

Water Conservation Master Plan Project

Water Commission Meeting
March 4, 2013

Facilitated by:

Toby Goddard,
Water Conservation Manager

Bill and Lisa Maddaus,
Maddaus Water Management



Tonight's Presentation

- Introduction
- Background
- Purpose & Need
- Water Conservation Plan Goals and Objectives
- Overview of Project Scope and Schedule
- Review Water Use Trends and Water Conservation Accomplishments over last Decade
- Solicit Input and Ideas about Potential Measures

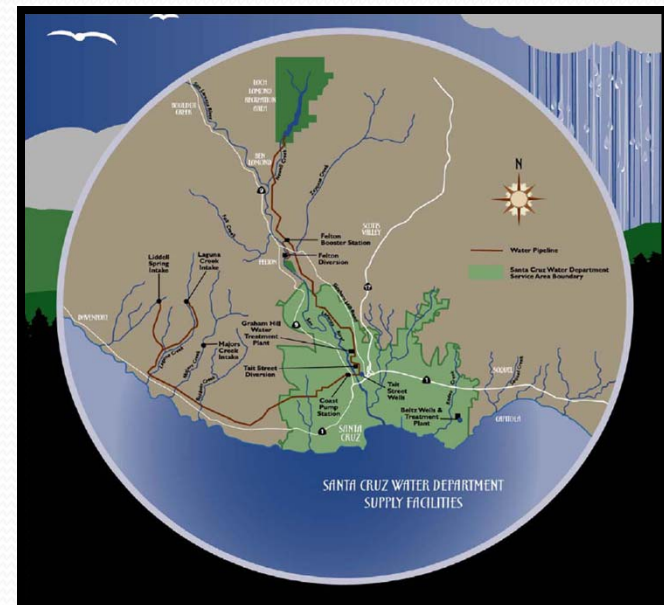
Maddaus Water Management, Inc.

- Hired MWM, whom has written nearly all the hallmark conservation planning guidance over the past three decades
- MWM has completed more than 200 Water Conservation Plans in the past 18 years.



Need For Sustainable Water Supply

- Sources of water supply
- 95% surface water
- Physical, geographic isolation
- Vulnerable to water shortage
- Reduction in surface supply to protect threatened & endangered species
- Decline in available groundwater supply



Integrated Water Planning Approach

- Water conservation recognized as a responsible management strategy for meeting our existing and future water needs
- Represents one of three components of the City's Integrated Water Plan
- Numerous potential benefits:
 - *protects our natural resources*
 - *stretches our existing supply*
 - *can help downsize, delay costly supply, treatment, and distribution system upgrades*

Purpose and Need

- Timing:
 - *Existing plan completed and due for update*
- Priority:
 - *Strengthening water conservation efforts identified as top priority in City Council's 3 year strategic plan and Water Commission's 2012-14 work plan*
- Need for Information:
 - *What is City's remaining conservation potential?*
 - *Demonstrating efficient use tied to support for new supply*

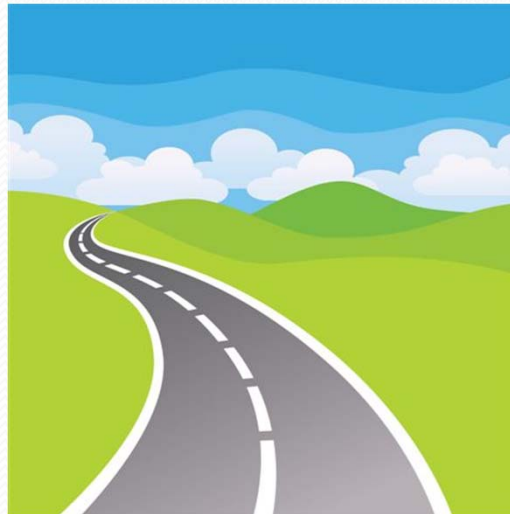
Project Goals and Objectives

- City's policy concerning water conservation addressed in various locations:
 - *City's General Plan,*
 - *City Council's Strategic Plan,*
 - *Urban Water Management Plan, and*
 - *Water Department Mission and Strategic Goals*
- Overarching principles:
 - *To assure public health and safety by providing a safe, adequate, and reliable water supply*
 - *Enhance environmental sustainability and resources*

Project Goals and Objectives

Fundamental goal:

*Create a roadmap to achieve
maximum practical water use efficiency*



Project Goals and Objectives

Specific Objectives:

- Systematically evaluate and quantify the City's remaining long-term water conservation potential;
- Determine which set of measures and implementation mechanisms represent the best approach to achieve future water savings; and
- Produce a master plan to guide the City's in carrying out future water conservation programs.

Project Goals and Objectives

Additional Objectives:

- Assure compliance with City's per capita water use targets under SB7 and the California Urban Water Conservation Council's MOU

Factors to Consider

- Long-term, sustainable reduction in per capita water use
- Cost-effectiveness
- Effect on future use curtailment
- Social acceptance
- Commitment to MOU/Best Management Practices
- Evolving technologies
- Feasibility of implementation

Overview of Project Scope and Schedule

- Task A: Review current water conservation program
- Task B: Analyze water use and organize conservation program opportunities
- Task C: Identify and prioritize conservation measures
- Task D: Master plan preparation

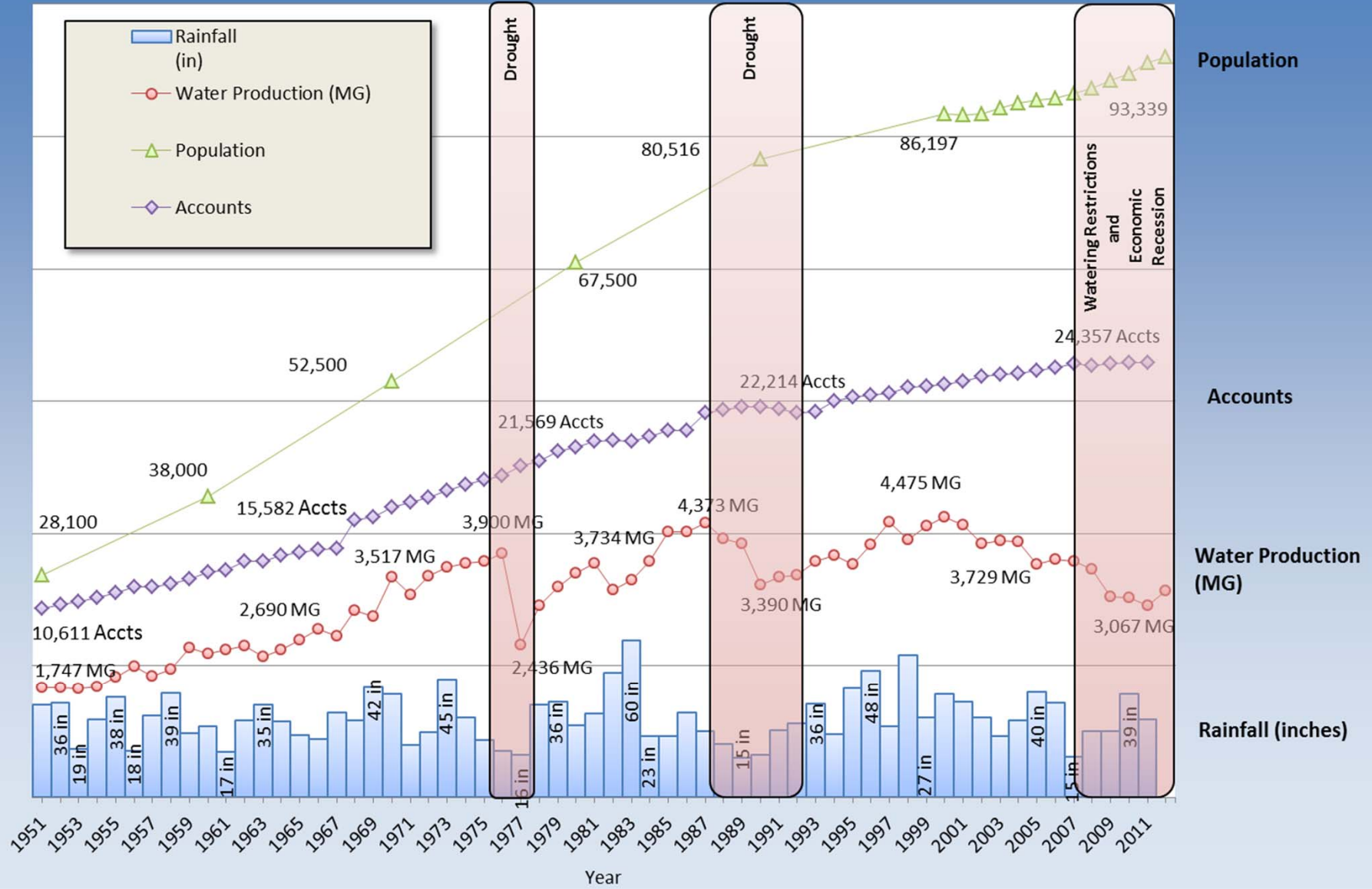
Water Commission Role

- Serve as venue for public input
- Provide its input and ideas
- Make recommendations at key input points

Key Input Points

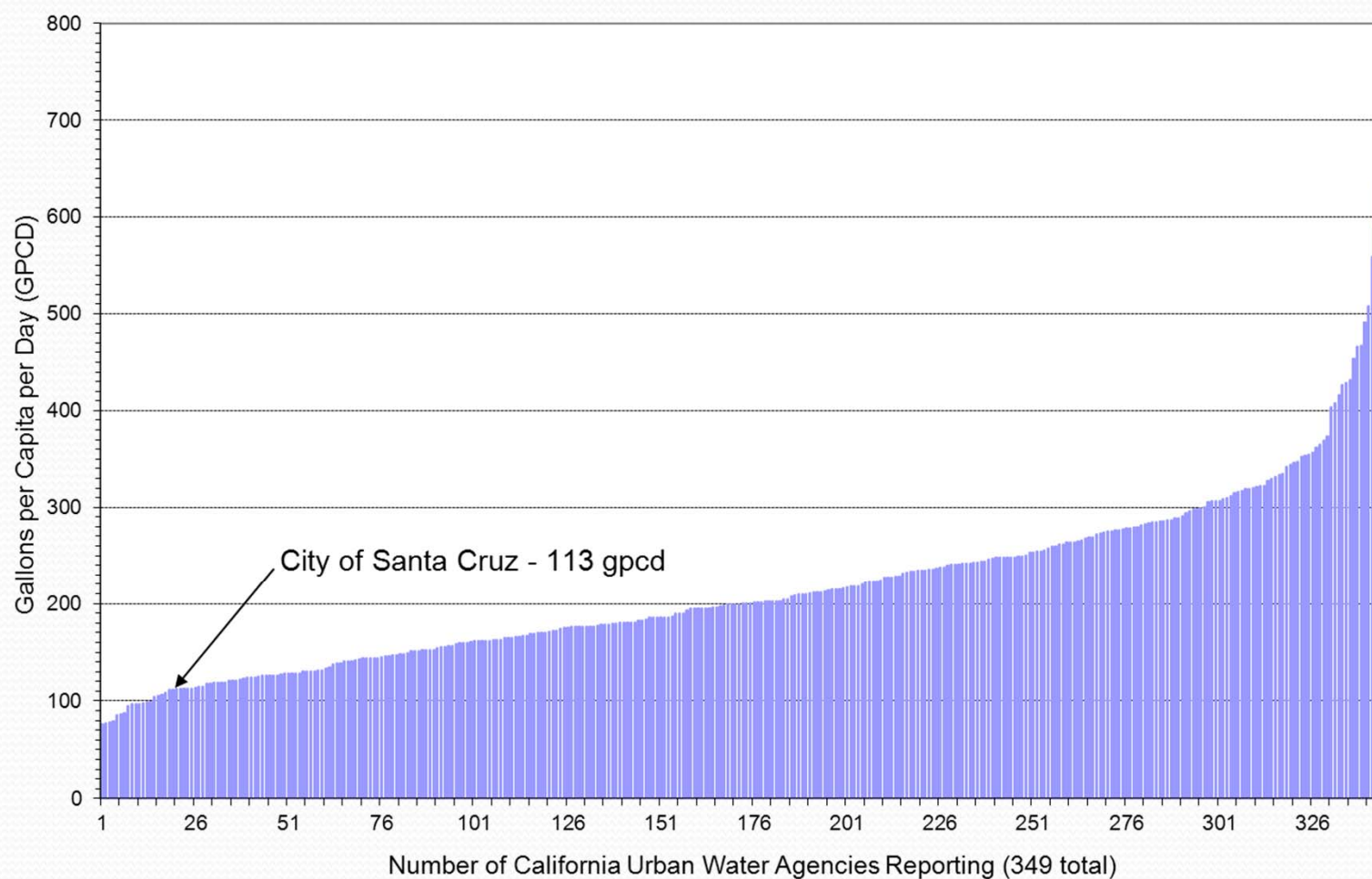
- **Tonight's Meeting:** Confirm Project Goals & Objectives
- **April - May:** Review universe of potential measures decide on conservation measures to be included & analyzed for cost effectiveness
- **August –September :** Review program packages and decide on package of conservation measures to be included in future City's recommended conservation program
- **December – January :** Review & recommend Water Conservation Master Plan to City Council for adoption

Population, Accounts, Water Production and Rainfall 1951-2011 City of Santa Cruz

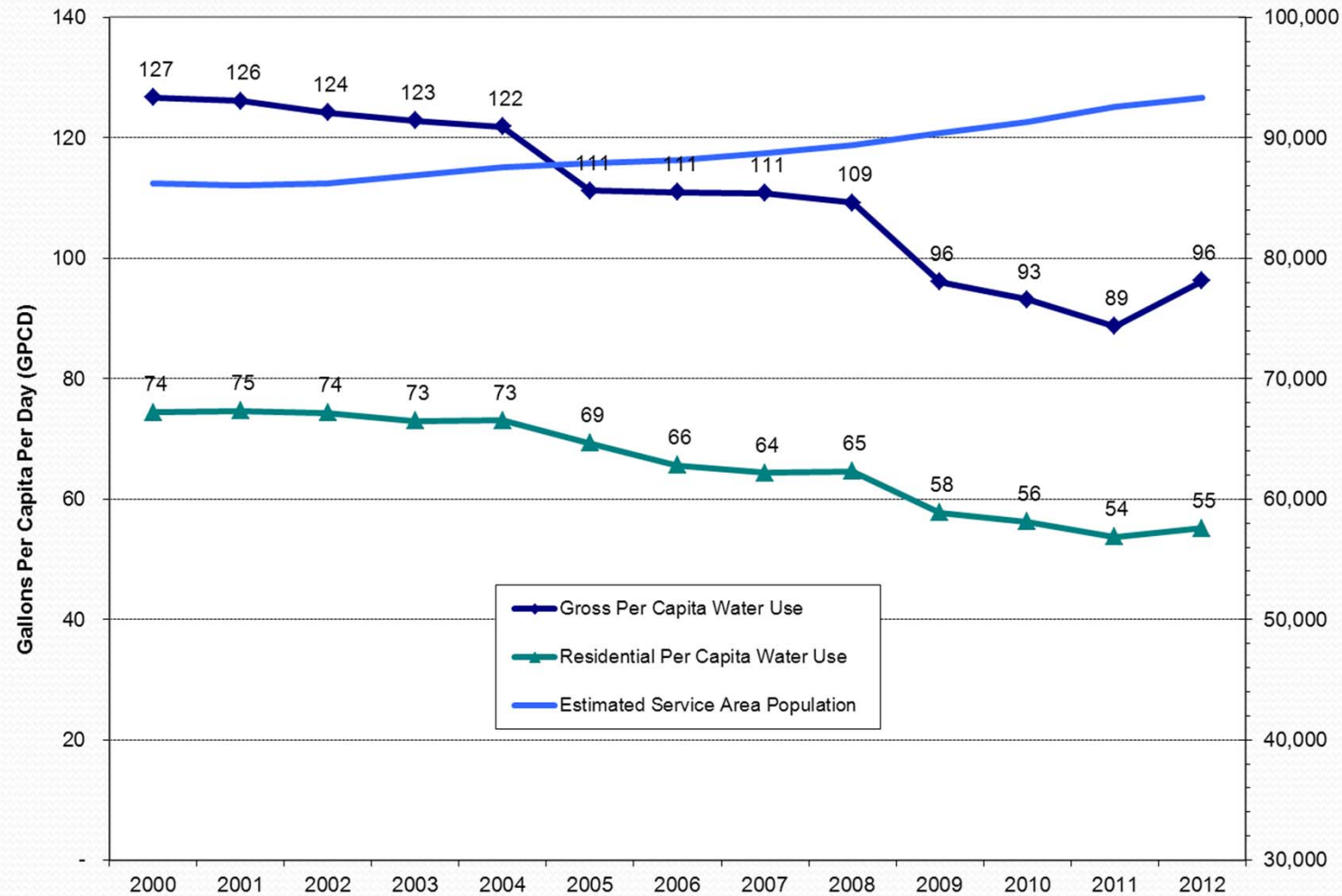


Per Capita Water Use

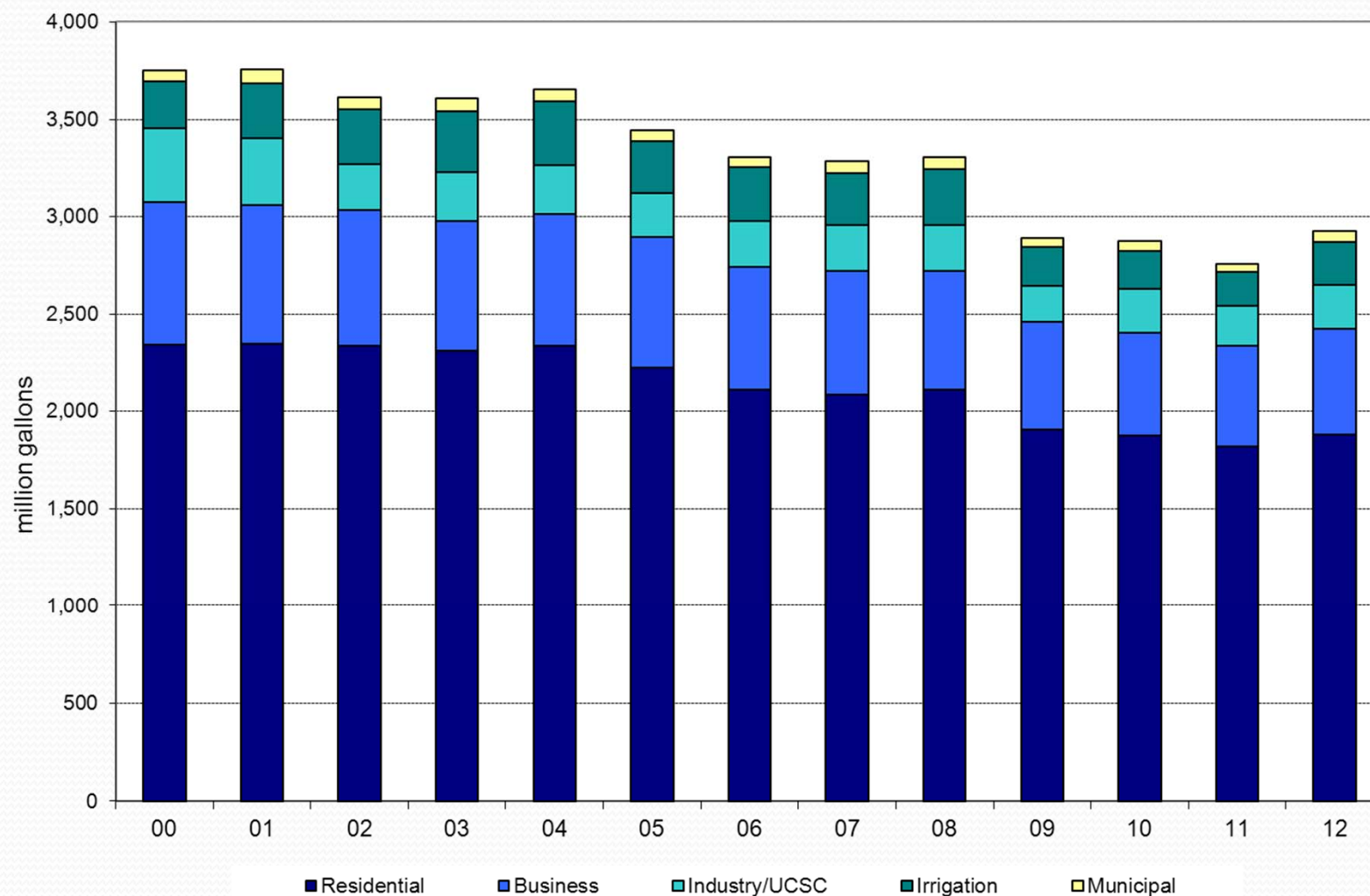
Statewide Urban Per Capita Water Use (10-year average)



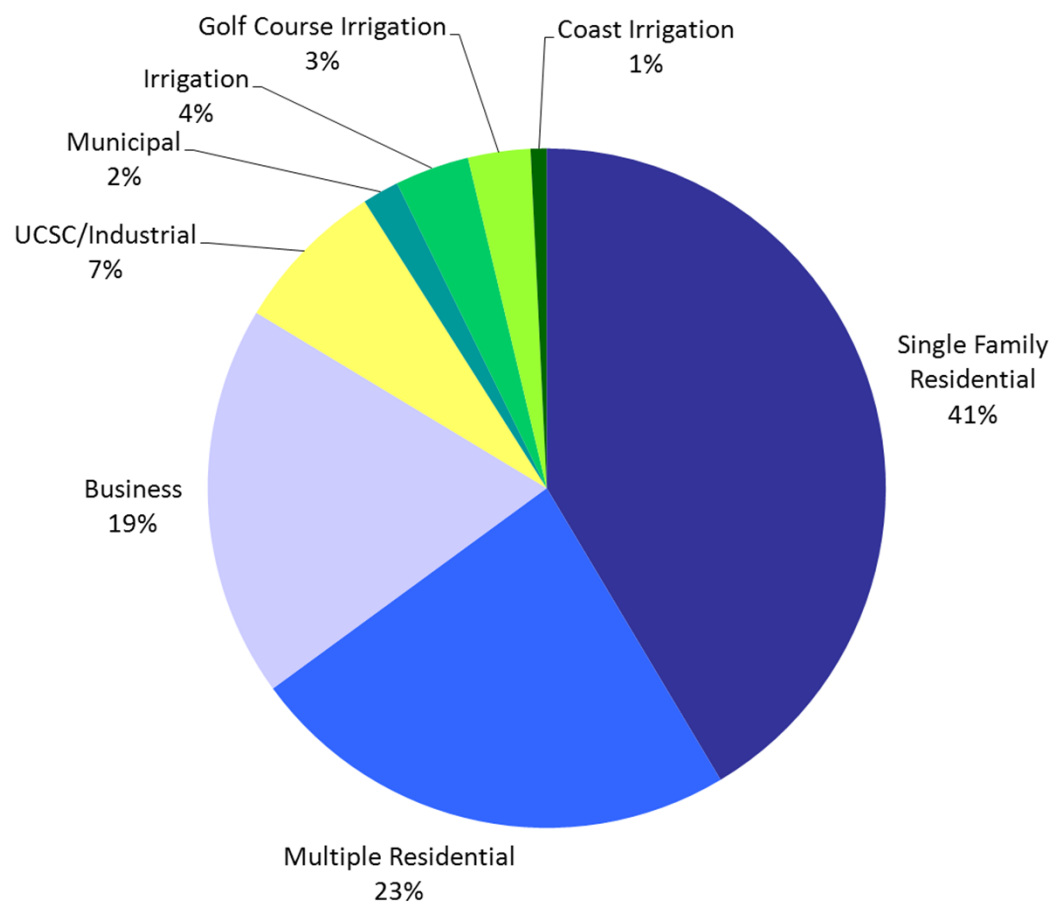
Per Capita Water Use



Recent Water Use Trends



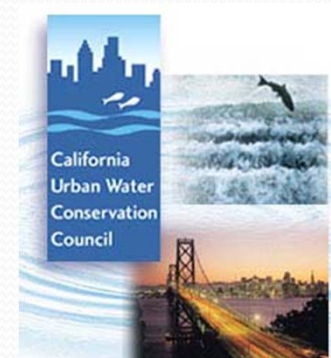
Water Use by Customer Category



Past & Current Conservation Efforts

Five categories:

- Utility operations programs
- Public information and education programs
- Residential
- Commercial, industrial, institutional (CII)
- Landscape

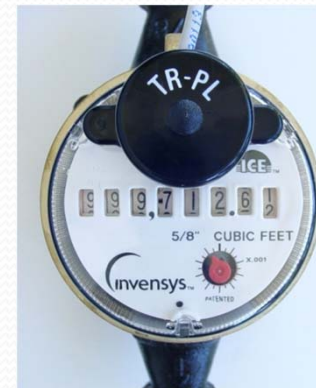


Utility Operations Programs

- Water waste prevention (1981)
 - Existing customers
 - New development
- Water loss control (1997)
- Metering with commodity rates
- Water conservation-oriented pricing (1995, 2004)

Water Waste Restrictions - In Effect at All Times:

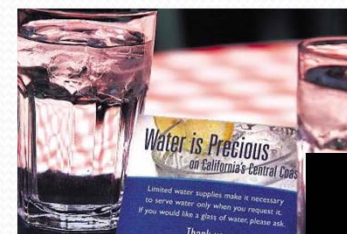
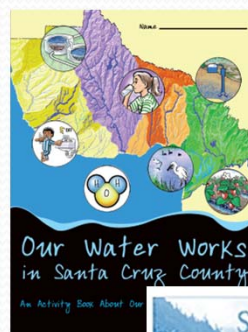
1. **No Excessive Irrigation:** Irrigating in a manner that causes or allows potable water to run off property onto sidewalks, gutters, streets, ditches, or storm drains is prohibited.
2. **Uncorrected Plumbing Leaks.** By law, a reasonable effort must be made to repair, or make arrangements for fixing, a plumbing leak within 24 hours of finding it.
3. **Hose Nozzle Required for Vehicle Washing.** Vehicles may be washed at a commercial car wash or by using a hose equipped with a shut-off nozzle.
4. **Other:** The indiscriminant running of water which is wasteful and without reasonable purpose is prohibited.

[illegible]

Public Information and Education

Various methods:

- Utility newsletter
- Website
- Literature
- Advertising and bill inserts
- Information on utility bills
- Distribution of free devices
- Workshops
- Regional events



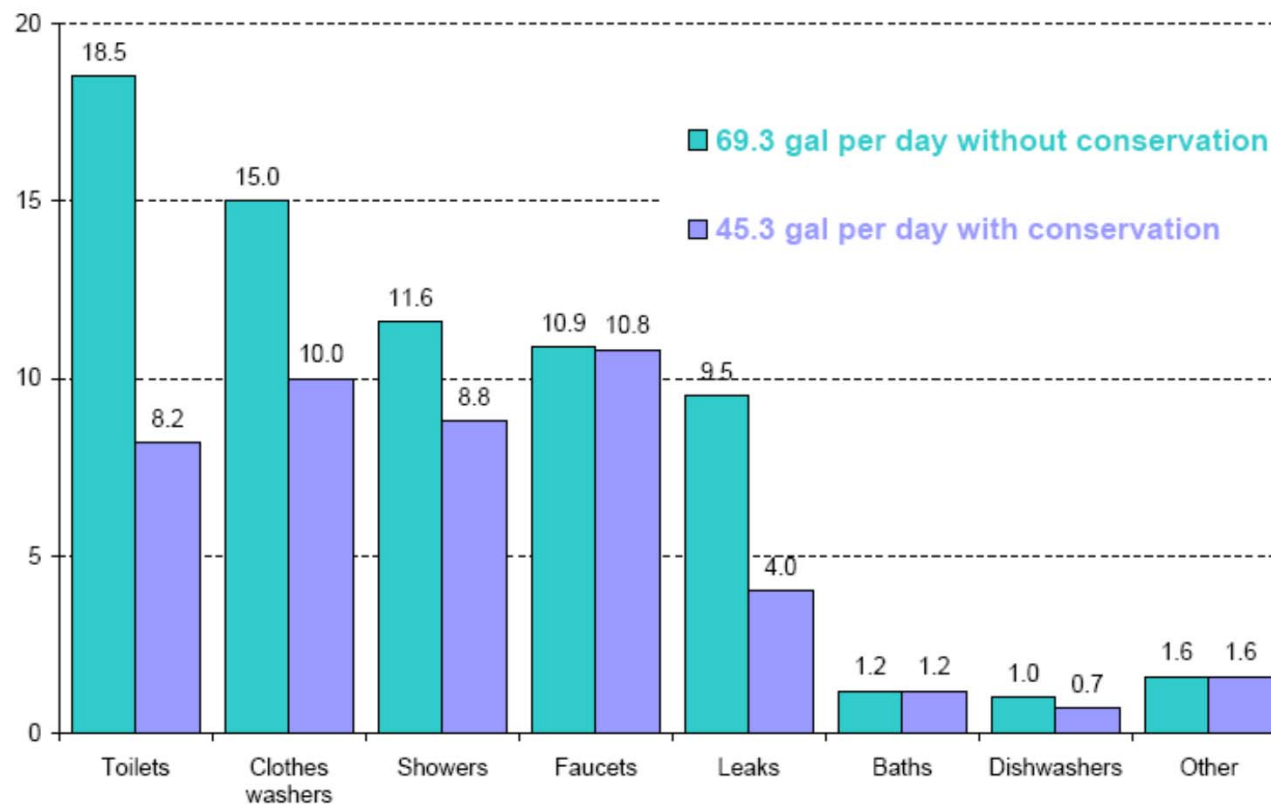
Residential Programs

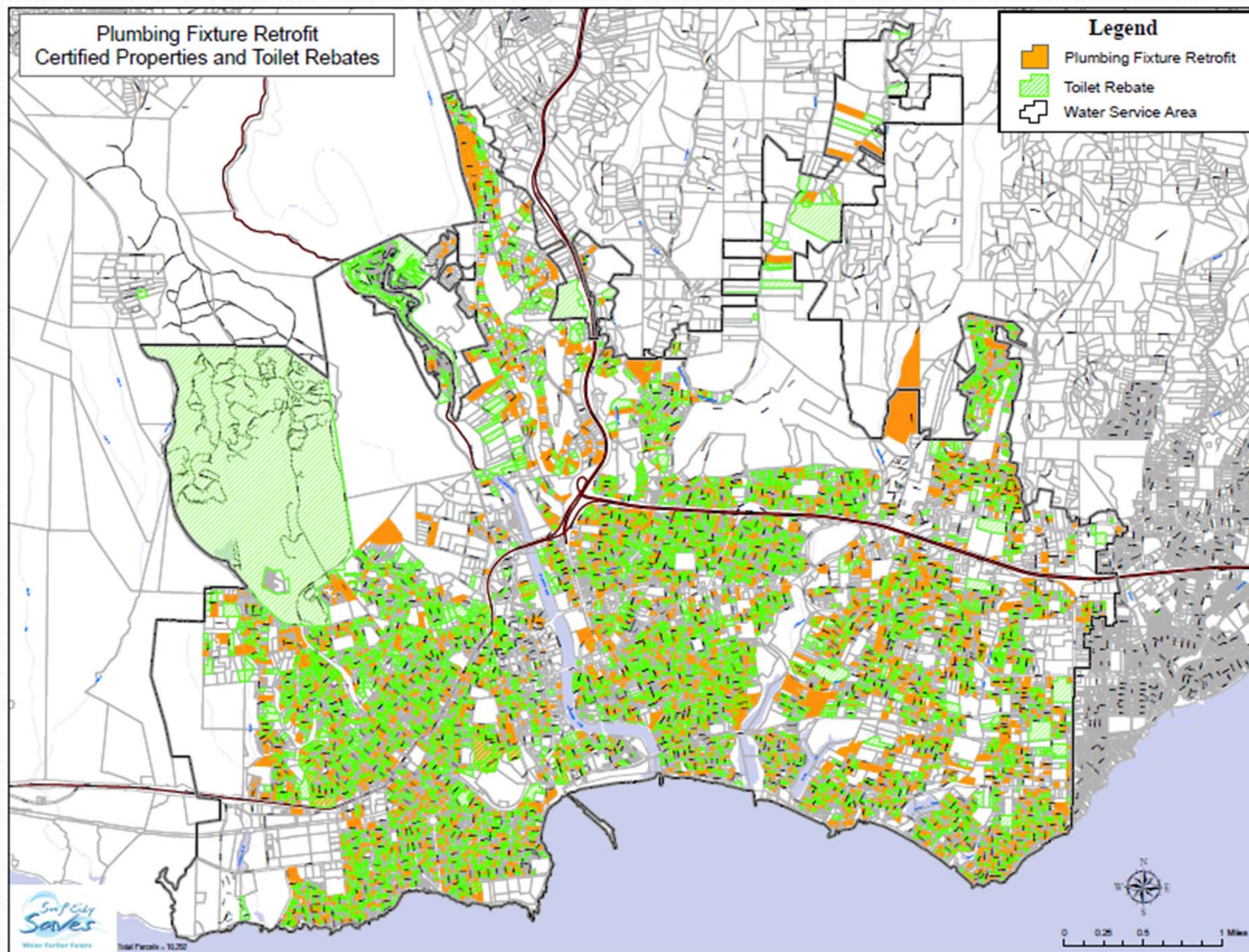
- High efficiency toilet rebates (1995)
- High efficiency clothes washer rebates (2000)
- Home water audits or “surveys” for high use customers (2006)
- Plumbing fixture retrofit regulations (2003)
- Distribution of water conservation devices (2001, ongoing)

Residential Programs



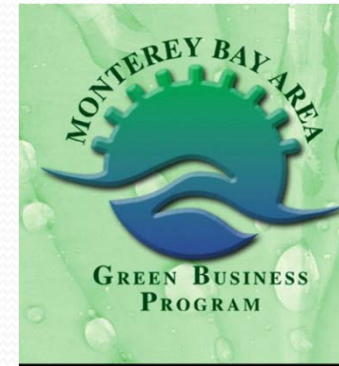
Residential indoor water use (gallons/person/day):



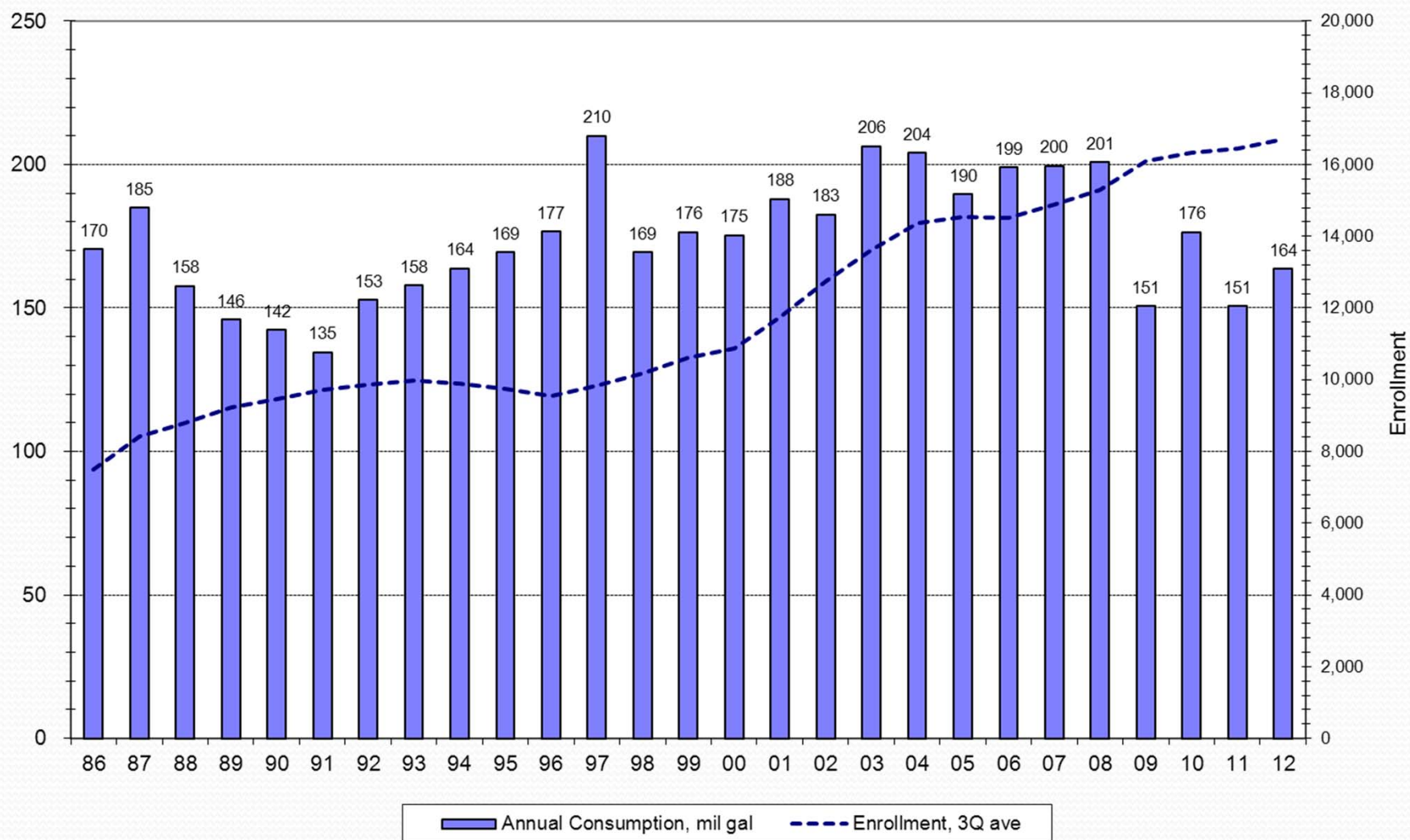


Commercial, Industrial, and Institutional Programs

- Fixture and appliance rebate programs (1995)
- Facility audits (2006)
- Retrofit regulations (2003)
- Smart Rinse (2005)
- Light Wash (2003)
- UC Santa Cruz



Annual Water Consumption, 1986-2012
Univeristy of California, Santa Cruz (main campus only)
(million gallons per year)

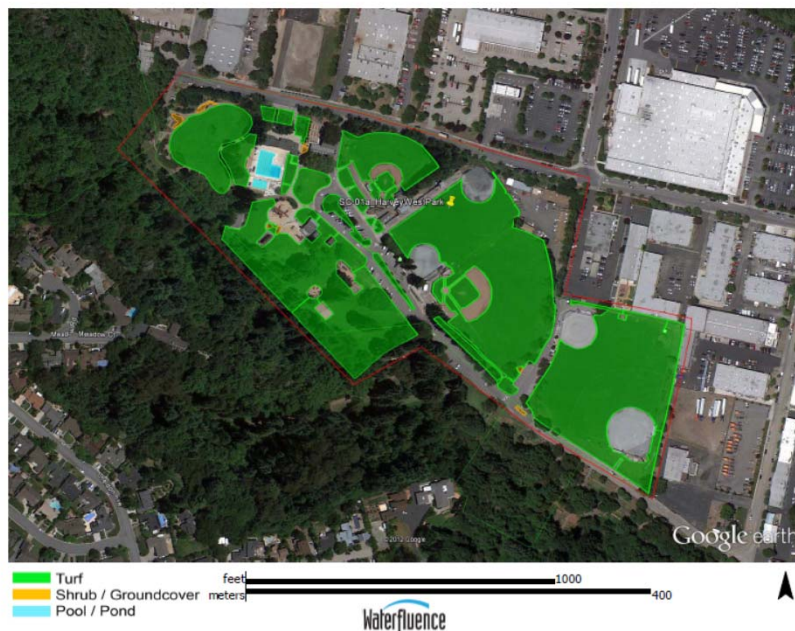


Landscape Programs

- Landscape standards for new development (1993, 2010)
- Water-Smart Gardening (2009)
- Workshops/certification
- Water budgets and large landscape water audits (2010)
- Rain barrel sales (2011)
- Updated gray water standards
- Lawn removal rebates (2010)



Landscape Programs



- 181 sites
- 16.5 million sq. ft.
- 265 million gallons/yr

Landscape Water Use Report

Prepared For:

Site Name: HarveyWestPark
Main Contact: Meta Rhoads
Landscape Firm:
Other Contacts: Dave Rosener

Acct# and Service Address:

027-02950-011; 0 Harvey West @ Dubois
027-02999-001; 300 Evergreen St
027-03400-011; 0 Harvey West Annex
027-03500-011; 0 Evergreen St
027-03505-011; 0 Harvey West Park
027-03520-011; 0 Harvey West Lit Lge

Site

Meas
Meas
Irrig
Irrig
Pool
Indo



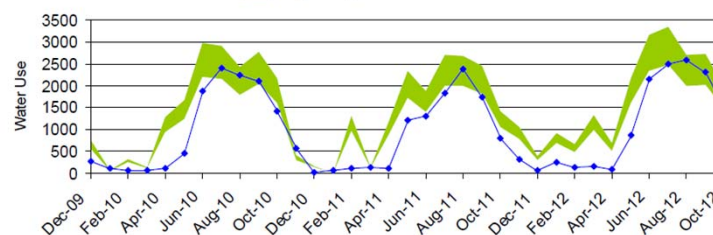
CITY OF SANTA CRUZ
HARVEY WEST PARK
809 CENTER ST RM 101
SANTA CRUZ CA 95060-3826



100-top score

Water Use History

Budget Range +/- 15% Actual Water Use



Savings Potential	Last Month	Last 12 Months	Last 24 Months	Last 36 Months	Read Date	Actual Water Ccf	Budget Water Ccf	Over Water Ccf	Over Water %	Weather ET to Rain Inches
Over Water Ccf	0	244	614	805	10/9/2012	1,502	1,739	0	0%	3.48
Over Water %	0%	2%	3%	2%	9/10/2012	2,317	2,373	0	0%	4.75
Dollars Lost \$	\$0	\$975	\$2,458	\$3,219	8/10/2012	2,592	2,348	244	9%	4.70
					7/11/2012	2,486	2,898	0	0%	5.80
					6/11/2012	2,158	2,743	0	0%	5.49
					5/11/2012	865	1,881	0	0%	3.77
					4/11/2012	96	591	0	0%	1.19
					3/13/2012	161	1,153	0	0%	2.31
					2/10/2012	135	572	0	0%	1.15
					1/11/2012	253	799	0	0%	1.60
					12/12/2011	74	347	0	0%	0.70
					11/10/2011	324	908	0	0%	1.82

Messages

How much potential remains in the residential, commercial, and landscape sectors?

Preliminary Results Water Use Baseline Survey		
	Single Family Residential	Multi-Family Residential
Toilets	90%	91%
Showerheads	92%	98%
Bathroom Faucets	90%	82%
Kitchen Faucets	71%	82%
Clothes Washers	63%	46%

Future Trends in Water Conservation Devices

- Water savings from plumbing codes (e.g., 2010 California Green Building Standards Code)
 - Passive savings as only more efficient fixtures become available for replacement/repair.
 - Active savings from rebates and Code compliance
- Updates resulting from current study efforts.
 - More efficient fixture recommendations
- Future innovations within the water supply, appliances, and water fixtures industry.

Plans for Future Discussion on Measures

- Foundational Best Management Practices
 - Public & School Education
 - Water Waste
 - Water Loss
 - Pricing
- Residential
- Commercial & Industrial
- Large Landscape Irrigation

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Options for Reducing Water Demand

1. Operations programs (water loss control, etc.)
2. Information and education
3. Distribute devices
4. Provide technical assistance/audits
5. Financial incentives
6. Direct installation
7. Regulations
8. Codes and standards
9. Pricing
10. Reuse



Next Steps

- Community Input on Approach and Conservation Measures to Consider
- Develop DSS Model Tool to Forecast Water Needs by type of Customer
- Evaluate Potential Conservation Measures
- Develop Water Conservation Master Plan
- Review with Water Commission
- Adopt Plan at City Council in early 2014

Commission's Input Request

- Questions? Any concerns?
- What conservation measures might you want evaluated? To be discussed next meeting...
- What are your ideas to update the conservation program?

