.50	0.75 to 500	500	420
4"	0.75	1.5 to 1250	1250	1100
6"	1.0	2.0 to 2000	2000	1800
8"	4	6.0 to 4000	4000	4000
10"	6	10.0 to 6500	6500	6500
12"	8	12.0 to 8000	8000	6500

**SYSTEMS GUARANTEE**

All solid state meters shall be guaranteed compatible with Neptune R900® systems without special programming of the meter.

**TECHNOLOGY REQUIREMENT**

The solid state meter technology provided must be ultrasonic-based technology featuring continuous measurement (greater or equal to 4 times per second) to ensure desired accuracy at low-end flow and during typical variable flow conditions.

Acceptable meters shall be Neptune Commercial and Industrial MACH 10® or approved equal.

**Part V: Encoder Register**

**GENERAL**

These specifications cover a self-contained encoder register metering system designed to obtain remote simultaneous water meter registration directly from the register odometer. The metering information shall be obtained through a remotely located receptacle using a compatible data capture system. The above system shall be configured as follows:

- Encoder meter register – Direct-mounting, encoded odometer wheels, digital data stream. Batteries or pulses are not allowed.
- Remotely mounted receptacle providing a communication link for the transmission of information from the register.
- Data acquisition equipment with which the above components can be interrogated. Such equipment shall be configured in two types:
  - + A device that captures information and displays it visually to confirm correct system installation and wiring.
  - + A device that is pre-programmed with route information and is capable of storing collected data in solid state memory.
- This device shall also electronically transfer the data for use by the utility billing computer. SPRWS measures consumption in cubic feet (CF). All registers delivered to SPRWS should measure in cubic feet unless otherwise specified.

## ENCODER REGISTER UNIT

### Registration

- The register shall provide at least an 8-digit visual registration at the meter.
- The unit shall provide an 8-digit meter reading for transmission through the radio MIU.
- The dial shall have a red sweep test hand and shall contain 100 equally divided graduations at its periphery.
- The register shall provide remote leak detection through an ASCII format to the RF AMR/AMI MIU.
- The register shall provide reverse flow detection, communicated as ASCII format data to the RF AMR/AMI MIU.
- Reverse flow detection shall be calculated based on 15-minute interval consumption.
- The register shall provide an indication of days of zero consumption, communicated as ASCII format data to the RF AMR/AMI MIU.
- Registers using pulse generation or conversion of pulses to digital output are not permitted. Batteries shall not be allowed.
- The manufacturer will guarantee that the reading obtained electronically matches the mechanical odometer reading on the register.

## MECHANICAL CONSTRUCTION

The registers should be manufactured in two different versions; one for inside set application and one for pit set.

### Inside Set Version

- The unit must be constructed of high-strength polycarbonate and possess a hermetic sonic-weld seal. Registers for inside set applications should be oil-free designs.
- The register shall be attached to the meter case by a bayonet attachment. Fastening screws or nuts shall not be required.
- A tamperproof seal pin shall be used to secure the register to the maincase.
- The register shall be removable from the meter without disassembling the meter body and shall permit field installation and/or removal without taking the meter out of service.
- Provision shall be made in the register for the use of seal wires to further secure the register.
- Terminal screws must be accessible on the register for wire connection to the remote receptacle or a future AMR/AMI system. A permanently potted wire connection shall be available as an option.

### Pit Set Version

- The unit must be constructed in a roll-sealed copper shell and glass lens assembly to provide a hermetic seal.
- The register shall be attached to the meter case by a bayonet attachment. Fastening screws or nuts shall not be required. A tamperproof seal pin shall be used to secure the register to the maincase.
- The register shall be removable from the meter without disassembling the meter body and shall permit field installation and/or removal without taking the meter out of service.
- Provision shall be made in the register for the use of seal wires to further secure the register.
- Terminal connections must be permanently potted so that the terminal cover cannot be removed.

### Electrical Construction

- The number wheels used in the register assembly shall be provided with light emitting diode (LED) technology to ensure data transmission.
- Connection shall be made to the register by three screw-type terminals sonically inserted into the register top. Access to the terminals shall be available to all models of register, with the exception of a permanently potted version. A port cover shall be provided to cover the terminals after they have been wired.
- The absolute encoder register shall automatically detect between two-wire and three-wire register protocol.

### **Meter Reading Information**

- The absolute encoder register shall provide to the reading equipment an 8-digit meter reading. An identification number of up to 10 digits shall be provided with each reading when read using a probed reading device.
- The solid state absolute encoder register shall provide additional value-added information remotely when connected to a radio MIU (e.g., detailed leak detection data, days of leak state, days of no consumption, and backflow indication). This information shall be communicated through the encoder protocol and RF MIU to the route management software to allow the seamless integration of data into a CIS package.

### **REMOTE RECEPTABLE**

#### **Mechanical Construction**

- Where indicated, a remote receptacle must be provided for attachment to a pit meter lid with another unit also designed for attachment by wall mounting.
- The materials employed shall be corrosion resistant, resistant to ultraviolet degradation, unaffected by rain or condensation, and compatible with rugged service and long life.
- The pit receptacle shall be installed into the meter lid either using two screws provided by the utility or mounted in a single 1¼” hole while not extending more than 4½” into the pit.
- The pit-mounted receptacle shall be provided with a minimum length of six feet of wire connected and sealed at the receptacle without terminal exposure.
- The remote receptacle shall not contain a battery or data storage capability.

### **Part VI: Plumbing Materials**

Part VI materials consist of items necessary to complete meter installations or modifications. All fittings shall be appropriate for potable water use, having uniformity in wall thickness and strength, free of defects affecting serviceability, and compliant with material requirements pursuant to the Minnesota Plumbing Code. Each fitting shall be permanently and plainly marked with the name or trademark of the manufacturer.

Unless otherwise specified, all materials shall be new and of the best quality for the purpose intended. If applicable, parts must adhere to the following standards.

- All brass that comes in contact with potable water conforms to AWWA Standard C800 (ASTM B584, UNS C89833)
- The product has the letters “NL” cast into the main body for lead-free identification
- Certified to NSF/ANSI Standard 61 and NSF/ANSI Standard 372 where applicable
- Brass components that do not come in contact with potable water conform to AWWA Standard C800 (ASTM B62 and ASTM B584, UNS C83600, 85-5-5-5).
- 175 PSI maximum working water pressure.

## **II. Other Requirements and Information**

### **A. Guarantee of Materials**

**1. Guarantee.** The Vendor shall guarantee to correct or replace or otherwise make good, at no expense to Saint Paul Regional Water Services, any and all of the materials of the Master Contract which may prove defective within one year from the date of final acceptance. This does not void or supersede any warranties that the manufacturer may have in place for any of the products that are specified in this contract.

**2. Replacement.** The Vendor shall, when required by SPRWS, make all replacements under the conditions of the Guarantee and, if the Vendor fails or refuses to replace material within thirty (30) days after receiving said notice, SPRWS shall make the required replacements and the cost therefore shall be deducted from any monies due or to become due the Vendor. SPRWS shall be the sole judge

as to the necessity, extent, and acceptability of any said replacements.

B. Inspection, Rejection, and Acceptance of Materials

On receipt of any parts or materials covered by these specifications, the parts or materials will be carefully inspected by representatives of SPRWS. All parts or materials which are cracked, broken, or otherwise defective on arrival will be rejected, and written notice of this action will be given to the Vendor as soon as possible. All parts or materials thus rejected shall be removed and replaced by the Vendor at Vendor's expense.

C. Delivery

**Standard.** Unless otherwise stated at the time the quantity is released against the contract, delivery is to be made F.O.B. Saint Paul Regional Water Services; 1900 Rice St., Saint Paul, MN 55113 - 6810.



PRODUCT DESCRIPTION	UNIT	ESTIMATE D QUANTITY (ANNUAL)	2024-2027 Sell
<b>Part I - Part I: Cold Water Meters/ Displacement Type (5/8" - 2")</b>			
5/8" X 5/8" T10 METER + Procoder Register	EAC H	1	190.00
5/8" X 3/4" T10 METER + Procoder Register	EAC H	25	190.00
3/4" T10 METER + Procoder Register	EAC H	100	265.00
1" T10 METER + Procoder Register	EAC H	100	360.00
1-1/2" T10 METER + Procoder Register	EAC H	100	780.00
2" T10 METER + Procoder Register	EAC H	20	995.00
<b>ESTIMATE D</b>			
PRODUCT DESCRIPTION	UNIT	QUANTITY (ANNUAL)	2024-2027 Sell
<b>Type 1.5"-10"</b>			
2" Turbine UME ONLY+ Procoder Register	EAC H	1	800.00
4" Turbine UME ONLY+ Procoder Register PIT	EAC H	1	1,700.00
6" Turbine UME ONLY + Procoder Register PIT	EAC H	1	2,500.00
6" Protectus UME ONLY + Procoder Register PIT	EAC H	1	5,000.00
8" Protectus UME + Procoder Register	EAC H	1	6,500.00
10" Turbine UME + Procoder Register	EAC H	1	4,200.00
<b>ESTIMATE D</b>			
PRODUCT DESCRIPTION	UNIT	QUANTITY (ANNUAL)	2024-2027 Sell
<b>(5/8"-2")</b>			
5/8" X 5/8" MACH 10 METER	EAC H	1	210.00
5/8" X 3/4" MACH 10 METER	EAC H	1	210.00
3/4" MACH 10 METER	EAC	1	250.00

	H		
1" MACH 10 METER	EAC H	1	320.00
1-1/2" MACH 10 METER	EAC H	1	830.00
2" MACH 10 METER	EAC H	1	975.00
<b>ESTIMATED</b>			
<b>PRODUCT DESCRIPTION</b>	<b>UNIT</b>	<b>QUANTITY</b> <b>(ANNUAL)</b>	<b>2024-2027 Sell</b>
(3"-12")			
3" MACH 10 UME ONLY + Procoder Register PIT	EAC H	0	1,610.00
3" MACH 10 METER	EAC H	17	2,880.00
4" MACH 10 METER	EAC H	17	3,600.00
4" MACH 10 UME ONLY + Procoder Register PIT	EAC H	1	2,300.00
6" MACH 10 METER	EAC H	1	5,500.00

6" MACH 10 UME ONLY + Procoder Register PIT	EAC H	1	3,225.00
8" Mach 10 w/ Procoder Register PIT	EAC H	1	10,600.00
8" MACH 10 UME ONLY + Procoder Register PIT	EAC H	1	4,500.00
10" Mach 10 w/ Procoder Register	EAC H	1	12,850.00
PIT	EAC H	1	5,500.00
<b>ESTIMATED</b>			
<b>PRODUCT DESCRIPTION</b>	<b>UNIT</b>	<b>QUANTITY (ANNUAL)</b>	<b>2024-2027 Sell</b>
<b>Part V: Encoder Register (5/8" - 10")</b>			
5/8" – 2" R900i Register	EAC H	1	235.00
R900V4 BOX	EAC H	13000	96.25
5/8" Procoder Register	EAC H	6000	68.75
3/4" Procoder Register	EAC H	6000	68.75
1" Procoder Register	EAC H	1000	68.75
1"- 1/2" Procoder Register	EAC H	20	68.75
2" Procoder Register	EAC H	20	68.75
5/8" Procoder Register – PIT	EAC H	30	99.00
3/4" Procoder Register – PIT	EAC H	30	99.00
1" Procoder Register – PIT	EAC H	30	99.00
1-1/2" Procoder Register – PIT	EAC H	30	99.00
2" Procoder Register – PIT	EAC H	30	99.00
3" Procoder Register – PIT	EAC H	10	99.00
4" Procoder Register – PIT	EAC H	10	99.00
6" Procoder Register – PIT	EAC H	10	99.00
8" Procoder Register – PIT	EAC H	10	99.00
10" Procoder Register – PIT	EAC	5	99.00

	H		
20' PIT Antenna	EAC H	1	50.00
<b>ESTIMATED QUANTITY (ANNUAL)</b>			
<b>PRODUCT DESCRIPTION</b>	<b>UNIT</b>	<b>ESTIMATED QUANTITY (ANNUAL)</b>	<b>2024-2027 Sell</b>
<b>Part VI: Misc. Meter Components</b>			
5/8" Straight Brass Meter Coupling	EAC H	400	11.33
3/4" Straight Brass Meter Coupling	EAC H	300	12.88
1" Straight Brass Meter Coupling	EAC H	100	19.84
1-1/2 in. Meter Flange KIT	EAC H	10	68.27
7610FKIT Series 2 in. Meter Flange KIT	EAC H	10	88.98
2 in. Meter Flanged x FIPT Brass Flange	EAC H	10	74.87
22/4 AWG Wire	EAC H	300000	0.45
3/4 in. FIP Straight Ball Valve	EAC H	10	68.08
1/2 x 3/4 in. Meter Swivel x FIP Brass Straight Dual Cartridge Check Valve	EAC H	10	85.80
2 in. Meter Flanged x FIP Brass Straight Check Valve	EAC H	300	277.93
Lead Meter Seal	EAC H	15000	0.50
Fire Hydrant Meter - Zenner Fire Hydrant FHZS	EAC H	1	1,000.00
3 in. Tru/Flo Compound Maincase Gasket	EAC H	200	46.14
4 in. Tru/Flo Compound Maincase Gasket	EAC H	100	92.00
3" Main Valve	EAC H	1	316.26
4" Main Valve	EAC H	1	406.61
6" Main Valve	EAC H	1	821.60
6" Flapper Valve	EAC H	1	684.26
8" Flapper Valve	EAC	1	714.29

	H		
10" Flapper Valve	EAC H	1	862.50

Board of Water Commissioners  
of the City of Saint Paul  
1900 Rice Street  
Saint Paul, MN 55113

Ferguson Enterprises, LLC  
751 Lakefront Commons  
  
Newport News, VA 23606

Board of Water Commissioners  
of the City of Saint Paul:  
This Agreement has been duly executed by the  
Board of Water Commissioners of the City of Saint Paul via  
electronic approval

Contractor:

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Printed Name

\_\_\_\_\_  
Title

\_\_\_\_\_  
Date