



INTEGRATING AMI DATA & WATER CONSERVATION PROGRAMMING



Agenda:

- Bend in a snapshot
- Brief background of AMI system
- Current & future AMI system capabilities
- Oregon regulatory requirements
- AMI data & conservation programming
 - Customer side leak detection
 - Large Landscape Program
 - Sprinkler Inspection Pilot Program



Bend in a snapshot:

- Estimated population 81,310 +/-
- Service population 60,673 +/-
- Water connections 24,461 +/-
- Annual demand 4,200 MG +/-
- Two primary water sources
- Water @ \$1.82 / CCF + base (\$22.02)
- Sewer @ \$3.38 / CCF + base (\$34.13)





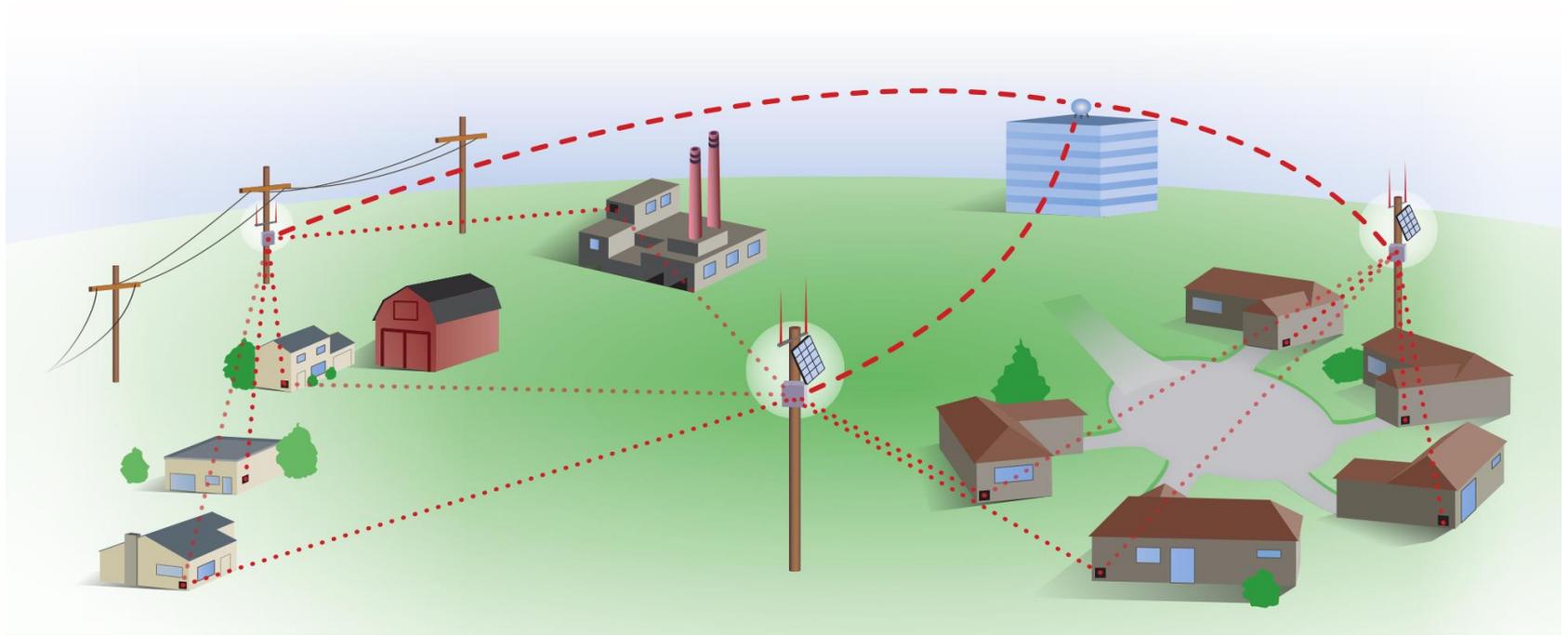
AMI system background:

- Aclara's STAR Network
- ARRA funded project
- 24,000+ Meter Transmission Units (MTUs)
- 45 Data Collector Units (DCUs)
- 1 Network Control Center (NCC)





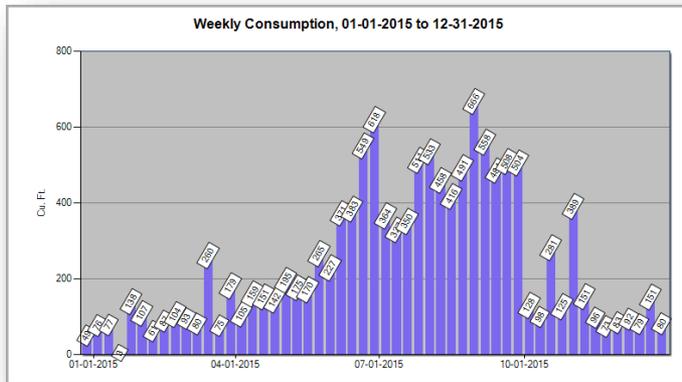
AMI system background:





AMI system capabilities:

- System diagnostics
- Hourly water use data
- Customized reporting
- Detailed customer water use



ACLARA STAR AMR System 7

DCU Selection: System DCU Views | Individual DCU Views | Enter Date Range

Search By: Call Summary | Diagnostics | Calls | Battery | Start: 01-22-2016 | End: 04-22-2016

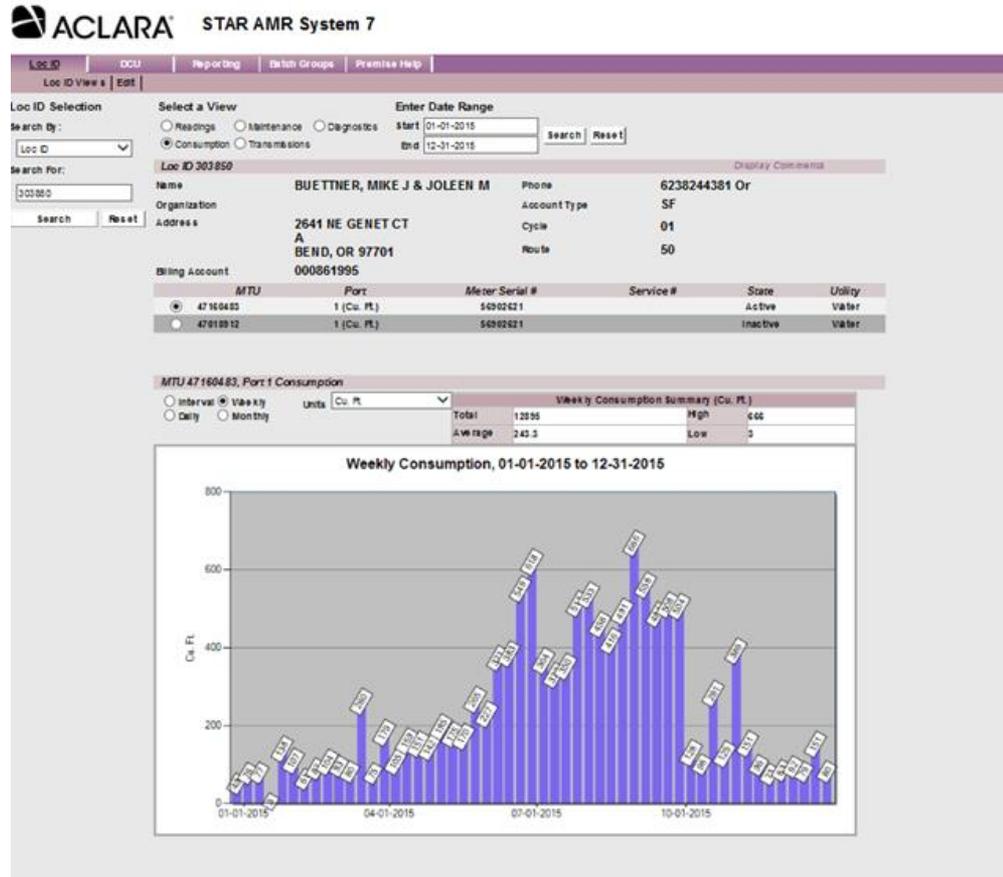
Search For: RSSI Thumbnails | Battery Thumbnails | Messages | RSSI

Search For: RSSI Thumbnails View, 03-23-2016 to 04-22-2016

DCU	Location	First Call	Last Call	First Call	Total Call	Expectancy	Records	Cleared	Connected
15339	Airport Action - Interline Building	04-21-2016	04-22-2016	00:26:05	00:26:05	18915	18915	Yes	No
15332	ME Depot Annex Rd. and Wendover St.	04-21-2016	04-22-2016	00:21:05	00:21:05	36554	36554	Yes	No
15332	Airway Pump Station	04-21-2016	04-22-2016	00:56:07	00:56:07	60687	60687	Yes	No
15335	Skyline Sports Complex and Skyline Blvd.	04-21-2016	04-22-2016	00:52:06	00:52:06	31100	31100	Yes	No
15335	Overhill Reservoir	04-21-2016	04-22-2016	01:02:50	01:02:50	69509	69509	Yes	No
15332	SE Wilkavick and Brentwood Blvd.	04-21-2016	04-22-2016	00:11:05	00:11:05	10797	10797	Yes	No
15335	ME Sheridan Meadows Rd. and Seward Park Rd.	04-21-2016	04-22-2016	00:21:05	00:21:05	14786	14786	Yes	No
15335	NE Lincoln Blvd. and Manchester Ave.	04-21-2016	04-22-2016	00:23:05	00:23:05	29032	29032	Yes	No
15335	NE Manning St. Dr. and Magnus Ln.	04-21-2016	04-22-2016	00:21:06	00:21:06	20710	20710	Yes	No
15335	NE Elm St. and Williamson Ave.	04-21-2016	04-22-2016	00:21:06	00:21:06	27874	27874	Yes	No
15335	US Highway 20 East and NE 65th Street	04-21-2016	04-22-2016	00:21:06	00:21:06	64806	64806	Yes	No
15335	NE Fairwood Dr. and Starwood Dr.	04-21-2016	04-22-2016	00:21:06	00:21:06	17765	17765	Yes	No
15335	1964 NW West Campbell Rd.	04-21-2016	04-22-2016	00:21:02	00:21:02	19193	19193	Yes	No
15335	1919 NW Washington St. and	04-21-2016	04-22-2016						

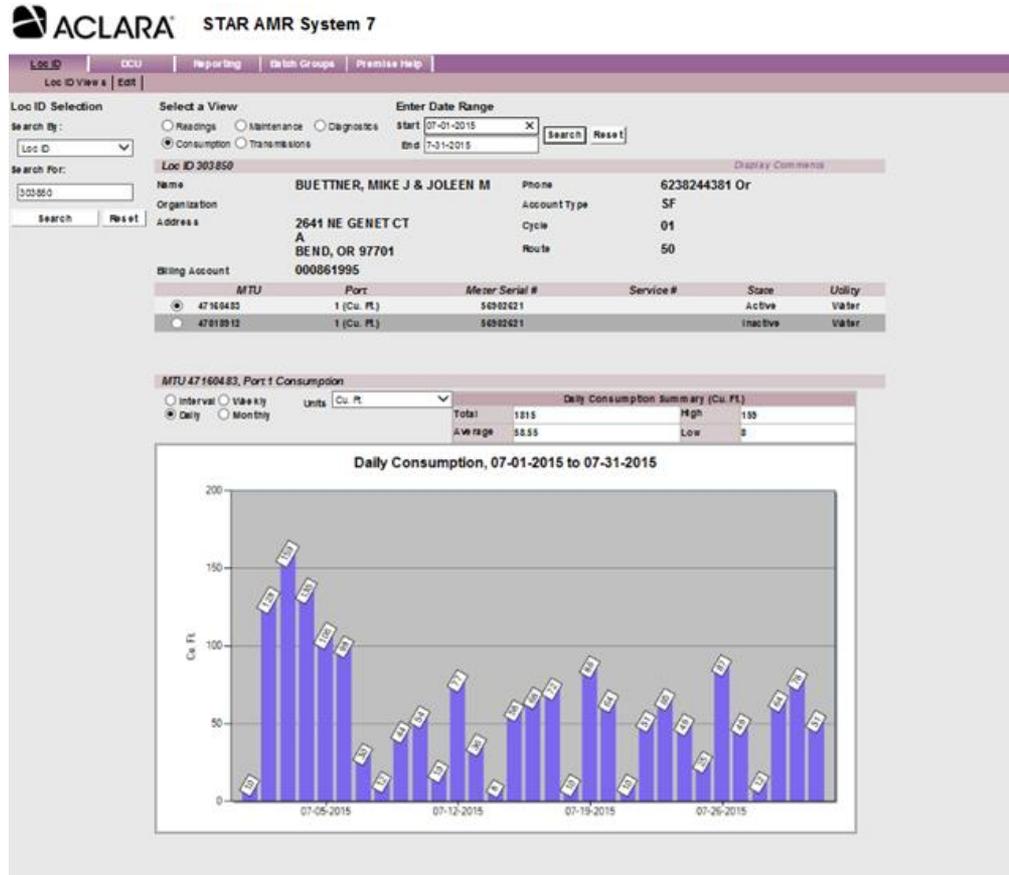


AMI system capabilities:





AMI system capabilities:





AMI system capabilities:





AMI system capabilities:

ACLARA STAR AMR System 7

LOC ID DCU Reporting Batch Groups Premises Help

Loc ID Views | Edit

Loc ID Selection Select a View Enter Date Range

Search By: Readings Maintenance Diagnostics Start: 07-01-2015 End: 7-8-2015 Search Reset

Consumption Transmissions

Loc ID: Search Reset

Loc ID: Search Reset

Loc ID 302850 Display Comments

Name: BUETTNER, MIKE J & JOLEEN M Phone: 6238244381 Or
 Organization: Account Type: SF
 Address: 2641 NE GENET CT Cycle: 01
 A BEND, OR 97701 Route: 50

Billing Account: 000861995

MTU	Port	Meter Serial #	Service #	Status	Utility
<input checked="" type="radio"/> 47160483	1 (Cu. Ft.)	5620221		Active	Water
<input type="radio"/> 47012912	1 (Cu. Ft.)	5620221		Inactive	Water

MTU 47160483, Port 1 Consumption

Interval Weekly Daily Monthly units: Cu. Ft.

Interval Consumption Summary (Cu. Ft.)			
Total	600	High	41
Average	7.54	Low	0

Interval Consumption, 07-01-2015 to 07-08-2015



AMI system capabilities:

ACLARA STAR AMR System 7

Loc ID Views | Edit

Loc ID Selection: Search By: Loc ID, Search For: 302850

Select a View: Readings, Maintenance, Diagnostics, Consumption, Transmissions

Enter Date Range: start 07-03-2015, end 7-3-2015

Loc ID 302850

Name: BUETTNER, MIKE J & JOLEEN M, Phone: 6238244381 Or
 Organization: A, Account Type: SF
 Address: 2641 NE GENET CT, A, Bend, OR 97701, Cycle: 01, Route: 50

Billing Account: 000861995

MTU	Port	Meter Serial #	Service #	Status	Utility
<input checked="" type="radio"/> 47160483	1 (Cu. Ft.)	56902621		Active	Water
<input type="radio"/> 47018912	1 (Cu. Ft.)	56902621		Inactive	Water

MTU 47160483, Port 1 Consumption

Interval: Interval, Weekly, Daily, Monthly

Units: Cu. Ft.

Interval Consumption Summary (Cu. Ft.)			
Total	139	High	40
Average	6.62	Low	0

Interval Consumption, 07-03-2015 to 07-03-2015



AMI system current limitations:

- Meter Data Management (MDM)
- Customer engagement
- Leak correlation add-ons

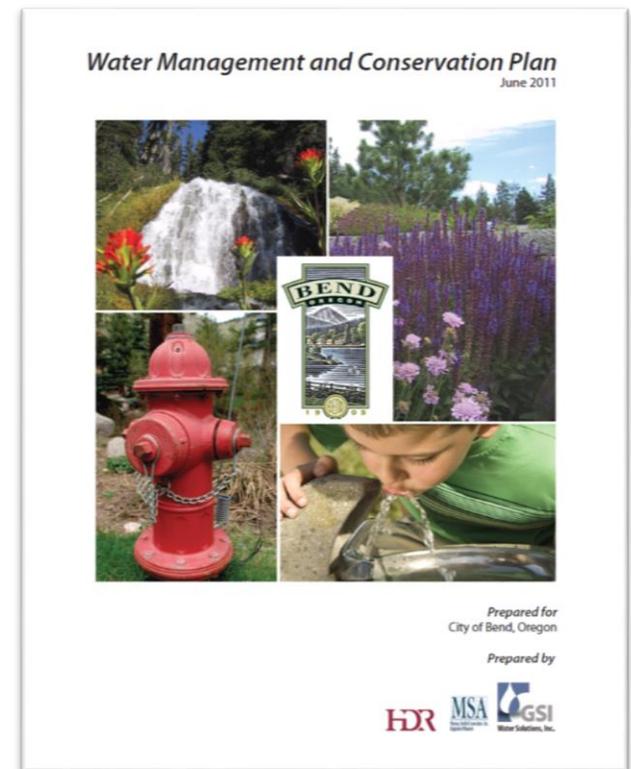




Oregon regulatory requirements

WMCP Benchmark Categories:

- Annual water audit
- Water reuse & recycling
- Utility rates
- Leak detection
- Technical & financial assistance
- Public education

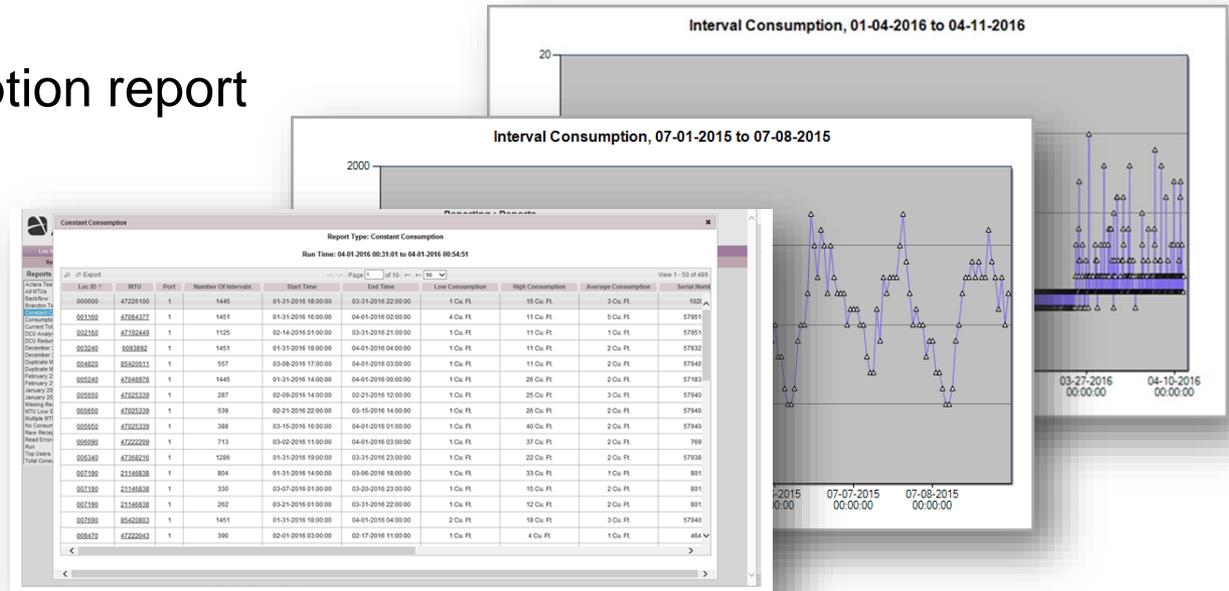




AMI data & conservation programming:

Leak Detection – customer side

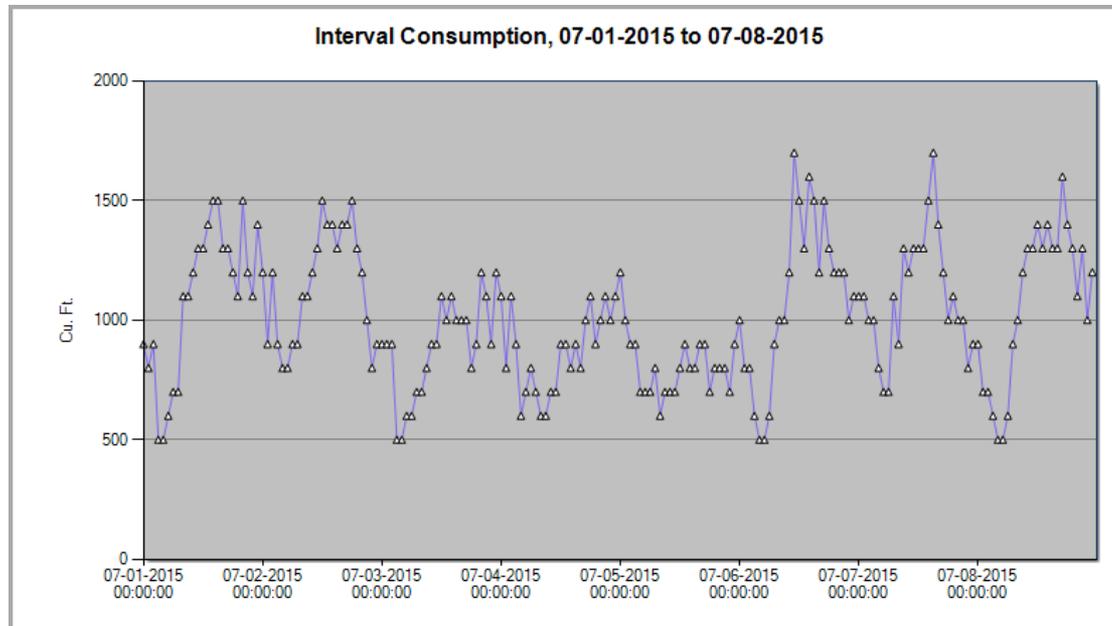
- Constant consumption report
- The regulars
- The newbies
- Our response





AMI data & conservation programming:

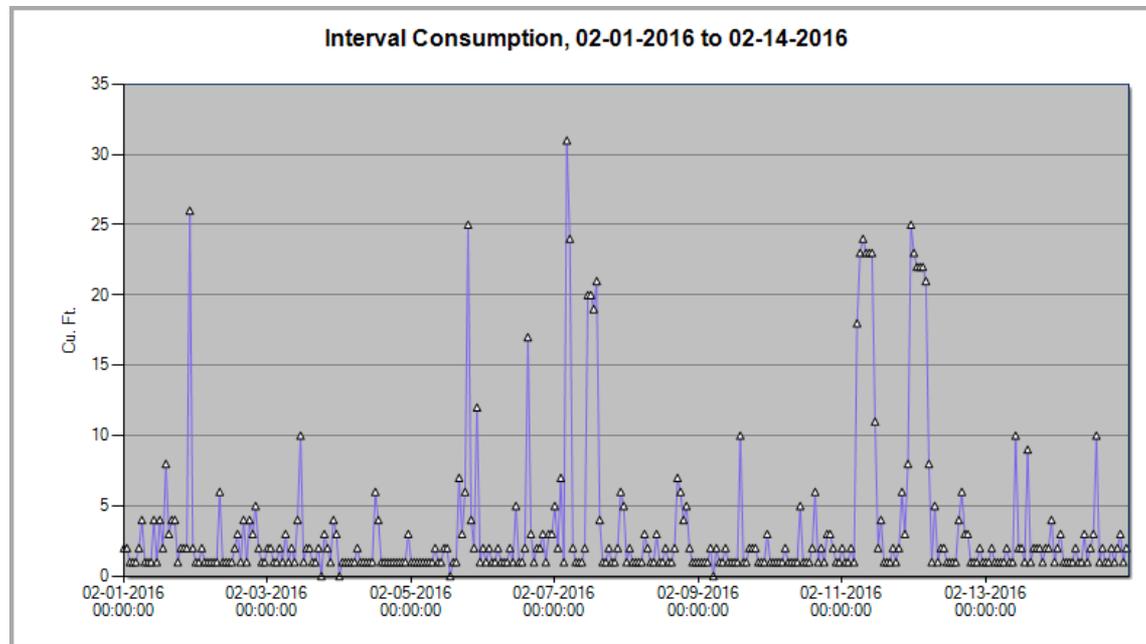
Leak Detection – the “regulars”





AMI data & conservation programming:

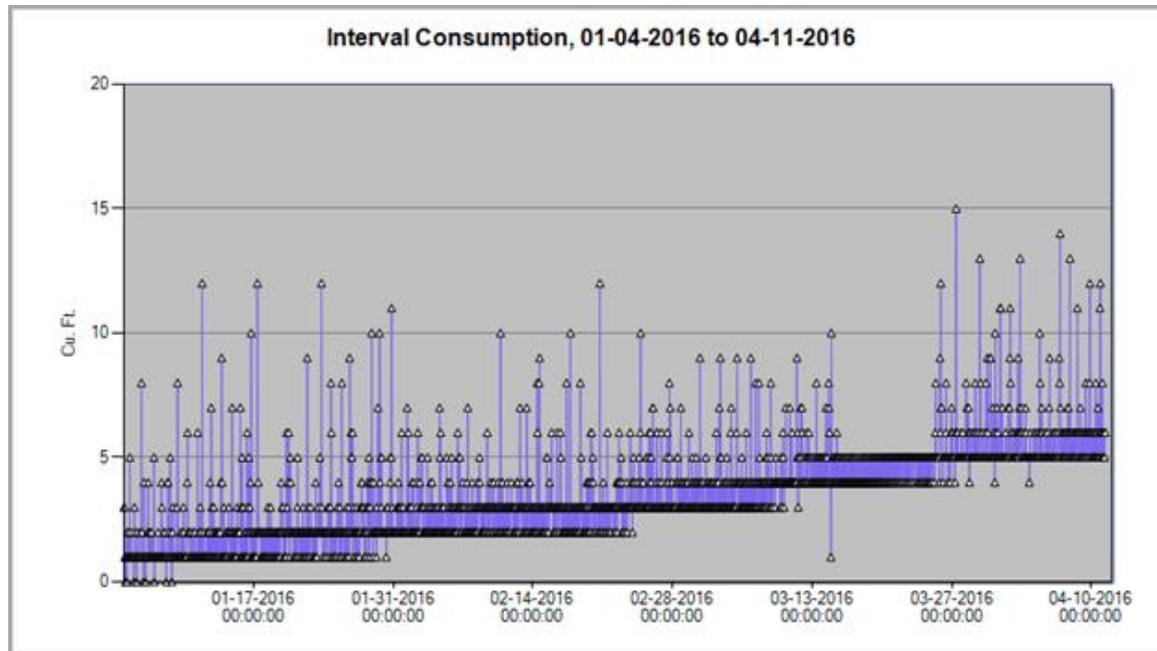
Leak Detection – the “newbies”





AMI data & conservation programming:

Leak Detection – the “not-so-newbies”





AMI data & conservation programming:

Technical Assistance - Large Landscape Program

- Bend LaPine Schools
- Bend Metro Parks & Rec
- Oregon State Parks
- Housing Works





AMI data & conservation programming:

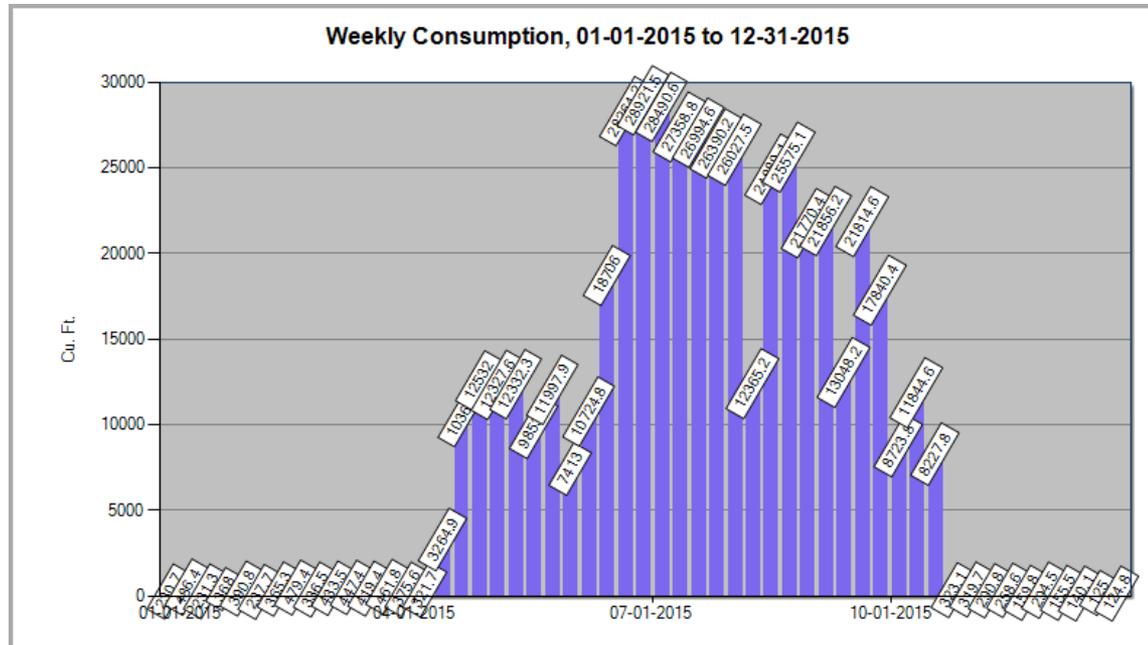
Large Landscape Program – Pilot Butte State Park





AMI data & conservation programming:

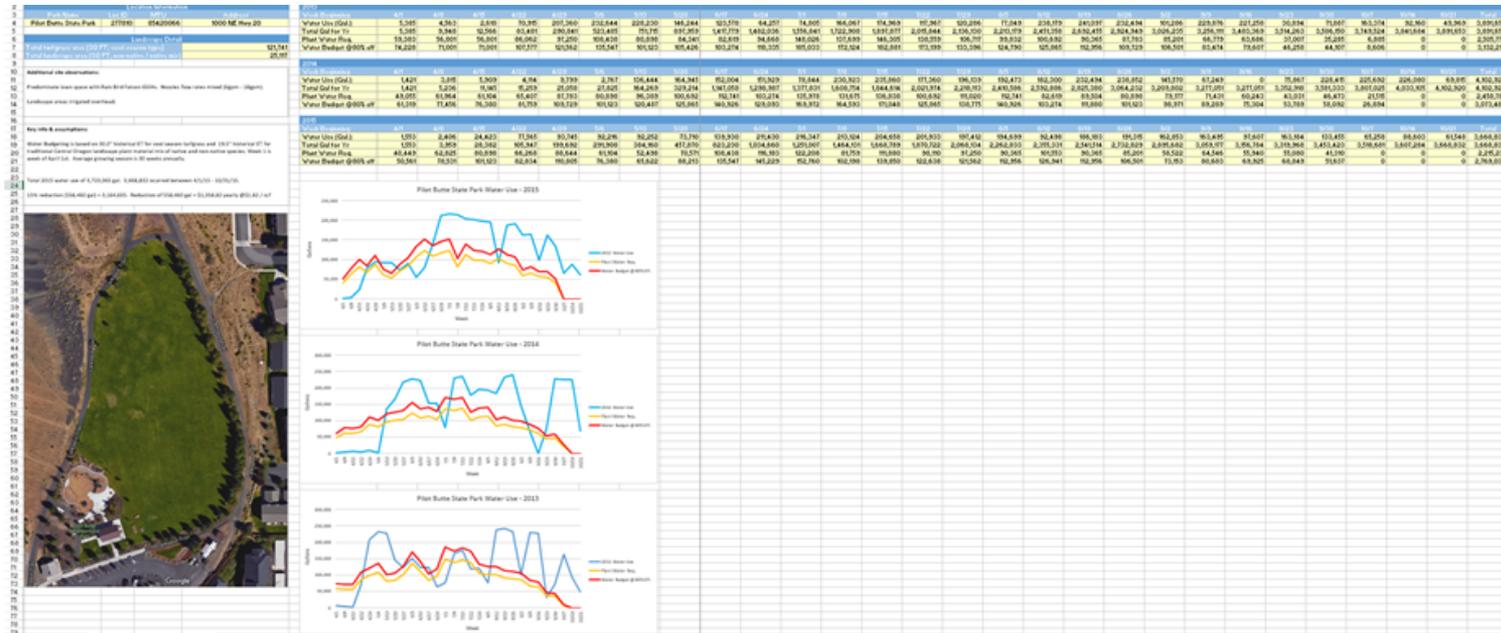
Large Landscape Program – Pilot Butte State Park





AMI data & conservation programming:

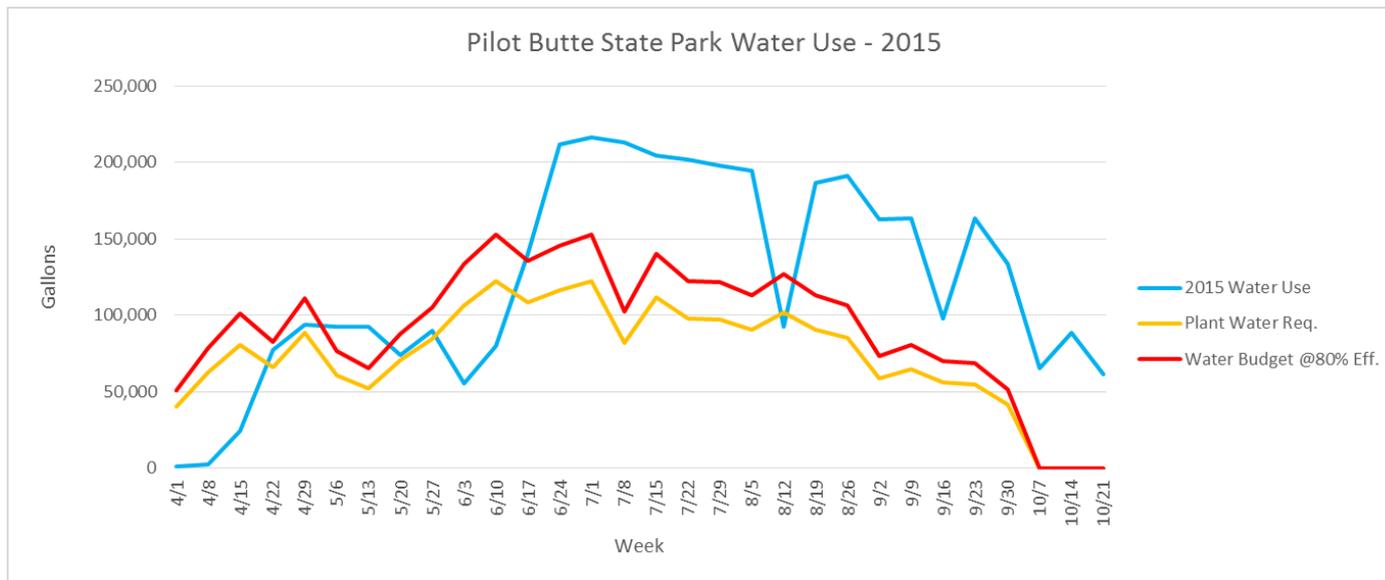
Large Landscape Program – Pilot Butte State Park





AMI data & conservation programming:

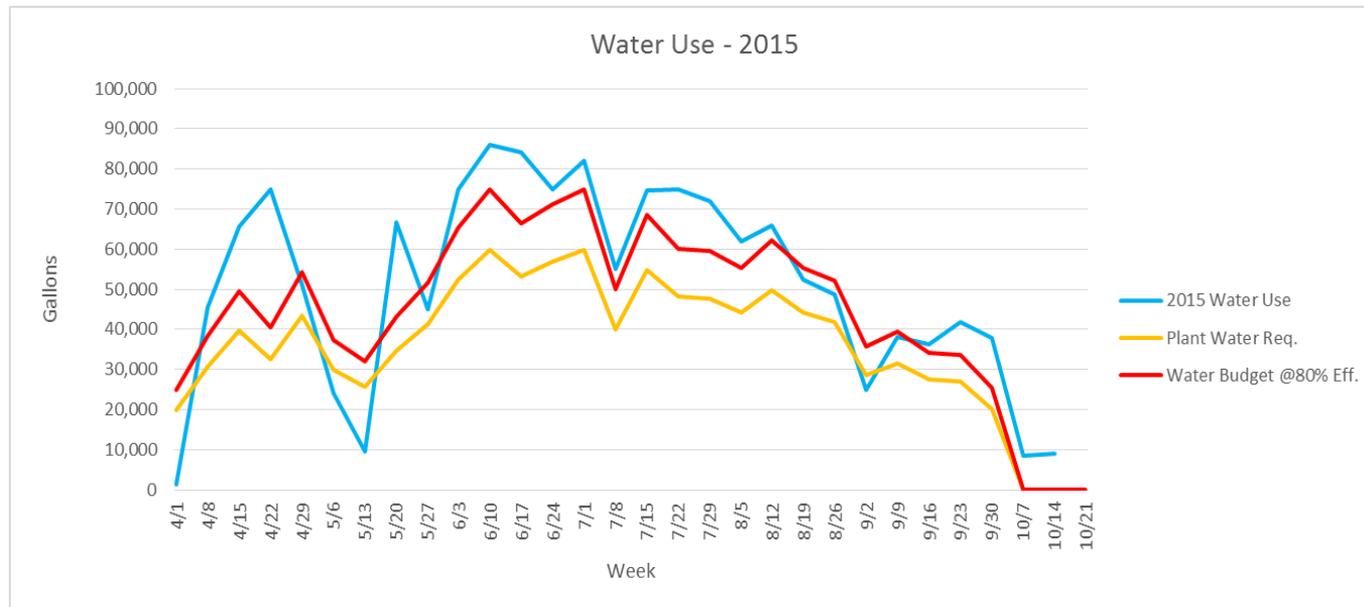
Large Landscape Program – Pilot Butte State Park





AMI data & conservation programming:

Large Landscape Program – An example of our work





AMI data & conservation programming:

Public Education – Sprinkler Inspection Pilot Program

- Free to Bend utility customers
- Emphasis on water efficiency
- 2015 pilot phase
- 2016 pilot phase w/ more data!





AMI data & conservation programming:

2015 pilot phase:

- Initial conversation
- Review of current schedule
- Visual inspection
- System tests
- Revised schedule
- Q & A





AMI data & conservation programming:

2016 pilot phase w/ more data!

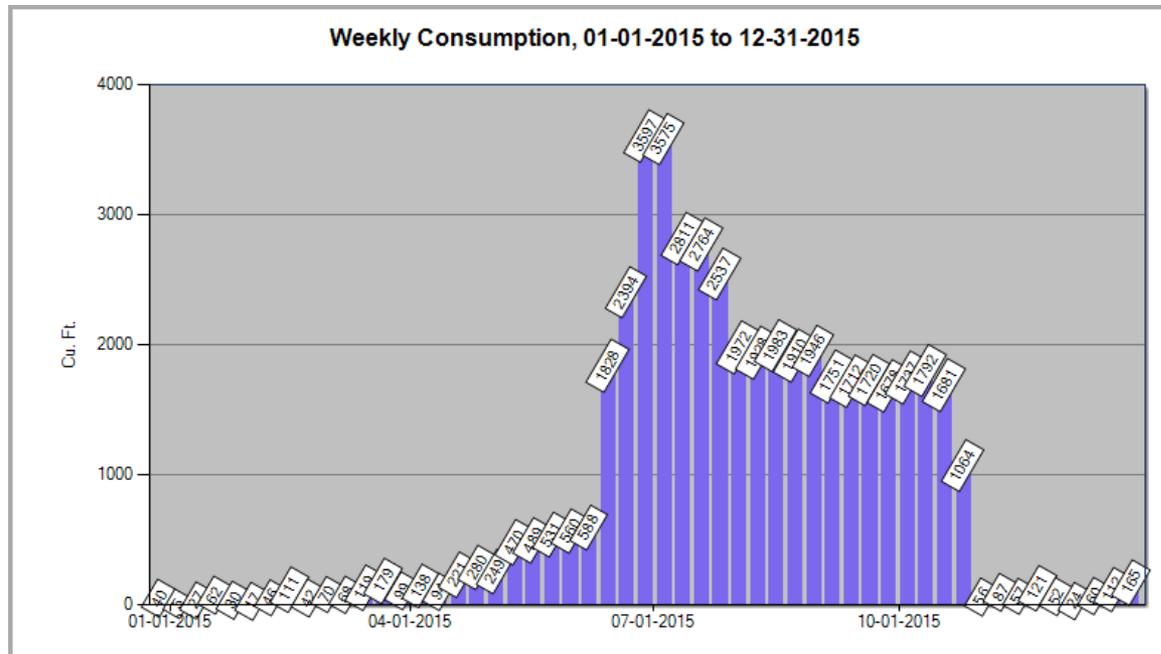
- 200 inspections (May – Aug)
- 100 targeted / 100 first come
- Conservation potential mapping
- Cheaper software solution(s)
- Changed administrative procedures
- Changed inspection process





AMI data & conservation programming:

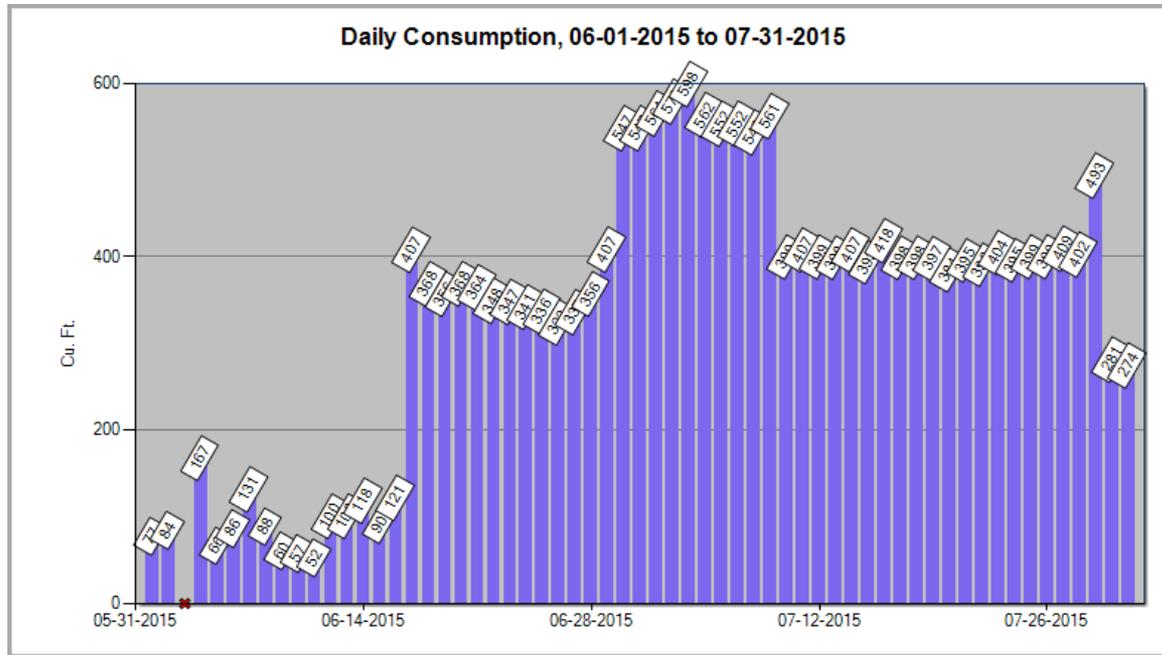
2016 pilot phase w/ more data!





AMI data & conservation programming:

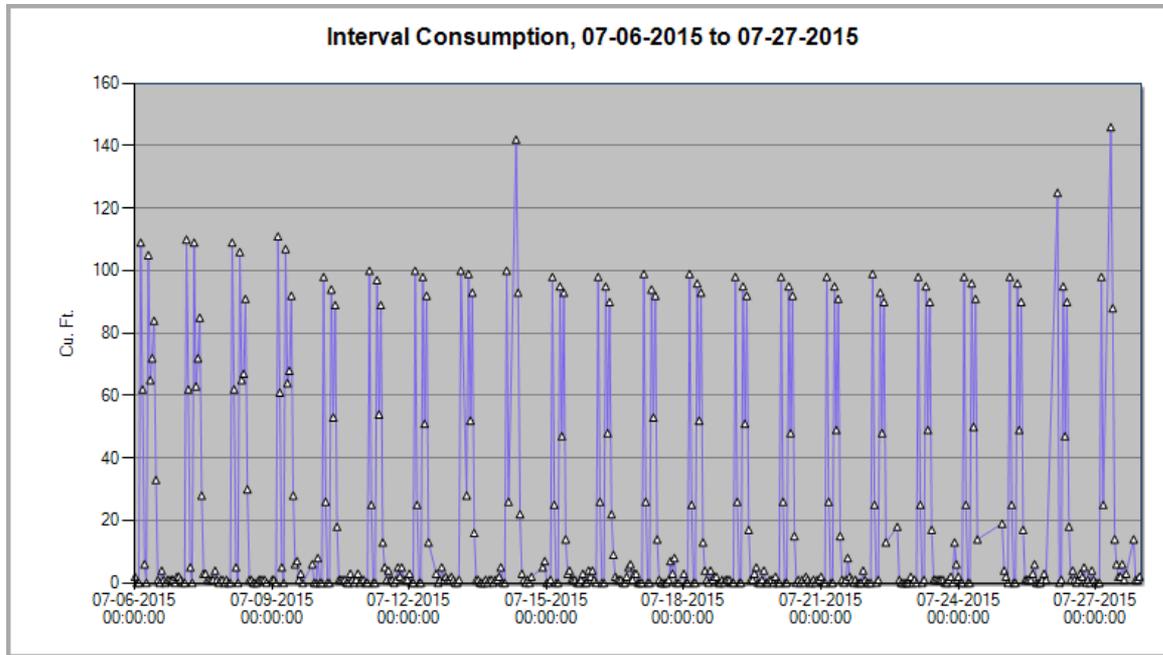
2016 pilot phase w/ more data!





AMI data & conservation programming:

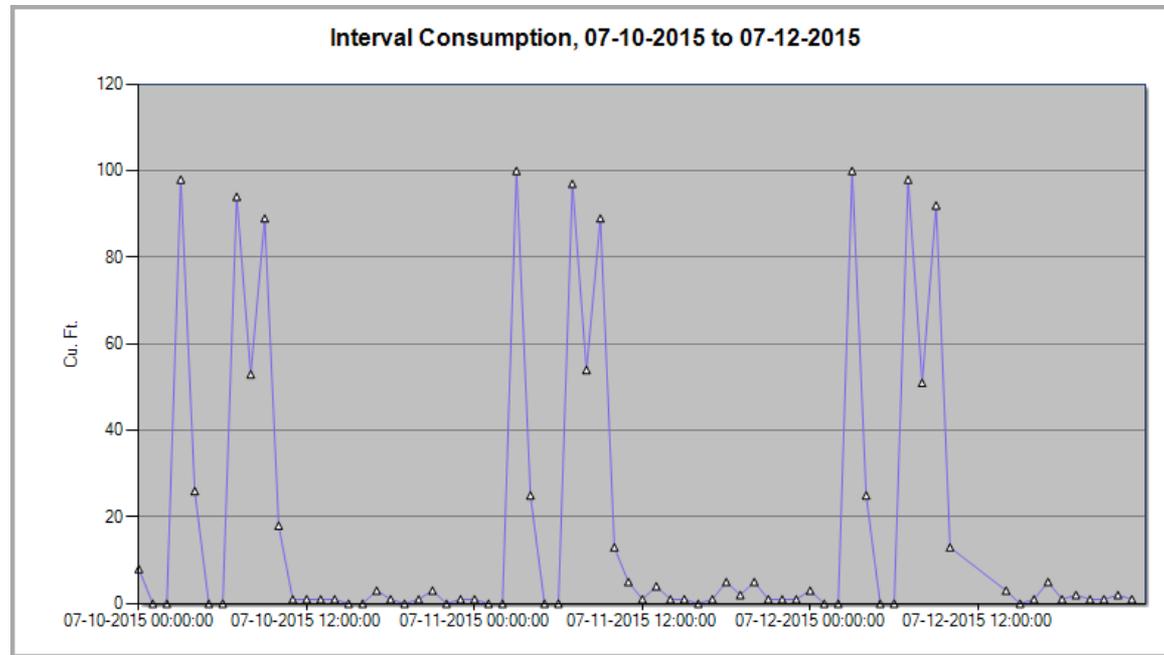
2016 pilot phase w/ more data!





AMI data & conservation programming:

2016 pilot phase w/ more data!





AMI data & conservation programming:

In conclusion:

- We've only begun to scratch the surface
- MDMs will propel us into the future
- We need more data driven conversation



Questions?

Mike Buettner

City of Bend - Water Conservation Program Manager

mbuettner@bendoregon.gov

541-388-5569