

Dana Nichols
San Antonio Water System

A Formula For Success:

Direct Incentive Programs, Community Education,
Stakeholder Input, Effective Regulations



Water for People and the Environment Conference
Dallas, Texas
October 20, 2007



Our water. Our future.

San Antonio Water Challenge

- San Antonio historically depends on the Edwards Aquifer as it's sole source of water.
- Withdraws are now limited by permits.
- SAWS and the region is now faced with developing alternative water sources
- Conservation was the first program developed to address water needs



San Antonio Conservation Plan and Funding

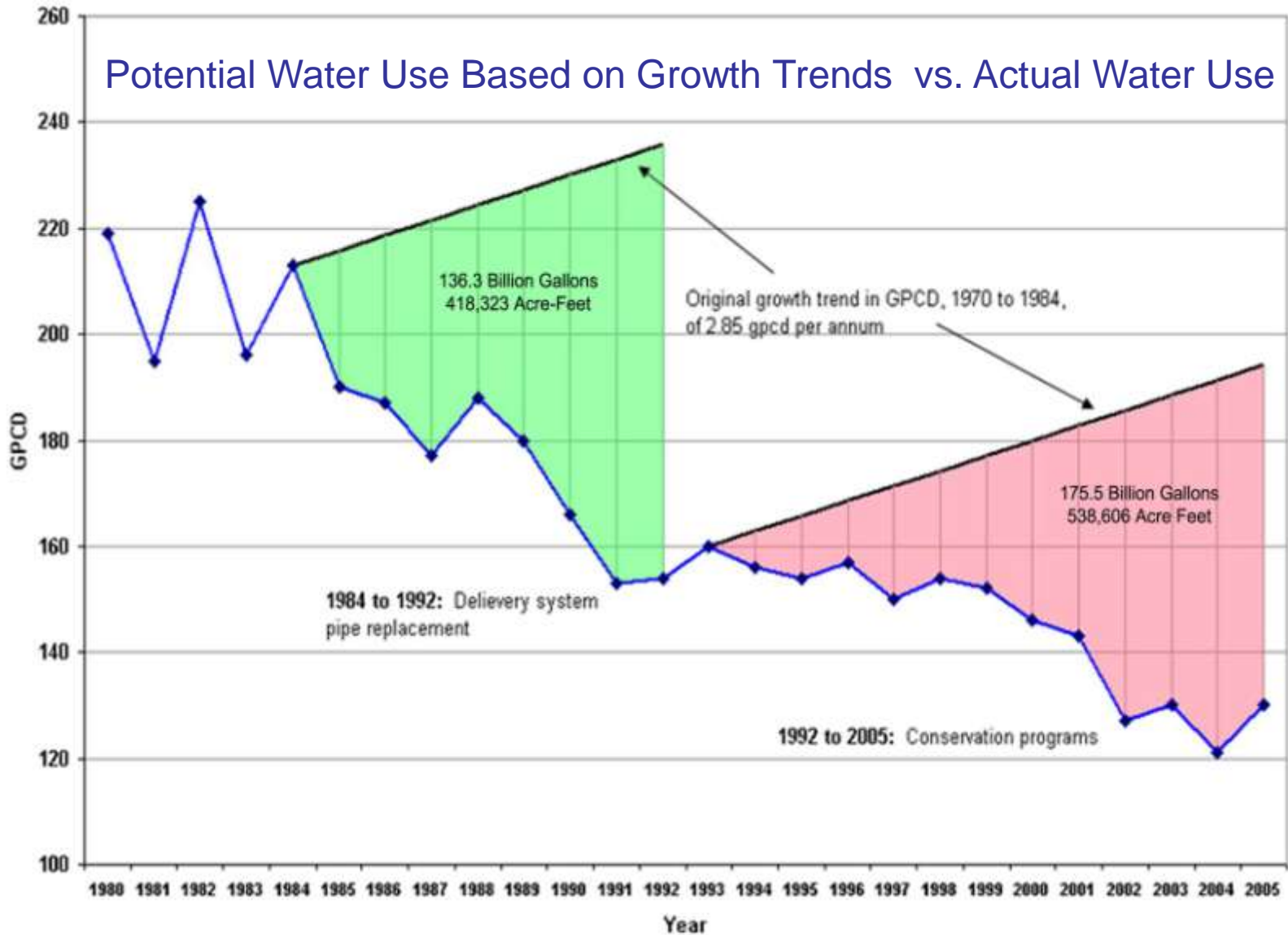
- 1992: City Council merged 3 water and wastewater agencies into one agency charged with managing water resources; the San Antonio Water System
- 1993: SAWS adopts its Conservation and Reuse Plan.
- 1994: San Antonio passes a residential rate structure with dedicated conservation funding
- 1998: San Antonio passes commercial meter fee based on meter size to fund commercial conservation

Setting Goals:

Conservation Plan GPCD Goals

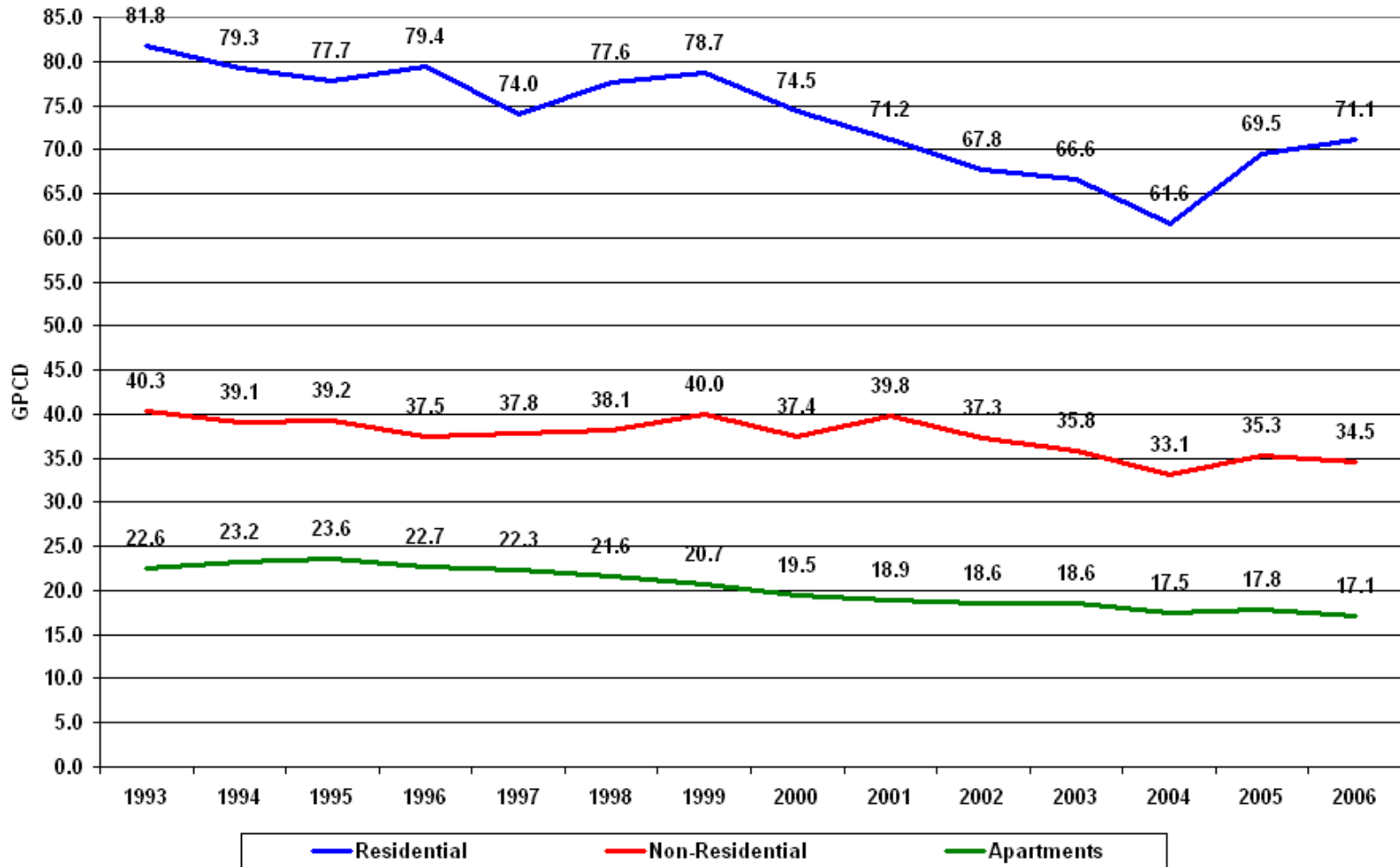
- 1993 starting point: 160 GPCD*
 - * Total pumped/ total service population
- Conservation Goals established in 1993:
 - » By 2008 – 140 GPCD
 - » By 2016 – 132 GPCD
- Results so far:
 - » 2008 goal achieved in 2001
 - » 2006 drought year GPCD 135.6
- New (2005) Goal: By 2016
 - » 116 GPCD in average year
 - » 132 GPCD in dry year

Potential Water Use Based on Growth Trends vs. Actual Water Use

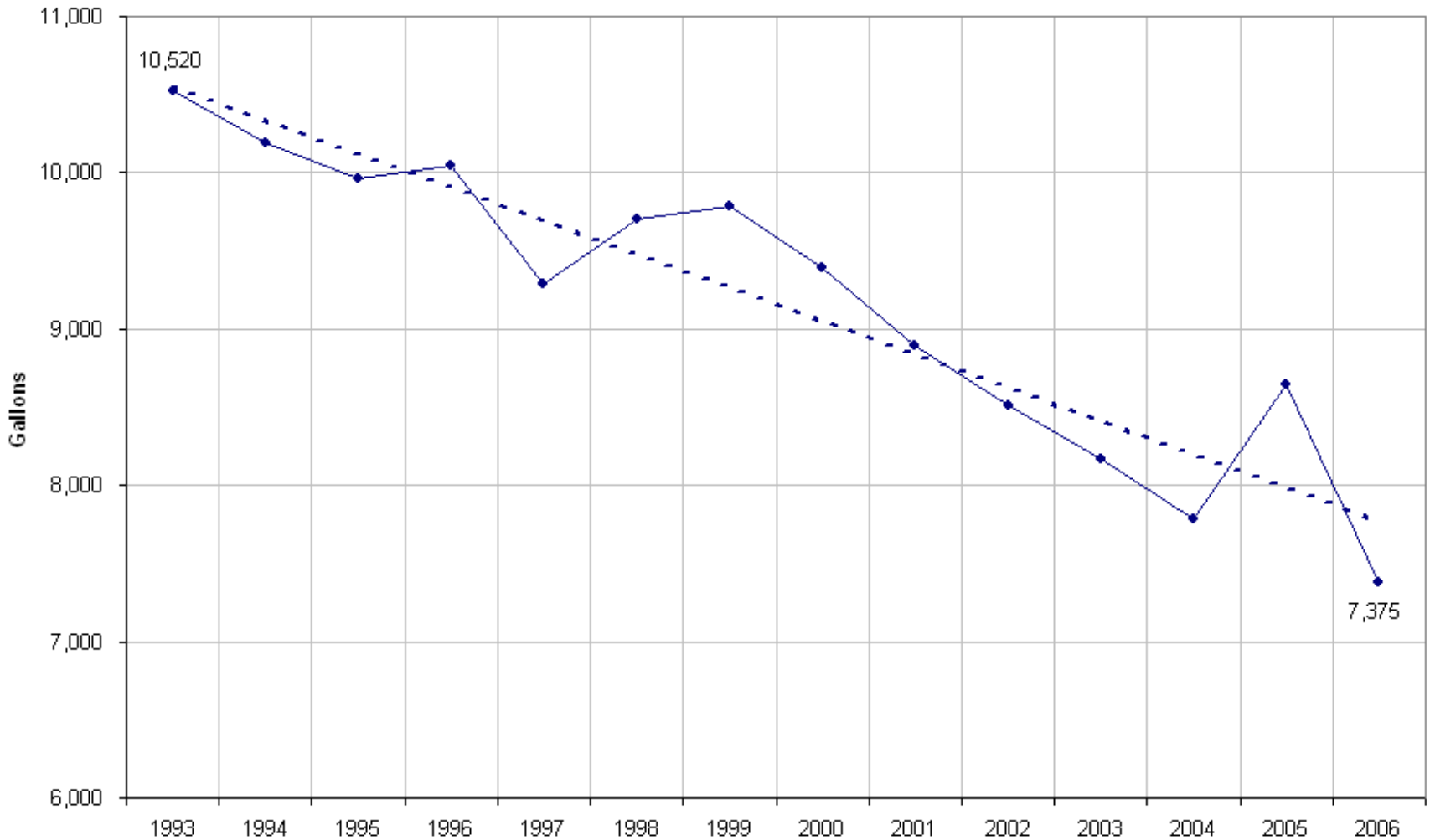


Metered GPCD* by category over time

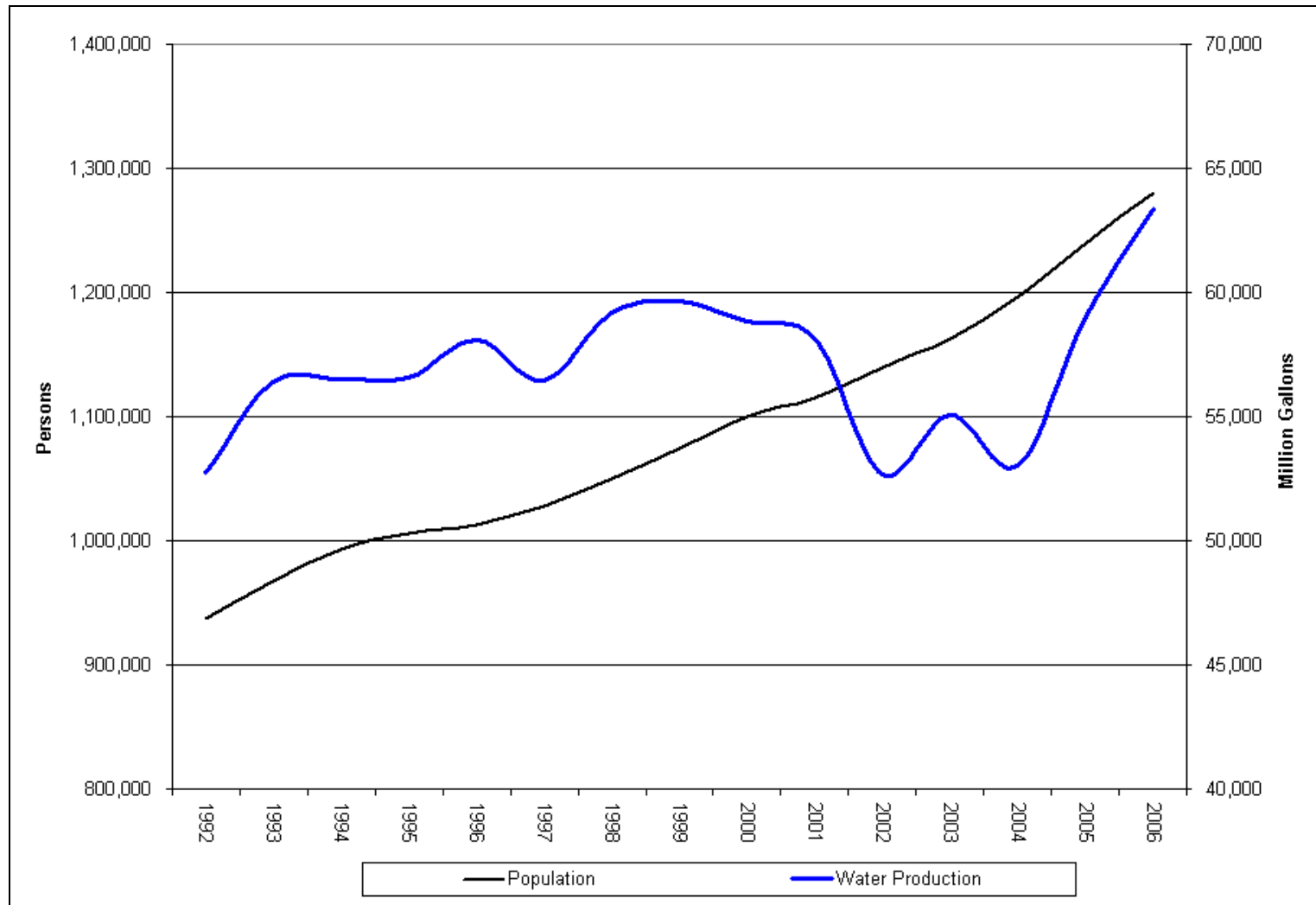
* This GPCD = total billed water within each category/total service population



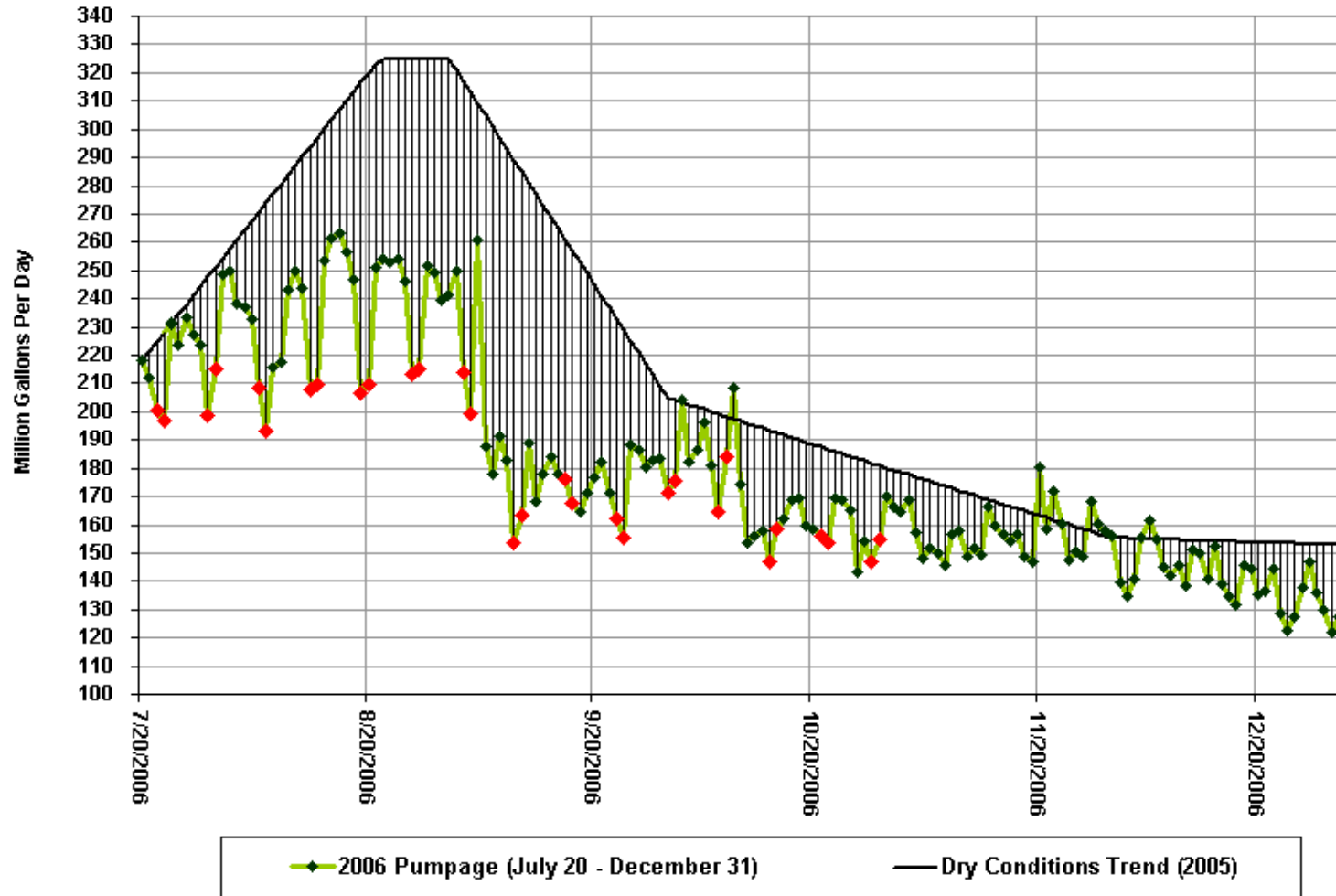
Average Residential Water Consumption (Includes Un-metered Irrigation)



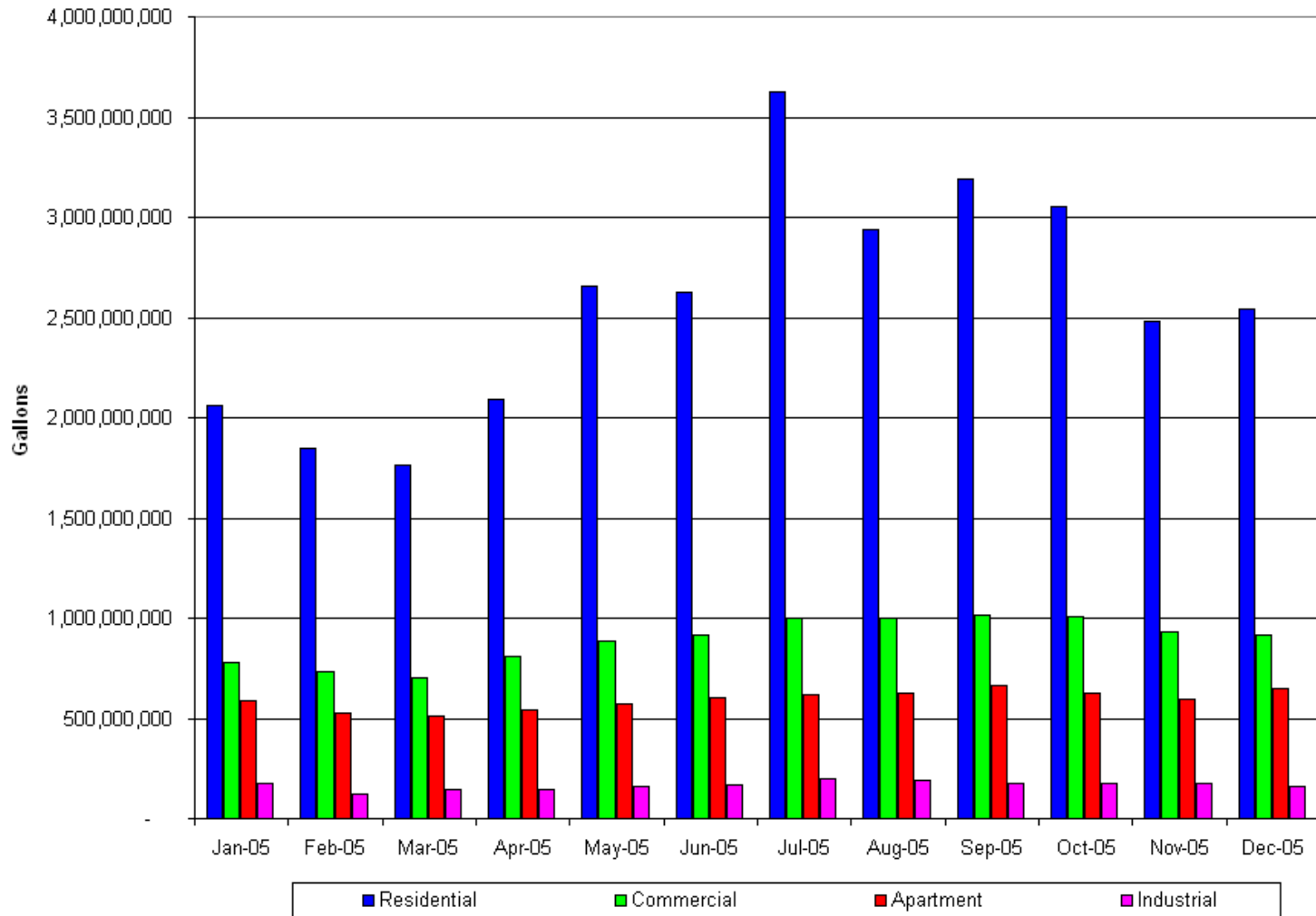
Population vs. Water Use



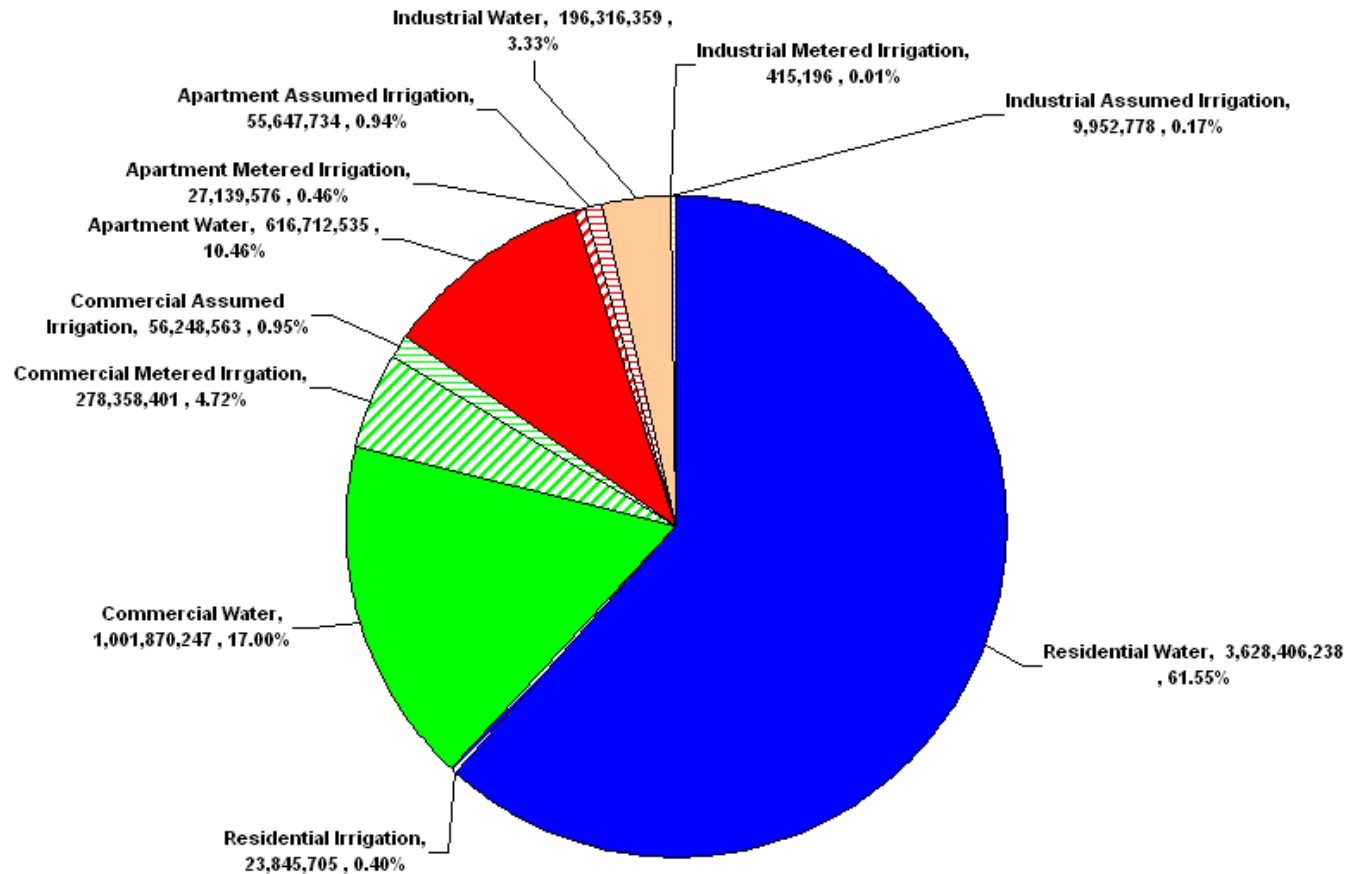
2006 Drought Management



2005 Metered Water: Hot, Dry No Restrictions



2005 Water Use By Sector: Hot, Dry, No Restrictions



2006 SAWS Water Conservation Program

- 330,000 taps representing 1.3 million people
- 2006 expenditures 4.4 million dollars
 - Includes personnel, programs and contractual services
- \$3.40 per person average expenditure
- Water conserved by direct programs in 2006:
1,426 Acre Feet
- Cost per AF saved in 2006 - \$308
- Current market rate for permanent purchase of additional Edwards raw water rights: \$5000 AF

Formula For Success in San Antonio

1. Conservation Considered a Source of Water
2. Dedicated Funding
3. Three-pronged Approach to Activities
 - A. Public Education and Involvement
 - B. Direct Programs
 - C. Research and Analysis
4. Effective Regulation
5. Nurturing a Community Conservation Ethic



1. Conservation: a Source of Water

- Conservation fully integrated into water resource plan. Reflected in SAWS organizational structure
- Program costs assessed against other water resource options

2. Dedicated funding in the rate structure

- Economic analysis on SAWS programs showed for every \$1 spent on conservation, \$4-\$7 are saved

3. Three-Pronged Approach

- A. Public education and community involvement
- B. Direct incentive programs
- C. Research and Analysis

A. Public Education

The Water Bill – Know thyself

- Everyone gets it
- Everyone reads it (at least the bottom line)
- First best way to communicate and educate cost effectively
- Includes a monthly newsletter



San Antonio Water System

P.O. Box 2990
San Antonio, Texas 78299-2990
(210) 704-SAWS (7297)



CURRENT BILL SUMMARY

ACCOUNT HOLDER
3456 SERVICE ADDRESS
ACCOUNT # 12 3456 789012 3

DOMESTIC WATER SERVICE CHARGE	6.89
WATER SUPPLY FEE	1.20
EDWARDS AQUIFER AUTHORITY FEE	.18
FEDERAL STORMWATER FEE	2.90
SEWER SERVICE CHARGE	5.70

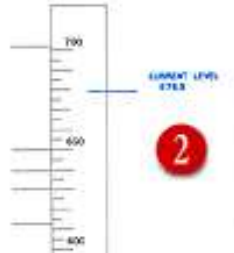
1

AMOUNT DUE NOW	16.33
5% LATE FEE AFTER JAN 26 2004	.82
TOTAL WITH LATE FEE	17.15

(Detailed bill calculation on back)

EDWARDS AQUIFER WATER LEVEL

Record High June 1993: 703.2 ft.



CURRENT LEVEL
678.3

Stage I Begins 600.0 ft.
Stage II Begins 640.0 ft.
Stage III Begins 680.0 ft.

Record Low Aug. 1968: 612.9 ft.

** Measured in feet above sea level

2



3

YOUR WATER USE WAS
1,496 GALLONS

YOUR NEIGHBORHOOD
AVERAGE WATER USE
WAS 8,229 GALLONS

SAWS RESIDENTIAL
AVERAGE WATER USE
WAS 8,229 GALLONS

YOUR NEXT SCHEDULED
METER READING DATE:
JAN 30 2004

IMPORTANT NOTICE

PAY TOTAL AMOUNT PRIOR TO DUE DATE TO AVOID NOTICE OF PRETERMINATION HEARING, SERVICE CHARGES, AND ADDITIONAL DEPOSIT.

THE ABOVE SUMMARY INDICATES A PREVIOUS BALANCE. IF SPECIAL CIRCUMSTANCES EXIST THAT WOULD PRECLUDE PAYMENT OF THIS BILL PLEASE CONTACT US AT (210) 704-SAWS (7297).

4

DETACH HERE PLEASE PRESENT BOTH PORTIONS IF PAYING IN PERSON DETACH HERE

RETURN BOTTOM PORTION WITH PAYMENT

ACCT# 12 3456 789012 3
00161

** FOR PAYMENTS BY CHECK,
SEE BACK OF BILL



AMOUNT DUE NOW

\$16.33

AMOUNT DUE AFTER JAN 26 2004
INCLUDES 5% LATE CHARGE!

\$17.15

230732366035100005405000053371

5



If you have any question about your bill, please call (210) 704-SAWS or write to: SAWS Customer Service, P.O. Box 2449, San Antonio Texas 78293-2449. SAWS appreciates the opportunity to serve you.

CURRENT BILL CALCULATION

SERVICE DATES FOR THIS STATEMENT: OCT 07-NOV 04 2003
RESIDENTIAL/COM. SERVICE ACCOUNT: 07 3090 064990 2
TOTAL GALLONS OF SERVICES: 504

DOMESTIC METER READING ON: OCT 07 2003 504
DOMESTIC METER READING ON: NOV 04 2003 510
METER WATER USE (GALLONS): 4,488

DOMESTIC WATER SERVICE CHARGE (5.18) EACH METER CHARGE (MINIMUM BILL) 5.41
4,488 GALLS. @ .0728 PER 100 GALLS 3.24
SUBTOTAL 8.65

WATER SUPPLY FEE 4,488 GALLS. @ .0044 PER 100 GALLS 3.79
SUBTOTAL 3.79

EDWARDS AQUIFER AUTHORITY FEE 4,488 GALLS. @ .01167 PER 100 GALLS .52
SUBTOTAL .52

FEDERAL STORMWATER FEE RESIDENTIAL LOT MORE THAN 4,999 SQ/FT 2.98
SUBTOTAL 2.98

SEWER SERVICE CHARGE YOUR WINTER AVERAGE IN GALLONS 1,496
F1451 1,496 GALLONS (MINIMUM CHARGE) 5.70
2,993 GALLS. @ .1938 PER 100 GALLS 4.97
SUBTOTAL 10.27

TOTAL CURRENT CHARGES 36.41

6

HOW TO READ YOUR METER

0 0 0 4 3 X

YOUR METER HAS A NUMBER DISPLAY SIMILAR TO THE ONE PICTURED ABOVE. READ THE METER FROM LEFT TO RIGHT. NUMBERS WITH A BLACK BACKGROUND ARE NOT USED IN THE CALCULATION OF YOUR MONTHLY WATER CONSUMPTION AND SHOULD BE DISREGARDED. SUBTRACT THE PREVIOUS METER READING (PROVIDED IN YOUR STATEMENT) FROM YOUR CURRENT OBSERVATION. THE RESULT WILL INDICATE THE AMOUNT OF WATER USED (IN HUNDREDS OF CUBIC FEET) SINCE THE LAST METER READING. TO CONVERT THIS USAGE TO GALLONS MULTIPLY THIS AMOUNT BY 7.48.1.

EXAMPLE

82-61+2 2X748.1=1,496

NEW SUPPLY FEE RATES IN JANUARY

IN OCTOBER 2000, CITY COUNCIL APPROVED A WATER SUPPLY FEE THAT FUNDS THE DEVELOPMENT OF NEW WATER SUPPLIES AND SECURES SAN ANTONIO'S WATER FUTURE.

THE INCREASE IN THE WATER SUPPLY FEE SCHEDULED FOR APPROVAL BY SAWS BOARD OF TRUSTEES IS \$0.0288 PER HUNDRED GALLONS OF WATER USE, AND WILL START TO BE REFLECTED IN FEBRUARY 2004 BILLINGS. THIS RATE IS LESS THAN THE SCHEDULED MAXIMUM INCREASE ORIGINALLY APPROVED BY CITY COUNCIL. ON THE AVERAGE CUSTOMER BILL FOR 8,500 GALLONS OF WATER, THE FEE WILL ADD APPROXIMATELY \$2.16 TO THE BILL.

THE WATER SUPPLY FEE APPEARS AS A SEPARATE LINE ITEM ON CUSTOMER BILLS AND IS THE SAME RATE FOR BOTH RESIDENTIAL AND COMMERCIAL CUSTOMERS.

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Para recibir su estado de cuenta en español favor de llamar 704-SAWS



To receive your statement in Spanish please call 704-SAWS

CUSTOMER SERVICE LOCATIONS

Monday - Friday

803 Castrovilla Road (Las Palmas)	8:00 am - 5:00 pm
915 W.W. White Rd.	8:00 am - 5:00 pm
1001 E. Market Street	8:00 am - 5:00 pm

9

10

** IMPORTANT MESSAGE CONCERNING PAYMENTS BY CHECK: IF A CHECK IS RETURNED FOR INSUFFICIENT OR UNCOLLECTED FUNDS, YOUR SIGNATURE GIVES PERMISSION TO DEBIT YOUR CHECKING ACCOUNT ELECTRONICALLY FOR THE ORIGINAL AMOUNT. PAYMENT BY CHECK CONSTITUTES ACCEPTANCE OF THESE TERMS. WE THANK YOU FOR YOUR BUSINESS.



A. Community Involvement: Stakeholders

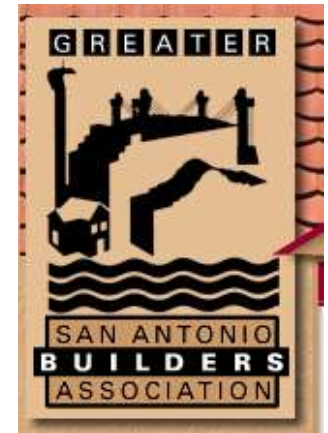
Community Conservation Committee

- Diverse committee appointed by Board of Trustees
- Formal way to receive input
- Brings stakeholders in to the process

Industry Groups

- Work with industry segments to promote Best Practices
 - Gets the word out
 - Can see others in industry are doing it
 - Greater San Antonio Builders Association
 - Green Industry Alliance
 - San Antonio Manufactures Assoc.

The Real Estate Council of San Antonio



Public Education & Community Involvement

Special Events & Free Workshops

- Contract with local volunteer groups: Master Gardeners, Botanical Society, Audubon Society, Garden Volunteers
 - Promotes “neighbor to neighbor” education
 - Extends staff resources



B. Direct Programs

Rebates, Services, Distribution

- Broad range of programs for residential and commercial customers
- Gives all users an opportunity to conserve
- A customer that has benefited from a conservation program will support conservation – On the Conservation Team

Equipment Change vs. Behavior Change

Equipment Changes

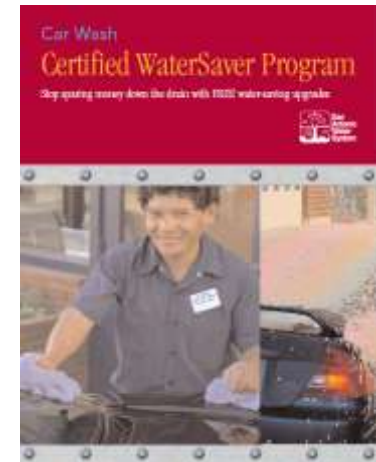
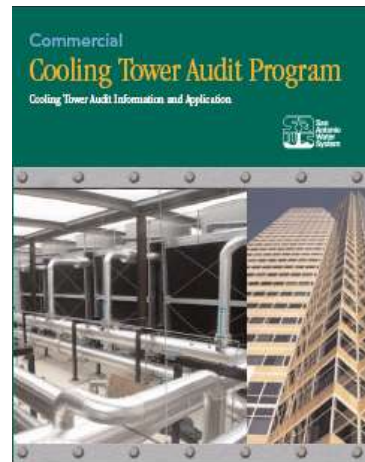
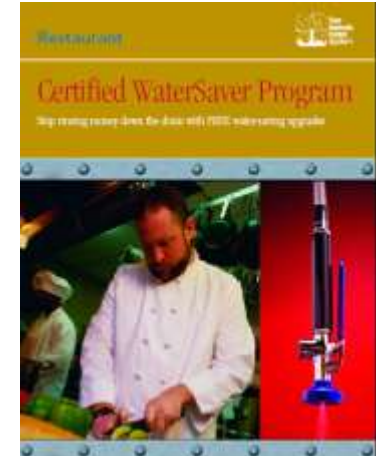
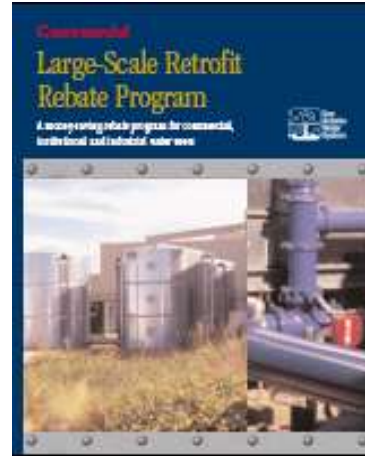
- Exchanging water using equipment with equipment that uses less or no water
- Generally thought of as “indoor” conservation
- Ex: HET’s, spray valves, bottle washers, car wash nozzles, shower heads
- One decision, one time, ongoing, month to month savings

Behavior Change

- Making decisions on when and how to use water
- Significant determinant for successful “outdoor” conservation
- Plant material may not need water, but use will only be reduced if not irrigated
- Decision to water or not needs to be made daily

Direct Programs- Commercial

- Toilet Distribution
- Large-scale retrofit
- Restaurant Retrofit
- Landscape Rebates
- Landscape Certification
- Builders Certification
- Free Workshops
- Watersaver Awards



Direct Programs - Residential



Home Water Audit

Want to keep money from going down the drain?



- Toilet Distribution
- Landscape Rebates
- Plumbers to People
- Home Water Check-ups
- Washing Machine Rebate
- Irrigation Advice
- Free Workshops
- Events



Wash Right

Get a \$100 rebate and *really* clean up with a new washer.



Watersaver Landscape

Saving water and money, landscaping never looked prettier.



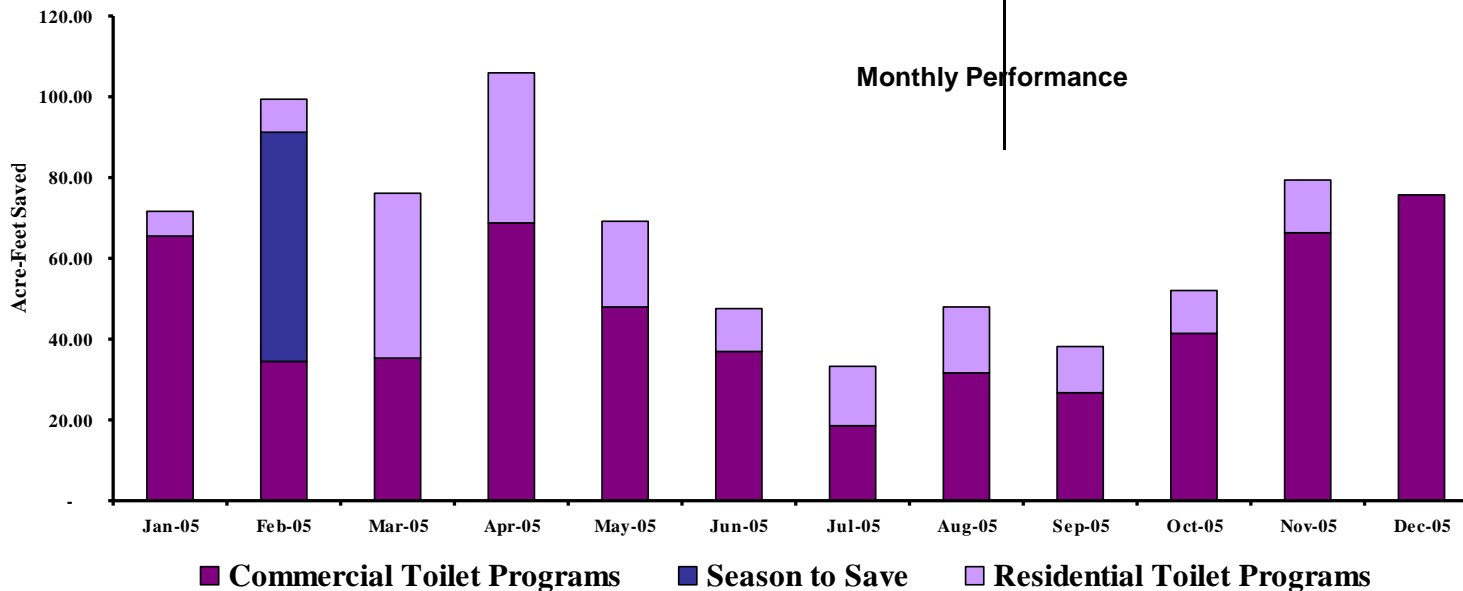
Kick the Can

It's a great way to save money and water.

TOILET DISTRIBUTION PROGRAMS

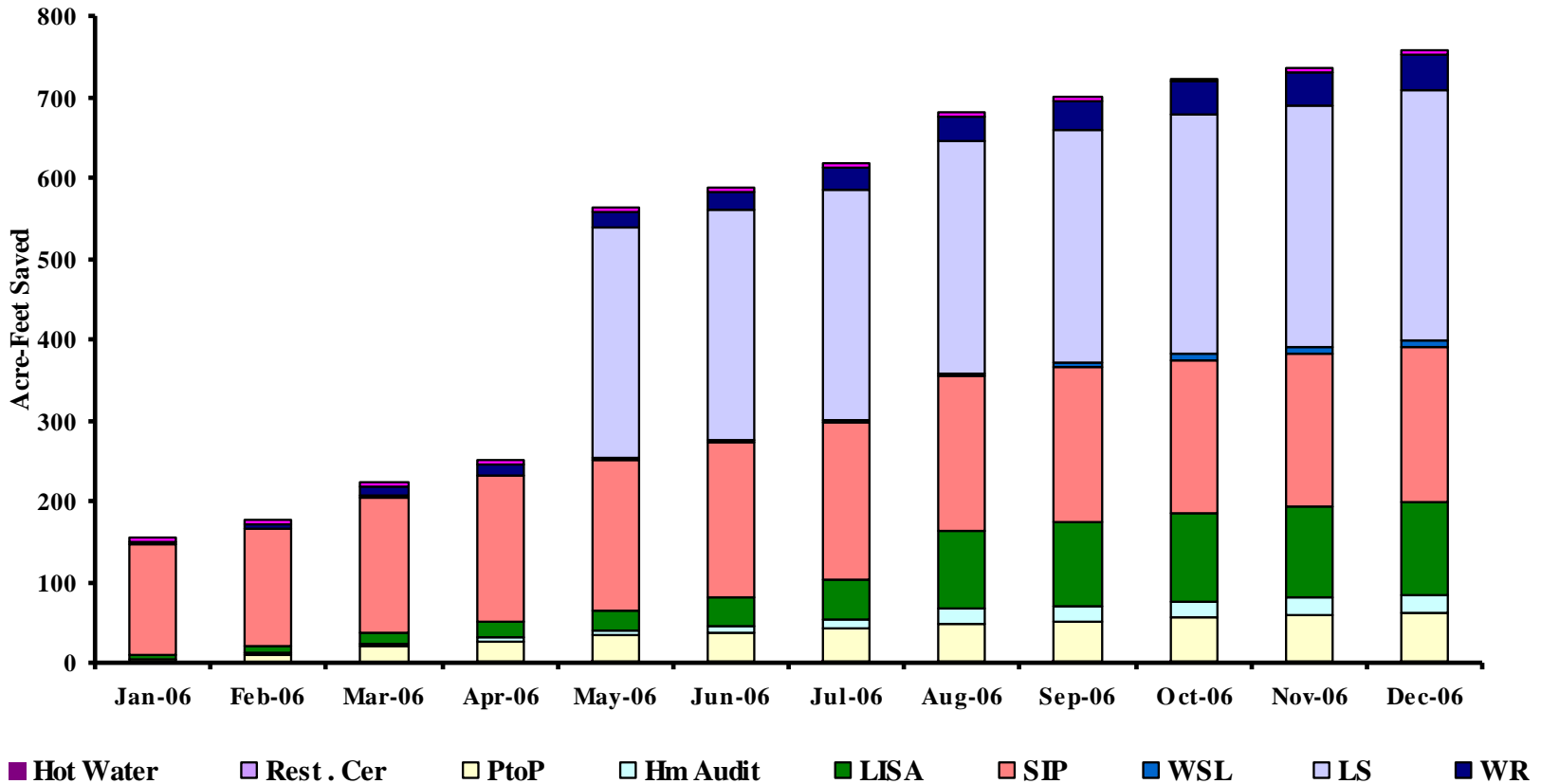
Goals: 2006 Direct Program Goal = 1,430 Acre-Feet (1 GPCD)
 Annual Objectives: 17,835 Toilet Retrofits
 803 Acre-feet Saved in 2006

18,789 Toilet Retrofits
 799.17 Acre-Feet Saved in 2006
99.5% of Total Goal Accomplished in 2006

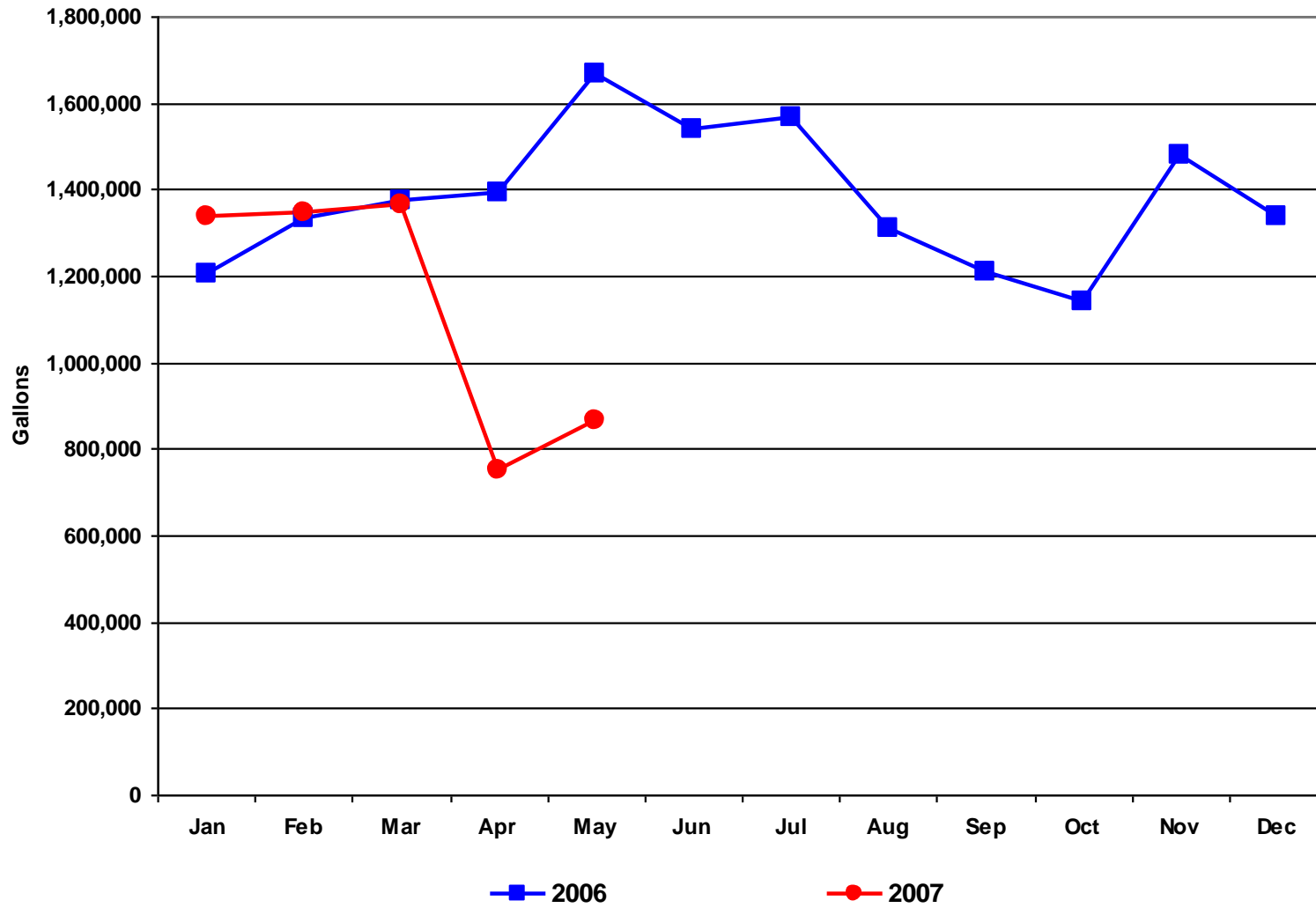


Other Conservation Programs

759.21 Acre-Feet Saved in 2006
120% of Goal in 2006!



Hotel Retrofit Program – Hilton Palacio del Rio



Top Commercial Water Users

Tap	Customer Name	2005 Annual Consumption	
City of San Antonio			
051013/ 293164	SA Zoo	75,552,863	Potential water savings of 459 million gallons
Commercial Laundry			
086892	Martin Laundry	44,037,655	Waiting for return call
Correctional Facilities			
136467	Wackenhut Corp.	47,157,979	Audit- Laundry Services
Food/Beverage Manufacturing			
172877	Pepsi Cola Bottling	69,797,776	Moved cooling tower from 1.28 to 4 cycles
349303	Cot Beverages	53,792,879	Audit; waiting for return call
314378	Reddy Ice	19,003,984	Replaced 4 toilets
Hospitals			
154215	Bexar County Hospital	107,085,930	Audit
267152	Bexar County Sheriff/Jail	101,024,172	Waiting for return call
Retail			
156886	Grande Ford	23,758,908	Contact made- turned off Dino-wash (Saved 21 million gallons per year)
Theme Park			
295587	Fiesta Texas	81,204,759	Potential to save 12 million gallons

Analyzing Conservation Potential: The ZOO

- Industrial flush valve toilets- 7 GPF to 1.6 GPF=**12,700,800 gals/year**
- 2 Soft Serve Ice Cream Machines = **876,000 gals/year**
- 4 ice machines – water to air cooled =**1,532,051 gals/year** Faucet aerators =**540,000 gals/year**

**Total estimated annual water savings:
15,648,851 gallons**



C. Research & Analysis-

Turfgrass Research

- Drought tolerant grass required in all new construction
- Defined as the ability to survive 60 days in the summer without supplemental irrigation
- Protects homebuyers investment in landscape
- Negotiated study with stakeholders (turf grower industry) to determine which varieties could meet standard.
- Funded the study site and hired TAMU to conduct the research
- Growers had significant input into the research protocols



Research & Analysis

Top Residential User Analysis

Initial Goal –

Quick Water Use Reductions

- Target our top 1% residential water users
 - 3300 customers using >43,000 gals/month vs. SAWS average of 9200 gals/month
- Sent a “call for action” letter that included a self audit and an offer of a free home and irrigation analysis

Long term Goals

- Analyze water use
- Identify opportunities for additional conservation
- Tailor outreach to customer need
- Implement outreach plan

Water Use vs. Customer Action

- Highest users requested home visits and reduce by the greatest percentage
- Lowest users completed and returned self audit and reduced use
- Mid-users did not respond to SAWS and reduced use by the least amount

Self Audit vs. SAWS Audit

Common Problems Found	Self Audits	SAWS Audits
Indoor Leaks	20	74
Outdoor Leaks	46	97
Irrigation System Leaks	25	66
Outdoor Faucet Leak	7	6
Other leak	4	3
Yard Pipe Leak	3	2
Pool Leak	7	0
Irrigation Clock Settings	0	20

Top Residential Water Customers

Based on 10% Response rate (306 out of 3273)

Action Taken (# Customers)	Average Monthly Reduction per residence (Aug – Dec)	Total Reduction per residence (Average monthly x 5 months)
No Action (2967)	843.32 gals.	4216.61 gals.
Self-Audit (123)	3099.47 gals.	15497.37 gals.
SAWS Audit (183)	5199.10 gals.	25995.48 gals.

Analysis –



Watersaver Landscape

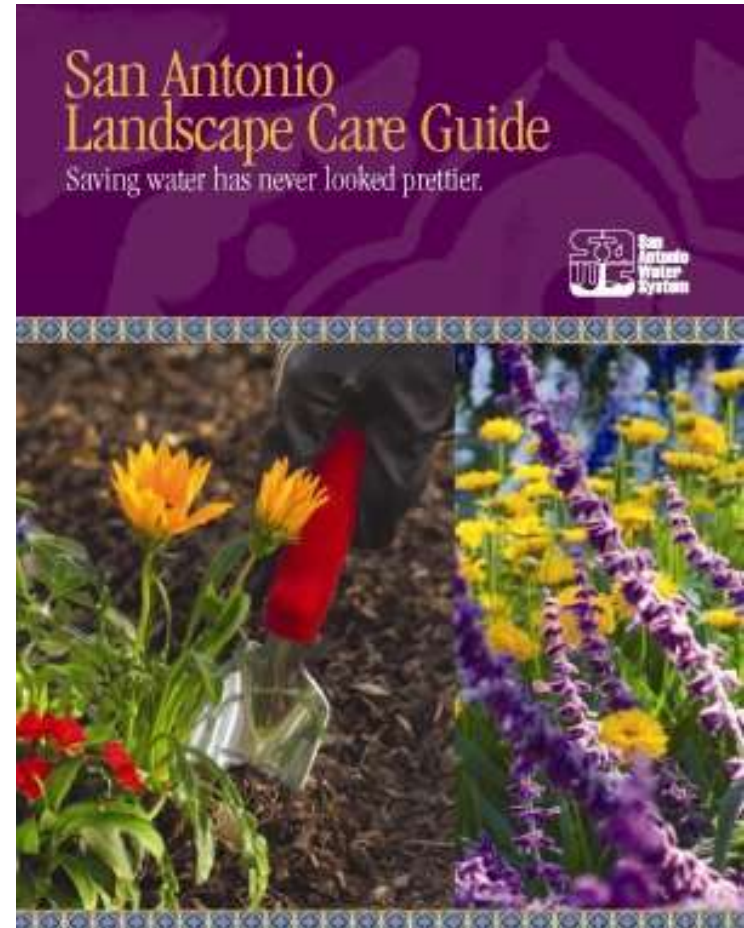
Saving water and money, landscaping never looked prettier.

Watersaver Rebate	Bonus (75)	No Bonus (58)
Avg. Savings/Over Target	42.27%	52.52%
Range of Savings/Over Target	1.61%-96.68%	1.83%- 205.37%
Avg. Lot Size	0.52 acres	0.76 acres
Range of Lot Size	0.0683 - 3.32 acres	0.1263 - 3.32 acres
Had No Design Assistance	49	18
Had Design Assistance	26	40
Has No Irrigation System	49	10
Has Irrigation System	26	48

Analysis Drives Program Course Corrections

Landscape Program Analysis

- Initial focus on plant material and design with extensive outreach and rebate programs.
- Successful in changing plant pallet appropriate to San Antonio.
- **Evaluation found the community knew what to plant but not how to take care of it.**
- **Focus has now changed maintenance of the landscape**



4. Effective Regulation – Year Around

- Prohibits sprinkling in the day and water running down the street
- Class C criminal misdemeanor
- Enforced by Conservation
- Filed in municipal court
- Public overwhelmingly supports enforcement
- Enforcement reduces wastes and keeps those who conserve on the **Conservation Team**



Conservation Ordinance Provision

- AC condensate piped to single drain or used on site in new commercial buildings
- 4" of soil under turf
- Irrigation zoning –beds/turf
- 4" setback of irrigation heads
- No spray in planting areas < 5 ft.
- Rain Sensor on all existing and new irrigation systems
- Model homes to have xeriscape landscape
- Builder to offer Xeriscape option
- Drought tolerant turf only (2007)
- Annual landscape irrigation check ups on properties > 5 acres



5. Foster a Community Conservation Ethic

- Offer a wide variety of programs so everyone has a way to do something
- Promote Conservation year around, not just when it's hot and dry
- Make messages as consistent as possible
- Include the community in conservation planning
- Set a goal and share it with the community
- Educate the community about their local water sources
- Foster “ownership” and “community pride” in conserving
 - More voluntary compliance, less time/\$\$ on enforcement
 - Better response to additional drought reductions when call upon



Season to Save Community Challenge

A Community Fundraiser that Saves Water and Earns Money

Happy Trails

