

# Compare to Conserve: Residential Smart-Metering

Jon Brandau. Goodyear mentors: Sandra Rode w/ Mark Holmes. ASU Faculty advisor: Dr. Dave White  
 Decision Center for a Desert City  
 Arizona State University

For residential outdoor water consumption, what benefits occur when comparing conservation management approaches?

Outdoor residential water use is the **prime intervention point** for Goodyear, AZ.  
**Why?**

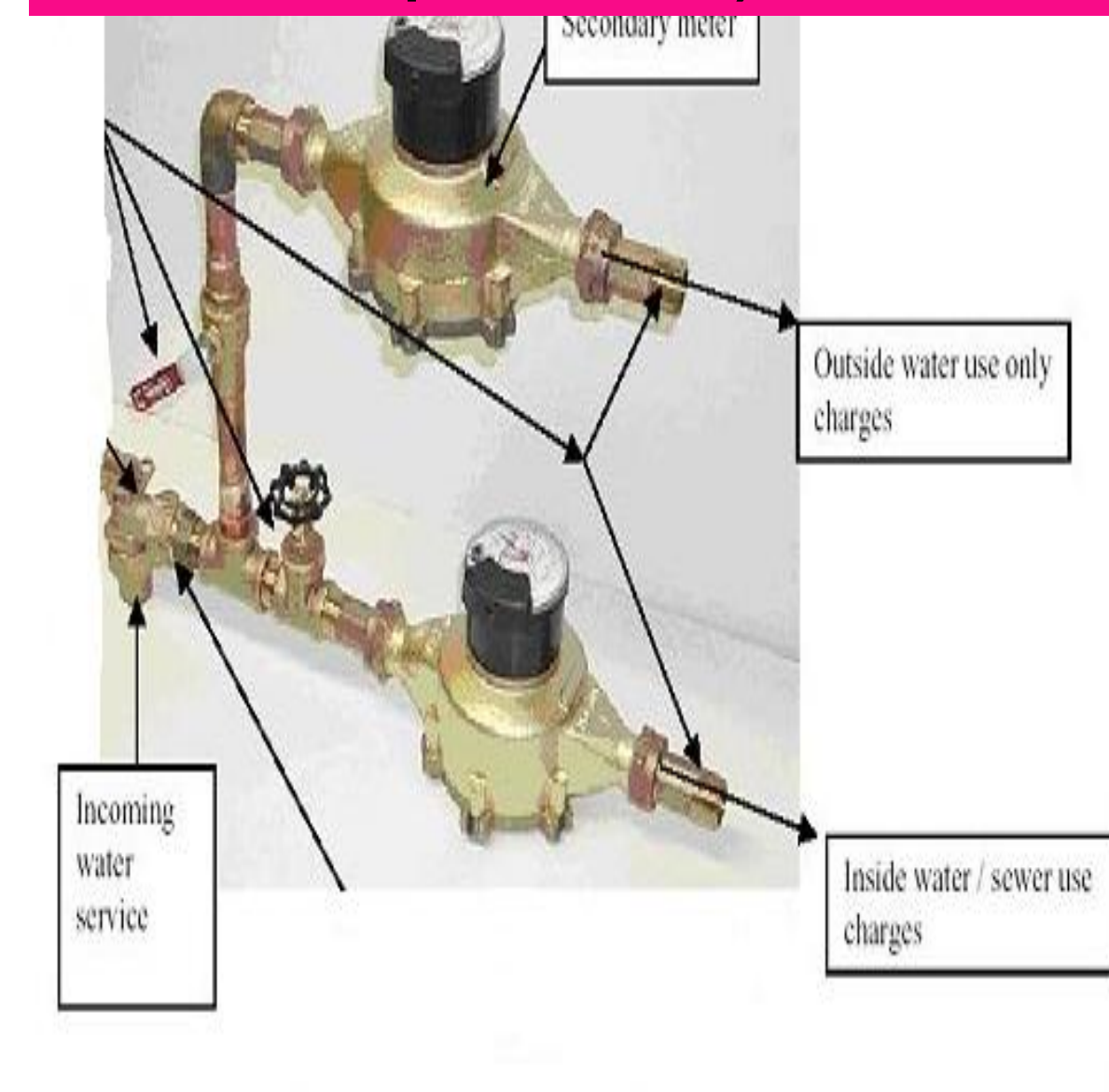
- 50% of managed water delivered to residences\*
- 50-70% of this delivery is destined for outdoor use\*
- This water cannot be reclaimed/reused due to evaporation & transpiration
- This intervention point represents low-hanging fruit in combination with a 'low regret' option

## Conservation Comparisons

With a qualitative method of comparison, criteria would be tailored to individual municipal needs.



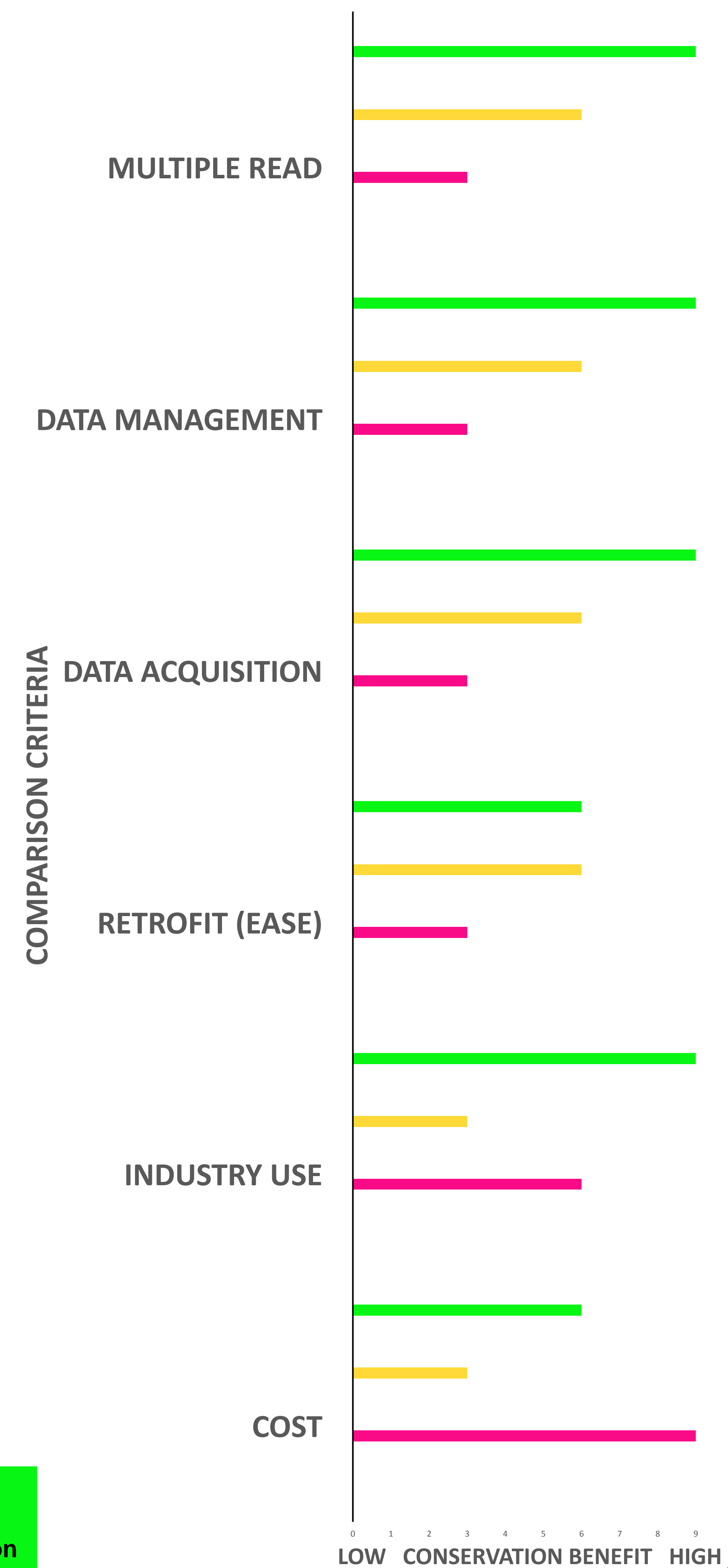
**Purple Pipe**  
 (Secondary plumbing to deliver a separate water supply for non-potable use)



**Sub-Metering**  
 (A division of indoor/outdoor consumption. Singular plumbing, but two meters).



**Smart-Metering**  
 (Fixed location digital water consumption data collection)



**If You Cannot Measure It, You Cannot Manage It.**

Recommendations for Goodyear:  
 Utilize Smart-metering on single-family residences

So indoor/outdoor water usage information is separated

So price differential can be applied to bolster residential conservation

This comparative analysis is **useful** not merely for the water conservation team in Goodyear. This information is **an explanatory aid** for:

- ✓ Conservation Minded People
- ✓ Public Consumers
- ✓ Infrastructure Planning
- ✓ Water Executives
- ✓ City Councils
- ✓ Other Arid Urban Centers

### Acknowledgment

This material is based upon work supported by the National Science Foundation under Grant No. SES-0951366 Decision Center for a Desert City II: Urban Climate Adaptation (DCDC). Any opinions, findings and conclusions or recommendation expressed in this material are those of the author(s) and do not necessarily reflect the views of the National Science Foundation (NSF).