An Insider's Story: Implementing an AMI system in Round Rock

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City of Round Rock

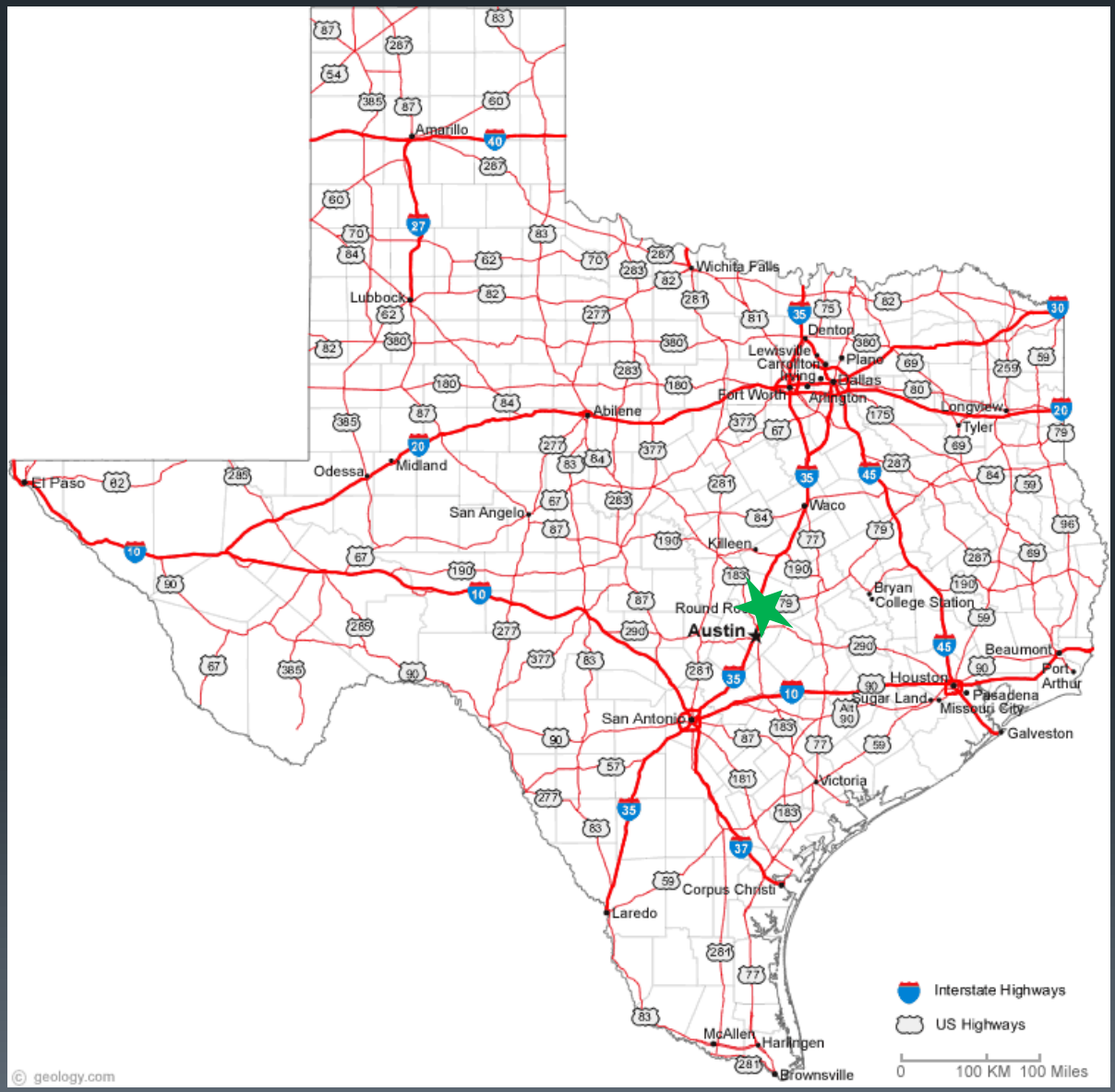
ROUND ROCK TEXAS

Round Rock, TX

Where?

- Williamson County
- north of Austin
- IH-35 corridor
- Avg rainfall = 34”
- Water planning group G
- BRA water customer

(*future* LCRA customer)



City Stats

Rapid population growth:

- 1990 = 30,923 residents
- Current Estimate = 106,462 residents in city limits
- Service area population ~ 150,000

~31,600 direct **water connections**

- Of those 29,000 are **residential**

Wholesale to 8 MUDs

Own & Operate WTP

Diversified Water Sources:

- Lake Georgetown/Lake Stillhouse Hollow System
- Edwards Aquifer (<8 mgd)
- Lake Travis *(future)*

AMR/AMI Benefits

- Meters more accessible;
- Eliminate staff positions;
- More efficient use of time;
- Water leaks identified sooner;
- “Water Fixed Network” can compare metered consumption with treated water in the system to determine water loss daily.
- Billing and user accuracy;
- Improved customer service;
- Locating “free” water users;
- Easier enforcement of any mandatory water restrictions;
- Can conduct water profiling of specific properties;
- Water use histories;
- Education tool;
- Identifying stopped meters sooner.

AMR Metering Retrofit

- Begin in November 2009—pilot project
- Originally planned as 7-year project
- 7.2 million dollars dedicated
- 98% of meters replaced by early 2014
- Fully drive-by system
- Able to get water use reports

Master Meter 3G USG RF register with data logging

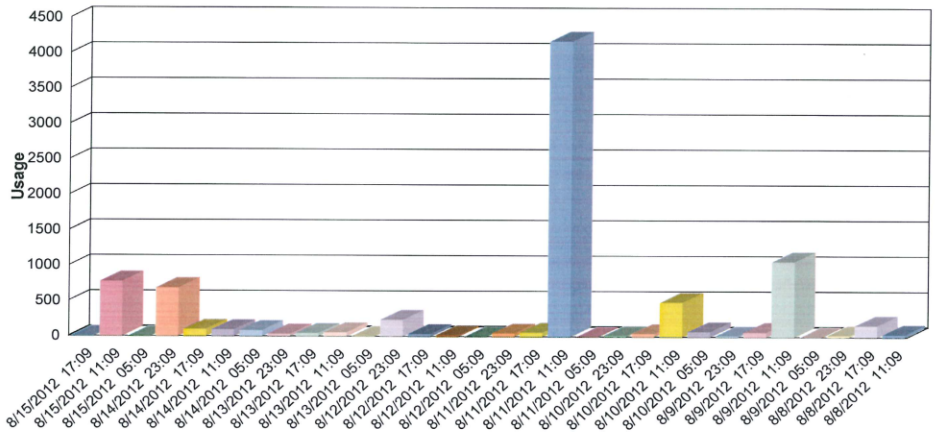
MASTER METER SYSTEMS

MasterLink Data Collection System

12/6/2012 2:24 pm

Data Log Event: 43470

Data Log Report
From: 7/6/2012 (05:09) To: 9/6/2012 (23:09)
Addr
Custome
MeterSN: 05879280 Electronic ID: 5879280
Peak Consumption: 4180 Occurred 8/11/2012 (11:09)



Date & Time	Reading	Usage
8/15/2012 17:09	654090	10
8/15/2012 11:09	654080	780
8/15/2012 05:09	653300	0
8/14/2012 23:09	653300	690
8/14/2012 17:09	652610	100
8/14/2012 11:09	652510	100
8/14/2012 05:09	652410	90
8/13/2012 23:09	652320	40
8/13/2012 17:09	652280	50
8/13/2012 11:09	652230	60
8/13/2012 05:09	652170	10
8/12/2012 23:09	652160	240
8/12/2012 17:09	651920	40
8/12/2012 11:09	651880	20
8/12/2012 05:09	651860	0
8/11/2012 23:09	651860	50
8/11/2012 17:09	651810	60
8/11/2012 11:09	651750	4180
8/11/2012 05:09	647570	0
8/10/2012 23:09	647570	20
8/10/2012 17:09	647550	50
8/10/2012 11:09	647500	490
8/10/2012 05:09	647010	80
8/9/2012 23:09	646930	20
8/9/2012 17:09	646910	70
8/9/2012 11:09	646840	1070
8/9/2012 05:09	645770	0
8/8/2012 23:09	645770	30
8/8/2012 17:09	645740	170
8/8/2012 11:09	645570	40

MASTER METER SYSTEMS

MasterLink Data Collection System

8/20/2012 1:20 pm

Data Log Event: 48935

Data Log Report

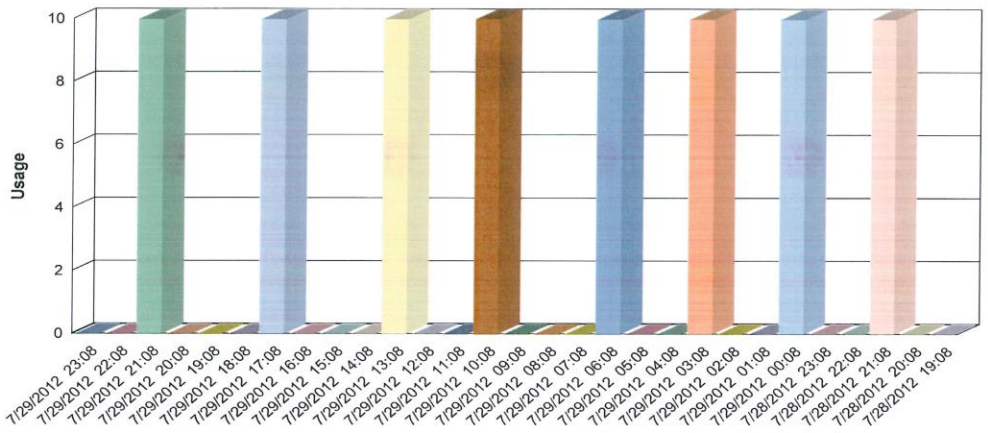
From: 7/20/2012 (

Address: 62

Custome

MeterSN: 07216416 Electronic ID: 7216416

Peak Consumption: 40 Occurred 7/20/2012 (10:08)



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7/29/2012 21:08	52120	10
7/29/2012 20:08	52110	0
7/29/2012 19:08	52110	0
7/29/2012 18:08	52110	0
7/29/2012 17:08	52110	10
7/29/2012 16:08	52100	0
7/29/2012 15:08	52100	0
7/29/2012 14:08	52100	0
7/29/2012 13:08	52100	10
7/29/2012 12:08	52090	0
7/29/2012 11:08	52090	0
7/29/2012 10:08	52090	10
7/29/2012 09:08	52080	0
7/29/2012 08:08	52080	0
7/29/2012 07:08	52080	0
7/29/2012 06:08	52080	10
7/29/2012 05:08	52070	0
7/29/2012 04:08	52070	0
7/29/2012 03:08	52070	10
7/29/2012 02:08	52060	0
7/29/2012 01:08	52060	0
7/29/2012 00:08	52060	10
7/28/2012 23:08	52050	0
7/28/2012 22:08	52050	0
7/28/2012 21:08	52050	10
7/28/2012 20:08	52040	0
7/28/2012 19:08	52040	0

MASTER METER SYSTEMS

09/11/2014 8:24 am

Data Log Event: 1098505

MasterLink Data Collection System

Data Log Report

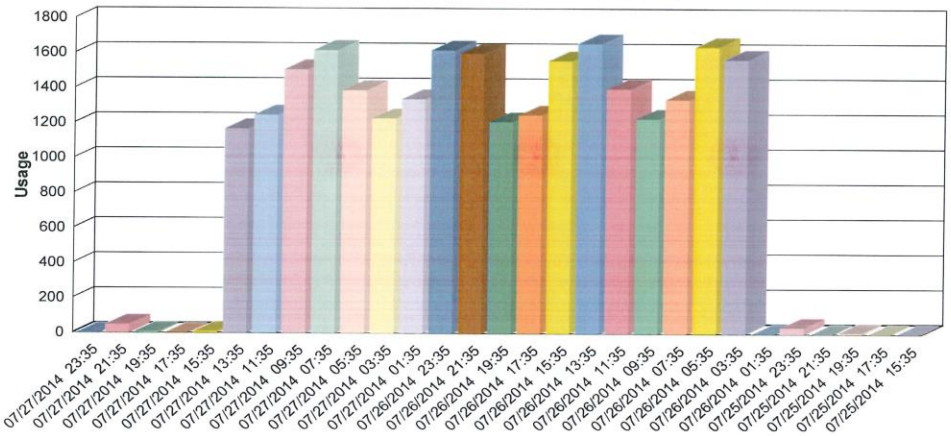
From: 07/16/2014 (01:35) To: 07/27/2014 (23:35)

Ac [redacted]

Cust

MeterSN: 07908595 Electronic ID: 7908595

Peak Consumption: 1660 Occurred 07/26/2014 (13:35)



Date & Time	Reading	Usage
07/27/2014 23:35	220560	0
07/27/2014 21:35	220560	50
07/27/2014 19:35	220510	10
07/27/2014 17:35	220500	0
07/27/2014 15:35	220500	10
07/27/2014 13:35	220490	1170
07/27/2014 11:35	219320	1250
07/27/2014 09:35	218070	1510
07/27/2014 07:35	216560	1620
07/27/2014 05:35	214940	1390
07/27/2014 03:35	213550	1230
07/27/2014 01:35	212320	1340
07/26/2014 23:35	210980	1620
07/26/2014 21:35	209360	1600
07/26/2014 19:35	207760	1210
07/26/2014 17:35	206550	1250
07/26/2014 15:35	205300	1560
07/26/2014 13:35	203740	1660
07/26/2014 11:35	202080	1400
07/26/2014 09:35	200680	1230
07/26/2014 07:35	199450	1340
07/26/2014 05:35	198110	1640
07/26/2014 03:35	196470	1570
07/26/2014 01:35	194900	0
07/25/2014 23:35	194900	40
07/25/2014 21:35	194860	0
07/25/2014 19:35	194860	10
07/25/2014 17:35	194850	0
07/25/2014 15:35	194850	0

AMI Infrastructure Upgrade

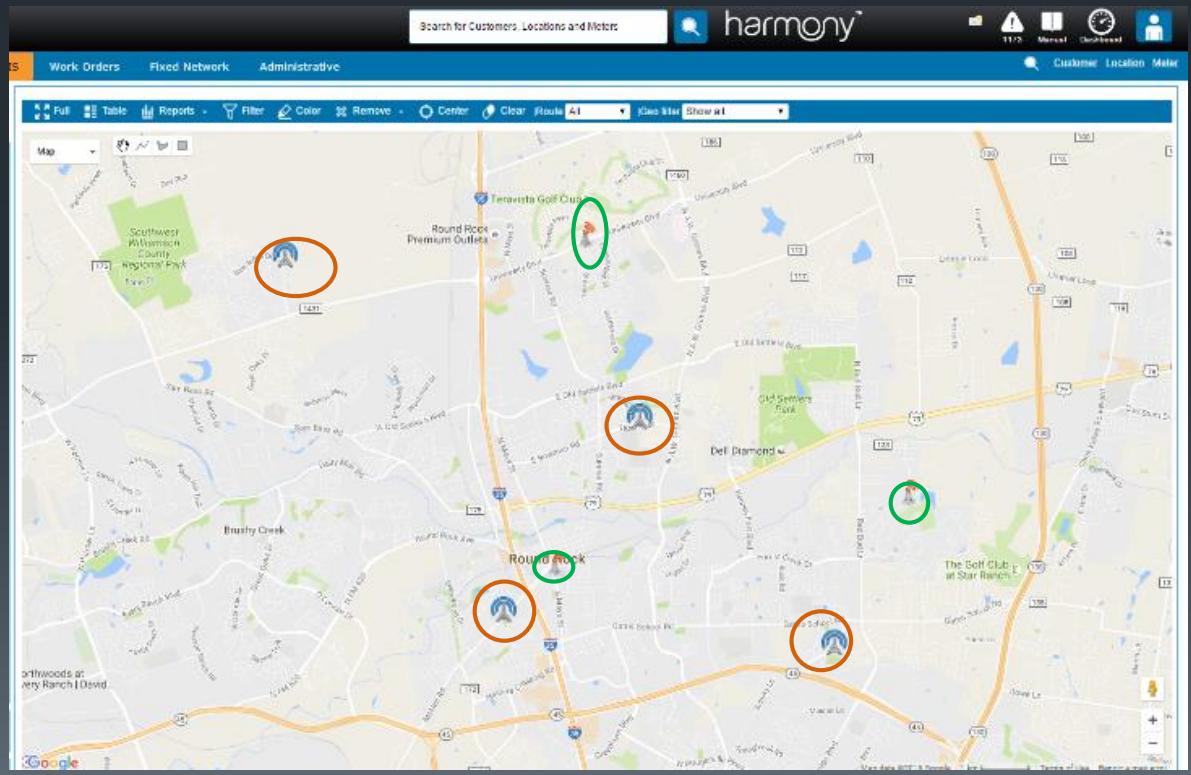
- March 2014: considered AMR completed. Prepared to install AMI infrastructure, but hit a snag.

- Technology change forced us to reevaluate program & essentially start from scratch:
  - New meter lids ☹
  - New antenna
  - New registers
  - Added an additional $800,000 to costs
  - Added an additional year

Allegro 2-way, 4G meter

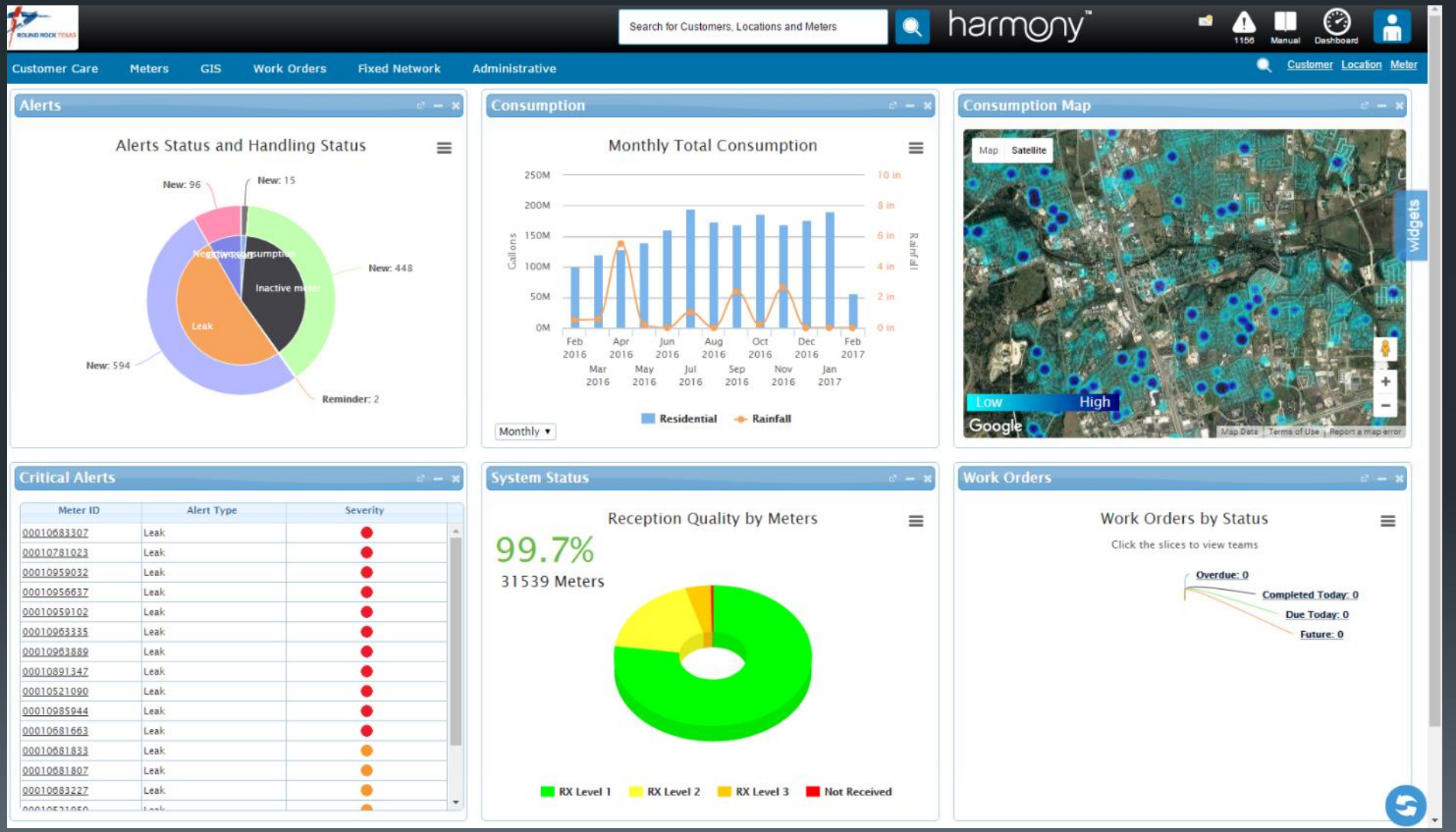
AMI Program Today

- Over 92% registers (over 30,100) replaced as of Jan 2017
- 4 base sites installed
- 3 repeaters
- plastic meter lids installed



So, how’s it helping with customer service?

Utility side interface



Summer Stress!

- Rainy winter – spring 2015
  - (28.48” by end of June!)
- All water restrictions lifted at end of May 2015
- July = zero rain
- August 0.76”
- *Water bills were delivered…*

What happened?

Meter Re-Reads

- 2015 = 1,733
- 2014 = 1,017

Data Logs

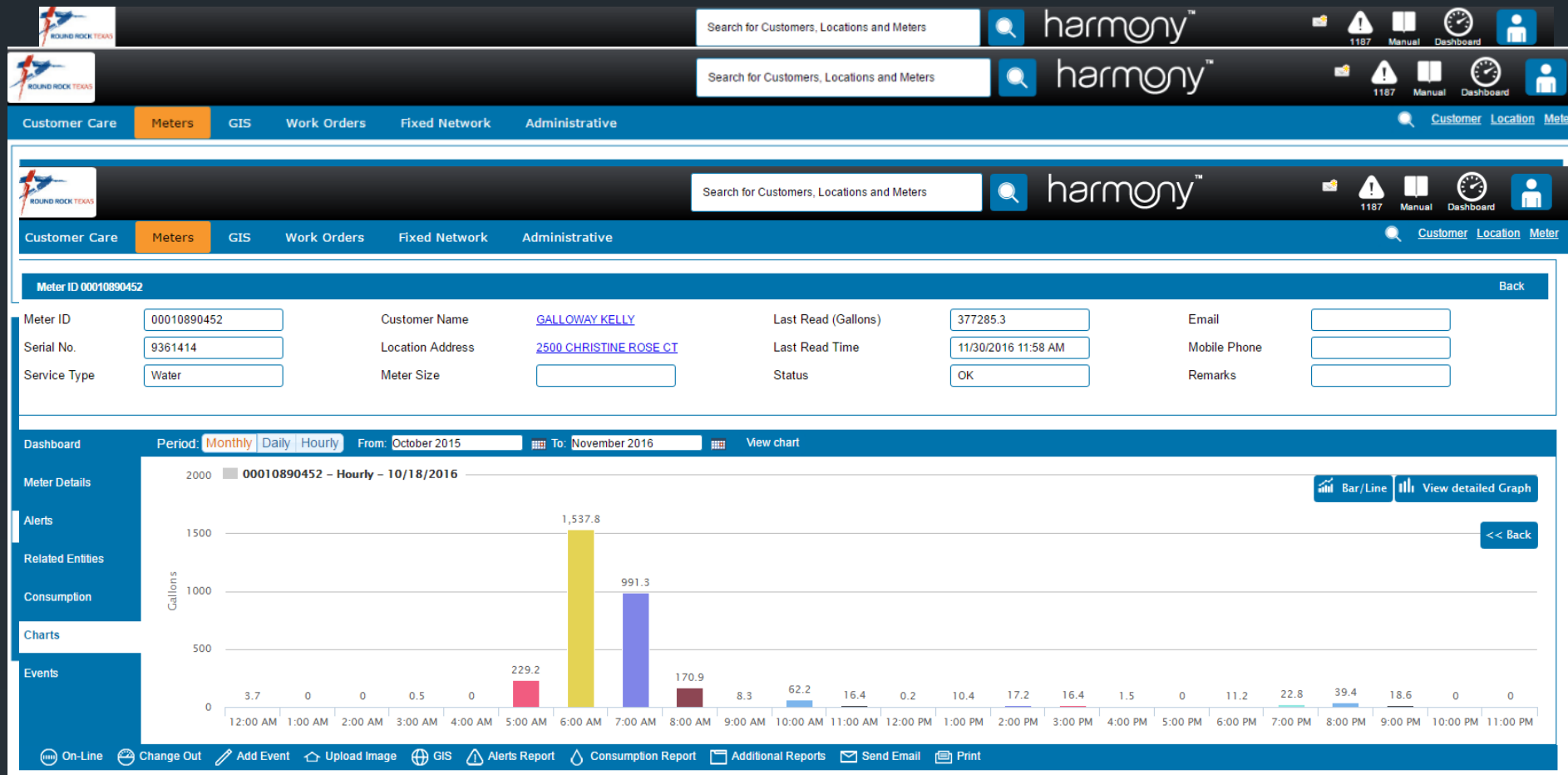
- 2015 = 357
- 2014 = 23

Meter Tests

- 2015 = 40 (1 failed)
- 2014 = 20

Irrigation Evals

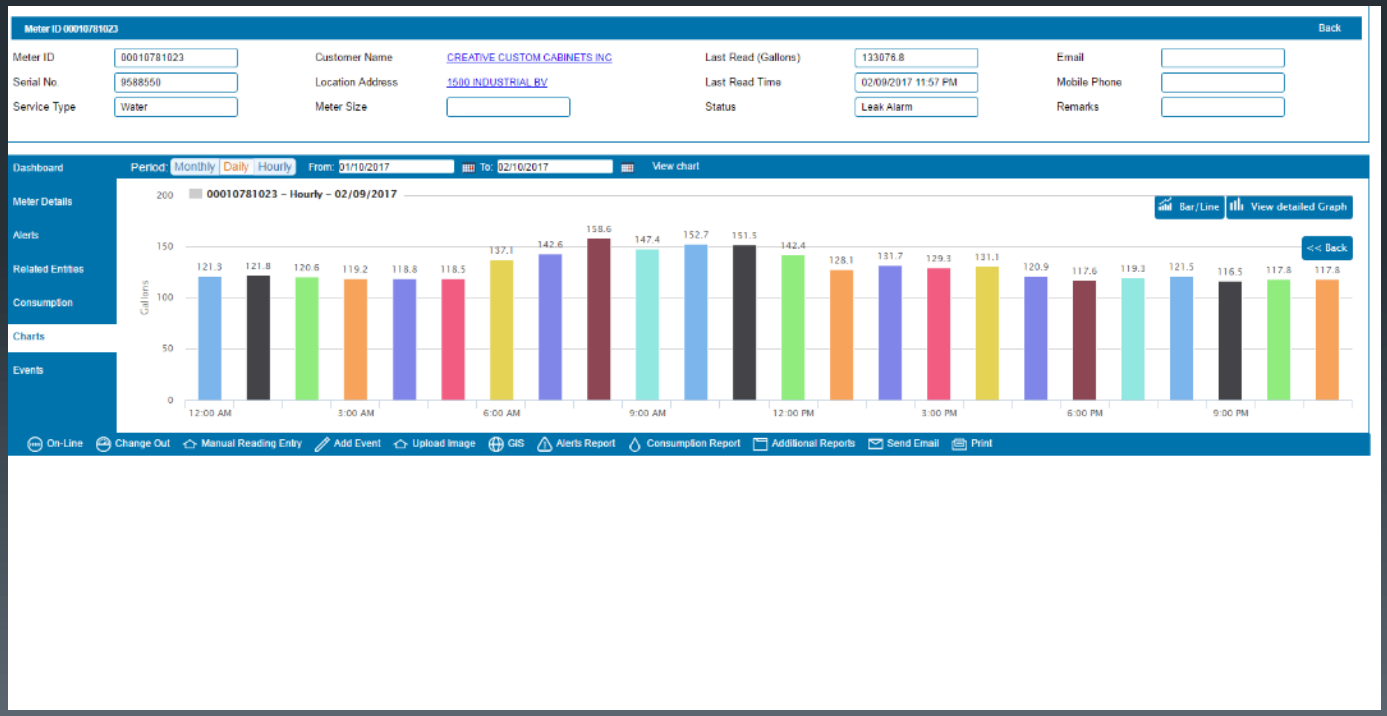
- 2015 = 69
- 2014 = 33



now seeing hourly water use

Moving ahead

- No customer access to a portal yet *(soon!)*
- Are manually sending out leak notifications
- Resolving issues over phone/email vs. site visits



Thank you!

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ROUND ROCK TEXAS