

# Water Conservation in Tucson Past, Present and Future

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Public Information / Conservation  
Officer

Tucson Water



Blue Ribbon Panel - May 6, 2010



# Water Conservation - A Brief History

- 1912 – Tucson implements \$50 fine for water waste (2008 equivalent = \$1,000)
- 1922 – Tucson Water launches water-saving education program
- 1976 – Tucson Water implements “Beat the Peak” program
- 1982 – Tucson and Pima County adopt conservation plumbing codes
- 1991 – Tucson adopts Xeriscape Landscaping Ordinance
- 1996 – Tucson Water launches Zanjero Residential Assistance Program
- 2003 – Tucson Water hires “Commercial Water Cops”
- 2005 – Tucson Water establishes Community Conservation Task Force
- 2008 – New Rebate and Incentive Programs begin
- 2008 – Rainwater Harvesting and Greywater Stub-out Ordinances

# Conservation Drivers

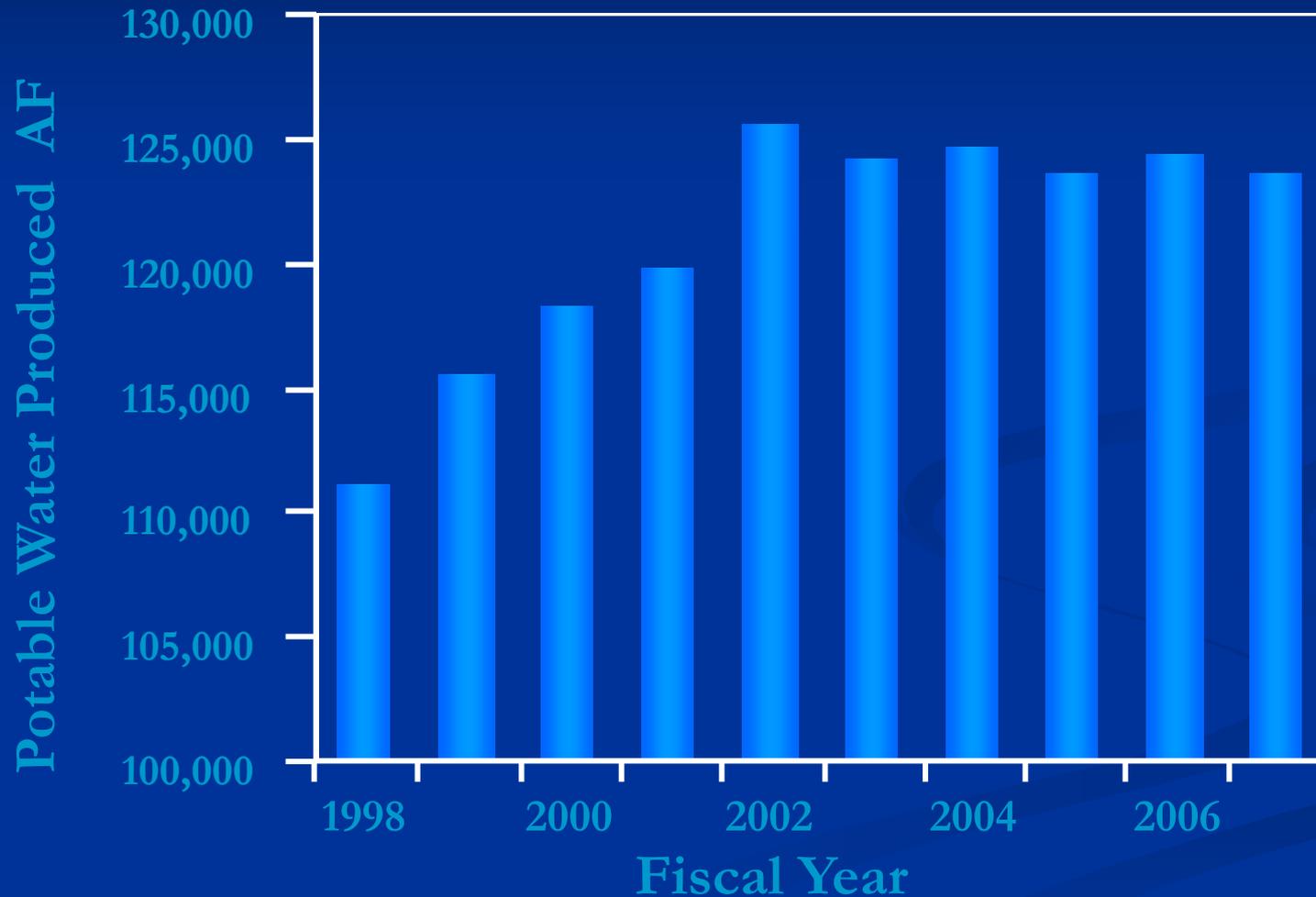
- 1970's – Peak Demand Management
- 1980's – Groundwater Management Act
- 1990's – Colorado River Water (CRW)
- 2000's – CRW  
Long Range Plan



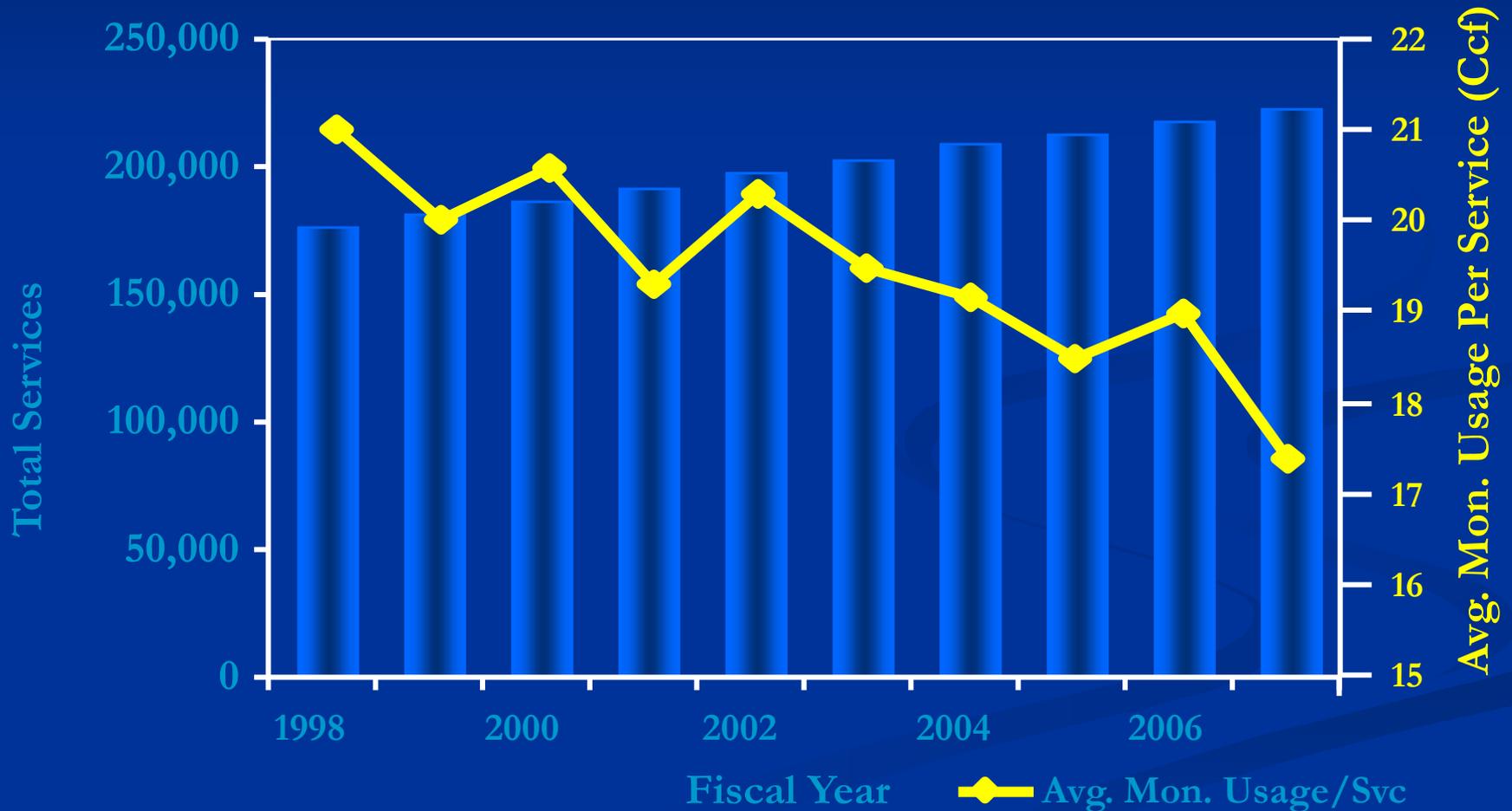
# Current Conservation Programs

|         |                            |   |
|---------|----------------------------|---|
| Level 1 | General Public Information | Beat the Peak, bill inserts, general advertising/promotion  |
| Level 2 | Education and Training     | Water\$mart Workshops, SmartScape Professionals, Classroom Programs   |
| Level 3 | Direct Assistance          | Zanjero Program, Commercial Audits  |
| Level 4 | Incentives                 | Rebate Programs, Rate Structure   |
| Level 5 | Ordinances                 | Water Waste, Plumbing Codes, Xeriscape Landscaping, Mandatory Conservation, Rainwater Harvesting, Greywater Stub-outs, Drought Response |

# Recent Water Use Trends



# Accounts and Usage per Service



# Developing New Conservation Strategies

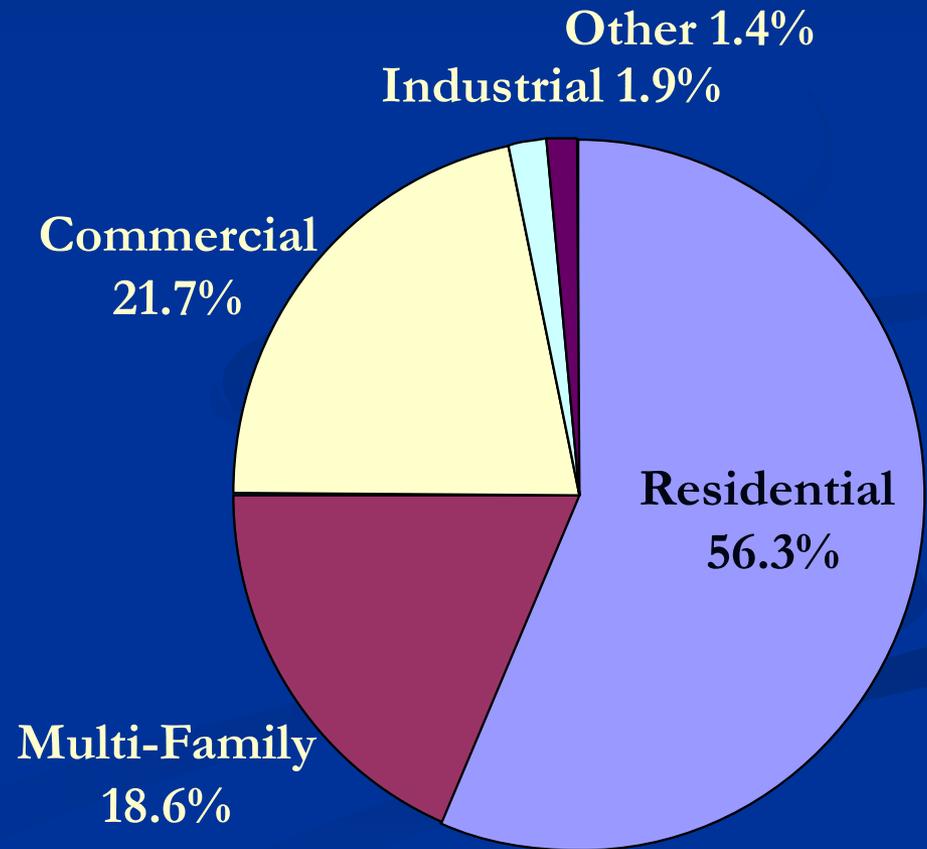
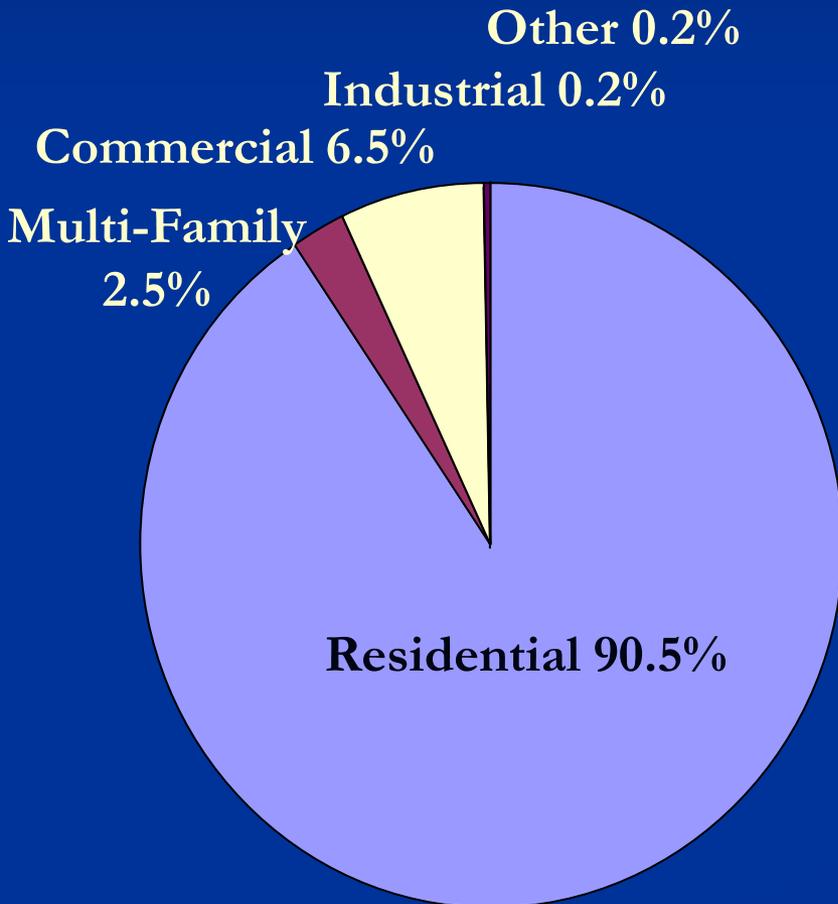
## ■ Factors to Consider

- Who Uses Tucson's Water?
- How Do They Use Water?
- How Much Water Do We Have?
- What Are Our Water Sources?
- How Much Conservation Can We Accomplish?
- Impact On Rates and Revenues

# Who Uses Tucson's Water 2007

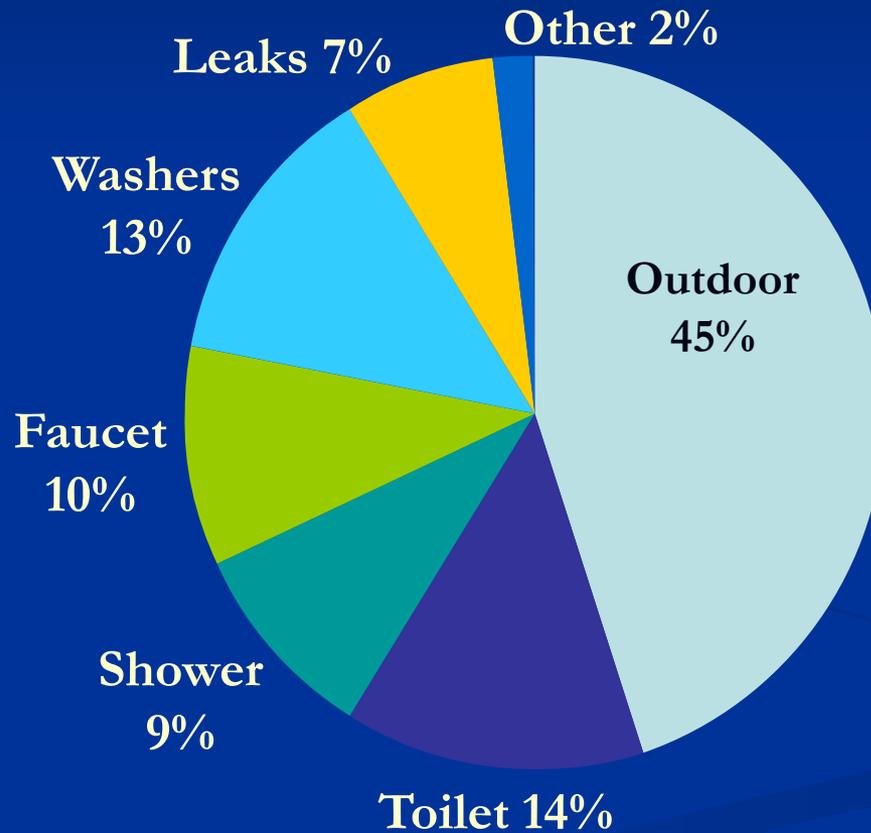
Accounts by Customer Class

Usage by Customer Class



# Water Usage by Customer Class

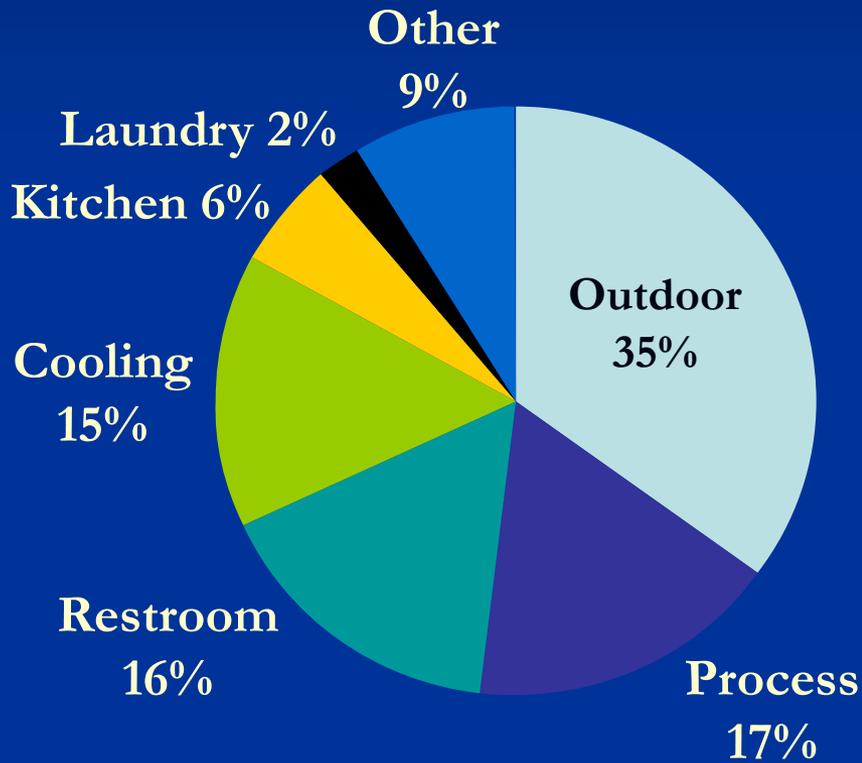
## Single Family



56% of Demand

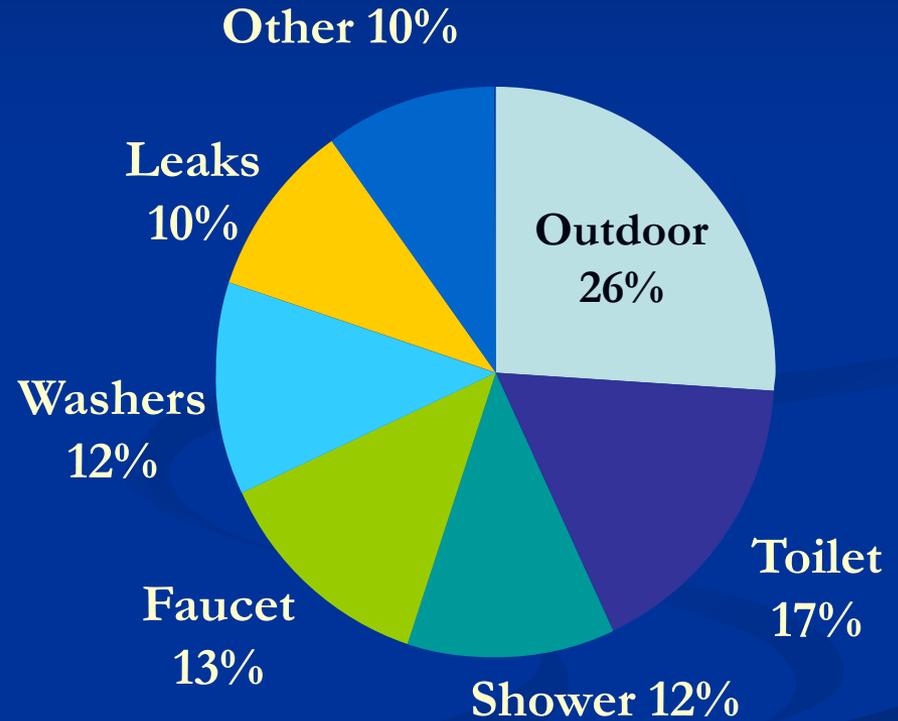
# Water Use by Class (Cont.)

## Commercial & Industrial



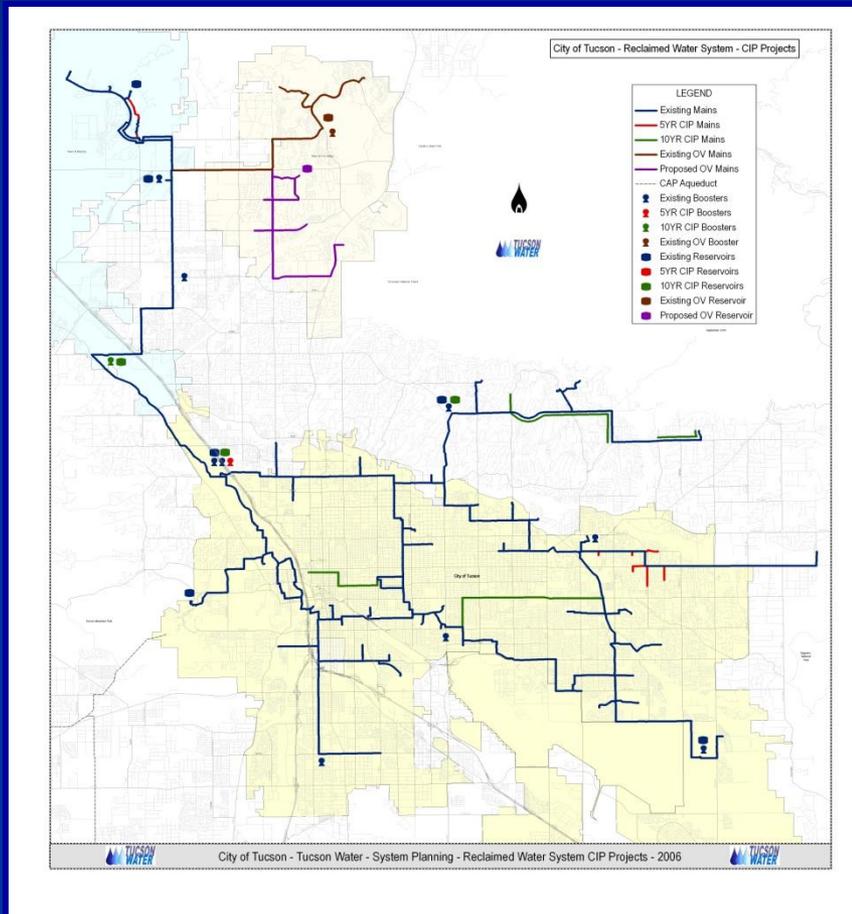
25% of Demand

## Multi-Family



19% of Demand

# Existing Reclaimed Water System



## Pipelines

- 160 miles

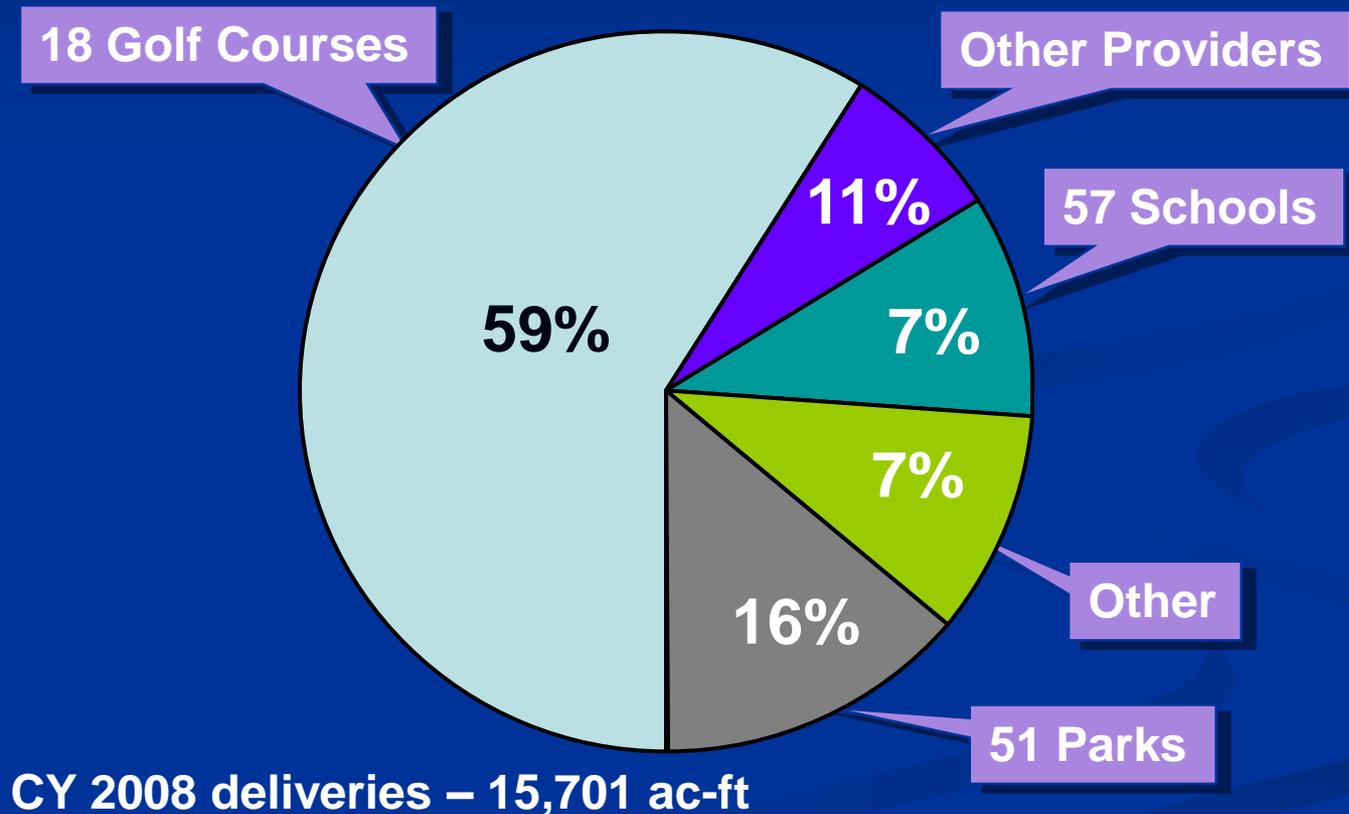
## Average Day

- 14 million gallons/day

## Peak Day

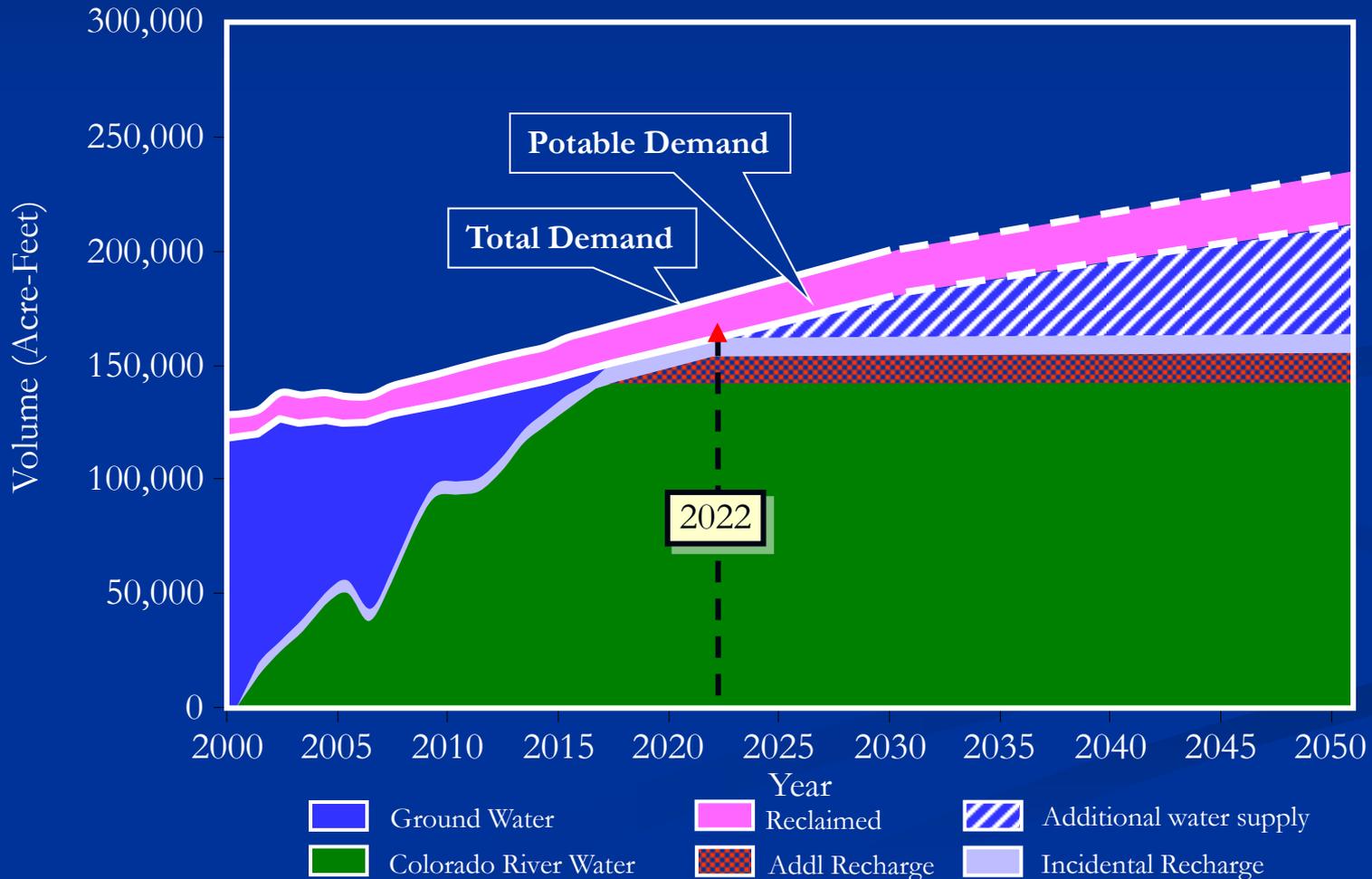
- 32 million gallons/day

# Annual Reclaimed Use by Customer Category



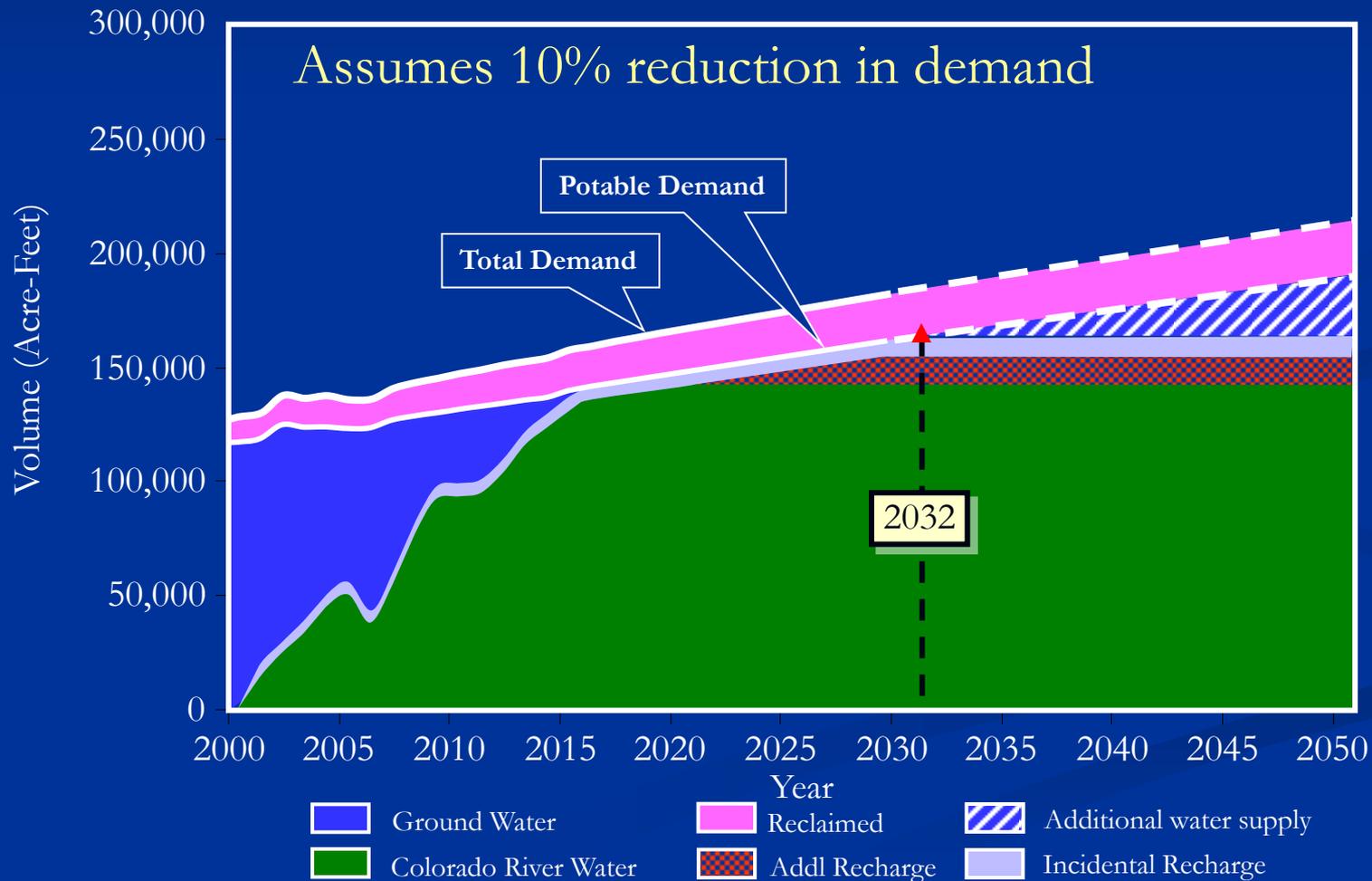
# Demand Without More Conservation

## When Will New Water Supplies Be Needed?



# Demand With More Conservation

## When Will New Water Supplies Be Needed?



# Involving the Community

- Community Conservation Task Force
  - Reviewed 123 Potential Conservation Strategies
  - Strategies Must Reduce Water Use
  - Selected 48 Strategies for Further Investigation
- Cost/Benefit Analysis
  - Evaluate the Cost, Who Pays, Potential Water Savings
- Task Force Recommended 22 Strategies
  - Approved by Mayor and Council Feb 2008

# Programs for 2009-10

- **Single Family targeted HET toilet rebate**
  - 50% the cost of a new toilet up to \$120 (\$200 max/home)
- **Commercial/Industrial/Multi-Family HET toilet rebate**
  - 75% the cost up to \$100/unit
- **Low Income HET replacement program**
  - Qualifying Low-Income Homeowners and Low Income Multi-Family complexes



# Programs for 2009-10

- Commercial: Irrigation System Upgrade Rebate
  - 100% cost of pre- and post- audit
  - 50% cost of irrigation sub- meters
  - 50% cost of smart irrigation timers
  - 50% cost of qualifying materials
    - Reduce waste
    - Increase efficiency



Before

- Up to \$10,000 per property
- Develop Landscape Water Budget



After

# Programs for 2009-10

## ■ Pre-rinse Spray Valve Replacement Program



- Spray valves account for the greatest use of water for most commercial kitchens
- Valve uses 50% less water
- Valve and installation totally free to the customer
- Partnership with State and Southwest Gas as part of water/energy reduction program

# Programs for 2009-10

## ■ WaterSmart Business Program

- Advisory Committee
- Water Management Workshops
- Water Audits
- Recognition



# Programs for 2009-10

- SmartScape Program
  - Landscape Training
  - WaterSmart Workshops
  - Landscape Water Audit Training



# Rainwater Harvesting Ordinance

- New Commercial Construction
- Effective June 2010
- Develop Landscape Water Budget
- Reduce Potable Outdoor Use by 50%
- Landscape Water Meter
- Annual Reporting Requirement



# Greywater Reuse Ordinance

- Effective June 2010
- New Residential Construction
- Provide 'Stub-outs' for future use
- Does not mandate use of greywater



# Rate Structures and Fees



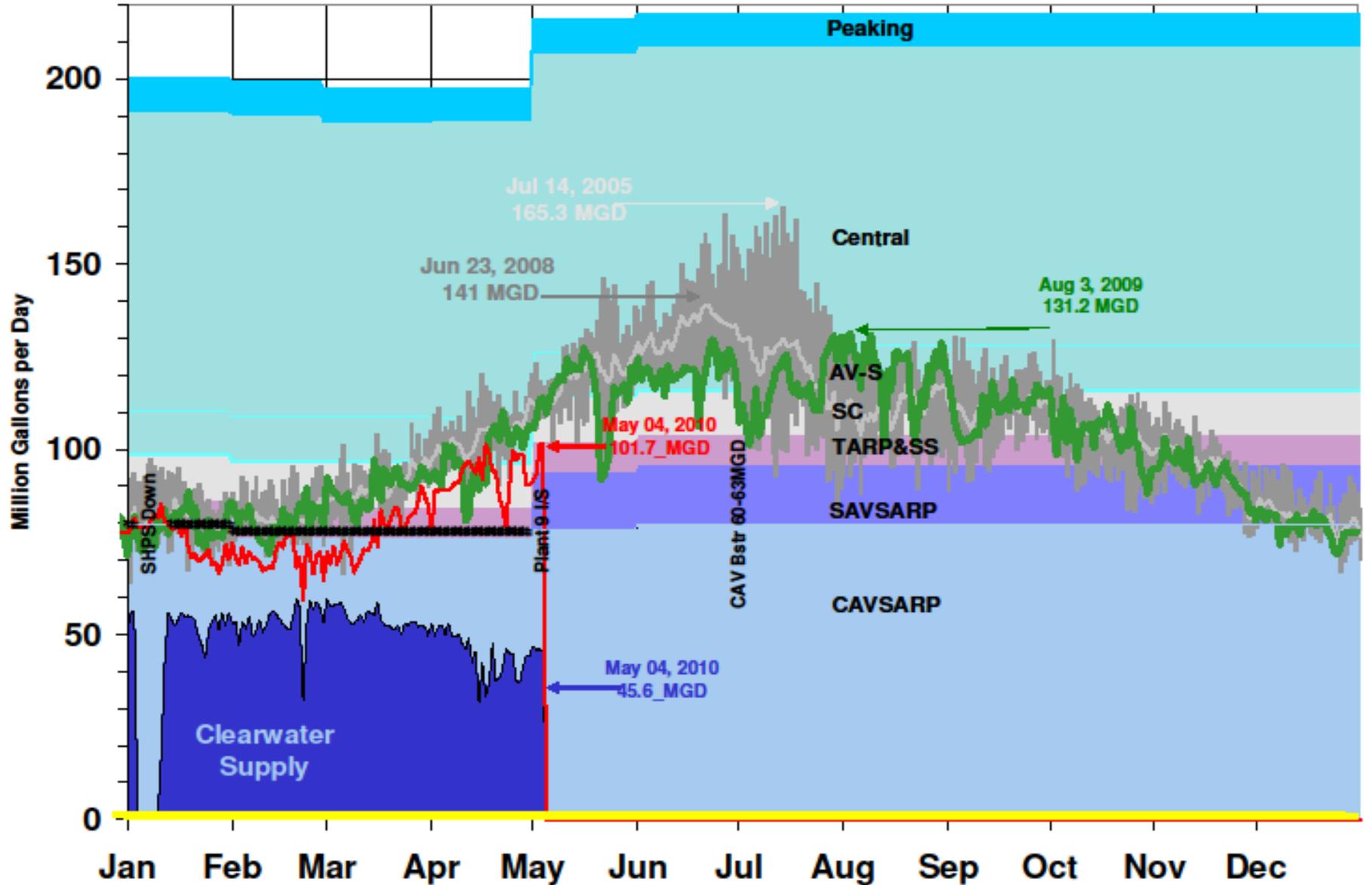
- Residential – Increasing Block Rate
- C/I – Base Rate – Summer Surcharge
- Multi-Family – Flat Rate
- Reclaimed – Flat Rate
- Conservation Fee

# Conservation Today

- **Lowest Levels of Water Use in Years**
  - **Single Family:** 96 gallons per capita per day
  - **Total Per Capita:** 143 gallons/person/day
  - **Peak Day:** 131 million gallons

# Daily Max Demand

May 05, 2010



# Recommendations

- Consider establishing statewide landscape irrigation requirements for commercial users.
- Establish educational requirements for Real Estate and Property Management Professionals.
- Implement Rainwater Harvesting as a Stormwater Management strategy.
- Encourage individual Utility Water Conservation Assessments.

**Water Conservation  
in Tucson Past, Present  
and Future  
Questions?**

**520-791-4331**

**[www.Tucsonaz.gov/water](http://www.Tucsonaz.gov/water)**



# Daily Max Demand

Sep 02, 2009

