

Victory Electric Cooperative AMI System Update

3/2/2012

By:

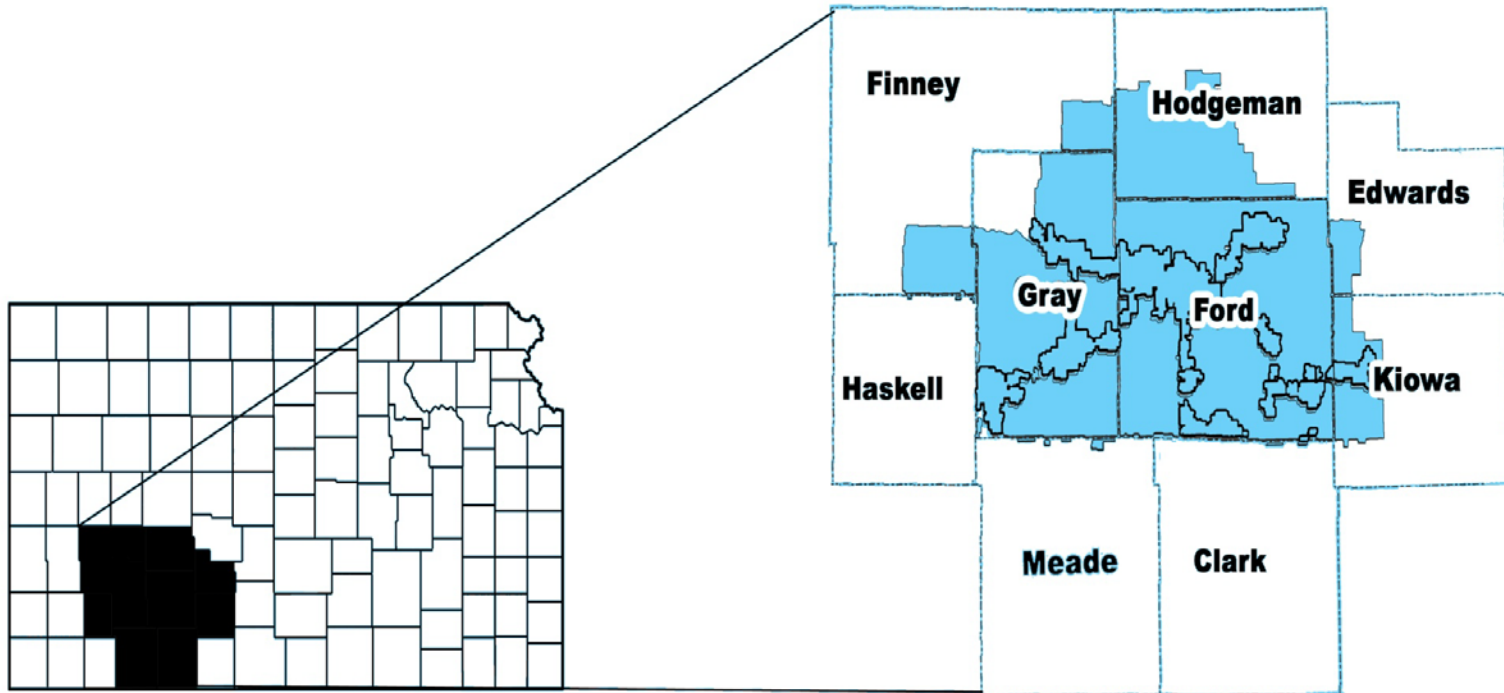
Terry Janson, CEO

Harold Flax, Systems Analyst



A Touchstone Energy[®] Cooperative 

Victory Electric Territory Map

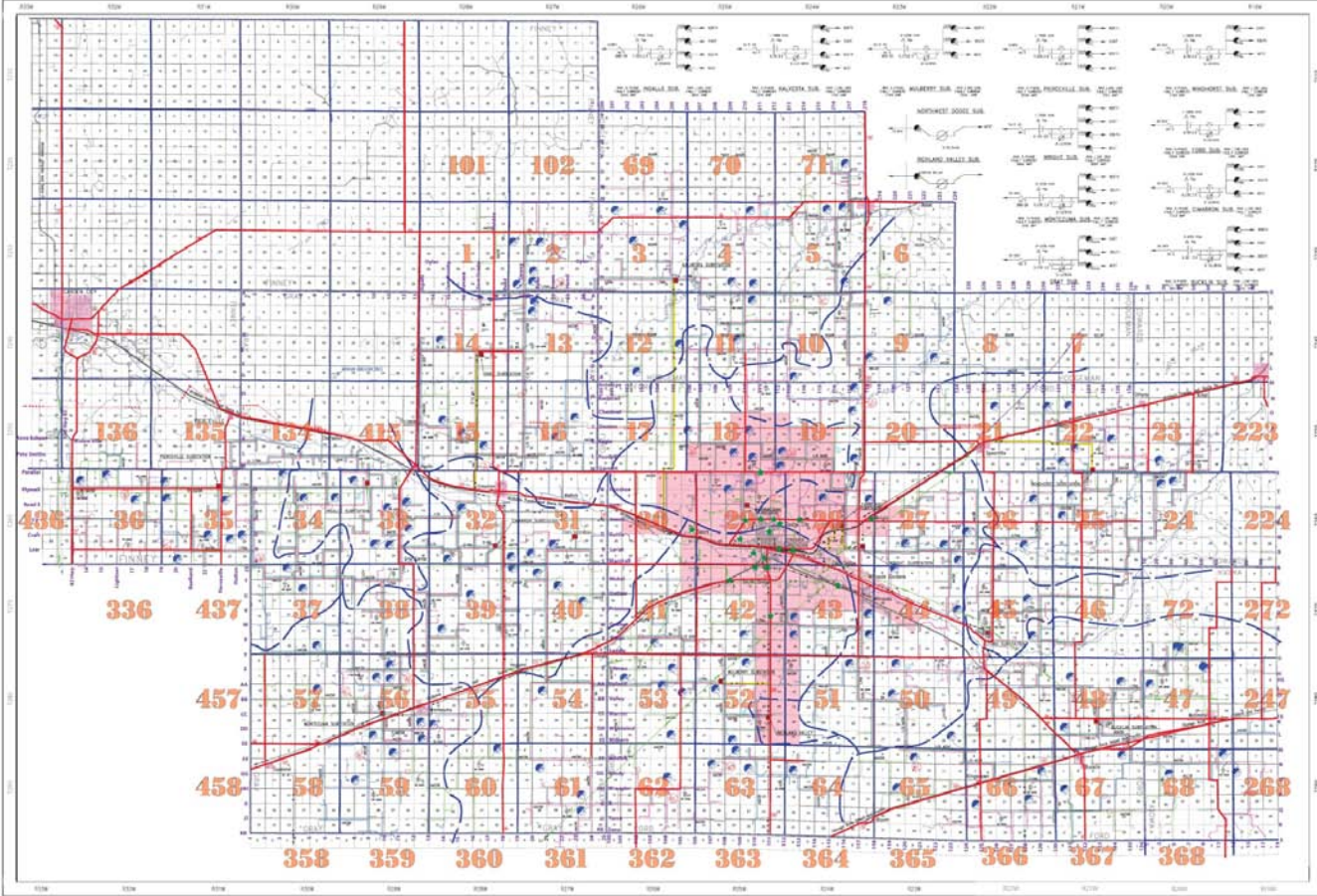


What is planned for 2012 Cont.

- **Complete residential (2,300 meters) deployment in our rural territory and small towns.**
- **Meter Data Management (MDM)**
 - **Provide our customers with a web portal. Scheduled for implementation in July 2012.**
- **Distribution Automation**
 - **Scheduled for 3rd quarter implementation**



AMI Project Status 2010



Enterprise Applications



Customer Information System



Outage Management System



Other Enterprise Systems



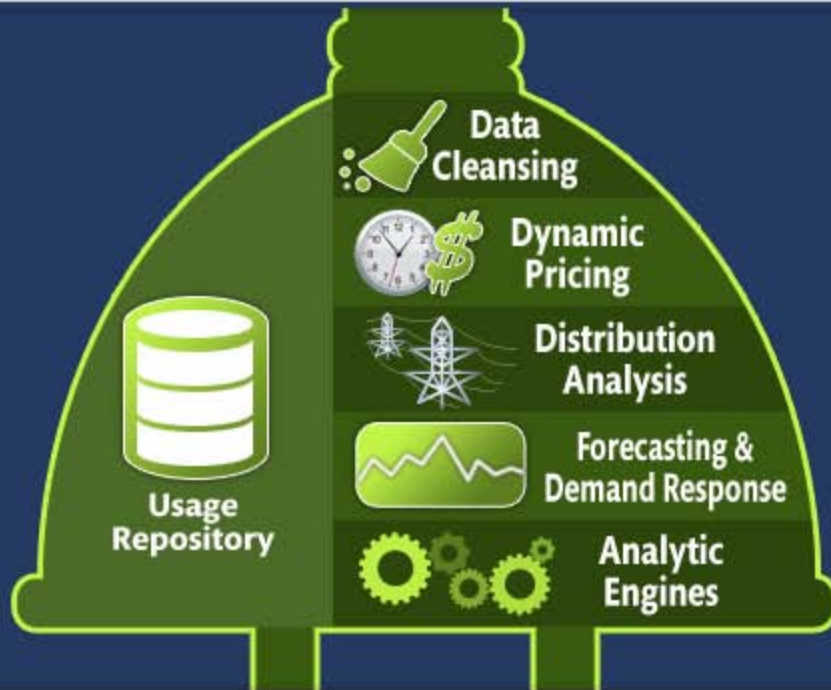
E-Solutions



Internet



Customer Presentment



Data Collection Systems

ACLARA

Landis Gyr+

COOPER
Power Systems

Itron

Others

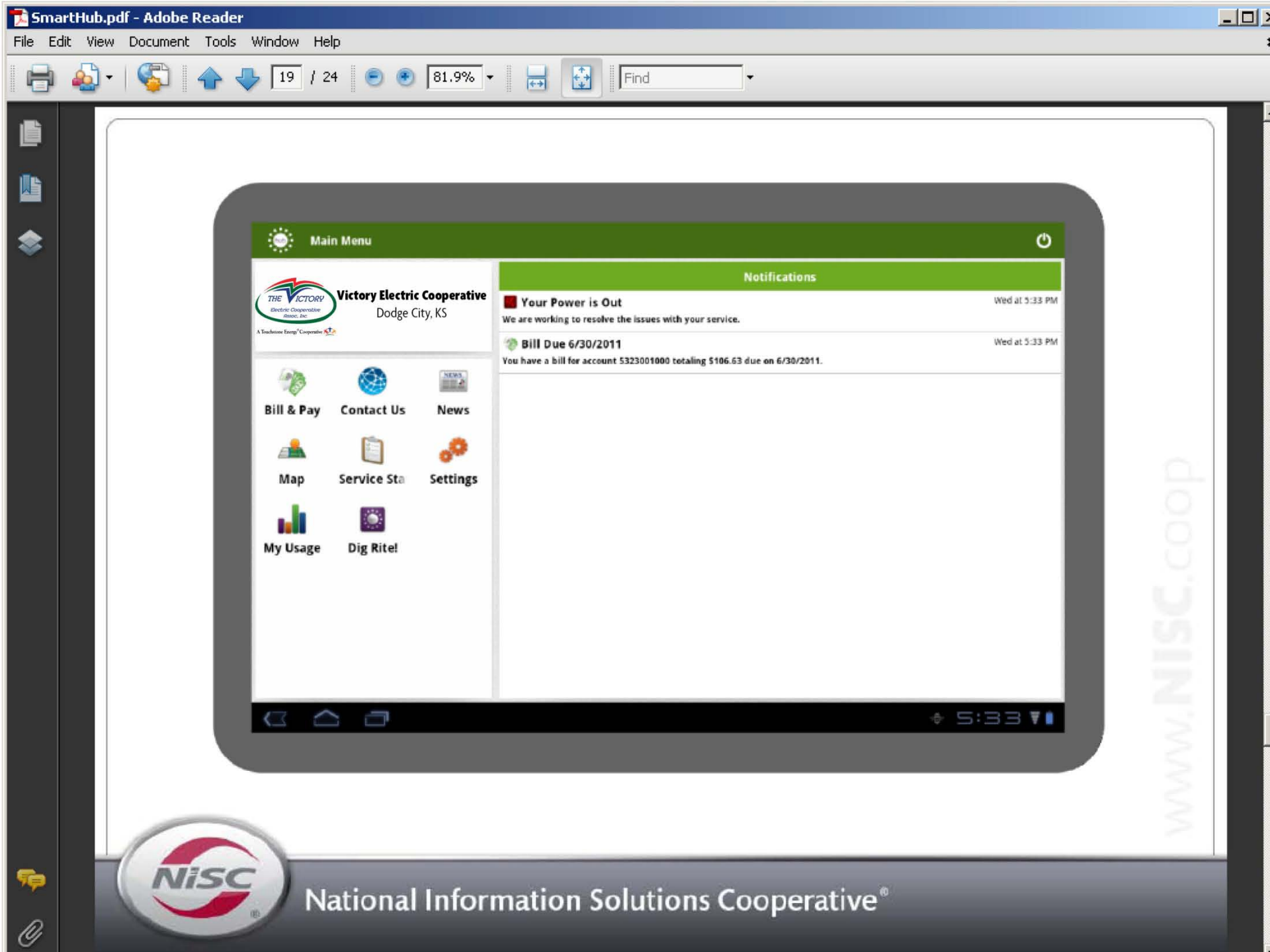


Scada


Customer Information System

- Customer able to view information on a cell phone, tablet or home computer, including:
 - Bill pay
 - Usage patterns
 - Outage information





Main Menu ⌂



Victory Electric Cooperative
Dodge City, KS

A Touchstone Energy Cooperative

Bill & Pay

Contact Us

News

Map

Service Station

Settings

My Usage

Dig Rite!

Notifications

■ **Your Power is Out** Wed at 5:33 PM

We are working to resolve the issues with your service.

■ **Bill Due 6/30/2011** Wed at 5:33 PM

You have a bill for account 5323001000 totaling \$106.63 due on 6/30/2011.

www.NISC.coop

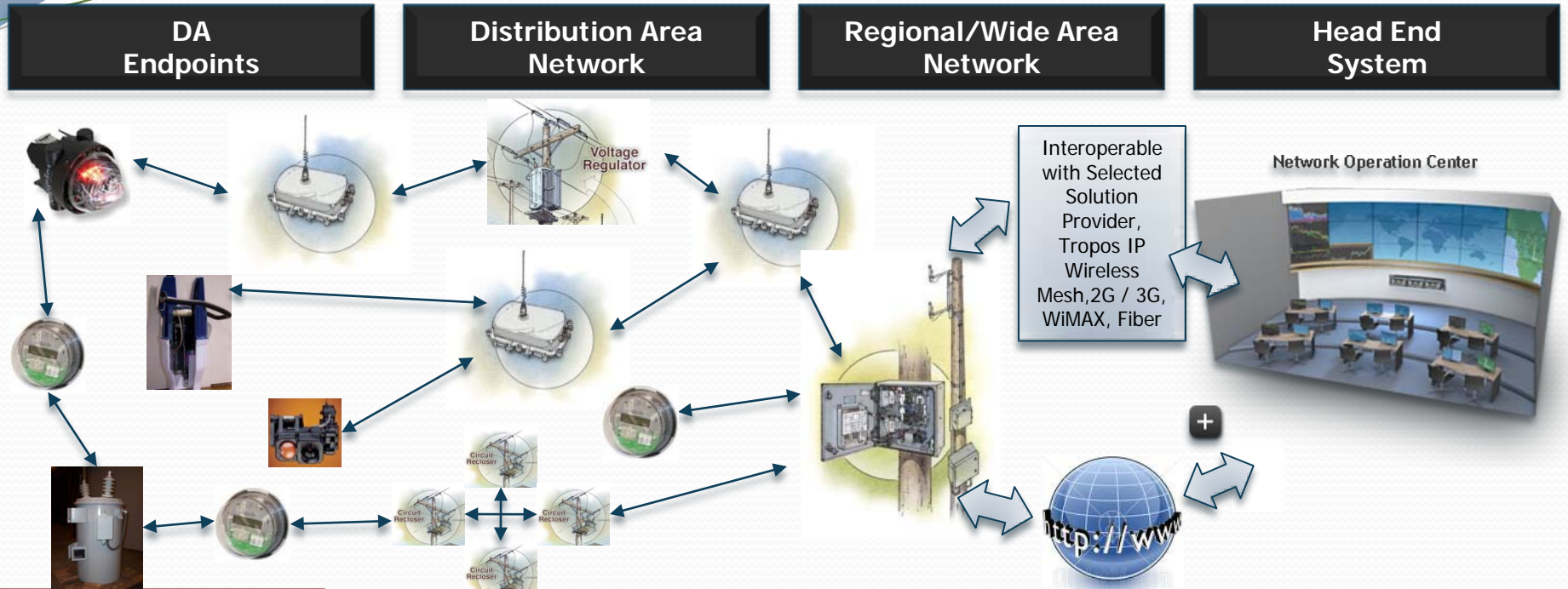


Distribution Automation (DA)

- What is DA? **Real-time monitoring and intelligent control of distribution system and substations**
- What will it do for VEC, members? **Quicker response to outages by know where the outage occurred . DA also allows VEC to monitor and control voltage, reducing energy costs from line loss.**



DA Network Architecture Overview



Radio Types

- Multiple Radio types for flexible deployments

DA Endpoint Classes

- Class 1**
 - Typically 100s to 1,000s
 - Critical Applications
 - Battery backed Routers Only
 - Peer to Peer Communications
- Class 2**
 - Projected 1,000s to 100,000s
 - Non-Critical Apps
 - Plug-&-Register Capability

Message Prioritization

7	Reserved
6	DA/SCADA Control
5	Load Control/HAN/Demand Response, Broadcast
4	Outage/Restoration Data, Alarms
3	DA/SCADA Data, Meter Registration, Configuration changes
2	Firmware Updates
1	On Request Reads
0	Meter PUSH Data, Informational Alarms, Network Data

SCADA Center

- Recloser monitoring and control
- Switch monitoring and control
- Capacitor bank monitoring and control
- Voltage regulator monitoring and control
- Auto-Sectionalizing & Restoration

Current Status of Victory Electric's AMI System



The Components of AMI

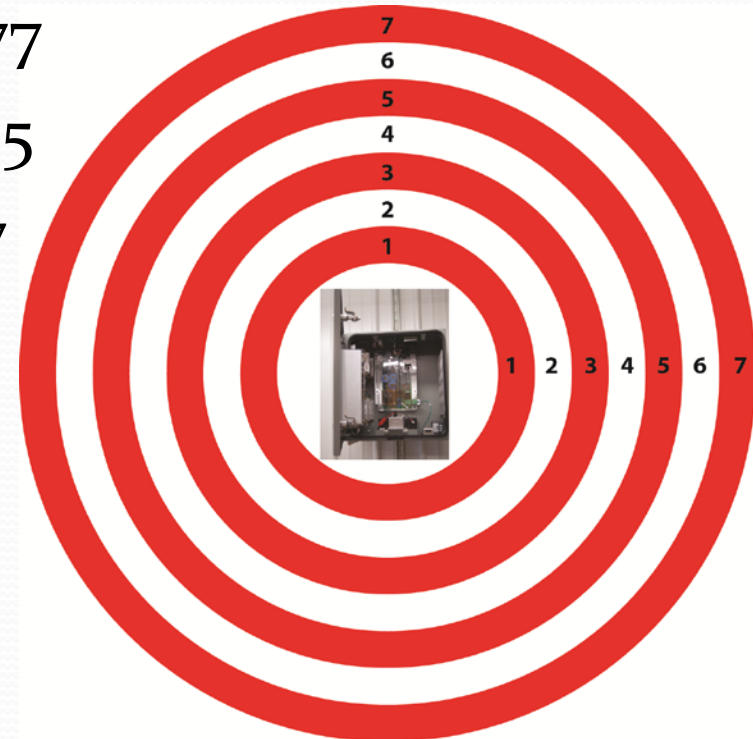


- Urban Collector Site
- Rural Collector Site
- Router
- Meter
- Meter Installation



Layer Endpoints Feb 23, 2012

<u>Layer</u>	<u>Dodge</u>	<u>Bucklin</u>	<u>Copeland</u>
1	477	104	27
2	2972	930	277
3	4160	581	165
4	992	256	37
5	152	143	13
6	16	9	1
7	2	0	



Command Center Victory Electric GridStream

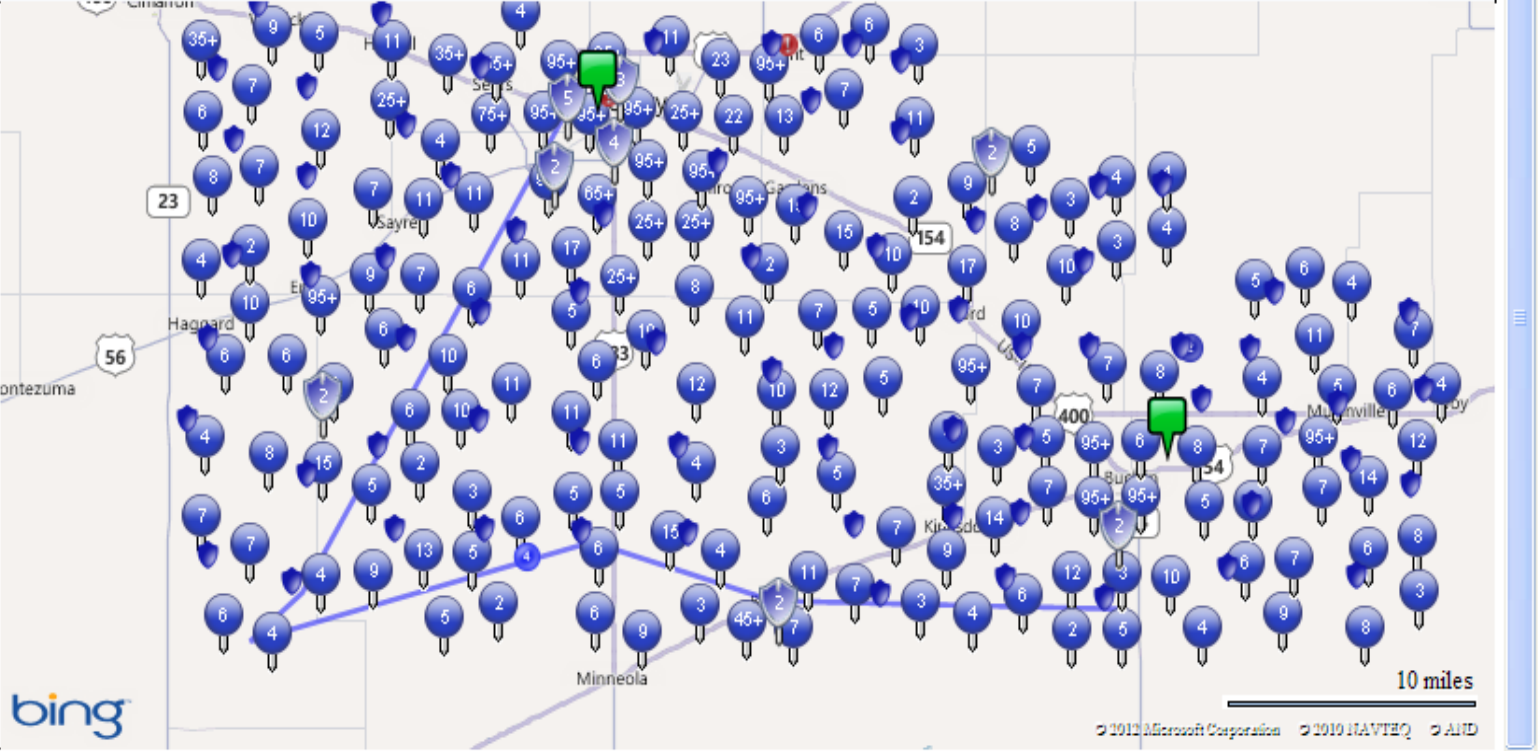
Setup Network Operations Reporting Help

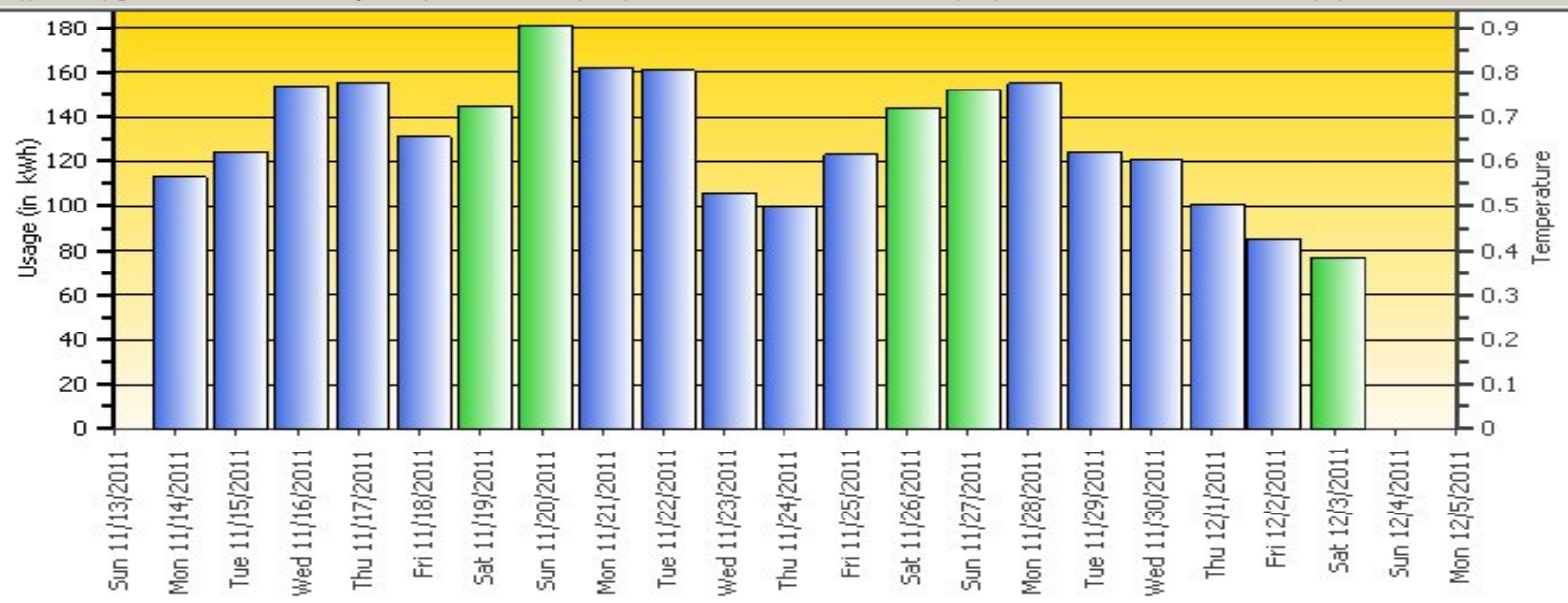


Zoom Default Clear Paths Refresh Road Aerial Google Legend Search Filters Collectors Endpoints Routers

2 10374 96

- Selected Collector**
- Collector**
- 14th and Soule
 - Bucklin Sub





Date	Meter Reading	Usage (kWh)	Received (-kWh)	Net (kWh)	Period
Mon 11/14/2011	7105	113	0.0000	113	
Tue 11/15/2011	7229	124	0.0000	124	
Wed 11/16/2011	7383	154	0.0000	154	
Thu 11/17/2011	7538	155	0.0000	155	
Fri 11/18/2011	7669	131	0.0000	131	
Sat 11/19/2011	7814	145	0.0000	145	
Sun 11/20/2011	7995	181	0.0000	181	
Mon 11/21/2011	8157	162	0.0000	162	
Tue 11/22/2011	8318	161	0.0000	161	
Wed 11/23/2011	8424	106	0.0000	106	
Thu 11/24/2011	8524	100	0.0000	100	
Fri 11/25/2011	8646	123	0.0000	123	
Sat 11/26/2011	8790	144	0.0000	144	
Sun 11/27/2011	8942	152	0.0000	152	
Mon 11/28/2011	9098	155	0.0000	155	
Tue 11/29/2011	9222	124	0.0000	124	
Wed 11/30/2011	9343	121	0.0000	121	
Thu 12/1/2011	9445	101	0.0000	101	-1 hr 56 min
Fri 12/2/2011	9529	85	0.0000	85	+1 hr 56 min
Sat 12/3/2011	9607	77	0.0000	77	

System Performance on 12/31

<u>System</u>	2010 Installed	2010 Read %	2011 Installed	2011 Read %
Stat Signal	3,484	99.9%	2,887	100%
Gridstream	7,095	99.9%	10,734	99.8%
Total	10,579	99.9%	13,621	99.8%



Command & Control

Read-in/Read-out commands issued

<u>Month</u>	<u>2010 Read-in/out</u>	<u>2011 Read-in/out</u>
Jan	52	115
Feb	153	81
March	786	227
April	639	225
May	498	206
June	508	495
July	217	628
August	507	553
September	452	264
October	296	251
November	223	211
December	417	183
TOTAL	4,748	3,439
		8,187



Command & Control

Connect/Disconnect commands issued

<u>Month</u>	<u>2010 Connect/Disc</u>	<u>2011 Connect/Disc</u>
Jan	0	82
Feb	0	156
March	42	225
April	17	295
May	54	379
June	159	274
July	53	314
August	413	445
September	409	490
October	377	630
November	116	336
December	86	147
TOTAL	1,726	3,773

5,499



Operational Savings on Monthly Reads

<u>Month</u>	<u>2010 Savings</u>	<u>2011 Savings</u>
January	\$16,657	\$36,098
February	\$21,163	\$37,403
March	\$22,764	\$42,280
April	\$24,528	\$42,709
May	\$26,814	\$42,848
June	\$26,869	\$43,219
July	\$26,869	\$43,219
August	\$26,869	\$47,568
September	\$26,869	\$59,430
October	\$29,394	\$59,430
November	\$29,394	\$68,283
December	<u>\$33,287</u>	<u>\$71,678</u>
Annual Saving	\$311,477	\$594,168



Annual AMI Operational Savings

<u>Year</u>	<u>Meters Installed</u>	<u>Annual Savings</u>
2008	1,967	\$ 51,274
2009	2,811	\$ 88,956
2010	10,579	\$ 393,964
2011	13,621	<u>\$1,017,735</u>
Total		\$1,551,929

Total Investment on 12/31/2011 \$3,746,710

**** Projected savings for 2012 \$1,180,000**



Thank You

- **Questions?**

- **Contact:**

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