

Water Wise Gilbert Contribution to the Reduction of Commercial Water Consumption



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Introduction



Water conservation is a significant strategy in Gilbert's water resources

portfolio. While Gilbert has sufficient water to meet current demand, water conservation is viewed as one cost-effective way to ensure adequate water supplies now and into the future. In response, Gilbert Water Conservation developed a program aimed at auditing commercial businesses to provide feedback on how to become more water efficient. If businesses implement the recommended water saving practices, they will be labeled Water Wise Gilbert in recognition of their efforts to reduce water consumption. The goal of this analysis is to provide the Town of Gilbert with feedback to assist in their program development to ensure their allotment of time and resources effectively to maximize water conservation.

Research Question

How has the Water Wise Gilbert program contributed to the reduction of commercial water demand?

Methods

- Collected monthly water consumption for each active participant (n=30) from domestic and landscape meters prior to Gilbert's intervention and post intervention using Eden, a software provided by the Town of Gilbert.



- Ideally, there would be a year of water consumption prior and a year of water consumption post.

- If a business had less than a year of post-intervention water consumption, then the number of months (and specifically which months) that passed since the intervention were used as the baseline time frame for the comparison of pre-intervention consumption data.

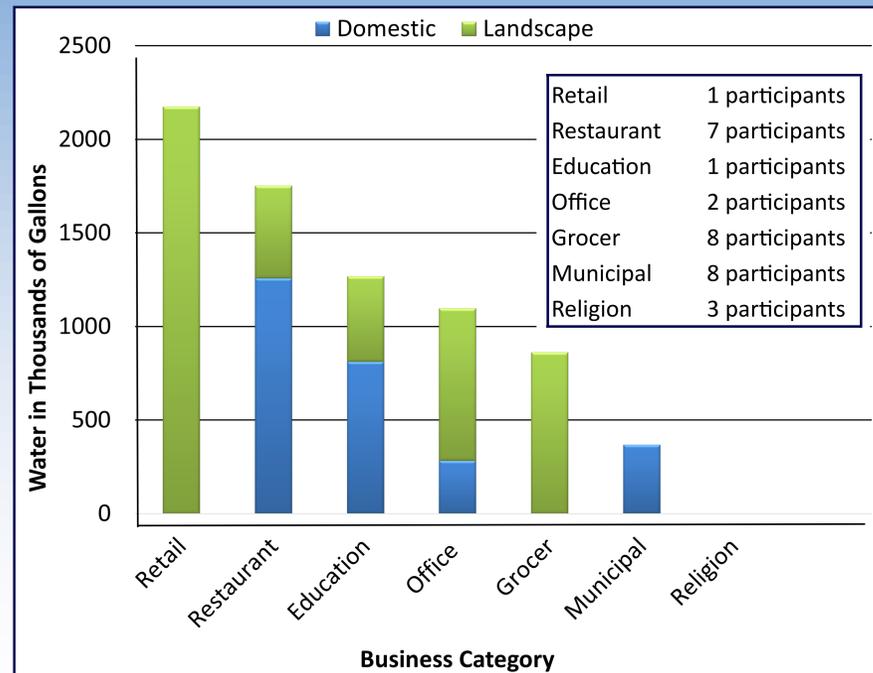
- **Example:** if an intervention was in July 2016, then



the months available for pre and post comparison are August, September, October, November, December, January, February, March, and April.

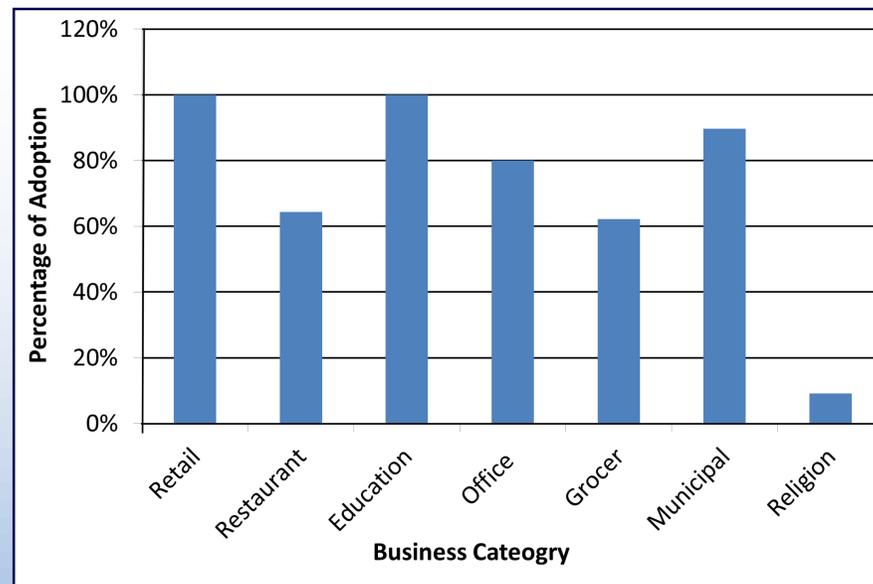
- The amount of water saved was calculated by subtracting the pre consumption by the post consumption.
- Interviewed the water conservationists to determine which businesses implemented what recommendations.

Water Saved by Water Wise Gilbert



Retail	1 participants
Restaurant	7 participants
Education	1 participants
Office	2 participants
Grocer	8 participants
Municipal	8 participants
Religion	3 participants

Adoption of Water Saving Recommendations



Types of Recommendations:

- Landscape Watering
- Efficient Plumbing Install
- Serve Water Upon Request
- Toilet Plumbing
- Cooling Tower Monitor and Maintenance

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Results

- Since its start in 2000, the Water Wise Gilbert program has saved a total of **7,525,000 gallons** of water from the commercial sector across 30 participants which equates to a savings of:

$$2,725,000 \text{ gallons of domestic} + 4,800,000 \text{ gallons of landscape} = 7,525,000 \text{ gallons} = 150 \text{ Water Tanks}$$



- Those who implemented all or most of the recommendations had the most savings as in the retail, education, and municipal sectors.
- Those who implemented few or none saved the least amount of water, specifically religion.
- Affecting landscape water consumption appears easier to impact than domestic water consumption.



Conclusion

It is important to understand why there weren't any savings for certain commercial sectors and low savings for others. Understanding these underlying issues allows Gilbert Water Conservation the opportunity to target these points of intervention to achieve a higher savings of water.

- Grocer:** Although this category has a high adoption rate, their cooling systems are so water intensive that the low-impact implementations aren't enough to have a cumulative water savings.
- Municipal:** Cooling systems in few municipal facilities account for the high adoption rate but low savings. There was not any impact on landscape consumption due to the use of dual meters for Gilbert municipal buildings.
- Religion:** There was low stakeholder engagement for this sector which prompted no motivation to implement recommendations.
- Retail:** Unable to intervene on domestic consumption due to the large capacity of the facility.

Areas the Water Conversation team should target to maximize conservation efforts are:

- Research cooling systems to determine best practices for efficiency
- Encourage stakeholder involvement from levels of management:
 - Owner/Board representation
 - Property Management Company
 - Landscape Contractor for site
- Develop strategies to better target domestic water consumption.