

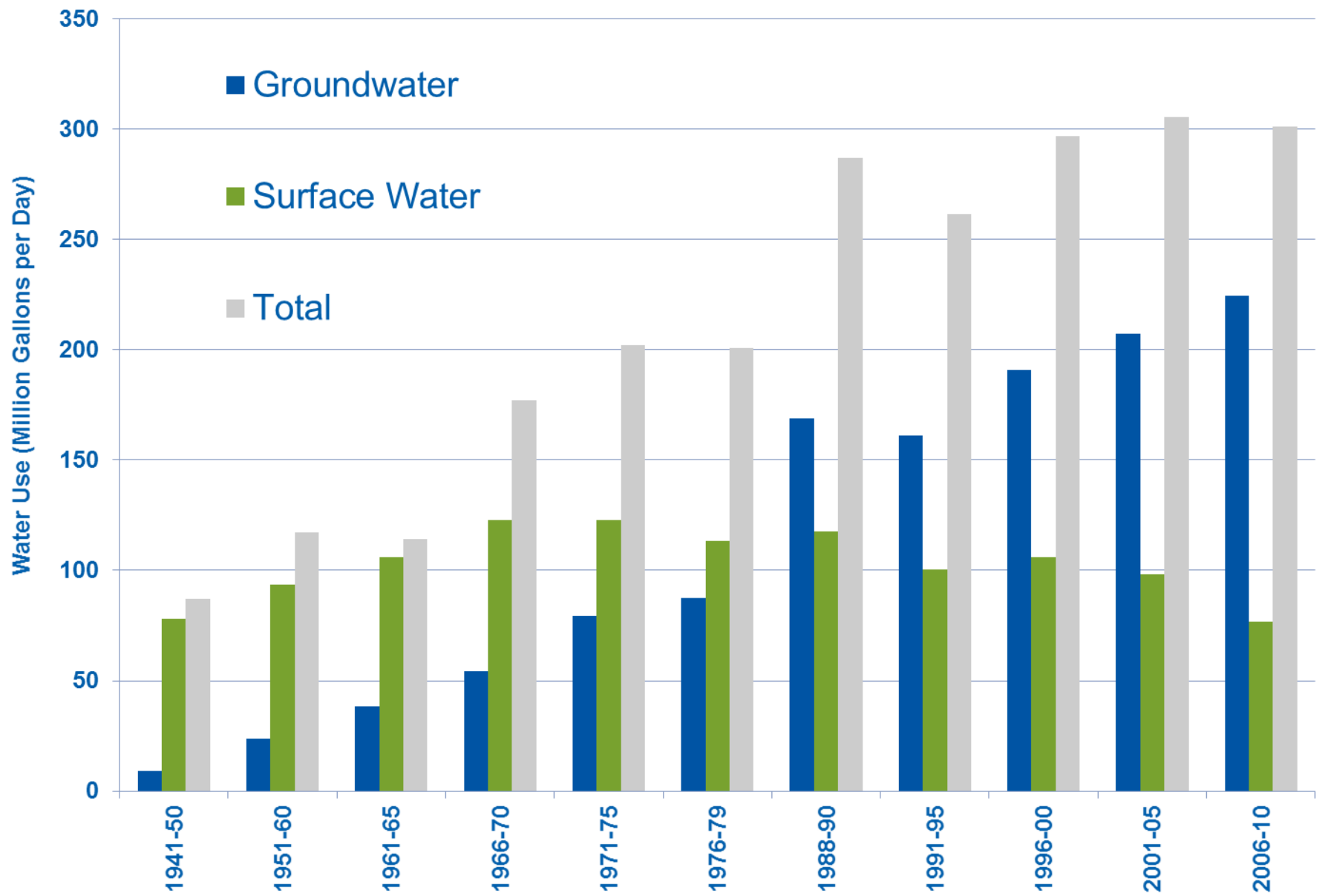
# Water Demand Trends and Irrigation

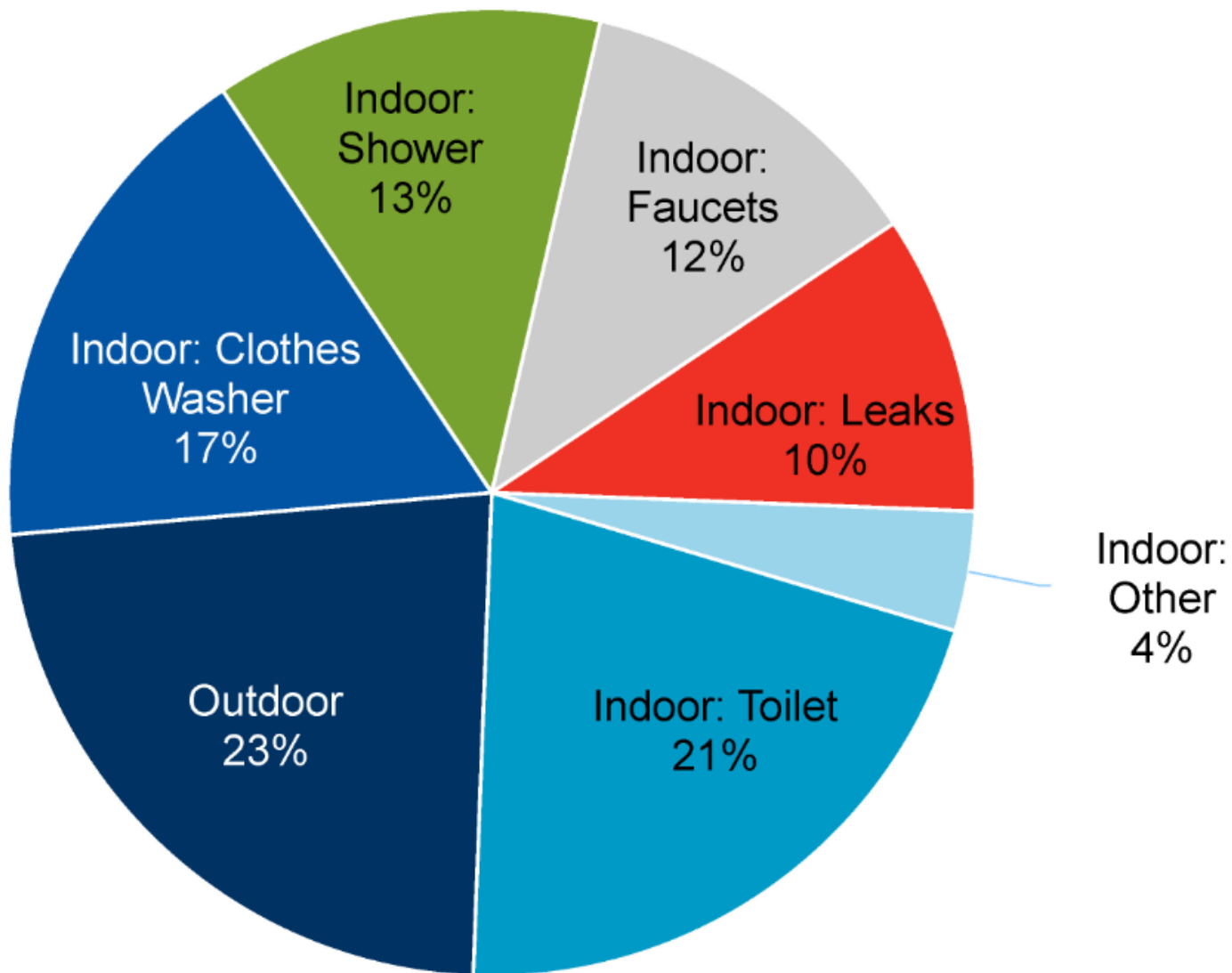
Brian M. Davis, Ph.D., P.G., P.E.  
Senior Engineer

March 1, 2017

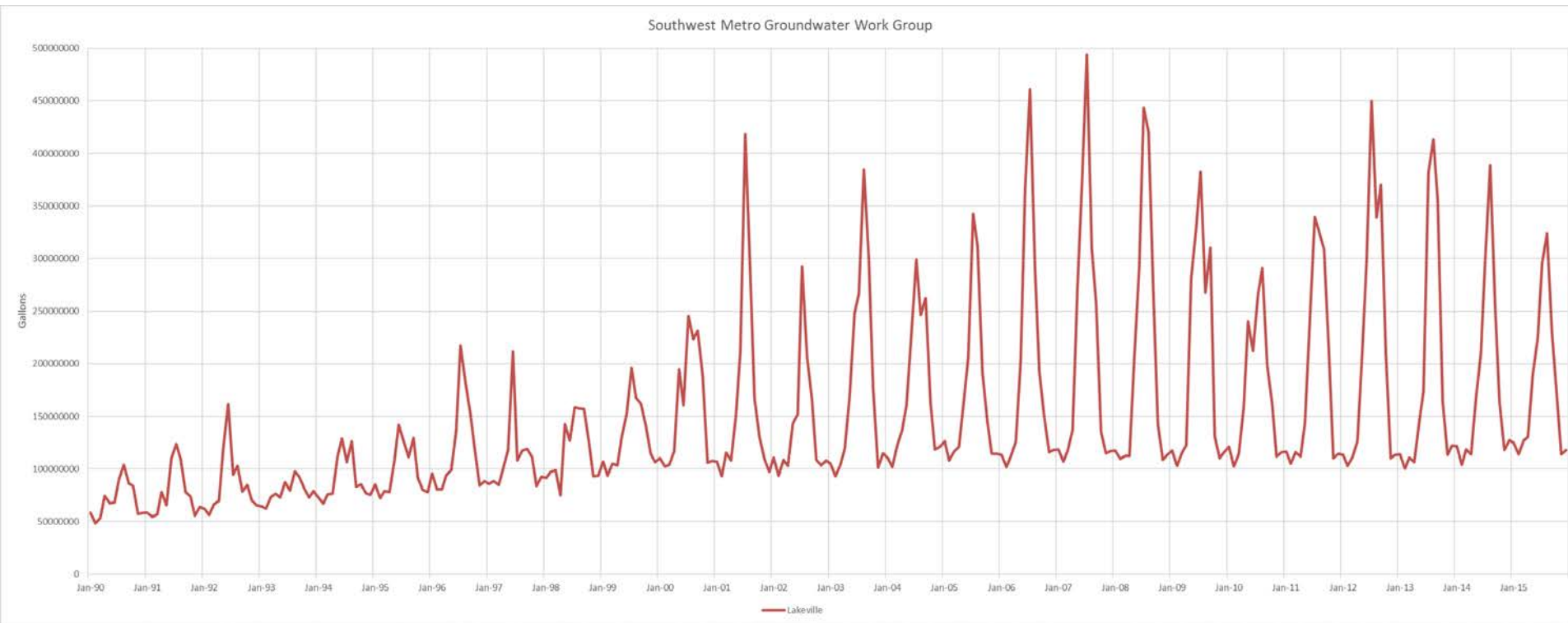
GreenStep Cities Workshop







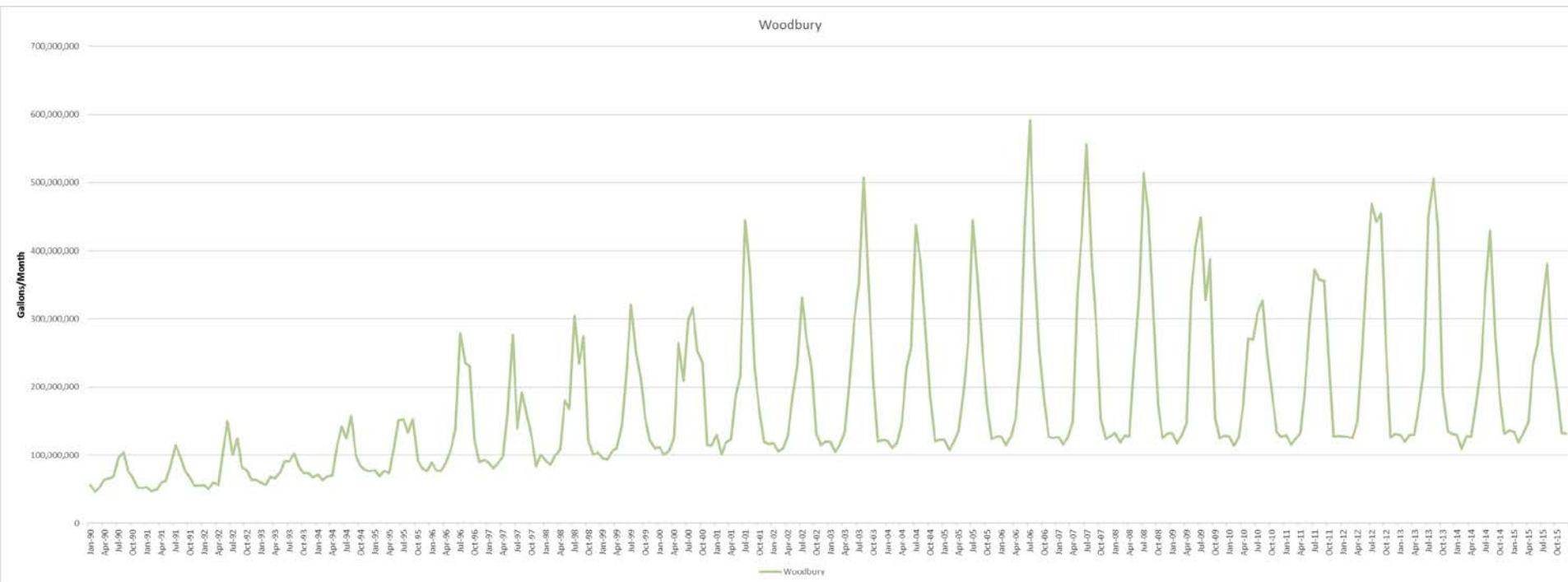
# Lakeville



1990: 24,854

2015: 59,991

# Woodbury



1990: 20,075

2015: 66,974

# Lawn Irrigation



Metropolitan Council



[sdinspect.com](http://sdinspect.com)

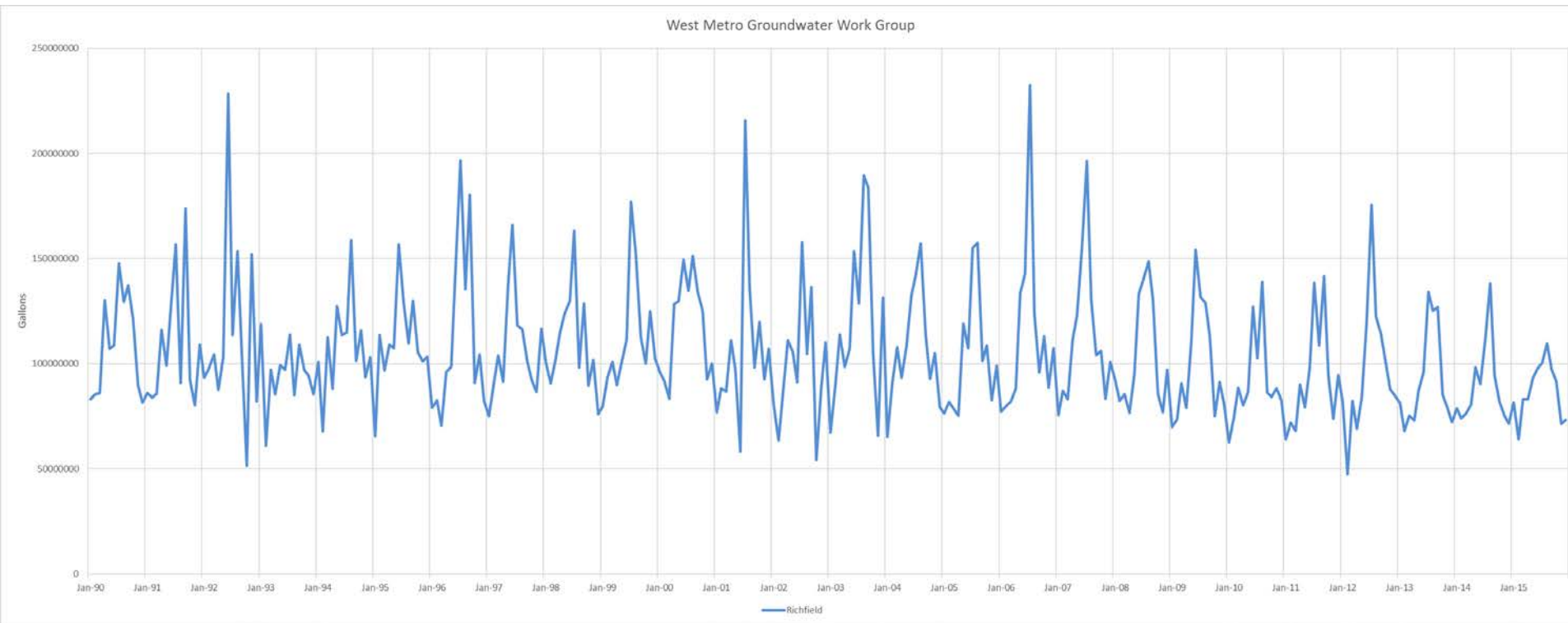


[smarteathsprinklers.com](http://smarteathsprinklers.com)



[http://blogs.ifas.ufl.edu/pinellasco/files/2015/07/rain\\_sprinkler-520x245.jpg](http://blogs.ifas.ufl.edu/pinellasco/files/2015/07/rain_sprinkler-520x245.jpg)

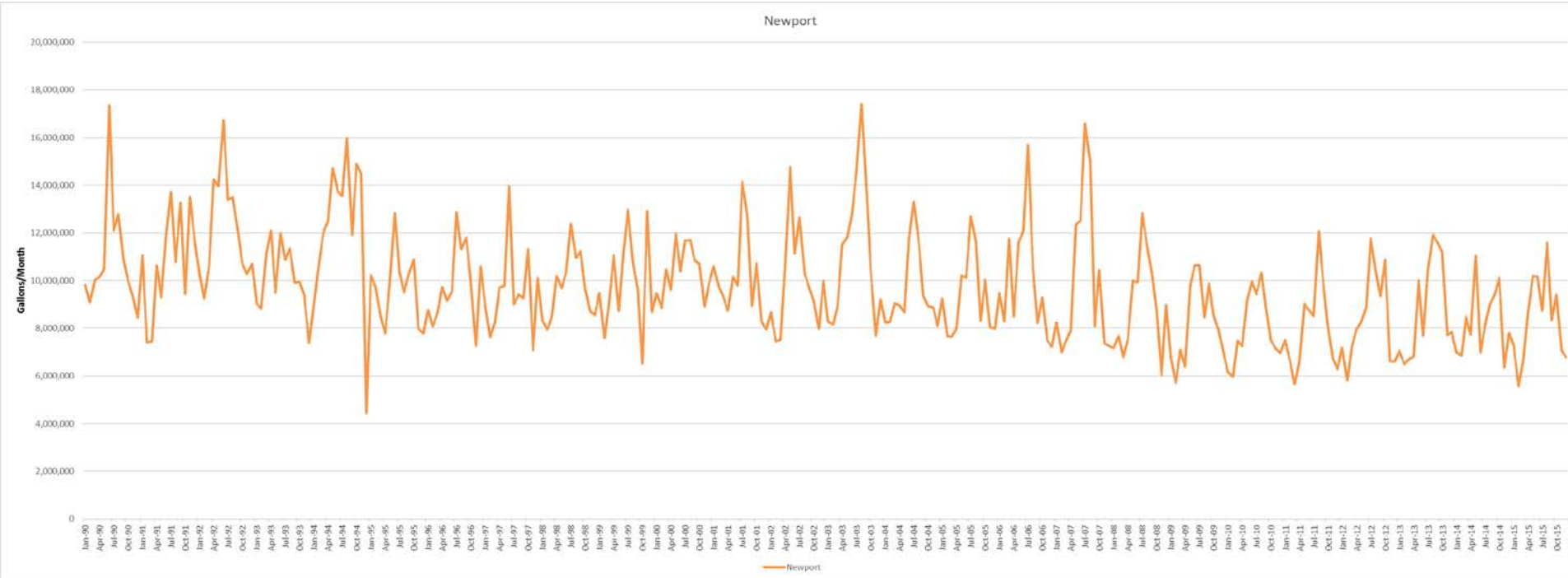
# Richfield



1990: 35,710

2015: 36,557

# Newport



1990: 3,720

2015: 3,582



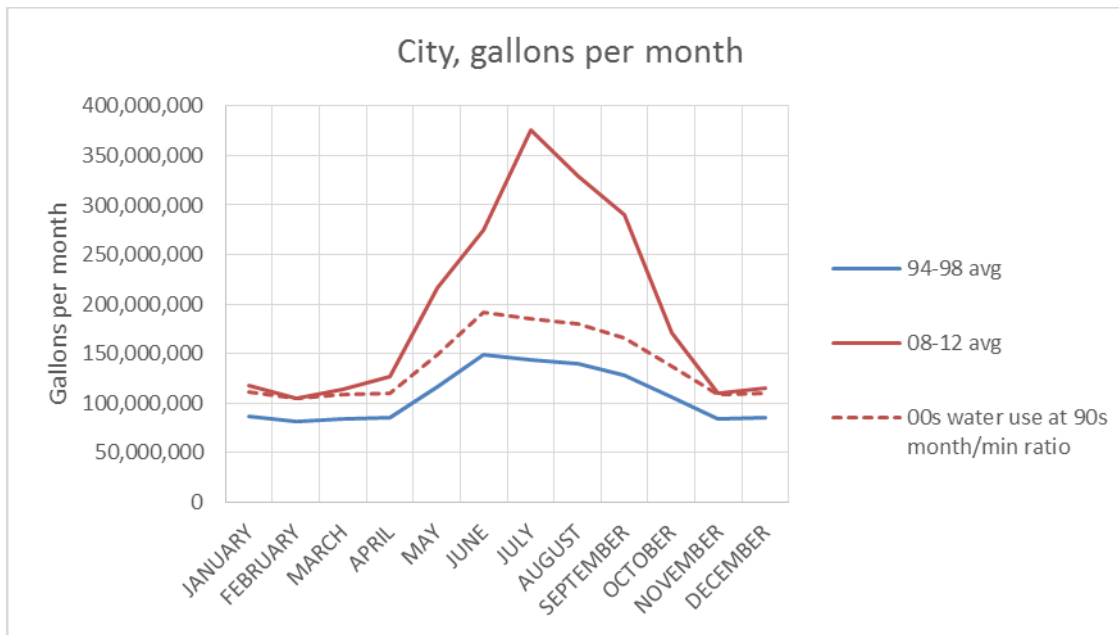
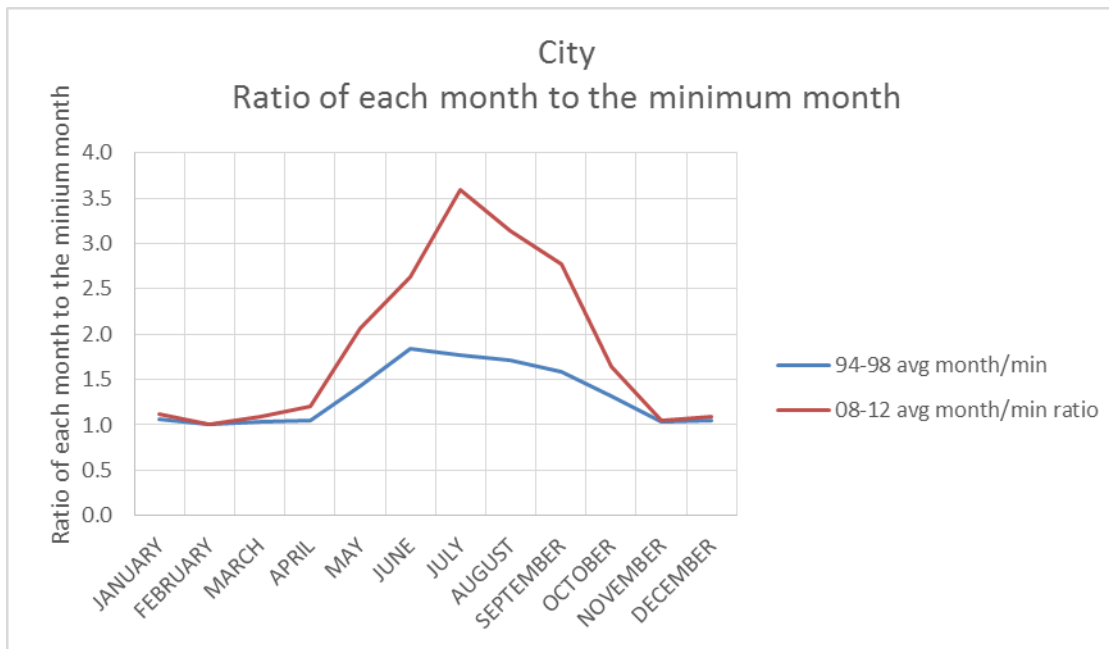
American Standard



Warners' Stellan



Chicago Tribune



# Efficiency and its importance

- 685,000,000 gal/year saved
- 29.2% of total
- Equivalent to 3 new wells
- 19,000 people
- 3 wells capital cost:
  - \$6,000,000
- Annual O&M cost
  - \$600,000/year



# How to focus efficiency efforts?

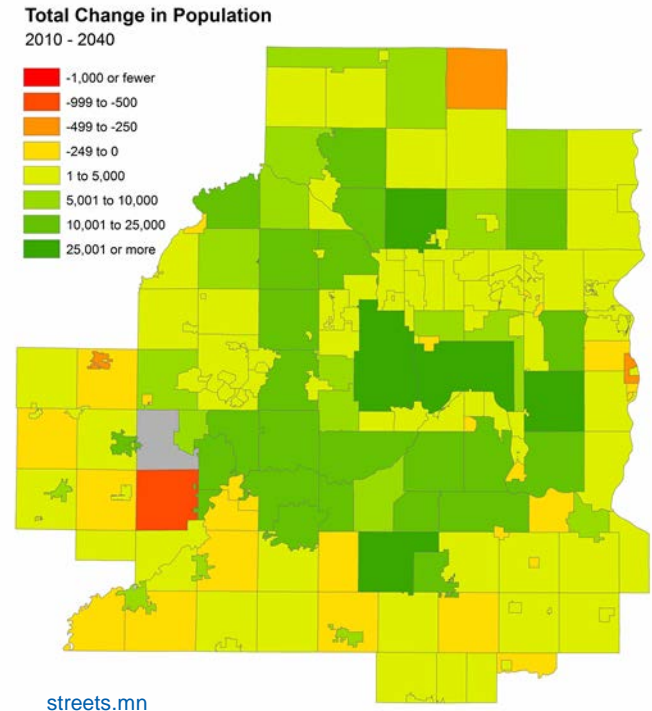
WEST METRO

## Twin Cities suburbs using less water – and paying more for it

Infrastructure upgrades have fueled higher bills.

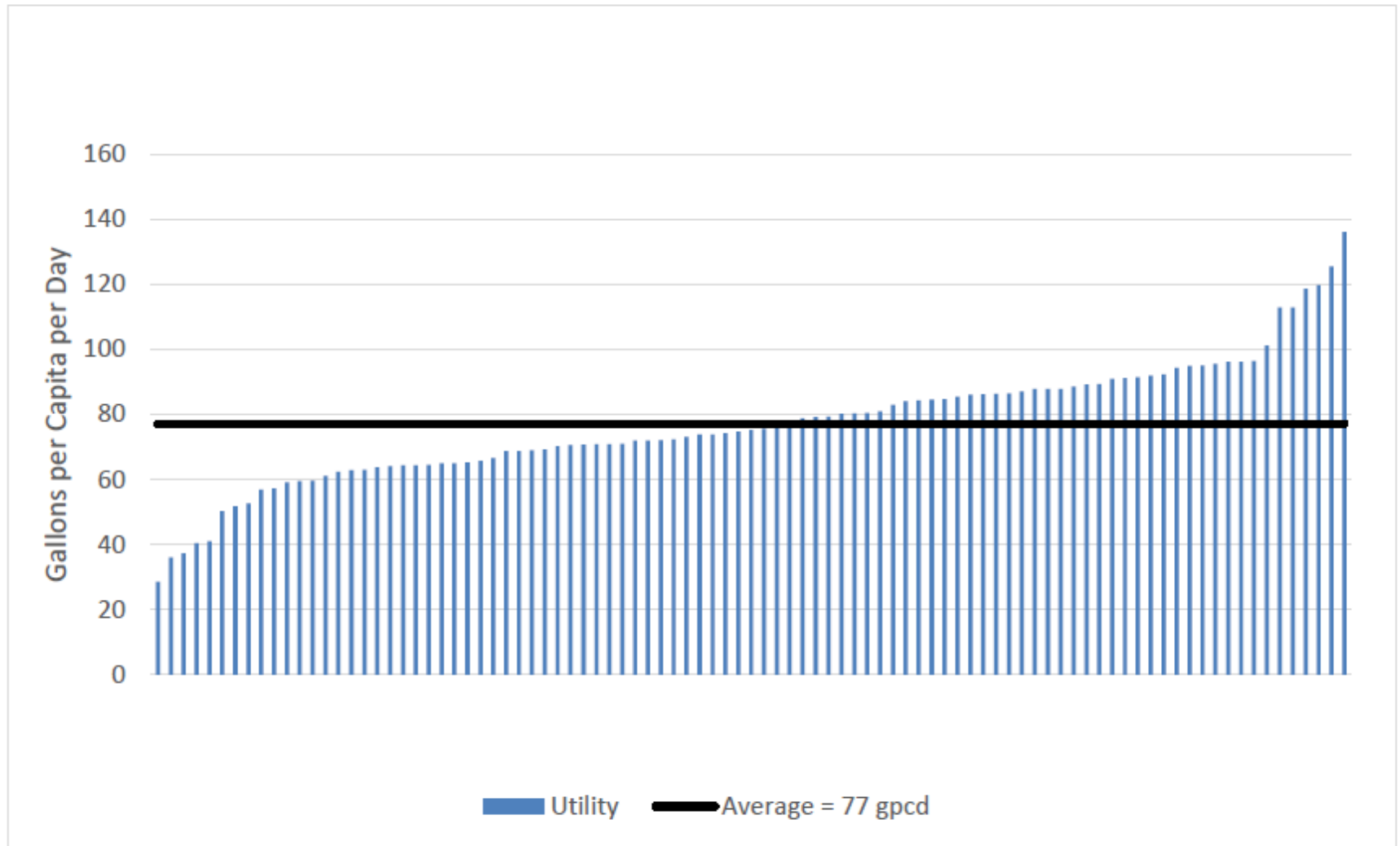
<http://www.startribune.com/water-usage-down-but-prices-go-up/375793591/>

- Focus on:
  - Growing communities
- Why?
  - Stabilize finances



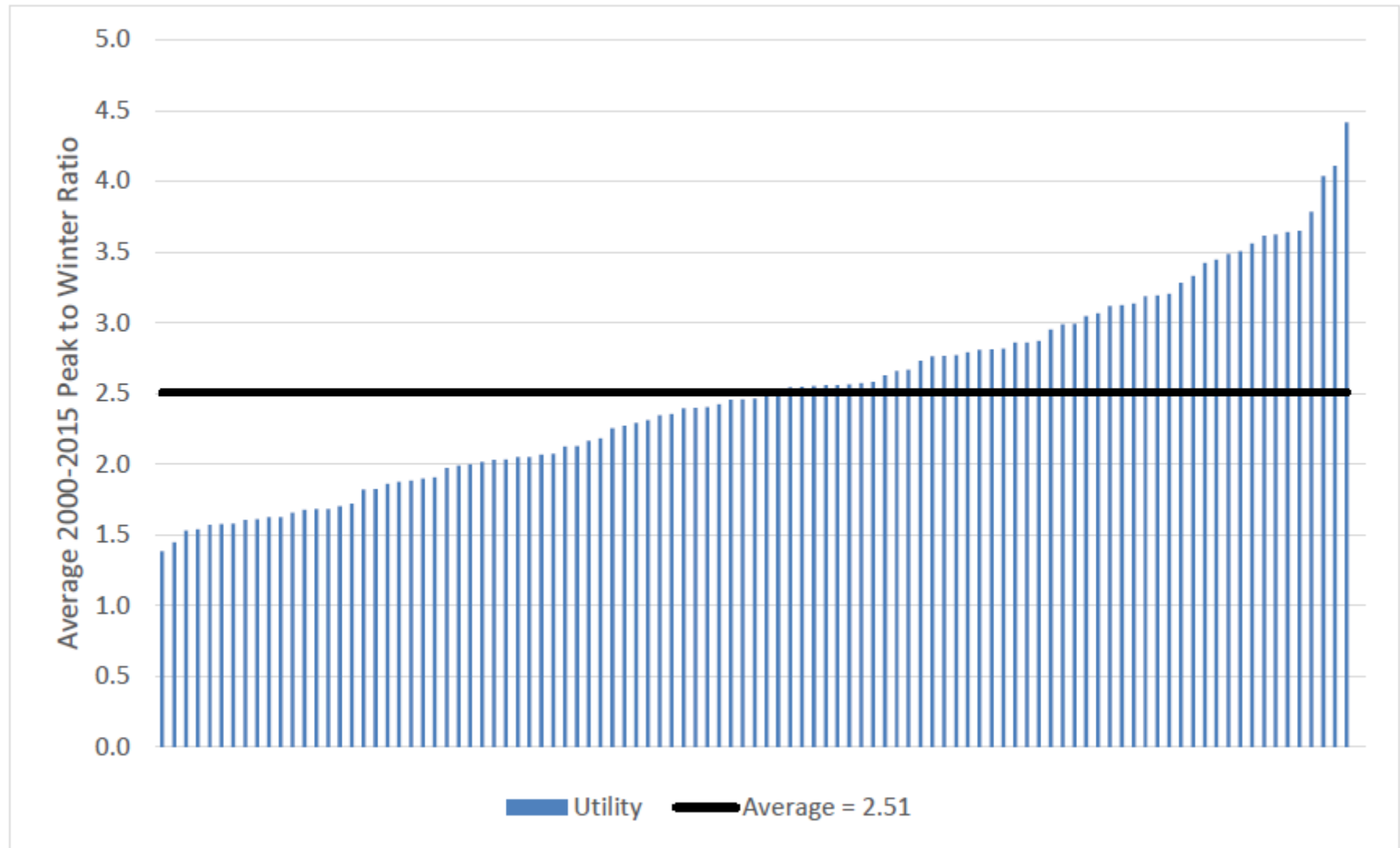
# How to focus efficiency efforts?

Figure 3 – Residential Gallons Per Capita Per Day (2003 through 2015)

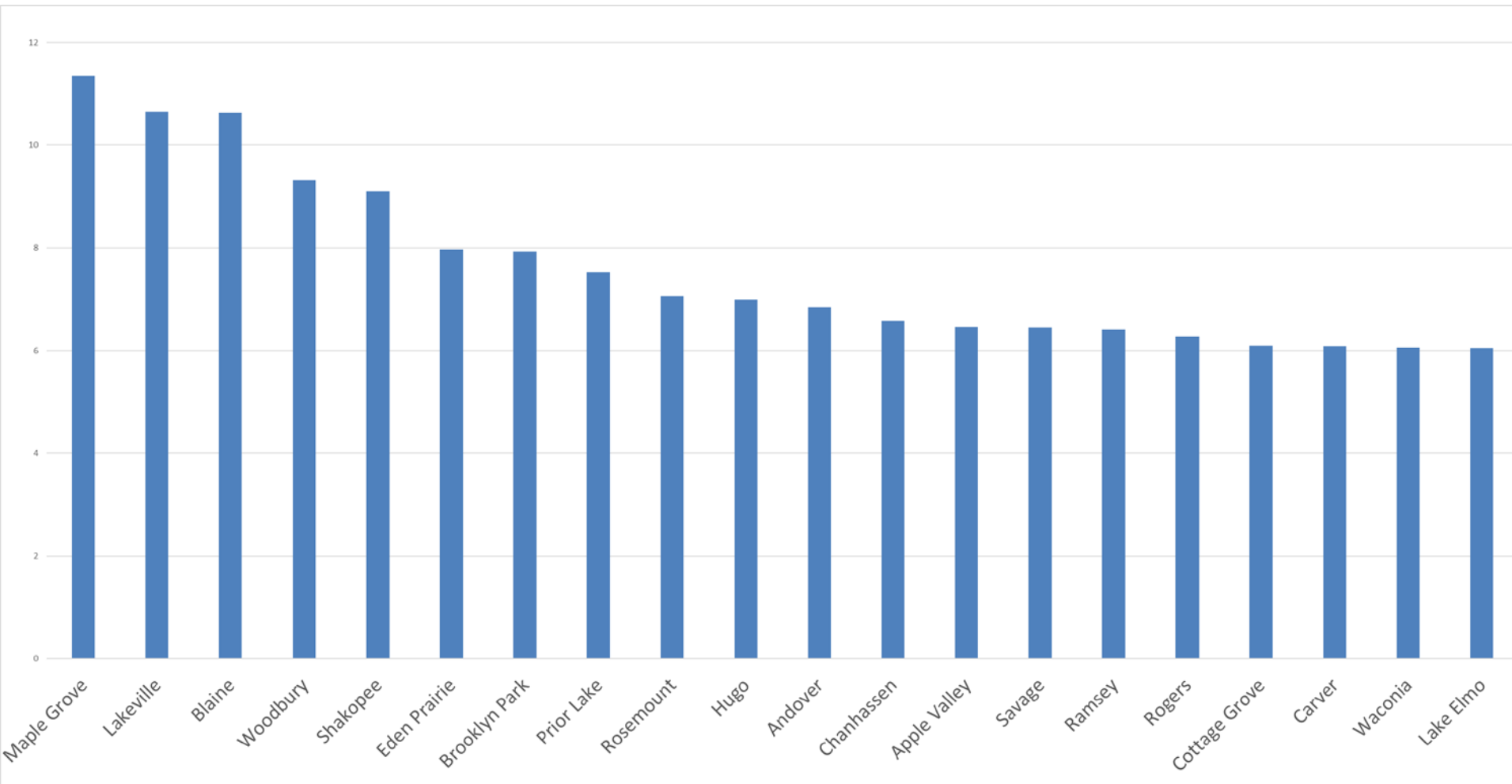


# How to focus efficiency efforts?

Figure 11 – Average 2000-2015 Peak to Winter Ratio by Municipal Utility



# Efficiency Potential Rating



# Thank you.

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Senior Engineer

March 1, 2017

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