

ASSESSING WATER USE AND CONSERVATION POTENTIAL IN WESTMINSTER

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WESTMINSTER

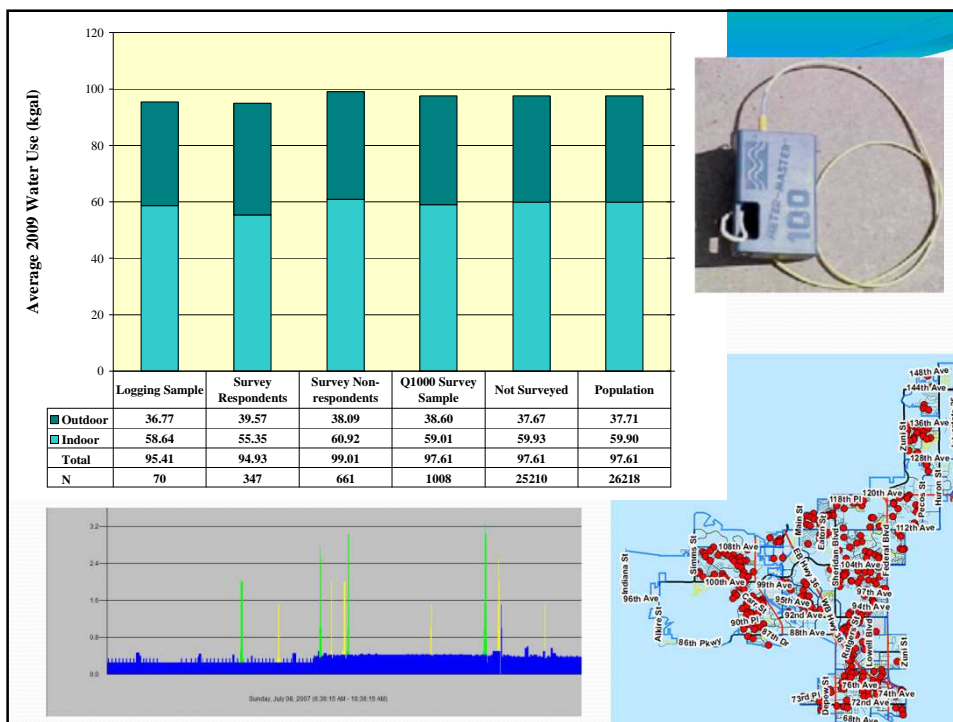


Project Goals

- Assess current SF residential water demands
- Determine penetration rates of conserving fixtures and measures
- Prepare realistic future demand and savings estimates for Westminster based on anticipated natural replacement rates and utility sponsored conservation efforts
- Revise (as necessary) Westminster's demand projections and integrate the new forecast into the water conservation plan

Methodology

- Assemble customer level data
- Select representative sample of 1,000 SF customers to receive survey
- Design and implement customer survey
- Select sample of 60 accounts for end use analysis
- Collect and analyze two weeks of end use data for 60 account sample
- Prepare research database
- Evaluate water use in Westminster

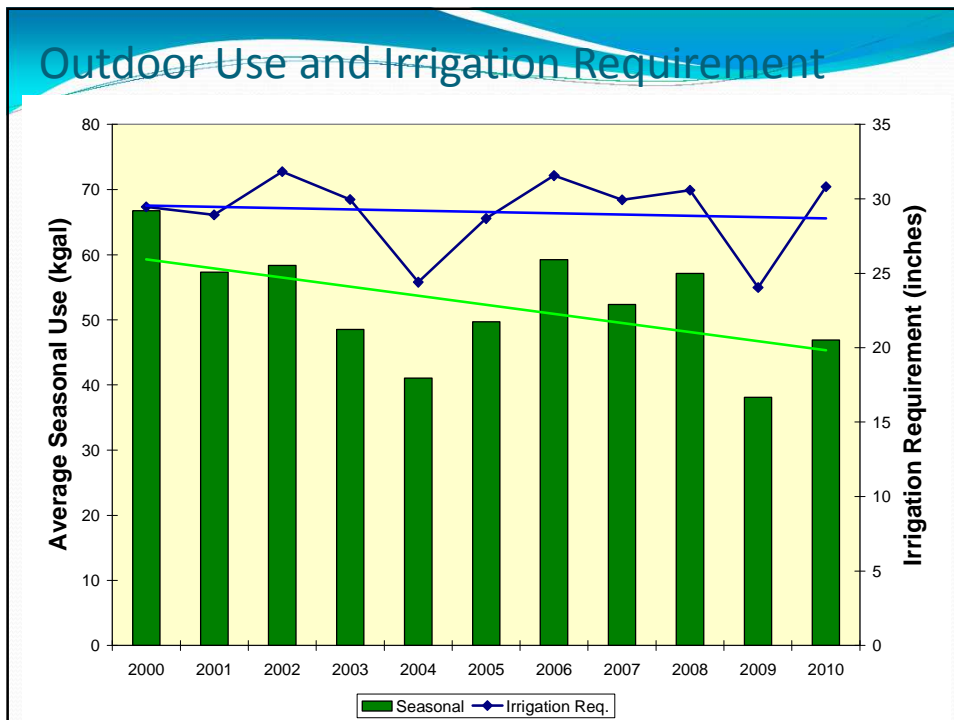
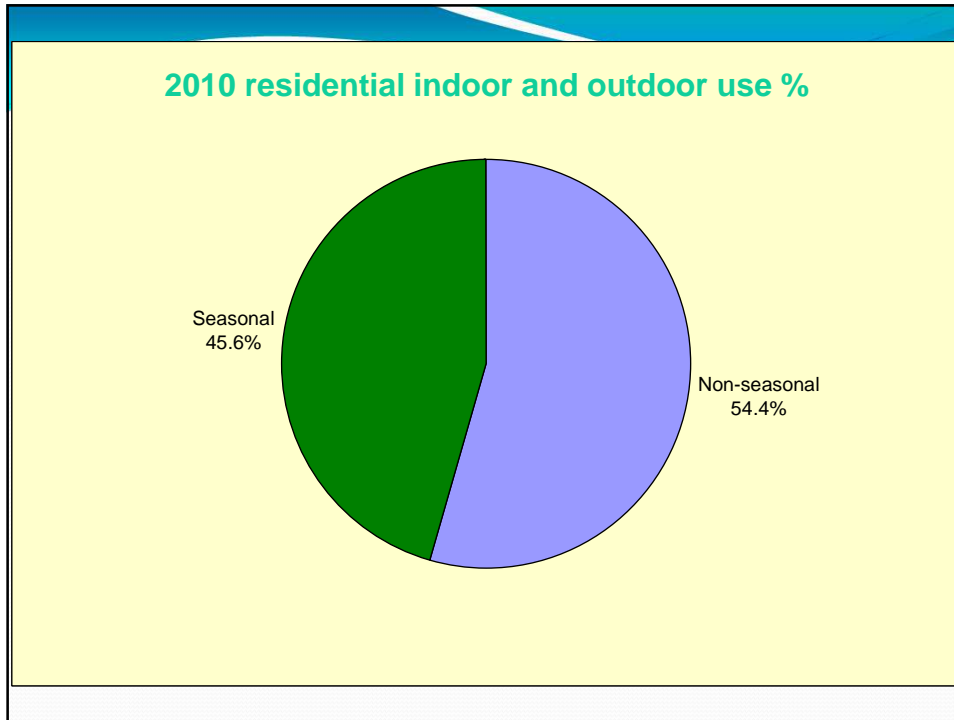


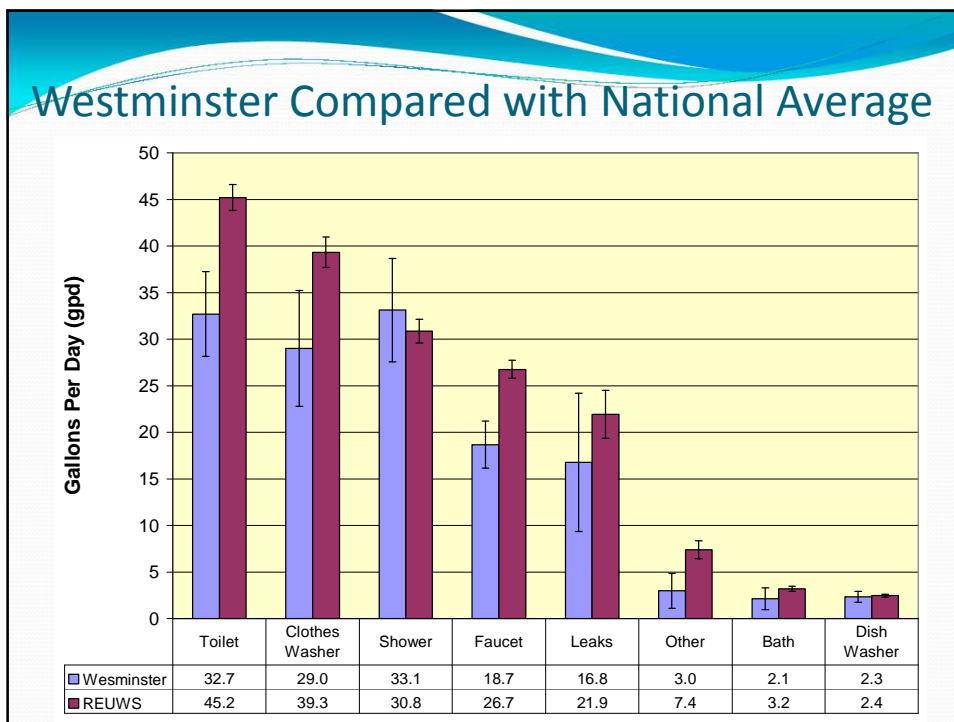
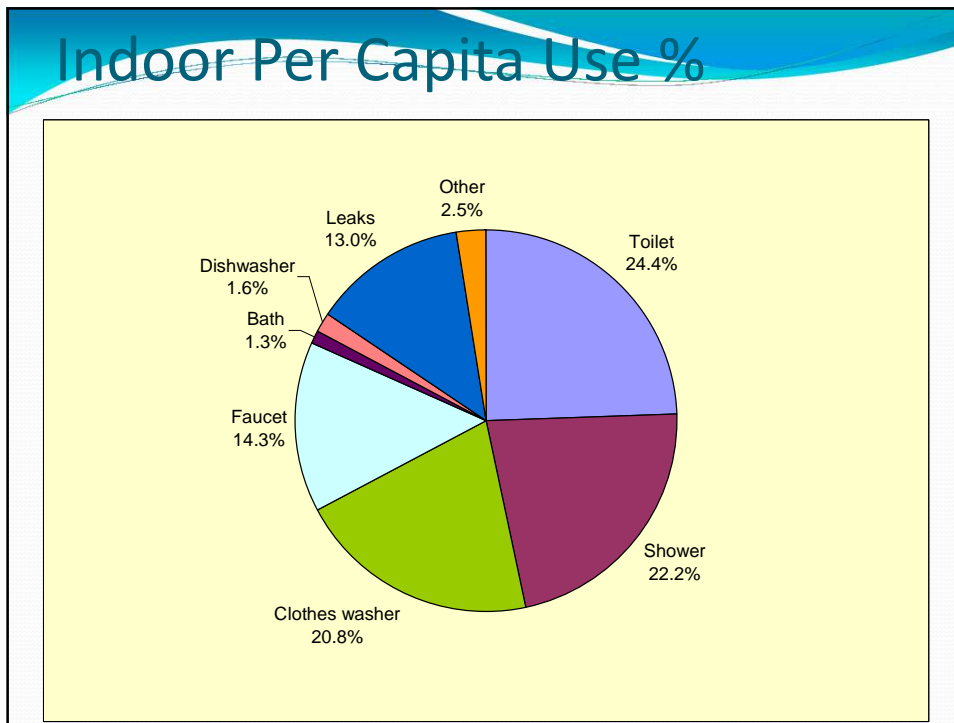
A Few Survey Results

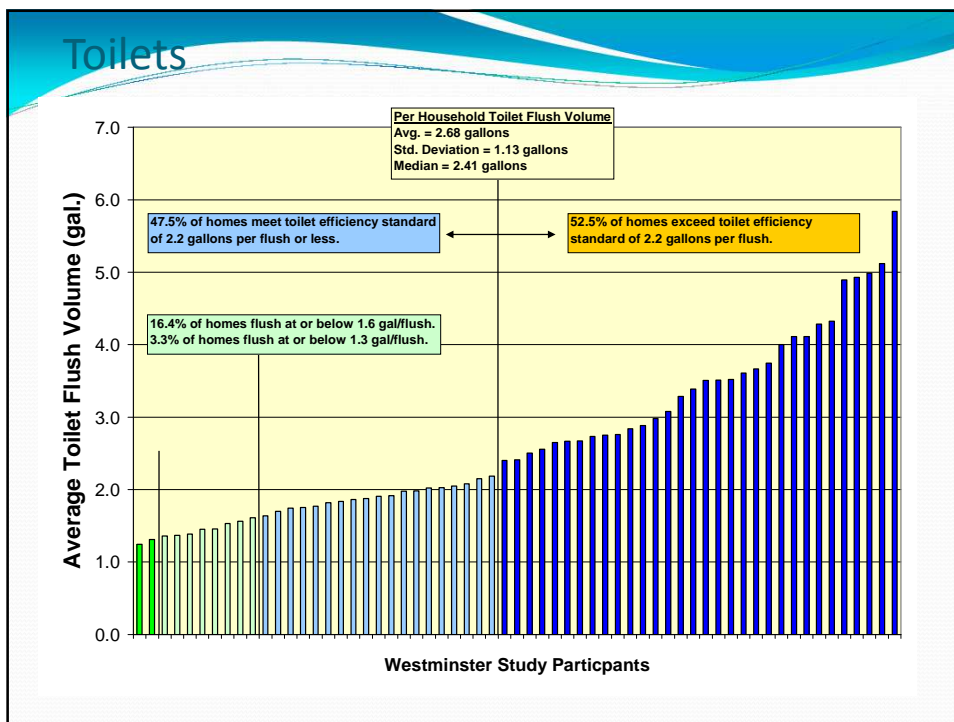
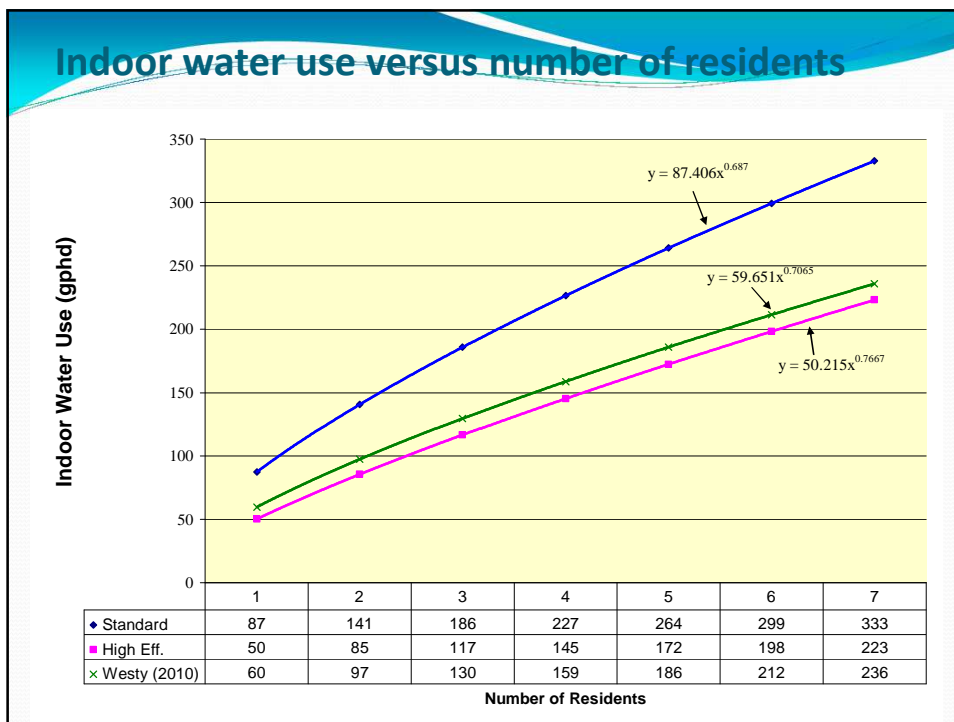
- Overall response rate = 35.7%
- Average home built in 1982
- Oldest home - 1940
- Newest home - 2008
- Average move-in year - 1995
- Average of 2.57 people per house
 - 2.03 adults
 - 0.07 infants
 - 0.28 children
 - 0.19 teenagers
- Average of 0.67 adults at home during the day

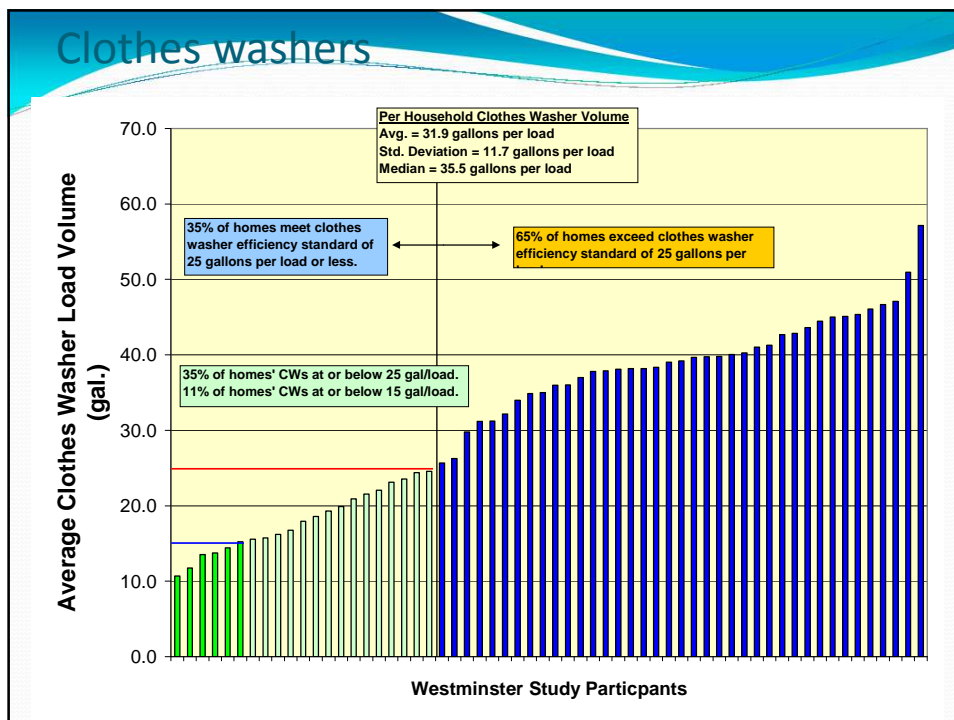
A Few More Survey Results

- **Regular outdoor irrigation** - 90.6% irrigate regularly
- **Automatic irrigation systems are the norm** - 67.4% have auto system.
- **Irrigation timing is adjusted frequently** - >50% adjust the timer at least once per month.
- **No rain or soil moisture sensors**
- **A few hot tubs, fewer swimming pools**





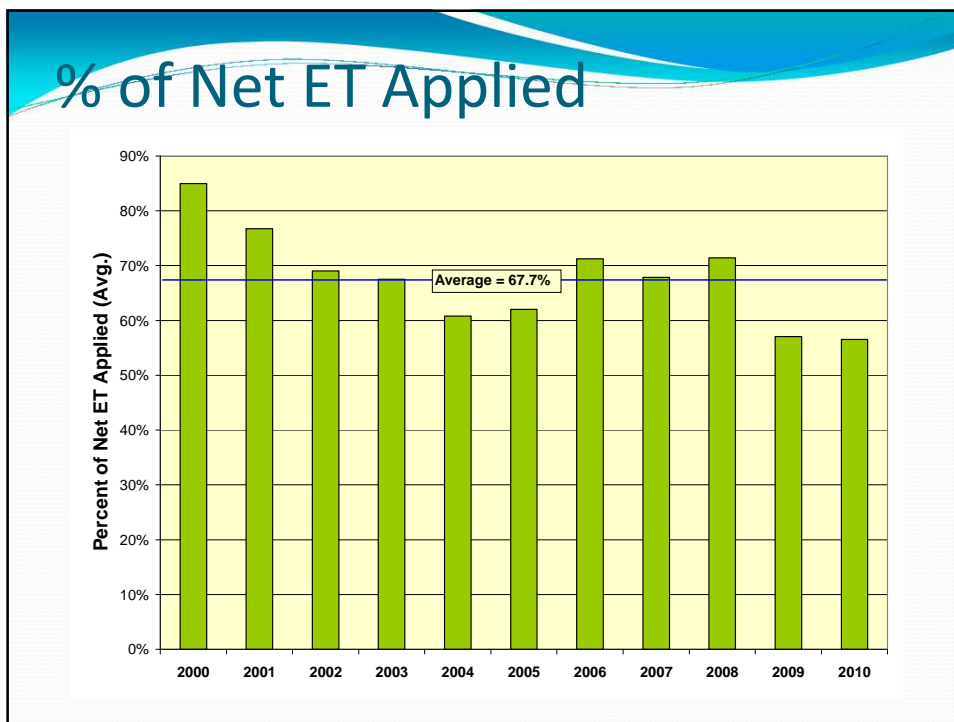
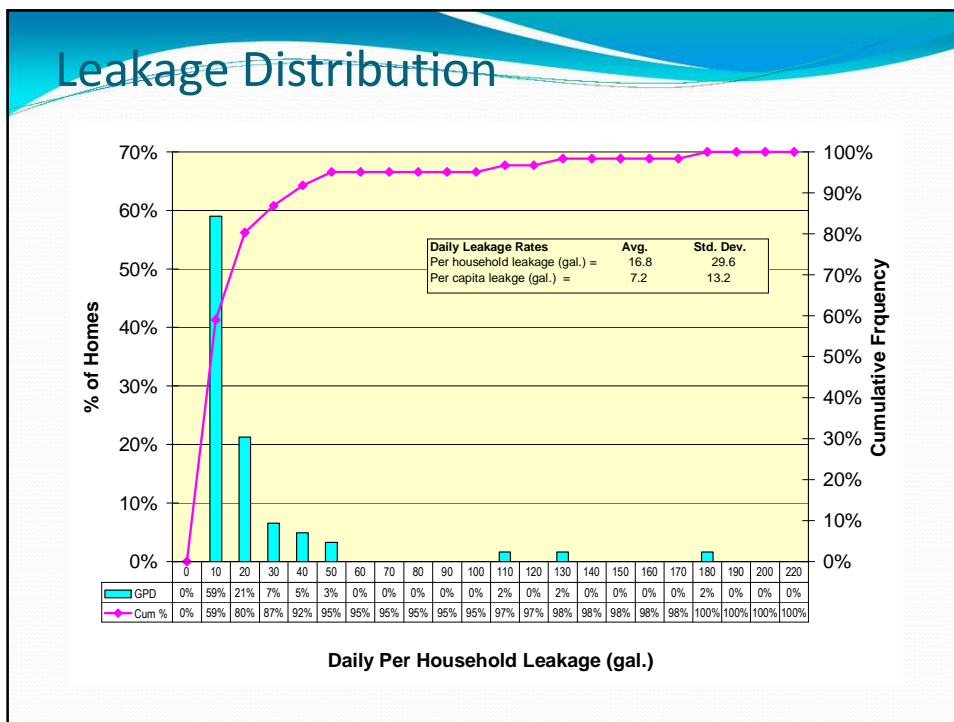


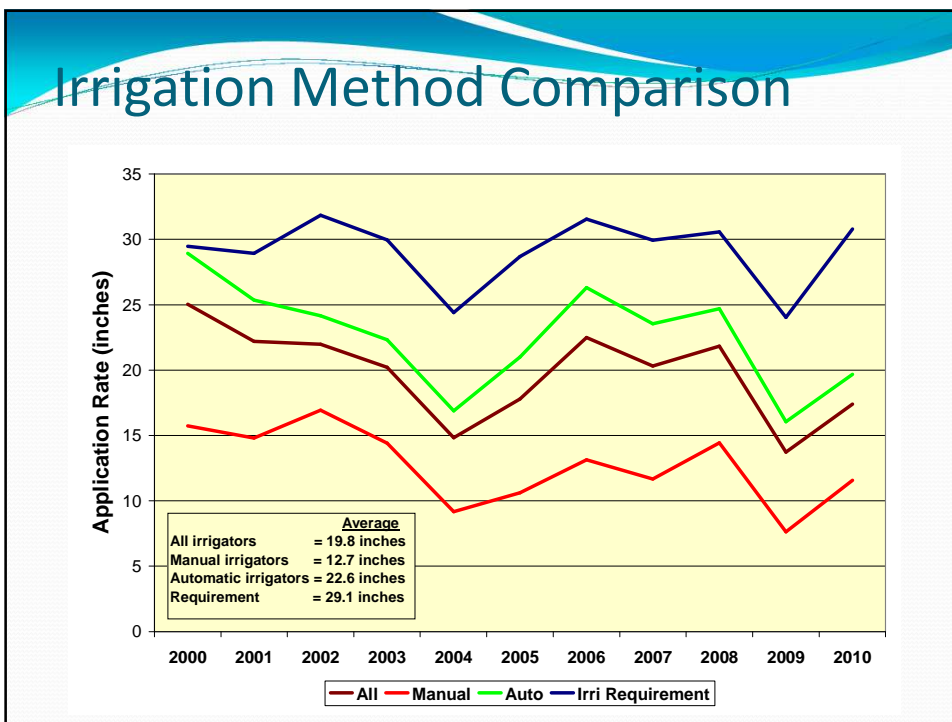
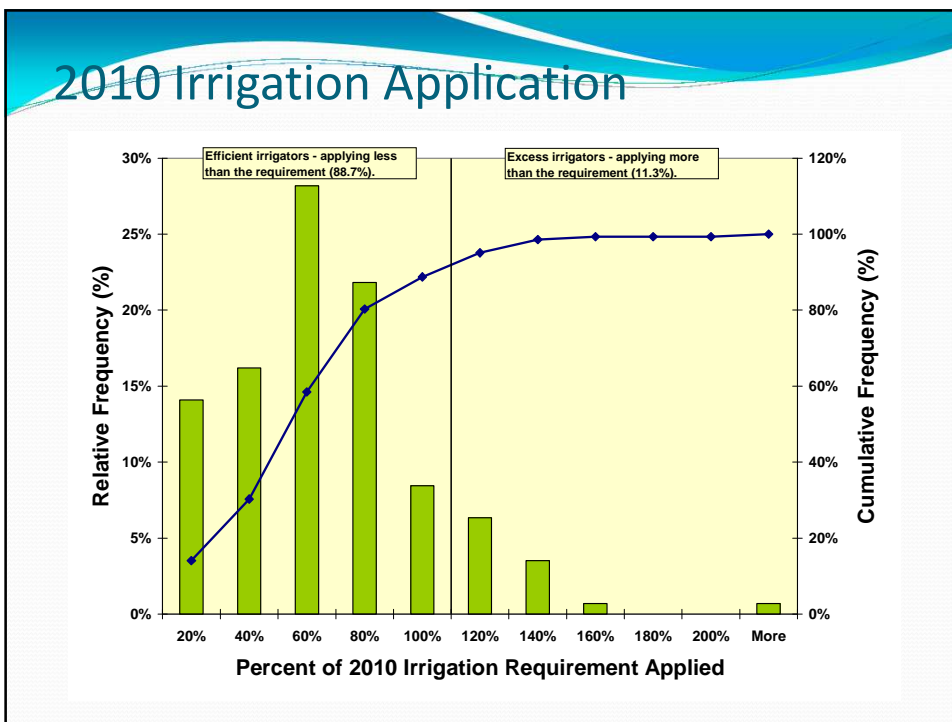


Showers

- Average shower volume = 16.95 gallons
- Average shower duration = 8 minutes and 52 seconds.
- Typical shower flow rate = 2.0 gpm
- In the 1999 REUWS, the average shower used **17.2 gallons**, the typical flow rate was **2.2 gpm**, and the average duration was **8 minutes and 12 seconds**.







Conclusions and Recommendations 1

- Residential water use in Westminster in 2011 is efficient.
- Expect only small reductions in future indoor demand from current customer base.
- Outdoor demand is already low. It could easily *increase* in the future.
- Demographic changes could impact demand in future.
- New development categories could be more water intensive per acre.

Conclusions and Recommendations 2

- Focus conservation program efforts on:
 - Outdoor use (maintain current savings)
 - Landscape regulations
 - Irrigation efficiency
 - Water rates and rate structure
 - CII sector
 - Additional research
 - Multifamily sector
 - Passive savings are below level of single family
 - Encourage fixture updates

Westminster Issues - Next Steps

- Declining indoor use affects wastewater system and water available for the City's reclaimed water system.
- Track passive savings and review need for Active program implementation.
- Keep a close eye on rates and rate structure for both water and wastewater to meet long term revenue needs.
- Irrigation Use needs more study.

Questions and Comments



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