



**CITY OF LODI
COUNCIL COMMUNICATION**

AGENDA TITLE: Adopt Resolution Authorizing the City Manager to Execute Agreements with the Following Entities for the Water Meter Program Phase 1 Project, Approving Four Temporary Part-Time Field Services Intern Positions, and Appropriating Funds in the Amount of \$3,250,000 for the Total Project:

- A. Knife River, of Stockton, for Construction (\$1,872,285)
- B. RMC Water and Environment, of Walnut Creek, for Construction Administration Services (\$198,433)
- C. National Meter and Automation, Inc., of Santa Rosa, for Meter Assemblies and Field Documentation (\$811,065.93)

MEETING DATE: March 16, 2011

PREPARED BY: Public Works Director

RECOMMENDED ACTION: Adopt resolution authorizing the City Manager to execute agreements with the following entities for the Water Meter Program Phase 1 Project, approving four temporary part-time field services intern positions, and appropriating funds in the amount of \$3,250,000 for the total project:

- A. Knife River Construction, of Stockton, for construction (\$1,872, 285)
- B. RMC Water and Environment, of Walnut Creek, for construction administration services (\$198,433)
- C. National Meter and Automation, Inc., of Santa Rosa, for meter assemblies and field documentation (\$811,065.93)

BACKGROUND INFORMATION:

A. Contract Awards

Plans and specifications for this project were approved on January 5, 2011. The bid opening for the construction contract was held on February 15, 2011, and the following 11 bids were received from prime contractors. The lowest bid is \$865,000 below the engineer's estimate and reflects the favorable bidding climate for public works projects.

Bidder	Location	Bid
<u>Engineer's Estimate</u>		<u>\$2,737,530</u>
Knife River Construction	Stockton	\$1,872,285
Vinciguerra Construction	Jackson	\$2,890,300
Sierra National Construction	Carmichael	\$1,928,012
GM Construction & Development	Citrus Heights	\$1,992,966
Teichert Construction	Roseville	\$2,060,850
Marques Pipeline	Sacramento	\$2,249,181
MCI Engineering	Stockton	\$2,378,675
West Valley Construction	San Jose	\$2,636,355
Mozingo Construction	Oakdale	\$2,937,986
Lister Construction	Vacaville	\$3,029,560
Flores Paving	Sacramento	\$3,047,108

Staff recommends awarding the construction contract to Knife River Construction.

APPROVED:

Konradt Bartlam, City Manager

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B. Construction Administration Services

Staff recommends RMC Water and Environment, of Walnut Creek, perform the construction administration services. As the design engineer for this project, RMC is ideally suited to perform these duties. This is a time-and-materials contract with a not-to-exceed maximum of \$198,433. Materials and testing services are included in the RMC contract.

C. Water Meter Assemblies and Related Service

National Meter and Automation, Inc., of Santa Rosa, is the local supplier for Badger Meter, Inc., of Milwaukee, that was approved by City Council on August 4, 2010 as the sole source provider of water meters to the Water Meter Program. Staff, along with RMC, has negotiated the necessary terms and requirements of the water meter assemblies procurement and related field services. Field services include the delivery of meters to the City and recordation of model, serial number, address, and location of approximately 3,800 meters to be installed with the Phase 1 project. The total contract amount is \$811,065.93.

D. Field Services Interns

The Phase 1 project includes approximately 3,800 meters that will be installed within existing meter boxes or at services with a rich box. Observation of this work will be performed by field service interns temporarily hired by the City. Up to four field service interns will be hired and their work scheduled between April and September, in coordination with the contractor's schedule to install the 3,800 meters. The total budget for this field work is \$32,000.

Appropriation

The total project appropriation is \$3,250,000 and includes the contracts described above, field services interns costs, Public Works Engineering staff costs and contingency, as summarized below.

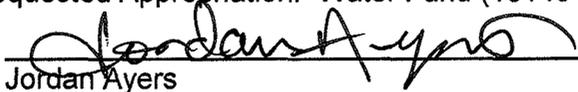
Budget Item	Amount
Construction Contract	\$1,872,285
Construction Total	\$1,872,285
National Meter Purchase	\$811,066
Equipment Total	\$811,066
RMC Construction Management	\$198,433
Field Services Interns (City)	\$32,000
Public Works Engineering	\$20,000
Engineering Total	\$250,433
Total	\$2,933,784
Project Contingency	\$316,216
Project Total Budget	\$3,250,000

FISCAL IMPACT:

Revenues from water sales is expected to be comparable to existing. Maintenance costs will reduce for those old pipelines and water services that are to be replaced.

FUNDING AVAILABLE:

Requested Appropriation: Water Fund (181464) \$3,250,000



 Jordan Ayers
 Deputy City Manager/Internal Services Director



 F. Wally Sandelin
 Public Works Director

Attachments

cc: Charles Swimley, Deputy Public Works Director - Utilities

K:\WP\PROJECTS\WATER\Meters\Water Meter Program Phase 1\CC Award.doc

3/9/2011

1. AA# _____

2. JV# _____

**CITY OF LODI
APPROPRIATION ADJUSTMENT REQUEST**

TO: Internal Services Dept. - Budget Division

3. FROM: Rebecca Areida-Yadav 5. DATE: 02/28/2011

4. DEPARTMENT/DIVISION: Public Works

6. REQUEST ADJUSTMENT OF APPROPRIATION AS LISTED BELOW

	FUND #	BUS. UNIT #	ACCOUNT #	ACCOUNT TITLE	AMOUNT
A. SOURCE OF FINANCING	181		3205	Fund Balance	\$ 3,250,000.00
B. USE OF FINANCING	181	181464	1825.2150	Water Meter Program - Phase 1	\$ 3,198,000.00
	181	181464	1827.2150	Water Meter Program - Phase 1	\$ 52,000.00

7. REQUEST IS MADE TO FUND THE FOLLOWING PROJECT NOT INCLUDED IN THE CURRENT BUDGET

Please provide a description of the project, the total cost of the project, as well as justification for the requested adjustment. If you need more space, use an additional sheet and attach to this form.

Contract with Knife River for water meter construction/installation of water meters (\$1,872,285), contract with RMC for construction administration (\$198,433), the purchase and assembly of water meters from National Meter and Automation (\$811,065.93). The remaining appropriation is for the hiring of field service interns (\$32,000) and City staff time (\$20,000) and the project contingency (\$316,216).

If Council has authorized the appropriation adjustment, complete the following:

Meeting Date: _____ Res No: _____ Attach copy of resolution to this form.

Department Head Signature: *CRELL* for EWS

8. APPROVAL SIGNATURES

Deputy City Manager/Internal Services Manager _____ Date _____

Submit completed form to the Budget Division with any required documentation.
Final approval will be provided in electronic copy format.

CITY OF LODI, CALIFORNIA

THIS CONTRACT made by and between the CITY OF LODI, State of California, herein referred to as the "City," and KNIFE RIVER CONSTRUCTION, herein referred to as the "Contractor."

W I T N E S S E T H :

That the parties hereto have mutually covenanted and agreed, and by these presents do covenant and agree with each other, as follows:

The complete Contract consists of the following documents, which are filed in the Public Works Department and which are incorporated herein by this reference, to-wit:

Notice Inviting Bids	The July 2002 Edition,
Information to Bidders	Standard Specifications,
General Provisions	State of California,
Special Provisions	Business and Transportation Agency,
Bid Proposal	Department of Transportation
Contract	
Contract Bonds	
Plans	

All of the above documents, sometimes hereinafter referred to as the "Contract Documents," are intended to cooperate so that any work called for in one and not mentioned in the other is to be executed the same as if mentioned in all said documents.

ARTICLE I - That for and in consideration of the payments and agreements hereinafter mentioned, to be made and performed by the City and under the condition expressed in the two bonds bearing even date with these presents and hereunto annexed, the Contractor agrees with the City, at Contractor's cost and expense, to do all the work and furnish all the materials except such as are mentioned in the specifications to be furnished by the City, necessary to construct and complete in a good workmanlike and substantial manner and to the satisfaction of the City the proposed improvements as shown and described in the Contract Documents which are hereby made a part of the Contract.

ARTICLE II - The City hereby promises and agrees with the Contractor to employ, and does hereby employ, the Contractor to provide all materials and services not supplied by the City and to do the work according to the terms and conditions for the price herein, and hereby contracts to pay the same as set forth in Section 5.600, "Measurement, Acceptance and Payment," of the General Provisions, in the manner and upon the conditions above set forth; and the said parties for themselves, their heirs, executors, administrators, successors and assigns, do hereby agree to the full performance of the covenants herein contained.

ARTICLE III - The Contractor agrees to conform to the provisions of Chapter 1, Part 7, Division 2 of the Labor Code. The Contractor and any Subcontractor will pay the general prevailing wage rate and other employer payments for health and welfare, pension, vacation, travel time,

and subsistence pay, apprenticeship or other training programs. The responsibility for compliance with these Labor Code requirements is on the prime contractor.

ARTICLE IV - And the Contractor agrees to receive and accept the following prices as full compensation for furnishing all materials and for doing all the work contemplated and embraced in this agreement; also for all loss or damage arising out of the nature of the work aforesaid or from the action of the elements, or from any unforeseen difficulties or obstructions which may arise or be encountered in the prosecution of the work until its acceptance by the City, and for all risks of every description connected with the work; also for all expenses incurred by or in consequence of the suspension or discontinuance of work and for well and faithfully completing the work, and the whole thereof, in the manner and according to the Plans and Contract Documents and the requirements of the Engineer under them, to-wit:

Perform the work necessary to construct approximately 4,240 linear feet of 8-inch water main and 320 linear feet of 4-inch water main, approximately 3,700 water meter assemblies, and other incidental and related work, in accordance with Plans and Specifications for "Water Meter Program Phase 1."

<u>ITEMS</u>					
ITEM NO.	DESCRIPTION	UNIT	EST'D QTY	UNIT PRICE	TOTAL PRICE
1	Construction Notifications	LS	1	\$10,000.00	\$10,000.00
2	Excavation Safety/Shoring and Bracing	LS	1	\$5,000.00	\$5,000.00
3	Water Pollution Control	LS	1	\$8,200.00	\$8,200.00
4	Install Meter Class A	EA	1,663	\$40.00	\$66,520.00
5	Install Meter Class B	EA	636	\$110.00	\$69,960.00
6	Install Meter Class C	EA	1,188	\$440.00	\$522,720.00
7	Install Meter Class D	EA	101	\$445.00	\$44,945.00
8	Install Meter Class E	EA	100	\$1,900.00	\$190,000.00
9	Construct Additional Surface Restoration, Moderate	EA	900	\$300.00	\$270,000.00
10	Construct Additional Surface Restoration, Difficult	EA	175	\$700.00	\$122,500.00
11	Replace Angle Meter Stop Valves	EA	380	\$111.00	\$42,180.00
12	Upgrade to Traffic Rated Water Meter Box	EA	100	\$83.00	\$8,300.00
13	Adjust Meter and Piping Alignment	EA	25	\$106.00	\$2,650.00
14	Install 8" Water Main	LF	4,240	\$45.50	\$192,920.00
15	Install 8" Water Valve	EA	16	\$1,700.00	\$27,200.00
16	Restore Additional Asphalt Concrete	SF	5,000	\$3.75	\$18,750.00
17	Connect New Main to Existing Main	EA	10	\$3,000.00	\$30,000.00

ITEM NO.	DESCRIPTION	UNIT	EST'D QTY	UNIT PRICE	TOTAL PRICE
18	Cap and Abandon Existing Main	EA	15	\$900.00	\$13,500.00
19	Connect Water Service To Building (Additional >50LF)	LF	1,250	\$24.00	\$30,000.00
20	Install Fire Hydrant Assembly	EA	2	\$2,400.00	\$4,800.00
21	Reset Existing Fire Hydrant Assembly	EA	2	\$1,160.00	\$2,320.00
22	Replace Additional 1" Service Line	LF	300	\$45.50	\$13,650.00
23	Install 6-inch Water Valve	EA	5	\$1,400.00	\$7,000.00
24	Install 4-inch Water Main	LF	320	\$50.00	\$16,000.00
25	Hot Tap Existing Main for 4" Main Connection	EA	1	\$3,000.00	\$3,000.00
26	Abandon Existing I-inch Service	EA	5	\$650.00	\$3,250.00
27	Install 2-inch Water Service	EA	3	\$3,700.00	\$11,100.00
28	Install Additional Ductile Iron Water Main	LF	80	\$54.00	\$4,320.00
29	Install Additional Water Service Tap	EA	15	\$1,700.00	\$25,500.00
30	Water Main Modifications near 1438 Voelker	LS	1	\$4,800.00	\$4,800.00
31	Install 4-inch Water Valve	EA	1	\$1,200.00	\$1,200.00
32	Traffic Control	LS	1	\$ 20,000.00	\$20,000.00
33	Mobilization/Demobilization (Mobilization: Max 2.5% of total contract, Demobilization: Min 2% of total contract)	LS	1	\$80,000.00	\$80,000.00
				TOTAL	\$1,872,285.00

ARTICLE V - By my signature hereunder, as Contractor, I certify that I am aware of the provisions of Section 3700 of the Labor Code, which requires every employer to be insured against liability for workers' compensation or to undertake self-insurance in accordance with the provisions of that code, and I will comply with such provisions before commencing the performance of the work of this contract.

ARTICLE VI - It is further expressly agreed by and between the parties hereto that, should there be any conflict between the terms of this instrument and the Bid Proposal of the Contractor, then this instrument shall control and nothing herein shall be considered as an acceptance of the said terms of said proposal conflicting herewith.

ARTICLE VII - The City is to furnish the necessary rights-of-way and easements and to establish lines and grades for the work as specified under the Special Provisions. All labor or materials not mentioned specifically as being done by the City will be supplied by the Contractor to accomplish the work as outlined in the specifications.

ARTICLE VIII - The Contractor agrees to commence work pursuant to this contract within 15 calendar days after the City Manager has executed the contract and to diligently prosecute to completion within 150 WORKING DAYS.

WHEN SIGNING THIS CONTRACT, THE CONTRACTOR AGREES THAT THE TIME OF COMPLETION FOR THIS CONTRACT IS REASONABLE AND THE CONTRACTOR AGREES TO PAY THE CITY LIQUIDATED DAMAGES AS SET FORTH IN SECTION 6-04.03 OF THE SPECIAL PROVISIONS. CONTRACTOR AGREES THAT THIS AMOUNT MAY BE DEDUCTED FROM THE AMOUNT DUE THE CONTRACTOR UNDER THE CONTRACT.

IN WITNESS WHEREOF, the parties to these presents have hereunto set their hands the year and date written below.

CONTRACTOR:

CITY OF LODI

By: _____
Konradt Bartlam
City Manager

By: _____

Date: _____

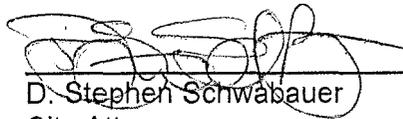
Attest:

Title

Randi Johl
City Clerk

(CORPORATE SEAL)

Approved As To Form



D. Stephen Schwabauer
City Attorney

City of Lodi Water Meter Program
Task Order No. 2
Phase 1 Construction Management Services
Exhibit A - Detailed Scope of Work

The City of Lodi (City) Water Meter Program (WMP) Phase 1 Water Meter Installation and Mainline Replacement Project consists of the construction/installation of the following:

- Approximately 4,600 lineal feet of water main to replace existing, undersized mains located in backyard easements.
- Approximately 3,700 residential water meters and associated water services.

This Scope of Work (SOW) for construction management services associated with the City's WMP Phase 1 project includes four tasks described below for the various work components, including the responsible person(s), the applicable work phase and duration when the task is to be completed, the deliverables, and assumptions used in developing the level of effort included in the budget. The performance of this SOW by Consultant is for the sole benefit of the City and shall not be relied upon or used by any third party without the express written consent of the City and Consultant.

Task 1 – Engineering Services During Construction (ESDC)

Purpose: The Consultant will provide engineering services during construction for the City to address Contractor submittals, record drawings and to provide overall technical support. The ESDC effort will be led by Tom Dugan (Resident Engineer - RE) and supported by the WMP Phase 1 design team of Mike Matson (Senior Review), Tony Valdivia (Project Manager), Kevin Smith (Project Engineer), and Victor Alaniz (CAD Production). The level of effort for ESDC activities is limited to the budgeted hours.

Phase/Duration: Entire Contract Period; April - October 2011 (approximately 150 working days)

Task 1.1 – Submittal Review

Consultant will review Contractor submittals for compliance with the contract documents. Consultant will process submittals that require the engineer of record's review and approval. Consultant will prepare written engineer's review comments for each major submittal and provide the City submittal recommendations.

Deliverable: Submittal Review Status Recommendation (e.g. make-correction noted), with written comments.

Task 1.2 – Technical/Design Support

Consultant will provide technical support to resolve field conflicts and other engineering issues, including responding to construction contractor requests for information (RFIs). The ESDC team will address City requests on an as needed basis or as directed by the RE. The ESDC team may conduct site visits to gain an understanding of the design conflict if required.

Deliverable: Written design clarifications and RFI responses to drawings and/or specification when warranted

Task 1.3 – Record Drawings

Consultant will prepare record drawings from the contractor's as-built WMP Phase 1 drawings once the City accepts completion of the WMP Phase 1 contract work.

Deliverable: Hard Copy: One (1) full size vellum set, Three (3) half-size plans and specification; Electronic: PDF containing one (1) full-size set of drawings and the specifications, and CAD files (full set) of Record Drawings.

Task 1.4 – Permit Registration Documents (PRD)

Prior to the start of construction activity, the City of Lodi must apply for coverage under the General Construction Storm Water Permit (2009-0009-DWQ). The City will be required to file completed Permit Registration Documents (PRD) and receive the State Water Resources Control Board (SWRCB) approval by being issued a Waste Discharger Identification number (WDID). Consultant will prepare the PRDs, review the PRDs with the City's Legally Responsible Person (LRP), and upload the PRDs to the State's Storm Water Multiple Application and Report Tracking System (SMARTS) on-line system.

Deliverable: Permit Registration Documents for General Construction Storm Water Permit

Task 2 – Contract Administration

Purpose: The Consultant will provide construction contract administration services throughout the WMP Phase 1 construction period. Services will include the subtasks described below. Contract administration will be performed by Tom Dugan (RE) and supported by RMC and Nolte staff.

Phase/Duration: Entire Contract Period; April - October 2011 (approximately 150 working days)

Task 2.1 - Contract Execution

The Consultant will support the City as needed during contract execution. Consultant activities during this period may include assisting the City with performance and payment bonds, public liability and property damage insurance, and compensation insurance.

Task 2.2 - Pre-Construction Meeting

The Consultant will set up the pre-construction meeting between the Contractor and the City Construction Project Manager (CPM), assist the City as needed during the meeting and record and publish meeting minutes.

Deliverable: Pre-Construction Meeting Agenda and Minutes

Task 2.3 - Progress Reports

The Consultant will prepare brief weekly progress emails to document construction progress and identify issues needing resolution. These reports will be based on regular feedback from the Consultant inspection team and contractor.

Deliverable: Progress of Work Emails

Task 2.4 - Monthly Progress Payment

The Consultant will verify the accuracy of the Contractor's monthly payment estimates and coordinate with the CPM, who will be responsible for approving the Contractor's monthly payment request.

Task 2.5 - Contract Change Orders

The Consultant will be responsible for managing contract change order processing. The Consultant will identify potential contract change orders (PCOs) and coordinate with the CPM and Contractor regarding the PCO. The Consultant and CPM will meet with the Contractor to negotiate a change orders impacts to the construction contract cost and schedule. The Consultant will prepare a recommendation for action to the City for resolving the PCO, and will track all change orders through project acceptance.

The Consultant will review proposed construction change orders involving changes to the design intent. The

ESDC staff will prepare design details for change orders and an independent cost estimate when necessary.

Task 2.6 - Schedule Review

The Consultant will review the initial baseline schedule and subsequent schedule updates. The review will include evaluation of schedule activities, logic, durations, critical path items, incorporation of constraints and requirements, progress of the construction. The Consultant will provide written comments to the Contractor on the baseline and updated schedules.

Task 2.7 - Submittal Review Administration

The Consultant will administer the submittal review process; including reviewing selected submittals for compliance with the Contract Documents where design team review is not required. The Consultant will be responsible for:

- Logging and tracking incoming and returned submittals;
- Reviewing and routing submittals, as necessary;
- Reviewing select submittals and preparing written comments;
- Assigning submittal action status as No Exceptions Taken (NET), Make Corrections Noted (MCN), Amend and Resubmit (AR), or Rejected/Resubmit;
- Returning submittals to Contractor and incorporating submittals into the project files.

The Consultant will review the Contractor's submittal schedule for completeness and will provide written comments to the Contractor. The Consultant shall retain copies of all submittal documents and ensure that an accurate file is available for ready retrieval throughout the project.

Task 2.8 - Construction Progress Meetings

The Consultant will schedule and conduct informal construction progress discussions with the Contractor on a weekly basis. The Consultant will document these discussions in progress emails.

Deliverable: Construction Progress Emails

Task 2.9 - Public Noticing Support

The Consultant will support and oversee noticing tasks required of the Contractor ahead of work in areas of the City. The Consultant will review contractor notices ensure that the contractor performs noticing as required in the Contract Documents. Consultant will create and post to the City web page monthly construction fliers informing residents of the construction status. The Contractor will separately prepare and distribute construction notices to residents ahead of actual construction work.

Deliverable: Construction fliers for webpage posting

Task 2.10 - Meter Assembly Procurement Management

The Consultant will assist the City in reviewing the meter assembly manifests and condition of the meters at time of delivery to the Contractor's warehouse. The Contractor will have ultimate responsibility for scheduling meter assembly deliveries with the meter supplier, and keeping the Consultant and/or City informed of the meter assembly delivery schedule.

Task 2.11 - Project Closeout

Prior to Final Acceptance, the CPM, Consultant, and Contractor will conduct a site walk and prepare an official punchlist of all incomplete contract work items that the Contractor must correct. The Consultant will also review

the Contractors as-built records and confirm that all contract documents (i.e. warranty and guarantee) are complete and accurate. The Consultant will review the Contractor's final pay request and prepare a letter of recommendation that the City accept the Contract.

Assumptions: Level of effort is based on budgeted staff hours for performing various activities under this task.

Deliverables: Punch list of Incomplete Contract work items, Prepare Letter of Recommendation that the City accept the Contract.

Task 3 – Field Observation Activities

Purpose: The Consultant will provide limited inspection services throughout the construction period. Services will include general field observation and inspection tasks, mainline and meter installation inspection, and providing and coordinating specialty inspections for the project. The task lead will be Tom Dugan (RE) supported by Ryan Wilson (Lead inspector).

Phase/Duration: Entire Contract Period; April - October 2011 (approximately 150 working days)

Task 3.1 - Monitor Field Activity

The Consultant will direct and coordinate field observation services necessary to monitor compliance with the Contract Documents. The Consultant is responsible for directing and documenting field inspections and observations consistent with the requirements of the Contract Documents. The Consultant will document construction activity, record construction progress, and track field changes to main replacement plan and profiles and meter installation plans. Inspection activities will include the following:

- Conducting visual inspections of work and materials;
- Requesting and have performed special testing/inspection as necessary (i.e. soil backfill and AC pavement compaction, concrete testing);
- Checking allowable tolerances;
- Checking installation in accordance with manufacturer's printed instructions;
- Checking qualified products list;
- Checking certified laboratory test reports;
- Checking certificate of compliance or conformance;
- Checking warranties and guarantees.

The Consultant will coordinate daily with the inspection team to assess contractor performance and work progress. The Contractor is responsible for quality control of its work and full compliance with contract documents; the Consultant is responsible for quality assurance for the Contractor's work. The Consultant will enforce compliance through the use of Advisory Notices and Non-Compliance Notices to the extent provided for in the Contract Documents.

Task 3.2 – Replacement Water Main Installation

The Consultant will be responsible for observing and reporting for the following pipeline installation activities:

- Reviewing the Contractor's activities (means and methods) to ensure compliance with Contract Documents;
- Verifying that the appropriate and submitted materials are being used in accordance with the

manufacturer's recommendation and the Contract Documents;

- Coordinating with the Contractor and/or CPM on a daily basis;
- Recording construction activity (Daily Inspection Reports);
- Reviewing Contractor's as-built mark ups weekly;
- Witnessing the mainline(s) hydrostatic pressure test and disinfection in accordance with the Testing and Inspection Summary Table in Task 3.4, including collecting samples for Bac-T testing by City;
- Verifying proper installation of 1-inch service "hot taps" on existing and replacement water mains.

The Consultant will complete daily field inspection reports for days when field inspection and observation are performed to document construction and inspection activities.

Task 3.3 – Meter Installation

The Consultant will oversee and direct the City's field interns who will be responsible for observation of the meter installations, 1-inch and 2-inch service line installations (mainline to dwelling), and the abandonment of backyard service lines. The Consultant activities may also include:

- Witnessing water meter installations, backyard service abandonments, and 1-inch service "hot taps" to the mainline;
- Witnessing the meter supplier's electronic documentation of meter assembly information;
- Preparing daily inspection reports when in the field and tracking field changes to the plans.

Task 3.4 – Specialty Inspections

The Consultant will contract separately with Specialty Inspection/Testing firms that will be available on-call to perform soil compaction, concrete compression, AC density, and materials sampling and testing. The Consultant will schedule specialty inspections, observe sampling and field tests and review test results. The Testing and Inspection Summary Table below identifies the tests and methods that will be performed by the Consultant.

Testing and Inspection Summary Table

Inspection and Testing Activities	Test Method	Est. Testing Frequency	Test Description/Notes	Est. Test No.	Specification Reference
Soils Testing					
Trench Section					
Bedding	Cal Test 231; ASTM D7380	Test every 200-lf to achieve a relative density of 90%	Test imported material to verify contractor's submittal	22	Special Provision 6-19; Standard Specification 19-5; Standard Detail 501A & 506
Haunching	Cal Test 231; ASTM D7380	Test every 200-lf to achieve a relative density of 90%	Test imported material to verify contractor's submittal	22	Special Provision 6-19; Standard Specification 19-5; Standard Detail 501A & 506
Pipe Zone/Final Backfill	Cal Test 231; ASTM D7380	Test every 200-lf to achieve a relative density of 92%	Test imported material to verify contractor's submittal	22	Special Provision 6-19; Standard Specification 19-5; Standard Detail 501A & 506
Structures and Manholes	Cal Test 231; ASTM D7380	Compaction test around all manhole & structures; RC. 92%	Test imported material to verify contractor's submittal	10	Special Provision 6-19; Standard Specification 19-5; Standard Detail 501A & 506
Yard Restoration	Cal Test 231; ASTM D7380	Landscaped areas 85% for top 6-inches	No testing anticipated for private yards	0	Special Provision 6-19.05
Subgrade Compaction	Cal Test 231;	Compaction test: 90% min 8 inch (typ), 90% 12-inch commerc	No testing anticipated of private property; Minimal testing within	5	Special Provision 6-19.05
Concrete Testing					
Curb & Gutter, Sidewalk, Driveway	Cal Test 521; ASTM C39	Conduct slump test (4-inch slump, 3000 psi	No testing anticipated of private property; Minimal testing within Public Right of Way. Test imported material to verify contractor's mix design submittal	10	Special Provision 6-19.05
Asphalt Concrete Testing					
Trench	Cal Test 308, 30	Test AC density every 400-lf	Perform Nuclear Gauge Density Test	11	Special Provisions 6-39
Street Patch (Class 1)	Cal Test 308, 30	Test AC density upon request	Perform Nuclear Gauge Density Test	30	
Replacement Main Testing					
Hydrostatic Testing	AWWA C900	Test every new mainline installed	City mainline pressure test	5	Special Provisions 6-76-.04
Disinfection BacT Testing	AWWA C651	Test every new mainline installed	Samples will be collected by CM Team and tested at City Facilities	5	Special Provisions 6-76.03, 6-76.04

Assumptions

- The contractor is responsible for quality control of its work, site safety and site supervision, and meeting the requirements of the Contract Documents.
- The Consultant will not be on site full time and field inspections and observations are limited to the level of effort included in the Task Order budget.
- Deliverables: Chronological daily inspection reports of days in field: PDF Files containing the daily inspection reports.
- Specialty inspection test reports: Hard copy (1) of all specialty inspection reports, Electronic copy (pdf. Files) of all specialty inspection reports
- Advisory Notices and Non-Compliance Notices: Electronic copy (1) of all Advisory and Non-Compliance Notices

Task 4 – Document Control Management and Project Closeout Services

Purpose: The Consultant will provide document management services, including project closeout activities. This task will be led by Tom Dugan (RE) and supported by the inspection team.

Phase/Duration: Entire Contract Period; April - November 2011

Task 4.2 – Document Control Management

The Consultant will maintain a working copy and electronic copy of contract documents and construction documentation and activity logs. The following list of documents that will be included in the project construction documentation file:

- Submittals and Shop Drawings
- RFIs and Design Clarifications
- Progress Payment Requests
- Potential Change Orders
- Change Orders
- Pending Claims
- Work Change Directives
- Inspector Daily Reports
- Material Testing Reports
- Construction Meeting Minutes
- General Project Documents
- Construction Photos
- Contractor Project Schedule
- Meter Assembly Manifest and Field Data
- Project Closeout Summary (i.e. Contractor's request for acceptance, warranty and guarantees)

The Consultant will store and organize project documents for the duration of the construction. The Consultant will coordinate with the CPM to finalize the construction files during project closeout.

Deliverable: Electronic copy (pdf. format) of all construction files documentation for the City's records.



Signature

Michael H. Markson

Printed Name

Sr. Vice President

Title

2/17/2011

Date

Signature

Konradt Bartlan

Printed Name

City Manager

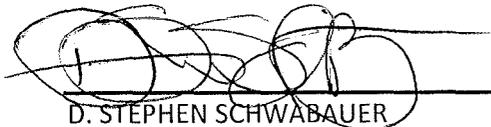
Title

Date

ATTEST:

RANDI JOHL
City Clerk

APPROVED AS TO FORM:



D. STEPHEN SCHWABAUER
City Attorney

CITY OF LODI



**City of Lodi - Water Meter Program Phase 1
Construction Management Services Fee Estimate**

Tasks	RMC Labor				RMC Labor				Outside Services				ODCs		Total		
	Mike Matson	Tony Valdivia	Kevin Smith	Tom Dugan	Total Hours	Total Labor Costs (1)	Ryan Wilson	Victor Alanz	Steve Garrick	Nolte Total Hours	Nolte Total Labor Costs (2)	Specialty Testing	Subtotal	Sub Consultant Total Cost (3)	ODCs	Total ODCs (4)	Total Fee
	PM	PE	PE	RE			Mainline Inspector	CAD Production	DB Support								
Task 1: Engineer Service During Construction	\$255	\$215	\$185	\$155			\$115	\$150	\$85	\$60							
1.1 Submittal Review	2	4	4		10	\$2,110				0	\$0		\$0	\$0	\$0	\$0	\$2,110
1.2 Technical/Design Support	3	5	8		16	\$3,320				0	\$0		\$0	\$0	\$0	\$0	\$3,320
1.3 Record Drawings			5		5	\$925		8		88	\$6,000		\$6,000	\$6,600	\$0	\$0	\$7,525
1.4 Permit Registration Documents			10		10	\$1,850			8	8	\$680		\$680	\$748	\$0	\$0	\$2,598
Subtotal Task 1:	5	9	27	0	41	\$8,205	0	8	8	80	\$6,680	\$0	\$6,680	\$7,348	\$0	\$0	\$15,553
Task 2: Contract Administration																	
2.1 Contract Execution	3			8	11	\$2,005				0	\$0		\$0	\$0	\$0	\$0	\$2,005
2.2 Pre-Construction Meeting			8	5	13	\$2,255	3			3	\$345		\$345	\$380	\$0	\$0	\$2,635
2.3 Progress Report				30	30	\$4,650				0	\$0		\$0	\$0	\$0	\$0	\$4,650
2.4 Monthly Progress Payment				10	10	\$1,550	10			10	\$1,150		\$1,150	\$1,265	\$0	\$0	\$2,815
2.5 Contract Change Orders	4			40	44	\$7,220	24			24	\$2,760		\$2,760	\$3,036	\$0	\$0	\$10,256
2.6 Schedule Review				5	5	\$775	7			7	\$805		\$805	\$886	\$0	\$0	\$1,661
2.7 Submittal Review Administration				40	40	\$6,200	15			15	\$1,725		\$1,725	\$1,898	\$0	\$0	\$8,098
2.8 Construction Progress Meetings		4		15	19	\$3,185	30			30	\$3,450		\$3,450	\$3,795	\$0	\$0	\$6,980
2.9 Public Noticing Support				10	10	\$1,550	5			5	\$575		\$575	\$633	\$0	\$0	\$2,183
2.10 Meter Assembly Procurement Management				5	5	\$775	15			15	\$1,725		\$1,725	\$1,898	\$0	\$0	\$2,673
2.11 Project Closeout				30	30	\$4,650	16			16	\$1,840		\$1,840	\$2,024	\$0	\$0	\$6,674
Subtotal Task 2:	7	4	8	198	217	\$34,815	125	0	0	0	\$14,375	\$0	\$14,375	\$15,815	\$0	\$0	\$50,630
Task 3: Field Observation Activities																	
3.1 Monitor Field Activity				200	200	\$31,000				0	\$0		\$0	\$0	\$1,000	\$1,100	\$32,100
3.2 Replacement Water Main Installation					0	\$0	240			240	\$27,600		\$27,600	\$30,360	\$1,000	\$1,100	\$31,460
3.3 Meter Installation					0	\$0	160			160	\$18,400		\$18,400	\$20,240	\$1,000	\$1,100	\$21,340
3.4 Specialty Inspections					0	\$0				0	\$0	\$19,000	\$19,000	\$20,900	\$0	\$0	\$20,900
Subtotal Task 3:	0	0	0	200	200	\$31,000	400	0	0	0	\$46,000	\$19,000	\$65,000	\$71,500	\$3,000	\$3,300	\$105,800
Task 4: Document Control Management																	
4.1 Document Control Management				160	160	\$24,800				0	\$0		\$0	\$0	\$1,500	\$1,650	\$26,450
Subtotal Task 4:	0	0	0	160	160	\$24,800	0	0	0	0	\$0	\$0	\$0	\$0	\$1,500	\$1,650	\$26,450
TOTAL	12	13	35	358	618	\$98,820	525	8	8	80	\$67,055	\$19,000	\$86,055	\$94,663	\$4,500	\$4,950	\$198,433

1. The individual hourly rates include salary, overhead and profit.
2. Subconsultants will be billed at actual cost plus 10%.
3. Other direct costs (ODCs) such as reproduction, delivery, mileage (rates will be those allowed by current IRS guidelines), and travel expenses, will be billed at actual cost plus 10%.
4. RMC reserves the right to adjust its hourly rate structure and ODC markup at the beginning of the calendar year for all ongoing contracts.



February 9, 2011

**U.S. Department of Labor
Bureau of Labor Statistics
Washington, D.C. 20212**

**Consumer Price Index
All Urban Consumers- (CPI-U)
San Francisco-Oakland-San Jose, CA**

Base Period: 1982-84=100
Years: 2008 to 2010

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
2008		219.612		222.074		225.181		225.411		225.824		218.528	222.767
2009		222.166		223.854		225.692		225.801		226.051		224.239	224.395
2010		226.145		227.697		228.110		227.954		228.107		227.658	227.469

12-Month Percent Change

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
2008		2.8		2.9		4.2		4.2		3.6		0.0	3.1
2009		1.2		0.8		0.2		0.2		0.1		2.6	0.7
2010		1.8		1.7		1.1		1.0		0.9		1.5	1.4

Source: <http://www.bls.gov/cpi/#data>

**PO Box 8339 Santa Rosa, CA 95407
707-575-0700 Phone 707-575-3786 Fax**



City of Lodi

Request for Proposal Purchase of Water Meter Assemblies and Related Services

January 7, 2011

Presented By:



Kathy Richards

2250 Apollo Way #300

Santa Rosa, CA 95407

707.575.0700 office

707.481.1684 cell

707.575.3786 fax

An Authorized %Badger Meter & **Itron** Distributor



Table of Contents

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January 7, 2011

Tom Dugan, Program Administrator
City of Lodi Public Works Department
221 West Pine Street
Lodi, CA 95240

Re: Purchase of Water Meter Assemblies and Related Services RFP Response

Mr. Dugan,

Since their inception in 1977, Itron, Inc. has become the world's leading provider of intelligent metering, data collection and utility software solutions, with nearly 8,000 utilities worldwide relying on their technology to optimize the delivery and use of energy and water.

Founded in 1905, Badger Meter, Inc. has earned an international reputation as an innovator in the development of flow measurement technologies. Badger's tremendous success is due, in part, to its distributor network.

Founded in 2004, National Meter & Automation, Inc. (NMAAI) is Badger Meter's largest distributor in the United States, as well as an authorized Itron, Inc. distributor covering California, Arizona, Nevada, Colorado and southern Wyoming. With a combined 75 years of AMR/Water Meter experience, our California branch includes knowledgeable inside and outside sales professionals along with a factory trained and certified technical support team. Just 112 miles from Lodi, CA, NMAAI has a local, fully stocked warehouse located in Santa Rosa, CA to provide optimum material availability.

Main Contact

Kathy Richards, CA Sales Manager
krichards@nmaai.com
(707) 481-1684 cell
(707) 575-0700 office
(707) 575-3786 fax
2250 Apollo Way #300
Santa Rosa, CA 95407

Corporate Office

Noel Frakes, President
nfrakes@nmaai.com
(303) 981-9330 cell
(303) 339-9100 office
(303) 649-1017 fax
7220 S. Fraser St.
Centennial, CO 80112

Technical Support

Dennis McConville
dmconville@nmaai.com
(916) 436-6670 cell



Enclosed is National Meter & Automation, Inc.'s proposal for Itron, Inc.'s premier Automated Meter Reading System in conjunction with Badger Meter's leading Water Meter technology. National Meter & Automation will work closely with the staff at the City of Lodi to seamlessly integrate meter data into the City's billing system. National Meter & Automation will also provide system implementation support and on-site training for field and office staff by a local, experienced and certified trainer.

National Meter & Automation has reviewed and will commit to the terms and conditions of the contract documents.

National Meter & Automation is pleased to present this proposal to the City of Lodi. For additional information, please contact me via cell phone at (707) 481-1684, or via email at krichards@nmaai.com.

Regards,

A handwritten signature in black ink that reads "Kathy Richards". The signature is written in a cursive, flowing style.

Kathy Richards, California Sales Manager
National Meter & Automation, Inc.

Proposal in Response to the Requirements of the RFP

D. Summary of Work

- Comply.

E. Scope of Summary

- 1) Meter Assemblies
 - A. Comply.
 - B. Comply. See Tab 6 for warranties
 - C. Comply. See Tab 5 for product equipment submittals.
- 2) Support Services
 - Comply.
- 3) Meter Assembly Documentation
 - Comply.
- 4) Meter Assembly Storage, Deliver and Transfer of Ownership
 - Comply.
- 5) Field Documentation
 - Comply. See Tab 2 for pricing.
- 6) OPTIONAL SCOPE ITEM 1: Meter Calibration Bench Testing Equipment
 - See Tab 4 for specifications and pricing.
- 7) OPTIONAL SCOPE ITEM 2: Leak Detection Equipment
 - See Tab 3 for specifications and pricing.

F. Meter Assembly Procurement Schedule

- Comply.

G. Deliveries of Submittals

- Comply.

H. Sales and Use Taxes

- Comply. See Tab 2 for pricing.

I. Guarantees

- Comply. See Tab 6 for warranties

J. Purchases

- Comply.



K. Business license

- Comply.

L. Procurement Proposal

- Comply.

5) The Components of the Proposal shall include the following:

- A. See Tab 5 for equipment submittals.
- B. Comply. See Tab 2 for pricing.
- C. Terms and Conditions

Terms and Conditions: Meter Assemblies and Materials

Material deliveries will be coordinated between National Meter & Automation and the Installation contractor. This coordination will include the number of required meter assemblies and delivery dates.

The Contractor will request delivery of the initial order of complete meter assemblies no less than 14 days prior to the required delivery date. Thereafter, a base delivery of 500 meter assemblies will be scheduled on 7 day intervals. Larger orders in less time intervals may be arranged between the Installation Contractor and National Meter & Automation.

All equipment shall be shipped FOB to the jobsite. The Installation Contractor will arrange for receipt of materials and shall provide a forklift to offload the truck. The Installation Contractor will take possession of and responsibility for the meter assemblies at the delivery site.

National Meter & Automation will invoice the City of Lodi for materials when shipped. Included with each invoice will be an Inventory Manifest. This manifest will include all meter assembly documentation as outlined in Item 3 of this Request for Proposal. Invoices will be issued with payment terms of Net 30 days.



Terms and Conditions: Field Documentation

Once each meter assembly is installed, National Meter & Automation will conduct a site visit and complete the Field Documentation as outlined in Item 5 of this Request for Proposal. Site visits will include a minimum of 1,000 locations, referred to as a Verified Group

National Meter & Automation will invoice the City of Lodi for the corresponding number of site visits completed and for which all Field Documentation has been collected and confirmed against the original Inventory Manifest at the completion of each Verified Group. Invoices will be issued with payment terms of Net 30 days.

National Meter & Automation will work with City staff as assigned for delivery of the entire Meter Installation Database at the completion of each project phase, or as requested by the City.

D. STATEMENT OF UNDERSTANDING

Statement of Understanding

National Meter & Automation will actively partner with the City of Lodi and RMC Water and Environment to ensure the successful implementation of the City of Lodi's water meter system.

As the authorized distributor for both Badger Meter, Inc. and Itron, Inc. in Northern California, National Meter & Automation will coordinate each aspect of the product from material procurement through data collection and presentment.

The process has begun with National Meter & Automation's successful negotiations with both manufacturers to ensure stable pricing through the seven phases of this project. Our pricing proposal reflects the material standards as outlined in the City of Lodi's Standards #403 and 412.

With water resource management being a primary driver in the implementation of this system, we have also included information and pricing for water loss management tools that are designed to work with the Itron system and assist the City in its efforts to manage





the integrity of the water distribution system. The Leak Sensor and MLog online presentment tools work in conjunction with the Itron ChoiceConnect meter reading system. The Leak Sensor's constant monitoring of the distribution system helps the City identify potential system leaks while they are still relatively small, allow for repair during normal working hours and before extensive water loss or damage to the infrastructure.

National Meter & Automation's approach to the water meter implementation project will be as follows:

NMAAI will procure materials from both manufacturers, Badger Meter, Inc. and Itron, Inc. on a schedule that has been outlined with the Installation Contractor and is based on his installation schedule.

The materials will arrive in our warehouse in Santa Rosa where we will begin the assembly and documentation process. All meters shall be tested and certified at the factory prior to their shipment. Certified test results will be the starting point for our material documentation process.

The meters and encoded registers will be assembled to an Itron 100W endpoint which has been programmed to operate in a drive-by mode. The serial number of the Itron 100W endpoint, together with the meter model number, size, and other information as outlined in item 3 of the RFP titled "Meter Assembly Documentation" will be added to the certified test results completing the data base, hereafter referred to as a Shipping Manifest.

National Meter & Automation will ship the meter assemblies to a jobsite location as determined by the City and Installation Contractor. A detailed shipping schedule will be mutually agreed upon between National Meter & Automation and the installation Contractor. For purposes of an initial estimate, these shipments will occur every 7 days with a quantity of 500 assemblies.

Scheduled shipments will be made FOB jobsite, full freight allowed. National Meter & Automation will retain ownership of materials until delivery is made at which time the Installation Contractor will take possession of and responsibility for the materials. The Installation Contractor will coordinate delivery of the materials and provide equipment for offload of the meter assemblies.

NATIONAL

METER AND AUTOMATION, INC.

The City of Lodi will be invoiced for each shipment once the Installation Contractor has taken possession of the materials. This invoice will include a detailed description of the materials and quantities shipped, and the date and method of shipment. A Shipping Manifest (as described above) will accompany each billing invoice. There will be two hard copies and one digital copy as requested by the City in this RFP.

National Meter & Automation will work closely with the Installation Contractor throughout the entire phase of the project.

The Installation Contractor will have a list of installation sites as identified by the City. This list of sites will be identified by both APN number and physical address.

RMC Water and Environment will be working with the Installation Contractor and will be responsible for inspecting the individual meter installations.

National Meter & Automation will obtain information from the Installation Contractor regarding completed installation sites. Once an installation group of 1,000 services or greater has been completed, National Meter & Automation will conduct a site visit to each location. Using the customer data base with APN number and physical address, National Meter and Automation will complete the Field Documentation process.

The Field Documentation process will include gathering all information pertaining to that meter location including meter, encoder and endpoint serial numbers, meter model, size and GPS coordinates of the installed meter to a sub-meter accuracy.

The data gathered at each meter site will be merged with the Inventory Manifest and City's database with APN number and physical address. This process will include verifying that the serial numbers for the complete meter assembly gathered at the installation site match the serial numbers of the assemblies as they were delivered to the Installation Contractor. Any assembly whose numbers do not match will require a second site visit to confirm the information for the final assembly installed on site.

National Meter & Automation will invoice the City of Lodi for each Installation Group at the completion of the Field Documentation process. National Meter and Automation will submit the completed Field Documentation to the City of Lodi at the completion of each phase. Partial listings shall be submitted sooner at the City's request.



At the completion of each phase, National Meter & Automation will work with City staff as assigned to integrate the meter installation data into the City's Utility Billing System. Once the data has been uploaded, National Meter & Automation will perform an initial meter read and confirm that all assemblies are functioning. A field investigation and troubleshooting will be performed on any assembly that does not communicate when interrogated. Any unit that found to be faulty due to material, workmanship or design will be replaced. Any unit found to have been damaged shall be reported to the City staff as assigned for additional direction.

Should the City opt to include a city wide or selected phase implementation of the Leak Sensor technology, National Meter & Automation will collect the additional information necessary during the Field Documentation process and add that data to the Meter Installation data base.

National Meter & Automation will conduct training sessions as necessary, but not less than once during each installation phase. This training will include, but is not limited to, field installation and troubleshooting, meter reading equipment training, use of the MV-RS software, review of available reports and their value to each department, and the custom report generation process. National Meter & Automation will also assist the City with any software upgrades or other issues that may arise during the daily use of its Itron meter reading system.

Subsequent phases of this project shall be reviewed on a case by case basis. Changes in the installation methodology and data collection process shall be continually reviewed by National Meter & Automation for upgrades in technology, improved efficiencies, and additional City requirements that may arise over the duration of this project.

At which point the City wishes to change its method of collection from the drive-by mode to the ChoiceConnect Fixed Network solution, National Meter & Automation will deliver the endpoints programmed in the appropriate transmission mode. We will also work with City staff to reprogram existing endpoints from the drive-by to the fixed-network transmission mode. National Meter & Automation will also work closely with both the City of Lodi and Itron, Inc. to ensure a successful transition in data collection methods and ensure that additional training is provided as needed.



Cost Proposal

*** Note 1) Meter Assembly & Documentation Pricing includes:**

Meter body, ADE register, and 100W endpoint with thru lid mounting kit
 All items as described in Support Services, Items 1-4

**** Note 2) Meter Assembly & Documentation Pricing Notes:**

1. Sales Tax shown are rates in effect at time of quotation.
 Sales Tax shall be charged based on the rates in effect at time of final sale.
2. Prices quoted are firm thru November 2011.
3. Future prices quoted may be increased in proportion to the increase in the Producer Price Index for Materials for durable manufacturing as reported by the US Department of Labor. The base index shall be the October 2010 index of 189.3. Changes in prices will be no more frequent than every 12 months if necessary, and will not exceed 3%.

***** Note 3) Field Documentation Pricing Notes:**

1. Prices quoted are firm thru November 2011.
2. Future years pricing may be adjusted according to Lodi area CPI rates.

Phase 1: 2011 Meter Assembly & Documentation Pricing

<u>Size</u>	<u>Model</u>	<u>Quantity</u>	<u>Unit Price</u>	<u>Total</u>
3/4"	Badger Model 35	3,695	\$ 194.00	\$ 716,830.00
1"	Badger Model 55	5	\$ 226.00	\$ 1,130.00
2"	Badger Model 170	1	\$ 622.00	\$ 622.00
Subtotal				\$ 718,582.00
CA Sales Tax			7.250%	\$ 52,097.20
County Sales Tax			0.500%	\$ 3,592.91
Local Sales Tax			1.000%	\$ 7,185.82
Total				\$ 781,457.93

*See Note 1
 ** See Note 2

Phase 1: 2011 Field Documentation Pricing

<u>Size</u>	<u>Quantity</u>	<u>Unit Price</u>	<u>Total</u>
All Sizes	3,701	\$8.00	\$29,608.00

*** See Note 3



NATIONAL
METER AND AUTOMATION, INC.

Phase 2: 2012 Meter Assembly & Documentation Pricing

Size	Model	Quantity	Unit Price	Total
3/4"	Badger Model 35	2,067	\$ 194.00	\$ 400,998.00
1"	Badger Model 55	5	\$ 226.00	\$ 1,130.00
2"	Badger Model 170	1	\$ 622.00	\$ 622.00
Subtotal				\$ 402,750.00
CA Sales Tax			7.250%	\$ 29,199.38
County Sales Tax			0.500%	\$ 2,013.75
Local Sales Tax			1.000%	\$ 4,027.50
Total				\$ 437,990.63

*See Note 1
** See Note 2

Phase 2: 2012 Field Documentation Pricing

Size	Quantity	Unit Price	Total
All Sizes	2,073	\$ 8.00	\$ 16,584.00

*** See Note 3

Phase 3: 2013 Meter Assembly & Documentation Pricing

Size	Model	Quantity	Unit Price	Total
3/4"	Badger Model 35	1,447	\$ 194.00	\$ 280,718.00
1"	Badger Model 55	5	\$ 226.00	\$ 1,130.00
2"	Badger Model 170	1	\$ 622.00	\$ 622.00
Subtotal				\$ 282,470.00
CA Sales Tax			7.250%	\$ 20,479.08
County Sales Tax			0.500%	\$ 1,412.35
Local Sales Tax			1.000%	\$ 2,824.70
Total				\$ 307,186.13

*See Note 1
** See Note 2

Phase 3: 2013 Field Documentation Pricing

Size	Quantity	Unit Price	Total
All Sizes	1,453	\$ 8.00	\$11,624.00

*** See Note 3



Phase 4: 2014 Meter Assembly & Documentation Pricing

Size	Model	Quantity	Unit Price	Total
3/4"	Badger Model 35	1,348	\$ 194.00	\$ 261,512.00
1"	Badger Model 55	5	\$ 226.00	\$ 1,130.00
2"	Badger Model 170	1	\$ 622.00	\$ 622.00
Subtotal				\$ 263,264.00
CA Sales Tax			7.250%	\$ 19,086.64
County Sales Tax			0.500%	\$ 1,316.32
Local Sales Tax			1.000%	\$ 2,632.64
Total				\$ 286,299.60

*See Note 1
** See Note 2

Phase 4: 2014 Field Documentation Pricing

<u>Size</u>	<u>Quantity</u>	<u>Unit Price</u>	<u>Total</u>
All Sizes	1,354	\$ 8.00	\$10,832.00

*** See Note 3

Phase 5: 2015 Meter Assembly & Documentation Pricing

<u>Size</u>	<u>Model</u>	<u>Quantity</u>	<u>Unit Price</u>	<u>Total</u>
3/4"	Badger Model 35	868	\$ 194.00	\$ 168,392.00
1"	Badger Model 55	5	\$ 226.00	\$ 1,130.00
2"	Badger Model 170	1	\$ 622.00	\$ 622.00
Subtotal				\$ 170,144.00
CA Sales Tax			7.250%	\$ 12,335.44
County Sales Tax			0.500%	\$ 850.72
Local Sales Tax			1.000%	\$ 1,701.44
Total				\$ 185,031.60

*See Note 1
** See Note 2

Phase 5: 2015 Field Documentation Pricing

<u>Size</u>	<u>Quantity</u>	<u>Unit Price</u>	<u>Total</u>
All Sizes	874	\$ 8.00	\$6,992.00

*** See Note 3



Phase 6: 2016 Meter Assembly & Documentation Pricing

<u>Size</u>	<u>Model</u>	<u>Quantity</u>	<u>Unit Price</u>	<u>Total</u>
3/4"	Badger Model 35	921	\$ 194.00	\$ 178,674.00
1"	Badger Model 55	5	\$ 226.00	\$ 1,130.00
2"	Badger Model 170	1	\$ 622.00	\$ 622.00
Subtotal				\$ 180,426.00
CA Sales Tax			7.250%	\$ 13,080.89
County Sales Tax			0.500%	\$ 902.13
Local Sales Tax			1.000%	\$ 1,804.26
Total				\$ 196,213.28

*See Note 1
** See Note 2

Phase 6: 2016 Field Documentation Pricing

<u>Size</u>	<u>Quantity</u>	<u>Unit Price</u>	<u>Total</u>
All Sizes	927	\$8.00	\$7,416.00

*** See Note 3

Phase 7: 2017 Meter Assembly & Documentation Pricing

<u>Size</u>	<u>Model</u>	<u>Quantity</u>	<u>Unit Price</u>	<u>Total</u>
3/4"	Badger Model 35	2,186	\$ 194.00	\$ 424,084.00
1"	Badger Model 55	5	\$ 226.00	\$ 1,130.00
2"	Badger Model 170	1	\$ 622.00	\$ 622.00
Subtotal				\$ 425,836.00
CA Sales Tax			7.250%	\$ 30,873.11
County Sales Tax			0.500%	\$ 2,129.18
Local Sales Tax			1.000%	\$ 4,258.36
Total				\$ 463,096.65

*See Note 1
** See Note 2

Phase 7: 2017 Field Documentation Pricing

<u>Size</u>	<u>Quantity</u>	<u>Unit Price</u>	<u>Total</u>
All Sizes	2,192	\$ 8.00	\$17,536.00

*** See Note 3



Leak Detection Equipment

*Note 1: Leak Detection Equipment Pricing

1. Sales Tax shown are rates in effect at time of quotation.
Sales Tax shall be charged based on the rates in effect at time of final sale.
2. Prices quoted are firm thru December 31, 2013 (3years).
3. Prices quoted may be increased by no more than 3% over the next 4 years,
January 1, 2014 thru December 31, 2017.
4. Leak Sensor quantity is estimate (1:3).
Final count subject to formal propagation study which factors in actual pipe materials & distances
5. Hosting Services are paid directly to Itron, Inc.

Itron DigiCorr Leak Noise Correlator

	<u>Qty</u>	<u>Unit Price</u>	<u>Total</u>
DigiCorr Leak Noise Correlator	1	\$ 22,995.00	\$ 22,995.00
CA Sales Tax		7.25%	\$1,667.14
County Sales Tax		0.50%	\$114.98
Local Sales Tax		1.00%	\$229.95
		Total	\$25,007.06
			*See Note 1

Itron Digital Leak Detector (DLD)

	<u>Qty</u>	<u>Unit Price</u>	<u>Total</u>
Digital Leak Detector (DLD)	1	\$2,995	\$2,995.00
CA Sales Tax		7.25%	\$217.14
County Sales Tax		0.50%	\$14.98
Local Sales Tax		1.00%	\$29.95
		Total	\$3,257.06
			*See Note 1



Phase 1: 2011 Leak Detection Equipment

Total services included in Phase 1: 3,701
 Estimated number of Leak Sensors required: 1,234

	<u>Qty</u>	<u>Unit Price</u>	<u>Total</u>
Upgrade - 100W single port transmitter with a 100W dual port transmitter includes Itron leak Sensor	1,234	\$ 123.00	\$ 151,741.00
		Subtotal	\$151,741.00
CA Sales Tax		7.25%	\$11,001.22
County Sales Tax		0.50%	\$758.71
Local Sales Tax		1.00%	\$ 1,517.41
		Total	\$165,018.34
Mlog Online Hosted Services (annual)		Add:	\$ 2,000.00
			*See Note 1

Phase 2: 2012 Leak Detection Equipment

Total services included in Phase 2: 2,073
 Estimated number of Leak Sensors required: 691

	<u>Qty</u>	<u>Unit Price</u>	<u>Total</u>
Upgrade - 100W single port transmitter with a 100W dual port transmitter includes Itron leak Sensor	691	\$ 123.00	\$84,993.00
		Subtotal	\$84,993.00
CA Sales Tax		7.25%	\$ 6,161.99
County Sales Tax		0.50%	\$424.97
Local Sales Tax		1.00%	\$ 849.93
		Total	\$92,429.89
Mlog Online Hosted Services (annual)		Add:	\$2,500.00
			*See Note 1



Phase 3: 2013 leak Detection Equipment

Total services included in Phase 3: 1,447

Estimated number of Leak Sensors required: 482

	<u>Qty</u>	<u>Unit Price</u>	<u>Total</u>
Upgrade - 100W single port transmitter	482	\$ 123.00	\$ 59,327.00
with a 100W dual port transmitter			
includes Itron leak Sensor		Subtotal	\$59,327.00
CA Sales Tax		7.25%	\$4,301.21
County Sales Tax		0.50%	\$ 296.64
Local Sales Tax		1.00%	\$ 593.27
		Total	\$64,518.11
Mlog Online Hosted Services (annual)		Add:	\$2,500.00
			*See Note 1

Phase 4: 2014 leak Detection Equipment

Total services included in Phase 4: 1,348

Estimated number of Leak Sensors required: 449

	<u>Qty</u>	<u>Unit Price</u>	<u>Total</u>
Upgrade - 100W single port transmitter	449	\$ 123.00	\$ 55,268.00
with a 100W dual port transmitter			
includes Itron leak Sensor		Subtotal	\$55,268.00
CA Sales Tax		7.25%	\$4,006.93
County Sales Tax		0.50%	\$ 276.34
Local Sales Tax		100%	\$ 552.68
		Total	\$60,103.95
Mlog Online Hosted Services (annual)		Add:	\$2,500.00
			*See Note 1



Phase 5: 2015 Leak Detection Equipment

Total services included in Phase 5: 868

Estimated number of Leak Sensors required: 289

	<u>Qty</u>	<u>Unit Price</u>	<u>Total</u>
Upgrade - 100W single port transmitter	289	\$123.00	\$ 35,588.00
with a 100W dual port transmitter			
includes Itron leak Sensor		Subtotal	\$35,588.00
CA Sales Tax		7.25%	\$ 2,580.13
County Sales Tax		0.50%	\$ 177.94
Local Sales Tax		1.00%	\$ 355.88
		Total	\$3,113.95
Mlog Online Hosted Services (annual)		Add:	\$3,000.00
			<i>*See Note 1</i>

Phase 6: 2016 Leak Detection Equipment

Total services included in Phase 6: 921

Estimated number of Leak Sensors required: 307

	<u>Qty</u>	<u>Unit Price</u>	<u>Total</u>
Upgrade - 100W single port transmitter	307	\$ 123.00	\$ 37,761.00
with a 100W dual port transmitter			
includes Itron leak Sensor		Subtotal	\$37,761.00
CA Sales Tax		7.25%	\$2,737.67
County Sales Tax		0.50%	\$188.81
Local Sales Tax		1.00%	\$377.61
		Total	\$3,304.09
Mlog Online Hosted Services (annual)		Add:	\$3,000.00
			<i>*See Note 1</i>



Phase 7: 2017 Leak Detection Equipment

Total services included in Phase 7: 2,186

Estimated number of Leak Sensors required: 729

	<u>Qty</u>	<u>Unit Price</u>	<u>Total</u>
Upgrade - 100W single port transmitter	729	\$123.00	\$89,626.00
with a 100W dual port transmitter			
includes Itron leak Sensor			
		Subtotal	\$89,626.00
		CA Sales Tax	7.25% \$ 6,497.89
		County Sales Tax	0.50% \$448.13
		Local Sales Tax	1.00% \$896.26
		Total	\$7,842.28
Mlog Online Hosted Services (annual)		Add:	\$3,500.00
			*See Note 1

Description of Leak Detection Products

Leak Sensor

The Itron Leak Sensor Module is a small acoustic based device that interrogates water lines to ensure the integrity of the city’s sub-surface infrastructure. The Leak Sensor is designed to be placed on the distribution side of the water meter; from there, it is able to listen out through the service line and into the larger distribution main. Strategically placed around the city, the Leak Sensor records, stores and eventually delivers all of its information through the Itron 100W Endpoint network.

Its reduced size, 24 hour listening cycle, 20-year battery life and use of the Itron 100W technology make the Leak Sensor the single most advanced and practical leak monitoring solution in the industry today.

MLog Online

MLog Online is the web based software where leak sensor information is stored. Presented on a Google map, MLog Online displays the current location of leak sensors throughout the city. MLog Online uses a three color indication system to determine the general security of the infrastructure being monitored by the leak sensors: Green represents little to no extraneous vibrations inside of the pipe, Yellow represents a higher than normal vibration



pattern within the pipe, and **Red** indicates the most positive indications that a leak exists somewhere in the surveyed area. When a leak is discovered and repaired, this information can be input into the software, creating a comprehensive library of maintenance information that can include dates, locations and names of leak investigators and repairers.

One of the greatest advantages to the web based software is the cloud based information storage. Through the web, Itron is able to manage all user data, essentially eliminating the need to budget additional server space. Additionally, any updates manufactured by Itron are seamlessly integrated into the software without additional charge or maintenance.

DigiCorr

The Itron DigiCorr system is one of the industry's most comprehensive digital leak correlating tools. Utilizing a similar acoustic interrogation found in the Leak Sensor, the DigiCorr is not only able to determine the existence of a leak, but also the exact location of the leak. The DigiCorr utilizes ALFA™ (Automated Leak Frequency Analysis), to differentiate between the specific vibration signature of a leak and other peripheral auditory interferences. Through this technology, and the extreme sensitivity of the unit's two accelerometers, the DigiCorr can be effectively deployed to investigate miles of pipe each day.

The DigiCorr has a database of fifteen different types of pipe material (including four specific plastic and poly pipe types), and can integrate up to four different lengths in a single survey. The auto save feature ensures that previous correlations can be retrieved to study, compare, or be tweaked at the behest of new information. The DigiCorr also listens in multiple directions, meaning that a single survey is not limited by the pre-set location of each accelerometer; if a leak exists beyond the current location of the unit, that information is quickly translated to the user so that the survey can be adjusted appropriately.

DLD- Digital Leak Detector

The Itron Digital Leak Detector (DLD) is a highly advanced ground microphone. Unlike other analog units, the DLD integrates digital filtration for purer sound and more accurate leak detection. The unit's five digital filters are capable of removing extraneous environmental noises such as high winds, loud animals and even high traffic noises. Additionally, the unit digitally displays a leak score index; after building a baseline, leak investigators are able to use the score to hone in on leaks they are not capable of hearing.

Leak Sensor

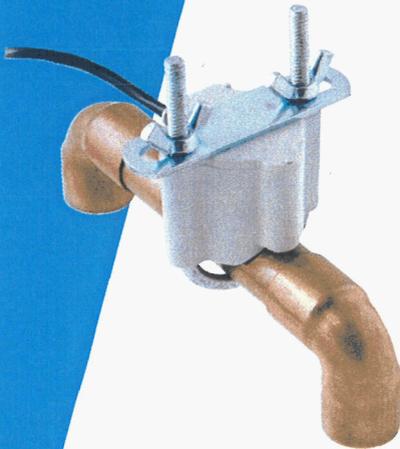
Overview

It's estimated that up to 30 percent of water pumped through distribution systems is lost to leaks. In today's conservation-driven environment, water losses – and associated pumping and treatment costs – add up quickly. Distribution leak detection, and keeping system losses minimal, are important operational concerns for water providers.

The Leak Sensor is an advanced approach to distribution system leak detection. Part of Itron's advanced metering solution, for Water Savesource and ChoiceConnect 100, the sensor is the result of merging the water meter module with an acoustic sensor to create a single point for collecting meter data and monitoring for distribution system leaks. Leak Sensor leverages the robust network of Water Savesource and ChoiceConnect 100. It offers unattended daily monitoring of leaks in distribution lines for proactive leak detection and timely mitigation. This reduces non-revenue water losses, associated costs and potential service disruptions caused by major leak events.

The innovation behind the Leak Sensor is a vibration sensor, amplifier, processor, and bi-directional one-wire automated meter reading (AMR) interface. Every day the acoustic sensors analyze sound patterns in its environment, detecting new, evolving and pre-existing leaks automatically. Sensors attach to endpoints and transmit vibration recordings throughout the day along with other metering information through the fixed network to the utility. An Itron web interface – mlogonline Network Leak Monitoring System – handles data interpretation and analysis of the recordings and graphically displays all sensor locations using visual maps and satellite images, highlighting the status of leak locations. An expanding database of historical information provide comprehensive condition assessment of the entire water distribution system.

Simple, affordable and technically superior, the Leak Sensor is sensible leak detection and location at optimal cost. Best of all, the Leak Sensor leverages the investment in fixed network meter data collection technology, often paying for itself within a few years.



DigiCorr

Digital Leak Noise Correlator

Introduction

The DigiCorr Leak Noise Correlator is the world's first and only digital correlator—uniquely designed to provide a complete solution to leakage management issues facing the modern water utility such as on demand, real-time leak pinpointing, flexible leak analysis, systematic leak surveying and the need for powerful leakage management tools. DigiCorr's patented computerized acoustic technology can accurately pinpoint pipeline leaks of all sizes within a typical error of less than three feet.

Using DigiCorr, water utilities can reduce their unaccounted-for water, realistically recovering 75 percent or more of their current leakage. By employing DigiCorr throughout their pipeline operations, utilities can increase their operational efficiency with proactive pipeline maintenance, improve their emergency management and customer satisfaction, and maximize revenues by delivering and billing for all water produced.

Smart Listening

Digital correlation relies on vibration sensors that sense the turbulence from pipeline leaks. Turbulence from leaks in pressurized pipelines creates traveling pressure waves which propagate through the fluid of a buried pipeline. The velocity of the propagation depends both on the fluid and on the dimensions and material of the pipe. Digital correlation measures the difference in propagation time of the pressure wave from the leak to each sensor. The exact location of the leak source is then pinpointed using the measured time and known velocity,



DLD

Digital Leak Detector

Introduction

The Itron Digital Leak Detector (DLD) is the first true digital leak detector for buried distribution pipeline management. Lightweight and easy-to-use, DLD uses dynamic range compression and digital precision to identify leaks that are undetectable with other leak detectors.

Key Features

Digital Audio Processor

- > Dynamic range compression accentuates leak sounds and reduces loud noises
- > Hears leaks missed by other instruments
- > Precise digital filters block ambient noise
- > Automatic rejection of electrical interference (60dB)
- > Lightweight (< 1 lb.)
- > Wearable strap or belt clip

User interface Buttons

- > LISTEN: Click on/off or press-and-hold to listen
- > VOLUME: 45 dB range in 29 steps
- > FILTER: Five digital filters for:
 - Ground (Gnd): Hard surfaces, soil, plastic pipe
 - Service (SEr): Service pipes
 - Contact (Con): Valve, hydrant, service connections
 - Survey (SUr): Surveying
 - Open (OPn): Full listening range

High-Resolution, Waterproof Universal Sensor

- > Contact microphone for meters and fittings
- > Ground listening plate with quick-release sensor
- > Magnetic base for hydrants and valves

Smart Volume Limiting

- > Continuous, automatic volume protection
- > Suppresses clicks, pops and sudden loud sounds

Automatic Leak Location

- > Leak Index Score from 0 to 999 provides a visual determination when positioned over the leak



Field Sensor Units (FSU)

Pipeline Sensors

- > Accelerometers
 - Sensitivity: 12V/g
 - Noise: < 0.016 $\mu\text{g}/\sqrt{\text{Hz}}$
 - Bandwidth: 1 – 4,000 Hz
- > Hydrophones are available for in-flow measurements

FSU Radio Transceivers

- > Noise-free digital transmission
- > ISM/LAN 2.4 GHz spread spectrum, license-free worldwide, FCC/ETSI approved
- > Range (line-of-sight) up to 10,000 feet (3 km)
- > Two-way communication with base station radio transceiver

Data Acquisition

- > Intelligent automatic gain: 10 – 80,000
- > 16-bit data acquisition, 92 dB dynamic range, sampling rate = 5 kHz

Power Supply

- > Intelligent power management
- > Up to 32 hours battery life, rechargeable & replaceable
- > Re-charger for FSUs from AC outlet or standard auto DC

Physical Characteristics

- > Dimensions: 4.25" x 4" x 8"
(10.8 cm x 10.2 cm x 20.3 cm)
- > Weight: 6.5 lbs (3 kg)
- > Rugged, metal, weatherproof enclosure

Base Station Computer

Physical Characteristics

- > Rugged (impact, grit, water-resistant) computer; Pentium processor, TFT color, bright sunlight-readable screen (DigiCorr software will run on any PC using Microsoft® Windows™ with at least 32 MB RAM and 800 x 600 display resolution)
- > Rugged, weather-resistant stereo headphones

Digital Radio Transceiver

- > Dimensions: 5" x 3.25" x 1"
(12.7 cm x 8.3 cm x 2.5 cm)
- > Weight: 1 lb (0.5 kg)
- > Rugged, metal, weatherproof enclosure

DigiCorr Software

- > ALFA™ (Automatic Leak Frequency Analysis)
- > Easy-to-use Microsoft® Windows®
- > High-resolution display of correlation function, onscreen, landmarked location of detected leaks
- > Correlation range: \pm 880 milliseconds
- > 15 types of pipe materials, including multiple sections of different pipes
- > Automatic sound velocity measurement
- > 16-bit stereo/mono sound playback
- > Visual inspection of sound recording
- > Spectral (FFT) analysis capability
- > Digital filters with full manual frequency band selection available:
 - High-pass: 1-2,000 Hz
 - Low-pass: 10-2,500 Hz in steps of 1 Hz
- > Automatic assessment of leak probability
- > Elimination of spurious noise events
- > Reanalysis of same data possible
- > Manual selection of possible leaks from correlation function
- > Data storage (any number of studies)
- > Database & mapping module

Meter Calibration Bench Testing Equipment

MARS Company Series 5-1000 Test Bench System

The Series 5-1000 Test Bench System is designed to test meters ranging from 5/8" through 2".

The proposed system Test Bench System, with the optional Gravimetrics, includes scales and a computer system (hardware, software and console) and is compliant with American Water Works Association (AWWA) standards and is traceable to NIST (National Institute of Standards and Technology) Handbook 44 specifications.

The Series 5-1000 is a double row test bench with the ability to test up to ten (10) 5/8"x1/2" through 1" meters on one side of the bench and up to five (5) 1.5" to 2" meters on the other.



Features include:

- 10 Gal./1 Cu.Ft. and 100 Gal./10 Cu.Ft. Stainless Steel Duplex Tank;
- Three (3) precision rotometers that cover a flow range from ± 160 gpm;
- Corrosive Protection (fusion nylon coated steel bench frame);
- All meter adapters, meter and adapter gaskets, manual flow control valves, document station, electric actuated clamping device and carrier bars;
- Optional Gravimetric Weight Scale System with M3 Meter Management Software. Computer and Printer.

The optional Recirculation System recycles the test water used on the MARS Series 5-1000 Test Bench, maintaining volume and pressure to test all the meters at the recommended AWWA Specifications, per Table 5-3 of the current AWWA M6 Manual. The benefits provided by the Recirculation System include:

- Compliance with local, state and/or Federal laws and regulations as it reduces the chemicals released into the environment;
- An immediate reduction in consumption and water dumped to waste after each test;
- Improved customer perception as the City sets an example for water conservation practices.

The MARS Recirculation System includes a 500-Gallon polyethylene tank, supply and return pumps, all related piping, valves, VFD and chlorination system. A similar configuration is pictured below.



On-Site Start-up with MARS Personnel includes training, scale certification and installation supervision at your facility. We will allow two (2) days of bench set-up with your assistance, plus an additional day for the Recirculation System. This does not include work on main electrical power supply / components, main water supply / components or any building modifications that may be necessary. MARS Company will provide all data necessary to assist the City of Lodi and comply with all local, state and Federal standards.



The pricing for the Series 5-1000 Test Bench System is as follows:

Mars Series 5-1000 Test Bench		\$42,025.00
MUN-200 Automated Dual Stage Shutdown		\$5,875.00
	Subtotal	\$47,900.00
	Freight	\$ 3,000.00
CA Sales Tax	7.25%	\$3,472.75
County Sales Tax	0.50%	\$239.50
Local Sales Tax	1.00%	\$479.00
	Subtotal	\$55,091.25
Installation Assistance & Training		\$7,500.00
	Total	\$62,591.25

The following items can be installed at the same time as the base test bench, or added at a later date:

Phase II - or Optional Equipment

Gravimetric Weight Scale System with M3Meter management Software, Computer and Printer		\$ 31,000.00
300-gallon Calibrated SS Tank w/scale		\$7,625.00
MARS Recirculation System		\$ 22,440.00
	Subtotal	\$61,065.00
CA Sales Tax	7.25%	\$4,427.21
County Sales Tax	0.50%	\$305.33
Local Sales Tax	1.00%	\$610.65
Freight		\$ 2,000.00
	Total	\$68,408.19

To purchase the complete bench and all additional Equipment as listed:

Complete Bench with All Options		\$108,965.00
CA Sales Tax	7.25%	\$ 7,899.96
County Sales Tax	0.50%	\$544.83
Local Sales Tax	1.00%	\$ 1,089.65
Freight		\$5,000.00
Installation Assistance & Training		\$7,500.00
	Total	\$130,999.44

Delivery is quoted as approximately 60-90 days after receipt of order (ARO).

Payment terms: Net 30 days after delivery – Pricing Subject to review by 12/31/2011

**Recordall®
Cold Water
Bronze Disc Meter**

Size 3/4" (DN 20mm)

**Technical
Brief**

DESCRIPTION

Badger Meter offers the Recordall Disc meter in two versions: Cast Bronze (M35 B81) and Envirobrass II (M35 EB2). The Envirobrass II version complies with NSF/ANSI Standard 61 and carry the NSF-61 mark on the housing. All components of the Envirobrass II meter, i.e., disc, chamber, housing, seals, etc., comprise the certified system.

APPLICATIONS: For use in measurement of potable cold water in residential, commercial and industrial services where flow is in one direction only.

OPERATION: Water flows through the meter's strainer and into the measuring chamber where it causes the disc to nutate. The disc, which moves freely, nutates on its own ball, guided by a thrust roller. A drive magnet transmits the motion of the disc to a follower magnet located within the permanently sealed register. The follower magnet is connected to the register gear train. The gear train reduces the disc nutations into volume totalization units displayed on the register dial face.

OPERATING PERFORMANCE: The Badger® Recordall® Disc meters meet or exceed registration accuracy for the low flow rates (95%), normal operating flow rates (100 ± 1.5%), and maximum continuous operation flow rates as specifically stated by AWWA Standard C700.

CONSTRUCTION: Badger Recordall Disc meter construction, which complies with ANSI/AWWA standard C700, consists of three basic components: meter housing, measuring chamber, and permanently sealed register. The water meter is available in bronze and Envirobrass II with externally-threaded spuds. A corrosion-resistant thermoplastic material is used for the measuring chamber.

To simplify maintenance, the register, measuring chamber, and strainer can be replaced without removing the meter housing from the installation. No change gears are required for accuracy calibration. Interchangeability of parts among like-sized meters also minimizes spare parts inventory investment. The built-in strainer has an effective straining area of twice the inlet size.

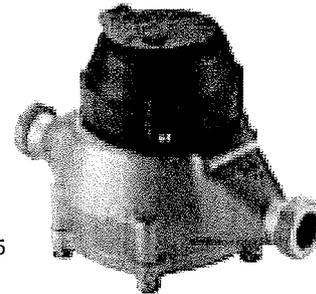
MAGNETIC DRIVE: Direct magnetic drive, through the use of high-strength magnets, provides positive, reliable and dependable register coupling for straight-reading, remote or automatic meter reading options.

SEALED REGISTER: The standard register consists of a straight-reading odometer-type totalization display, 360° test circle with center sweep hand and flow finder to detect leaks. Register gearing consists of self-lubricating thermoplastic gears to minimize friction and provides long life. Permanently sealed; dirt, moisture, tampering and lens fogging problems are eliminated. Multi-position register simplifies meter installation and reading. Generator-type remote reading and automatic meter reading systems are available for all Recordall Disc meters. (See back of sheet for additional information.) All reading options are removable from the meter without disrupting water service.

TAMPER-PROOF FEATURES: Customer removal of the register to obtain free water can be prevented when the optional tamper detection seal wire screw or TORX® tamper resistant seal screw is added to the meter. Both can be installed at the meter site or at the factory.

MAINTENANCE: Badger Recordall Disc meters are designed and manufactured to provide long-term service with minimal maintenance. When maintenance is required, it can be performed easily either at the meter installation or at any other convenient location. As an alternative to repair by the utility, Badger offers various maintenance and meter component exchange programs to fit the needs of the utility.

CONNECTIONS: Tailpieces/Unions for installations of meters on various pipe types and sizes, including misaligned pipes, are available as an option.



Model 35

SPECIFICATIONS

Typical Operating Range (100% ± 1.5%)	3/4-35 GPM (.17 to 7.9 m³/hr)
Low Flow (Min. 97%)	3/8 GPM (.085 m³/hr)
Maximum Continuous Operation	25 GPM (5.7 m³/hr)
Pressure Loss at Maximum Continuous Operation	5 PSI at 25 GPM (.37 bar at 5.7 m³/hr)
Maximum Operating Temperature	80°F (26°C)
Maximum Operating Pressure	150 PSI (10 bar)
Measuring Element	Nutating disc, positive displacement
Register Type	Straight reading, permanently sealed magnetic drive standard. Remote reading or Automatic Meter Reading units optional.
Register Capacity	10,000,000 Gallons, 1,000,000 Cubic Feet, 100,000 m³. 6 odometer wheels.
Meter Connections	Available in bronze and thermoplastic to fit 3/4" spud thread bore diameter sizes. See table below:

Size Designation	x	"L" Laying Length	"B" Bore Dia.	Coupling Nut and Spud Thread	Tailpiece Pipe Thread (NPT)
3/4"	x	7"	3/4"	1" (3/4")	3/4"
3/4"	x	9"	3/4"	1" (3/4")	3/4"
3/4" x 1"	x	9"	3/4"	1 1/4" (1")	1"

MATERIALS

Meter Housing	Cast Bronze, Envirobrass II
Housing Bottom Plates	Bronze, Cast Iron, Envirobrass II
Measuring Chamber	Thermoplastic
Disc	Thermoplastic
Trim	Stainless Steel, Bronze
Strainer	Thermoplastic
Disc Spindle	Stainless Steel
Magnet	Ceramic
Magnet Spindle	Stainless Steel
Register Lid and Shroud	Thermoplastic, Bronze
Generator Housing	Thermoplastic



**Recordall®
Cold Water
Bronze Disc Meter**

**Size 1" (DN 25mm)
Model 55**

**Technical
Brief**

DESCRIPTION

Badger Meter offers the Recordall Disc meter in Cast Bronze and a Low Lead Alloy. The Low Lead Alloy (Trade Designation: M55 LL) version complies with NSF/ANSI Standard 61 and carries the NSF-61 Mark on the housing. All components of the Low Lead Alloy meter, i.e., disc, chamber, housing, seals, etc., comprise the certified system.

APPLICATIONS: For use in measurement of potable cold water in residential, commercial and industrial services where flow is in one direction only.

OPERATION: Water flows through the meter's strainer and into the measuring chamber where it causes the disc to rotate. The disc, which moves freely, rotates on its own ball, guided by a thrust roller. A drive magnet transmits the motion of the disc to a follower magnet located within the permanently sealed register. The follower magnet is connected to the register gear train. The gear train reduces the disc rotations into volume totalization units displayed on the register dial face.

OPERATING PERFORMANCE: The Badger Recordall Disc meters meet or exceed registration accuracy for the low flow rates (95%), normal operating flow rates (100 ± 1.5%), and maximum continuous operation flow rates as specifically stated by AWWA Standard C700.

CONSTRUCTION: Badger Recordall Disc meter construction, which complies with ANSI/AWWA standard C700, consists of three basic components: meter housing, measuring chamber, and permanently sealed register. The water meter is available in bronze and Low Lead Alloy with externally-threaded spuds. A corrosion-resistant thermoplastic material is used for the measuring chamber.

To simplify maintenance, the register, measuring chamber, and strainer can be replaced without removing the meter housing from the installation. No change gears are required for accuracy calibration. Interchangeability of parts among like-sized meters also minimizes spare parts inventory investment.

MAGNETIC DRIVE: Direct magnetic drive, through the use of high-strength magnets, provides positive, reliable and dependable register coupling for straight-reading, remote or automatic meter reading options.

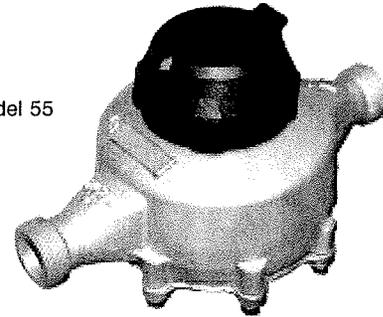
SEALED REGISTER: The standard register consists of a straight-reading odometer-type totalization display, 360° test circle with center sweep hand and flow finder to detect leaks. Register gearing consists of self-lubricating thermoplastic gears to minimize friction and provides long life. Permanently sealed; dirt, moisture, tampering and lens fogging problems are eliminated. Multi-position register simplifies meter installation and reading. Generator-type remote reading and automatic meter reading systems are available for all Recordall Disc meters. (See back of sheet for additional information.) All reading options are removable from the meter without disrupting water service.

TAMPER-PROOF FEATURES: Customer removal of the register to obtain free water can be prevented when the optional tamper detection seal wire screw or TORX® tamper resistant seal screw is added to the meter. Both can be installed at the meter site or at the factory.

MAINTENANCE: Badger Recordall Disc meters are designed and manufactured to provide long-term service with minimal maintenance. When maintenance is required, it can be performed easily either at the meter installation or at any other convenient location. As an alternative to repair by the utility, Badger offers various maintenance and meter component exchange programs to fit the needs of the utility.

CONNECTIONS: Tailpieces/Unions for installations of meters on various pipe types and sizes, including misaligned pipes, are available as an option.

Model 55



SPECIFICATIONS

Typical Operating Range (100% ± 1.5%)	1-55 GPM (.23 to 12.5 m³/hr)
Low Flow (Min. 95%)	1/2 GPM (.11 m³/hr)
Maximum Continuous Operation	40 GPM (9.1 m³/hr)
Pressure Loss at Maximum Continuous Operation	3.4 PSI at 40 GPM (.23 bar at 9.1 m³/hr)
Maximum Operating Temperature	80°F (26°C)
Maximum Operating Pressure	150 PSI (10 bar)
Measuring Element Register Type	Nutating disc, positive displacement Straight reading, sealed magnetic drive standard. Remote reading or Automatic Meter Reading units optional.
Register Capacity	10,000,000 Gallons, 1,000,000 Cubic Feet, 100,000 m³. 6 odometer wheels.
Meter Connections	Available in bronze and thermoplastic to fit 1" (DN25mm) spud thread bore diametersizes. See table below.

METER SPUD AND CONNECTION SIZES

Size Designation	x	"L" Laying Length	"B" Bore Dia.	Coupling Nut and Spud Thread	Tailpiece Pipe Thread (NPT)
1"	x	10 3/4"	1"	1 1/4" (1")	1"

MATERIALS

Meter Housing	Cast Bronze, Low Lead Alloy
Housing Bottom Plates	Bronze, Cast Iron, Low Lead Alloy
Measuring Chamber	Thermoplastic
Disc	Thermoplastic
Trim	Stainless Steel, Bronze
Strainer	Thermoplastic
Disc Spindle	Thermoplastic
Magnet	Polymer Bonded
Magnet Spindle	Thermoplastic
Register Lid and Shroud	Thermoplastic, Bronze
Generator Housing	Thermoplastic



BadgerMeter, Inc.

RD-T-55

**Recordall® Cold
Water Top Load
Bronze Disc Meter**

**Size 2" (DN 50mm)
ANSI/NSF Standard
61 Certified, Annex G**

**Technical
Brief**

DESCRIPTION

Badger Meter offers the Recordall Disc meter in Cast Bronze and a Low Lead Alloy. The Low Lead Alloy (Trade Designation: M170 LL) version complies with ANSI/NSF Standard 61, Annex G and carries the NSF-61 Mark on the housing. All components of the Low Lead Alloy meter, i.e., disc, chamber, housing, seals, etc., comprise the certified system.

APPLICATIONS For use in measurement of potable cold water in residential, commercial and industrial services where flow is in one direction only.

OPERATION: Water flows through the meter's strainer and into the measuring chamber where it causes the disc to rotate. The disc, which moves freely, rotates on its own ball, guided by a thrust roller. A drive magnet transmits the motion of the disc to a follower magnet located within the permanently-sealed register. The follower magnet is connected to the register gear train. The gear train reduces the disc rotations into volume totalization units displayed on the register dial face.

OPERATING PERFORMANCE The Badger Recordall Disc meters meet or exceed registration accuracy for the low flow rates (95%), normal operating flow rates (100 ± 1.5%), and maximum continuous operation flow rates as specifically stated by AWWA Standard C700.

CONSTRUCTION: Badger Recordall Disc meter construction, which complies with ANSI/AWWA standard C700, consists of three basic components: bronze meter housing, measuring chamber, and permanently sealed register. A corrosion-resistant thermoplastic material is used for the measuring chamber.

To simplify maintenance, the register, measuring chamber, and strainer can be replaced without removing the meter housing from the installation. No change gears are required for accuracy calibration. Interchangeability of parts among like-sized meters also minimizes spare parts inventory investment. The built-in strainer has an effective straining area of twice the inlet size.

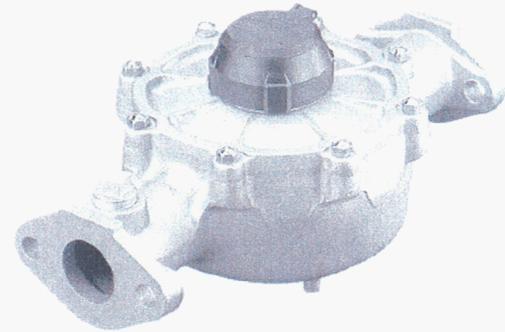
MAGNETIC DRIVE: Direct magnetic drive, through the use of high-strength magnets, provides positive, reliable and dependable register coupling for straight-reading, remote or automatic meter reading options.

SEALED REGISTER: The standard register consists of a straight-reading, odometer-type totalization display, 360° test circle with center sweep hand and flow finder to detect leaks. Register gearing consists of self-lubricating thermoplastic gears to minimize friction and provides long life. Permanently sealed; dirt, moisture, tampering and lens fogging problems are eliminated. Multi-position register simplifies meter installation and reading. Generator-type remote reading and automatic meter reading systems are available for all Recordall Disc meters. All reading options are removable from the meter without disrupting water service.

TAMPER-PROOF FEATURES Customer removal of the register to obtain free water can be prevented when the optional tamper detection seal wire screw or Torx® tamper seal resistant screw is added to the meter. Both can be installed at the meter site or at the factory.

MAINTENANCE Badger Recordall Disc meters are designed and manufactured to provide long-term service with minimal maintenance. When maintenance is required, it can be performed easily either at the meter installation or at any other convenient location. As an alternative to repair by the utility, Badger offers various maintenance and meter component exchange programs to fit the needs of the utility.

CONNECTIONS: Tailpieces/Flanges for installations of meters on various pipe types and sites, including misaligned pipes, are available as an option.



Model 170 shown with optional 1" Test Plug

SPECIFICATIONS

Typical Operating Range (100% ± 1.5%)	2 1/2-170 GPM (.57 to 39 m³/hr)
Low flow (Min. 95%)	1 1/2 GPM (.34 m³/hr)
Maximum Continuous Operation	100 GPM (23 m³/hr)
Pressure Loss at Maximum Continuous Operation	3.3 PSI at 100 GPM (.23 bar at 23 m³/hr)
Maximum Operating Temperature	80°F (26°C)
Maximum operating Pressure	150 PSI (10 bar)
Measuring Element	Nutating disc, positive displacement
Register Type	Straight reading, permanently sealed magnetic drive standard. Remote reading or Automatic Meter Reading units optional.
Registration Register Capacity	100 Gallons, 10 Cubic Feet, 1 m³ 100,000,000 Gallons, 10,000,000 Cubic Feet, 1,000,000 m³. 6 odometer wheels.
Meter Connections	2" AWWA two bolt elliptical flange, drilled, or 2" - 11 1/2 NPT internal pipe threads.
Optional Test Plug	1" NPT test plug (TP) available on elliptical long and short versions.
MATERIALS	
Meter Housing	Cast Bronze, Low Lead Alloy
Housing Top Plates	Bronze, Low Lead Alloy
Measuring Chamber	Thermoplastic
Disc	Thermoplastic
Trim	Stainless Steel/Bronze
Strainer	Thermoplastic
Disc Spindle	Stainless Steel
Magnet	Ceramic
Magnet Spindle	Stainless Steel
Register Lid and Box	Thermoplastic or Bronze
Generator Housing	Thermoplastic

Description

Applications: The Absolute Digital Encoder (ADE®) is designed for use with all Recordall® Disc, Turbo, Compound and Fire Service meters to provide connectivity with ORION®, Badger® ERT®, BadgerTouch® and Badger Meter approved AMR technology solutions.

Electronic Resolution: Digital output from the ADE includes the option of either four, five or six dial resolution. Refer to tables on the next page for details.

Mounting: The ADE in its shroud assembly uses a bayonet mount compatible with all Recordall Disc, Turbo, Compound and Fire Series meters. The bayonet mount allows positioning of the register in any of four orientations for visual reading convenience. The ADE can be removed from the meter without disrupting water service.

Magnetic Drive: A direct-drive, high-strength magnetic coupling through the meter body to the wetted magnet provides reliable and dependable register coupling.

Local Indication: The ADE register face features a six-digit mechanical odometer wheel stack, a 360° test circle with sweep hand, and a flow finder to indicate leaks.

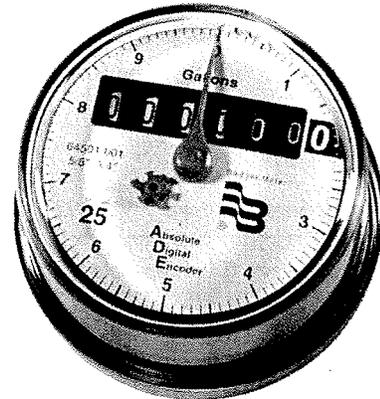
Tamper-Resistant Features: Unauthorized removal of the ADE is inhibited by a tamper resistant Torx® seal screw, provided as a standard accessory with the ADE. An optional tamper detection seal wire screw is also available.

Construction: The housing of the ADE is constructed of a strengthened glass lens top and a corrosion-resistant metal bottom. Internal construction materials are thermoplastic for long life and high reliability. The register gearing is self-lubricating thermoplastic to minimize friction and provide long, reliable life. The shroud assembly is thermoplastic.

Temperature: The operating range of the ADE is -40° C to 60° C (-40°F to 140°F). The water meter should not be subjected to temperatures below freezing.

Sealing: The ADE achieves true water resistance due to the adhesive technology used to seal the glass dome to the corrosion resistant metal bottom. Leak rates less than 10⁻⁶ cc/sec, as tested by a helium mass spectrometer, are comparable to a true hermetic seal. Due to this unique sealing process, the ADE exceeds all applicable requirements of AWWA Standard C707 regarding moisture intrusion.

Wire Connections: The ADE is available with either a wire lead, fully potted to prevent moisture intrusion at the connections, or with terminal screws. When provided with a wire lead, the ADE may be pre-wired at the factory to select Badger Meter-approved AMR devices, or may be furnished with a variety of lead wire lengths. Lead wire equipped ADE registers are suitable for installation in all environments,



Specifications

Transmitter/Register	Straight reading, permanently sealed, magnetic drive
Unit of Measure	U.S. Gallons, Cubic Feet, Cubic Meters, clearly identified on register face
Number Wheels	Six with 3/16-inch high numerals
Test Circle	360° circle with ten major increments with ten divisions each
Weight	11 Ounces
Humidity	0% to 100% condensing when equipped with potted lead wire, 0% to 95% non-condensing with screw-terminal wire connections
Temperature	-5° F to 120° F (-20° C to 49° C)
Signal Output	Industry Standard ASCII Format
Visual Resolution	1/100th of Test Circle
Electronic Resolution	Four-, five- or six-dial resolution
Signal Type	Two-wire asynchronous for Touch Solutions
Power Source	External

including continuously submerged water meter pits. The terminal screw version ADE features a tamper-resistant cap over the three-wire terminals. ADE registers with terminal screws are for indoor installation in protected environments, such as residential basements.

Electrical: The electronic circuitry is designed to provide immunity to electrical surges and transients per IEC801-2, IEC801-4 Severity Level 4. Operation of the ADE is dependent on the wire length limitations of connected AMR equipment.

Operating Characteristics: The digital reading obtained by an AMR device is sensed directly from the position of the ADE register's odometer using internal LED light paths to determine the exact position of each number wheel. This technology eliminates electromechanical contacts that could wear out, and provides greater long-term performance.



100 Series

Water Endpoint

Introduction

The 100 Series water endpoint is the latest addition to Itron's portfolio of advanced water metering devices. Featuring a compact design, industry-leading battery life and technology designed to adapt and grow with your business, the 100 Series can help you streamline your operations and maximize your resources today and into the future.

100 Series endpoints are available in two housing designs, supporting both water pit and remote installations. These endpoints offer advanced meter data collection designed specifically for the collection systems of Itron's ChoiceConnect™ solution, including mobile collection and fixed network systems. 100 Series endpoints differentiate themselves from other devices on the market by providing true two-way communications capabilities. Engineered from the ground up to leverage the benefits of ChoiceConnect, 100 Series devices enable easy migration from mobile to fixed network operations as your business needs evolve. And with ChoiceConnect's™ complementary technology, mobile and fixed network systems can be mixed-and-matched to ensure maximum efficiency and reliability in both high- and low-density meter populations.

Water meter compatibility

The 100 Series water endpoint is compatible with industry-leading water meters from Itron—as well as those from manufacturers such as Badger, Elster AMCO, Hersey, Metron Famier, Neptune and Sensus—enabling water utilities to consolidate all their water meters under a single reading system. Powered by advanced lithium battery technology, the endpoint is designed for greater than 20 years of battery life. Battery life is reduced if mobile hard-to-read mode is activated.



Data logging

The 100 Series water endpoint stores 40 days of hourly consumption information, offering the advantages of a fixed network system and the capabilities of a mobile system. This data is available in four basic packets and readable with the fixed network system as well as mobile:

- Any reading within the last 40 days
- A set of 24 consecutive hourly intervals
- A set of 40 daily intervals
- A set of 40 days of hourly intervals

Ease of installation

The 100 Series water endpoint includes integral mounting adapters to install the device below compatible meter pit lids, by mounting directly to the meter body or using a standard-dimension fiberglass rod. A shelf-mount adapter is available for use with lids that contain a recessed cavity on the underside of the pit. Additionally, a remote antenna is available for through-lid installations (for lids utilizing a 1.75-inch hole). Both models can also be screw-fastened to flat surfaces. The compact design of the 100 Series endpoint, coupled with an optional in-line register cable connector (pit version only), make installations up to 25 feet from the water meter quick and easy.

The encoder version does not require any programming—it automatically detects the register type within one hour of being connected. 100 Series devices do not require a FCC license.

Leak management

Water loss management is critical to any water utility's success. 100 Series water endpoints connect to Itron's advanced acoustic leak sensors. These sensors collect and analyze sound patterns in their environment to detect new, evolving and pre-existing leaks automatically with web based application mlogonline. Leak sensor technology coupled with the endpoint's internal metered leak logic and the option to use data from groups of 100 Series devices (District Metering) provide the utility with a highly accurate picture of the overall health of the water distribution system.

Warranties



<p>100W Series Water Endpoints (including battery)</p>	<p>Full warranty consistent with the warranty terms in the Agreement for the first 10 years from shipment.</p> <p>For warranty claims in years 11 through 15, Itron's sole obligation will be to provide Customer with a discount on replacement product equal to 50 percent of its then-current list price for the replacement product.</p> <p>For warranty claims in years 16 through 20, Itron's sole obligation will be to provide Customer with a discount on replacement product equal to 25 percent of its then-current list price for the replacement product.</p>
<p>Leak Sensor</p>	<p>Full warranty consistent with the warranty terms in the Agreement for the first 10 years from shipment.</p> <p>For warranty claims in years 11 through 15, Itron's sole obligation will be to provide Customer with a discount on replacement product equal to 50 percent of its then-current list price for the replacement product.</p> <p>For warranty claims in years 16 through 20, Itron's sole obligation will be to provide Customer with a discount on replacement product equal to 25 percent of its then-current list price for the replacement product.</p>
<p>Digital Leak Detector</p>	<p>14 months from shipment</p>
<p>DigiCorr Leak Correlator</p>	<p>14 months from shipment</p>

Badger Meter



This warranty shall apply to all Recordall® Non-Loaded Bronze Disc Meters, models LP through 170 when used to measure potable water; and the registers, generators, and encoders used with these meters (collectively "Product"), sold on or after September 1, 2007. This warranty is extended only to utilities, municipalities, other commercial users and authorized Badger Meter, Inc. ("BadgerSM") distributors, hereafter referred to as "Customer" and does NOT apply to consumers.

Badger warrants Product to be free from defects in materials and workmanship appearing within the earlier of the following time-frames:

Twenty (20) years after installation; or twenty (20) years and six (6) months after shipment from Badger.

Twenty-five (25) years after installation; or twenty-five (25) years and six (6) months after shipment from Badger.

Ten (10) years after installation; or ten (10) years and six (6) months after shipment from Badger.

Five (5) years after installation; or five (5) years and six (6) months after shipment from Badger.

Fifteen (15) years after installation; or fifteen (15) years and six (6) months after shipment from Badger.

One (1) year after installation; or one (1) year and six (6) months after shipment from Badger

The meter product will meet or exceed new meter accuracy standards set forth in **AWWA** Standard C700-02 for the following periods:

Model LP Recordall 5/8" and 5/8" x 3/4"
Five (5) years from date of shipment or registration of 750,000 gallons, whichever occurs first.

Model 25 Recordall 5/8" and 5/8" x 3/4"
Five (5) years from date of shipment or registration of 750,000 gallons, whichever occurs first.

Model 35 Recordall 3/4"
Five (5) years from date of shipment or registration of 750,000 gallons, whichever occurs first.

Model 55 Recordall 1"
Five (5) years from date of shipment or registration of 1,000,000 gallons, whichever occurs first.

Model 70 Recordall 1"
Five (5) years from date of shipment or registration of 1,100,000 gallons, whichever occurs first

Model 120 Recordall 1-1/2"
Two (2) years from date of shipment or registration of 1,600,000 gallons, whichever occurs first

Model 170 Recordall 2"
Two (2) years from date of shipment or registration of 2,300,000 gallons, whichever occurs first

The meter product will meet or exceed repaired meter accuracy standards set forth in **AWWA** Manual M-6, Chapter 5 (1999) Table 5.3 for the following periods:

Model LP Recordall 5/8" and 5/8" x 3/4"
Fifteen (15) years from date of shipment or registration of 2,500,000 gallons, whichever occurs first, with a 20 gpm safe maximum operating capacity and a 10 gpm maximum rate for continuous operation.

Model 25 Recordall 5/8" and 5/8" x 3/4"
Fifteen (15) years from date of shipment or registration of 2,500,000 gallons, whichever occurs first, with a 25 gpm safe maximum operating capacity and a 15 gpm maximum rate for continuous operation.

Model 35 Recordall 3/4"
Fifteen (15) years from date of shipment or registration of 2,500,000 gallons, whichever occurs first, with a 35 gpm safe maximum operating capacity and a 25 gpm maximum rate for continuous operation.

Model 55 Recordall 1"
Fifteen (15) years from date of shipment or registration of 3,000,000 gallons, whichever occurs first, with a 55 gpm safe maximum operating capacity and a 40 gpm maximum rate for continuous operation.

Model 70 Recordall 1"
Fifteen (15) years from date of shipment or registration of 3,250,000 gallons, whichever occurs first, with a 70 gpm safe maximum operating capacity and a 50 gpm maximum rate for continuous operation.

Model 120 Recordall 1-1/2"
Fifteen (15) years from date of shipment or registration of 5,690,000 gallons, whichever occurs first, with a 120 gpm safe maximum operating capacity and a 80 gpm maximum rate for continuous operation.

Model 170 Recordall 2"
Fifteen (15) years from date of shipment or registration of 10,400,000 gallons, whichever occurs first, with a 170 gpm safe maximum operating capacity and a 100 gpm maximum rate for continuous operation.

Badger Meter Warranty For Absolute Digital Encoder (ADE®)

Badger Meter



PRODUCT WARRANTY

This warranty shall apply to the Absolute Digital Encoder (ADE®) ("Product"), sold on or after August 1, 2006. The warranty is extended only to utilities, municipalities, other commercial users, and authorized Badger Meter, Inc. ("Badger®") distributors, hereinafter referred to as "Customer", and does NOT apply to consumers.

LEGAL AND NON-WARRANTY

Badger warrants the Product to be free from defects in materials and workmanship appearing within the earlier of either: Ten (10) years after installation; or ten (10) years and six (6) months after shipment from Badger.

PRODUCT RETURN

Any Product proved to Badger's satisfaction to have failed the foregoing warranties will, at Badger's option, be repaired or replaced without charge to the Customer. Badger's obligation hereunder shall be limited to such repair and replacement and shall be conditioned upon Badger's receiving written notice of any alleged defect within ten (10) days after its discovery. This exclusive remedy shall not be deemed to have failed its essential purpose so long as Badger is willing and able to replace defective Products to Customer within a reasonable time after receipt of proof that a defect is involved. Product returns must be shipped by the Customer prepaid F.O.B. to the nearest Badger factory or distribution center. The Customer shall be responsible for all direct and indirect costs associated with removing original product and reinstalling the repaired or replacement Product.

EXCLUSIONS

This warranty shall not apply to Product repaired or altered by any party other than Badger. The foregoing warranty applies only to the extent that the Product is installed, serviced and operated strictly in accordance with Badger's instructions. The warranty shall not apply and shall be void with respect to Product exposed to conditions other than those detailed in Product technical literature and Installation and Operation Manuals (IOMs), or which have been subject to vandalism, negligence, accident, acts of God, improper installation, operation or repair, alteration, or other circumstances which are beyond Badger's reasonable control. With respect to equipment and parts not manufactured by Badger, the warranty

obligations of Badger shall in all respects conform and be limited to the warranty extended to Badger by the supplier.

THE FOREGOING WARRANTIES ARE EXCLUSIVE AND IN LIEU OF ALL OTHER EXPRESS AND IMPLIED WARRANTIES WHATSOEVER, INCLUDING BUT NOT LIMITED TO IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE (except warranties of title).

Any description of the Product, whether in writing or made orally by Badger or Badger's agents, specifications, samples, models, bulletins, drawings, diagrams, engineering sheets or similar materials used in connection with any Customer's order are for the sole purpose of identifying the Product and shall not be construed as an express warranty. Any suggestions by Badger or Badger's agents regarding use, application, or suitability of the Product shall not be construed as an express warranty unless confirmed to be such in writing by Badger.

Exclusion of Consequential Damages and Disclaimer of Other Liability. Badger's liability with respect to breaches of the foregoing warranty shall be limited as stated herein. Badger's liability shall in no event exceed the contract price. **BADGER SHALL NOT BE SUBJECT TO AND DISCLAIMS: (1) ANY OTHER OBLIGATIONS OR LIABILITIES ARISING OUT OF BREACH OF CONTRACT OR OF WARRANTY, (2) ANY OBLIGATIONS WHATSOEVER ARISING FROM TORT CLAIMS (INCLUDING NEGLIGENCE AND STRICT LIABILITY) OR ARISING UNDER OTHER THEORIES OF LAW WITH RESPECT TO PRODUCTS SOLD OR SERVICES RENDERED BY BADGER, OR ANY UNDERTAKINGS, ACTS OR OMISSIONS RELATING THERETO, AND (3) ALL CONSEQUENTIAL, INCIDENTAL, AND CONTINGENT DAMAGES WHATSOEVER.**

Due to continuous research, product improvements and enhancements, Badger Meter reserves the right to change product or system specifications without notice, except to the extent an outstanding contractual obligation exists.

Badger® is a registered trademark of Badger Meter, Inc.
ADE™ is a trademark of Badger Meter, Inc.

NATIONAL METER AND AUTOMATION, INC.

Cost Proposal

* Note 1) Meter **Assembly & Documentation Pricing** includes:

Meter body, ADE register, and 100W endpoint with thru lid mounting kit \rightarrow "or suitable for pit mounting, as specified by the Contractor."
All items as described in Support Services, Items 1-4

** Note 2) Meter Assembly & Documentation Pricing Notes:

1. Sales Tax shown are rates in effect at time of quotation.
Sales Tax shall be charged based on the rates in effect at time of final sale.
2. Prices quoted are firm thru November 2011.
3. Future prices quoted may be increased in proportion to the increase in the Producer Price Index for Materials for durable manufacturing as reported by the US Department of Labor. The base index shall be the October 2010 index of 189.3. Changes in prices will be no more frequent than every 12 months if necessary, and will not exceed 3%.

*** Note 3) Field Documentation Pricing Notes:

1. Prices quoted are firm thru November 2011.
2. Future years pricing may be adjusted according to Lodi area CPI rates? "CPI Index is based on the US Department of Labor, Bureau of Statistics, as of December 31, 2010, Sacramento Area."

Phase 1: 2011 Meter Assembly & Documentation Pricing

<u>Size</u>	<u>Model</u>	<u>Quantity</u>	<u>Unit Price</u>	<u>Total</u>
3/4"	Badger Model 35	3,695	\$ 194.00	\$ 716,830.00
1"	Badger Model 55	5	\$ 226.00	\$ 1,130.00
2"	Badger Model 170	1	\$ 622.00	\$ 622.00
Subtotal				\$ 718,582.00
			CA Sales Tax	7.250% \$ 52,097.20
			County Sales Tax	0.500% \$ 3,592.91
			Local Sales Tax	1.000% \$ 7,185.82
Total				\$ 781,457.93

"Units costs shown assume lid-mounted assemblies. Unit price for meter assemblies is reduced by \$2 for pit mounted ERTs."

* See Note 1
** See Note 2

Phase 1: 2011 Field Documentation Pricing

<u>Size</u>	<u>Quantity</u>	<u>Unit Price</u>	<u>Total</u>
All Sizes	3,701	\$ 8.00	\$29,608.00

*** See Note 3

NATIONAL METER AND AUTOMATION, INC.

K. Business License

- Comply,

L. Procurement Proposal

- Comply.

5) The Components of the Proposal shall include the following:

- A. *See* Tab 5 for equipment submittals.
- B. **Comply.** See Tab 2 for pricing.
- C. Terms and Conditions

Terms and Conditions: Meter Assemblies and Materials

Material deliveries will be coordinated between National Meter & Automation and the Installation contractor. This coordination will include the number of required meter

The City has established that 500-unit meter lots delivered every 7 days is the basis for bidding by Installation Contractors.

~~meter assemblies will be sche~~

All equipment shall be shipped FOB to the jobsite. The Installation Contractor will arrange for receipt of materials and shall provide a forklift to offload the truck. The Installation Contractor will take possession of and responsibility for the meter assemblies at the delivery site.

National Meter & Automation will invoice the City of Lodi for materials when shipped. Included with each invoice will be an Inventory Manifest. This manifest will include all meter assembly documentation as outlined in Item 3 of this Request for Proposal. Invoice will be issued with payment terms of Net 30 days.



City of Lodi
WMP Meter Procurement Proposal
Addendum #1: Clarifications

1) Section L5- Terms and Conditions: Meter Assemblies and Material

“Page 4 of the National Meter Proposal, second paragraph under “Terms and Conditions: Meter Assemblies and Materials”: National Meter states that a “base delivery of 500 meter assemblies will be scheduled on 7 day intervals.” A “base load” of a set quantity at a set interval should not be assumed by National Meter. Smaller or larger delivery increments may be required, and National Meter and Automation is responsible for coordinating precise delivery schedules with the Installation Contractor. The City’s RFP established 500 unit lots delivered every 7 days as the maximum rate for meter deliveries to the Installation Contractor as a basis for bids. This delivery schedule should not be considered as a constant ‘base load.’ ”

Reply: Agreed. Meter deliveries will be scheduled with the Installation Contractor. This delivery schedule will not be considered as a constant “base load”.

2) Cost Proposal

“The benchmark date for the Producer Price Index has been proposed as October 2010. No basis has been proposed for the Consumer Price Index. National Meter should provide the benchmark date for the local CPI as the basis for future price increases. Also, National Meter should provide the specific CPI index (e.g. the formal name of the proposed, local index or region) that will be used.”

Reply: CPI index is based on the US Department of Labor, Bureau of Labor Statistics, as of December 31, 2010, Sacramento Area.

3) ERT Mounting Options

“The City has determined that existing meter box lids will not be replaced under the WMP. Existing meter box installations account for only a fraction of the total meter installations, but will not be compatible with the lid-mounted encoder- receiver-transmitter- (ERT) units previously specified by the City and proposed by National Meter. Instead, pit mounted ERT’s will be required at these locations. The Installation Contractor will be responsible for specifying the quantity of pit mounted ERTs and providing this information to National Meter. Prior to awarding the water meter procurement contract to National Meter, the City should verify with National Meter that partially substituting pit mount ERTs for lid-mount ERTs does not cause a price change.”

Reply: Substituting pit mount (under lid) ERTs for lid mount ERTs will reduce the net price for the meter and ERT assembly by \$2.00.

city of Lodi, Public Works Department, Water/Wastewater Division

211 W. Oak Street, Groundwater Clean up

Calculations of Sewage Capacity Fees and Monthly Sewer Service Charges

9/13/10

PROCESS WASTEWATER:

Flow 39.42 million gallons/year
 BOD mg/L = 0 1000 lbs/year = 0.00
 TSS mg/L = 0 1000 lbs/year = 0.00

Sewer Capacity Fee for Process Wastewater

Flow, MG		\$/unit	/MG =	totals	
39.42	X	\$45,261.00		\$1,784,188.62	
BOD, 1000 lbs					
0.00	X	\$11,722.00	/1000 =	\$0.00	
TSS, 1000 lbs					Equivalent
0.00	X	\$6,269.00	/1000 =	\$0.00	SSU'S
				<u>\$1,784,188.62</u>	300.47

Monthly sewer service billing

Flow, MG		\$/unit		totals	
39.42	X	\$3,145.95	-	\$124,013.35	
BOD, 1000 lbs					
0.00	X	\$519.16	=	\$0.00	
TSS, 1000 lbs					
0.00	X	\$324.61	-	\$0.00	Monthly
				<u>\$124,013.35</u>	\$10,334.45

EMPLOYEES:

employees 0 / empl./SSU 8 = Total SSU's 0.000

Capacity fees for employees:

SSU'S 0.000 X \$/SSU \$5,938 = Total \$0.00

Monthly sewer service for employees:

SSU'S 0.000 X \$/SSU/month \$31.07 = Total/month \$0.00

TOTAL CAPACITY FEE:

	Process:	Employees:	Total Cap. Fee:	Equivalent SSU's:	SSU Credits:	SSU'S Owed:
	\$1,784,188.62	\$0.00	<u>\$1,784,188.62</u>	300.470	0.00	300.47
				0.000		
				300.470		

TOTAL MONTHLY SERVICE BILLING:

	Process:	Employees:	Total Monthly Fee:	Equivalent SSU's:
	\$10,334.45	\$0.00	<u>\$10,334.45</u>	332.618
				0.000
				332.618



February 7, 2011

U.S. Department of Labor
Bureau of Labor Statistics
Washington, D.C. 20212

Producer Price Index
Total wholesale trade industries
Merchant wholesalers, durable goods
Base Index 6/04

				Percent Change
Year	Aug	Nov	Dec	Dec-Dec
2008	118.1	119.2	119.3	6.6
2009	119.5	119.4	118.9	-0.8
2010	116.9	117.6	119	0.2

Source: http://www.bls.gov/schedule/archives/ppi_nr.htm



February 7, 2011

U.S. Department of labor
Bureau of labor Statistics
Washington, D.C. 20212

Consumer Price index
All Urban Consumers- (CPI-U)
U.S. City Average
All Items as of 1/14/2011

Year	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec	Percent Change
													Dee- Dec
2008	211.08	211.693	213.528	214.823	216.632	218.815	220	219.086	218.783	216.573	212.425	210.228	0.1
2009	1211.143	1212.193	1212.709	213.24	213.856	215.693	215.4	215.834	215.969	216.177	216.33	215.949	2.7
2010	216.687	216.741	217.631	218.009	218.178	217.965	218	218.312	218.439	218.711	218.803	219.179	1.5

Source: <ftp://ftp.bls.gov/pub/special.requests/cpi/cpiiai.txt>

PO Box 8339 Santa Rosa, CA 95407
707-575-0700 Phone 707-575-3786 Fax

Technical Memorandum

City of Lodi Water Meter Program

Subject: Recommendation for Award of Water Meter Procurement Contract
Prepared For: Wally Sandelin, Public Works Director
Prepared by: Tony Valdivia, P.E.
Reviewed by: Mike Matson, P.E.
Date: February 8, 2011
Reference: 140-007

At the request of the City of Lodi, RMC Water and Environment has reviewed the proposal from National Meter and Automation, Inc. (National Meter), for "Purchase of Water Meter Assemblies and Related Services" (January 7, 2011). We have found the proposal to be complete, responsive and compatible with the Water Meter Program (WMP) Phase 1 Contract Documents that are currently out for bid.

Proposal Summary

In summary, the scope of the National Meter proposal includes assembly, testing, documentation, shipping and field verification of complete water meter assemblies in accordance with the requirements of the City's Request for Proposal (RFP) for these services over a seven year period. National Meter has taken no exception to the City's standard General Conditions or other terms presented in the RFP.

The National Meter proposal offers the following price for these materials and services for the initial 2011 contract year for WMP Phase 1. Inclusive of sales taxes, the proposed cost to complete the scope of work for the 3,700 Phase 1 meter assemblies is approximately \$811,065.93. For the six remaining phases of the project, each of which will be completed in a subsequent calendar year (2012 through 2017), National Meter proposes an escalation from the 2011 pricing in accordance with the following price indices:

1. Meter Assemblies and Factory Documentation pricing will increase based on the Producer Price Index (PPI) for Materials for durable manufacturing as reported by the US Department of Labor. Changes in price will be no more frequent than every 12 months (effectively adjusted for each WMP phase) and will not exceed 3% in any given year from prior year pricing.
2. Field Documentation pricing may, at National Meter's discretion, be increased according to Lodi area Consumer Price Index (CPI) rates (see clarifications, below).

As summarized above, future cost increases for materials and labor are tied to widely-accepted third-party indices. In our opinion, this pricing structure represents a fair and equitable method of determining price escalation over the course of the proposed 7-year contract. It should be noted that the proposed costs contained in the proposal for Phases 2 through 7 reflect non-escalated 2011 base pricing. The City should assume pricing adjustments using projections from the base indices year over year.

Clarifications

Prior to executing a contract to National Meter and Automation, Inc., RMC recommends that the following items be clarified with National Meter:

1. Page 4 of the National Meter Proposal, second paragraph under “Terms and Conditions: Meter Assemblies and Materials”: National Meter states that a “base delivery of 500 meter assemblies will be scheduled on 7 day intervals.” A “base load” of a set quantity at a set interval should not be assumed by National Meter. Smaller or larger delivery increments may be required, and National Meter and Automation is responsible for coordinating precise delivery schedules with the Installation Contractor. The City’s RFP established 500 unit lots delivered every 7 days as the maximum rate for meter deliveries to the Installation Contractor as a basis for bids. This delivery schedule should not be considered as a constant “base load.”
2. The benchmark date for the Producer Price Index has been proposed as October 2010. No basis has been proposed for the Consumer Price Index. National Meter should provide the benchmark date for the local CPI as the basis for future price increases. Also, National Meter should provide the specific CPI index (e.g. the formal name of the proposed, local index or region) that will be used.
3. The City has determined that existing meter box lids will not be replaced under the WMP. Existing meter box installations account for only a fraction of the total meter installations, but will not be compatible with the lid-mounted encoder- receiver-transmitter- (ERT) units previously specified by the City and proposed by National Meter. Instead, pit mounted ERT’s will be required at these locations. The Installation Contractor will be responsible for specifying the quantity of pit mounted ERTs and providing this information to National Meter. Prior to awarding the water meter procurement contract to National Meter, the City should verify with National Meter that partially substituting pit mount ERTs for lid-mount ERTs does not cause a price change.

Provided that the City does not object to these proposed clarifications and responses from National Meter, RMC recommends that the City award the contract for these materials and services to National Meter and Automation, Inc.

Optional Equipment

The National Meter proposal includes pricing for optional equipment that the City may wish to consider for purchase, including meter bench testing equipment (to be installed at City facilities) and field leak detection equipment (to be installed in lieu of standard equipment in select meter boxes). This equipment is not essential to the WMP but could be of value to future City operations and maintenance programs and water conservation efforts. Note that installing leak detection equipment after the WMP is completed will result in a higher cost. The pricing for leak detection equipment is outlined in the National Meter Proposal.



City of Lodi
WMP Meter Procurement Proposal
Addendum #2: Clarifications

February 9, 2011

1) Cost Proposal

“The benchmark date for the Producer Price Index has been proposed as October 2010. No basis has been proposed for the Consumer Price Index. National Meter should provide the benchmark date for the local CPI as the basis for future price increases. Also, National Meter should provide the specific CPI index (e.g. the formal name of the proposed, local index or region) that will be used.”

(original) Reply: CPI Index is based on the US Department of labor, Bureau of labor Statistics, as of December 31, 2010, Sacramento Area.

Addendum #2 – the Regional Resource reference for the CPI Index shall be the San Francisco, Oakland, San Jose database (not the Sacramento Area region as previously referenced)

RESOLUTION NO. 2011-34

A RESOLUTION OF THE LODI CITY COUNCIL AUTHORIZING
THE CITY MANAGER TO EXECUTE AGREEMENTS FOR
CONSTRUCTION, CONSTRUCTION ADMINISTRATION, AND
METER ASSEMBLIES AND FIELD DOCUMENTATION FOR
THE WATER METER PROGRAM PHASE 1 PROJECT,
APPROVING FOUR TEMPORARY PART-TIME FIELD
SERVICES INTERN POSITIONS, AND FURTHER
APPROPRIATING FUNDS

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WHEREAS, in answer to notice duly published in accordance with law and the order of this City Council, sealed bids were received and publicly opened on February 15, 2011, at 11:00 a.m., for the Water Meter Program Phase 1 Project described in the plans and specifications therefore approved by the City Council on January 5, 2011; and

WHEREAS, said bids have been checked and tabulated and a report thereof filed with the City Manager as follows:

Bidder	Bid
Knife River Construction	\$1,872,285
Vinciguerra Construction	\$1,890,300
Sierra National Construction	\$1,928,012
GM Construction & Development	\$1,992,966
Teichert Construction	\$2,060,850
Marques Pipeline	\$2,249,181
MCI Engineering	\$2,378,675
West Valley Construction	\$2,636,355
Mozingo Construction	\$2,937,986
Lister Construction	\$3,029,560
Flores Paving	\$3,047,108

WHEREAS, staff recommends awarding the contract for the construction of the Water Meter Program Phase 1 Project to the low bidder, Knife River Construction, of Stockton, California, in the amount of \$1,872,285; and

WHEREAS, staff recommends RMC Water and Environment, of Walnut Creek, perform the construction administration services, with a time-and-materials contract with a not-to-exceed maximum of \$198,433; and

WHEREAS, National Meter and Automation, Inc., of Santa Rosa, is the local supplier for Badger Meter, Inc., of Milwaukee, that was approved by City Council on August 4, 2010, as the sole source provider of water meters to the Water Meter Program. Staff has negotiated the necessary terms and requirements of the water meter assemblies procurement and related field services for a total contract amount of \$811,065.93; and

WHEREAS, for Phase 1 of the project, up to four field service interns will be hired at a cost of \$32,000 to observe the installation of the approximately 3,800 meters.

NOW, THEREFORE, BE IT RESOLVED that the Lodi City Council does hereby authorize the City Manager to execute the contract for the construction of the Water Meter Program Phase 1 Project with the low bidder, Knife River Construction, of Stockton, California, in the amount of \$1,872,285; and

BE IT FURTHER RESOLVED that the City Council does hereby authorize the City Manager to execute the contract for construction administration services for the Water Meter Program Phase 1 Project with RMC Water and Environment, of Walnut Creek, California, in an amount not to exceed \$198,433; and

BE IT FURTHER RESOLVED that the City Council does hereby authorize the City Manager to execute the contract for meter assemblies and field documentation for the Water Meter Program Phase 1 Project with National Meter and Automation, Inc., of Santa Rosa, California, in the amount of \$811,065.93; and

BE IT FURTHER RESOLVED that the City Council does hereby approve four temporary part-time field services intern positions for the Water Meter Program Phase 1 Project; and

BE IT FURTHER RESOLVED that funds in the amount of \$3,250,000 be appropriated from Water Funds for this project.

Dated: March 16, 2011

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I hereby certify that Resolution No. 2011-34 was passed and adopted by the City Council of the City of Lodi in a regular meeting held March 16, 2011, by the following vote:

- AYES: COUNCIL MEMBERS – Hansen, Katzakian, and Mayor Johnson
- NOES: COUNCIL MEMBERS – Mounce and Nakanishi
- ABSENT: COUNCIL MEMBERS – None
- ABSTAIN: COUNCIL MEMBERS – None



RANDI JOHL
City Clerk