



Painesville AMI Project

Where do we go from here?

July 15, 2019

Where did we start? When did we start? Here is the RFP in 2015

Painesville was one of AMP's pilot Members!

- Jeff McHugh was an active member of AMP's Smart Grid Advisory Committee
- Painesville had looked at AMI several times in the past
- Eleven of AMP's members collaborated on the design of an AMI program that would allow participants to share costs and systems
- Painesville deferred moving forward due to other capital priorities in the City





Advanced Metering Program

Presentation to the City of Painesville, Ohio

November 6, 2017



We started with a question at a council meeting

What is Advanced Metering?



Current State - HHMR



Billing System

- Manual meter reading process
- Aging meters, handheld equipment
- Support for new rates
- “Smart grid” platform & customer expectations

American Municipal Power, Inc.



Who benefits from the program?



Benefits of Advanced Metering

- Positive financial benefits to the City
 - Improved cash flow from reduced time from meter reading to billing
 - Reduced workload in these areas allows reallocation of labor to higher priority work:
 - Field investigations of billing issues
 - Reduced labor costs from connecting/disconnecting meters
 - Meter Reading
 - Reduction in uncollectibles; more timely disconnection of service

<http://www.whatissmartgrid.org/>

American Municipal Power, Inc.



And the customer too



Benefits of Advanced Metering

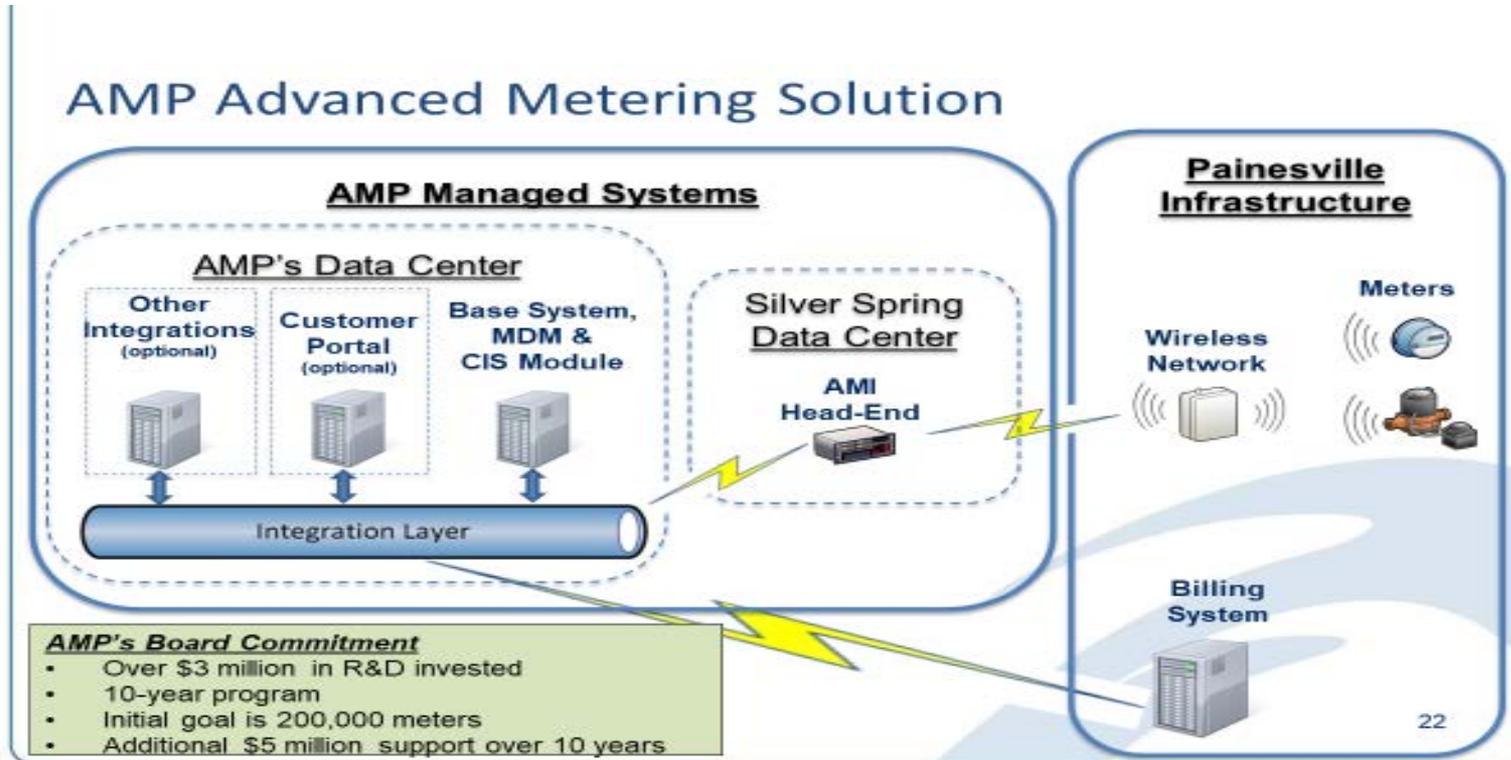
- *Improved utility operations*
 - Improved outage restoration driven by visualization of meters out of service
 - Suspected distribution transformers can be monitored for overloading
 - Voltage monitoring allows reduction distribution voltages; less loss
 - Focused tree trimming from meters reporting momentary outages
 - Data analysis & reporting

<http://www.whatissmartgrid.org/>

American Municipal Power, Inc.



This is what the AMI system would look like for us being part of the AMP project



Business Confidential - Do Not Distribute

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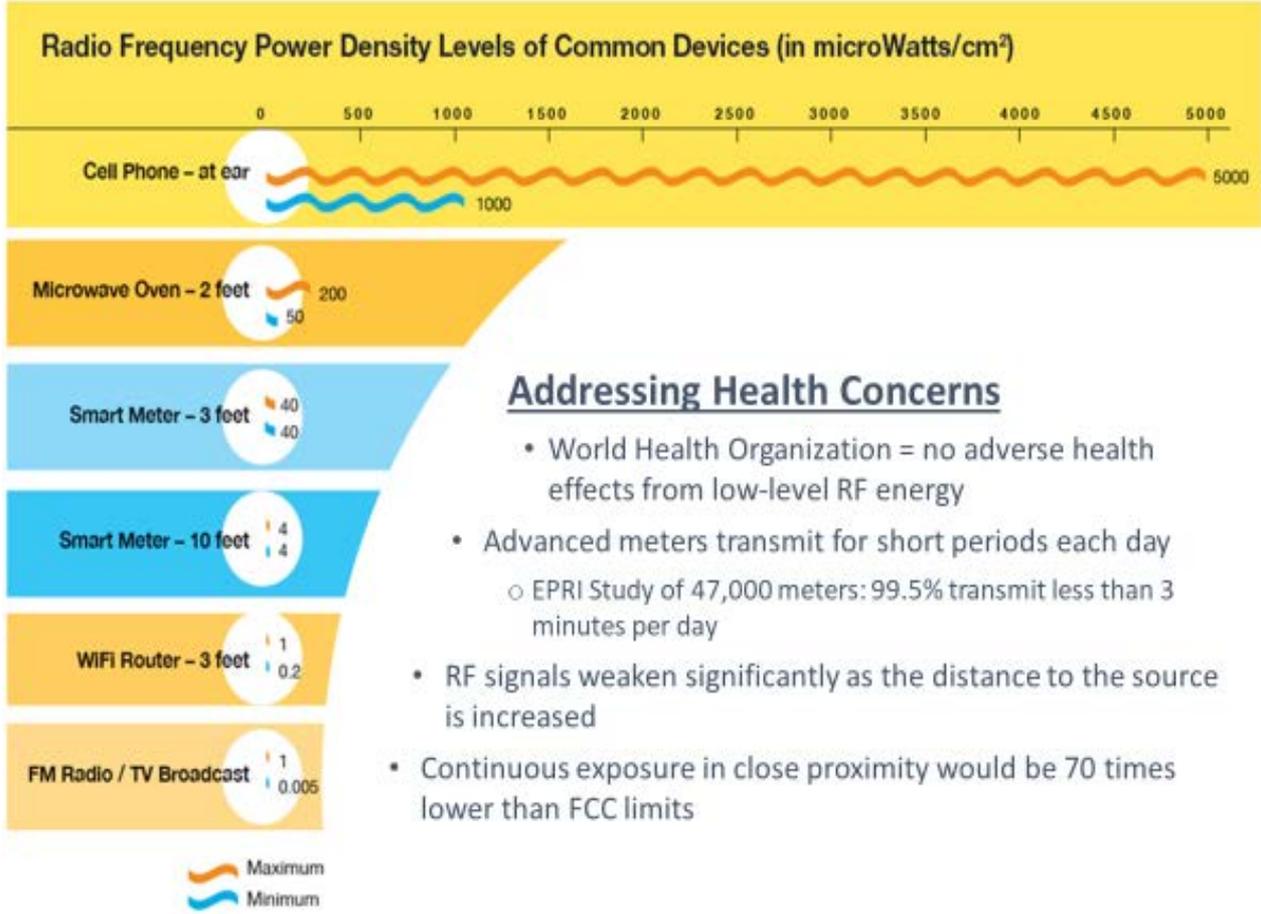




Advanced Metering Project Update –
January, 2018

Monica Ireland – City Manager

Jeff McHugh – Electric Superintendent



Addressing Health Concerns

- World Health Organization = no adverse health effects from low-level RF energy
- Advanced meters transmit for short periods each day
 - EPRI Study of 47,000 meters: 99.5% transmit less than 3 minutes per day
- RF signals weaken significantly as the distance to the source is increased
- Continuous exposure in close proximity would be 70 times lower than FCC limits

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Account #	Meter #	Service Address	Tools
81027 -1 (Test)	856070174	333 Texas St	Usage Billing History Alerts

Start: 02/22/2011 End: 03/22/2011 Billing Cycles

► **Summary** Use by Day: Feb 22 2011 - Mar 22 2011 Total: 1838.7 kwh Approx.Cost*: \$179.48



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Usage Alerts

Account #	Meter #	Service Address	Tools		
81027 -1 (Test)	856070174	333 Texas St	Usage	Billing History	Alerts
Email: bgerman@electsolve.com		SMS:		Edit	

Spending Alerts

Weekly Reports

On Off

Notifications

SMS EMAIL

Spend Tracking

On Off

Budget

\$ 150.00

Alert Thresholds

- 25%
- 50%
- 75%
- 100%

[Save](#)



Enhancements to Customer Service Operations

Billing History Usage

METERS AVAILABLE (BOLD INDICATES ACTIVE)

Meter #	Account	Start Date	End Date	Service Type	Address	Meter Type
10437948	45548-001	2008-08-05		Electric	PO, Box 232 2425 Arco Rd, Painesville MD 20021	

Displaying 1 to 25 of 25 records -- Download to spreadsheet

READS



SEARCH READS

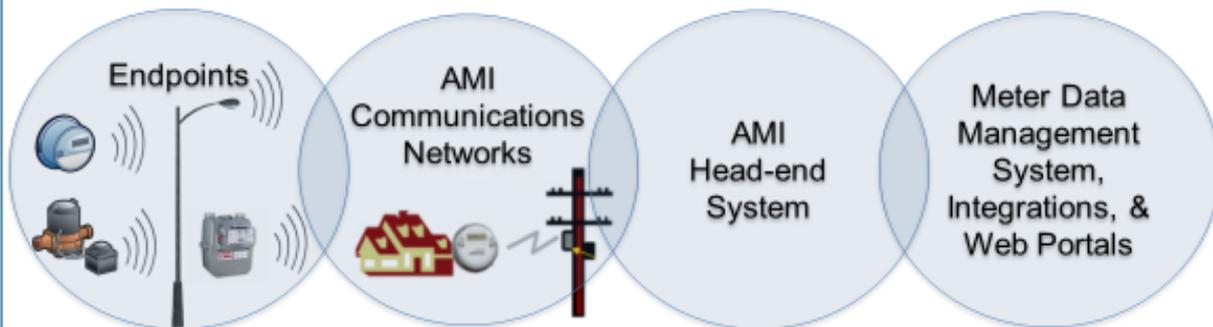
Start Date: 8/24/2015

End Date: 8/23/2016

Search By: Meter #

Date	Register	Usage	UCM	Mult	Clas	Code	Meter #	Serial #	New Bill	Source	Info
2015-03-17	55803	254	WH	1.0000	1	3	10437948	10437948		XXXX-AM	
2015-03-11	55712	1630	WH	1.0000	1	3	10437948	10437948		CR	
2015-03-11	10337		WH	1.0000	2	3	10437948	10437948		CR	
2016-02-11	64768	2169	WH	1.0000	1	3	10437948	10437948		CR	
2016-02-11	817		WH	1.0000	2	3	10437948	10437948		CR	
2016-01-11	52407	2231	WH	1.0000	1	3	10437948	10437948		CR	
2016-01-11	81		WH	1.0000	2	3	10437948	10437948		CR	
2015-12-10	50256	1580	WH	1.0000	1	3	10437948	10437948		CR	
2015-12-10	839		WH	1.0000	2	3	10437948	10437948		CR	
2016-11-11	48708	1168	WH	1.0000	1	3	10437948	10437948		CR	
2015-11-11	876		WH	1.0000	2	3	10437948	10437948		CR	
2015-10-12	47505	1143	WH	1.0000	1	3	10437948	10437948		CR	
2015-10-12	816		WH	1.0000	2	3	10437948	10437948		CR	
2015-09-13	46438	1438	WH	1.0000	1	3	10437948	10437948		CR	
2015-09-13	887		WH	1.0000	2	3	10437948	10437948		CR	
2015-08-13	44822	1012	WH	1.0000	1	3	10437948	10437948		CR	

AMI System Components



Four Discrete Areas of Functionality

- No one vendor is superior in all four domains
- Vendors combine their use of terminology, leading to confusion
- Vendors partner to create “illusion” of integrated product offerings
- Co-existence of multiple providers will be a requirement

Advanced Metering Program

Presentation to Painesville, OH
Council Work Session
February 12, 2018

Jared Price – Chief Technology Officer

American Municipal Power, Inc.



Vision – Cities See a Connected Future



AMP Painesville, OH Network Design

RF Mesh Links Map



■ Access Point

● Relay

Smart Grid Meters

■	0 hops
■	1 hop
■	2 hops
■	3 hops
■	4 hops
■	5 hops
■	6 hops
■	7 hops

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What do other cities do with AMI?

Let's go to Wadsworth?



The next steps were to present to our customers through a series of Townhall type meetings.

We got positive feedback and the direction to move forward.

With that, an August 2018 Resolution was passed giving us direction to begin working with AMP to determine the exact costs to the City for the AMI Program



- Internal due diligence began and work was done from August 2018 through February 2019
- AMP sent a the City a membership agreement in April 2019. Staff reviewed the agreement and sent AMP questions for review
- AMP answered all the concerns from the questions
- June 2019 legislation was presented to Council to proceed with the AMP AMI program.



If this Legislation passes:

- There is already approved \$4.0 million in the Budget for the AMI system and new Financial software
- Phase I is estimated at \$2.6 million, of that amount \$1.4 million will be for the 12,000 new meters. The remainder will go to the network installation and infrastructure costs
- Phase II will start in 2021 following the new software implementation when the Meter Data Management System (MDMS) is integrated with the new Financial software system. The estimated costs are \$255,676
- The ongoing costs through Phase I and II include program management and other services. These are approximately \$146,754 annually



THANK YOU

July 15, 2019