

**Observed levels of demand reduction associated  
with water efficient landscape policies  
Single-family Sector**

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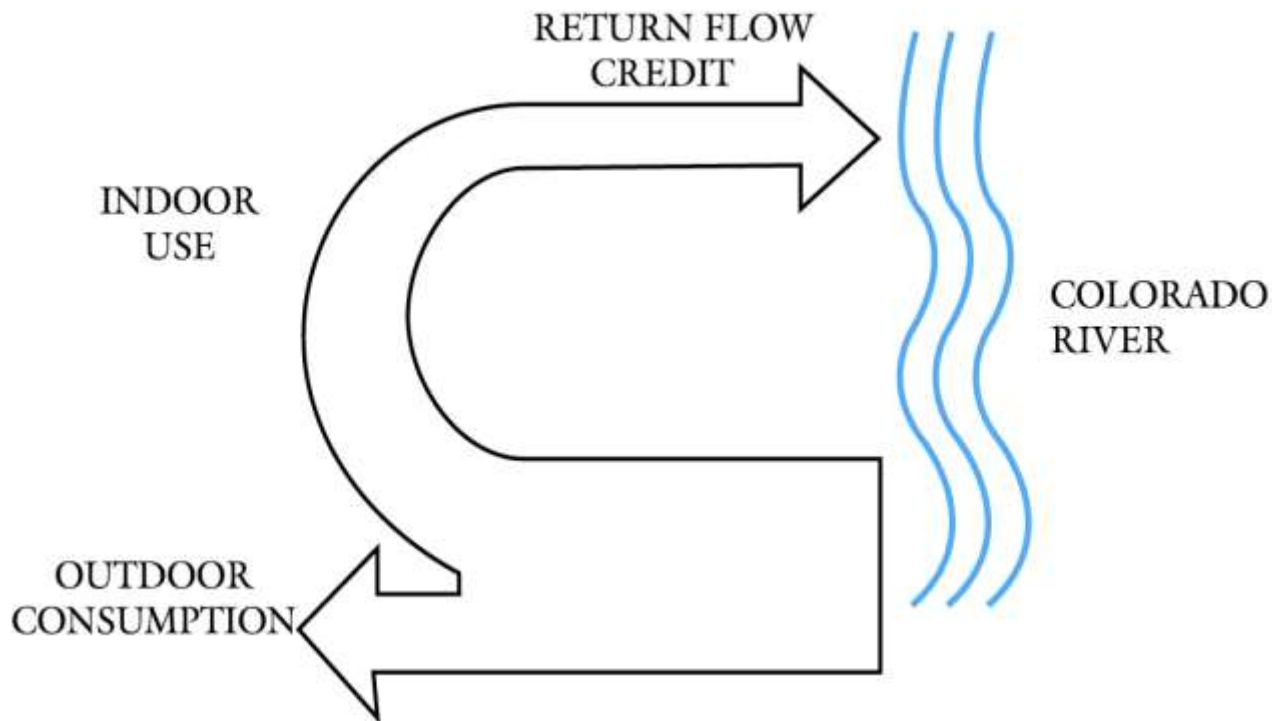
Southern Nevada Water Authority  
(SNWA)

# Southern Nevada Responds to Drought

- By 2002 it became clear that the Colorado River system had settled into a multi-year drought and the community needed to respond.
- In 2003 the various municipalities in the Las Vegas Valley passed drought mitigating ordinances, many centering on turf limitations for new construction.
- At homes, turf was prohibited in front-yards and is limited to a maximum of 50 percent the landscape area in backyards.
- These provisions were made permanent in 2009.
- This study was done to quantify the savings in water use from this landscape development policy in the single-family sector.

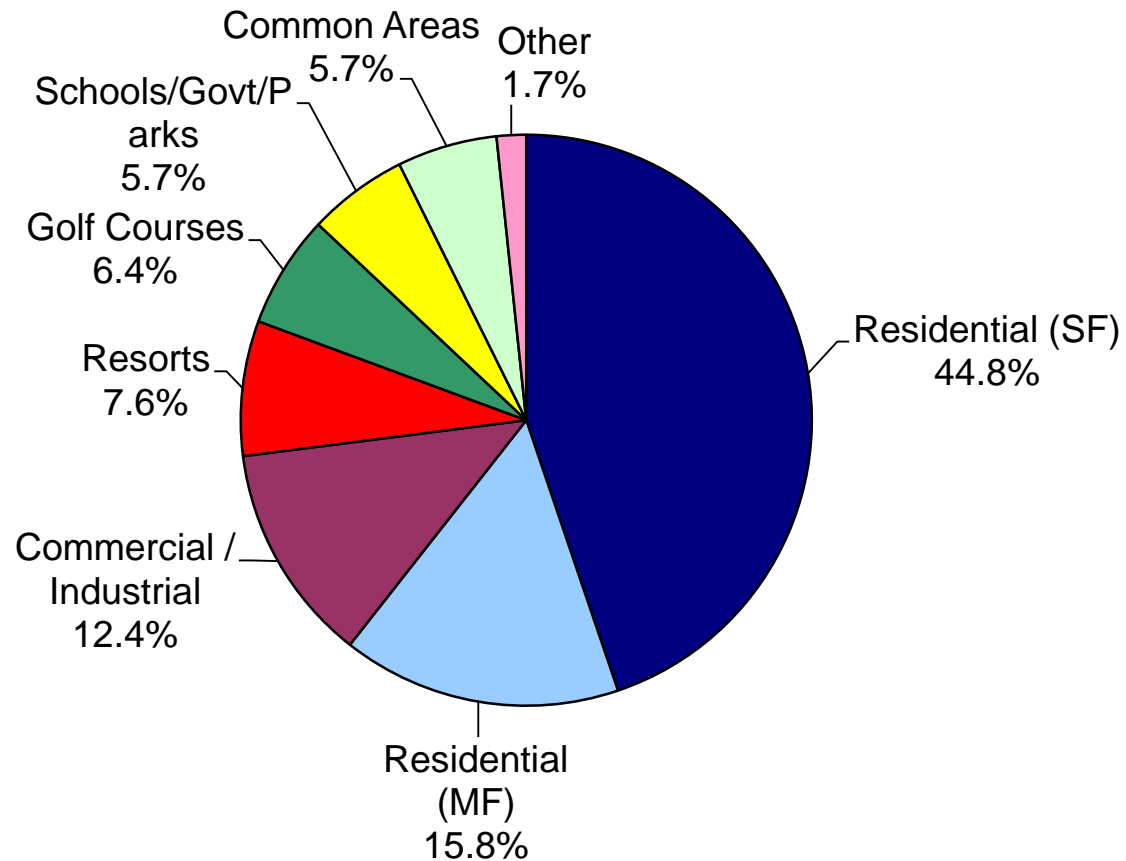
# Targeting Consumptive Use

- For SNWA consumptive use is outdoor use as we get return flow credits for all indoor use. Outdoor use reduction thus extends are supplies.



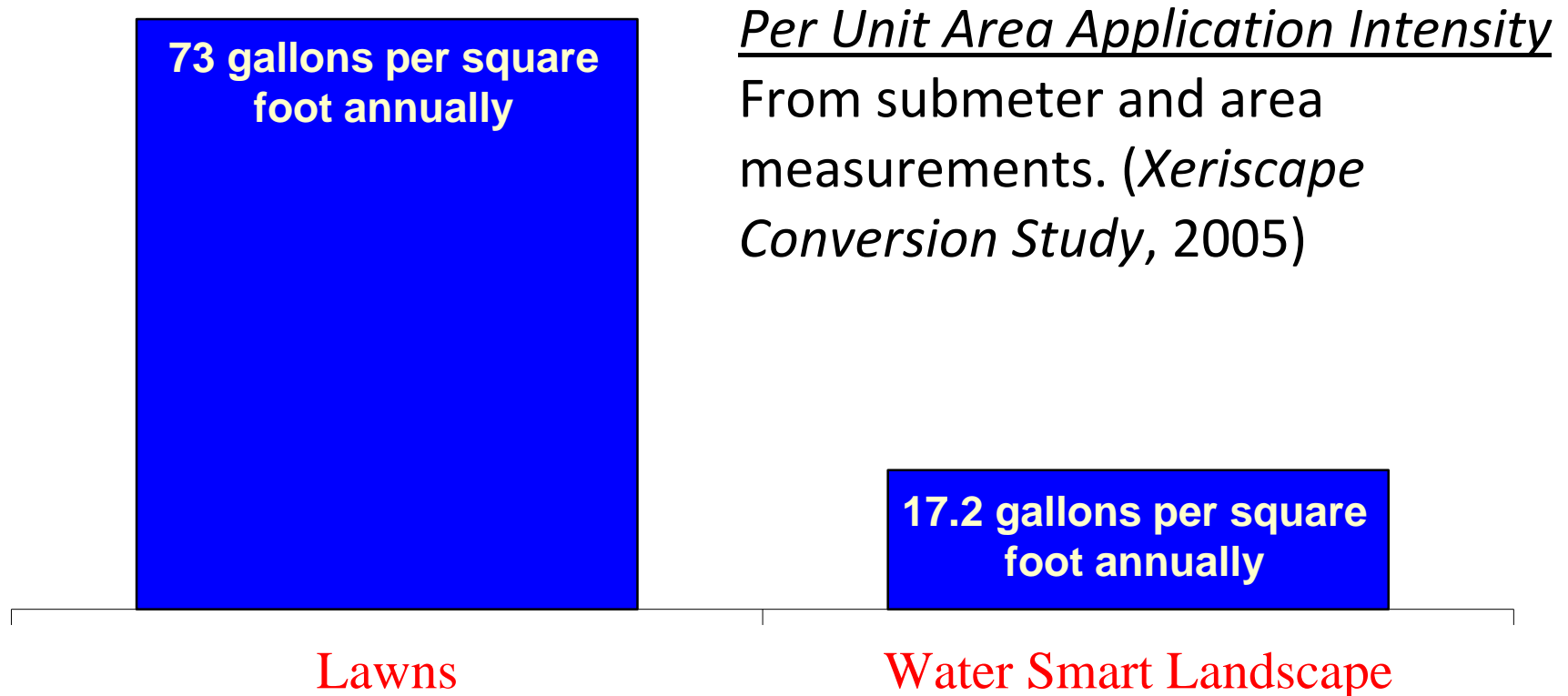
# Water Use By Sector

## 2013 Municipal Metered Water Consumption Use By Customer Type

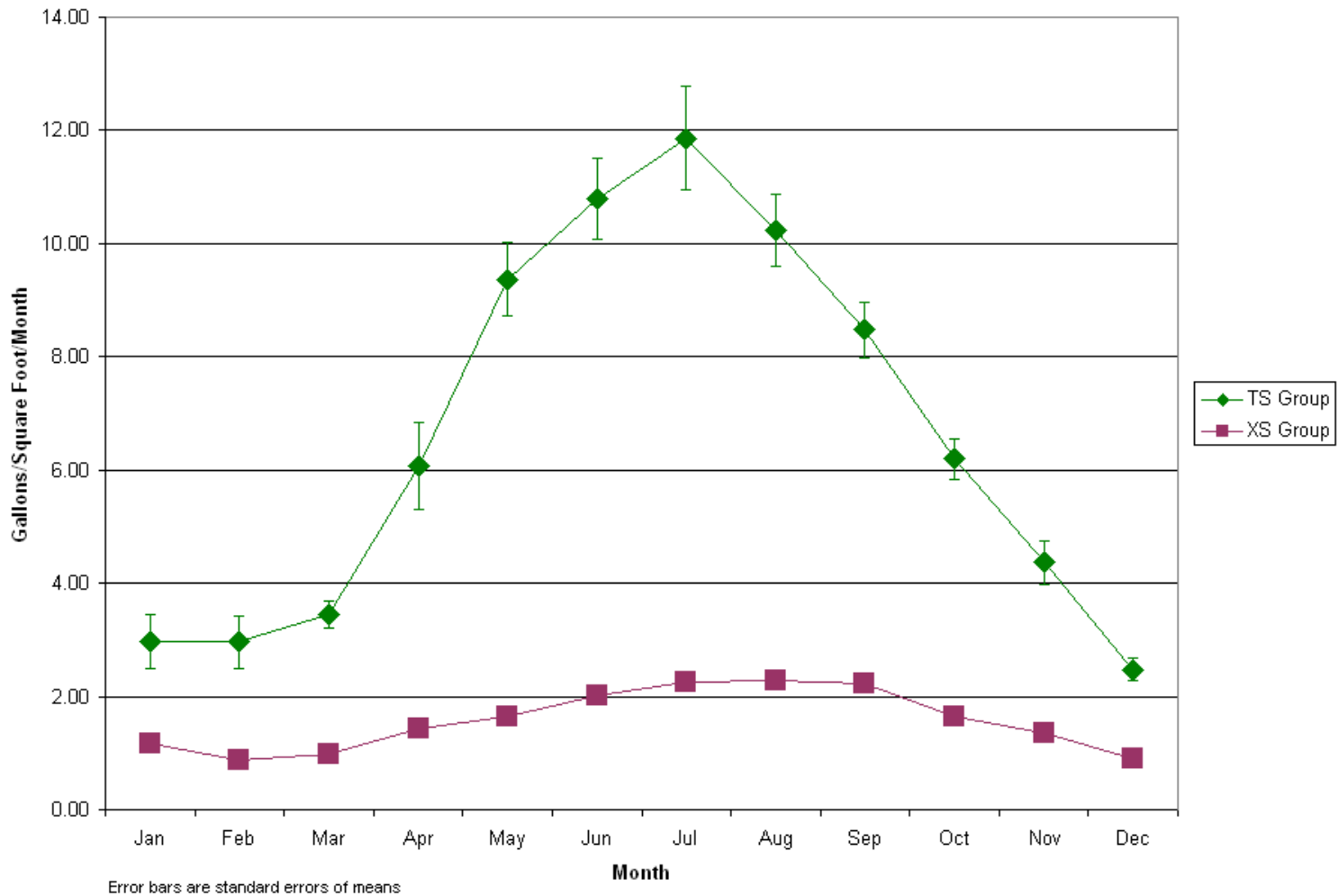


# Background Research

- We have known for some time that savings from conversions is real and substantial.



# Much less of a peak in application rates for xeric landscape areas

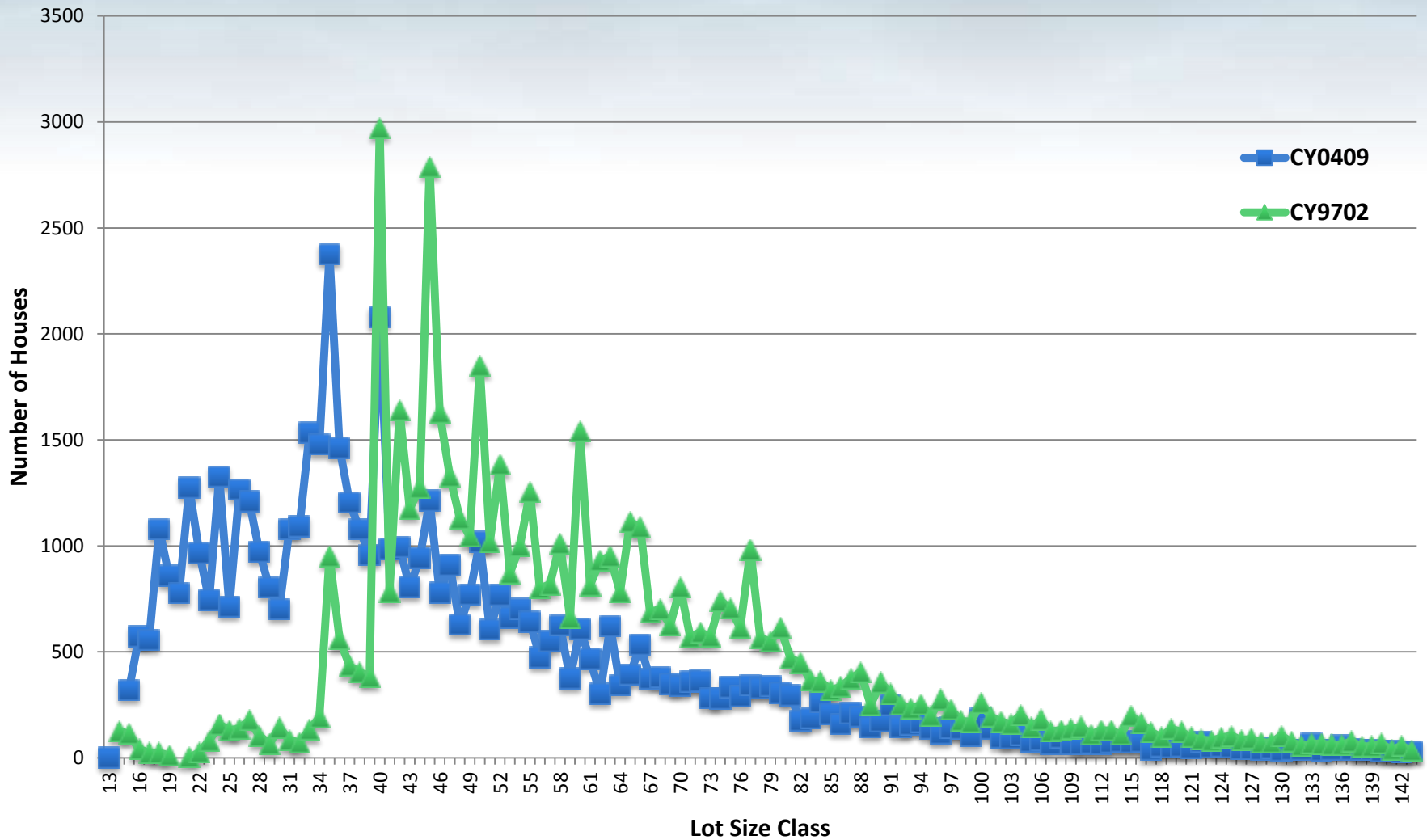


# Methods

## Selection Process

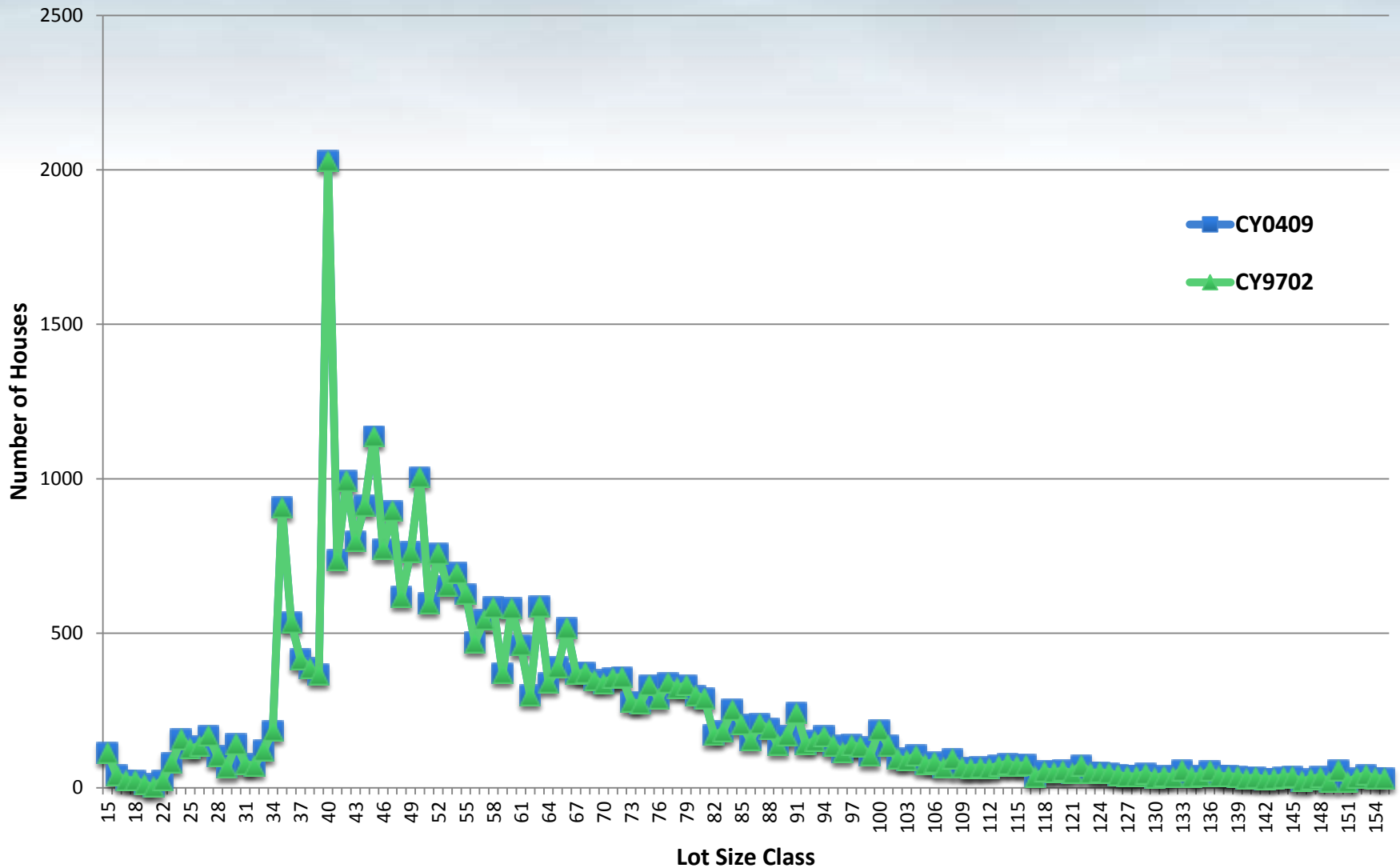
- Started from a pool of over 100,000 active single family residential (SFR) accounts that had use for every month in 2012.
  - This eliminates “Snow Bird” & “Fire Bat” seasonal residents.
- Divided into two groups: those constructed six years prior to 2003 and those built in the six years after (designated CY9702 & CY0409).
- Removed any that participated in our rebate programs.

# Lot Size Distributions

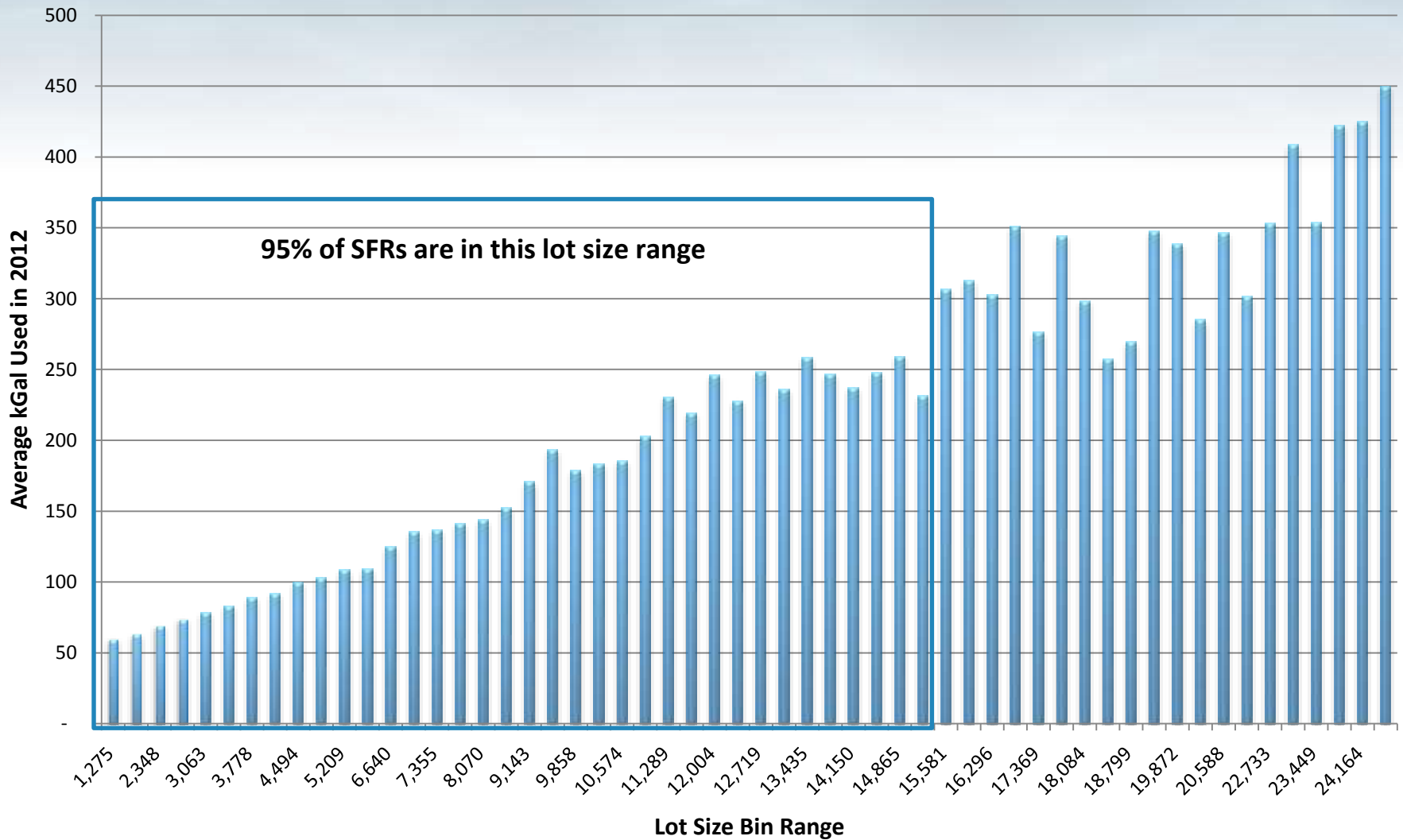




# Sample Lot Size Distribution

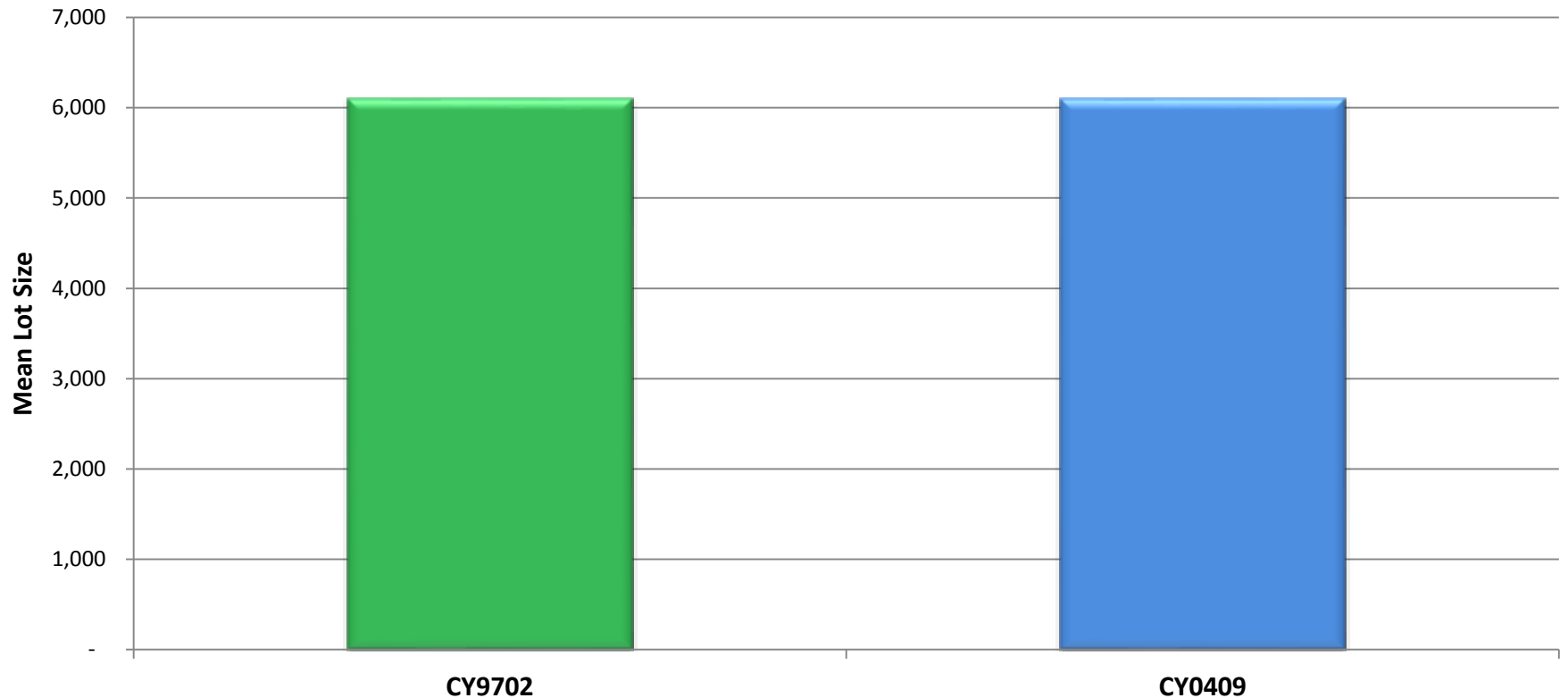


# Average of Total by Lot Size Range



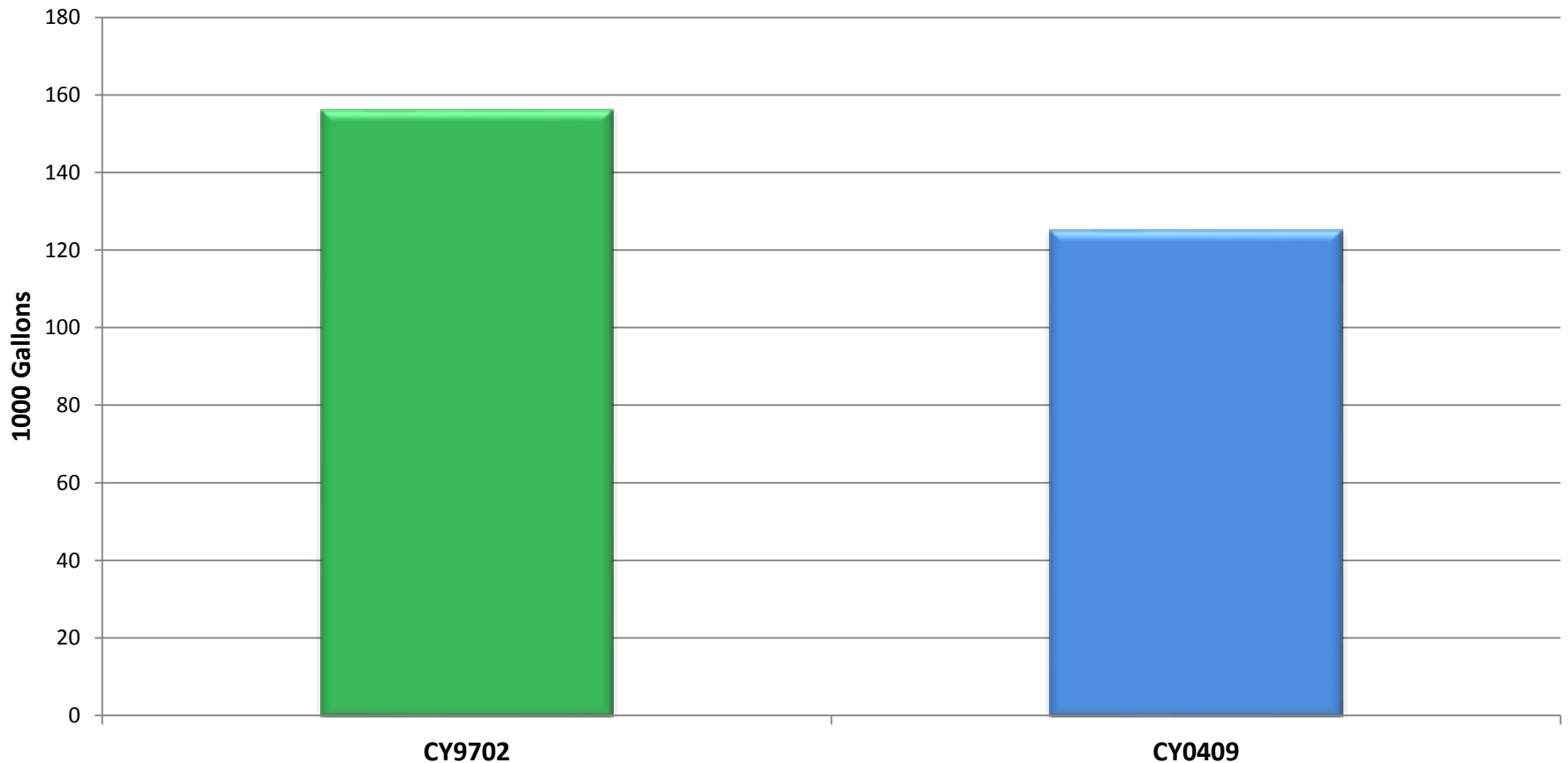
# Final Sample

- Just over 34,000 residences in each group



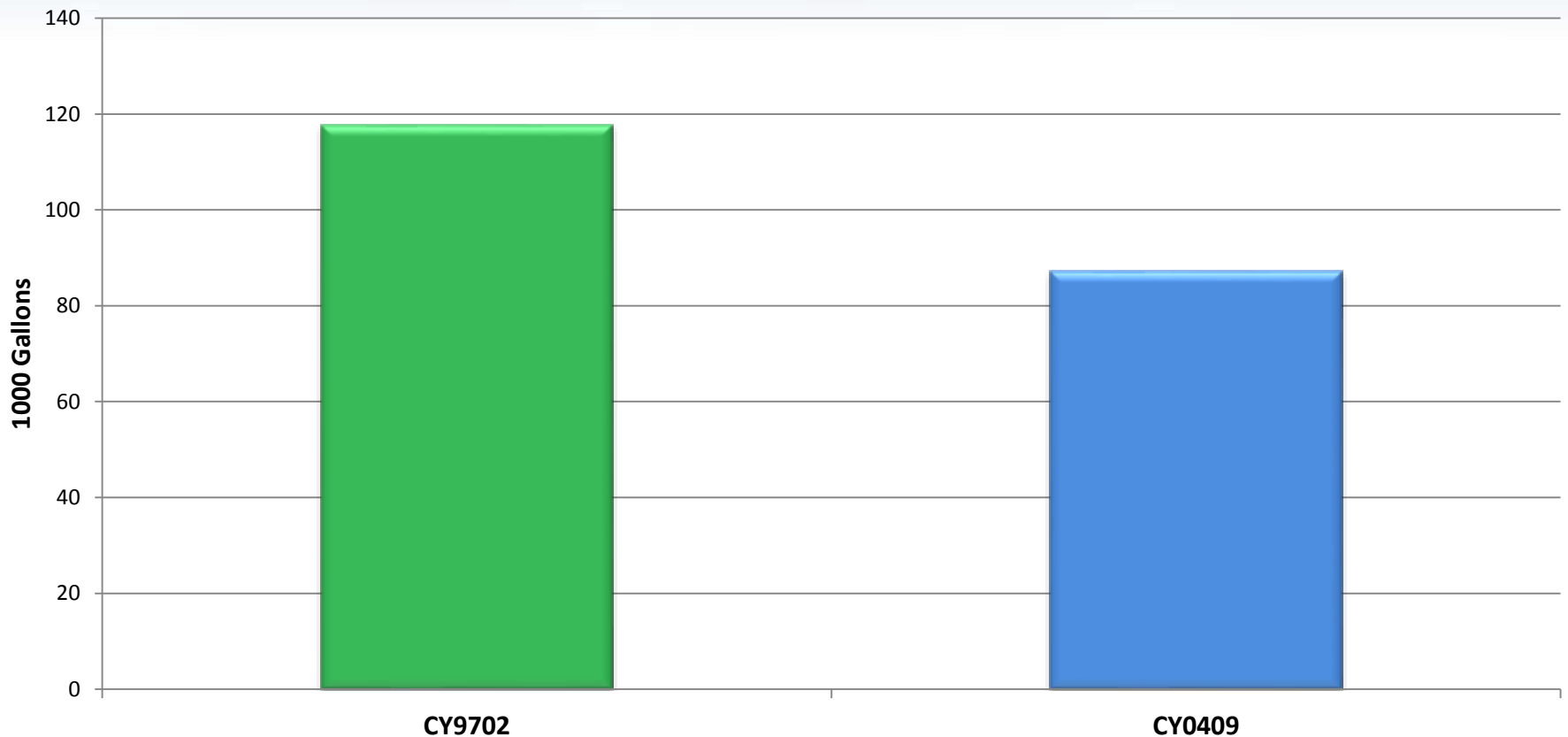
# Average Total 2012 Use

19.8% Reduction,  $p < 0.00$



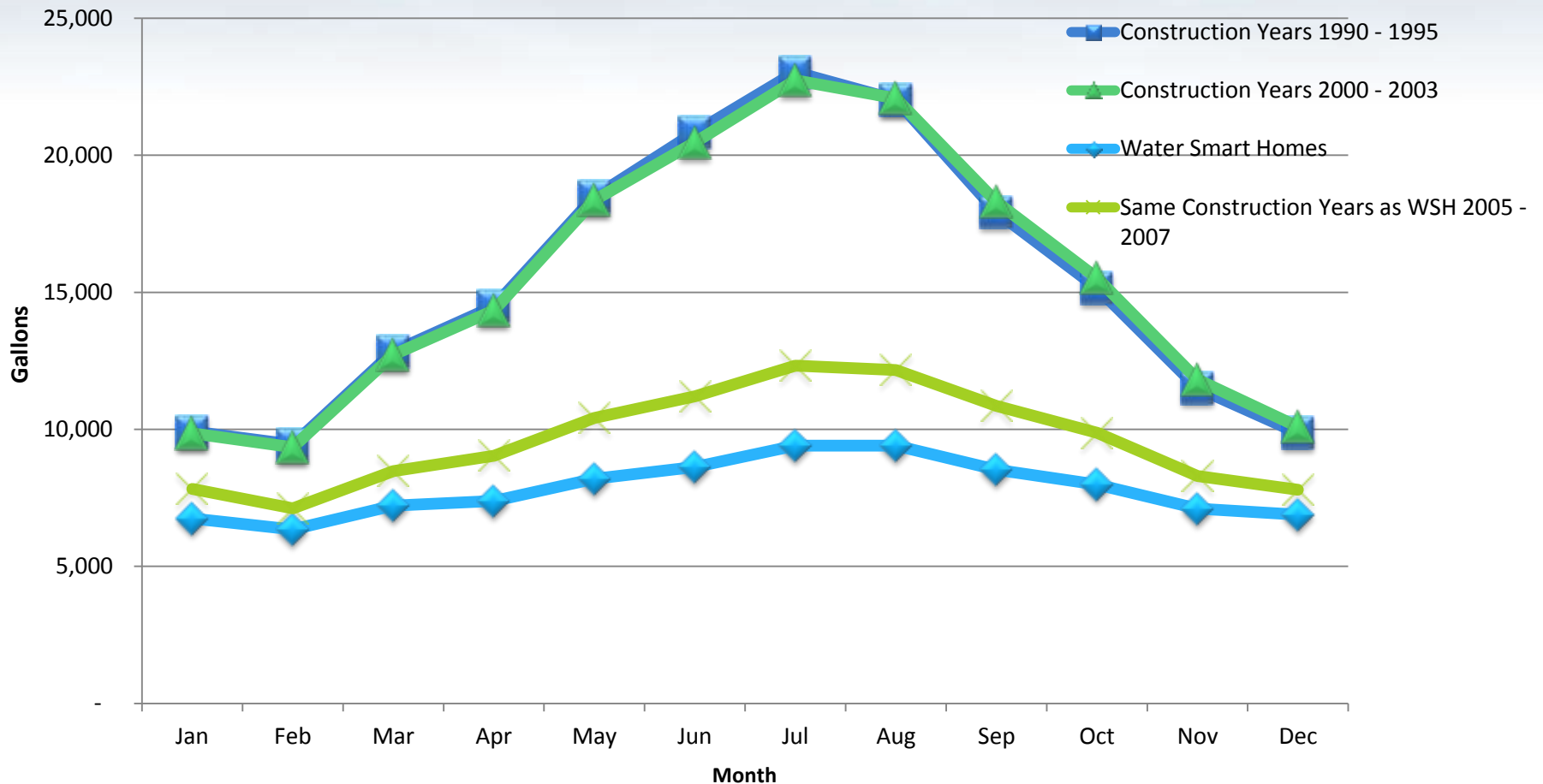
# Average Outdoor 2012 Use

25.9% Reduction,  $p < 0.00$



# Water Smart Homes (Separate Study)

## Average Monthly Consumption for 2007 & 2008



# Conclusions

- Post-drought code constructed homes used about 31,000 gallons less than those built before.
  - Nearly a 20% total decrease.
  - Consumptive outdoor use decreased approximately 25%.
- In a separate study, Water Smart Homes show a 49% decrease over pre-code construction.
  - This is an average difference of 91,731 gallons annually.

Questions?