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IRA A. FULTON COLLEGE

CAPSTONE

CEEn-2018CPST-014

Santaquin City Irrigation-Water Conservation Study

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OUR OBJECTIVE

Reduce Santaquin City peak water demand due to growth rate of over 5% without modifying the waterlines already in place.

TACTICS

Implementation of Smart Meters

- Use Spanish Fork smart meter data due to similar demographics and climate to estimate benefits for Santaquin City

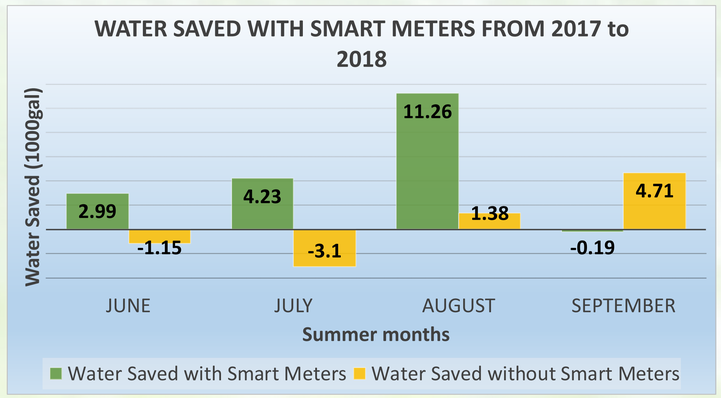
Smart Meter: A wirelessly controlled device installed on a sprinkler system that connects to the internet. It is intended to:

- Track the weather and determine watering needs based on precipitation
- Reduce water usage while maintaining a green lawn
- Be controlled from a smart phone or tablet

RESIDENTAL BENEFITS

Cost savings

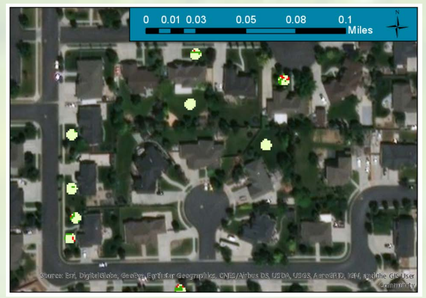
- On average, households in Spanish Fork saved 18,300 gallons of water per year
- With government grants, smart meters will have little to no cost for residents



Green Savings

Residents will not agree to smart meters unless they have a guarantee their lawns will stay green. Our team created a GIS project to compare levels of green in lawns before and after smart meters. This delivers quantifiable results as seen below.

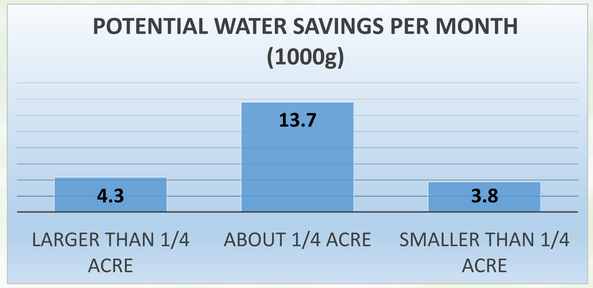
*As of now the imagery taken after the meters were installed has not been published.



IMPLEMENTATION

Recommendations for Santaquin City include:

- Delay city-wide roll out for another year to double available Spanish Fork Data
- Focus initial installation in new developments
- Add smart meters as state grants allow
- Target ¼-acre lots



Water Savings

- Potential to save 4 million gallons of water in the first year

Peak Demand Decrease

Smart meters led to a peak demand decrease of 4%. This allows for:

- Smaller pipes in new developments
- Extended life of current pipe system
- Increased availability of water budget funds