

This presentation premiered at WaterSmart Innovations

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Years of Drought; What Have We Learned?

October, 2012

WaterSmart Innovations

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Drought Topics

What have we learned?

- Follow the plan
- How do we know restrictions work at all?
- Surprise: Customers don't hate the rules or the water provider.
- Misconceptions
- Revisions to plan take time



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Lessons Learned on Drought Management

Have A Plan & Follow It

Early action is easier & safer than a delay

- Stages defined and tested by prior droughts made implementation fairly smooth
- Nearly all departments involved in weekly review of operations, supply, community response and more
- Historical data used to model what to expect
- Deeper restrictions avoided by effective early action

Technology, New Supplies & Demand Management

- Recycled water
- Aquifer Storage & Recovery (ASR) adds spot resource
- Variety of Supplies decrease risk
- Demand Reduction is still cornerstone to managing drought period

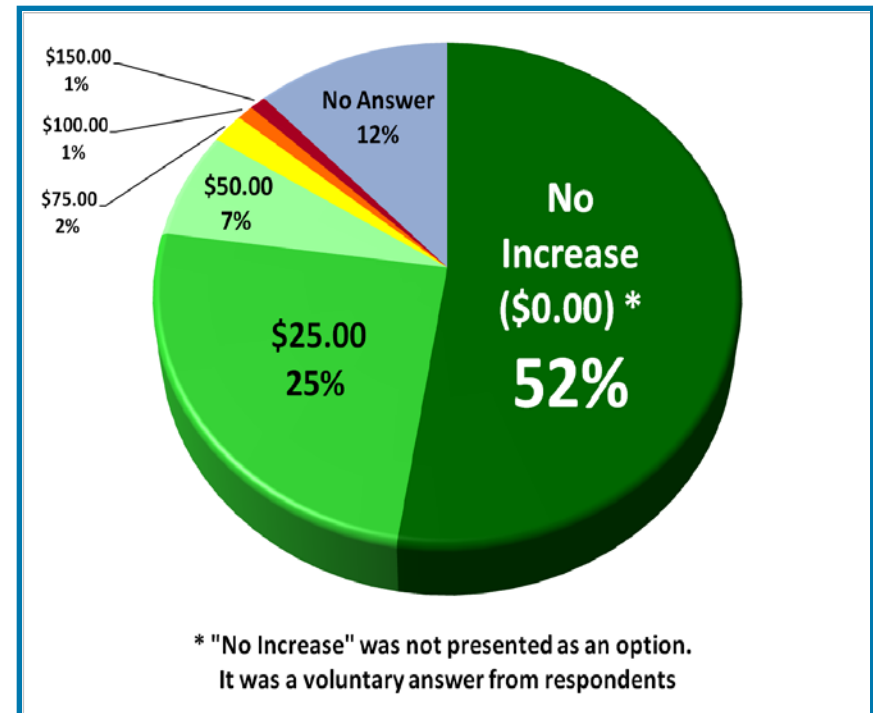
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Enforcement Can Be Done

Enforcement strengthens compliance

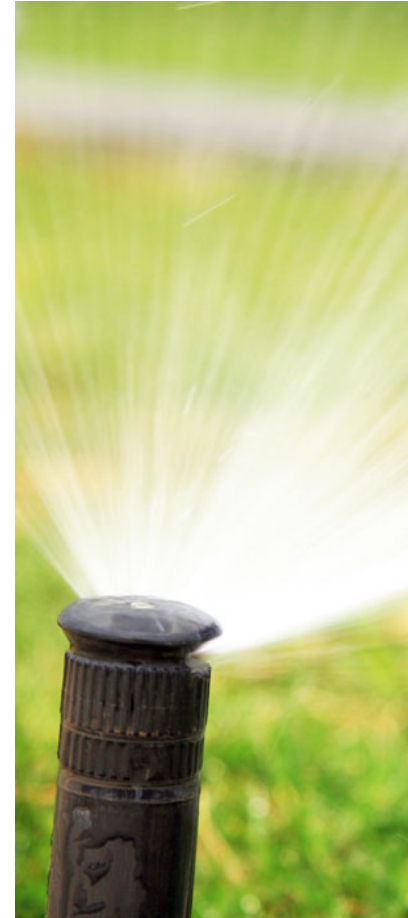
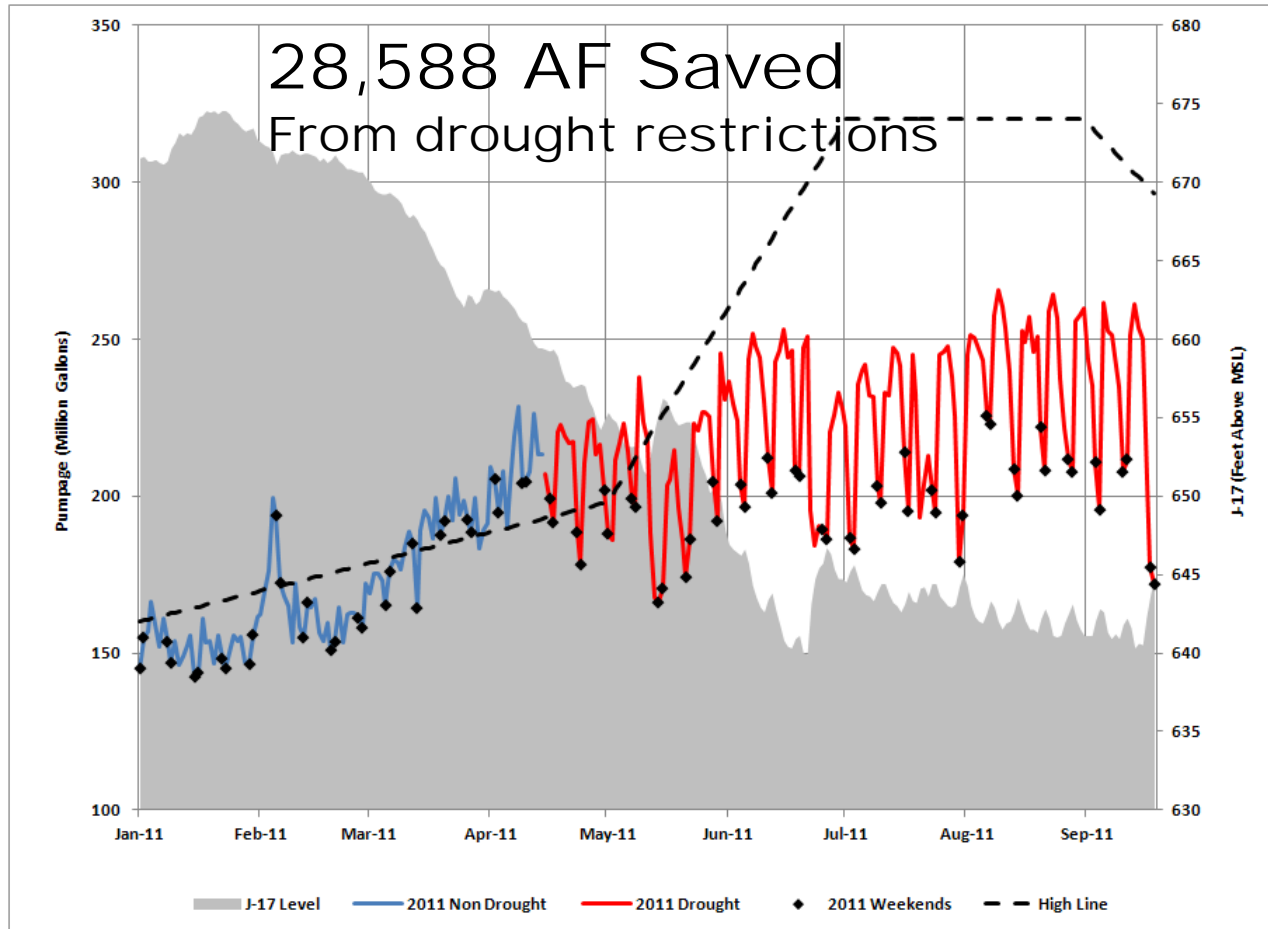
- 1.6 million people and 400,000 water accounts
- 20 police officers hired PT for nightly patrol
- 200 citations/week
- Alerts for reports of problems



Nearly 100% in neighborhoods with irrigation systems indicated they understand the rules. Most support them as reasonable.

How do we know what works?

Customer bills & pumping pattern data



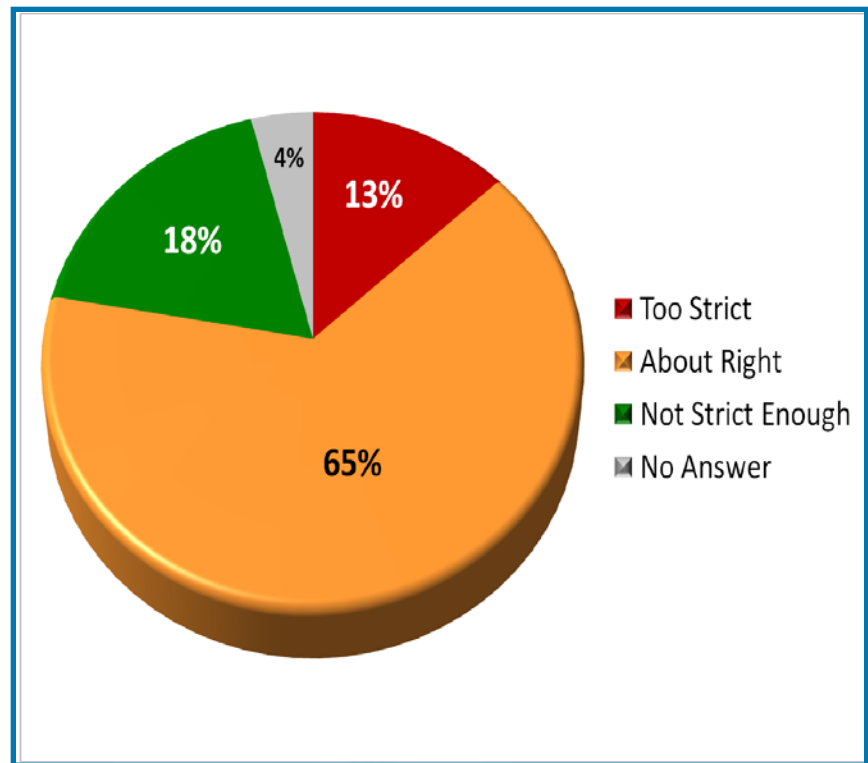
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Surprise: Customer Response

Surveys showed support after drought

- Rules = reasonable management strategy
- They know the rules
- Once per week “about right”
- No breaks for business !
- HOA demands unpopular



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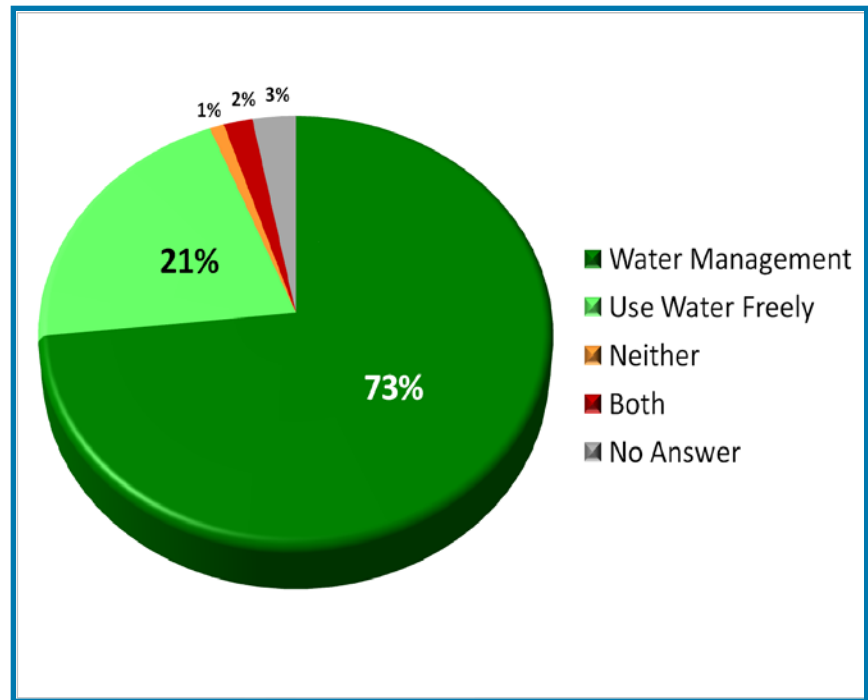
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Change takes time & patience

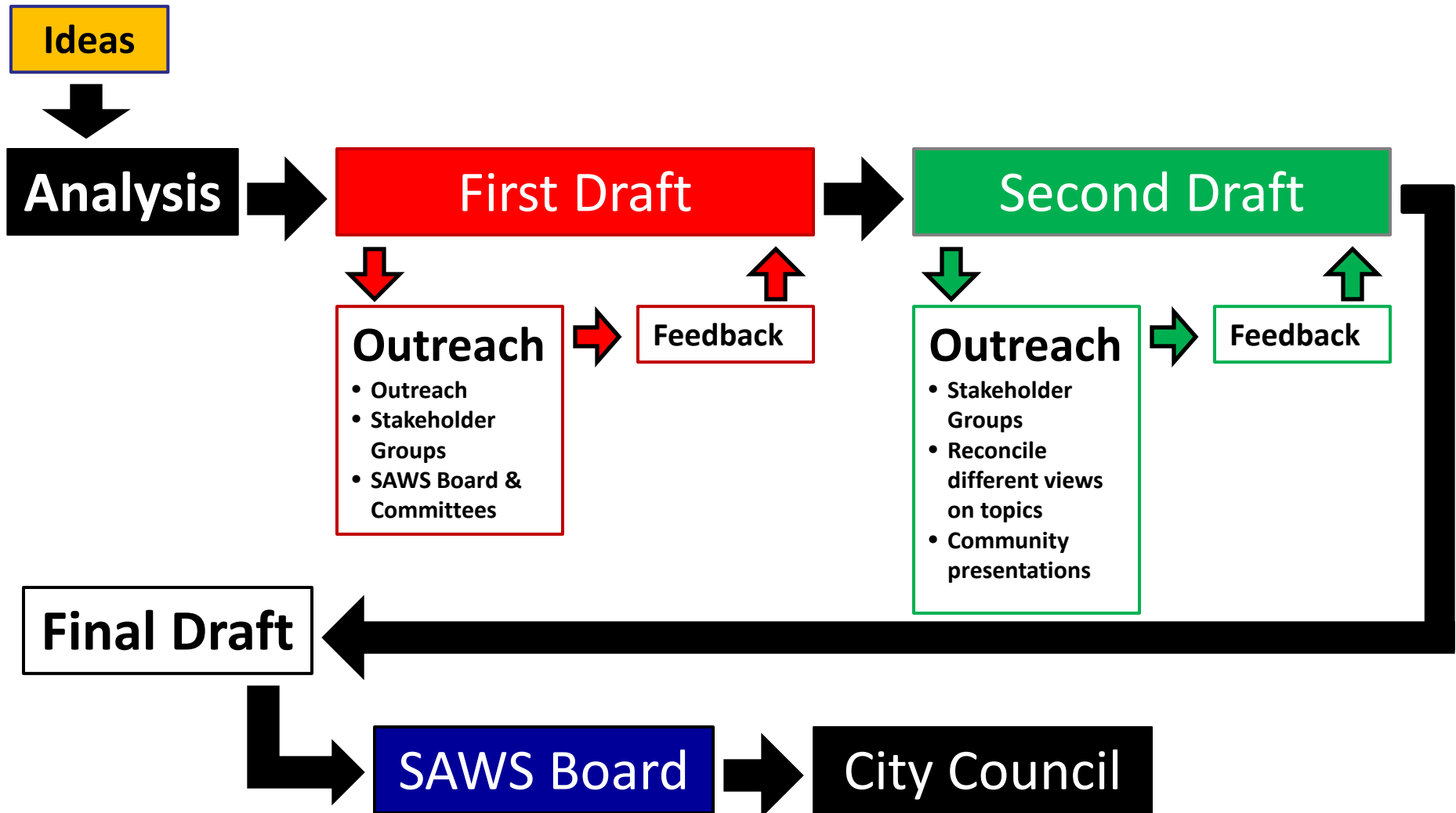
Questions Raised

- What contributes bulk of savings?
- What annoys people the most for little gain?
- Does backing off at all send wrong long-term conservation message?
- Compromise needed!

Water Use vs. Drought Restrictions



Flow Process

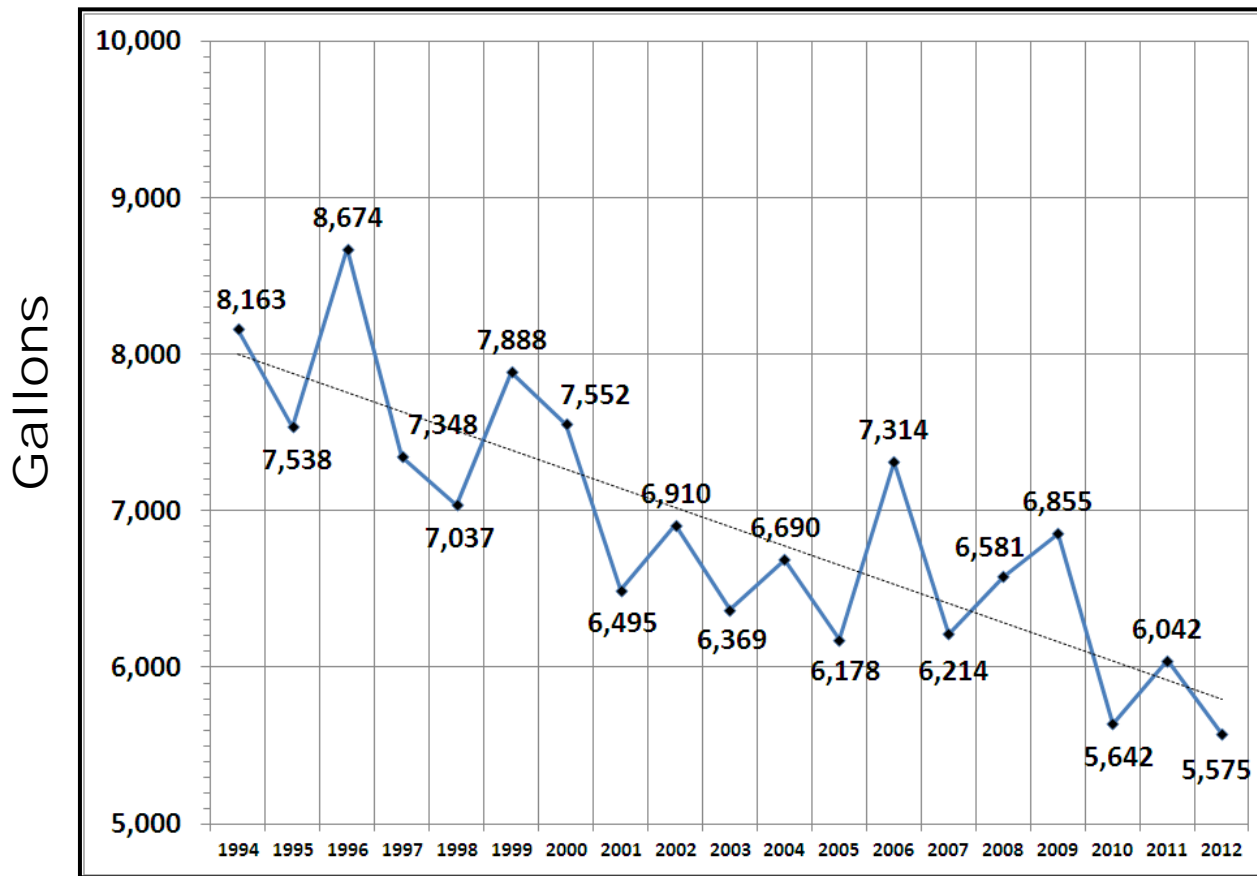


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Lessons Learned on Drought Management

Misconception: indoor vs. outdoor

Indoor Water Has Best Reduction Trends



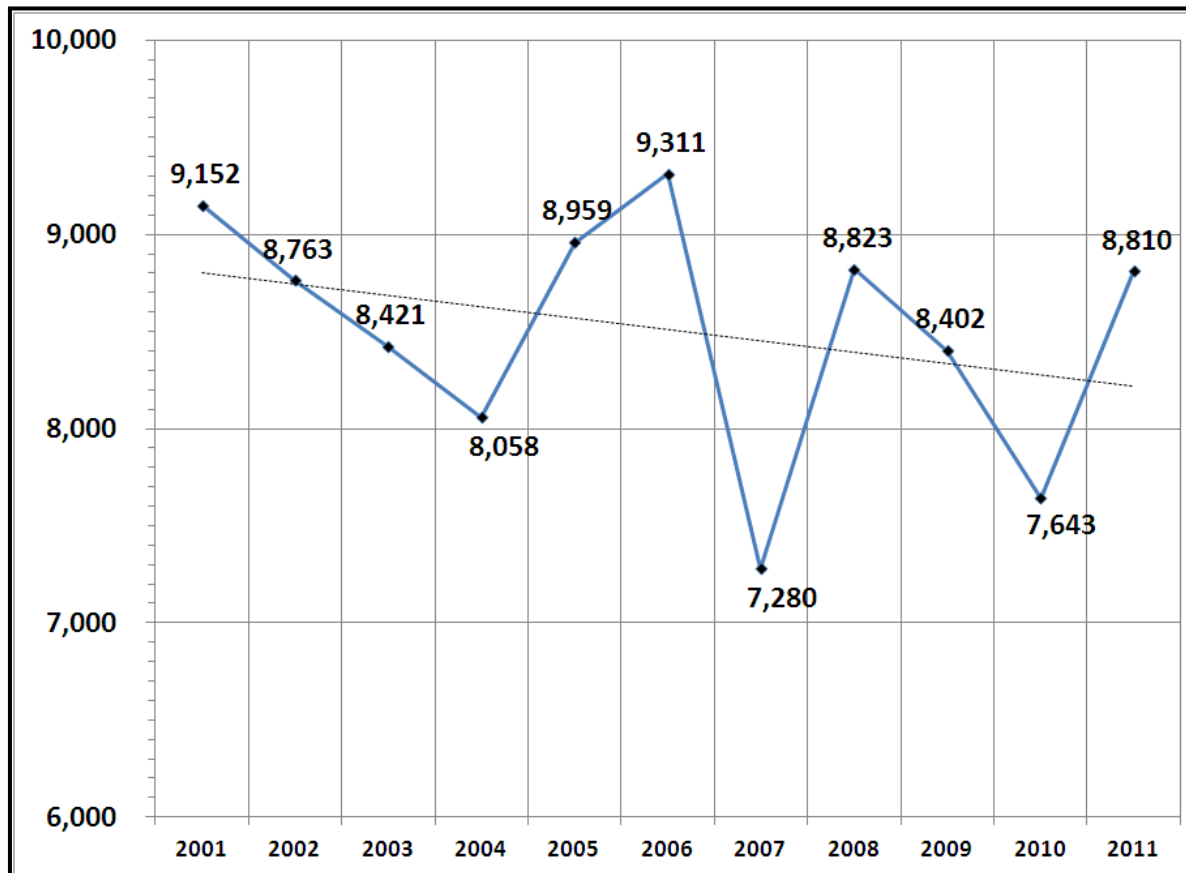
- Drop in winter average was nearly 28% in ten years
- Larger trend matches changes at individual sites as more efficient fixtures are used
- Recent year trends strong

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Misconception: indoor vs. outdoor

Residential: Problematic dry year trends



- Average residential goes down only 7% over ten years
- Summer usage has higher influence on demand
- Recent years show little change when it is hot and dry; except for “holding the line” with restrictions

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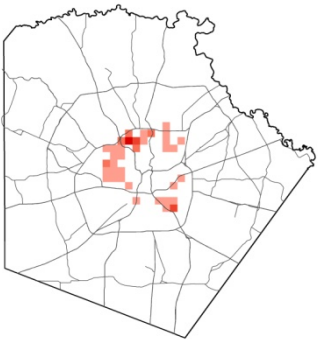
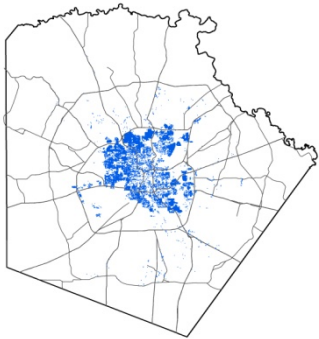
Misconceptions

Long term & drought data contradicts these statements

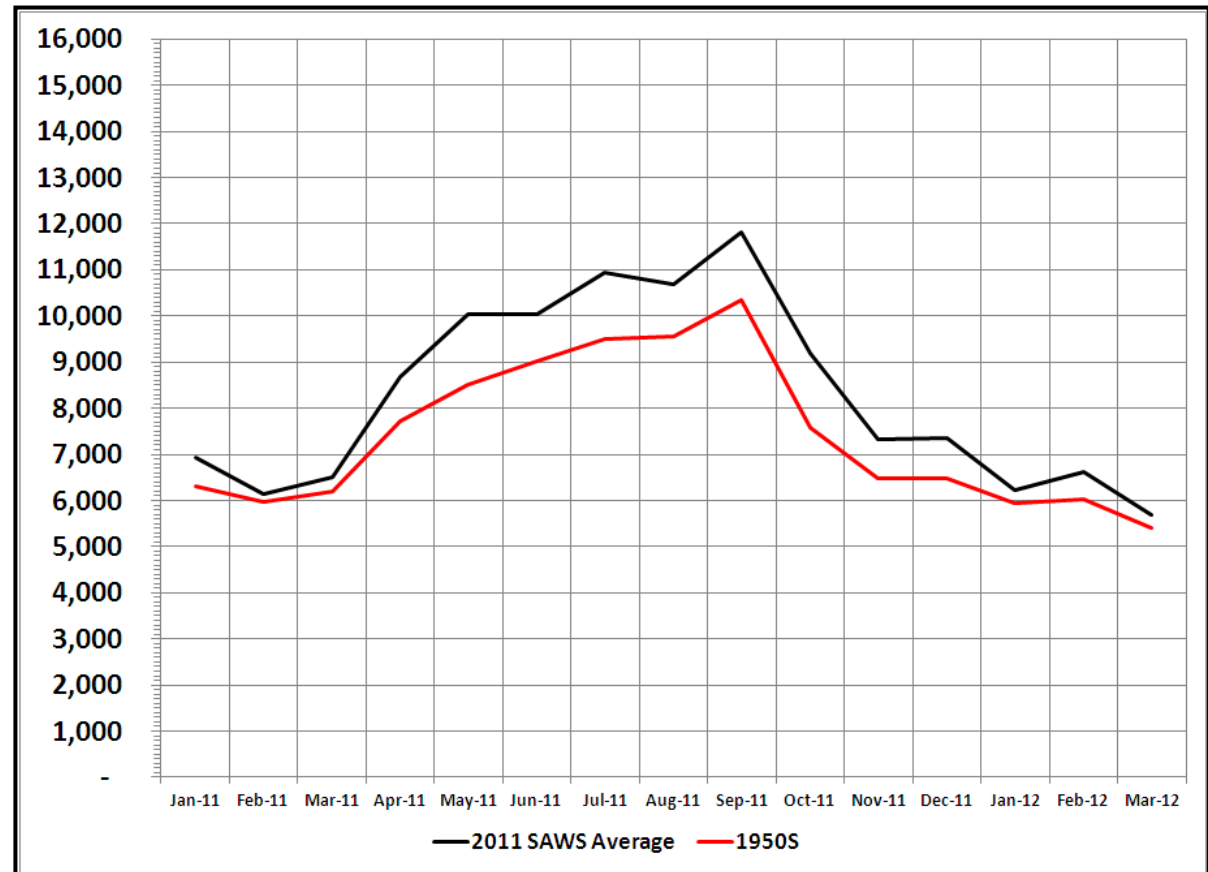
- The problem is the older homes using more water
- Apartments are more efficient; especially new ones
- Water use will be **lower than normal** due to Stage One and Stage Two restrictions

Misconception Older Homes

1950s Homes: Modest Users Compared to Others



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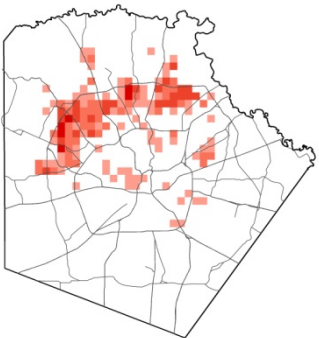
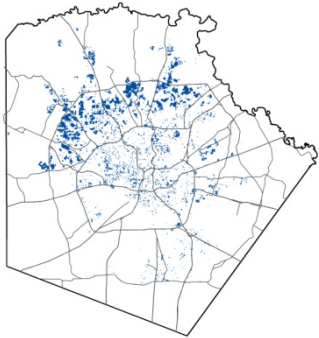


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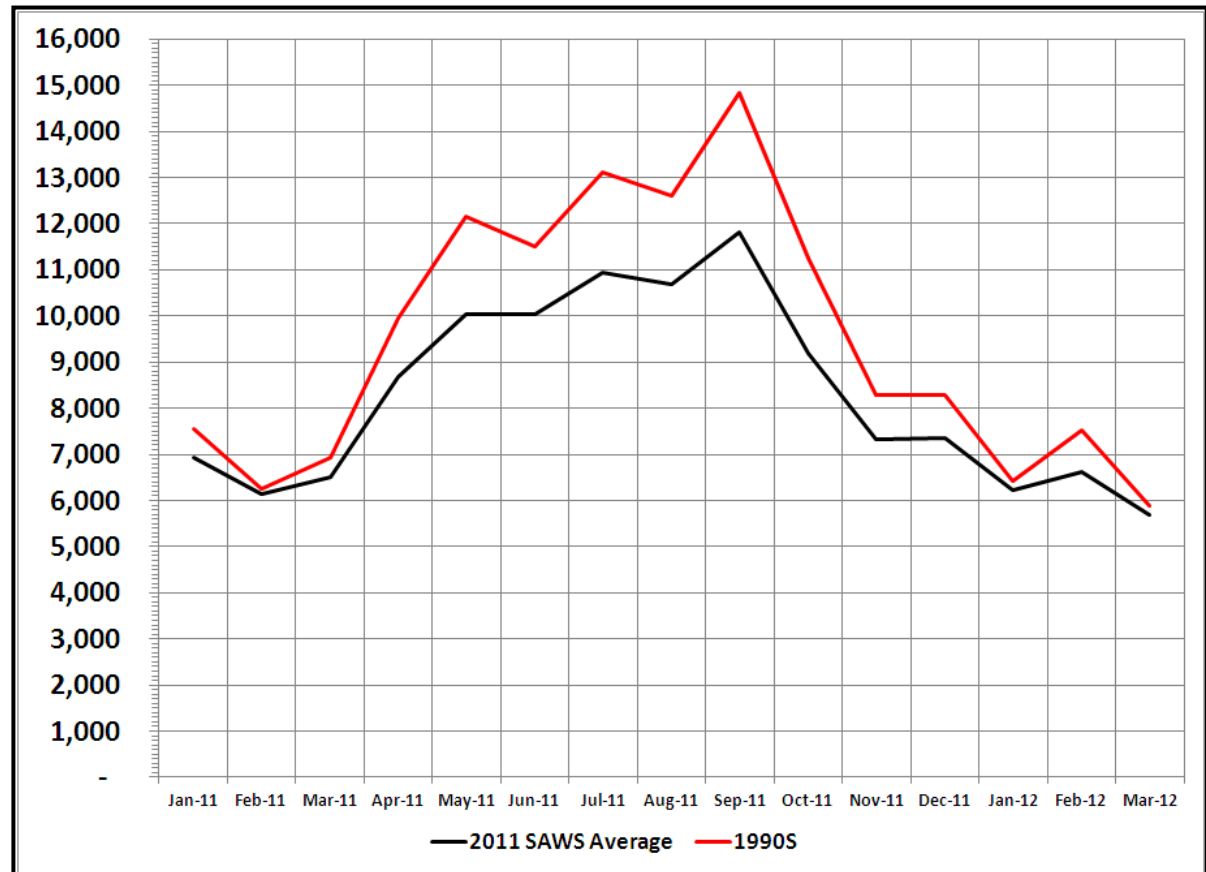
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Misconception Older Homes

1990s Homes: Larger Lots with Irrigation Systems



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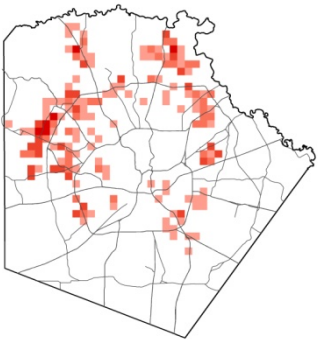
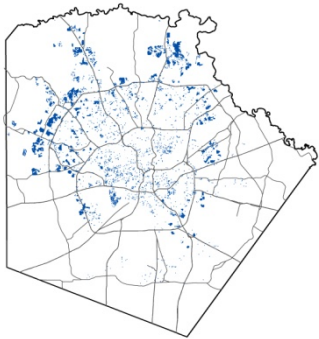


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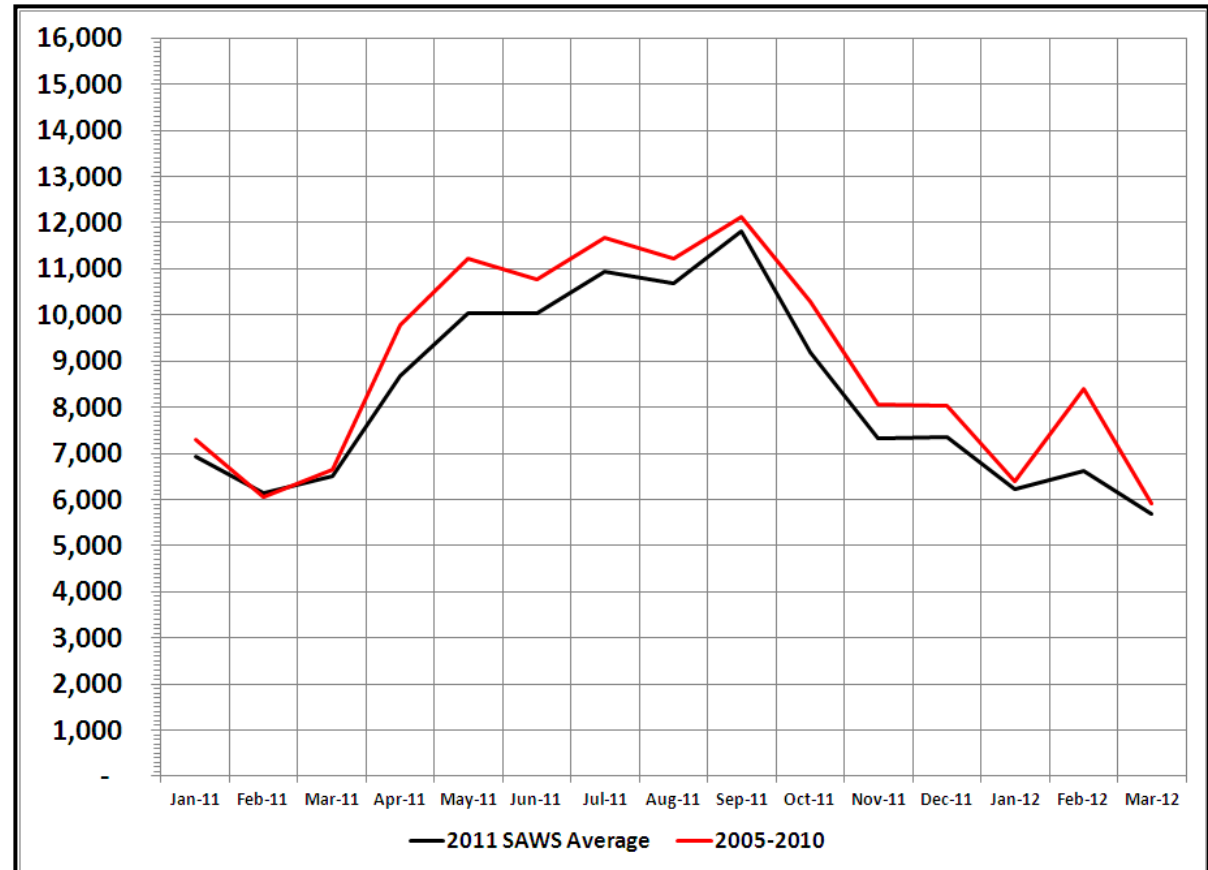
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Misconception Older Homes

2005 – 2010: Smaller Lots with Irrigation Systems



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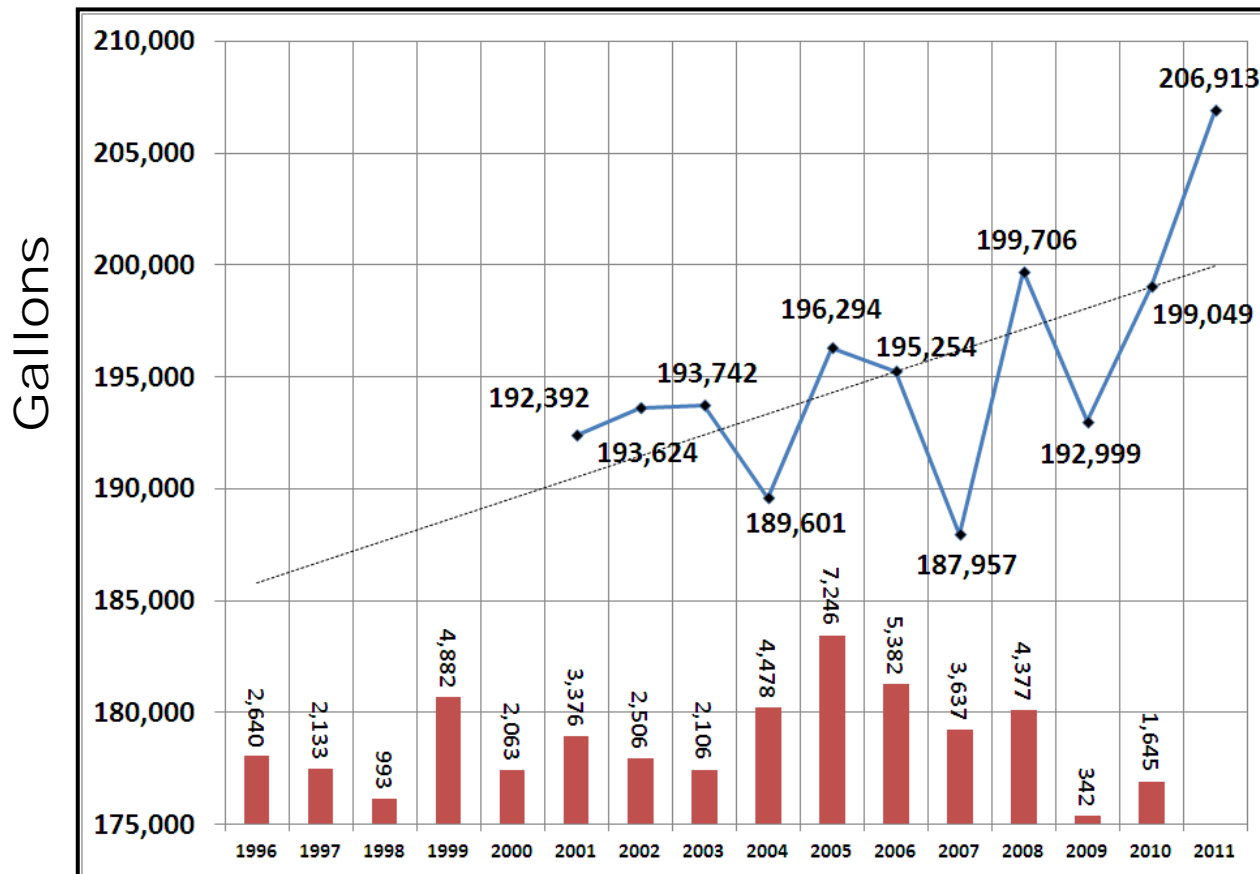


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Misconceptions Apartments

Newer Apartments are Using More Water, NOT Less



There are more apartments

Apartment use per bill has steadily increased

Toilets in new apartments are not high flow

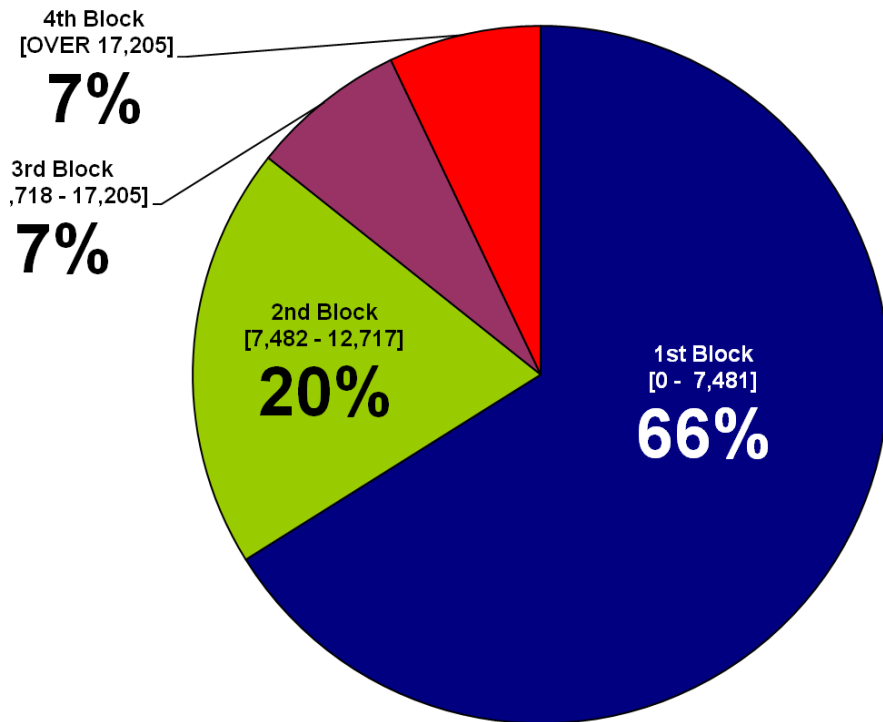
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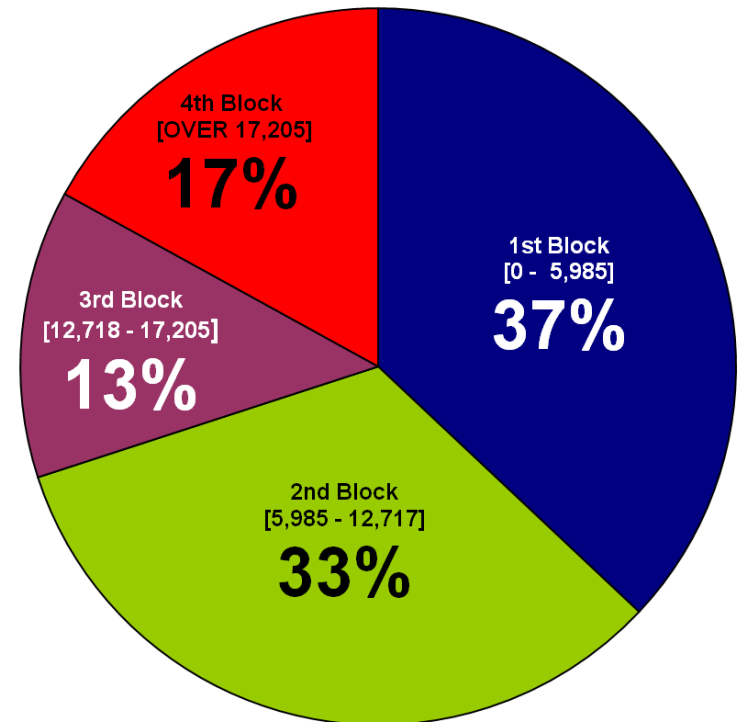
Misconception Stage One & Two

Customers Will Use More in Extreme Conditions

Average of 2009 and 2010
Ending in Existing Blocks



July- Sept 2011
Extreme Drought



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Consensus is hard

- Citizens are passionate about water issues
- Diverse viewpoints must be considered
- Still answering the question: How much to cut back vs. how much new water to get?
- Not all customers are eager for lighter drought rules



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