CONNECTIONS SUMMIT
❖ ELECTRICITIES

You've Got AMI Data - Now What?

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- **Project Coordinator, Electric Department**
- **Assisted with the AMI deployment with the Town of Clayton**
- **Managed over 17 major electric construction projects since 2021**
- **2023 ElectriCities Rising Star Award winner**

Gary Smith

- **President of Sagewell**
- **Implemented 10 Bring Your Own Charger® (BYOC) programs, with more than 3.75 million customer participation days**
- **Oversees Sagewell's BYOC, AMI analytics and electrification teams and programs**

"Garbage In, Garbage Out"

The best data technology is useless without good data

The takeaway

- **Useful analysis requires good, clean data**
- **Good news: most data errors can (and must be) be fixed before analysis**

Raise your hand if...

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- **Your utility is served by NCEMPA**

- **Your utility is served by NCMPA1**

- **Has AMI meters deployed for a majority of customers**

- **You can personally access that data for analysis**

- **You trust the data you have access to**

Project Goal

- **Utilize AMI data to evaluate DR switch connectivity & performance against Clayton's load management goals**
    - A 2011 switch audit conducted in-person showed over 50% disconnection of load switches
    - Reward participating customers, but not those who are no longer participating

DR switches deployed

Total Residential Meters	7,674
Residential meters with DR switch(es)	3,640
Total DR switches	8,004
Switches per meter (DR switches / meters with DR switches)	2.2
A/C only switches	938
A/C + heat strips	444
A/C + water heater	555
A/C + water heater + heat strips	1,681
Other combinations	22

Measuring impact

- **Sagewell's advanced AMI data analytics was used to evaluate load control impacts of more than 100 events between January 2022 and August 2023.**
- **While some customers seemed to perform well, overall results were lower than expected.**
- **Analyzed the data in a number of different ways to assess impact, but *we found more questions than answers…***

Some issues identified in this project

Known outage appeared 1 hour later than expected in AMI data
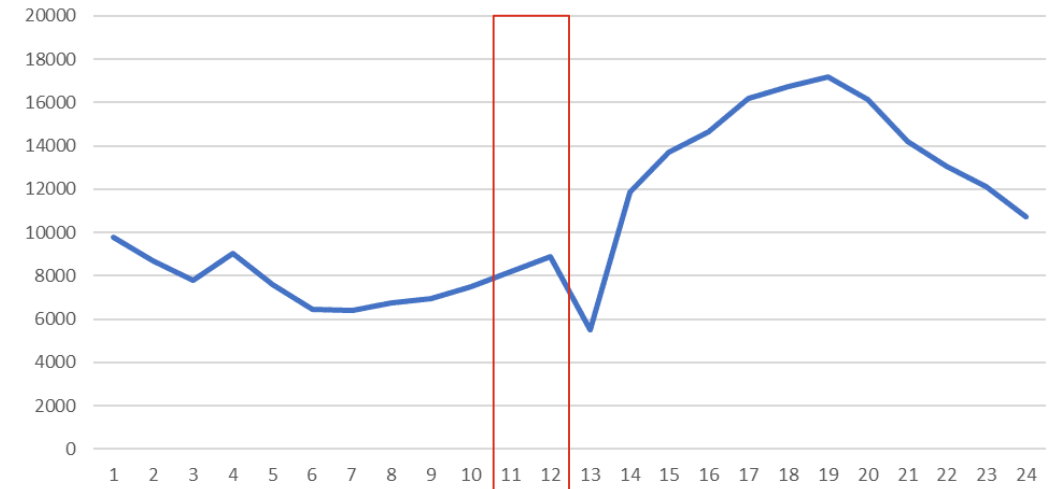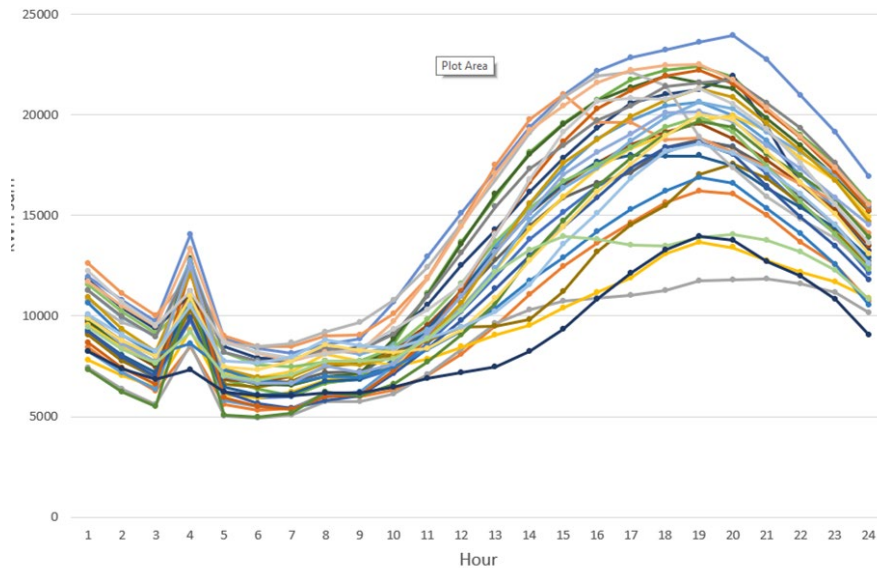
Consumption "spikes" at 4am

Clayton isn't alone!

In other projects, we've identified:

- **Incorrect timestamps**
  - "UTC" that isn't UTC
  - Local time that is improperly adjusted
  - 15-minute intervals rolled-up from 0:45 to 0:45 instead of 0:00 to 0:00
  - Daylight Savings Time issues
- **Other data problems**
  - Incorrect GIS data and meter-to-transformer mapping
  - Duplicate readings
  - Incorrect meter multipliers
  - Misqueried data
  - human and automated errors!

How do we move forward?

- **Distrust and verify**
  - Never take data at face value, and find some Known Knowns to verify results
- **Include the experts**
  - Someone at your organization, or at one of your vendors, should know what every data field means and how to interpret it
- **Ask for help**
  - Rarely are issues unique - find out who else has dealt with this