(SEMI) AUTOMATED ANNUAL RESIDENTIAL WATER USE REPORTS

THE WHY, HOW, AND WHAT DID WE GET OURSELVES INTO PRESENTATION
THE WHY

• Water Utility at a glance
  • 7500 Residential customers
  • 1000 Commercial customers
  • Annual water consumption for City of Garden City in 2017 was 2.4 Billion gals.
  • Winter time water demand is typically 2-3 million gals per day.
  • Summer time water demand is 10-12 Million gals per day.
SANDHILLS STATIC WATER DEPTH LEVELS

Water level 2004
Water level 2018
GARDEN CITY SOURCE WELL STATIC WATER DEPTH LEVELS

Water level 2004
Water level 2018
THE WHY (CONT.)

• Automated Metering Infrastructure (AMI)
  • Utility can monitor in real time
  • Notify metering issues
  • Notify customer issues
  • Can combine input/output metering to troubleshoot issues with wells
THE WHY

• We know how water is used in the community, but do our customers?

• How can we give our customers something “relatable” regarding their water use?

• How can we better develop policies to promote conservation and ensure resource availability for projects that will convert water consumption into economic impact?
THE WHY (CONT.)

- Communities are investing in data collection but not necessarily data analysis.
- Any Community can probably provide more “relatable” data to their customers with some planning.
THE HOW

• What does reduction in residential water use mean at a house level? (Or is it right to tell someone with a grassy two and a half acre lot that they are doing a good job with water conservation?)
WHO IS BEING A GOOD STEWARD OF WATER?

Monthly Water Usage

- House 1: 2.46 Acres
- House 2: 0.54 Acres
- House 3: 0.15 Acres
WHO IS BEING A GOOD STEWARD OF WATER?

Monthly Water Usage – PER ACRE

House 1
House 2
House 3
THE HOW (CONT.)

• We needed to collect this data and tie it together:
  • Meter Data
  • Parcel Data
THE HOW (CONT.)

• How did we look at this data
  • How do we make “comparable” houses?
  • Why did we decide to look at future use instead of past use?
  • How did we handle “zeros or near zeros” in the data?
THE HOW (CONT.)

• How did we report the analysis?
  • How can we make the data relatable?
  • How can we make customized charts?
  • How can we make an auto generating report?
Based on your water usage in 2017, you are projected to use **21% Less Water** per day in 2018 than similar households in Garden City. Your annual water cost for 2018 could be **$50 Less** than similar households.

**How Much Water is Your Sprinkler System Really Using?**

Over 60% of residential water consumed in Garden City is used for outdoor watering. That is over 1 Billion Gallons annually! Houses with clock timer controlled irrigation systems use about 50% more water outdoors than homes without irrigation systems. Experts estimate that as much as half the water used is wasted due to over-watering and poorly maintained sprinkler systems. Consider replacing older washers with Energy Star rated washers with a low integrated water factor.

**Energy Star**

Older washers use up to 45 gallons per load of laundry. High efficient energy Star rated washers use about 15-30 gallons per load. Consider replacing older washer with Energy Star rated washer with a low integrated water factor.

**Smart Irrigation**

The average home sprinkler system uses up to 3,000 gallons per cycle! WaterSense labeled controllers can automatically adjust to weather events and save significant amounts of water. Some can even be controlled by your smartphone!

**Flushes Count**

Did you know that older toilets can use 3-7 gallons of water per flush? If your home was built before 1992, consider replacing your toilets with WaterSense labeled toilets, which use on average 1.2 gallons per flush.

**How Does Your Home Compare?**

Here’s how your average daily water usage stacked up against households like yours in the past year:

- **Your Household**: 239 Galls
- **Similar Households**: 299 Galls

**Where Does Our Water Go?**

- **Non-Revenue Water**: 11%
- **Commercial**: 11%
- **Residential - Indoor**: 40%
- **Residential - Outdoor Watering**: 25%
- **Loss - Unaccounted**: 13%

Was this information helpful? Please take our online survey by scanning the QR Code by following the URL: [https://www.surveymonkey.com/r/GCwater](https://www.surveymonkey.com/r/GCwater)
Water Report for 000 Main St
January 1, 2017 - January 1, 2018

Based on your water usage in 2017, you are projected to use 44% More Water per day in 2018 than similar households in Garden City. Your annual water cost for 2018 could be $110 More than similar households.

How Does Your Home Compare?
Here’s how your average daily water usage stacked up against households like yours in the past year:

<table>
<thead>
<tr>
<th></th>
<th>Gallons</th>
</tr>
</thead>
<tbody>
<tr>
<td>Your Household</td>
<td>405</td>
</tr>
<tr>
<td>Similar Households</td>
<td>281</td>
</tr>
</tbody>
</table>

How Much Water is Your Sprinkler System Really Using?
Over 60% of residential water consumed in Garden City is used for outdoor watering. That is over 1 Billion Gallons annually! Homes with clock timer controlled irrigation systems use about 50% more water outdoors than homes without irrigation systems. Experts estimate that as much as half the water used is wasted due to over-watering and poorly maintained sprinkler systems. Consider replacing older washers with Energy Star rated washers with a low integrated water factor.

Where Does Our Water Go?

- 13% Laundry
- 25% Residential - Indoor
- 40% Residential - Outdoor Watering
- 11% Non-Residential - Commercial
- 11% Non-Residential - Other

Water Usage Over Time
Your average daily water usage in 2016 compared to your average daily water usage in 2017.

Gallons (in Thousands)

<table>
<thead>
<tr>
<th></th>
<th>2016</th>
<th>2017</th>
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<tbody>
<tr>
<td>Jan</td>
<td>12.1</td>
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<td>Feb</td>
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<tr>
<td>Dec</td>
<td>12.1</td>
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</tr>
</tbody>
</table>

Take Action!
Follow these tips to help you save water and money!

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Smart Irrigation
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Flushes Count
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Based on your water usage in 2017, you are projected to use **44% More Water** per day in 2018 than similar households in Garden City. Your annual water cost for 2018 could be **$110 More** than similar households.

**How Does Your Home Compare?**

Here’s how your average daily water usage stacked up against households like yours in the past year.

- **Your Household**: 405 Gallons
- **Similar Households**: 281 Gallons
Water Usage Over Time

Your average daily water usage in 2016 compared to your average daily water usage in 2017.

- Blue: Your Household 2017
- Orange: Your Household 2016

Gallons (in Thousands)
THE HOW

• Other neat things we can do with the data now that we have a process going:
  • Heat maps of water usage by acre for internal use
  • Planning for future development’s water used based on similar neighborhoods
  • Implement targeted campaigns to help high water users reduce their usage
EXAMPLE: ANNUAL RESIDENTIAL NEIGHBORHOOD WATER REPORT

Average Household Water use by Neighborhoods 2017 vs. 2016

Month
1 2 3 4 5 6 7 8 9 10 11 12
Average Monthly Gallon Change
-20000 -10000 0 10000 20000
Decrease Increase
THE WHAT DID WE GET OURSELVES?
(CHALLENGES)

• Linking meter, GIS parcel, and customer mailing addresses.

• Needing to automate everything possible (1 min task meant three weeks of work)

• Complete planning of the reporting so that errors in automated output doesn’t creep in

• Reporting in a way that was insightful, helpful, but not accusatory.
HOW DID IT GO?

• Do we want to talk about the response, what we learned?
THANKS! – ANY QUESTIONS?

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