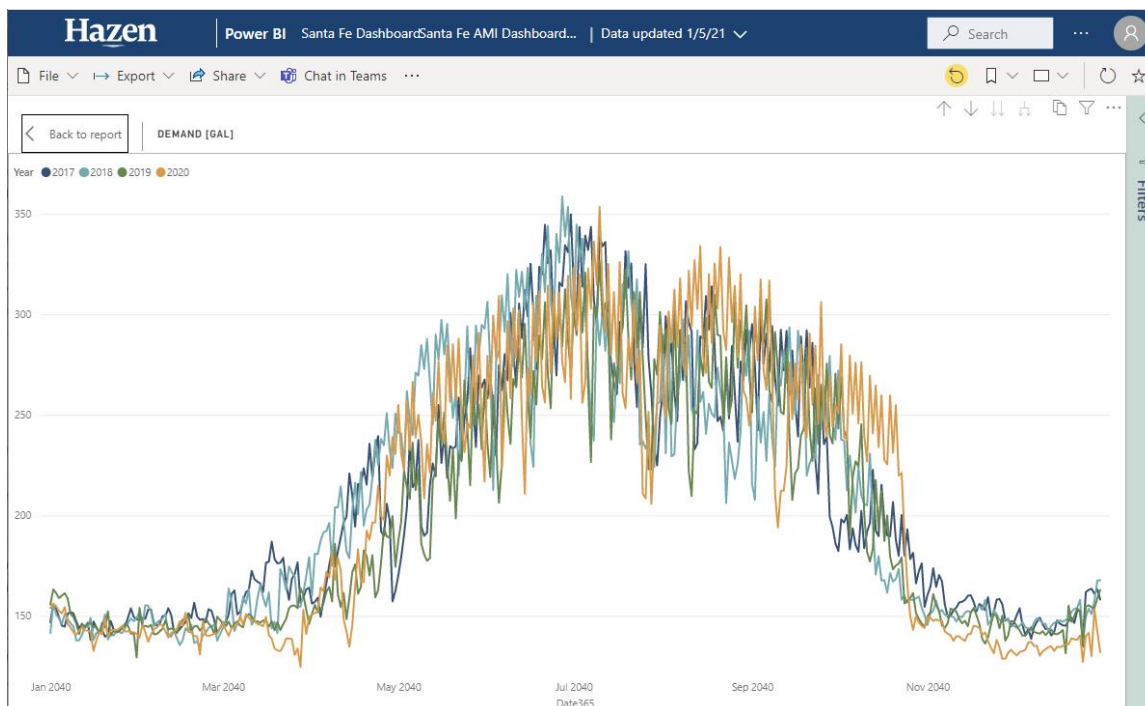


# City of Santa Fe Water, Badger Meter and Meter Reading System

*Presented February 5, 2021 as Information to Administration and Governing Body*

- 36,204 meters
  - 36,032 Badger Meters with BEACON Advanced Metering Analytics (AMA)
  - 82 old meters not in BEACON
  - 40 fire service meters not in BEACON
  - 50 Badger Meters without BEACON AMA (manual read) due to opt out
- 2015 exchanged meter inventory and installed Badger Meters with BEACON AMA System
  - Installation was mostly performed by a third party installer (PMI was firm)
- 2016 completed retro-fits for large meters (retro-fits mostly preformed in house)
- Since installation, average 99.5% read success
- Majority of meters are Badger M25 and Endpoints are Orion CDMA (3G)
  - We also have Orion LTE and Orion LTE-M Endpoints (4G) on approximately 1,500 high freeze risk meters and 869 that have been replaced by Badger over the last three years.
- Meter with end point costs about \$200 for 5/8" meter (majority of meters are 5/8")
- Meter with end point costs about \$300 for 1" meter (second most common meter)
- End Point only cost about \$100 each
- Service cost for automated reads is \$0.73 per endpoint per meter plus tax (about \$28,522 per month)
- BEACON AMA functionality added:
  - Meter reads sent electronically several times per day
  - Leak detection
    - Roughly 14,000 letter have been sent by Conservation Team over the last three years
  - Customer water use profile
  - Sub monthly use data (see figure below)



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- Eye on water (customer access to nearly real time meter data)
    - Currently 5,500 subscribers (over 15%)
  - Real time access to all meter data via a web based interface.
  - Temperature reading (on new models)
  - Backflow Detection
- System installation and meter exchange cost \$8.3 Million
  - Included a ten year warranty on endpoints (expected life cycle of battery)
  - Included additional 36,000 endpoints for replacement before end of ten year warranty (included another ten year warranty). Intent was to cover a twenty year time span for automated meter reading and allowing for technology upgrades as they become available.
- Meters have been in the system for over 6 years. The intent was to begin endpoint change out around year 7 and allow 3-4 years to complete and begin staggering installation dates for easier asset management and life cycle replacement scheduling.
- Have been notified that cell service providers are moving forward with replacing 3G network for 5G system and equipment. As the City's endpoint are mostly 3G, we have been encouraged by service provider to move ahead with a more aggressive replacement schedule to get endpoints upgraded to 4G(LTE) or 5G.
- New endpoints will have a fourteen year full replacement warranty (so that we still get 20 years of full warranty paid for) and then a six year prorated replacement warranty.
- The Water Division is beginning replacement in house and is optimistic the change out can be managed, but is exploring contractor options for some of the replacements should that become necessary.