



**Notice**  
**City Commission Study Session**

**4:00 P.M.**

Monday, October 10, 2016

Governmental Center, Commission Chambers, 400 Boardman Avenue  
Traverse City, MI 49684

Posted and Published: 10-07-2016

The meeting informational packet is available for public inspection at the Traverse Area District Library, Law Enforcement Center, City Manager's Office, and City Clerk's Office. The City of Traverse City does not discriminate on the basis of disability in the admission or access to, or treatment or employment in, its programs or activities. Penny Hill, Assistant City Manager, 400 Boardman Avenue, Traverse City, MI 49684, 922-4440-TDD: 922-4412, has been designated to coordinate compliance with the non-discrimination requirements contained in Section 35.107 of the Department of Justice regulations. Information concerning the provisions of the Americans with Disabilities Act, and the rights provided thereunder, are available from the ADA Coordinator. If you are planning to attend and you have a disability requiring any special assistance at the meeting and/or if you have any concerns, please immediately notify the ADA Coordinator.

At the request of City Manager Marty Colburn, City Clerk Benjamin Marentette has called this Study Session.

City Commission:  
c/o Benjamin C. Marentette, MMC, City Clerk  
(231) 922-4480  
Email: [tcclerk@traversecitymi.gov](mailto:tcclerk@traversecitymi.gov)  
Web: [www.traversecitymi.gov](http://www.traversecitymi.gov)  
400 Boardman Avenue  
Traverse City, MI 49684

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*The mission of the Traverse City City Commission is to guide the preservation and development of the City's infrastructure, services, and planning based on extensive participation by its citizens coupled with the expertise of the city's staff. The Commission will both lead and serve Traverse City in developing a vision for sustainability and the future that is rooted in the hopes and input of its citizens and organizations, as well as cooperation from surrounding units of government.*

**Welcome to the Traverse City Study Session!**

Any interested person or group may address the City Commission on any agenda item when recognized by the presiding officer or upon request of any commissioner. Also, any interested person or group may address the City Commission on any matter of City concern not on the Agenda during the agenda item designated Public comment. The comment of any member of the public or any special interest group may be limited in time. Such limitation shall not be less than five minutes unless otherwise explained by the presiding officer, subject to appeal by the Commission.

**Agenda**

Pledge of Allegiance

Roll Call

1. Presentation regarding an analysis on the economic productivity of properties within the City. (Marty Colburn, Russell Soyring)
2. Discussion regarding automated metering infrastructure. (Marty Colburn, Dave Green)
3. Announcements from the City Clerk. (Benjamin Marentette)
4. Public comment.
5. Adjournment.



The City of Traverse City

## Communication to the City Commission

FOR THE CITY COMMISSION MEETING OF OCTOBER 10, 2016

DATE: OCTOBER 7, 2016

FROM: <sup>*MC*</sup> MARTY COLBURN, CITY MANAGER

SUBJECT: OCTOBER 10 STUDY SESSION

Please recall that Monday evening's Study Session **begins at 4 p.m.**

1. Presentation regarding an analysis on the economic productivity of properties within the City.

Attached is a memo from City Planning Director Russell Soyring regarding the presentation Joe Minicozzi will make to the City Commission at 4 p.m. on Monday afternoon. Mr. Minicozzi will show the tax revenue generated by different development types – from big box retail stores to single-family residences to downtown buildings. As explained by Mr. Soyring, the study being presented by Mr. Minicozzi is made possible by funding from the Downtown Development Authority, Grand Traverse County, the National Association of Realtors, Traverse Area Association of Realtors and the City.

2. Discussion regarding automated metering infrastructure.

Attached is a memo from GIS Coordinator Larry LaCross regarding Advanced Metering Infrastructure, or AMI. Our Capital Improvement Plan anticipates \$3 million in funding for this system over this and next fiscal year; the cost would be split evenly between the Water Fund and the Sewer Fund.

Traverse City Light and Power is moving forward with seeking proposals for this technology, which we could implement in tandem. Currently, meters for usage of water and sewer as well as electrical service are manually read; that process would be automated with this technology. Mr. LaCross outlines other significant benefits of this system. The benefits of this system are vast and vary from much more accurate billings to better customer service to reducing the risk to our residents of frozen pipes.

At the meeting on Monday evening, we will seek your support on the City participating in joining Traverse City Light and Power in seeking proposals for this important upgrade to our utility systems.

MC/bcm

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copy: Tom Menzel, Grand Traverse County Administrator

Jean Derenzy, Grand Traverse County Deputy Director of Planning and  
Development

Kim Pontius, Traverse Area Association of Realtors

Rob Bacigalupi, Downtown Development Authority Executive Director

Russell Soyring, City Planning Director

Dave Green, Director of Public Services

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# The City of Traverse City

Planning Department

GOVERNMENTAL CENTER  
400 Boardman Avenue  
Traverse City MI 49684  
(231) 922-4778  
(231) 922-4457 fax



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To: Marty Colburn, City Manager  
From: Russ Soyring, City Planning Director  
Subject: Minicozzi Presentation to the City Commission  
Date: October 5, 2016

A handwritten signature in blue ink, appearing to read "Russ Soyring", written over the "From:" line of the header.

The City of Traverse City hired Joe Minicozzi to study the economic productivity of all the parcels in Grand Traverse County and Traverse City. The City of Traverse City, Grand Traverse County, Traverse City Downtown Development Authority, National Association of Realtors and Traverse Area Association of Realtors all contributed to the cost of this study. Mr. Minicozzi will present his findings at several presentations titled, **"Who's paying the tax bill? Let's do the math."**

On Monday, October 10 at 11 AM he will meet informally with City and County staff to share his findings. Later that day at 4 PM, he will give his first formal presentation to the City Commission. The City Commissioners will learn who are the really "big hitters" in terms of generating tax revenues in Traverse City. His work will help us understand the economic potency of different development types from single family residential dwellings, to downtown buildings to big box retail stores. Joe will graphically show in colorful and easy to understand 2-D and 3-D maps what our tax base looks like. There are likely to be some surprising findings, ones that will likely generate some lively discussion. His presentations are always interesting and his statements are sometime blunt. His analysis is based on real tax numbers from our data base; he just does the simple math and puts it on maps that allow one to quickly understand what development patterns and building type produce the most revenue on a per acre basis within the community. We only have about 5 square miles of taxable property so it's good to know what types of development will produce a higher level of property taxes.

On Monday evening at 7 PM Minicozzi will give a public presentation at the State Theater. On Tuesday, October 11 at 9:30 he will speak to all the tax authorities in the County at the Library on Woodmere. At noon he will present to the Rotary Club and then in the evening at 7 PM he will give a second public presentation at Lars Hockstad Auditorium (Central Grade School).



Joe Minicozzi is a sought-after lecturer on community development issues. He is noted for his multidisciplinary expertise with town planning in the public and private sector, as well as his ingenuity with real estate finance, prompted by the development of his award-winning analytical tools that have been featured in the Wall Street Journal and other national publications. His work is pioneering a paradigm shift on the way government officials view developments and town planning.

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# Memorandum

The City of Traverse City  
Department of Public Services



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**TO:** Marty Colburn, City Manager  
**FROM:** Larry LaCross, GIS Coordinator   
**DATE:** October 3rd, 2016  
**SUBJECT:** Advanced Metering Infrastructure (AMI) Support

The City's Department of Public Service's Sewer and Water Maintenance Division has been researching the implementation of an Advanced Metering Infrastructure (AMI) for data collections of water consumption. AMI is an integrated system of smart meters, communications networks, and data management systems that enables two-way communication between utilities and customers. AMI enables billing information to be directly extracted "real time" from the smart meter and transferred to the billing software. Monthly readings by meter readers are not required. An AMI can eliminate non reads and eliminates estimated utility billing because every meter is read multiple times per day automatically.

The implementation of AMI will not only give billing information, but it will give the utility information on pressure, backflow, asset management, and temperature. With this information the utility can manage the water system more efficiently. For example, 50% of existing water meters are more than 20 years old and the accuracy for these meters are estimated to be 88% accurate. Another example is acquiring accurate pressure readings. Getting an accurate pressure reading will help find leaks through seeing backflow or reduced pressures. Pressure readings will also help calibrate our current water model to better plan for future water main projects and expansions. Additionally, temperature can be collected on select meters to aid the utility and customers in preventing frozen services and or pipes. Customers being able to see their own meter data through a customer web portal is another powerful component of AMI that can improve customer satisfaction through understanding their personal patterns of use and by setting up alerts for high water consumption or continues flow.

Traverse City Light and Power's Manager of Telecom & Technology has also been researching the implementation of AMI for the TCLP Customer's electric meters. TCLP has included the City water meters in their research. TCLP is moving forward to request proposals from AMI providers and the Sewer Water Maintenance Division would like to be included in TCLP's Request for Proposals (RFP). If both TCLP and the Sewer Water Maintenance Division builds an AMI together, then we could use the same network, software and both electric and water meter reads would go the Treasurer's Office the same way. Another component in this decision is that TCLP employs the meter readers

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# Memorandum

The City of Traverse City  
Department of Public Services



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that read our water meters and if the meter readers no longer read meters for TCLP the City will need to find an alternative for getting meter data.

At this time, we feel being part of TCLP's RFP will help the City better understand the real cost of the implementation of an AMI. TCLP has put some preliminary numbers together that will be illustrated in the presentation attached. The Sewer and Water Maintenance Division has anticipated an implementation of new technology for meter reading and has put the project inside the Capital Improvement Program, with funds coming from the Water Fund and the Waste Water fund in the amount of 3 million dollars over the next 2 years.

CITY OF TRAVERSE CITY, MICHIGAN  
SIX YEAR CAPITAL IMPROVEMENT PLAN  
Budget Year 2016-2017 by Fund

All Projects Submitted for 2016/17

Date/Time Printed: 6/29/2016 11:14:18 AM

Bold - Indicates projects occurring in the first FY of the plan.

Project + - Indicates projects with multiple funding sources.

\* - Indicates new projects submitted for review.

Project ID	Cat	Carry Forward 2015-16	Fiscal Year 2016-17	Fiscal Year 2017-18	Fiscal Year 2018-19	Fiscal Year 2019-20	Fiscal Year 2020-21	Fiscal Year 2021-22	Project Cost	City Funds	Non-City Funds	
<b>WATER FUND</b>												
<b>Water Distribution System</b>												
367	WATER-Annual Water Rehab/Replace	M	\$0.00	\$450,000.00	\$450,000.00	\$450,000.00	\$450,000.00	\$450,000.00	\$2,700,000.00	\$2,700,000.00	\$0.00	
986	*WATER-Automated Metering Infrastructure (+ Wastewater)	C	\$0.00	\$750,000.00	\$750,000.00	\$0.00	\$0.00	\$0.00	\$1,500,000.00	\$1,500,000.00	\$0.00	
113	WATER-Barlow Reservoir Rehabilitation / Reconstruction	C	\$250,000.00	\$750,000.00	\$0.00	\$0.00	\$0.00	\$0.00	\$1,000,000.00	\$1,000,000.00	\$0.00	
973	*WATER-Galvanized Water Service Replacement Project	M	\$0.00	\$60,000.00	\$60,000.00	\$60,000.00	\$60,000.00	\$0.00	\$240,000.00	\$240,000.00	\$0.00	
932	*WATER-Hannah Ave Water Main Upgrade	C	\$0.00	\$0.00	\$310,000.00	\$0.00	\$0.00	\$0.00	\$310,000.00	\$310,000.00	\$0.00	
799	WATER-Huron Hills Booster Station Demolition Project	M	\$0.00	\$75,000.00	\$0.00	\$0.00	\$0.00	\$0.00	\$75,000.00	\$75,000.00	\$0.00	
801	WATER-Replacement - Large Diameter Water Tapping Machine	M	\$30,000.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$30,000.00	\$30,000.00	\$0.00	
<b>Total Water Distribution System</b>			<b>\$280,000.00</b>	<b>\$2,085,000.00</b>	<b>\$1,570,000.00</b>	<b>\$510,000.00</b>	<b>\$510,000.00</b>	<b>\$450,000.00</b>	<b>\$5,855,000.00</b>	<b>\$5,855,000.00</b>	<b>\$0.00</b>	
<b>Water System Reliability Projects</b>												
935	*WATER-East - West Transmission Main Upgrade	C	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$1,090,000.00	\$1,090,000.00	\$1,090,000.00	\$0.00	
930	*WATER-Electrical Gear Upgrades at WTP & Low Service	M	\$0.00	\$0.00	\$850,000.00	\$0.00	\$0.00	\$0.00	\$850,000.00	\$850,000.00	\$0.00	
770	WATER-High & Low Service Pump Repairs	M	\$0.00	\$80,000.00	\$80,000.00	\$80,000.00	\$80,000.00	\$80,000.00	\$480,000.00	\$480,000.00	\$0.00	
115	WATER-Midtown Water Transmission Line	C	\$0.00	\$0.00	\$0.00	\$1,500,000.00	\$0.00	\$0.00	\$1,500,000.00	\$1,500,000.00	\$0.00	
<b>Total Water System Reliability Projects</b>			<b>\$0.00</b>	<b>\$80,000.00</b>	<b>\$930,000.00</b>	<b>\$1,580,000.00</b>	<b>\$80,000.00</b>	<b>\$1,170,000.00</b>	<b>\$3,920,000.00</b>	<b>\$3,920,000.00</b>	<b>\$0.00</b>	
<b>Water Treatment</b>												
933	*WATER-Chemical System Upgrades (Alum, Chlorine & Fluoride)	M	\$0.00	\$0.00	\$0.00	\$0.00	\$250,000.00	\$0.00	\$250,000.00	\$250,000.00	\$0.00	
985	*WATER-Coagulant Bulk Storage Tanks Replacement	M	\$0.00	\$50,000.00	\$0.00	\$0.00	\$0.00	\$0.00	\$50,000.00	\$50,000.00	\$0.00	
114	WATER-Filters 1, 2 & 3 Media Replacement & Surface Wash Upgrades	M	\$0.00	\$0.00	\$0.00	\$350,000.00	\$0.00	\$0.00	\$350,000.00	\$350,000.00	\$0.00	
934	*WATER-Filters 1, 2 & 3 Valve Replacement	M	\$0.00	\$0.00	\$0.00	\$0.00	\$400,000.00	\$0.00	\$400,000.00	\$400,000.00	\$0.00	
731	WATER-Generator Plug Receptacle for Low Service Pump Station	M	\$0.00	\$0.00	\$0.00	\$20,000.00	\$0.00	\$0.00	\$20,000.00	\$20,000.00	\$0.00	
121	WATER-Plant - Freight Elevator Compliance	M	\$0.00	\$30,000.00	\$0.00	\$0.00	\$0.00	\$0.00	\$30,000.00	\$30,000.00	\$0.00	
507	WATER-Replacement of Air Compressors	M	\$0.00	\$0.00	\$10,000.00	\$0.00	\$0.00	\$0.00	\$10,000.00	\$10,000.00	\$0.00	
769	WATER-Security System Upgrade	M	\$0.00	\$20,000.00	\$0.00	\$0.00	\$0.00	\$0.00	\$20,000.00	\$20,000.00	\$0.00	
508	WATER-Sump Pump Replacement	M	\$0.00	\$25,000.00	\$0.00	\$0.00	\$0.00	\$0.00	\$25,000.00	\$25,000.00	\$0.00	
<b>Total Water Treatment</b>			<b>\$0.00</b>	<b>\$125,000.00</b>	<b>\$10,000.00</b>	<b>\$370,000.00</b>	<b>\$650,000.00</b>	<b>\$0.00</b>	<b>\$1,155,000.00</b>	<b>\$1,155,000.00</b>	<b>\$0.00</b>	
<b>TOTAL WATER FUND</b>			<b>\$280,000.00</b>	<b>\$2,290,000.00</b>	<b>\$2,510,000.00</b>	<b>\$2,460,000.00</b>	<b>\$1,240,000.00</b>	<b>\$1,620,000.00</b>	<b>\$530,000.00</b>	<b>\$10,930,000.00</b>	<b>\$10,930,000.00</b>	<b>\$0.00</b>

CITY OF TRAVERSE CITY, MICHIGAN  
 SIX YEAR CAPITAL IMPROVEMENT PLAN  
 Budget Year 2016-2017 by Fund

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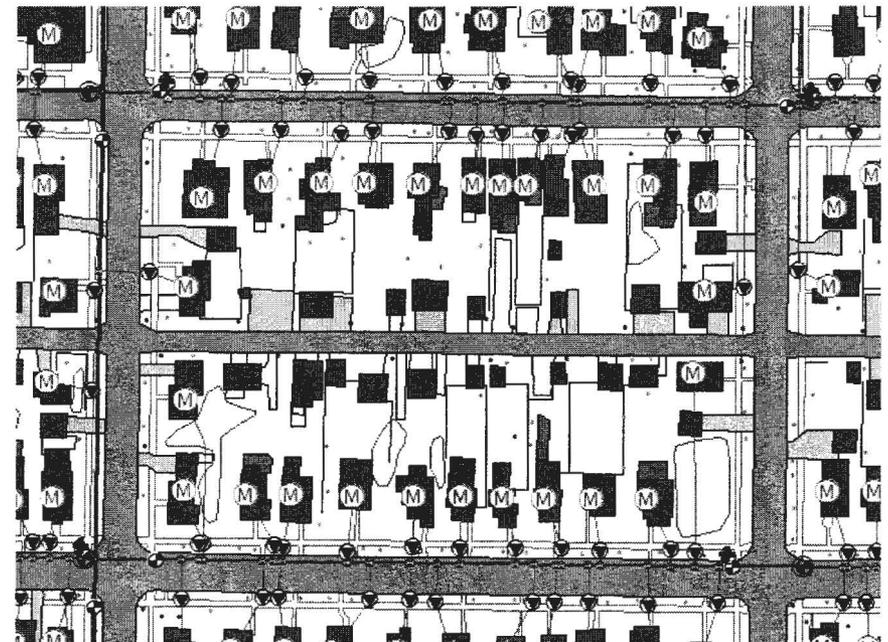
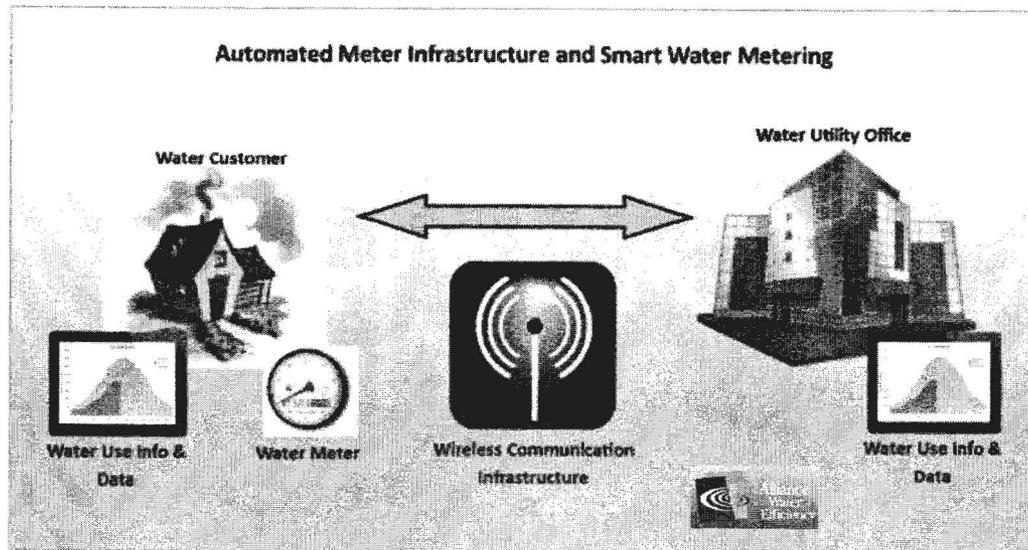
Cat	Carry Forward 2015-16	Fiscal Year 2016-17	Fiscal Year 2017-18	Fiscal Year 2018-19	Fiscal Year 2019-20	Fiscal Year 2020-21	Fiscal Year 2021-22	Project Cost	City Funds	Non-City Funds
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**WASTE WATER FUND**

Sewer Collection System

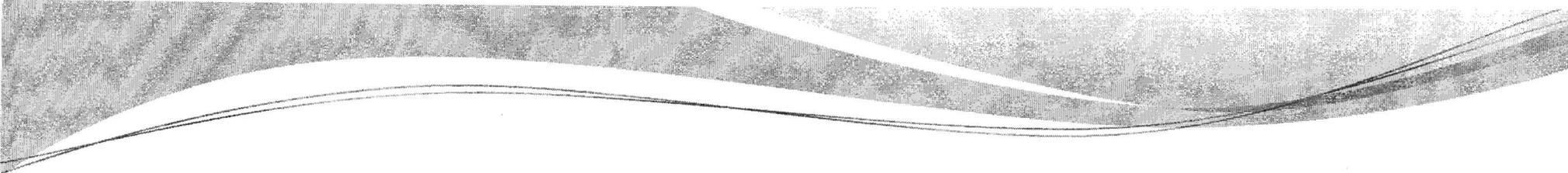
366	WW-Annual Sewer Rehab/Replace	M	\$450,000.00	\$450,000.00	\$450,000.00	\$450,000.00	\$450,000.00	\$450,000.00	\$3,150,000.00	\$3,150,000.00	\$0.00	
13	WW-Annual Storm Water Management Program	M	\$50,000.00	\$50,000.00	\$50,000.00	\$50,000.00	\$50,000.00	\$50,000.00	\$350,000.00	\$350,000.00	\$0.00	
987	*WW-Automated Metering Infrastructure (+ Water)	C	\$0.00	\$750,000.00	\$750,000.00	\$0.00	\$0.00	\$0.00	\$1,500,000.00	\$1,500,000.00	\$0.00	
293	WW-Catch Basin & Manhole Casting Replacement	M	\$0.00	\$30,000.00	\$30,000.00	\$0.00	\$0.00	\$0.00	\$60,000.00	\$60,000.00	\$0.00	
968	*WW-Clinch Park Lift Station/Bay Street/Birchwood Upgrade of Control Panels	M	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$117,000.00	\$117,000.00	\$0.00	
967	*WW-Engineering Evaluation of Clinch Park Lift Station Capacity	M	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$50,000.00	\$50,000.00	\$0.00	
910	*WW-Front Street Lift Station Pump Around Hookup	M	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$30,000.00	\$0.00	\$30,000.00	\$0.00	
913	*WW-Lift Station Telemetry System	M	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$90,000.00	\$0.00	\$90,000.00	\$0.00	
898	*WW-Riverine Lift Station Equipment Upgrade	M	\$0.00	\$0.00	\$107,865.00	\$0.00	\$0.00	\$0.00	\$107,865.00	\$107,865.00	\$0.00	
899	*WW-SCADA Upgrade at Front Street Lift Station and the TCRWWTP for PLC 5	M	\$0.00	\$0.00	\$116,006.00	\$0.00	\$0.00	\$0.00	\$152,639.00	\$116,006.00	\$36,633.00	
892	*WW-TBA LIFT STATION EQUIPMENT UPGRADE	M	\$75,000.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$75,000.00	\$75,000.00	\$0.00	
909	*WW-Woodmere Lift Station Upgrade	M	\$0.00	\$0.00	\$0.00	\$0.00	\$79,860.00	\$0.00	\$79,860.00	\$79,860.00	\$0.00	
<b>Total Sewer Collection System</b>			<b>\$575,000.00</b>	<b>\$1,280,000.00</b>	<b>\$1,503,871.00</b>	<b>\$500,000.00</b>	<b>\$579,860.00</b>	<b>\$620,000.00</b>	<b>\$667,000.00</b>	<b>\$5,762,364.00</b>	<b>\$5,725,731.00</b>	<b>\$36,633.00</b>

# Advanced Meter Infrastructure (AMI) Water



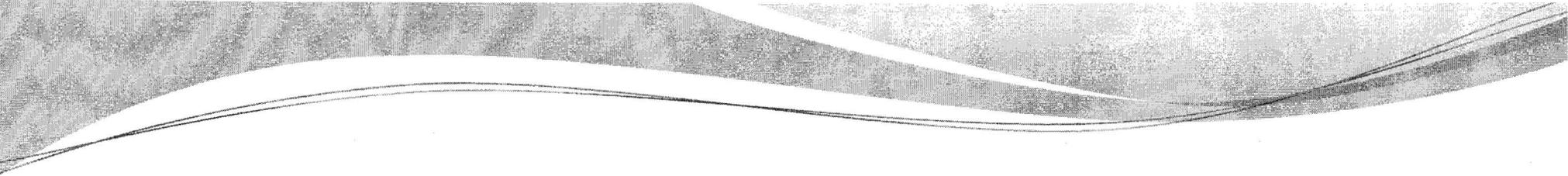
 **CITY of**  
**TRAVERSE CITY** MICHIGAN

Larry LaCross, GISP  
Department of Public Services  
October, 3<sup>rd</sup> 2016



# Introduction

- Current State of Water Meters
- AMI
- Benefits of AMI
- Pilot Study
- GE and TCLP  
Summary Breakdown



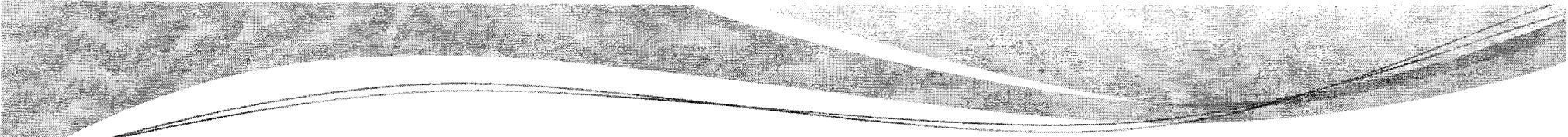
# Current State of Water Meter Data Collection

- Automated Meter Reading (AMR)
- Manual processes for:
  - Meter reading
  - Multiple field visits
    - Verification of service
    - Re-reads
  - Bill payment

# Current State of the Municipal Industry



- AMR
  - Refers to systems where the meter reader must be in close proximity to the water meter and acquire a remote meter read using a handheld receiver or by driving a vehicle down the street that accesses the reads using a mobile data collector. Typically this type of system delivers a cumulative read when it is interrogated or receives the read.

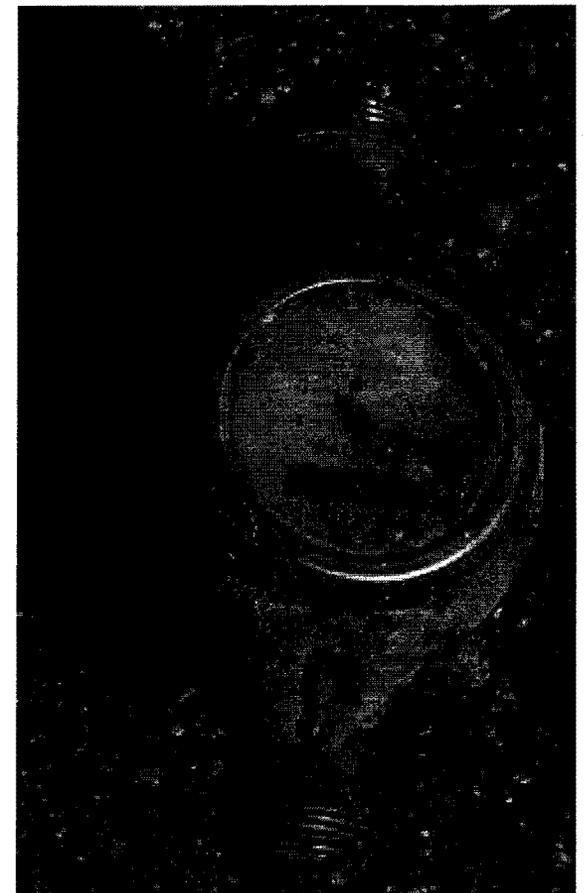


# Automated Metering Infrastructure (AMI)

- Collection of devices (meters) that communicate bi-directionally over a network (typically wireless RF) to a head-end software system.
- The Head-end Software System interacts with these devices to collect data, including consumption for use in billing.
- Devices can send near-real-time information for alerts and alarming, as well as utility-initiated reads.

# Benefits of Advanced Metering Infrastructure – Accurate Billing

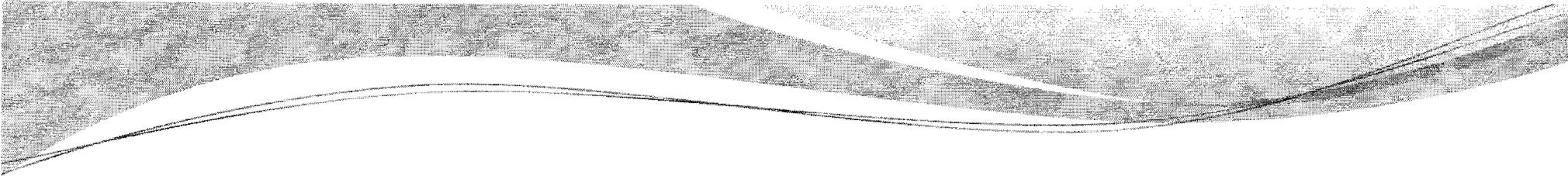
- Increased meter accuracy
  - 20 year old meters
    - Water: ~88% accurate
  - 30 year old meters
    - Water: ~85% accurate



# Benefits of AMI– Cost of Service

- Reduction in truck rolls
  - Re-reads
  - Meter reading
  - New service reads
- Reduction of bad debt
- Reduction of unaccounted water usage and leaks



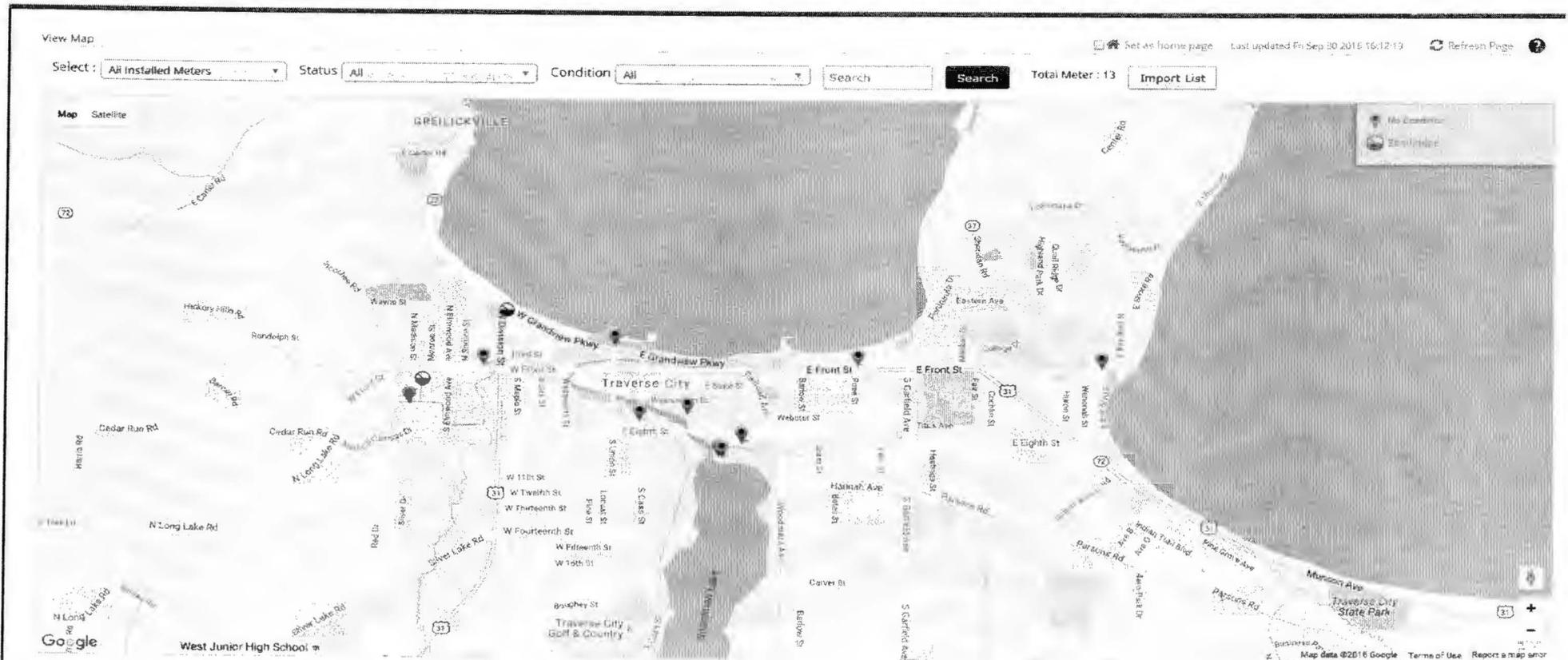


# Benefits of AMI

- More customer engagement
- Leak detection
- Billing Accuracy
- Backflow Detection
- Tampering Notification
- Customer Satisfaction
- Temperature Monitor
- System Management
- Asset Management
- Data Management
- Work Management
- Water Reliability
- Distribution Automation (Modeling)
- Integrates with GIS

# Pilot Project

- Installed 12 Smart Meters (May 2015)



# Pilot Project

- Monitor Results Through the Customer Web Portal

Consumer Account Information Set as home page | Last updated Fri Sep 30 2016 16:16:30 | Refresh Page

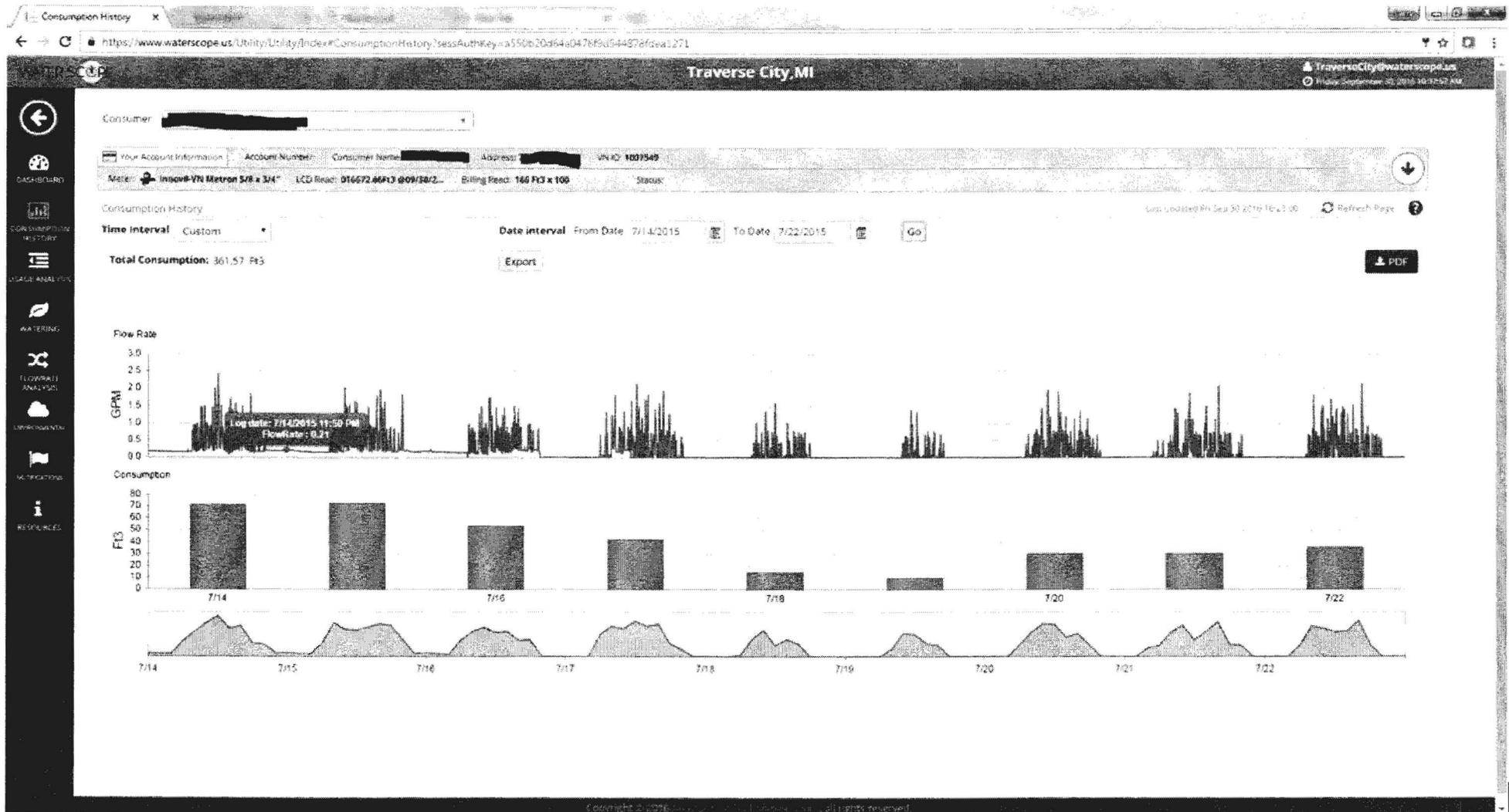
Select:  Status:  Condition:

Id	Consumer Name	Address	VN ID	Size (')	LCD Read	24-Hr	Read Date	Conditions
	[REDACTED]		1007531	R	1660.66	0.73	09-30-2016	
	[REDACTED]		1007532	R	13174.7	56.35	09-30-2016	
	[REDACTED]		1007533	R	13649.72	5.55	09-30-2016	
	City of TC Drinking F...	100 W Grandview P...	1007534	R	369.51	0.14	09-30-2016	
	[REDACTED]		1007535	R	2970.28	5	09-30-2016	
	City of Traverse City	507 Hannah Ave	1007547	R	3785.53	9.55	09-30-2016	
	City of Traverse City	503 Hannah Ave	1007548	R	3585.18	8.61	09-30-2016	
	[REDACTED]		1007549	R	16672.66	24.51	09-30-2016	
	[REDACTED]		1010588	2	277.4	0	09-30-2016	
	[REDACTED]		1011345	1.5	11756	0	09-30-2016	
	[REDACTED]		1011346	2	365.8	0	09-30-2016	
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	Governmental Center	400 Boardman Ave	2002469	2	84000	200	09-30-2016	
	[REDACTED]		2002908	2	85700	0	09-30-2016	
	[REDACTED]		2003045	1.5	212212.7	1272.9	09-30-2016	
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20 items per page 1 - 16 of 16 items

# Pilot Project

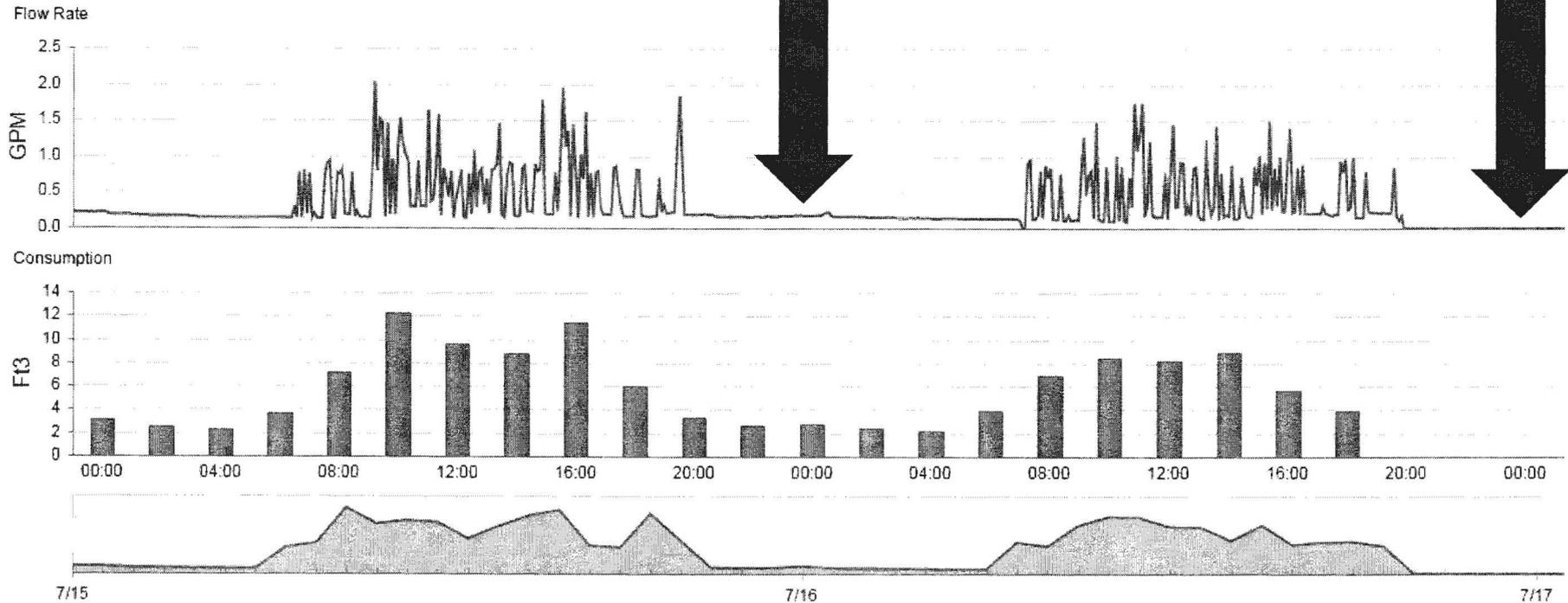
- 2 out of 12 reported indoor plumbing leaks

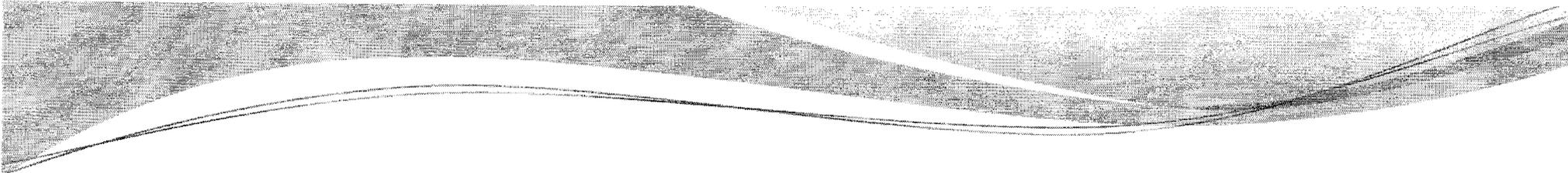


# Pilot Project

Consistent use in the middle of the night

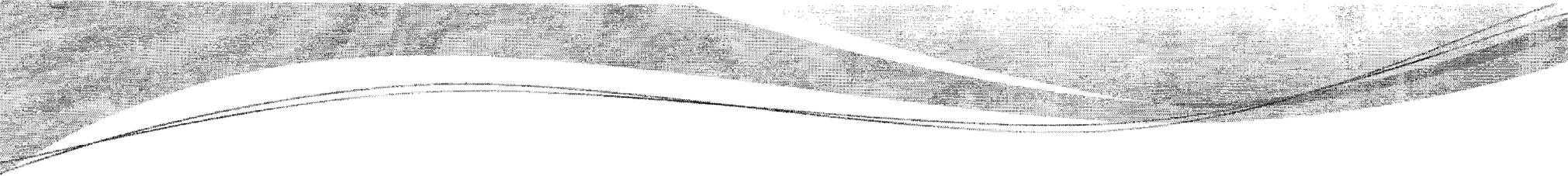
After leak was repaired, no use





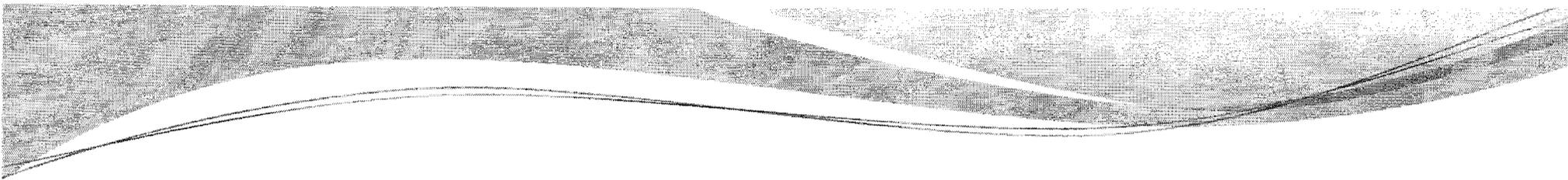
# Pilot Project

- Do the Math for one of these leaks
  - Approximately .2 Gallons Per Minute (GPM)
  - $.2 \times 60 = 12$  Gallons per Hour (GPH) =  $24 \times 12 = 288$  Gallons Per Day (GPD) =  $30 \times 288 = 8,640$  Gallons Per Month
  - We found 2 out of 12 Customers had Leaks
    - 2 meters out of 12 =  $.16666 = 16.6\%$



# Pilot Project (Hypothetical)

- There are 7,460 Meters X 0.166666 (Assume %16.67 of the entire water system has Leaks)
- Possibly 1,243 Water Customer have Leaks in the City
- $1,243 \times 8,640$  Gallons Per Month = 10,739,520 Gallons Per Month Potential Water Loss
- Potential 10,739,520 (Gallons Per Month) Water Loss
- Cost to produce water per Gallon \$0.00056
- $10,739,520 \times \$0.00056 = \$6,014.13$  per Month Water Loss
- Potential Residential Loss
  - $\$6,014.13 \times 12$  Months = \$72,169.57 per year



# Pilot Project

- Who's effected?
  - Water Production (Water Plant, Water Customer)
  - Energy (Water Plant, Electric Utility, Customer)
  - Waste Water (Waste Water Treatment Plant, Customer)
  - Customer High Bills (Angry Customer, Utility Billing)
  - Conservation of our Natural Resource (All)

# AMI Benefits – Summary Breakdown from GE and TCLP

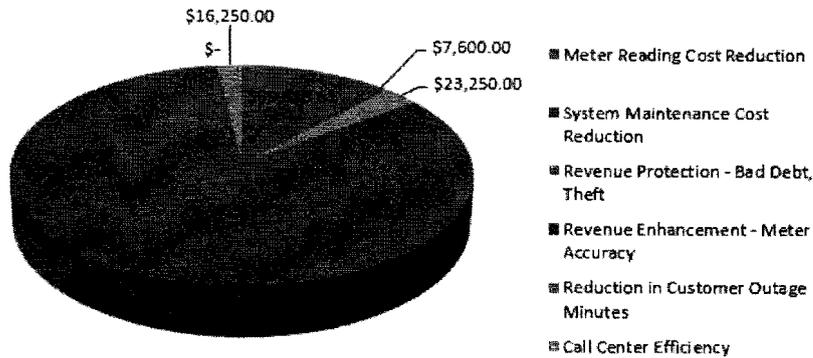
Annual Savings Estimate Summary	
	Savings
Meter Operations	\$97,000
Revenue Management	\$704,000
Leak Detection	unknown
Billing/Customer Service	\$16,250
<b>TOTAL</b>	<b>\$914,954</b>

### Assumptions Being Made:

- Based on measured results of other utility clients using City of Traverse City Public Works and Traverse City Light & Power data when available.
- Estimated Yearly revenue from water/waste estimated at \$7.2M.
- Estimated number of meter readers is 2 for water.
- Estimated annual bad debt is \$45,000 (water/waste).
- Estimated annual theft of service is \$15,000 (water/waste).
- 50% of water meters are over 20 years old.

# AMI Benefits - Details

## Water Only



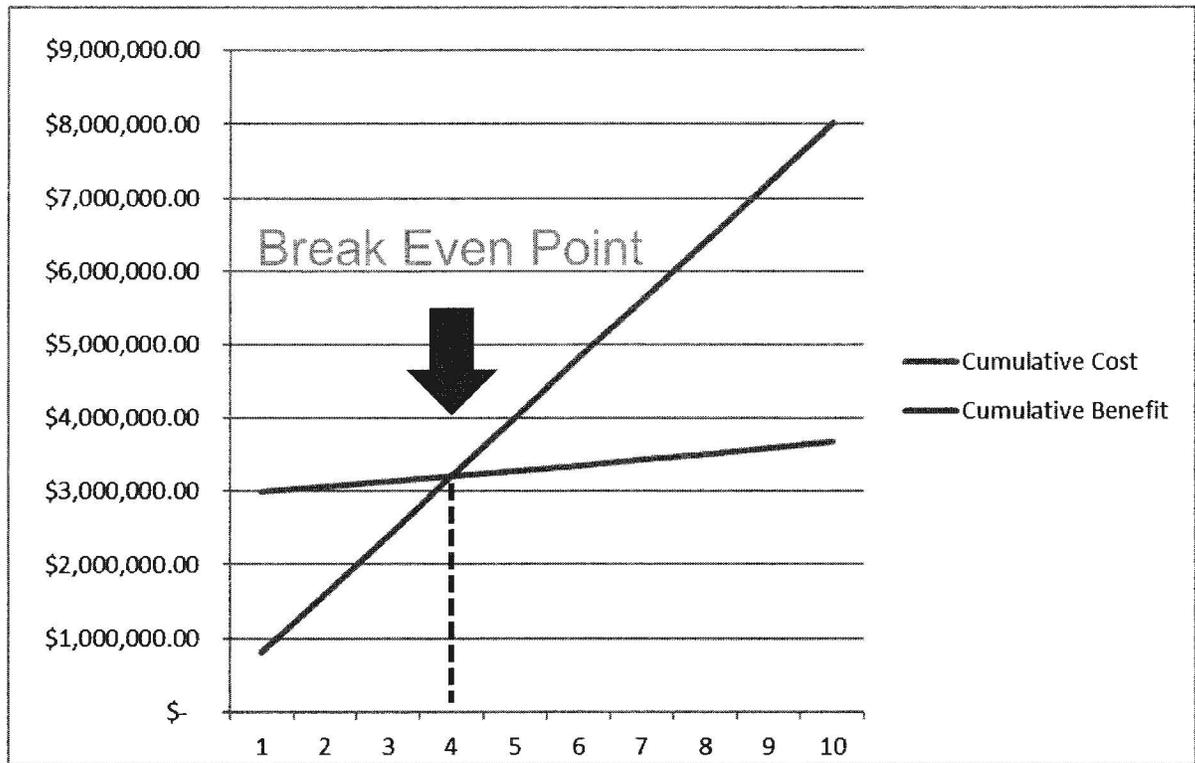
### Summary Report - Steady-State Annual Projection

Projected steady-state annual benefits after initial system ramp-up periods.

Item Description	Electric (Annual)	Water (Annual)	Gas (Annual)	\$ Annual Benefit
<b>METER OPERATIONS</b>				
<b>Meter Reading Cost Reduction</b>				
On-Cycle Meter Cost Reduction		\$ 64,579.79	\$ -	\$ 64,579.79
Off-Cycle Meter Cost Reduction		\$ 25,038.83	\$ -	\$ 25,038.83
Overtime / Disconnect Cost Reduction				\$ -
<b>System Maintenance Cost Reduction</b>				
AMR / IT Maintenance Cost Reduction				\$ -
Meter Maintenance / Testing Cost Reduction		\$ 7,600.00	\$ -	\$ 7,600.00
<b>Total</b>	\$ -	\$ 97,218.62	\$ -	\$ 97,218.62
<b>REVENUE MANAGEMENT</b>				
<b>Revenue Protection</b>				
Reduction in Bad Debt		\$ 15,750.00	\$ -	\$ 15,750.00
Reduction in Theft		\$ 7,500.00	\$ -	\$ 7,500.00
Reduction in Unbilled Consumption				\$ -
<b>Revenue Enhancement</b>				
Improvement in Meter Accuracy		\$ 681,129.70	\$ -	\$ 681,129.70
<b>Total</b>	\$ -	\$ 704,379.70	\$ -	\$ 704,379.70
<b>OUTAGE DETECTION</b>				
<b>Service Dispatch Cost Savings</b>				
Reductions in Outage Investigation Time				\$ -
<b>Revenue Enhancement</b>				
Reduction in Customer Outage Minutes				\$ -
<b>Total</b>				\$ -
<b>BILLING-CUSTOMER SERVICE</b>				
<b>Call Center Efficiency</b>				
Reduction in Call Time & Inquiries		16250		\$ 16,250.00
<b>Total</b>	\$ -			\$ 16,250.00
<b>TOTAL</b>	\$ -	\$ 801,598.32	\$ -	\$ 817,848.32

# Benefits – Summary Breakdown from GE and TCLP

Year	Cumulative Cost	Cumulative Benefit
2017	\$ 3,000,000.00	\$ 801,598.32
2018	\$ 3,067,500.00	\$ 1,603,196.64
2019	\$ 3,136,687.50	\$ 2,404,794.96
2020	\$ 3,207,604.69	\$ 3,206,393.28
2021	\$ 3,280,294.80	\$ 4,007,991.60
2022	\$ 3,354,802.17	\$ 4,809,589.92
2023	\$ 3,431,172.23	\$ 5,611,188.24
2024	\$ 3,509,451.53	\$ 6,412,786.56
2025	\$ 3,589,687.82	\$ 7,214,384.88
2026	\$ 3,671,930.02	\$ 8,015,983.20



*Note: Cost estimates include water system only, with full installation, and ongoing Maintenance and Service costs for 10 years.*



# Questions?