

EAST BAY MUNICIPAL UTILITY DISTRICT

REQUEST FOR QUOTATION (RFQ) No. 1805 for Water Meters

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For complete information regarding this project, see RFQ posted at <https://www.ebmud.com/business-center/materials-and-supplies-bids/current-requests-quotation-rfqs/> or contact the EBMUD representative listed above. Please note that prospective bidders are responsible for reviewing this site during the RFQ process, for any published addenda regarding this RFQ.

RESPONSE DUE
by
1:30 p.m.
on
February 28, 2018
at
EBMUD, Purchasing Division
375 Eleventh St., First Floor
Oakland, CA 94607



375 Eleventh Street, Oakland, CA 94607
Website: ebmud.com

EAST BAY MUNICIPAL UTILITY DISTRICT

RFQ No. 1805

for

Water Meters

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IMPORTANT NOTICE TO PROSPECTIVE BIDDERS

Vendors submitting bids for consideration, under the specifications contained in this proposal, must offer meters that have been previously tested and approved by the District. Meters which have not been pre-approved by the District will not be considered for award. Previously approved meters that have been modified with newly designed parts are subject to the Districts testing and approval prior to awarding a contract. For further information on this requirement, see “BRAND NAMES, APPROVED EQUIVALENTS, DEVIATIONS, AND EXCEPTIONS”, Section III, subsection B of this proposal.

I. STATEMENT OF WORK

A. SCOPE

It is the intent of these specifications, terms, and conditions to describe 5/8" x 3/4", 3/4", 1", 1-1/2" and 2" displacement type water meters and 3", 4", 6" and 8" compound and turbine water meters to be used for new and replacement installations.

East Bay Municipal Utility District (District) intends to award a contract to the lowest cost bidder(s) whose response meets the District's requirements.

B. BIDDER QUALIFICATIONS

1. Bidder Minimum Qualifications

- a. Bidder, bidder's principal, or bidder's staff shall have been regularly engaged in the business of providing Water Meters for at least five (5) years.
- b. Bidder shall be an authorized manufacturer, dealer, or provider of water meters.
- c. Bidder shall possess all permits, licenses, and professional credentials necessary to supply product and perform services as specified under this RFQ.

C. SPECIFIC REQUIREMENTS

Provide 5/8" x 3/4", 3/4", 1", 1-1/2" and 2" displacement type water meters and 3", 4", 6" and 8" compound and turbine water meters to be used for new and replacement installations from the preapproved Manufacturer's list, and as described in Exhibit A.

Specifications for meters are attached in Appendix D. For sizes and types without specifications, bidder will provide manufacture's technical specifications.

All products shall be in new and unused condition and shall be of the most current and up to date model.

Materials in Contact with Drinking Water.

1. All materials, equipment, or products that will be in contact with drinking water (potable water) shall be tested and certified as meeting the specifications of NSF/ANSI 61 Standard in accordance with California Code of Regulations, Title 22, Section 64591. Examples include, but are not limited to, valves, pumps, flow

meters, protective materials (coatings, linings, liners), joining and sealing materials, pipes, tanks, pipe fittings, filters, cleaning chemicals, and lubricants.

2. All materials, equipment, or products that will be in contact with drinking water (potable water) shall be tested and certified as “lead-free” per California Health and Safety Code Section 116875 and NSF 61 Annex G or NSF 372.
3. All chemicals that will be in contact with drinking water shall be certified by NSF to NSF/ANSI Standard 60.
4. For materials:
 - a. Documentation which demonstrates current NSF/ANSI Standard 61 certification shall be submitted by the bidder in their bid package.
 - b. If awarded, contractor is responsible for informing the District within 5 days, if and when their certification lapses or expires. Failure to inform the District within the allotted time will be sufficient grounds for immediate termination of the contract.

D. DELIVERABLES / REPORTS

1. Submit the following prior to delivery:
 - a. Operating and Maintenance (O&M) Manuals
 - b. The manufacturer shall furnish the District with an affidavit of compliance that the water meters furnished comply with the applicable provisions of the latest AWWA Standard C700 and this specification.
 - c. Factory test tag certifying the meter accuracy at the flows required by AWWA C700 Table 1.
 - d. For 8” compound meters and all turbine meters, vendors must provide Manufacturers Technical Briefs and test fixtures.

E. INSPECTION

The District will inspect material after its arrival at the delivery point. If the rejection rate of a sample of components is 10% or higher, all components will be rejected. Contractor is solely responsible for ensuring the material arrives at the District's ship-to location free of defects and manufactured in strict conformance with the specifications.

In the case that an item or lot is rejected, District Inspectors will provide Contractor and the EBMUD Purchasing Division with an Inspectors Job Report which will itemize the product deficiencies and required corrective action.

The District reserves the right-of-access to the Contractor's facility to verify conformance to this specification at the District's expense.

F. FAILURE TO MEET SPECIFICATIONS

In the event any shipment or shipments of a Contractor's product do not meet the specification or delivery requirements, the District may reject the shipment or shipments and, at its option, may purchase this material from any supplier on the open market who can meet the District's specification requirements or the District may demand immediate replacement by Contractor of the non-conforming product. Any costs over and above the original contract price will be charged back to the Contractor. In addition, Contractor shall bear the costs of removal and disposition for any delivery which fails to conform to the specifications.

II. CALENDAR OF EVENTS

EVENT	DATE/LOCATION
RFQ Issued	February 8, 2018
Response Due	February 28, 2018 by 1:30 p.m.
Anticipated Contract Start Date	April 1, 2018

Note: All dates are subject to change.

Bidders are responsible for reviewing <https://www.ebmud.com/business-center/materials-and-supplies-bids/current-requests-quotation-rfqs/> for any published addenda. Hard copies of addenda will not be mailed out.

III. DISTRICT PROCEDURES, TERMS, AND CONDITIONS

A. RFQ ACCEPTANCE AND AWARD

1. RFQ responses will be evaluated to determine that they are responsive, responsible, and that they meet the specifications as stated in this RFQ.
2. The District reserves the right to award to a single or to multiple Contractors, dependent upon what provides the lowest overall cost to the District.
3. The District has the right to decline to award this contract or any part of it for any reason.
4. Any specifications, terms or conditions, issued by the District, or those included in the bidder's submission, in relation to this RFQ, may be incorporated into any purchase order or contract that may be awarded as a result of this RFQ.
5. Award of contract. The District reserves the right to reject any or all proposals, to accept one part of a proposal and reject the other, unless the bidder stipulates to the contrary, and to waive minor technical defects and administrative errors, as the interest of the District may require. Award will be made or proposals rejected by the District as soon as possible after bids have been opened.

B. BRAND NAMES, APPROVED EQUIVALENTS, DEVIATIONS, AND EXCEPTIONS

Vendors submitting bids for consideration, under this proposal, must offer meters that have been previously tested and approved by the District. **If a bid is being submitted for a previously approved meter(s) that have been modified with newly designed parts A MINIMUM OF TEN (10) OF THE NEWLY DESIGNED PARTS MUST BE SUBMITTED WITH THE BID IN ORDER FOR YOUR BID TO BE CONSIDERED RESPONSIVE. These meters with their newly designed parts are subject to the District's testing and approval prior to awarding a contract.** The District also reserves the right to retest previously approved meter models and associated parts. **Failure for meters to remain approved may void any contract with the District.**

Manufacturer/Model	Size
Hersey / 430IIS	Group I
Neptune / T-10	Group I
Sensus / SR11	Group I
Badger / Rcdl 25	Group I
Master Meter	Group I
Neptune / T-10	Group II

Badger / Rcdl	Group II
Badger Compound Series	Group III
Neptune True-Flow	Group III

Taking exception to the RFQ, or failure on the part of the bidder to comply with all requirements and conditions of this RFQ, may subject the RFQ response to rejection. If no deviations are shown, the bidder will be required to furnish the material exactly as specified. The burden of proof of compliance with the specifications will be the responsibility of the bidder.

This RFQ is subject to acceptance only on the terms and conditions stated in this RFQ. Any additional or different terms and conditions proposed by the bidder are hereby rejected, and shall be of no force or effect unless expressly assented to in writing by the District.

Bids will only be accepted for preapproved water meters as listed in Exhibit A, "Preapproved Manufacturers and Models".

C. PRICING

1. All prices are to be F.O.B. destination. Any freight/delivery charges are to be included.
2. All prices quoted shall be in United States dollars.
3. Price quotes shall include any and all payment incentives available to the District.
4. Bidders are advised that in the evaluation of cost, if applicable, it will be assumed that the unit price quoted is correct in the case of a discrepancy between the unit price and extended price.

D. PROTESTS

Protests must be in writing and must be received no later than seven (7) business days after the District issues the Notice of Intent to Award, which is sent to all entities who submitted a bid package. The District will reject the protest as untimely if it is received after this specified time frame. Protests will be accepted from bidders or potential bidders only.

If the protest is mailed and not received by the District, the protesting party bears the burden of proof to submit evidence (e.g., certified mail receipt) that the protest was

sent in a timely manner so that it would be received by the District within the RFQ protest period.

Bid protests must contain a detailed and complete written statement describing the reason(s) for protest. The protest must include the name and/or number of the bid, the name of the firm protesting, and include a name, telephone number, email address and physical address of the protester. If a firm is representing the protester, they shall include their contact information in addition to that of the protesting firm.

Protests must be mailed or hand delivered to the Manager of Purchasing, East Bay Municipal Utility District, 375 Eleventh Street, Oakland, CA 94607 or P.O. Box 24055, Oakland, California 94623. Facsimile and electronic mail protests must be followed by a mailed or hand delivered identical copy of the protest and must arrive within the seven day time limit. Any bid protest filed with any other District office shall be forwarded immediately to the Manager of Purchasing.

The bid protester can appeal the determination to the requesting organization's Department Director. The appeal must be submitted to the Department Director no later than five working days from the date of receipt of the requesting organization's determination on the protest.

Such an appeal must be made in writing and must include all grounds for the appeal and copies of the original protest and the District's response. The bid protester must also send the Purchasing Division a copy of all materials sent to the Department Director. The Department Director will make a determination of the appeal and respond to the protester by certified mail in a timely manner. If the appeal is denied, the letter will include the date, time, and location of the Board of Directors meeting at which staff will make a recommendation for award and inform the protester it may request to address the Board of Directors at that meeting.

The District may transmit copies of the protest and any attached documentation to all other parties who may be affected by the outcome of the protest. The decision of the District as to the validity of any protest is final. This District's final decision will be transmitted to all affected parties in a timely manner.

E. METHOD OF ORDERING

1. Written POs will be issued as inventory is needed.
2. POs and payments for products and/or services will be issued only in the name of Contractor.

3. Any and all change orders shall be in writing and agreed upon, in advance, by Contractor and the District.

F. TERM / TERMINATION / RENEWAL

1. The term of the contract, which may be awarded pursuant to this RFQ, will be two years.

At the sole discretion of the District, any contract which may be awarded pursuant to this RFQ, may be extended for three (3) additional one-year terms at agreed prices with all other terms and conditions remaining the same. In the event that a Contractor does not agree to an extension, the District shall be given a minimum of 90 days' notice to locate a suitable replacement contractor.

2. This Agreement may be terminated for convenience by the District provided the Contractor is given written notice of not less than 30 calendar days. Upon such termination, the District shall pay the Contractor the amount owing for the products ordered and satisfactorily received by the District. This shall be the sole and exclusive remedy to which the Contractor is properly entitled in the event of termination by the District.
3. This Agreement may be terminated for cause at any time, provided that the District notifies Contractor of impending action.

G. WARRANTY

1. Bidder expressly warrants that all goods and services to be furnished pursuant to any contract awarded it arising from the Bid will conform to the descriptions and specifications contained herein and in supplier catalogs, product brochures and other representations, depictions or models, and will be free from defects, of merchantable quality, good material, and workmanship. Bidder expressly warrants that all goods and services to be furnished pursuant to such award will be fit and sufficient for the purpose(s) intended. This warranty shall survive any inspections, delivery, acceptance, payment, or contract termination for any reason, by the District. Bidder warrants that all work and services furnished hereunder shall be guaranteed for a period of 15 years from the date of acceptance by the District.

H. INVOICING

Payment will be made within thirty (30) days following receipt of a correct invoice and upon complete satisfactory receipt of product and/or performance of services.

1. The District shall notify Contractor of any invoice adjustments required.

2. Invoices shall contain, at a minimum, District purchase order number, invoice number, remit to address, and itemized products and/or services description.
3. The District will pay Contractor in an amount not to exceed the total amount quoted in the RFQ response.

IV. RFQ RESPONSE SUBMITTAL INSTRUCTIONS AND INFORMATION

A. DISTRICT CONTACTS

All contact during the competitive process is to be through the contact listed on the first page of this RFQ. The following persons are to be contacted only for the purposes specified below.

TECHNICAL SPECIFICATIONS:

Attn: Jeffery Braun, Meter Repair and Testing Supervisor

EBMUDE-Mail: Jeffrey.Braun@ebmud.com

PHONE: (510) 510-287-0844

CONTRACT EQUITY PROGRAM:

Attn: Contract Equity Office

PHONE: (510) 287-0114

AFTER AWARD:

Attn: Jeffery Braun, Meter Repair and Testing Supervisor

EBMUD E-Mail: Jeffrey.Braun@ebmud.com

PHONE: (510) 510-287-0844

B. SUBMITTAL OF RFQ RESPONSE

1. Responses must be submitted in accordance with Exhibit A – RFQ Response Packet, including all additional documentation stated in the “Required Documentation and Submittals” section of Exhibit A.
2. Late and/or unsealed responses will not be accepted.
3. RFQ responses submitted via electronic transmissions will not be accepted. Electronic transmissions include faxed RFQ responses or those sent by electronic mail (“e-mail”).
4. RFQ responses will be received only at the address shown below, must be SEALED, and must be received at the District Purchasing Division by 1:30 p.m. on the due date specified in the Calendar of Events. Any RFQ response received after that time or date, or at a place other than the stated address cannot be considered and will be returned to the bidder unopened.

All RFQ responses must be received and time stamped at the stated address by the time designated. The Purchasing Division's timestamp shall be considered the official timepiece for the purpose of establishing the actual receipt of RFQ responses.

5. RFQ responses are to be addressed/delivered as follows:

Mailed:

Andrew Akelman, Manager of Purchasing
East Bay Municipal Utility District
Water Meters
RFQ No. 1805
EBMUD–Purchasing Division
P.O. Box 24055
Oakland, CA 94623

Hand Delivered or delivered by courier or package delivery service:

Andrew Akelman, Manager of Purchasing
East Bay Municipal Utility District
Water Meters
RFQ No. 1805
EBMUD–Purchasing Division
375 Eleventh Street, First Floor
Oakland, CA 94607

Bidder's name, return address, and the RFQ number and title must also appear on the mailing package.

6. All costs required for the preparation and submission of an RFQ response shall be borne by the bidder.
7. California Government Code Section 4552: In submitting an RFQ response to a public purchasing body, the bidder offers and agrees that if the RFQ response is accepted, it will assign to the purchasing body all rights, title, and interest in and to all causes of action it may have under Section 4 of the Clayton Act (15 U.S.C. Sec. 15) or under the Cartwright Act (Chapter 2, commencing with Section 16700, of Part 2 of Division 7 of the Business and Professions Code), arising from purchases of goods, materials, or services by the bidder for sale to the purchasing body pursuant to the RFQ response. Such assignment shall be made and become effective at the time the purchasing body tenders final payment to the bidder.

8. Bidder expressly acknowledges that it is aware that if a false claim is knowingly submitted (as the terms “claim” and “knowingly” are defined in the California False Claims Act, Cal. Gov. Code, §12650 et seq.), the District will be entitled to civil remedies set forth in the California False Claim Act.
9. The RFQ response shall remain open to acceptance and is irrevocable for a period of one hundred eighty (180) days, unless otherwise specified in the RFQ documents.
10. It is understood that the District reserves the right to reject any or all RFQ responses.
11. RFQ responses, in whole or in part, are NOT to be marked confidential or proprietary. The District may refuse to consider any RFQ response or part thereof so marked. RFQ responses submitted in response to this RFQ may be subject to public disclosure. The District shall not be liable in any way for disclosure of any such records.



EXHIBIT A

RFQ RESPONSE PACKET

RFQ No. 1805 – WATER METERS

To: The EAST BAY MUNICIPAL UTILITY District (“District”)

From: _____
(Official Name of Bidder)

RFQ RESPONSE PACKET GUIDELINES

- **BIDDERS ARE TO SUBMIT ONE (1) ORIGINAL HARDCOPY RFQ RESPONSE WITH ORIGINAL INK SIGNATURES, ONE COPY, AND ONE (1) ELECTRONIC COPY (in PDF format on a CD or flash drive) CONTAINING THE FOLLOWING, IN THEIR ENTIRETY:**
 - **EXHIBIT A – RFQ RESPONSE PACKET**
 - **INCLUDING ALL REQUIRED DOCUMENTATION AS DESCRIBED IN “EXHIBIT A-REQUIRED DOCUMENTATION AND SUBMITTALS”**
- **ALL PRICES AND NOTATIONS MUST BE PRINTED IN INK OR TYPEWRITTEN; NO ERASURES ARE PERMITTED; ERRORS MAY BE CROSSED OUT AND CORRECTIONS PRINTED IN INK OR TYPEWRITTEN ADJACENT, AND MUST BE INITIALED IN INK BY PERSON SIGNING THE RFQ RESPONSE.**
- **BIDDERS THAT DO NOT COMPLY WITH THE REQUIREMENTS, AND/OR SUBMIT AN INCOMPLETE RFQ RESPONSE MAY BE SUBJECT TO DISQUALIFICATION AND THEIR RFQ RESPONSE REJECTED IN TOTAL.**
- **IF BIDDERS ARE MAKING ANY CLARIFICATIONS AND/OR AMENDMENTS, OR TAKING EXCEPTION TO ANY PART OF THIS RFQ, THESE MUST BE SUBMITTED IN THE EXCEPTIONS, CLARIFICATIONS, AND AMENDMENTS SECTION OF THIS EXHIBIT A – RFQ RESPONSE PACKET. THE DISTRICT, AT ITS SOLE DISCRETION, MAY ACCEPT AMENDMENTS/EXCEPTIONS, OR MAY DEEM THEM TO BE UNACCEPTABLE, THEREBY RENDERING THE RFQ RESPONSE DISQUALIFIED.**
- **BIDDERS SHALL NOT MODIFY DISTRICT LANGUAGE IN ANY PART OF THIS RFQ OR ITS EXHIBITS, NOR SHALL THEY QUALIFY THEIR RFQ RESPONSE.**



BIDDER INFORMATION AND ACCEPTANCE

1. The undersigned declares that all RFQ documents, including, without limitation, the RFQ, Addenda, and Exhibits, have been read and that the terms, conditions, certifications, and requirements are agreed to.
2. The undersigned is authorized to offer, and agrees to furnish, the articles and services specified in accordance with the RFQ documents of RFQ No. 1805.
3. The undersigned acknowledges acceptance of all addenda related to this RFQ. List Addenda for this RFQ on the lines below:

Addendum #	Date

4. The undersigned hereby certifies to the District that all representations, certifications, and statements made by the bidder, as set forth in this RFQ Response Packet and attachments, are true and correct and are made under penalty of perjury pursuant to the laws of California.
5. The undersigned acknowledges that the bidder is, and will be, in good standing in the State of California, with all the necessary licenses, permits, certifications, approvals, and authorizations necessary to perform all obligations in connection with this RFQ and associated RFQ documents.
6. It is the responsibility of each bidder to be familiar with all of the specifications, terms, and conditions and, if applicable, the site condition. By the submission of an RFQ response, the bidder certifies that if awarded a contract it will make no claim against the District based upon ignorance of conditions or misunderstanding of the specifications.
7. Patent indemnity: Contractors who do business with the District shall hold the District, its Directors, officers, agents, and employees, harmless from liability of any nature or kind, including cost and expenses, for infringement or use of any patent, copyright, or other proprietary right, secret process, patented or unpatented invention, article, or appliance furnished or used in connection with the contract or purchase order.

8. Insurance certificates are not required at the time of submission. However, by signing Exhibit A – RFQ Response Packet, the bidder agrees to meet the minimum insurance requirements stated in the RFQ. This documentation must be provided to the District prior to execution of an agreement by the District, and shall include an insurance certificate which meets the minimum insurance requirements, as stated in the RFQ.
9. The undersigned bidder hereby submits this RFQ response and binds itself on award to the District under this RFQ to execute in accordance with such award a contract and to furnish the bond or bonds and insurance required by the RFQ. The RFQ, subsequent Addenda, bidder’s Response Packet, and any attachments, shall constitute the Contract, and all provisions thereof are hereby accepted.
10. The undersigned acknowledges **ONE** of the following (please check only one box)*:

- Bidder is not an SBE and is ineligible for any bid preference; **OR**
- Bidder is an SBE or DVBE as described in the Contract Equity Program (CEP) and Equal Employment Opportunity (EEO) Guidelines, is requesting a 5% bid preference, and has completed the CEP and EEO forms at the hyperlink contained in the CEP and EEO section of this Exhibit A.

*If no box is checked, it will be assumed that the bidder is ineligible for bid preference and none will be given. For additional information on SBE bid preference, please refer to the Contract Equity Program and Equal Employment Opportunity Guidelines at the above referenced hyperlink.

Official Name of Bidder (exactly as it appears on Bidder’s corporate seal and invoice): _____

Street Address Line 1: _____

Street Address Line 2: _____

City: _____ State: _____ Zip Code: _____

Webpage: _____

Type of Entity / Organizational Structure (check one):

- Corporation
- Limited Liability Partnership
- Limited Liability Corporation
- Other: _____
- Joint Venture
- Partnership
- Non-Profit / Church

Jurisdiction of Organization Structure: _____

Date of Organization Structure: _____

Federal Tax Identification Number: _____

Department of Industrial Relations (DIR) Registration Number: _____

Primary Contact Information:

Name / Title: _____

Telephone Number: _____ Fax Number: _____

E-mail Address: _____

Street Address Line 1: _____

City: _____ State: _____ Zip Code: _____

SIGNATURE: _____

Name and Title of Signer (printed): _____

Dated this _____ day of _____ 20 _____



BID SUMMARY SHEET

Cost shall be submitted on this Bid Form as is. The prices quoted shall not include Sales Tax or Use Tax; said tax, wherever applicable, will be paid by the District to the contractor, if licensed to collect, or otherwise directly to the State.

No alterations or changes of any kind to the Bid Form(s) are permitted. RFQ responses that do not comply may be subject to rejection in total. The cost quoted below shall be the cost the District will pay for the term of any contract that is a result of this RFQ process.

Quantities listed herein are annual estimates based on past usage and are not to be construed as a commitment. No minimum or maximum is guaranteed or implied.

TOTAL SCHEDULE I	\$ _____
TOTAL SCHEDULE II	\$ _____
TOTAL SCHEDULE III	\$ _____
TOTAL SCHEDULE IV	\$ _____
TOTAL SCHEDULE V	\$ _____
TOTAL SCHEDULE VI	\$ _____
TOTAL SCHEDULE VII	\$ _____
TOTAL SCHEDULE VIII	\$ _____
TOTAL SCHEDULE IX	\$ _____
TOTAL SCHEDULE X	\$ _____



BIDDING SHEET

Bidder is expected to bid entire schedule for each meter size. If for any reason a Bidder cannot bid all lines within a schedule, they must provide an explanation below. ***EBMUD reserves the right to award on a per size basis, line item basis, to single or multiple vendors, to award a schedule in its entirety, or to reject all bids.***

Schedule I – Displacement Type 5/8” x 3/4”

LINE ITEM	SIZE/TYPE OF REGISTER	ESTIMATED ANNUAL QUANTITY	PRICE EACH	EXTENDED	METER MANUFACTURER AND MODEL
1.	5/8” X 3/4”- DIRECT READ	25,000	\$	\$	MFR. _____ MODEL_____
2.	5/8” X 3/4”- AMI	25,000	\$	\$	MFR. _____ MODEL_____
3.	5/8” X 3/4” – RECYCLED DIRECT READ	25	\$	\$	MFR. _____ MODEL_____
4.	5/8” X 3/4” - RECYCLED W/AMI	25	\$	\$	MFR. _____ MODEL_____
TOTAL SCHEDULE I				\$	



BIDDING SHEET

Bidder is expected to bid entire schedule for each meter size. If for any reason a Bidder cannot bid all lines within a schedule, they must provide an explanation below. ***EBMUD reserves the right to award on a per size basis, line item basis, to single or multiple vendors, to award a schedule in its entirety, or to reject all bids.***

Schedule II – Displacement Type 3/4”

LINE ITEM	SIZE/TYPE OF REGISTER	ESTIMATED ANNUAL QUANTITY	PRICE EACH	EXTENDED	METER MANUFACTURER AND MODEL
1.	3/4” – DIRECT READ	500	\$	\$	MFR. _____ MODEL_____
2.	3/4” - AMI	500	\$	\$	MFR. _____ MODEL_____
3.	3/4” - RECYCLED	10	\$	\$	MFR. _____ MODEL_____
4.	3/4” - RECYCLED W/AMI	10	\$	\$	MFR. _____ MODEL_____
TOTAL SCHEDULE II				\$	



BIDDING SHEET

Bidder is expected to bid entire schedule for each meter size. If for any reason a Bidder cannot bid all lines within a schedule, they must provide an explanation below. ***EBMUD reserves the right to award on a per size basis, line item basis, to single or multiple vendors, to award a schedule in its entirety, or to reject all bids.***

Schedule III – Displacement Type 1”

LINE ITEM	SIZE/TYPE OF REGISTER	ESTIMATED ANNUAL QUANTITY	PRICE EACH	EXTENDED	METER MANUFACTURER AND MODEL
8.	1” - DIRECT READ	500	\$	\$	MFR. _____ MODEL_____
9.	1” – AMI	100	\$	\$	MFR. _____ MODEL_____
10.	1” - RECYCLED	10	\$	\$	MFR. _____ MODEL_____
11.	1” – RECYCLED W/AMI	10	\$	\$	MFR. _____ MODEL_____
TOTAL PRICING FOR SCHEDULE III				\$	

*Notes:



BIDDING SHEET

Bidder is expected to bid entire schedule for each meter size. If for any reason a Bidder cannot bid all lines within a schedule, they must provide an explanation below. ***EBMUD reserves the right to award on a per size basis, line item basis, to single or multiple vendors, to award a schedule in its entirety, or to reject all bids.***

Schedule IV – Displacement Type 1-1/2”

LINE ITEM	SIZE/TYPE OF REGISTER	ESTIMATED ANNUAL QUANTITY	PRICE EACH	EXTENDED	METER MANUFACTURER AND MODEL
1.	1-1/2” – DIRECT READ	1,000	\$	\$	MFR. _____ MODEL _____
2.	1-1/2” - AMI	1,500	\$	\$	MFR. _____ MODEL _____
3.	1-1/2” - RECYCLED	20	\$	\$	MFR. _____ MODEL _____
4.	1-1/2” - RECYCLED W/AMI	20	\$	\$	MFR. _____ MODEL _____
	TOTAL SCHEDULE IV			\$	

*NOTES:



BIDDING SHEET

Bidder is expected to bid entire schedule for each meter size. If for any reason a Bidder cannot bid all lines within a schedule, they must provide an explanation below. ***EBMUD reserves the right to award on a per size basis, line item basis, to single or multiple vendors, to award a schedule in its entirety, or to reject all bids.***

Schedule V – 2” Displacement Type

LINE ITEM	SIZE/TYPE OF REGISTER	ESTIMATED ANNUAL QUANTITY	PRICE EACH	EXTENDED	METER MANUFACTURER AND MODEL
1.	2” - DIRECT READ	1,000	\$	\$	MFR. _____ MODEL _____
2.	2” - AMI	1,500	\$	\$	MFR. _____ MODEL _____
3.	2” - RECYCLED	20	\$	\$	MFR. _____ MODEL _____
4.	2” - RECYCLED W/AMI	20	\$	\$	MFR. _____ MODEL _____
	TOTAL SCHEDULE V			\$	

*NOTES:



BIDDING SHEET

Bidder is expected to bid entire schedule for each meter size. If for any reason a Bidder cannot bid all lines within a schedule, they must provide an explanation below. ***EBMUD reserves the right to award on a per size basis, line item basis, to single or multiple vendors, to award a schedule in its entirety, or to reject all bids.***

Schedule VI – Compound 3”

Line Item	SIZE/TYPE OF REGISTER	ESTIMATED ANNUAL QUANTITY	PRICE EACH	EXTENDED	METER MANUFACTURER AND MODEL
1.	3” COMPOUND - DIRECT READ	50	\$	\$	MFR. _____ MODEL _____
2.	3” COMPOUND - AMI	50	\$	\$	MFR. _____ MODEL _____
3.	3” COMPOUND - RECYCLED	1	\$	\$	MFR. _____ MODEL _____
4.	3” COMPOUND - RECYCLED W/AMI	1	\$	\$	MFR. _____ MODEL _____
	TOTAL SCHEDULE VI			\$	

*NOTES:



BIDDING SHEET

Bidder is expected to bid entire schedule for each meter size. If for any reason a Bidder cannot bid all lines within a schedule, they must provide an explanation below. ***EBMUD reserves the right to award on a per size basis, line item basis, to single or multiple vendors, to award a schedule in its entirety, or to reject all bids.***

Schedule VII - 4" COMPOUND

Line Item	SIZE/TYPE OF REGISTER	ESTIMATED ANNUAL QUANTITY	PRICE EACH	EXTENDED	METER MANUFACTURER AND MODEL
1.	4" COMPOUND - DIRECT READ	40	\$	\$	MFR. _____ MODEL _____
2.	4" COMPOUND - AMI	40	\$	\$	MFR. _____ MODEL _____
3.	4" COMPOUND - RECYCLED	1	\$	\$	MFR. _____ MODEL _____
4.	4" COMPOUND - RECYCLED W/AMI	1	\$	\$	MFR. _____ MODEL _____
	TOTAL SCHEDULE VII			\$	

*NOTES:



BIDDING SHEET

Bidder is expected to bid entire schedule for each meter size. If for any reason a Bidder cannot bid all lines within a schedule, they must provide an explanation below. ***EBMUD reserves the right to award on a per size basis, line item basis, to single or multiple vendors, to award a schedule in its entirety, or to reject all bids.***

SCHEDULE VIII - 6" COMPOUND

Line Item	SIZE/TYPE OF REGISTER	ESTIMATED ANNUAL QUANTITY	PRICE EACH	EXTENDED	METER MANUFACTURER AND MODEL
1.	6" COMPOUND - DIRECT READ	30	\$	\$	MFR. _____ MODEL _____
2.	6" COMPOUND - AMI	30	\$	\$	MFR. _____ MODEL _____
3.	6" COMPOUND - RECYCLED	1	\$	\$	MFR. _____ MODEL _____
4.	6" COMPOUND - RECYCLED W/AMI	1	\$	\$	MFR. _____ MODEL _____
	TOTAL SCHEDULE VIII			\$ _____	

*NOTES:



BIDDING SHEET

Bidder is expected to bid entire schedule for each meter size. If for any reason a Bidder cannot bid all lines within a schedule, they must provide an explanation below. ***EBMUD reserves the right to award on a per size basis, line item basis, to single or multiple vendors, to award a schedule in its entirety, or to reject all bids.***

Schedule IX – 8” COMPOUND – Bidder must provide manufacturer’s technical specifications.

	SIZE/TYPE OF REGISTER	ESTIMATED ANNUAL QUANTITY	PRICE EACH	EXTENDED PRICE	
1.	8” COMPOUND-DIRECT READ	10	\$	\$	MFR. _____ MODEL _____
2.	8” COMPOUND-W/AMI	10	\$	\$	MFR. _____ MODEL _____
3.	8” COMPOUND-RECYCLED	1	\$	\$	MFR. _____ MODEL _____
4.	8” COMPOUND-RECYCLED W/AMI	1	\$	\$	MFR. _____ MODEL _____
	TOTAL SCHEDULE IX			\$ _____	

*Notes:



BIDDING SHEET

****EBMUD reserves the right to award on a line item basis to multiple vendors or to award a schedule in its entirety.* ***Bidders are not required to bid on entire schedule. Bidding by meter-size is acceptable. Bidder must provide exception explanation as to why a line item within a size category if unable to bid by size. Bidder must provide manufacturer’s technical specifications for each size bid.

Schedule X – All Turbine Meters

	SIZE/TYPE OF REGISTER	ESTIMATED ANNUAL QTY	PRICE EACH	EXTENDED PRICE	
1.	3" TURBINE- DIRECT READ	5	\$	\$	MFR. _____ MODEL _____
2.	3" TURBINE- AMI	5	\$	\$	MFR. _____ MODEL _____
3.	3" TURBINE- RECYCLED	5	\$	\$	MFR. _____ MODEL _____
4.	3" TURBINE- RECYCLED W/AMI	5	\$	\$	MFR. _____ MODEL _____
5.	4" TURBINE- DIRECT READ	5	\$	\$	MFR. _____ MODEL _____
6.	4" TURBINE- AMI	5	\$	\$	MFR. _____ MODEL _____
7.	4" TURBINE- RECYCLED	5	\$	\$	MFR. _____ MODEL _____
8.	4" TURBINE- RECYCLED W/AMI	5	\$	\$	MFR. _____ MODEL _____
9.	6" TURBINE- DIRECT READ	5	\$	\$	MFR. _____ MODEL _____



10.	6" TURBINE- AMI	5	\$	\$	MFR. _____ MODEL _____
11.	6" TURBINE- RECYCLED	5	\$	\$	MFR. _____ MODEL _____
12.	6" TURBINE- RECYCLED W/AMI	5	\$	\$	MFR. _____ MODEL _____
13.	8" TURBINE – DIRECT READ	5	\$	\$	MFR. _____ MODEL _____
14.	8" – TURBINE AMI	5	\$	\$	MFR. _____ MODEL _____
15.	8" TURBINE – RECYCLED	5	\$	\$	MFR. _____ MODEL _____
16.	8" TURBINE – RECYCLED AMI	5	\$	\$	MFR. _____ MODEL _____
17.	10" TURBINE – DIRECT READ	5	\$	\$	MFR. _____ MODEL _____
18.	10" TURBINE - AMI	5	\$	\$	MFR. _____ MODEL _____
19.	10" TURBINE – RECYCLED	5	\$	\$	MFR. _____ MODEL _____
20.	10" TURBINE – RECYCLED AMI	5	\$	\$	MFR. _____ MODEL _____
TOTAL SCHEDULE X				\$	



Notes:



REQUIRED DOCUMENTATION AND SUBMITTALS

All of the specific documentation listed below is required to be submitted with the Exhibit A – RFQ Response Packet. Bidders shall submit all documentation, in the order listed below, and clearly label each section of the RFQ response with the appropriate title (i.e. Table of Contents, Letter of Transmittal, Key Personnel, etc.).

1. **Description of the Proposed Equipment/System:** RFQ response shall include a description of the proposed equipment/system, as it will be finally configured during the term of the contract. The description shall specify how the proposed equipment/system will meet or exceed the requirements of the District and shall explain any advantages that this proposed equipment/system would have over other possible equipment/systems. The description shall include any disadvantages or limitations that the District should be aware of in evaluating the RFQ response. Finally, the description shall describe all product warranties provided by bidder.
2. **Evidence of Qualification Testing:** RFQ response provides evidence that the proposed equipment/system has successfully completed the qualification test standard requirements defined in this RFQ. The manufacturer shall furnish the District with an affidavit of compliance that the water meters furnished comply with the applicable provisions of the latest AWWA Standard C700 and this specification. Factory test tag certifying the meter accuracy at the flows required by AWWA C700 Table 1. If the equipment/system specified requires the addition of components or features not previously tested by the ITA, the District will determine, in its sole discretion, whether qualification testing of such components or features will be required prior to the award of a contract.
3. **Sustainability Statement:** Contractors shall submit a statement regarding any sustainable or environmental initiatives or practices that they or their suppliers engage in. This information can be in relation to the specific products procured under this RFQ or in relation to the manufacture, delivery, or office practices of your firm which relate to the provision of these products.
4. **Evidence of current NSF 60 and/or 61 certification:** Submit NSF/ANSI 61 certification for all materials in contact with drinking water. If NSF certified before January 4, 2014 the material must be certified as meeting CA low lead requirement (NSF/ANSI 61 Annex G or NSF/ANSI 372).
5. **References**
 - (a) Bidders must use the templates in the “References” section of this Exhibit A – RFQ Response Packet to provide references.
 - (b) References should have similar scope, volume, and requirements to those outlined in these specifications, terms, and conditions.



- Bidders must verify the contact information for all references provided is current and valid.
 - Bidders are strongly encouraged to notify all references that the District may be contacting them to obtain a reference.
- (c) The District may contact some or all of the references provided in order to determine Bidder's performance record on work similar to that described in this RFQ. The District reserves the right to contact references other than those provided in the RFQ response.

6. **Exceptions, Clarifications, Amendments:**

- (a) The RFQ response shall include a separate section calling out all clarifications, exceptions, and amendments, if any, to the RFQ and associated RFQ documents, which shall be submitted with Bidder's RFQ response using the template in the "Exceptions, Clarifications, Amendments" section of this Exhibit A – RFQ Response Packet.
- (b) **THE DISTRICT IS UNDER NO OBLIGATION TO ACCEPT ANY EXCEPTIONS, AND SUCH EXCEPTIONS MAY BE A BASIS FOR RFQ RESPONSE DISQUALIFICATION.**

7. **Contract Equity Program:**

- (a) Every bidder must fill out, sign, and submit the appropriate sections of the Contract Equity Program and Equal Employment Opportunity documents located at the hyperlink contained in the last page of this Exhibit A. Special attention should be given to completing Form P-25, "Contractor Employment Data and Certification". Any bidder needing assistance in completing these forms should contact the District's Contract Equity Office at (510) 287-0114 prior to submitting an RFQ response.



REFERENCES

RFQ No. 1805 – Water Meters

Bidder Name: _____

Bidder must provide a minimum of 4 references.

Company Name:	Contact Person:
Address:	Telephone Number:
City, State, Zip:	E-mail Address:
Services Provided / Date(s) of Service:	

Company Name:	Contact Person:
Address:	Telephone Number:
City, State, Zip:	E-mail Address:
Services Provided / Date(s) of Service:	

Company Name:	Contact Person:
Address:	Telephone Number:
City, State, Zip:	E-mail Address:
Services Provided / Date(s) of Service:	

Company Name:	Contact Person:
Address:	Telephone Number:
City, State, Zip:	E-mail Address:
Services Provided / Date(s) of Service:	

Company Name:	Contact Person:
Address:	Telephone Number:
City, State, Zip:	E-mail Address:
Services Provided / Date(s) of Service:	



CONTRACT EQUITY PROGRAM & EQUAL EMPLOYMENT OPPORTUNITY

The District's Board of Directors adopted the Contract Equity Program (CEP) to enhance equal opportunities for business owners of all races, ethnicities, and genders who are interested in doing business with the District. The program has contracting objectives, serving as the minimum level of expected contract participation for the three availability groups: white-men owned businesses, white-women owned businesses, and ethnic minority owned businesses. The contracting objectives apply to all contracts that are determined to have subcontracting opportunities, and to all contractors regardless of their race, gender or ethnicity.

All Contractors and their subcontractors performing work for the District must be Equal Employment Opportunity (EEO) employers, and shall be bound by all laws prohibiting discrimination in employment. There shall be no discrimination against any person, or group of persons, on account of race, color, religion, creed, national origin, ancestry, gender including gender identity or expression, age, marital or domestic partnership status, mental disability, physical disability (including HIV and AIDS), medical condition (including genetic characteristics or cancer), genetic information, or sexual orientation.

Contractor and its subcontractors shall abide by the requirements of 41 CFR §§ 60-1.4(a), 60-300.5(a) and 60-741.5(a). These regulations prohibit discrimination against qualified individuals based on their status as protected veterans or individuals with disabilities, and prohibit discrimination against all individuals based on their race, color, religion, sex, sexual orientation, gender identity, or national origin in the performance of this contract. Moreover, these regulations require that covered prime contractors and subcontractors take affirmative action to employ and advance in employment individuals without regard to race, color, religion, sex, national origin, protected veteran status or disability.

All Contractors shall include the nondiscrimination provisions above in all subcontracts.

Please include the required completed forms with your bid.

Non-compliance with the Guidelines may deem a bid non-responsive, and therefore, ineligible for contract award. Your firm is responsible for:

- 1) Reading and understanding the CEP guidelines.
- 2) Filling out and submitting with your bid the appropriate forms.

The CEP guidelines and forms can be found at the following direct link:

[Contract Equity Program Guidelines and Forms](#)

The CEP guidelines and forms can also be downloaded from the District website at the following link:

<http://ebmud.com/business-center/contract-equity-program/>

If you have questions regarding the Contract Equity Program please call (510) 287-0114.



EXHIBIT B

INSURANCE REQUIREMENTS

Insurance certificates are not required at the time of submission; however, by signing Exhibit A – RFQ Response Packet, the bidder agrees to meet the minimum insurance requirements stated in the RFQ. This documentation must be provided to the District, prior to award.

The following are the minimum insurance limits, required by the District, to be held by the Contractor performing on this RFQ:

INDEMNIFICATION AND INSURANCE

A. Indemnification

CONTRACTOR expressly agrees to defend, indemnify, and hold harmless the District and its Directors, officers, agents, and employees from and against any and all loss, liability, expense, claims, suits, and damages, including attorneys' fees, arising out of or resulting from CONTRACTOR's, its associates', employees', subcontractors', or other agents' negligent acts, errors or omissions, or willful misconduct, in the operation and/or performance under this Agreement.

B. Insurance Requirements

CONTRACTOR shall take out and maintain during the life of the Agreement all the insurance required in this section, and if requested shall submit certificates for review and approval by the District. The Notice to Proceed shall not be issued, and CONTRACTOR shall not commence work until such insurance has been approved by the District. The certificates shall be on forms approved by the District. Acceptance of the certificates shall not relieve CONTRACTOR of any of the insurance requirements, nor decrease the liability of CONTRACTOR. The District reserves the right to require CONTRACTOR to provide insurance policies for review by the District.

C. Workers Compensation Insurance

CONTRACTOR shall take out and maintain during the life of the Agreement Workers Compensation Insurance for all of its employees on the project. In lieu of evidence of Workers Compensation Insurance, the District will accept a Self-Insured Certificate from the State of California. CONTRACTOR shall require any subcontractor to provide it with evidence of Workers Compensation Insurance.

D. Commercial General Liability Insurance

CONTRACTOR shall take out and maintain during the life of the Agreement Automobile and General Liability Insurance that provides protection from claims which may arise from

operations or performance under this Agreement. If CONTRACTOR elects to self-insure (self-fund) any liability exposure during the contract period above \$50,000, CONTRACTOR is required to notify the District immediately. Any request to self-insure must first be approved by the District before the changed terms are accepted. CONTRACTOR shall require any subcontractor to provide evidence of liability insurance coverages.

The amounts of insurance shall be not less than the following:

\$2,000,000/Occurrence, Bodily Injury, Property Damage -- Automobile.

\$2,000,000/Occurrence, Bodily Injury, Property Damage -- General Liability.

The following coverages or endorsements must be included in the policy(ies):

1. The District, its Directors, officers, and employees are Additional Insureds in the policy(ies) as to the work being performed under the contract.
2. The coverage is *Primary and non-contributory* to any other applicable insurance carried by the District.
3. The policy(ies) covers *contractual liability*.
4. The policy(ies) is written on an *occurrence* basis.
5. The policy(ies) covers the District's Property in Consultant's care, custody, and control.
6. The policy(ies) covers *personal injury* (libel, slander, and wrongful entry and eviction) liability.
7. The policy(ies) covers explosion, collapse, and underground hazards.
8. The policy(ies) covers *products and completed operations*.
9. The policy(ies) covers the use of *owned, non-owned* and hired automobiles.
10. The policy(ies) and/or a separate pollution liability policy(ies) shall cover pollution liability for claims related to the release or the threatened release of pollutants into the environment arising out of or resulting from Consultant's performance under this agreement.
11. The policy(ies) will not be canceled nor the above coverages/endorsements reduced without 30 days written notice to East Bay Municipal Utility District at the address above.

GENERAL REQUIREMENTS**CONTENTS**

1. DEFINITIONS
2. BOND
3. CONTRACTOR'S FINANCIAL OBLIGATION
4. SAMPLES OR SPECIMENS
5. MATERIAL AND WORKMANSHIP
6. DEFECTIVE WORK
7. WARRANTY OF TITLE
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27. RIGHTS AND REMEDIES OF THE DISTRICT
28. WAIVER OF RIGHTS
29. CONFIDENTIALITY

1. DEFINITIONS

The following terms shall be given the meaning shown, unless context requires otherwise or a unique meaning is otherwise specified.

- a. **"Change Order"** A Change Order is a written instrument used for modifying the contract with regards to the scope of Work, contract sum, and/or Contract Time. An approved Change Order is a Change Order signed by the District. An executed Change Order is a Change Order signed by both the District and the Contractor.

- b. **“Contract”** means the agreement between the District and Contractor as memorialized in the Contract Documents.
- c. **“Business Entity”** means any individual, business, partnership, joint venture, corporation, sole proprietorship, or other private legal entity recognized by statute.
- d. **“Buyer”** means the District’s authorized contracting official.
- e. **“Contract Documents”** comprise the entire agreement between the District and the Contractor and can include the District’s contract form if used, any purchase order, RFP, RFQ or Contractor response packet, and any addenda, appendices and District approved changes or amendments. The Contract Documents are intended to be complementary and include all items necessary for the Contractor’s proper execution and completion of the Work. Any part of the Work not shown or mentioned in the Contract Documents that is reasonably implied, or is necessary or usual for proper performance of the Work, shall be provided by the Contractor at its expense.
- f. **“Contractor”** means the Business Entity with whom the District enters into a contractual agreement. Contractor shall be synonymous with “supplier”, “vendor”, “consultant” or other similar term.
- g. **“Day”** unless otherwise specified, days are calendar days, measured from midnight to the next midnight.
- h. **“District”** means the East Bay Municipal Utility District, its employees acting within the scope of their authority, and its authorized representatives.
- i. **“Force Account”** means the method of compensation for Work performed that is billed at actual cost for labor, materials, equipment, taxes and other costs plus a specified percentage of markup for overhead and profit. Compensation rate for certain cost elements may be specified in the Contract.
- j. **“Goods”** means off the shelf software and all types of tangible personal property, including but not limited to materials, supplies, and equipment.
- k. **“Project Manager”** shall be the District designated individual responsible for administering and interpreting the terms and conditions of the Contract Documents, for matters relating to the Contractor’s performance under the Contract with the District, and for liaison and coordination between the District and Contractor.
- l. **“Work”** means all labor, tasks, materials, supplies, and equipment required to properly fulfill the Contractor’s obligations as required in the Contract Documents.
- m. **“Work Day”** Unless otherwise specified, work day includes all days of the year except Saturdays, Sundays and District holidays.

2. BOND

- a. When required in the District’s bid or proposal solicitation documents, the Contractor to whom award is made shall furnish a good and approved faithful performance bond

and/or payment bond within ten business days after receiving the forms for execution.

- b. The bonds shall be executed by a sufficient, admitted surety insurer (i.e.: as listed on website [http://interactive.web.insurance.ca.gov/webuser/idb_co_list\\$.startup](http://interactive.web.insurance.ca.gov/webuser/idb_co_list$.startup)) admitted to transact such business in California by the California Department of Insurance. After acceptance of the bond(s) by the District, a copy of the bond(s) will be returned to the Contractor.
- c. If, during the continuance of the Contract, any of the sureties, in the opinion of the District, are or become irresponsible, the District may require other or additional sureties, which the Contractor shall furnish to the satisfaction of the District within ten days after notice. If the Contractor fails to provide satisfactory sureties within the ten-day period, the Contract may be terminated for cause under Article 18.

3. CONTRACTOR'S FINANCIAL OBLIGATION

The Contractor shall promptly make payments to all persons supplying labor and materials used in the execution of the contract.

4. SAMPLES OR SPECIMENS

The Contractor shall submit samples or prepare test specimens of such materials to be furnished or used in the work as the Project Manager may require.

5. MATERIAL AND WORKMANSHIP

- a. All goods and materials must be new and of the specified quality and equal to approved sample, if samples have been required. In the event any goods or materials furnished or services provided by the Contractor in the performance of the Contract fail to conform to the requirements, or to the sample submitted by the Contractor, the District may reject the same, and it shall become the duty of the Contractor to reclaim and remove the item promptly or to correct the performance of services, without expense to the District, and immediately replace all such rejected items with others conforming to the Contract. All work shall be done and completed in a thorough, workmanlike manner, notwithstanding any omission from these specifications or the drawings, and it shall be the duty of the Contractor to call attention to apparent errors or omissions and request instructions before proceeding with the work. The Project Manager may, by appropriate instructions, correct errors and supply omissions, which instructions shall be binding upon the Contractor as though contained in the original Contract Documents.
- b. All materials furnished and all Work must be satisfactory to the Project Manager. Work, material, or machinery not in accordance with the Contract Documents, in the opinion of the Project Manager, shall be made to conform.

6. DEFECTIVE WORK

The Contractor shall replace at its own expense any part of the work that has been improperly executed, as determined by the Project Manager. If Contractor refuses or neglects to replace such defective work, it may be replaced by the District at the expense of the Contractor, and its sureties shall be liable therefor.

7. WARRANTY OF TITLE

Contractor shall warrant to the District, its successors and assigns, that the title to the materials, supplies or equipment covered by the Contract, when delivered to the District or to its successors or assigns, is free from all liens and encumbrances.

8. WARRANTY OF FITNESS

Contractor hereby warrants that all materials furnished shall meet the requirements and conditions of the Contract Documents; shall be fit for the purposes intended and fulfill its design functions; be free of all patent and latent defects in design, materials and workmanship; and perform satisfactorily. It is understood and agreed that by acceptance of this warranty and the acceptance of the materials or supplies to be manufactured or assembled pursuant to these specifications, the District does not waive any warranty either expressed or implied in Sections 2312 to 2317, inclusive, of the Commercial Code of the State of California or any products liability of the Contractor as determined by any applicable decision of a court of the State of California or of the United States.

9. SAFETY AND ACCIDENT PREVENTION

In performing work under the Contract on District premises, Contractor shall conform to any specific safety requirements contained in the Contract or as required by law or regulation. Contractor shall take any additional precautions as the District may reasonably require for safety and accident prevention purposes. Any violation of such rules and requirements, unless promptly corrected, shall be grounds for termination of this Contract or Contractor's right to precede in accordance with the default provisions of the Contract Documents.

10. CHARACTER OF WORKFORCE

The Contractor shall employ none but skilled competent qualified personnel to perform the Work, and shall maintain discipline and order in the conduct of the Work at all times.

11. PREVAILING WAGES & DIR REGISTRATION

- a. Please see www.dir.ca.gov for further information regarding the below.
- b. All Contractors and Subcontractors of any tier bidding on, or offering to performing work on a public works project shall first be registered with the State Department of Industrial Relations (DIR) pursuant to Section 1725.5 of the Labor Code. No bid will be accepted nor any contract entered into without proof of the Contractor and Subcontractors' current registration with the DIR (LC § 1771.1).
- c. All public works projects awarded after January 1, 2015, are subject to compliance monitoring and enforcement by the DIR (LC § 1771.4) and all Contractors are required post job site notices, "as prescribed by regulation" (LC § 1771.4).
- d. To the extent applicable, pursuant to Section 1773 of the Labor Code, the District has obtained from the Director of Industrial Relations of the State of California, the general prevailing rates of per diem wages and the general prevailing rates for holiday and overtime work in the locality in which the Work is to be performed, for each craft, classification, or type of worker needed to execute the contract. Pursuant to Section

1773.2 of the Labor Code, a copy of the prevailing wage rates is on file with the District and available for inspection by any interested party at www.dir.ca.gov.

- e. The holidays upon which such rates shall be paid shall be all holidays recognized in the collective bargaining agreement applicable to the particular craft, classification, or type of worker employed on the Work.
- f. The Contractor shall post a copy of the general prevailing rate of per diem wages at the jobsite pursuant to Section 1773.2 of the Labor Code.
- g. Pursuant to Section 1774 of the Labor Code, the Contractor and any of its Subcontractors shall not pay less than the specified prevailing rate of wages to all workers employed in the execution of the contract.
- h. As set forth with more specificity in Section 1773.1 of the Labor Code, "per diem" wages include employer payments for health and welfare, pension, vacation, travel, subsistence and, in certain instances, apprenticeship or other training programs, and shall be paid at the rate and in the amount spelled out in the pertinent prevailing wage determinations issued by the Director of Industrial Relations.
- i. The Contractor shall, as a penalty to the State or the District, forfeit not more than the maximum set forth in Section 1775 of the Labor Code for each calendar day, or portion thereof, for each worker paid less than the prevailing rates for the work or craft in which the worker is employed under the contract by the Contractor or by any Subcontractor under him. The difference between the prevailing wage rates and the amount paid to each worker for each calendar day or portion thereof for which such worker was paid less than the stipulated prevailing wage rate shall be paid to such worker by the Contractor.
- j. The specified wage rates are minimum rates only and the District will not consider and shall not be liable for any claims for additional compensation made by the Contractor because of its payment of any wage rate in excess of the general prevailing rates. All disputes in regard to the payment of wages in excess of those specified herein shall be adjusted by the Contractor at its own expense.
- k. General prevailing wage determinations have expiration dates with either a single asterisk or a double asterisk. Pursuant to California Code of Regulations, Title 8, Section 16204, the single asterisk means that the general prevailing wage determination shall be in effect for the specified contract duration. The double asterisk means that the predetermined wage modification shall be paid after the expiration date. No adjustment in the Contract Sum will be made for the Contractor's payment of these predetermined wage modifications.

12. PAYROLL RECORDS & ELECTRONIC SUBMISSION

- a. The Contractor and each Subcontractor shall keep an accurate payroll record, showing the name, address, social security number, work classification, straight time and overtime hours worked each day and week, and the actual per diem wages paid to each journeyman, apprentice, worker or other employee employed in connection with the Work. The payroll records shall be certified and shall be available for inspection in accordance with the provisions of Section 1776 of the Labor Code. Certified payroll

records shall be on the forms provided by the DIR or contain the same information required on the Department's form.

- b. The Contractor shall submit for each week in which any contract Work is performed a copy of all payroll records to the Project Manager. The Contractor shall be responsible for submission of copies of payroll records of all Subcontractors.
- c. The Contractor or Subcontractor shall certify the payroll records as shown on the DIR form. In addition, the records shall be accompanied by a statement signed by the Contractor or Subcontractor certifying that the classifications truly reflect the Work performed and that the wage rates are not less than those required to be paid.
- d. For public works projects awarded on or after April 1, 2015, or that are still ongoing after April 1, 2016, no matter when awarded, each Contractor and Subcontractor shall furnish the certified payroll related records as more specifically described above and in Labor Code section 1776 directly to the Labor Commissioner (see LC § 1771.4). These records shall be provided to the Labor Commissioner at least monthly or more frequently if required by the terms of the Contract. For exception on projects covered by collective bargaining agreements like a PLA, please see Labor Code section 1771.4.
- e. In the event of noncompliance with the requirements of Section 1776 of the Labor Code, the Contractor shall have 10 days in which to comply subsequent to receipt of written notice specifying in what respects such Contractor must comply with said Section. Should noncompliance still be evident after such 10-day period, the Contractor shall, as a penalty to the State or the District, forfeit the amount set forth in Section 1776 of the Labor Code for each calendar day, or portion thereof, for each worker, until strict compliance is effectuated. Upon the request of the Division of Apprenticeship Standards or the Division of Labor Standards Enforcement, such penalties shall be withheld from progress payments then due.
- f. The Contractor and every Subcontractor shall post at the workplace and comply with all required wage related workplace postings. Copies of the required postings may be downloaded or ordered electronically from the Department of Industrial Relations website at <http://www.dir.ca.gov/wpnodb.html>.

13. HOURS OF LABOR

Pursuant to the provisions of Sections 1810, et seq. of the Labor Code and any amendments thereof:

- a. Eight hours of labor constitutes a legal day's Work under the contract.
- b. The time of service of any worker employed upon the work shall be limited and restricted to eight hours during any one calendar day, and forty hours during any one calendar week except as provided in Article 13.iv below.
- c. The Contractor shall, as a penalty to the State or the District, forfeit the amount set forth in Section 1813 of the Labor Code for each worker employed in the execution of the contract by the Contractor or by any Subcontractor for each calendar day during which such worker is required or permitted to work more than eight hours in any calendar day and forty hours in any one calendar week in violation of this Article and the

provisions of Labor Code, Sections 1810, et seq.

- d. Work performed by employees of the Contractor in excess of eight hours per day, and forty hours during any one calendar week, shall be permitted upon compensation for all hours worked in excess of eight hours per day at not less than one and one-half times the basic rate of pay.
- e. The Contractor and every Subcontractor shall keep an accurate record showing the name of and the actual hours worked each calendar day and each calendar week by each worker employed by him in connection with the Work; the record shall be kept open at all reasonable hours to the inspection of the District and to the Division of Labor Standards Enforcement of the State of California.

14. EMPLOYMENT OF APPRENTICES

- a. In the performance of the contract, the Contractor and any Subcontractor shall comply with the provisions concerning the employment of apprentices in Section 1777.5 of the Labor Code and any amendments thereof.
- b. In the event the Contractor or any Subcontractor willfully fails to comply with the aforesaid section, such Contractor or Subcontractor shall be subject to the penalties for noncompliance in Labor Code, Section 1777.7.

15. CHANGES

- a. Changes in the Work can only be made in writing signed by an authorized employee of the District. If the change causes an increase or decrease in the contract sum, or a change in the time for performance under the Contract, an adjustment may be made as determined by the Project Manager.
- b. The District reserves the right to make changes in the design of materials, equipment, or machinery, to make alterations or additions to or deviations or subtractions from the Contract and any specifications and drawings, to increase or decrease the required quantity of any item or portion of the Work or to omit any item or portion of the Work, as may be deemed by the Project Manager to be necessary or advisable and to order such extra work as may be determined by the Project Manager to be required for the proper execution and completion of the whole Work contemplated. Any such changes will be ordered in writing by the Project Manager. The determination of the Project Manager on all questions relating to changes, including extra work, shall be conclusive and binding.
- c. Prior to issuing an amendment or change, or Change Order to the Contract, the Project Manager may request that the Contractor submit a proposal covering the changes. Within 10 business days of receiving the request, the Contractor shall submit its proposal to the Project Manager of all costs associated with the proposed amendment or change and any request for an extension of Contract time. Contractor's proposal shall include detailed estimates with cost breakdowns, including labor, material, equipment, overhead, and profit. Labor shall be broken down into hours and rate per hour. If applicable, the proposal shall include a breakdown for off-site labor (including factory labor, engineering, etc.). The Contractor's proposal shall include an analysis of schedule impact when the Contractor is requesting an adjustment in contract time. The

Contractor shall be responsible for any delay associated with its failure to submit its change proposal within the time specified. If the Project Manager decides not to issue an amendment or change after requesting a proposal from the Contractor, the Contractor will be notified in writing. The Contractor is not entitled to reimbursement for Change Order preparation costs if the Contractor's proposal is not accepted by the Project Manager.

- d. If the Contractor agrees with the terms and conditions of the approved Change Order, the Contractor shall indicate its acceptance by signing the original copy and returning it to the Project Manager within 10 Work Days after receipt or with reasonable promptness and in such sequence as to not delay the Work or activities of the District or of separate contractors, whichever is sooner. If notice of any change is required to be given to a surety by the provisions of any bond, the Contractor shall provide notice and the amount of each applicable bond shall be adjusted separately. Payment in accordance with the terms and conditions set forth in the executed Change Order shall constitute full compensation for all Work included in the Change Order and the District will be released from any and all claims for direct, indirect, and impact expenses and additional time impact resulting from the Work. If the Contractor disagrees with the terms and conditions of the approved Change Order, the Contractor shall indicate specific areas of disagreement and return the approved Change Order to the Project Manager with a detailed written dispute. No payment will be made on the disputed work until the approved Change Order is returned to the Project Manager. However, whether or not the Contractor agrees with the terms and conditions of an approved Change Order, the Contractor shall immediately revise its sequence of operations as required to facilitate timely completion of the changed work and shall proceed with the revised work sequence.
- e. The Project Manager may, after having received a written cost quotation from the Contractor, order the Contractor, in writing, to proceed with the work prior to issuance of an approved Change Order through a change directive. The change directive will authorize the Contractor to proceed with the work subject to the cost quotation submitted by the Contractor. Within five days following receipt of the change directive, the Contractor shall submit a detailed change proposal documenting the amount of compensation. The Project Manager will review the change proposal and, at its option, will either issue an approved Change Order for the work or direct the Contractor to perform the work through Force Account. Until the method of compensation is determined and the approved Change Order is received, the Contractor shall keep full and complete time and material records of the cost of the ordered work and shall permit the Project Manager to have access to such records. An approved Change Order shall supersede any previously issued written change directive covering the same Work.

16. EFFECT OF EXTENSIONS OF TIME

The granting, or acceptance, of extensions of time to complete the Work or furnish the labor, supplies, materials or equipment, or any one of the aforementioned, will not operate as a release of Contractor or the surety on Contractor's faithful performance bond.

17. DELAYS

- a. The Contractor shall take reasonable precautions to foresee and prevent delays to the Work. When the Contractor foresees a delay event, and upon the occurrence of a delay

event, the Contractor shall immediately notify the Project Manager of the probability or the actual occurrence of a delay, and its cause. With respect to all delays (compensable, excusable or inexcusable), the Contractor shall reschedule the Work and revise its operations, to the extent possible, to mitigate the effects of the delay. Within 15 days from the beginning of a delay the Contractor shall provide the Project Manager with a detailed written description of the delay, its cause, its impact and the Contractor's mitigation plans. Failure to provide the notification required above waives the Contractor's right to any additional time or compensation resulting from the delay for whatever cause. The Project Manager will investigate the facts and ascertain the extent of the delay, and the Project Manager's findings thereon shall be final and conclusive, except in the case of gross error. An extension of time must be approved by the Project Manager to be effective, but an extension of time, whether with or without consent of the sureties, shall not release the sureties from their obligations, which shall remain in full force until the discharge of the contract.

- b. For inexcusable delays (delays caused by circumstances within the Contractor's control, the control of its subcontractors or supplies of any tier, or within the scope of the Contractor's contract responsibilities) the Contractor shall not be entitled to an extension of time or additional compensation for any loss, cost, damage, expense or liability resulting directly or indirectly from the inexcusable delay.
- c. For excusable delays (delays to completion of the Work within the time limits set forth in the Contract Documents directly caused by events beyond the control of both the Contractor and the District, which delay is not concurrent with an inexcusable delay and which could not have been avoided by the Contractor through reasonable mitigation measures) the Project Manager will grant the Contractor an extension of time in an amount equal to the period of the excusable delay based on the analysis of schedule impact and delay analysis diagram, which shall be the Contractor's sole and exclusive remedy for such delay. Excusable delays shall include labor strikes, adverse weather, or Acts of God which directly affect the Contractor's performance.
- d. For compensable delays (delays to completion of the Work within the time limits set forth in the Contract Documents that could not be avoided by Contractor mitigation, caused directly and solely by the District or by causes within the exclusive control of the District, and which were not concurrent with any other type of delay) the Project Manager will grant the Contractor an extension of the time to perform under the Contract and compensation in an amount that represents the Contractor's actual direct costs incurred as a direct result of the compensable delay. The Contractor may recover its direct costs only and may not recover (and waives) all other types of indirect, consequential, special and incidental damages.
- e. For concurrent delays (two or more independent causes of delay directly preventing the Contractor from completing the Work within the time limits set forth in the Contract Documents where the delays occur at the same time during all or a portion of the delay period being considered, and where each of the delays would have caused delay to the Contractor even in the absence of any of the other delays, and none of the delays could have been avoided by Contractor mitigations) the following rules apply:
 - i. One or more of the concurrent delays are excusable or compensable, then the period of concurrent delay will be treated as an excusable delay; and

- ii. All of the concurrent delays are inexcusable, then the period of concurrent delay will be inexcusable.

18. TERMINATION

a. Termination by the District for Cause:

- i. District may terminate the Contractor's right to proceed under the Contract, in whole or in part, for cause at any time after the occurrence of any of the following events, each of which constitutes a default:
 1. The Contractor becomes insolvent or files for relief under the bankruptcy laws of the United States.
 2. The Contractor makes a general assignment for the benefit of its creditors or fails to pay its debts as the same become due.
 3. A receiver is appointed to take charge of the Contractor's property.
 4. The Contractor fails to supply skilled supervisory personnel, an adequate number of properly skilled workers, proper materials, or necessary equipment to prosecute the Work in accordance with the Contract Documents.
 5. The Contractor fails to make progress so as to endanger performance of the Work within the contractually required time.
 6. The Contractor disregards legal requirements of agencies having jurisdiction over the Work, the Contractor, or the District.
 7. The Contractor fails to provide the District with a written plan to cure a District identified default within five business days after the District's request for a plan to cure; the District does not accept the Contractor's plan for curing its default;, or the Contractor does not fully carry out an accepted plan to cure.
 8. The Contractor abandons the Work. Abandonment is conclusively presumed when the District requests a written plan to cure a default and the Contractor does not submit the plan within five business days of the District's request.
 9. The Contractor materially fails to meet its obligations in accordance with the Contract Documents.
 10. The Contractor is in default of any other material obligation under the Contract Documents.

- ii. If any of the above events occur, the District may, in its discretion, require that the Contractor submit a written plan to cure its default, which plan must be provided to the District within 5 business days of the request and must include a realistic, executable plan for curing the noted defaults.
 - iii. Upon any of the occurrences referred to in Article 18.a.i. above, the District may, at its election and by notice to the Contractor, terminate the Contract in whole or in part; accept the assignment of any or all of the subcontracts; and then complete the Work by any method the District may deem expedient. If requested by the District, the Contractor shall remove any part or all of the Contractor's materials, supplies, equipment, tools, and machinery from the site of the Work within seven days of such request; and, if the Contractor fails to do so, the District may remove or store, and after 90 days sell, any of the same at the Contractor's expense.
 - iv. No termination or action taken by the District after termination shall prejudice any other rights or remedies of the District provided by law or by the Contract Documents.
 - v. Conversion: If, after termination for other than convenience, it is determined that the Contractor was not in default or material breach, or that the default or material breach was excusable, the rights and obligations of the parties shall be the same as if the termination had been issued for convenience pursuant to Article 18.b. below.
- b. Termination by the District for Convenience:
- i. The District may, at its option, and for its convenience, terminate the Contract at any time by giving written notice to the Contractor specifying the effective date of termination. Upon such termination, the Contractor agrees to comply with the notice and further agrees to waive any claims for damages, including loss of anticipated profits, on account of the termination; and, as the sole right and remedy of the Contractor, the District shall pay the Contractor as set forth below.
 - ii. Upon receipt of a notice of termination for convenience, the Contractor shall, unless the notice directs otherwise, do the following:
 - 1. Immediately discontinue its performance of the Contract to the extent specified in the notice.
 - 2. Place no further orders or subcontracts for materials, equipment, services, or facilities, except as may be necessary for completion of a portion of the Work that is not discontinued or that is necessary for an orderly cessation of the Work.

3. Promptly cancel, on the most favorable terms reasonably possible, all subcontracts to the extent they relate to the performance of the discontinued portion of the Work.
 4. Thereafter, do only such Work as may be necessary to preserve and protect Work already in progress and to protect materials, plants, and equipment in transit to or on the site of performance.
- iii. Upon such termination for convenience, the District will pay to the Contractor the sum of the following:
1. The amount of the contract sum allocable to the portion of the Work properly performed by the Contractor as of the effective date of termination, less sums previously paid to the Contractor.
 2. Previously unpaid costs of any items delivered to the project site that were already fabricated for subsequent incorporation into the Work.
 3. Any proven losses with respect to materials and equipment directly resulting from the termination.
 4. Reasonable demobilization costs.
- iv. The above reimbursement is the sole and exclusive remedy to which the Contractor is entitled in the event the contract is terminated for convenience; and the Contractor expressly waives any other claims, damages, demands, compensation or recovery related to this contract or project. The Contractor agrees to sign a general release incorporating this waiver.
- c. Effect of Termination: Upon termination, the obligations of the Contract shall continue as to portions of the Work already performed and, subject to the Contractor's obligations under Article 18.b.ii, as to bona fide obligations assumed by the Contractor prior to the date of termination.
- d. Force Majeure: If the contract is suspended or terminated by the District because Contractor's performance is prevented or delayed by an event including an irresistible, superhuman cause, or by the act of public enemies of the State of California or of the United States ("Force Majeure"), the Contractor will be paid for Work performed prior to the Force Majeure event at either (i) the unit prices named in the Contract; or (ii) in the event no unit prices are named, a sum equal to the percentage of the total contract amount that matches the percentage of the total contract Work performed prior to the Force Majeure event.

19. DAMAGES

All losses or damages to material or equipment to be furnished pursuant to the Contract Documents occurring prior to receipt and final acceptance of the Work shall be sustained by the Contractor. The Contractor shall sustain all losses arising from unforeseen obstructions or difficulties, either natural or artificial, encountered in the prosecution of the Work, or from any action of the elements prior to final acceptance of the work, or from an act or omission on the part of the Contractor not authorized by the Contract Documents.

20. ORDER OF PRECEDENCE

- a. In the case of conflicts, errors, or discrepancies in any of the Contract Documents, the order of precedence is as follows. Within the same order of precedence, specific requirements shall take precedence over general requirements.
 - i. Approved Change Orders.
 - ii. Addenda.
 - iii. RFQ or RFP.
 - iv. Referenced Standard Specifications and Drawings.
 - v. Contractor's Response Packet
- b. With reference to drawings:
 - i. Numerical dimensions govern over scaled dimensions.
 - ii. Detailed drawings govern over general drawings.
 - iii. Addenda/Change Order drawings govern over contract drawings.
 - iv. Contract drawings govern over standard drawings.
 - v. Notes apply only to the drawing where the notes appear, unless classified as "typical" or intended to apply elsewhere in which case they apply to all drawings where the conditions or circumstance noted occurs.
 - vi. Typical details apply to all drawings unless a specific different detail is shown

21. INDEMNIFICATION/RESPONSIBILITY

- a. Contractor shall indemnify, keep and save harmless the District and each of its directors, officers, agents and employees against any and all suits, claims or actions arising out of any of the following:
 - i. Any injury to persons or property that may occur, or that may be alleged to have occurred, arising from the performance or implementation of this Contract; or

- ii. Any allegation that materials or services developed, provided or used for this Contract infringe or violate any copyright, trademark, patent, trade secret, or any other intellectual-property or proprietary right of any third party.
- b. Contractor further agrees to defend any and all such actions, suits or claims and pay all charges of attorneys and all other costs and expenses of defenses as they are incurred. If any judgment is rendered, or settlement reached, against the District or any of the other agencies or individuals enumerated above in any such action, Contractor shall, at its expense, satisfy and discharge the same.
- c. This indemnification shall survive termination or expiration of the Contract.

22. PROHIBITION OF ASSIGNMENT

The Contractor shall not assign, transfer, or otherwise dispose of any of its rights, duties or obligations under this Contract.

23. NEWS RELEASES

The Contractor, its employees, subcontractors, and agents shall not refer to the District, or use any logos, images, or photographs of the District for any commercial purpose, including, but not limited to, advertising, promotion, or public relations, without the District's prior written consent. Such written consent shall not be required for the inclusion of the District's name on a customer list.

24. TRANSFER OF INTEREST

Contractor shall not assign, transfer or otherwise substitute its interest in the Contract or any of the contract obligations without prior written consent from the District.

25. SEVERABILITY

Should any part of the Contract be declared by a final decision by a court or tribunal of competent jurisdiction to be unconstitutional, invalid or beyond the authority of either party to enter into or carry out, such decision shall not affect the validity of the remainder of the Contract, which shall continue in full force and effect, provided that the remainder of the Contract can be interpreted to give effect to the intentions of the parties.

26. COVENANT AGAINST GRATUITIES

The Contractor warrants that no gratuities (in the form of entertainment, gifts, or otherwise) were offered or given by the Contractor, or any agent or representative of the Contractor, to any officer or employee of the District with a view toward securing the Contract or securing favorable treatment with respect to any determinations concerning the performance of the Contract. For breach or violation of this warranty, the District shall have the right to terminate the Contract, either in whole or in part, and any loss or damage sustained by the District in procuring on the open market any items which Contractor agreed to supply shall be borne and paid for by the Contractor. The rights and remedies of the District provided in this clause shall not be exclusive and are in addition to any other rights and remedies provided by law or in equity.

27. RIGHTS AND REMEDIES OF THE DISTRICT

The rights and remedies of the District provided herein shall not be exclusive and are in addition to any other rights and remedies provided by law or under the Contract.

28. WAIVER OF RIGHTS

Any action or inaction by the District or the failure of the District on any occasion, to enforce any right or provision of the Contract, shall not be construed to be a waiver by the District of its rights and shall not prevent the District from enforcing such provision or right on any future occasion. Rights and remedies are cumulative and are in addition to any other rights or remedies that the District may have at law or in equity.

29. CONFIDENTIALITY

Contractor agrees to maintain in confidence and not disclose to any person or entity, without the District's prior written consent, any trade secret or confidential information, knowledge or data relating to the products, process, or operation of the District. Contractor further agrees to maintain in confidence and not to disclose to any person or entity, any data, information, technology, or material developed or obtained by Contractor during the term of the Contract. The covenants contained in this paragraph shall survive the termination of this Contract for whatever cause.

EXHIBT D

SPECIFICATIONS

WATER METERS – SPECIFICATIONS I
COLD WATER METERS – DISPLACEMENT TYPE
5/8" X 3/4" AND 1"

WATER METERS – SPECIFICATIONS II
COLD WATER METERS – DISPLACEMENT TYPE
1-1/2" AND 2"

WATER METERS – SPECIFICATIONS III
COLD WATER METERS – COMPOUND TYPE
3", 4" AND 6"

WATER METERS – SPECIFICATIONS I
COLD WATER METERS – DISPLACEMENT TYPE
5/8" X 3/4" AND 1"

PART 1 - GENERAL

1.1 DESCRIPTION

- A. Furnish cold water meters in sizes 5/8"x3/4", 3/4", and 1" as specified herein.

1.2 SUBMITTALS

- A. Submit the following prior to assembly:

1. Certified manufacturers' drawings showing dimensions, construction details, and materials used for all parts of the water meters. UNS designations are required for all copper, bronze and brass materials. See Section 2.2 A.1 for acceptable copper-base alloy materials and designated UNS numbers.
2. Submit NSF/ANSI 61 certification for all materials in contact with drinking water. If NSF certified before January 4, 2014 the material must be certified as meeting CA low lead requirement (NSF/ANSI 61 Annex G or NSF/ANSI 372).

- B. Submit the following prior to delivery:

1. Operating and Maintenance (O&M) Manuals
2. The manufacturer shall furnish the District with an affidavit of compliance that the water meters furnished comply with the applicable provisions of the latest AWWA Standard C700 and this specification.
3. Factory test tag certifying the meter accuracy at the flows required by AWWA C700 Table 1.

1.3 REFERENCES:

- A. ANSI/AWWA C700 (latest edition) – AWWA Standard for Cold Water Meters Displacement Type - Bronze Main Case

PART 2 - PRODUCTS

2.1 GENERAL

- A. Meters shall comply with the most current revision of AWWA Standard Specification C700 for bronze case Displacement type meters as modified herein. Whenever these modifications conflict with the applicable AWWA Specifications,

the specific wording of these modifications shall govern. All provisions of AWWA C700, not modified herein, shall apply in full force.

- B. All meters offered under these specifications must be pre-qualified as described in Section 2.5.

2.2 WATER METERS

A. MATERIAL AND DESIGN

1. The meter body and any component made of copper-base alloy in contact with water shall be non-leaded material UNS No. C89520 (EnviroBrass II or Sebilloy) or UNS No. C89833 (Federalloy) and conform to California Proposition 65 requirements. The term non-leaded means the maximum lead content shall be 0.25% or less.
2. Meter shall have a meter serial number imprinted on the outlet side of the meter body and on the inside of the register box lid. The lid shall be a dark color with white numerals 1/4" high. Reclaimed-water meters shall have a serial number with R followed by seven digits. The register lid and box shall be purple for reclaimed-water meters.
3. The size, model, serial number, and direction of flow through the meter shall be permanently imprinted on the outer cases of all meters.
4. Serial numbers shall be a District specified sequence such as: meters made in the year 2018 will be an 8 digit sequence starting with 518, meters made in 2019 will start with 519, etc. For reclaimed meters, serial numbers shall be a District specified sequence such as: meters made in the year 2018 will be an 8 digit sequence starting with R18, meters made in 2019 will start with R19, etc.
5. Main cases for all meters shall be of the removable bottom cap type with the bottom cap secured by 300 Series stainless steel bolts.
6. All external bolts and washers shall be constructed of stainless steel and shall be easily removed from the main case.
7. All meter main cases shall be guaranteed free from manufacturing defects in workmanship and material for 15 years.
8. The overall height of 5/8"x3/4" and 3/4" meter shall not exceed 5-1/2" with register any attached. The overall height of a 1" meter shall not exceed 6-1/2" with register attached.
9. All copper-alloy component parts that come in contact with, potable water must have an identifying feature to signify its non-leaded material status: "NL"=Federalloy, "SE" or "EB"=Sebilloy.

10. All wetted materials shall be suitable for soft water (less than 50 ppm total dissolved solids) with PH from 7.0 to 9.5 and maximum total chlorine residual of 2.5 ppm (in chloramine form). The presence of chloramines in the water shall not have any effect on the manufacturer's warranty.
11. Meter must be offered with Direct Read, AMI Compatible, Recycled-Water Direct Read registers, and AMI Compatible Recycled Water registers. Meters that are not offered with at least AMI Compatible and Recycled Water AMI Compatible registers will not be considered.

B. DIRECT READ REGISTER

1. The magnetic drive registers shall be of the straight-reading sealed type; and shall contain six (6) numeral wheels and shall be constructed to read on cubic feet. The register must contain a low-flow indicator for leak detection purposes. The dial shall be white and black markings and of the center-red-sweep-pointer type and shall contain 100 equally divided graduations at its periphery. The two right hand digits shall be white on black background; all other digits shall be black on a white background.
2. All registers shall have the size, model and date of manufacture stamped on the face. The register shall be oriented on the meter so that it is read from the outlet side.
3. All registers shall be made tamper resistant by use of non-lead seal such as Stoffel Seal Model NL-1, "Rotoseal", or an approved equal.
4. 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.
5. Registers shall be capable of being removed without interruption of service and be compatible with Automatic Meter Reading technology.
6. Register lid shall be flat with an external tab such that the lid may be flipped up easily for reading. Domed shaped lids are not acceptable.

C. AMI COMPATIBLE REGISTER

1. The magnetic drive registers shall be of the straight-reading sealed type; and shall contain eight (8) numeral wheels and shall be constructed to read on cubic feet. The register must contain a low-flow indicator for leak detection purposes. The dial shall be white and black markings. The four left hand digits shall be black on white background; all other digits shall be white on a black background.

2. All registers shall have the size, model and date of manufacture stamped on the face. The register shall be oriented on the meter so that it is read from the outlet side.
3. All registers shall be made tamper resistant by use of non-lead seal such as Stoffel Seal Model NL-1, "Rotoseal", or an approved equal.
4. 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.
5. Registers shall be capable of being removed without interruption of service and be compatible with Advanced Metering Infrastructure (AMI) technology.
6. Register lid shall be flat with an external tab such that the lid may be flipped up easily for reading. Domed shaped lids are not acceptable.
7. Register shall produce at least 8-digit Sensus Protocol UI-1203 Encoded Output with the smallest increment being equal to no more than 0.01 CUFT resolution and be readable as 8-digits by all AMR and AMI systems that EBMUD would consider using such as the Sensus Flex Net and Aclara systems which are currently in use at EBMUD.
8. Register shall be factory potted with Sensus Touch Pad connector or equivalent for use with Sensus Flex Net 520M meter interface units.

D. RECYCLED WATER WITH DIRECT READ REGISTER

1. The magnetic drive registers shall be of the straight-reading sealed type; and shall contain six (6) numeral wheels and shall be constructed to read on cubic feet. The register must contain a low-flow indicator for leak detection purposes. The dial shall be white and black markings and of the center-red-sweep-pointer type and shall contain 100 equally divided graduations at its periphery. The two right hand digits shall be white on black background; all other digits shall be black on a white background.
2. All registers shall have the size, model and date of manufacture stamped on the face. The register shall be oriented on the meter so that it is read from the outlet side.
3. All registers shall be made tamper resistant by use of non-lead seal such as Stoffel Seal Model NL-1, "Rotoseal", or an approved equal.
4. 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.

5. Registers shall be capable of being removed without interruption of service and be compatible with Automatic Meter Reading technology.
6. Register lid shall be flat with an external tab such that the lid may be flipped up easily for reading. Domed shaped lids are not acceptable.
7. Register face, body, and lid shall be colored purple consistent with recycled water practices. The serial number shall start with the letter 'R' followed by seven digits.

E. RECYCLED WATER METER WITH AMI COMPATIBLE REGISTER

1. The magnetic drive registers shall be of the straight-reading sealed type; and shall contain eight (8) numeral wheels and shall be constructed to read on cubic feet. The register must contain a low-flow indicator for leak detection purposes. The dial shall be white and black markings. The four left hand digits shall be black on white background; all other digits shall be white on a black background.
2. All registers shall have the size, model and date of manufacture stamped on the face. The register shall be oriented on the meter so that it is read from the outlet side.
3. All registers shall be made tamper resistant by use of non-lead seal such as Stoffel Seal Model NL-1, "Rotoseal", or an approved equal.
4. 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.
5. Registers shall be capable of being removed without interruption of service and be compatible with AMI technology.
6. Register lid shall be flat with an external tab such that the lid may be flipped up easily for reading. Domed shaped lids are not acceptable.
7. Register shall produce at least 8-digit Sensus Protocol UI-1203 Encoded Output with the smallest increment being equal to no more than 0.01 CUFT resolution and be readable as 8-digits by all AMR and AMI systems that EBMUD would consider using such as the Sensus Flex Net and Aclara systems which are currently in use at EBMUD.
8. Register shall be factory potted with Sensus Touch Pad connector or equivalent for use with Sensus Flex Net 520M meter interface units.
9. Register face, body, and lid shall be colored purple consistent with recycled water practices. The serial number shall start with the letter 'R' followed by seven digits.

F. MEASURING CHAMBER (Disc and Piston Type)

1. The measuring chamber shall be of a 2-piece snap-joint type. The chamber shall be made of a vulcanized hard rubber, such as those classified per ASTM D2135, D4549, D4067, D4203, D2874 or D3935 and shall be smoothly and accurately machined and shall contain a removable molded diaphragm of the same material as that of the chamber. No screws shall be used to secure the chamber together.
2. The motion of the piston or disc shall be transmitted to the register through the use of a magnetic drive assembly.
3. The measuring chamber outlet port shall be sealed to the maincase outlet port by means of an “O” ring gasket to eliminate any chamber leak paths.
4. The chamber shall be warranted for 15 years against defects in workmanship and materials.

G. STRAINERS

1. All meters shall contain removable polypropylene plastic strainer screens. The strainer shall be located near the inlet maincase port, before the measuring chamber.

2.3 PERFORMANCE

- A. To ensure accuracy, each meter must be accompanied by a factory test tag certifying the accuracy at the flows required by AWWA C700 Table 1 Characteristics of Displacement-type Meters (low, intermediate, and full flow).

2.4 WARRANTY

- A. The sealed register unit shall have a guarantee of: 15 years against a) fogging, b) water intrusion, c) defects in workmanship and materials, and d) failure of electronic components affecting electronic output accuracy and consistency or properties (e.g. resistance or impedance). The manufacturer shall replace, without charge, registers which develop defects within 15 years after delivery. If the manufacturer desires that the defective registers be returned, the manufacturer shall pay all freight costs for such return shipments.

2.5 PREQUALIFICATION

- A. Any meter supplied under this specification shall have passed the District’s accelerated wear test. This capacity shall be demonstrated for each type, model, and specific design of meter offered by any manufacturer in bidding on these specifications. For testing purposes, the District has designated 5/8”x3/4”x3/4” and 1” displacement type meters as Group I. See Engineering Standard Practice, ESP 521.3 for test procedure.

2.6 PROOF OF COMPLIANCE

- A. The manufacturer demonstrates compliance with Section 2.5 by supplying a random sample to the District for accelerated wear-testing by the procedure described in Engineering Standard Practice, ESP 521.3.

2.7 NOTIFICATION OF CHANGES

- A. It shall be the responsibility of the manufacturer of an approved meter to notify the District in writing of any changes in the design, construction, materials or dimensions of their meter. The District will then determine if such changes require that the meter, so modified, be retested to demonstrate its compliance with these specifications.

PART 3 - EXECUTION

3.1 SHIPPING AND HANDLING

- A. All meters shall be transported, handled and stored in accordance with the manufacturer's recommendations
- B. If stored outdoors, meters shall be covered with tarpaulins, plastic sheeting, or other protective covering, to protect them from sunlight and ozone damage.

END OF SECTION

WATER METERS – SPECIFICATIONS II
COLD WATER METERS – DISPLACEMENT TYPE
1-1/2” AND 2”

PART 1 - GENERAL

1.1 DESCRIPTION

- A. Furnish positive displacement type cold water meters, magnetic driven, in sizes 1-1/2” and 2” as specified herein.

1.2 SUBMITTALS

- A. Submit the following prior to assembly:
 - 1. Certified manufacturers’ drawings showing dimensions, construction details, and materials used for all parts of the water meters. UNS designations are required for all copper, bronze and brass materials. See Section 2.2 A.1 for acceptable copper-base alloy materials and designated UNS numbers.
 - 2. Submit NSF/ANSI 61 certification for all materials in contact with drinking water. If NSF certified before January 4, 2014 the material must be certified as meeting CA low lead requirement (NSF/ANSI 61 Annex G or NSF/ANSI 372).
- B. Submit the following prior to delivery:
 - 1. Operating and Maintenance (O&M) Manuals
 - 2. The manufacturer shall furnish the District with an affidavit of compliance that the water meters furnished comply with the applicable provisions of the latest AWWA Standard C700 and this specification.
 - 3. Factory test tag certifying the meter accuracy at the flows required by AWWA C700 Table 1.

1.3 REFERENCES:

- A. ANSI/AWWA C700 (latest edition) – AWWA Standards for Cold Water Meters Displacement Type Bronze Main Case

PART 2 - PRODUCTS

2.1 GENERAL

- A. Meters shall comply with the most current revision of AWWA Standard Specification C700 for Bronze Case Displacement Type Meters as modified herein. Whenever these modifications conflict with the applicable AWWA Specifications,

the specific wording of these modifications shall govern. All provisions of AWWA C700, not modified herein, shall apply in full force.

- B. All meters offered under these specifications must be pre-qualified, as described in Section 2.5.

2.2 WATER METERS

A. MATERIAL AND DESIGN

1. The meter body, top cover, and any component made of copper-base alloy in contact with water, shall be non-leaded material UNS No. C89520 (EnviroBrass II or Sebilloy), UNS No. C89833 (Federalloy) or UNS No. C89836 (BiAlloy) or UNS No. C87850 (Eco Brass), and conform to California Proposition 65 requirements. The term non-leaded means the maximum lead content shall be 0.25% or less.
2. A 1" FPT (female national pipe thread) Meter Test outlet; shall be provided on meter cases. It shall be located between the register and the outlet flange, and shall be parallel with the register box and perpendicular to the axis of the meter body.
3. The size, model, serial number and direction of flow through the meter shall be marked permanently on the outer case and visible when the meter is viewed from the top.
4. Serial numbers shall be a District specified sequence such as: meters made in the year 2018 will be an 8 digit sequence starting with 518, meters made in 2019 will start with 519, etc. For reclaimed meters, serial numbers shall be a District specified sequence such as: meters made in the year 2018 will be an 8 digit sequence starting with R18, meters made in 2019 will start with R19, etc.
5. Meter shall have a meter serial number imprinted on the outlet side of the meter body and on the inside of the register box lid. Numerals shall be approximately 1/4" high. Reclaimed-water meters shall have a serial number with R followed by seven digits. The register lid and box shall be purple for reclaimed-water meters.
6. Main cases for all meters shall be of the removable top case type with the top secured by 300 Series stainless steel bolts.
7. Connections for both 1-1/2" and 2" meters shall be oval flanged on both sides.
8. Frost protection devices shall not be provided.
9. All wetted materials shall be suitable for soft water (less than 50 ppm total dissolved solids) with PH 7.0 to 9.5 and maximum total chlorine residual of 2.5 ppm (in chloramine form). The presence of chloramines in the water shall not have any effect on the manufacturer's warranty.

10. Meter must be offered with Direct Read, AMI Compatible, and AMI Compatible Recycled Water registers. Meters that are not offered with at least AMI Compatible and Recycled Water AMI Compatible registers will not be considered.

B. METER WITH DIRECT READ REGISTER

1. Registers shall read in cubic feet, have a sweep hand and a low-flow/leak indicator.
2. Registers and register gear trains shall be hermetically sealed.
3. Registers shall be made tamper resistant by use of non-lead seal such as Stoffel Seal Model NL-1, Brooks "Rotoseal", or an approved equal.
4. Register lid shall be flat with an external tab such that the lid may be flipped up easily for reading. Domed shaped lids are not acceptable.
5. Registers shall be oriented on meter such that it is read from the outlet side.
6. Registers shall have seven digit, odometer style readout with a maximum registration of 9,999,990 cubic feet and a minimum of 0,000,000 cubic feet. The first digit on the far right shall be fixed and indicate 0 cubic feet. The numbers displayed on the two right most digits, which include the fixed 0, indicate multiples of ten cubic feet and shall be white on a black background. All numbers displayed on the remaining digits shall be black on a white background. A sweep hand on the dial face shall be provided. A single sweep of this hand shall register 10 cubic feet. Wheel stack shall be in the 6 o'clock position.
7. Registers shall be capable of being removed without interruption of service.

C. METER WITH AMI COMPATIBLE REGISTER

1. The magnetic drive registers shall be of the straight-reading sealed type; and shall contain eight (8) numeral wheels and shall be constructed to read on cubic feet. The register must contain a low-flow indicator for leak detection purposes. The five left hand digits shall be black on white background; all other digits shall be white on a black background.
2. Registers shall read in cubic feet, have a sweep hand and a low-flow/leak indicator.
3. Registers and register gear trains shall be hermetically sealed.
4. Registers shall be made tamper resistant by use of non-lead seal such as Stoffel Seal Model NL-1, Brooks "Rotoseal", or an approved equal.
5. Register lid shall be flat with an external tab such that the lid may be flipped up easily for reading. Domed shaped lids are not acceptable.

6. Registers shall be oriented on meter such that it is read from the outlet side.
7. Register shall produce at least 8-digit Sensus Protocol UI-1203 Encoded Output with the smallest increment being equal to no more than 0.1 CUFT resolution and be readable as 8-digits by all AMR and AMI systems that EBMUD would consider using such as the Sensus Flex Net and Aclara systems which are currently in use at EBMUD.
8. Register shall be factory potted with Sensus Touch Pad connector or equivalent for use with Sensus Flex Net 520M meter interface units.

D. RECYCLED-WATER METER WITH DIRECT READ REGISTER

1. Registers shall read in cubic feet, have a sweep hand and a low-flow/leak indicator.
2. Registers and register gear trains shall be hermetically sealed.
3. Registers shall be made tamper resistant by use of non-lead seal such as Stoffel Seal Model NL-1, Brooks "Rotoseal", or an approved equal.
4. Register lid shall be flat with an external tab such that the lid may be flipped up easily for reading. Domed shaped lids are not acceptable.
5. Registers shall be oriented on meter such that it is read from the outlet side.
6. Registers shall have seven digit, odometer style readout with a maximum registration of 9,999,990 cubic feet and a minimum of 0,000,000 cubic feet. The first digit on the far right shall be fixed and indicate 0 cubic feet. The numbers displayed on the two right most digits, which include the fixed 0, indicate multiples of ten cubic feet and shall be white on a black background. All numbers displayed on the remaining digits shall be black on a white background. A sweep hand on the dial face shall be provided. A single sweep of this hand shall register 10 cubic feet. Wheel stack shall be in the 6 o'clock position.
7. Registers shall be capable of being removed without interruption of service.
8. Register face, body, and lid shall be colored purple consistent with recycled water practices. The serial number shall start with the letter 'R' followed by seven digits.

E. RECYCLED WATER METER WITH AMI COMPATIBLE REGISTER

1. The magnetic drive registers shall be of the straight-reading sealed type; and shall contain eight (8) numeral wheels and shall be constructed to read on cubic feet. The register must contain a low-flow indicator for leak detection purposes. The five left hand digits shall be black on white background; all other digits shall be white on a black background.

2. Registers shall read in cubic feet, have a sweep hand and a low-flow/leak indicator.
3. Registers and register gear trains shall be hermetically sealed.
4. Registers shall be made tamper resistant by use of non-lead seal such as Stoffel Seal Model NL-1, Brooks "Rotoseal", or an approved equal.
5. Register lid shall be flat with an external tab such that the lid may be flipped up easily for reading. Domed shaped lids are not acceptable.
6. Registers shall be oriented on meter such that it is read from the outlet side.
7. Register shall produce at least 8-digit Sensus Protocol UI-1203 Encoded Output with the smallest increment being equal to no more than 0.1 CUFT resolution and be readable as 8-digits by all AMR and AMI systems that EBMUD would consider using such as the Sensus Flex Net and Aclara systems which are currently in use at EBMUD.
8. Register shall be factory potted with Sensus Touch Pad connector or equivalent for use with Sensus Flex Net 520M meter interface units.
9. Register body and lid shall be colored purple consistent with recycled water practices. The serial number shall start with the letter 'R' followed by seven digits.

F. MEASURING CHAMBER (Disc and Piston Type)

1. The measuring chamber shall be of a 2-piece snap-joint type. The chamber shall be made of a vulcanized hard rubber, such as those classified per ASTM D2135, D4549, D4067, D4203, D2874 or D3935 and shall be smoothly; and accurately machined and shall contain a removable molded diaphragm of the same material as that of the chamber. No screws shall be used to secure the chamber together.
2. The motion of the piston or disc shall be transmitted to the register, through the use, of a magnetic drive assembly.
3. The measuring chamber outlet port shall be sealed to the maincase outlet port by means of an "O" ring gasket to eliminate any chamber leak paths.
4. The chamber shall be warranted for 15 years against defects in workmanship and materials.

G. STRAINERS

1. All meters shall contain removable polypropylene plastic strainer screens. The strainer shall be located near the inlet maincase port, before the measuring chamber.

2.3 PERFORMANCE

- A. To ensure accuracy, each meter must be accompanied by a factory test tag certifying the accuracy at the flows required by AWWA C700 Table 1 Characteristics of Displacement-type Meters (low, intermediate, and full flow).

2.4 WARRANTY

- A. The sealed register unit shall have a guarantee of: 15 years against a) fogging, b) water intrusion, c) defects in workmanship and materials, and d) failure of electronic components affecting electronic output accuracy and consistency or properties (e.g. resistance or impedance). The manufacturer shall replace, without charge, registers which develop defects within 15 years after delivery. If the manufacturer desires that the defective registers be returned, the manufacturer shall pay all freight costs for such return shipments.

2.5 PREQUALIFICATION

- A. Any meter supplied under this specification shall have passed the District's accelerated wear test. This capacity shall be demonstrated for each type, model, and specific design of meter offered by any manufacturer in bidding on these specifications. For testing purposes, the District has designated 1-1/2" and 2" displacement type meters as Group II. See Engineering Standard Practice, ESP 521.3 for test procedure.

2.6 PROOF OF COMPLIANCE

The manufacturer demonstrates compliance with Section 2.5 by supplying a random sample to the District for accelerated wear-testing by the procedure described in Engineering Standard Practice, ESP 521.3.

2.7 NOTIFICATION OF CHANGES

- A. It shall be the responsibility of the manufacturer of an approved meter to notify the District, in writing, of any changes in the design, construction, materials or dimensions of their meter. The District will then determine if such changes require that the meter, so modified, be retested to demonstrate its compliance with these specifications.

PART 3 - EXECUTION

3.1 SHIPPING AND HANDLING

- A. All meters shall be transported, handled and stored in accordance with the manufacturer's recommendations.
- B. If stored outdoors, meters shall be covered with tarpaulins, plastic sheeting, or other protective covering, to protect them from sunlight and ozone damage.

END OF SECTION

WATER METERS – SPECIFICATIONS III
COLD WATER METERS – COMPOUND TYPE
3”, 4” AND 6”

PART 1 - GENERAL

1.1 DESCRIPTION

- A. Furnish compound type cold water meters in sizes 3”, 4” and 6” as specified herein.

1.2 SUBMITTALS

- A. Submit the following prior to assembly:

1. Certified manufacturers’ drawings showing dimensions, construction details, and materials used for all parts of the water meters. UNS designations are required for all copper, bronze and brass materials. See Section 2.2 A.1 for acceptable copper-base alloy materials and designated UNS numbers.
2. Submit NSF/ANSI 61 certification for all materials in contact with drinking water. If NSF certified before January 4, 2014 the material must be certified as meeting CA low lead requirement (NSF/ANSI 61 Annex G or NSF/ANSI 372).

- B. Submit the following prior to delivery:

1. Operating and Maintenance (O&M) Manuals
2. The manufacturer shall furnish the District with an affidavit of compliance that the water meters furnished comply with the applicable provisions of the latest AWWA Standard C702 and this specification.
3. Factory test tag certifying the meter accuracy at the flows required by AWWA C702 Table 1 (Class I), or Table 1.1 (Class II).

1.3 REFERENCES:

- A. ANSI/AWWA C702 (latest edition) – AWWA Standard for Cold-Water Meters Compound Type.

PART 2 - PRODUCTS

2.1 GENERAL

- A. Meters shall comply with the most current revision of AWWA Standard Specification C702 for compound type meters as modified herein. Whenever these modifications conflict with the applicable AWWA Specifications, the specific

wording of these modifications shall govern. All provisions of AWWA C702, not modified herein, shall apply in full force.

- B. All meters offered under these specifications must be pre-qualified as described in Section 2.5.

2.2 WATER METERS

A. MATERIAL AND DESIGN

1. The main cases and any component made of copper-base alloy in contact with water shall be non-leaded material UNS No. C89520 (EnviroBrass II or Sebilloy), UNS No. C89833 (Federalloy) or UNS No. C89836 (BiAlloy) or UNS No. C87850 (Eco Brass), and conform to California Proposition 65 requirements. The term non-leaded means the maximum lead content shall be 0.25% or less.
2. Change-over valve weights shall contain no lead.
3. Laying length is limited to the following dimensions in order to fit into the District's standard meter boxes:

Meter size (in)	Maximum Overall Length (in)
3	17
4	20
6	24

4. Companion flanges, gaskets, bolts, nuts and washers shall NOT be furnished.
5. A tapped boss, 1-1/2" NPT minimum on 3" meters, and 2" NPT minimum on 4", 6", 8" and larger meters, shall be provided on the top or side of the case near the outlet spud for test purposes.
6. Mainline section of the meter shall be of the turbine type. Disc or proportional flow types are NOT acceptable.
7. By-pass unit shall be a disc or piston-type measuring device and in line with the turbine in a uni-body construction.
8. External strainers shall be supplied. External line strainers shall be made of the same material as the main case. All nuts, bolts, gaskets, and necessary hardware must be shipped with strainer when not assembled to meter.
9. The manufacturers meter serial number shall be imprinted on the inside of the register box lids as well as on the outer cases in approximately 1/4" high letters. If no suitable space is available on the case, the serial number shall be stamped

on the upper edge of one of the flanges. Reclaimed-water meters shall have a serial number with R followed by seven digits. The register lid and box shall be purple for reclaimed-water meters.

10. Serial numbers shall be a District specified sequence such as: meters made in the year 2018 will be an 8 digit sequence starting with 518, meters made in 2019 will start with 519, etc. For reclaimed meters, serial numbers shall be a District specified sequence such as: meters made in the year 2018 will be an 8 digit sequence starting with R18, meters made in 2019 will start with R19, etc.
11. All wetted materials shall be suitable for soft water (less than 50 ppm total dissolved solids) with PH 7.0 to 9.5 and maximum total chlorine residual of 2.5 ppm (in chloramines form). The presence of chloramines in the water shall not have any effect on the manufacturer's warranty.
12. Meter must be offered with Direct Read, AMI Compatible, and AMI Compatible Recycled Water registers. Meters that are not offered with at least AMI Compatible and Recycled Water AMI Compatible registers will not be considered.

B. METER WITH DIRECT READ REGISTER

1. Registers shall be straight reading design, hermetically sealed, and read in cubic feet. The two right-hand digits shall be white on a black background. All other digits shall be black on a white background. Wheel stack shall be in the 6 o'clock position.
2. Registers shall be made tamper resistant by use of seal-wires incorporating a non-lead seal. The seal shall be Stoffel Seal Model NL-1, Brooks "Roto-Seal", or an approved equivalent.
3. Meters using a totalizer or any other means to combine both large and small flows into one register are not acceptable.
4. Registers shall be capable of being removed without interruption of service.

C. METER WITH AMI COMPATIBLE REGISTER

1. Registers shall be straight reading design, hermetically sealed, and read in cubic feet. Dials representing readings below 100 cubic feet shall be white on a black background. All other digits shall be black on a white background. Wheel stack shall be in the 6 o'clock position.
2. Registers shall be made tamper resistant by use of seal-wires incorporating a non-lead seal. The seal shall be Stoffel Seal Model NL-1, Brooks "Roto-Seal", or an approved equivalent.

3. Meters using a totalizer or any other means to combine both large and small flows into one register are not acceptable.
4. Registers shall be capable of being removed without interruption of service.
5. Register shall produce at least 8-digit Sensus Protocol UI-1203 Encoded Output with the smallest increment being equal to no more than 1.0 CUFT resolution on the large dial, 0.01 CUFT resolution on the small dial, and be readable as 8-digits by all AMR and AMI systems that EBMUD would consider using such as the Sensus Flex Net and Aclara systems which are currently in use at EBMUD.
6. Register shall be factory potted with Sensus Touch Pad connector or equivalent for use with Sensus Flex Net 520M meter interface units.

D. RECYCLED-WATER METER WITH DIRECT READ REGISTER

1. Registers shall be straight reading design, hermetically sealed, and read in cubic feet. Dials representing readings below 100 cubic feet shall be white on a black background. All other digits shall be black on a white background. Wheel stack shall be in the 6 o'clock position.
2. Registers shall be made tamper resistant by use of seal-wires incorporating a non-lead seal. The seal shall be Stoffel Seal Model NL-1, Brooks "Roto-Seal", or an approved equivalent.
3. Meters using a totalizer or any other means to combine both large and small flows into one register are not acceptable.
4. Registers shall be capable of being removed without interruption of service.
5. Register face, body, and lid shall be colored purple consistent with recycled water practices. The serial number shall start with the letter 'R' followed by seven digits.

E. RECYCLED WATER METER WITH AMI COMPATIBLE REGISTER

1. Registers shall be straight reading design, hermetically sealed, and read in cubic feet. Dials representing readings below 100 cubic feet shall be white on a black background. All other digits shall be black on a white background. Wheel stack shall be in the 6 o'clock position.
2. Registers shall be made tamper resistant by use of seal-wires incorporating a non-lead seal. The seal shall be Stoffel Seal Model NL-1, Brooks "Roto-Seal", or an approved equivalent.
3. Meters using a totalizer or any other means to combine both large and small flows into one register are not acceptable.

4. Registers shall be capable of being removed without interruption of service.
5. Register shall produce at least 8-digit Sensus Protocol UI-1203 Encoded Output.
6. Register shall produce at least 8-digit Sensus Protocol UI-1203 Encoded Output with the smallest increment being equal to no more than 1.0 CUFT resolution on the large dial, 0.01 CUFT resolution on the small dial, and be readable as 8-digits by all AMR and AMI systems that EBMUD would consider using such as the Sensus Flex Net and Aclara systems which are currently in use at EBMUD.
7. Register face, body, and lid shall be colored purple consistent with recycled water practices. The serial number shall start with the letter 'R' followed by seven digits.

2.3 PERFORMANCE

- A. To ensure accuracy, each meter must be accompanied by a factory test tag certifying the accuracy at the flows required by AWWA C702 Table 1, Operating Characteristics Class I (low, intermediate, and full flow), or Table 1.1, Operating Characteristics Class II (low, intermediate, and full flow).

2.4 WARRANTY

- A. The sealed register unit shall have a guarantee of: 15 years against a) fogging, b) water intrusion, c) defects in workmanship and materials, and d) failure of electronic components affecting electronic output accuracy and consistency or properties (e.g. resistance or impedance). The manufacturer shall replace, without charge, registers which develop defects within 15 years after delivery. If the manufacturer desires that the defective registers be returned, the manufacturer shall pay all freight costs for such return shipments.

2.5 PREQUALIFICATION

- A. Any meter supplied under this specification shall have passed the District's accelerated wear test. This capacity shall be demonstrated for each type, model, and specific design of meter offered by any manufacturer in bidding on these specifications. For testing purposes, the District has designated 3" and larger mechanical type meters as Group III. See Engineering Standard Practice, ESP 521.3 for test procedure.

2.6 PROOF OF COMPLIANCE

- A. The manufacturer demonstrates compliance with Section 2.5 by supplying a random sample to the District for accelerated wear-testing by the procedure described in Engineering Standard Practice, ESP 521.3.

2.7 NOTIFICATION OF CHANGES

- A. It shall be the responsibility of the manufacturer of an approved meter to notify the District, in writing, of any changes in the design, construction, materials or dimensions of their meter. The District will then determine if such changes require that the meter, so modified, be retested to demonstrate its compliance with these specifications.

PART 3 - EXECUTION

3.1 SHIPPING AND HANDLING

- A. All meters shall be transported, handled and stored in accordance with the manufacturer's recommendations.
- B. If stored outdoors, meters shall be covered with tarpaulins, plastic sheeting, or other protective covering, to protect them from sunlight and ozone damage.

END OF SPECIFICATION

EXHIBIT E

ENGINEERING AND STANDARD PRACTICE

ENGINEERING STANDARD PRACTICE

ESP	521.3
EFFECTIVE	30 JUL 10
SUPERSEDES	24 APR 04

SUBJECT:

ACCELERATED-WEAR TESTING OF REVENUE WATER METERS

PURPOSE

To provide a standard testing procedure consistent with Procedure 715, for accelerated-wear testing of revenue water meters, and for prequalifying those meter designs that comply with the latest District Standard Specifications.

APPLICATION

To all mechanically driven revenue water meters used for billing purposes. This does not include magmeters.

GENERAL INFORMATION

For test purposes, the revenue water meters used by the District have been divided into three groups:

Group I – 5/8" x 3/4", 3/4" and 1" displacement type

Group II – 1-1/2" and 2" displacement type

Group III – 3" and above compound type and turbine type

This grouping is based on the fact that a manufacturer normally uses an identical design for all meter sizes within a group. To take advantage of this practice and to reduce the test time required, the program calls for testing only the smallest sized meter in each group.

If a manufacturer uses different designs for the meters within a group, then each design will have to be tested.

Testing of 5/8" meters is expected to take about six months, and 1-1/2" and 3" meters about ten months. These test periods may be extended if water service needs require temporary suspension of tests.

The test facility is designed to test thirty 5/8" meters at a time in six groups of five. Each group will consist of meters of identical type, model, size, design and manufacture.

For the purposes of this ESP, the term "applicable AWWA standard" is defined as the most current revision of the following American Water Works Association standards as it corresponds to the type and size meter being referenced.

1. Displacement type: AWWA Standard C700.
2. Turbine type: AWWA Standard C701.
3. Compound type: AWWA Standard C702.

ENGINEERING STANDARD PRACTICE

ESP	521.3
EFFECTIVE	30 JUL 10
SUPERSEDES	24 APR 04

SUBJECT:

ACCELERATED-WEAR TESTING OF REVENUE WATER METERS

TEST PROCEDURE

1. The warehouse will receive five meters of the type, model, size, and design to be tested. The meters shall be accompanied by a certificate from the manufacturer verifying that the meters furnished are randomly selected from production run meters. The meters shall be in sealed boxes, and shall be opened in the Meter Shop in the presence of Design Division personnel. Each meter shall be individually sealed, and the seals shall be intact. **NO** disassembly shall be done prior to testing.
2. The Meter Shop will test each meter individually for: mechanical defects, accuracy at five flow rates in the flat position and at the second to the lowest flow rate in each of the other two positions, and coasting accuracy in the flat position. Each meter will also be tested for pressure drop across the meter at each specified flow rate and for compliance with applicable AWWA standard test pressure rating.

The three test positions are as follows:

- (a) Flat (longitudinal axis through the meter connections horizontal, register drive shaft vertical).
- (b) Tilted 45° (longitudinal axis through the meter connections tilted vertically 45°, register drive shaft in the vertical plane).
- (c) Rotated 45° (longitudinal axis through the meter connections horizontal, register drive shaft displaced 45° from vertical).

The five test flow rates are as follows:

- (a) 5/8" x 3/4" meters – 1/8, 1/4, 2, 5, and 10 gallons per minute (gpm).
- (b) 1-1/2" meters – 1/2, 1-1/2, 12, 50, and 100 gpm.
- (c) 3" meters – 1/8, 1/2, 20, 160, and 320 gpm.

The meters will be tested as follows:

- (a) Flat position (all groups at all five flow rates).
- (b) Tilted 45° position (Groups I and II at the second to the lowest flow rate only).
- (c) Rotated 45° position (Group I at the second to the lowest flow rate only).
- (d) Cross over range (Group III only at varying flow rates).

ENGINEERING STANDARD PRACTICE

ESP	521.3
EFFECTIVE	30 JUL 10
SUPERSEDES	24 APR 04

SUBJECT:

ACCELERATED-WEAR TESTING OF REVENUE WATER METERS

- (e) Each meter will be tested for coasting accuracy in the flat position at the second to the lowest test flow rate by interrupting the flow 20 times.
- (f) The pressure drop across each meter at each specified flow rate shall be measured and logged.
- (g) Each meter will be tested at the test pressure of the applicable AWWA Standard (see Table 2). This may be done individually or all five together. Test results shall be logged and any weeping or evidence of failure will be noted.

All test data will be logged. The accuracy of each meter subjected to tests (a) through (e) above shall be within the accuracy limits specified on Tables 4 and 5. Any meter that fails the applicable tests (a) through (g) above will be rejected at this point and no further tests will be performed.

- 3. All five meters will be removed from the Meter Shop. Groups I and II meters will be installed in the field test facility in series so that the same water flows through all five meters. Group III meters will not be subjected to accelerated wear testing at this time. Accelerated wear testing will resume when a test bench becomes available in the future to facilitate testing multiple 3" and larger compound or turbine meters (Group III). In the meantime, proceed to paragraph 6.
- 4. The initial registration and starting time shall be logged for each meter. The test flow shall be continued until the full test quantity of water has been run through each meter as follows:
 - (a) 5/8" x 3/4" meters – 500,000 cubic feet (cu.ft.), 3,120 hours or 130 days at 20 gpm.
 - (b) 1-1/2" meters – 4,400,000 cu.ft., 229 days at 100 gpm.
 - (c) 3" meters – 870,000 cu.ft., 151 days at 30 gpm; and 5,500,000 cu.ft., 88 days at 320 gpm (requirements for future testing of Group III meters).

Meter register readings shall be logged once weekly during the test. Any meter showing no change in reading shall be removed from the test stand and reported to the Design Division.

- 5. At the end of the test run, the meters shall be removed, delivered to the Meter Shop, and retested for accuracy and pressure loss. The meters will be subjected to the same tests as described in Paragraph 2, steps (a) through (g).
- 6. All meters shall be disassembled and examined for any mechanical defects. The inspector shall also verify that the meter is in compliance with the latest District standard specifications. Inspection findings shall be logged.

ENGINEERING STANDARD PRACTICE

ESP	521.3
EFFECTIVE	30 JUL 10
SUPERSEDES	23 APR 04

SUBJECT:

ACCELERATED-WEAR TESTING OF REVENUE WATER METERS

7. All meters shall be reassembled, boxed, labeled with the test run number, sealed, and delivered to the warehouse.
8. All logged test data shall be forwarded to the Design Division.
9. The Design Division will review the test logs received and prepare a formal report accepting or rejecting the meters submitted for test. If **ANY** of the following conditions are found during the test, the entire sample will be rejected:
 - (a) Any mechanical failure in any one of the five meters tested.
 - (b) Pressure loss, in any one of the five meters, in excess of the "Maximum Pressure Loss at Safe Maximum Operating Capacity" of the applicable AWWA Standard (see Table 3).
 - (c) Registration accuracy, after passage of water quantities given in Step 5, in two or more of the five meters, of:
 - (1) Less than 80% at minimum test flow rate in the applicable AWWA Standard for minimum flows (See Table 4). Note: The accuracy obtained at the lowest test flow rate is for data gathering purposes only and is not intended to be used as grounds for rejection.
 - (2) Not within the limits listed in the applicable AWWA Standard for normal flow rates (see Table 5).
10. The Design Division shall forward the draft formal report to the Meter Committee for review and comment prior to finalizing. The finished report shall be submitted to the Purchasing Division. The Purchasing Division will prepare the summary report to the manufacturer.
11. The Purchasing Division will return to the manufacturer four of the five samples submitted for test, along with the summary test report.



XAVIER J. IRIAS
Director of Engineering and Construction

EXHIBIT F

APPLICABLE AWWA STANDARDS

Applicable AWWA Standards¹

Table 1. Meter Sizes Covered in AWWA Standard

TYPE	SIZE (IN)	APPLICABLE AWWA STANDARD SECTION
Displacement	1/2 - 2	C700-09 1.1
Multijet	5/8 - 2	C708-05 1.1
Turbine	3/4 - 20	C701-07 1.1
Compound	2 - 8	C702-01 1.1

Table 2. Pressure Test (For TEST PROCEDURE – Paragraph 2.g)

TYPE	TEST PRESSURE (PSIG)	APPLICABLE AWWA STANDARD SECTION
Displacement	300	C700-09 B.3.2
Multijet	300	C708-05 A.2.2
Turbine	300	C701-07 A.3.2
Compound	300	C702-01 A.3.2

Table 3. Pressure Loss (For TEST PROCEDURE – Paragraph 9.b)

TYPE	PRESSURE LOSS (PSIG)	APPLICABLE AWWA STANDARD SECTION
Displacement	15	C700-09, Table 1
Multijet	15	C708-05, Table 1
Turbine ²		
Class I	15	C701-07, Table 1
Class II	7	
Compound ³		
Class I	20	C702-01, Table 1
Class II	15	C702-01, Table 1.1

¹ See GENERAL INFORMATION (Page 1) for the definition of “Applicable AWWA Standard”. The information provided on Tables 1 through 5 was obtained from the latest AWWA Standards as of 2009.

² Class I meters are the vertical-shaft and low-velocity, horizontal-shaft models. Class II meters are the in-line, horizontal-axis, high-velocity-type turbines characterized by lower head loss and a wider normal operating flow range than Class I models. See AWWA C701 1.1.

³ See AWWA C702-01 for defining characteristics for Class I and II.

Table 4. Allowable Registration Accuracy at Minimum Flowrate (For TEST PROCEDURE – Paragraph 9.c)

TYPE	SIZE (IN)	MINIMUM TEST FLOWRATE (GPM)	ACCURACY LIMITS (%)	APPLICABLE AWWA STANDARD SECTION
Displacement	5/8 x 3/4	1/4	95 - 101	C700-09 4.2.8.2
	3/4	1/2		
	1	3/4		
	1-1/2	1-1/2		
	2	2		
Multijet	1-1/2	1-1/2	97 -103	C708-05 4.2.8.2
	2	2		
Turbine	No AWWA Standard. Use criteria from same size meter of other meter types (for 1-1/2", and 2" use displacement type criteria).			
Compound	2	1/4	Not less than 95	C702-01 4.2.6.3
(Class I and II)	3	1/2		
	4	3/4		
	6	1-1/2		
	8	2		

Table 5. Allowable Registration Accuracy at Normal Flowrate (For TEST PROCEDURE – Paragraph 9.c)

TYPE	SIZE (IN)	NORMAL TEST FLOWRATE ⁴ (GPM)	ACCURACY LIMITS (%)	APPLICABLE AWWA STANDARD SECTION
Displacement	5/8 x 3/4	1 - 20	98.5 - 101.5	C700-09 4.2.8.1
	3/4	2 - 30		
	1	3 - 50		
	1-1/2	5 - 100		
	2	8 - 160		
Multijet	1-1/2	5 - 100	98.5 - 101.5	C708-05 4.2.8.1
	2	8 - 160		
Turbine			98.0 - 102	C701-07 4.2.7.1
Class I Low-Velocity Horizontal Type	2	1 - 120		
	3	24 - 250		
	4	40 - 400		
	6	80 - 1,000		
	8	140 - 1,600		
	10	225 - 2,500		
Class I Vertical-Shaft Type	12	400 - 4,000		
	3/4	1.5 - 30		
	1	2 - 50		
	1-1/2	3 - 100		
	2	4 - 160		
	3	6 - 350		
	4	8 - 630		
	6	15 - 1,300		
Class II In-Line (High-Velocity) Type	1-1/2	4 - 120	98.5 - 101.5	C701-07 4.2.7.2
	2	4 - 160		
	3	8 - 350		
	4	15 - 630		
	6	30 - 1,400		
	8	50 - 2,400		
	10	75 - 3,800		
	12	120 - 5,000		
	14	150 - 7,500		
	16	200 - 10,000		
	18	250 - 12,500		
20	300 - 15,000			

Table 5. Allowable Registration Accuracy at Normal Flowrate (For TEST PROCEDURE – Paragraph 9.c)

TYPE	SIZE (IN)	NORMAL TEST FLOWRATE ⁴ (GPM)	ACCURACY LIMITS (%)	APPLICABLE AWWA STANDARD SECTION
Compound				
Class I	2	2 - 160	97 - 103	C702-01 4.2.6.1
	3	4 - 320		
	4	6 - 500		
	6	10 - 1,000		
	8	16 - 1,600		
Class II	2	1 - 160	98.5 - 101.5	C702-01 4.2.6.1
	3	2 - 350		
	4	3 - 600		
	6	5 - 1,350		
	8	16 - 1,600		

⁴ Take readings at the low end, midpoint, and high end (e.g., for a 3/4" displacement meter, take readings at 1, 10.5, and 20 gpm).