GUAM WATERWORKS AUTHORITY

"Better Water. Better Lives"

Gloria B. Nelson Public Service Building
688 Route. 15, Mangilao, Guam 96913

BID ADDENDUM NO. 1

Invitation for Bid Number: GWA 2021-17

For Various Size Automated Meter Reading (AMR) Water Meters.

Indefinite Quantity Bid

This is an "Indefinite Quantity Bid" pursuant to the Guam Procurement Regulations. The quantities reflected are only estimated and not guarantee of amounts to be purchased. Quantities may increase or decrease through the duration of the contract, and continued purchase is subject to the availability of funds. No guarantee or other commitment is made to vendors in terms of purchasing quantity, and the amounts set forth in this bid are only estimates of needs for the near term.

"Must Bid All or None"

An all or none bid means that GWA will not award on an itemize basis. In order for an award to be made, all bid items listed below must include a bid amount.

As provided under 28 G.A.R. Chapter 4, any reference in the Solicitation to a manufacturer brand name or product number is due to GWA's need to provide minimum satisfactory product specifications. A "brand name or equal" reference is solely intended to provide a description of the type or quality of products or services sought by GWA and not to limit bids nor restrict a vendor from providing equivalent products or services of the same quality and construction. However, where a "brand name or equal" is set forth in the specifications, bidders must clearly state and provide proof of the quality and compatibility of the exact articles they are offering.

I. BID ITEM(s)

Item No	Description	Estimated Qty	Unit Cost	Total Cost
1.1	Positive Displacement Water Meter 5/8" x ¾"	500 each	_____	_____
1.2	1" Positive Displacement Water Meter	500 each	_____	_____

1.3 1 ½" Positive Displacement Water Meter 500 each _____ _____

1.4 2" Positive Displacement Water Meter 500 each _____ _____

The following below must be provided and applies to all Bid Items:

All training necessary to use the software, meters, and to maintain capability with existing GWA systems must be provided in video format and hard copy instructions inclusive of costs, length of training period, and any other requirements for face-to-face training and virtual training hours for all required training sessions.

TECHNICAL SPECIFICATIONS ON ITEM 1.1 through 1.4.

DESIGN and PERFORMANCE SPECIFICATIONS GWA Positive Displacement Water Meters Sizes 5/8x3/4" through 2"	**COMPLY** YES OR NO	**COMMENTS** *Size, weight, type, etc.*
Meters shall be magnetic drive, sealed register, positive displacement type, nutating disc cold water meters of size 5/8x3/4" through 2". All meters shall meet at a minimum AWWA C700 standards and the standards listed below.		
Meters and registers shall be compatible with Landis + Gyr Series 5 Water Interpreter.		
Meter register readings shall be compatible with GWA existing read software. This software is Badger Read Center Analytics and Analytics Mobile data management software applications, Version 3.16.04.15.		
Meter casing shall be lead-free bronze per NSF/ANSI 61 specifications. Serial numbers shall be stamped onto the register lid as well as the meter body. Meter size, model, registration, and date of manufacture shall be printed on the register face. Meter casing shall include a stamped directional flow arrow. Registers shall affix to the meter body with a tamper proof mechanism.		
The disc center pin as well as the magnetic drive assembly shaft shall be stainless steel. The disc guide assembly shall be stainless steel. Plastic will not be accepted.		
All reduction gearing must have the capability of being interchanged from one meter to another of the same size without affecting the accuracy or requiring calibration.		

DESIGN and PERFORMANCE SPECIFICATIONS **GWA Positive Displacement Water Meters** **Sizes 5/8x3/4" through 2"**	**COMPLY** YES OR NO	**COMMENTS** *Size, weight, type, etc.*
All registers shall have at minimum 8 dials. 5/8x3/4" through 1" registers shall display at minimum up to millions of gallons. 1.5" and 2" registers shall display at minimum up to tens of millions of gallons. All registers shall read in U.S. gallons. Register measurement shall be to the 0.1 gallon for 5/8X3/4" and 1" meters and 1 gallon for 1.5" and 2" meters. Meter shall update future ERT every 1 gallon or less. Register must clearly differentiate the billing read (1000 gals) and the raw read. Registers shall include a rollover or reset of dial indicator/alert.		
It is preferred that the Register lens be convex to avoid damage and collection of debris. It is preferred that the Register lens resist breakage and scoring under normal conditions. Register shall be permanently sealed to eliminate intrusion of moisture, dirt, and other contaminants. Register shall be suitable for installation in all environments, including meter pits subject to continuous submergence.		
All meters shall be constructed with an internal corrosion-resistant strainer which is easily removed from the meter body. It is preferred that internal strainers for 1 ½ and 2" meters be stainless steel. 2" meters shall come with an external round bronze plate strainer with a drain plug. Meters sized 1 ½" and 2" shall have one-inch NPT test port plugs on the meter outlet for onsite meter performance testing.		
All complete operating and parts manuals are to be furnished upon delivery at no additional cost to GWA. Manuals and other materials shall show all meter specifications and mechanical troubleshooting in paper and electronic media.		
Meter safe maximum operating capacity (SMOC) values by size shall be at minimum: 5/8x3/4" = 20 gpm 1" = 50 gpm 1-1/2" = 100 gpm 2" = 160 gpm		
Meter shall typically operate within flow ranges shown below by meter size: 5/8x3/4" = 0.5 – 25 gpm 1" = 1.0 - 55 gpm 1-1/2" = 2.5 - 120 gpm 2" = 2.5 - 170 gpm		

DESIGN and PERFORMANCE SPECIFICATIONS **GWA Positive Displacement Water Meters** **Sizes 5/8x3/4" through 2"**	**COMPLY** YES OR NO	**COMMENTS** *Size, weight, type, etc.*
Meters shall operate accurately at extended low flow rates at minimums shown below by meter size: 5/8x3/4" = 0.25 gpm 1" = 0.5 gpm 1-1/2" = 1.25 gpm 2" = 1.50 gpm		
Maximum head loss shall not exceed 3.0 psi at 15 gpm for 5/8x3/4" and 1" meters. Maximum head loss shall not exceed 5 psi at 80 gpm for 1 ½" and 2" meters.		
Meter register shall contain an 8-digit mechanical odometer wheel stack display with the following features: -Removable from meter -Meter register update future ERT every 1 gallon or less -Consumption (to 0.1 gallon or less) -Rate of flow (gpm) -Reverse-flow indicator or detection -Leak indicator or detection (low flow) -Rollover/reset indicator -High resolution ASCII encoder protocol		
Encoder register for 5/8x3/4", 1", 1-1/2", and 2" meters shall have a 5-foot Badger Meter Twist Tight connect/in-line connector which is waterproof.		
Serial numbers shall be stamped onto the register lid as well as the meter body. Sticker with serial number shall be placed on underside of register lid.		
Meter size, model, registration (gallons), and date of manufacture shall be printed on the register face.		
Meters and registers shall be submersible in pit/vault environments and shall be waterproof and weatherproof.		
Bolts that attach the bottom plate to the meter case shall be stainless steel, if applicable.		
Meters sized 1", 1.5", and 2" shall be maintainable through replacement parts, including measurement chamber and register.		
The maximum operating pressure of the meter housing shall be at least 150 psi.		
Meter accuracy requirements shall be warranted as follows:		

DESIGN and PERFORMANCE SPECIFICATIONS **GWA Positive Displacement Water Meters** **Sizes 5/8x3/4" through 2"**	**COMPLY** YES OR NO	**COMMENTS** *Size, weight, type, etc.*
All 5/8x3/4" and 1" meters shall meet or exceed current AWWA C700 new meter low, normal, and high flow new meter accuracy standards for a minimum period of 5 years from date of manufacture. New meters shall have factory-tested accuracy results at the three AWWA test flows specified for the meter size. Meters shall achieve AWWA repaired meter accuracy standards for 15 years from date of manufacture. All 1 ½ and 2" meters shall meet or exceed current AWWA C700 new meter accuracy standards for a minimum period of 2 years from the date of manufacture. Meters shall achieve AWWA repaired meter accuracy standards for a minimum period of 15 years from date of manufacture.		
Additional warranty requirements include meter housing and registers - 25 years.		
Meter deliveries must include an inventory upload file for the utility to upload serial numbers into its meter inventory system via a format provided by GWA.		
All meters shall conform to the AWWA standards for the latest AWWA C700 meters at minimum.		
All technical specification sheets for each meter shall be included in the final response to the IFB. Such information shall include accuracy versus flow and head loss versus flow curves as well as physical dimensions.		
Lay length requirements for meters are as follows assuming continued use of GWA Ford meter boxes: 5/8x3/4" = 7-1/2 inches 1" =10-3/4 inches 1-1/2" = 13 inches 2" = 17 inches		

General Requirements:

Sample meters and registers of each size for which a bid is submitted are requested by GWA to assure compatibility with existing GWA meter boxes and vaults.

Meter deliveries must include an inventory upload file that GWA is able to use for its meter inventory system via a format provided by GWA.

Specification sheets shall be provided for each meter type and size in the final bid.

INSPECTION, REGISTRATION AND TESTS:

The vendor shall be responsible for delivering all meters in a first-class condition. GWA will inspect and test each meter at the flows specified in the latest revision of the AWWA Manual M6 and any meter failing to register accurately according to these test specifications shall be rejected and returned to the vendor. Rejected meters shall be repaired or replaced by the vendor at no cost to GWA.

To cover costs of testing, a charge of $25.00 will be made against the supplier and paid as reimbursement to GWA by the supplier for each meter failing to pass inspection or tests. The tests made by GWA will be final and binding. The vendor may observe any or all testing.

If more than 3% of any order placed fails to pass inspection and tests, GWA reserves the right to reject the entire order.

BIDDING ON:

MFG: _____

BRAND: _____

PLACE OF ORIGIN: _____

DATE OF DELIVERY: _____
(AFTER RECEIPT OF PURCHASE ORDER)

Item No	Description	Estimated Qty	Unit Cost	Total Cost
2.1	Ultrasonic Water Meters 5/8 x 3/4"	10 each	_____	_____
2.2	1" Ultrasonic Water Meters	10 each	_____	_____
2.3	1 ½" Ultrasonic Water Meters	10 each	_____	_____
2.4	2" Ultrasonic Water Meters	10 each	_____	_____
2.5	3" Ultrasonic Water Meters	10 each	_____	_____
2.6	4" Ultrasonic Water Meters	10 each	_____	_____

TECHNICAL SPECIFICATIONS ON ITEM 2.1 through 2.6.

DESIGN and PERFORMANCE SPECIFICATIONS **GWA Ultrasonic Water Meters** **Sizes 5/8x3/4" through 4"**	**COMPLY** YES OR NO	**COMMENTS** *size, weight, type, etc.*
Meters shall use solid state technology in a totally encapsulated, waterproof housing. Meter and register may be a single unit, but there shall be no moving parts in the flow path. Removable register is preferred for larger sizes (indicate integrated or removable). All meters shall meet at a minimum AWWA C715 standards and the standards listed below.		
Meters and registers shall be compatible with the Landis +Gyr Series 5 Water Interpreter.		
Meter register readings shall be compatible with GWA existing read software. This software is Badger Read Center Analytics and Analytics Mobile data management software applications, Version 3.16.04.15.		
Meters shall be lead free bronze, polymer, or stainless-steel construction per NSF/ANSI 61 specifications. Meter size, model, registration, and date of manufacture shall be printed on the register face. Serial numbers shall be stamped onto the register lid as well as the meter body. Meter casing shall include a stamped directional flow arrow. Meters sized 1.5" and larger are preferred to have NPT test port plugs on the meter outlet for onsite meter performance testing.		
All registers shall have at minimum 8 dials. 5/8x3/4" - 1" registers shall display at minimum up to millions of gallons. 1.5" - 4" registers shall display at minimum up to tens of millions of gallons. All registers shall read in U.S. gallons. Register measurement for 5/8x3/4" through 1" shall be to the 0.1 gallon. Register measurement for 1.5" through 4" shall be to the 1 gallon. Meter shall update future ERT every 1 gallon or less. Register must clearly differentiate the billing read (1000 gals) and the raw read. Registers shall indicate a rollover or reset of dial indicator/alert.		
It is preferred that the Register lens be convex to avoid damage and collection of debris. It is preferred that the Register lens resist breakage and scoring under normal conditions. Register shall be permanently sealed to eliminate intrusion of moisture, dirt, and other contaminants. Register shall be suitable for installation in all environments, including meter pits subject to continuous submergence.		

All complete operating and parts manuals are to be furnished upon delivery at no additional cost to GWA. Manuals and other materials shall show all meter specifications and mechanical troubleshooting in paper and electronic media.		
Meter safe maximum operating capacity (SMOC) values by size shall be at minimum: 5/8x3/4" = 20 gpm 1" = 50 gpm 1-1/2" = 100 gpm 2" = 160 gpm 3" = 500 gpm 4" = 1000 gpm		
Meters shall operate accurately at extended low flow rates at minimums shown below by meter size: 5/8x3/4" = 0.05 gpm 1" = 0.25 gpm 1-1/2" = 0.40 gpm 2" = 0.50 gpm 3" = 0.50 gpm 4" = 0.75 gpm		
Maximum head loss shall not exceed 2.5 psi at 15 gpm for 5/8x3/4" and 1" meters. Maximum head loss shall not exceed 5 psi at 100 gpm for 1 ½" and 2" meters. Maximum head loss shall not exceed 3.0 psi at 350 gpm for 3" meters and 600 gpm for 4" meters.		
Meter register shall contain a programmable 8-digit LCD display with the following features: -non-removable or removable from meter (indicate which) -Meter shall update future ERT every 1 gallon or less -Consumption (to 1 gallon or less) -Battery life indicator -Rate of flow (gpm) -Reverse-flow indicator or detection -Leak indicator or detection (low flow) -Turnover/Rollover or reset indicator -High resolution ASCII encoder protocol		
Encoder registers for 5/8x3/4", 1", 1-1/2", and 2" meters shall have a 5-foot Badger Meter Twist Tight connect/in-line connector. Encoders for 3" and 4" meters shall have at least a 5-foot Badger Meter Twist Tight connect/in-line connector. Connectors shall be waterproof.		
Serial numbers shall be stamped onto the register lid as well as the meter body. Sticker with serial number shall be placed on underside of register lid.		

Meter size, model, registration (gallons), and date of manufacture shall be printed on the register face.		
Meters and registers shall be submersible in pit/vault environments and shall be waterproof and weatherproof.		
Any attaching bolts or screws shall be stainless steel, if applicable.		
Meters shall be maintenance free and contain no internal moving parts.		
The maximum operating pressure of the meter housing shall be at least 175 psi.		
The electronic register for 5/8x3/4" and 1" meters shall have a 20-year battery life with reads still obtainable on-site in the event of the LCD screen failing or battery failure. The electronic register for 1 ½", 2", 3", and 4" meters shall have a 10-year battery life with reads still obtainable on-site in the event of the LCD screen failing or battery failure.		
5/8x3/4" and 1" meters shall meet or exceed AWWA C715 new meter low, normal, and high flow new meter accuracy standards for a period of 20 years from date of shipment from manufacturer with no limit on cumulative flow through the meter. Meters sized 1 ½" and 2" shall meet or exceed AWWA C715 new meter low, normal, and high flow new meter accuracy standards for a period of 10 years from date of shipment from manufacturer with no limit on cumulative flow through the meter. 3" and 4" meters shall meet or exceed AWWA C715 new meter low, normal, and high flow new meter accuracy standards for a period of 3 years from date of shipment from manufacturer with no limit on cumulative flow through the meter.		
All meters shall conform to the AWWA standards for the latest AWWA C715 Type 1 meters at minimum.		
Lay length requirements for meters are as follows, assuming continued use of GWA Ford meter boxes: 5/8x3/4" = 7-1/2 inches 1" =10-3/4 inches 1-1/2" = 13 inches 2" = 17 inches 3" = 17 inches 4" = 20 inches		

General Requirements:

Sample meters and registers of each size for which a bid is submitted are requested by GWA to assure compatibility with existing GWA ¾" through 2" meter boxes and vaults.

Meter deliveries must include an inventory upload electronic file for the utility to upload serial and transmitter numbers into its meter inventory system via a format provided by GWA.

All technical specification sheets for each meter shall be included in the final response to the IFB. Such information shall include accuracy versus flow and head loss versus flow curves as well as physical dimensions.

Additional warranty requirements include meter housing-20 years, register-20 years, and register battery and measuring transducers 20 years prorated for years 11 through 20.

INSPECTION, REGISTRATION AND TESTS:

The vendor shall be responsible for delivering all meters in a first-class condition. GWA will inspect and test each meter at the flows specified in the latest revision of the AWWA Manual M6 and any meter failing to register accurately according to these test specifications shall be rejected and returned to the vendor. Rejected meters shall be repaired or replaced by the vendor at no cost to GWA.

To cover costs of testing, a charge of $25.00 will be made against the supplier and paid as reimbursement to GWA by the supplier for each meter failing to pass inspection or tests. The tests made by GWA will be final and binding. The vendor may observe any or all testing.

If more than 3% of any order placed fails to pass inspection and tests, GWA reserves the right to reject the entire order.

BIDDING ON:

MFG: _____

BRAND: _____

PLACE OF ORIGIN: _____

DATE OF DELIVERY: _____
(AFTER RECEIPT OF PURCHASE ORDER)

Item No	Description	Estimated Qty	Unit Cost	Total Cost
3.1	3" Turbine Class II Water Meters	10 each	_____	_____

3.2 4" Turbine Class II Water Meters 10 each _____

_____

3.3 6" Turbine Class II Water Meters 10 each _____

_____

3.4 8" Turbine Class II Water Meters 10 each _____

_____

3.5 10" Turbine Class II Water Meters 10 each _____

_____

TECHNICAL SPECIFICATIONS ON ITEM 3.1 through 3.5.

DESIGN and PERFORMANCE SPECIFICATIONS GWA Turbine Class II Water Meters Sizes 3" through 10"	**COMPLY** YES OR NO	**COMMENTS** *Size, weight, type, etc*
Requested meter sizes are 3-inch, 4-inch, 6-inch, 8-inch, and 10-inch.		
Meters shall be magnetic drive, sealed register, turbine type cold water meters of size 3" through 10". All meters shall meet at a minimum AWWA C701 Class II standards and the specifications listed below. Meters shall be lead-free bronze per NSF/ANSI 61 and 372 standards.		
Meters and registers shall be compatible with Landis + Gyr Series 5 Water Interpreter.		
Meter register readings shall be compatible with GWA existing read software. This software is Badger Read Center Analytics and Analytics Mobile data management software applications, Version 3.16.04.15.		
Meter casing shall be lead-free bronze per NSF/ANSI 61 specifications. Serial numbers shall be stamped onto the register lid as well as the meter body. Meter size, model, registration, and date of manufacture shall be printed on the register face. Meter casing shall include a stamped directional flow arrow. Registers shall affix to the meter body with a tamper proof mechanism.		
The disc center pin as well as the magnetic drive assembly shaft shall be stainless steel. The disc guide assembly shall be stainless steel. Plastic will not be accepted.		

DESIGN and PERFORMANCE SPECIFICATIONS **GWA Turbine Class II Water Meters** **Sizes 3" through 10"**	**COMPLY** YES OR NO	**COMMENTS** *Size, weight, type, etc*
All reduction gearing must have the capability of being interchanged from one meter to another of the same size without affecting the accuracy or requiring calibration.		
All registers shall have at minimum 8 dials. For meters sized 3" and 4", registers shall display at minimum up to 100 million gallons. 6", 8" and 10" registers shall display at minimum up to 1 billion gallons. All registers shall read in U.S. gallons. Register measurement shall be to the 1 gallon. Meter shall update future ERT every 1 gallon or less. Register must clearly differentiate the billing read (1000 gals) and the raw read. Registers shall include a rollover or reset of dial indicator/alert.		
All meters shall be constructed without an internal corrosion-resistant strainer. External round plate strainers shall be provided for all large meter sizes. Strainers shall come with an external round bronze plate strainer with a drain plug. Meters shall have two-inch NPT test port plugs on the meter outlet for onsite meter performance testing.		
All complete operating and parts manuals are to be furnished upon delivery at no additional cost to GWA. Manuals and other materials shall show all meter specifications and mechanical troubleshooting in paper and electronic media.		
Meter register shall contain an 8-digit mechanical odometer wheel stack display with the following features: -Removable from meter -Meter register update future ERT every 1 gallon or less -Consumption (to 1 gallon or less) -Rate of flow (gpm) -Reverse-flow indicator or detection -Leak indicator or detection (low flow) -Rollover/reset indicator -High resolution ASCII encoder protocol		
Encoder registers shall have a 5-foot Badger Meter Twist Tight connect/in-line connector which is waterproof.		
Serial numbers shall be stamped onto the register lid as well as the meter body. Sticker with serial number shall be placed on underside of register lid.		

DESIGN and PERFORMANCE SPECIFICATIONS **GWA Turbine Class II Water Meters** **Sizes 3" through 10"**	**COMPLY** YES OR NO	**COMMENTS** *Size, weight, type, etc*
Registers must affix to the meter body with a tamper proof mechanism.		
Meter bottom plates shall be bronze or brass.		
Meters and registers shall be submersible in pit/vault environments and shall be waterproof and weatherproof.		
The maximum operating pressure of the meter housing shall be at least 150 psi.		
Turbine meters shall exhibit the following ranges of flow for the indicated sizes: 3-inch – 5 to 550 gpm 4-inch – 10 to 1250 gpm 6-inch – 20 to 2500 gpm 8-inch – 30 to 4500 gpm 10-inch – 50 to 7000 gpm		
Turbine meters shall have the following low flow range for the indicated sizes: 3-inch – 4 gpm 4-inch – 6 gpm 6-inch – 12 gpm 8-inch – 20 gpm 10-inch – 30 gpm		
Turbine meters shall have at least the following maximum continuous flow for the indicated sizes: 3-inch – 450 gpm 4-inch – 1000 gpm 6-inch – 2000 gpm 8-inch – 3500 gpm 10-inch – 5500 gpm		
Turbine meters shall exhibit no more head loss at maximum continuous flow than indicated for the sizes below without an integral strainer: 3-inch – 1.8 psi 4-inch – 7.3 psi 6-inch – 4.8 psi 8-inch – 2.5 psi 10-inch – 1.6 psi		

General Requirements:

Sample meters and registers of each size for which a bid is submitted may be requested by GWA to assure compatibility with existing GWA meter boxes and vaults.

Meter deliveries must include an inventory upload file that GWA is able to use for its meter inventory system via a format provided by GWA.

Specification sheets shall be provided for each meter type and size in the final bid.

Turbine meters shall have a warranty to meet C701 accuracy standards for a minimum of 18 months after shipment from the manufacturer. Additional warranty requirements include meter housing-18 months and meter register-5 years.

Turbine type meters lay lengths for each size and type shall be included in the bid, assuming continued use by GWA of existing Ford meter boxes.

All technical specification sheets for each meter shall be included in the final response to this IFB.

Such information shall include accuracy versus flow and head loss versus flow curves as well as physical dimensions.

INSPECTION, REGISTRATION AND TESTS:
The vendor shall be responsible for delivering all meters in a first-class condition. GWA will inspect and test each meter at the flows specified in the latest revision of the AWWA Manual M6 and any meter failing to register accurately according to these test specifications shall be rejected and returned to the vendor. Rejected meters shall be repaired or replaced by the vendor at no cost to GWA.

To cover costs of testing, a charge of $25.00 will be made against the supplier and paid as reimbursement to GWA by the supplier for each meter failing to pass inspection or tests. The tests made by GWA will be final and binding. The vendor may observe any or all testing.

If more than 3% of any order placed fails to pass inspection and tests, GWA reserves the right to reject the entire order.

BIDDING ON:
MFG: _____
BRAND: _____

PLACE OF ORIGIN: _____

DATE OF DELIVERY: _____
(AFTER RECEIPT OF PURCHASE ORDER)

Item No	Description	Estimated Qty	Unit Cost	Total Cost
4.1	3" Compound Water Meters	5 each	_____	_____
4.2	4" Compound Water Meters	5 each	_____	_____
4.3	6" Compound Water Meters	5 each	_____	_____

OPTION TO PURCHASE AND TECHNICAL SPECIFICATIONS ON ITEM 4.1 through 4.3.

DESIGN and PERFORMANCE SPECIFICATIONS GWA Compound Water Meters Sizes 3" through 6"	**COMPLY** YES OR NO	**COMMENTS** *Size, weight, type, etc*
Requested meter sizes are 3-inch, 4-inch, and 6-inch.		
Meters shall be magnetic drive, sealed register, compound type cold water meters of size 3" through 6". All meters shall meet at a minimum AWWA C702 standards and the specifications listed below. Meters shall be lead-free bronze per NSF/ANSI 61 and 372 standards.		
Meters and registers shall be compatible with Landis + Gyr Series 5 Water Interpreter.		
Meter register readings shall be compatible with GWA existing read software. This software is Badger Read Center Analytics and Analytics Mobile data management software applications, Version 3.16.04.15.		
Meter casing shall be lead-free bronze per NSF/ANSI 61 specifications. Serial numbers shall be stamped onto the register lid as well as the meter body. Meter size, model, registration, and date of manufacture shall be printed on the register face. Meter casing shall include a stamped directional flow arrow. Registers shall affix to the meter body with a tamper proof mechanism.		

DESIGN and PERFORMANCE SPECIFICATIONS **GWA Compound Water Meters** **Sizes 3" through 6"**	**COMPLY** YES OR NO	**COMMENTS** *Size, weight, type, etc*
The disc center pin as well as the magnetic drive assembly shaft shall be stainless steel. The disc guide assembly shall be stainless steel. Plastic will not be accepted.		
All reduction gearing must have the capability of being interchanged from one meter to another of the same size without affecting the accuracy or requiring calibration.		
All registers shall have at minimum 8 dials. Registers shall display at minimum up to 100 million gallons. All registers shall read in U.S. gallons. Register measurement shall be to the 1 gallon. Meter shall update future ERT every 1 gallon or less. Register must clearly differentiate the billing read (1000 gals) and the raw read. Registers shall include a rollover or reset of dial indicator/alert.		
It is preferred that the Register lens be convex to avoid damage and collection of debris. It is preferred that the Register lens resist breakage and scoring under normal conditions. Register shall be permanently sealed to eliminate intrusion of moisture, dirt, and other contaminants. Register shall be suitable for installation in all environments, including meter pits subject to continuous submergence.		
Meters shall have two-inch NPT test port plugs on the meter outlet for onsite meter performance testing.		
All complete operating and parts manuals are to be furnished upon delivery at no additional cost to GWA. Manuals and other materials shall show all meter specifications and mechanical troubleshooting in paper and electronic media.		
Meter registers shall contain an 8-digit mechanical odometer wheel stack display with the following features: -Removable from meter -Meter register update future ERT every 1 gallon or less -Consumption (to 1 gallon or less) -Rate of flow (gpm) -Reverse-flow indicator or detection -Leak indicator or detection (low flow) -Rollover/reset indicator -High resolution ASCII encoder protocol		

DESIGN and PERFORMANCE SPECIFICATIONS **GWA Compound Water Meters** **Sizes 3" through 6"**	**COMPLY** YES OR NO	**COMMENTS** *Size, weight, type, etc*
Encoder registers shall have a 10-foot factory pre-wired connector, which shall be waterproof.		
Serial numbers shall be stamped onto the register lid as well as the meter body. Sticker with serial number shall be placed on underside of register lid.		
Registers must affix to the meter body with a tamper proof mechanism.		
Meter bottom plates shall be bronze or brass.		
Bottom plate bolts shall be stainless steel.		
Meters and registers shall be submersible in pit/vault environments and shall be waterproof and weatherproof.		
The maximum operating pressure of the meter housing shall be at least 150 psi.		
Compound meters shall exhibit the following ranges of flow for the indicated sizes: 3-inch – 0.5 to 450 gpm 4-inch – 0.75 to 1000 gpm 6-inch – 0.75 to 2000 gpm		
Compound meters shall have the following low flow range for the indicated sizes: 3-inch – 0.25 gpm 4-inch – 0.375 gpm 6-inch – 0.375 gpm		
Compound meters shall have at least the following maximum continuous flow for the indicated sizes: 3-inch – 400 gpm 4-inch – 800 gpm 6-inch – 1500 gpm		
Compound meters shall exhibit no more head loss at maximum continuous flow than indicated for the sizes below: 3-inch – 6.0 psi 4-inch – 11.0 psi 6-inch – 9.3 psi		

General Requirements:

Compound meters shall have a warranty to meet C702 accuracy standards for a minimum of 18 months after shipment from the manufacturer.

Additional warranty requirements include meter housing- 18 months, low flow register- 25 years, and turbo register 5 years.

Meter deliveries must include an inventory upload file that GWA is able to use for its meter inventory system via a format provided by GWA.

Specification sheets shall be provided for each meter type and size in the final bid.

Compound type meters lay lengths for each size and type shall be included in the bid, assuming continued use of GWA meter vaults.

Sample meters and registers of each size for which a bid is submitted may be requested by GWA to assure compatibility with existing GWA meter boxes and vaults

All technical specification sheets for each meter shall be included in the final response to IFB. Such information shall include accuracy versus flow and head loss versus flow curves as well as physical dimensions.

INSPECTION, REGISTRATION AND TESTS:
The vendor shall be responsible for delivering all meters in a first-class condition. GWA will inspect and test each meter at the flows specified in the latest revision of the AWWA Manual M6 and any meter failing to register accurately according to these test specifications shall be rejected and returned to the vendor. Rejected meters shall be repaired or replaced by the vendor at no cost to GWA.

To cover costs of testing, a charge of $25.00 will be made against the supplier and paid as reimbursement to GWA by the supplier for each meter failing to pass inspection or tests. The tests made by GWA will be final and binding. The vendor may observe any or all testing.

If more than 3% of any order placed fails to pass inspection and tests, GWA reserves the right to reject the entire order.

BIDDING ON:
MFG: _____
BRAND: _____

PLACE OF ORIGIN: _____

DATE OF DELIVERY: _____
(AFTER RECEIPT OF PURCHASE ORDER)

Item No	Description	Estimated Qty	Unit Cost	Total Cost
5.1	2" Electromagnetic Flow Water Meters	10 each	_____	_____
5.2	3" Electromagnetic Flow Water Meters	10 each	_____	_____
5.3	4" Electromagnetic Flow Water Meters	10 each	_____	_____
5.4	6" Electromagnetic Flow Water Meters	10 each	_____	_____
5.5	8" Electromagnetic Flow Water Meters	10 each	_____	_____

TECHNICAL SPECIFICATIONS ON ITEM 5.1 through 5.5.

DESIGN and PERFORMANCE SPECIFICATIONS GWA Electromagnetic Flow Water Meters Sizes 2" through 8"	**COMPLY** YES OR NO	**COMMENTS** *Size, weight, type, etc*
Requested meter sizes are 2-inch, 3-inch, 4-inch, 6-inch, and 8-inch.		
Meters shall be based on Faraday's law of induction using electromagnetic flow technology. The meter consists of two major components- a stainless steel tube with a liner and a transmitter which converts analog data into a digital format. Meters shall operate on 110/220 AC voltage. Analog output is 20mA. Meters shall be factory calibrated. Meters shall be lead-free NSF/ANSI 61 and 372 standards.		
Meters and registers shall be compatible with Landis + Gyr Series 5 Water Interpreter.		
Meter register readings shall be compatible with GWA existing read software. This software is Badger Read Center Analytics and Analytics Mobile data management software applications, Version 3.16.04.15.		
Meter flow tube shall be stainless steel. Serial numbers shall be stamped onto the flow transmitter as well as the		

DESIGN and PERFORMANCE SPECIFICATIONS **GWA Electromagnetic Flow Water Meters** **Sizes 2" through 8"**	**COMPLY** YES OR NO	**COMMENTS** *Size, weight, type, etc*
meter body. Meter size, model, registration, and date of manufacture shall be printed on the register face. Meter casing shall include a stamped directional flow arrow. Transmitter shall be remote with a 15-foot standard connector cable.		
The flow transmitter shall have at minimum 9 digits. Transmitters shall display at minimum up to 1 billion gallons and shall read in U.S. gallons. Transmitter measurement shall be to the 1 gallon or less. Meter shall update future ERT every 1 gallon or less. transmitter must clearly differentiate the billing read (1000 gals) and the raw read.		
The meter shall be permanently sealed to eliminate intrusion of moisture, dirt, and other contaminants. The flow tube shall be suitable for installation in all environments, including meter pits subject to continuous submergence.		
All complete operating and parts manuals are to be furnished upon delivery at no additional cost to GWA. Manuals and other materials shall show all meter specifications and mechanical troubleshooting in paper and electronic media.		
Transmitter capabilities shall include the following: -Removable from meter -Update future ERT every 1 gallon or less -Cumulative volume (to 1 gallon or less) -Rate of flow (gpm) -Empty pipe detection -High/low flow alarm -High resolution ASCII encoder protocol		
Flow transmitters shall have a remote mount 15-foot standard cable.		
The flow tube liner shall be hard rubber.		
Flanges shall be carbon steel.		
Grounding rings shall be 316 stainless steel.		
Meters shall be submersible in pit/vault environments and shall be waterproof and weatherproof.		
The maximum operating pressure of the meter housing shall be at least 150 psi.		

DESIGN and PERFORMANCE SPECIFICATIONS **GWA Electromagnetic Flow Water Meters** **Sizes 2" through 8"**	**COMPLY** YES OR NO	**COMMENTS** *Size, weight, type, etc*
Electromagnetic flow meters shall exhibit the following ranges of flow for the indicated sizes: 2-inch – 0.93 to 373 gpm 3-inch – 2.39 to 956 gpm 4-inch – 3.73 to 1494 gpm 6-inch – 8.4 to 3361 gpm 8-inch - 14.9 to 5975 gpm		
Meter accuracy shall be within 0.2 percent of actual flow. Accuracy shall not be affected by temperature, pressure, viscosity, or density.		
There shall be no measurable head loss through the meter.		

General Requirements:

Electromagnetic flow meters shall have a warranty to meet specified accuracy standards for a minimum of 24 months after shipment from the manufacturer.

Meter deliveries must include an inventory upload file that GWA is able to use for its meter inventory system via a format provided by GWA.

Specification sheets shall be provided for each meter type and size in the final bid.

Electromagnetic type meter lay lengths for each size and type shall be included in the bid.

All technical specification sheets for each meter shall be included in the final response to IFB. Such information shall include accuracy versus flow and head loss versus flow curves as well as physical dimensions.

Sample meters and registers of each size for which a bid is submitted may be requested by GWA to assure compatibility with existing GWA installation locations and dimensions.

INSPECTION, REGISTRATION AND TESTS:
The vendor shall be responsible for delivering all meters in a first-class condition. GWA will inspect and may test each meter at the flows specified by GWA. Any meter failing to register accurately according to these test specifications shall be rejected and returned to the vendor. Rejected meters shall be repaired or replaced by the vendor at no cost to GWA.

To cover costs of testing, a charge of $25.00 will be made against the supplier and paid as reimbursement to GWA by the supplier for each meter failing to pass inspection or tests. The tests made by GWA will be final and binding. The vendor may observe any or all testing.

If more than 10% of any order placed fails to pass inspection and tests, GWA reserves the right to reject the entire order.

BIDDING ON:

MFG: _____

BRAND: _____

PLACE OF ORIGIN: _____

DATE OF DELIVERY: _____
(AFTER RECEIPT OF PURCHASE ORDER)

End of Bid Addendum No. 1.

Bidders are also notified to visit GWA website: www.guamwaterworks.org to ensure that addenda to the bid, answers to questions, and reminders are communicated to all bidders throughout the solicitation process.

8·23·2021
Date

Miguel C. Bordallo, P.E.
General Manager