



Date:03/20/2023

## Project Proposal

Solutions for Farmer City, IL

Presenter: Zach Thomas, Dir  
Dan Lawlor, RAM  
Joseph Boetsch, VP



# Solution I : Complete WM Changeout

## Water Meters / AMI – 995 meters w/ sensors 995 sensors (includes 60 installed)

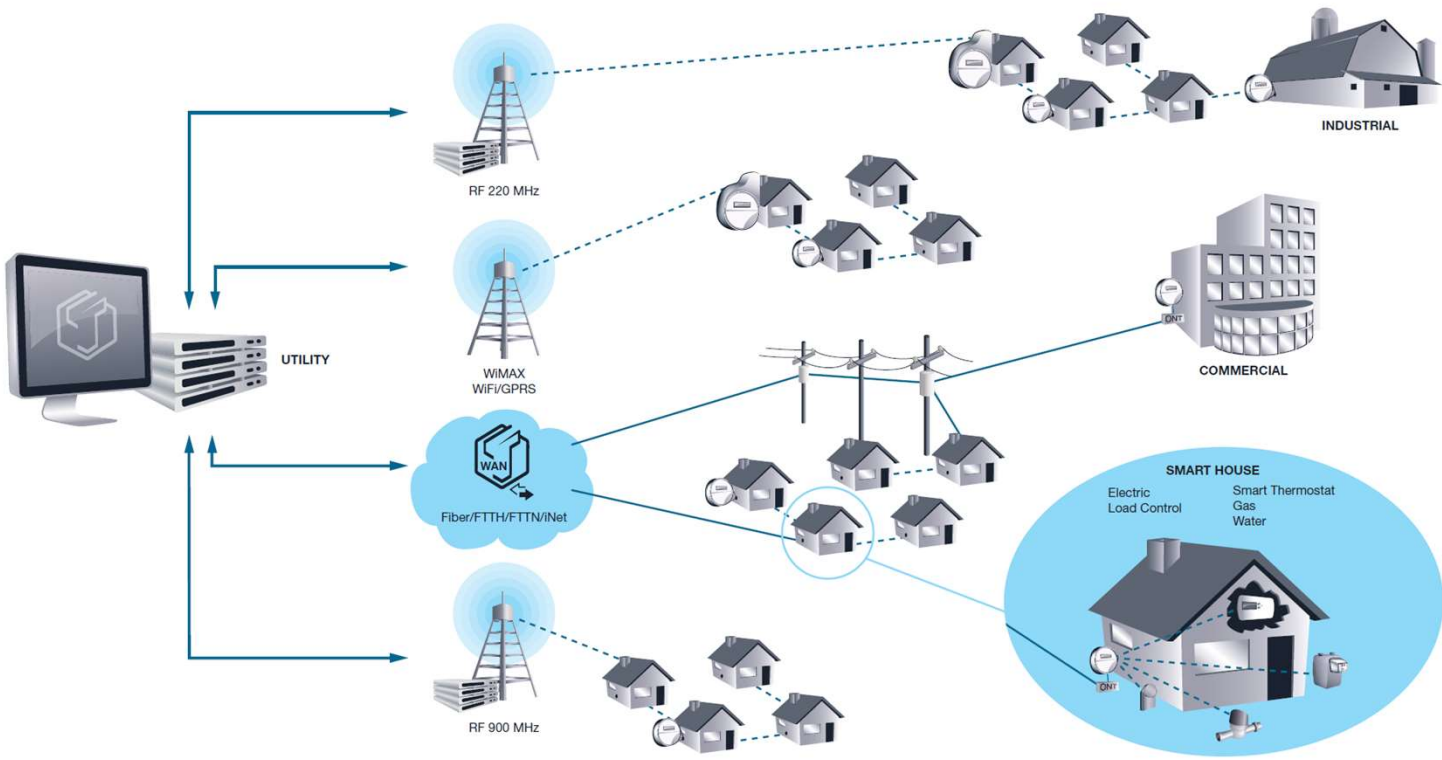
- Replace water meters (large / residential Pits and Yokes) Diehl meters
- Install advanced metering infrastructure (AMI) system (Water & Electric) I-tron
- 325 additional erts for electrical meters for AMI
- Leak Detection / Zone Metering
- GPS locators / Repeaters

## Benefits related to replacement project

- Comprehensive approach – standardization of technology going forward
- Advanced technology provides for hourly readings – accuracy will help with any billing discrepancies / inquiries
- Increased accuracy may provide for additional revenue to Farmer City
- Water Meters Read with AMI System



# Solution I : Water Meter Changeout Includes: AMI Smart System



# Solution I : Water Meter Pass / Fail Test Data:

At random we sampled 60 residential meters.

- 20 Meters Passed - 28%
- 40 Meters Failed - 67% A high percentage of failures
  - 21 Meters Failed (Low) - 35% ~ *Every failure failed low flow.*
  - 13 Meters Failed (Low & Mid) - 22% ~ A high percentage of failures.
  - 13 Meter Failed (High) – 22% ~ Catastrophic failures
- Elster meters tested: 12 Total
  - 5 Meters Passed – 41%
  - 7 Meters Failed – 59% (Low & Mid) ~ less than 5 years installed



# Solution I : Water Meter Pass / Fail Test Data:

At random we sampled 60 residential meters.



## TEST PROCEDURES

The meter was tested in accordance with AWWA (American Water Works Association) standards.  
 The meter was tested on a Meter Test Bench at the flows designated by AWWA according to meter size and type.

## TEST AND REPAIR DATA

Tested: 12/21/2022 By: Logan M. Meter Sealed   
 Repaired: \_\_\_\_\_ By: \_\_\_\_\_ Meter Sealed

TESTS	Test Results			Post Test Results		
	Flow Rate GPM	Allowable Test Accuracy	Actual Test Accuracy	Flow Rate GPM	Allowable Post Test Accuracy	Actual Post Test Accuracy
Start	x		x			
Minimum	.25	95 - 101	0		90 - 101	
Intermediate	2	98.5 - 101.5	91.1		98.5 - 101.5	
Maximum	15	98.5 - 101.5	3.1		98.5 - 101.5	

Tested within Accuracy Limits     Retested within Accuracy Limits     Recommend Replacement



# Solution I : Water Meter Changeout Includes: Diehl Ultrasonic Smart Water Meter



## FEATURES

- Extended minimum low flow rate in comparison to mechanical meters
- Integrated leak detection
- Mountable in any installation position
- Lead-free copper alloy "CUPHIN®" body
- UV resistant housing with IP 68 rating
- Over 40 days of hourly data storage
- **Accuracy is maintained over the life of the meter**
- No measurement of air
- Diehl Extended Encoder protocol that includes, temperature, alarms and error messages, etc.
- Meets or exceeds C715 AWWA/ANSI Standards
- Complies with NSF/ANSI Standards 61, Annex F/G as well as FCC part 15 B

## APPLICATION

Highly accurate, lead-free brass ultrasonic smart water meter for all residential, commercial and industrial installations



# Solution I : Water Meter Changeout Benefits: AMI Smart System

- Replace all residential water meters.
- Replace all large water meters.
- Address Pits and Yokes if there are issues. Up to 25 were included
- Install advanced metering infrastructure (AMI) system (**Water & Electric**) I-Tron. This consists of Tantallus software and front end, TUNet data collection devices, Itron endpoints on meters. Pit drilling wiring etc. for interior and exterior meters.
- No need for two meter readers - can be reallocated towards other city needs.



# Solution I : Water Meter Changeout Benefits: AMI Smart System

- Leak Detection – integrated with system
- Zone Metering - zone meters (electric meters) are for data capture from new and existing meters.
- GPS locators - all meters will be inventoried and included in new system with meter manufacturer, address where installed, meter size, etc. so you will have a full detail on all installed meters.
- Detailed Propagation Study – will have the number of repeaters included that are adequate for city footprint.
- Assist in identifying lead water lines for the city.





# Solution I : Water Meter Changeout Benefits: AMI Smart System

- Pit lid drilling where needed - up to 500 total.
- All engineering – necessary to implement AMI system
- Training
- Project management
- Establish a call center / Scheduling
- System design
- Billing integration



# Solution I : Water Meter Changeout Benefits: AMI Smart System



- All necessary hardware for accurate meter transmission.
- Large meters replaced
- Up to 50 service valve replacements at residential meters. - Utilizing pipe freeze technology to complete repairs.
- Vacuum and clean up to 250 pits/vaults.
- Tantalus software training - monthly system health checks, repair guides and yearly refresher training-first year only.
- **NO CHANGE ORDERS**



# Farmer City Water Main Project



- Main street water main over 100 years old.
- The integrity of the water main in downtown area is beyond useful life and is posing a potential threat to businesses and emergency services
- June of 2020, Farmer City obtained a water main replacement proposal for a grant submission. The grant was not approved.
- ABM walked Market St., Main St., James St., High and West Street with ABM Team and Public Works to rebid the project.





# Farmer City Water Main Project – ABM Team

- Provide site survey/verification, IFC drawing set, submittal review, project oversight and closeout documentation.
- **Directional drilling new watermain under IL Route 54 to avoid lane closures**
- All watermain taps are to be done “live” to avoid service interruptions.
- Watermain materials consists of PVC SDR-21 pipe, ductile iron fittings, CTS polyethylene water service tubing and corporation stops with boxes for service connections.
- New water service connections will be made where existing service valves are located.





## Farmer City Water Main Project – ABM Team

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- Water main will be tested, flushed, cleaned and submit testing to pass two consecutive tests to EPA for approval.
- ABM will deliver turnkey installation, which mitigates the risk to Farmer City
- Provide all labor, materials, equipment, and supervision to complete the water main work as shown in drawings.
- Includes all concrete and asphalt removal and replacement to facilitate work.



# ABM Water Main Replacement Proposal Differentiator



- **Cast Iron fittings for high pressure connections.**
- New lines/taps for +/- six (6) existing commercial properties.
- New residential taps +/- four (4) at the end of the line.
- Curb painting and striping as needed.
- Replace fire hydrants involved in project



# ABM Water Main Replacement Proposal Differentiator



- Install new taps from replaced water main to the front of the businesses.
- Excavation and regrading of turf areas and planting beds in city park.
- As-Built drawings of water main project to reflect full scope of work.
- **NO CHANGE ORDERS.**

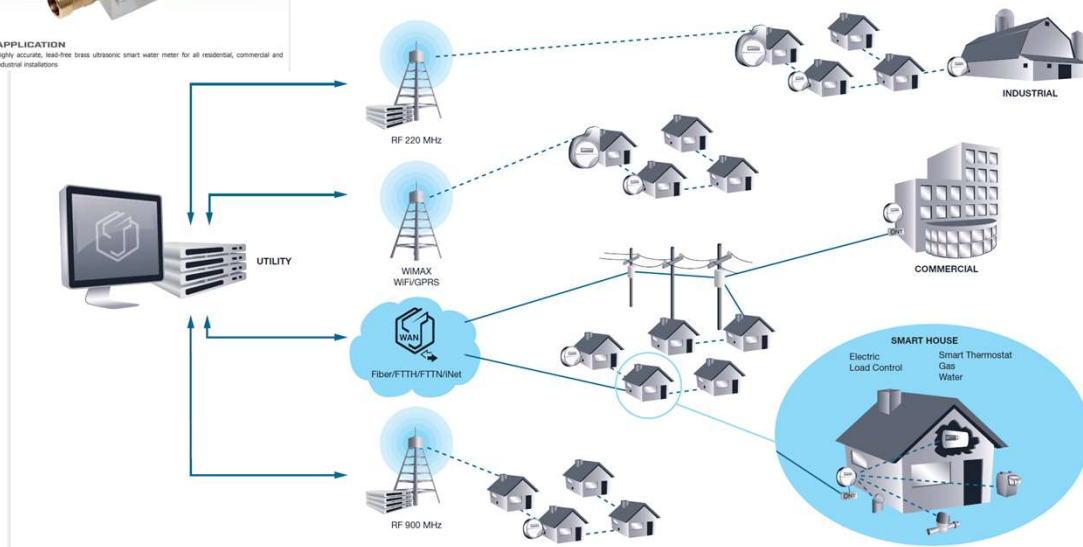


# Complete project – Water Meters & Water Mains

## Project cost today - \$7,352,626

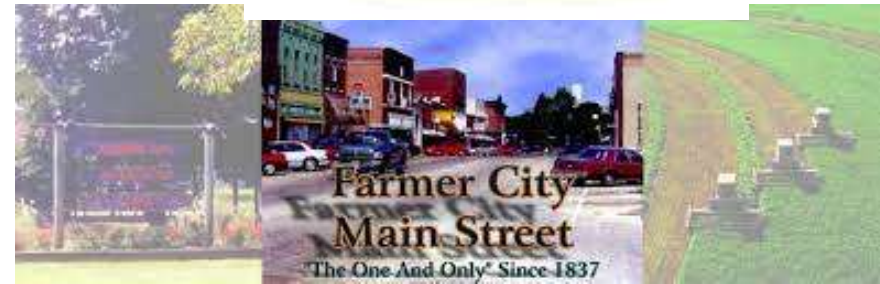


**APPLICATION**  
Highly accurate, lead-free brass ultrasonic smart water meter for all residential, commercial and industrial installations





# Farmer City







## Thank You

Zachary Thomas ME, MBA

Enterprise-Wide Director

Phone: 317-506-3683

Email: [zachary.thomas@abm.com](mailto:zachary.thomas@abm.com)

