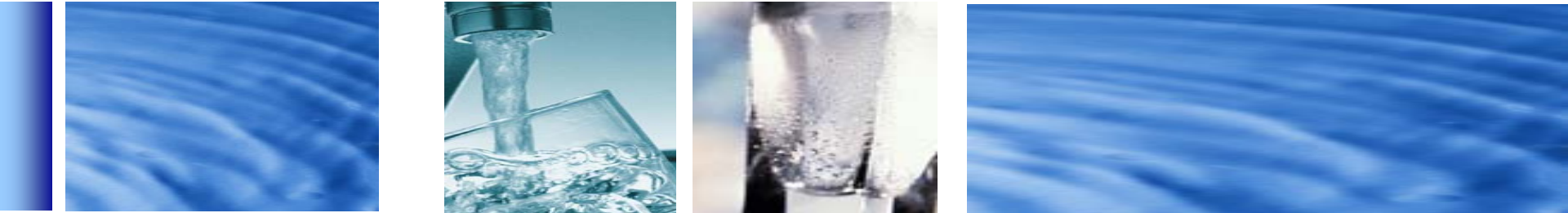


conservation
department.

Counting Up the Savings: Meeting Goals by Evaluation of Conservation Programs

Eddie Wilcut
Manager



Tarrant Regional Water Symposium
November 7, 2008



Our water. Our future.

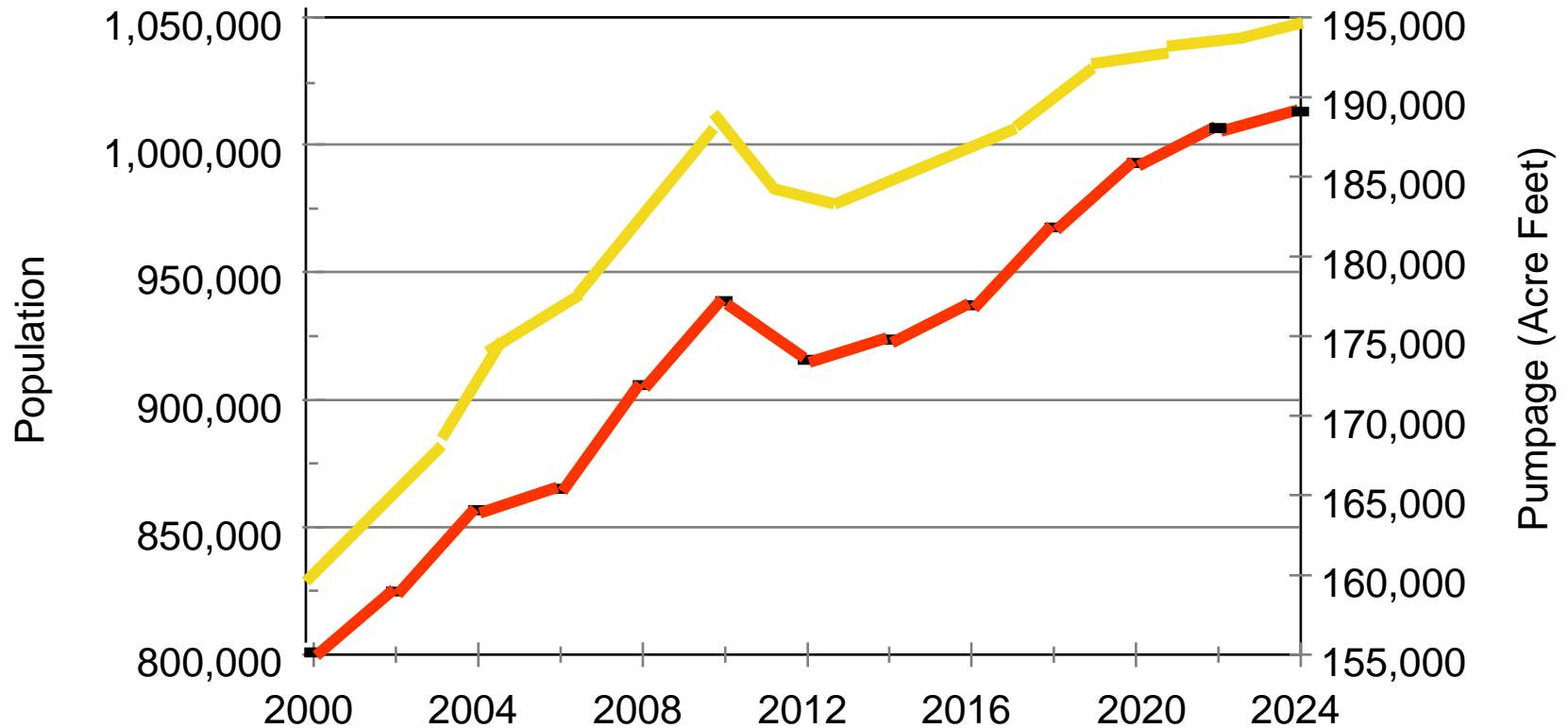
OVERVIEW

1. Why do we conserve
2. How do we conserve?
3. The Goals
4. Evaluation Criteria
5. Cost/Benefit Analysis

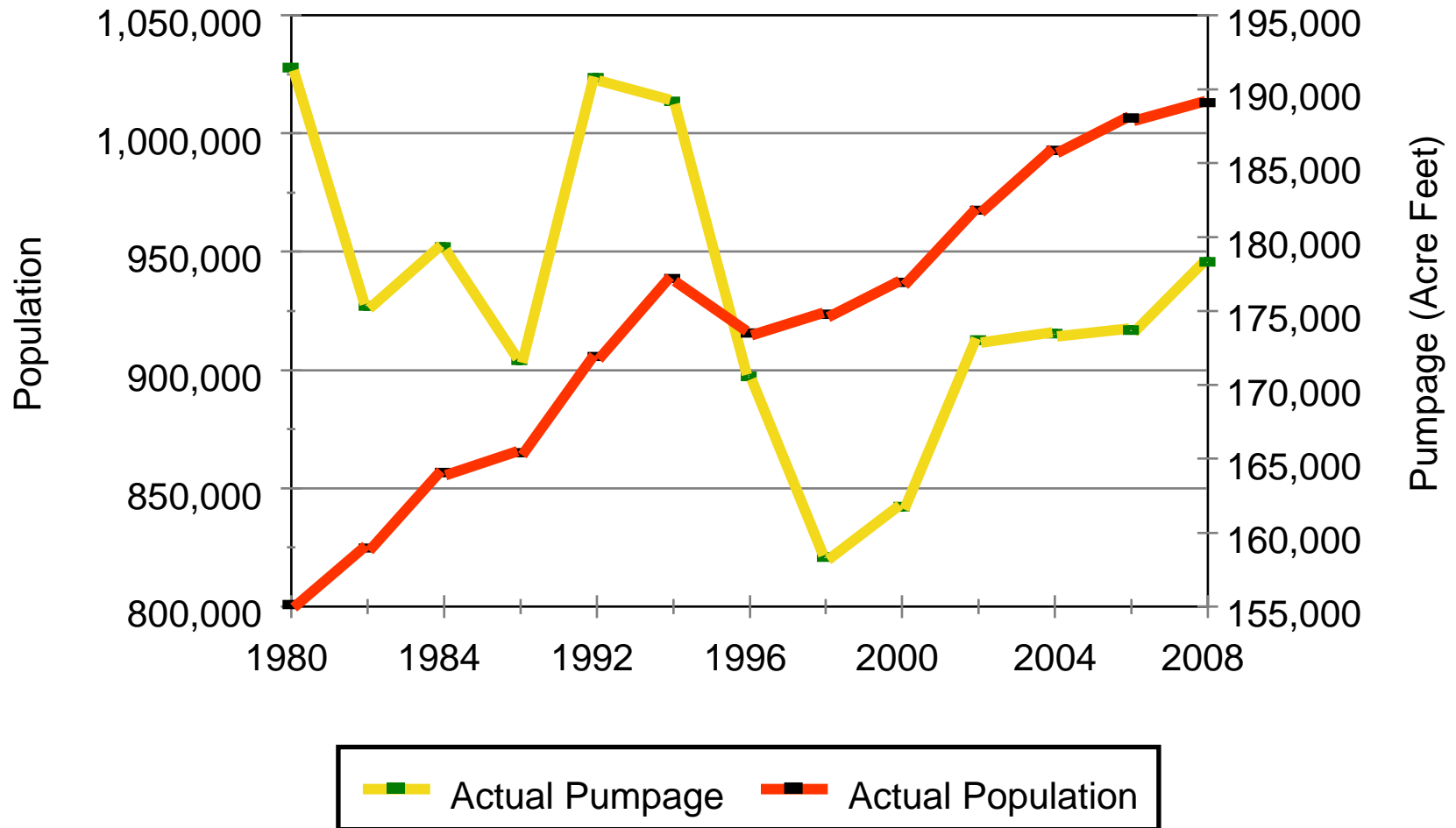
WHY CONSERVE? – MACRO VIEW

1. Population & Demand Projections
2. Supply & Demand Projections
3. Peak Demand Reductions
4. Infrastructure Planning
5. Drought Response
6. State or Federal Mandates
7. GPCD Reductions

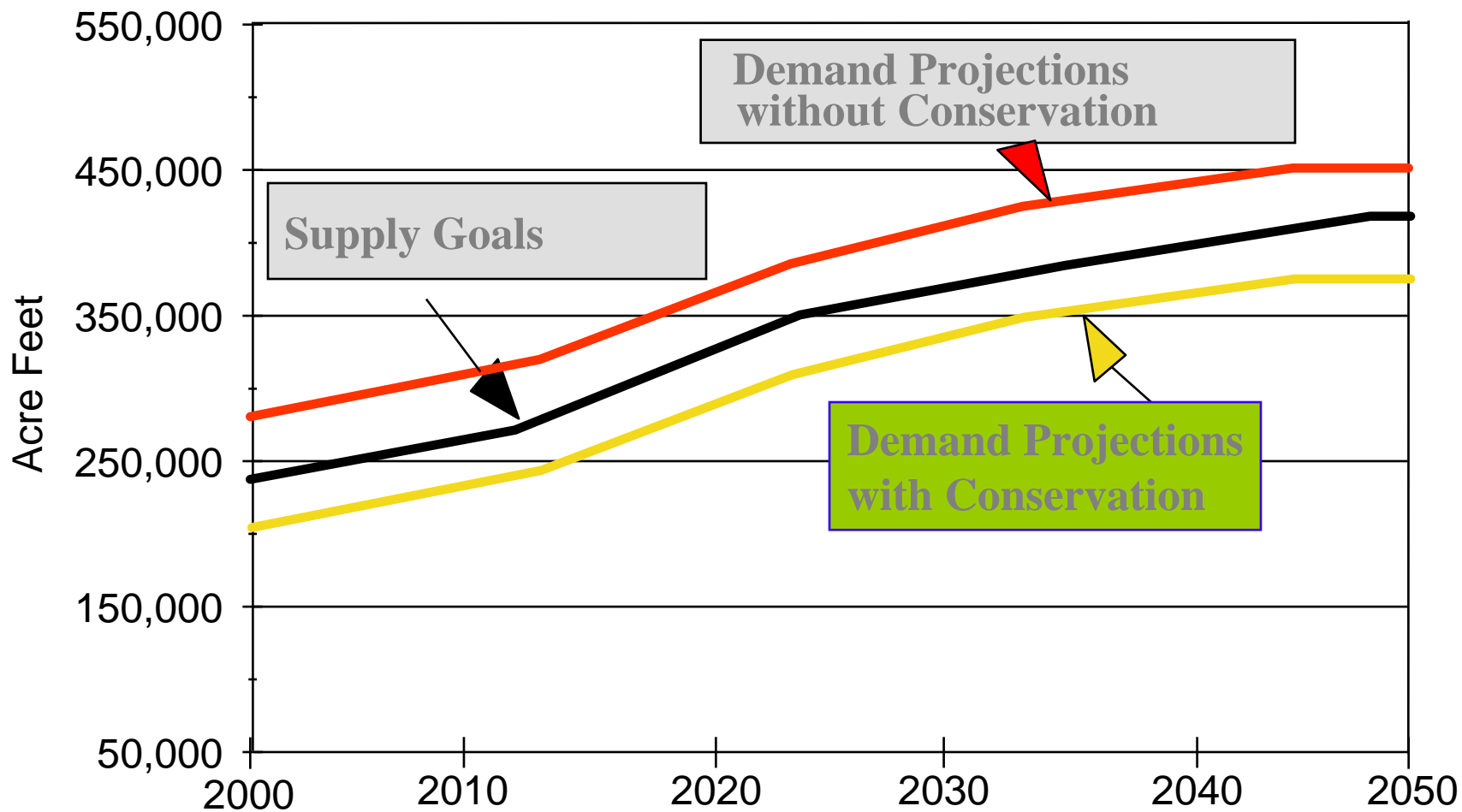
Pumpage and Population



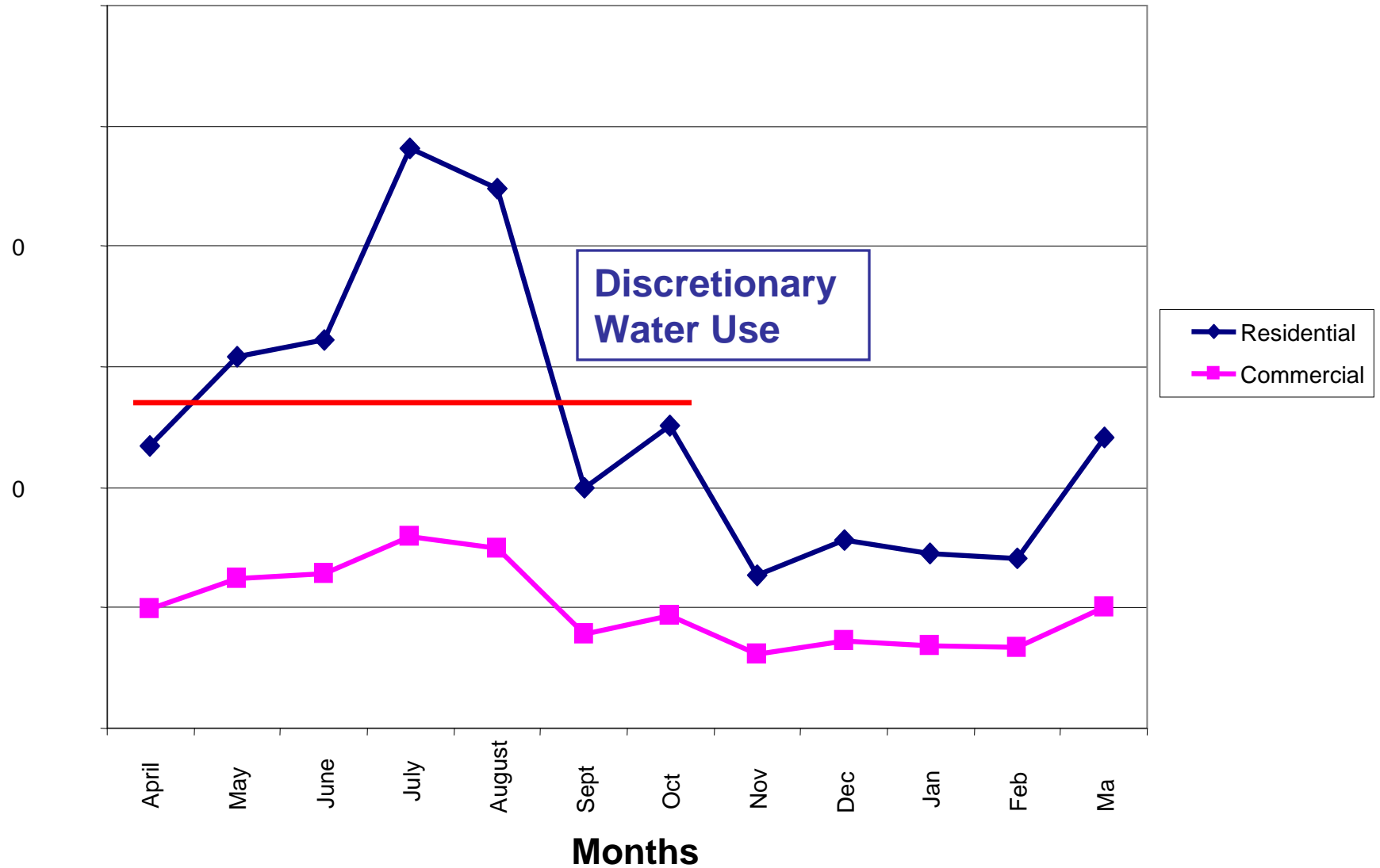
Pumpage and Population



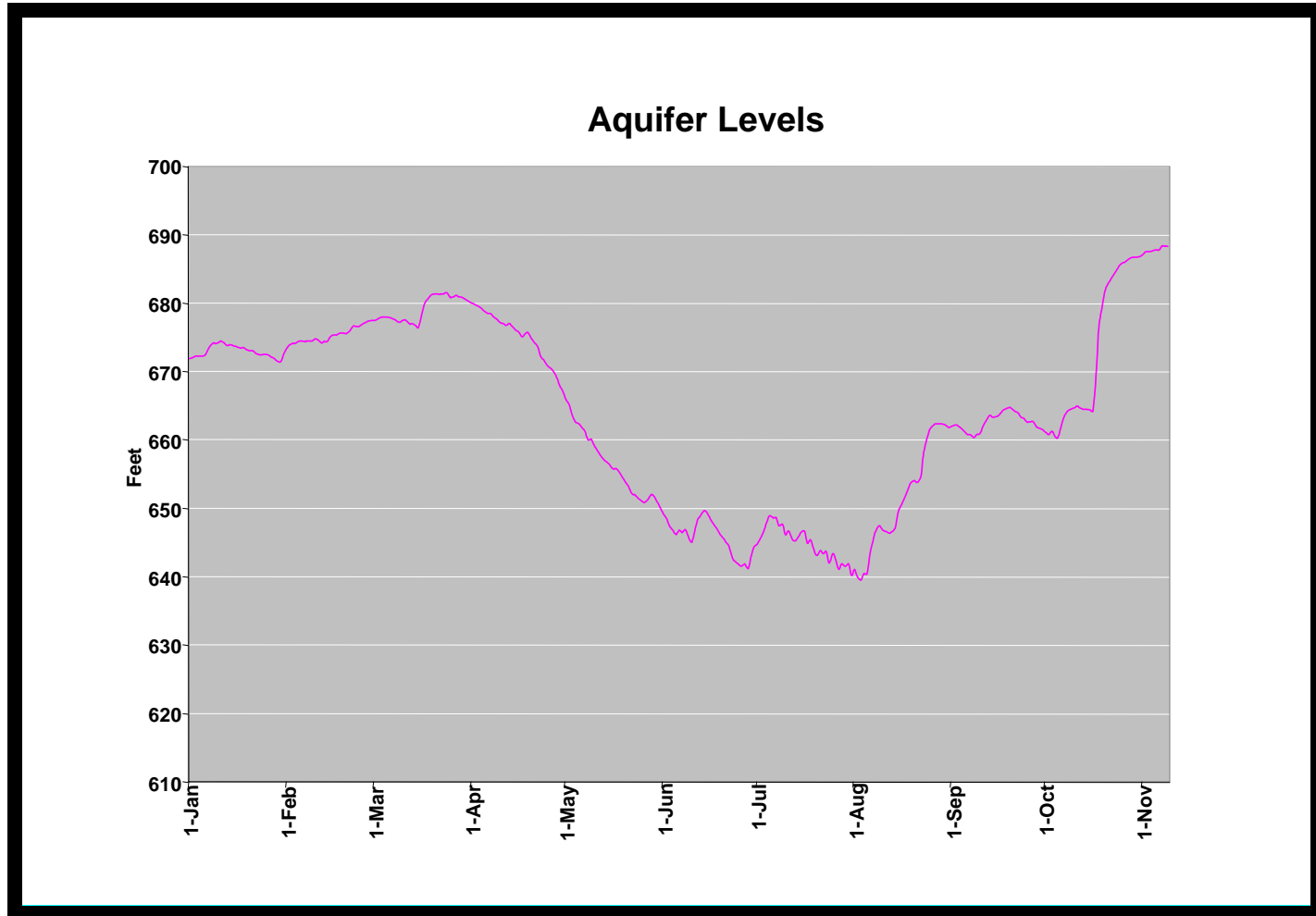
Supply & Demand Curve



Seasonal Peaks

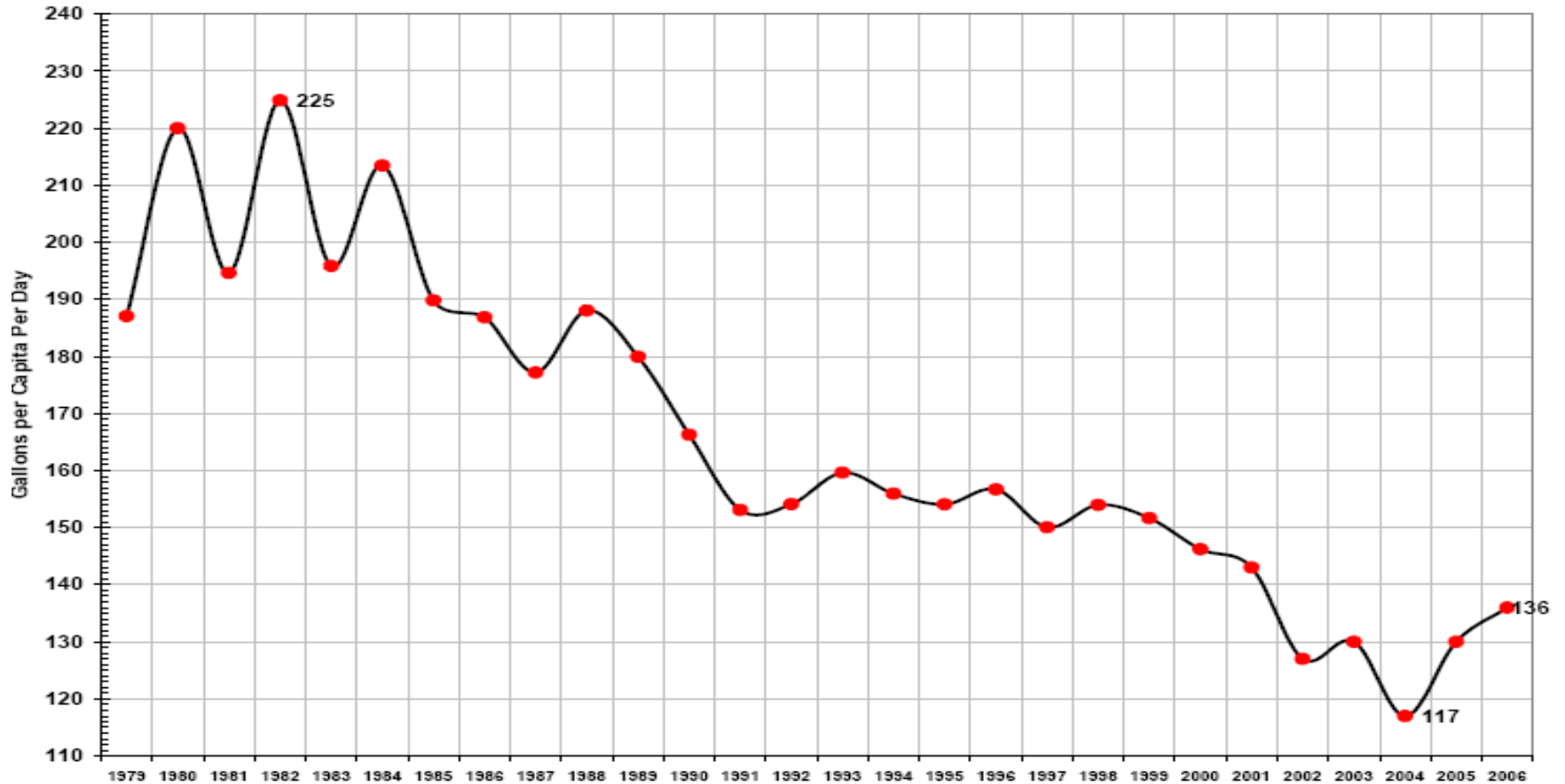


Drought Management



GPCD Reduction

San Antonio Water System
Gallons Per Capita Per Day (GPCD)
1979 - 2006



HOW DO WE CONSERVE? MICRO VIEW

1. **Establishing Goals**
2. **Water Consumption Evaluation**
3. **Identifying Opportunities**
4. **Program Development & Implementation**
5. **Program Tracking & Evaluation**

HOW DO WE CONSERVE? MICRO VIEW

ESTABLISHING GOALS

- a. Reductions in Peak Demand
- b. Reductions in Seasonal Demand
- c. Reductions in Specific Service Areas
- d. Reductions in Per Capita Consumption

CONSERVATION DIRECT PROGRAM GOALS

POPULATION – 1.28 MILLION

1 GPCD REDUCTION = 1,434 ACRE FEET OR 467 MILLION GALLONS

Direct Conservation Goals can best be achieved through the identification and development of partnerships, aimed at cost effectively reducing water consumption while maintaining or improving quality of life for the residential customer, and maintaining or improving productivity for the commercial customer.

HOW DO WE CONSERVE? MICRO VIEW

WATER CONSUMPTION EVALUATION

- a. Residential End Uses of Water Study (REUWS)
- b. Identification of Water Use Sectors
- c. Industrial Production Data
- d. Climate Driven Consumption Patterns
- e. Customer Driven Consumption Patterns
- f. Behavioral Consumption Patterns
- g. Comparing & Contrasting Similar End Uses

HOW DO WE CONSERVE? MICRO VIEW

IDENTIFYING OPPORTUNITIES

- a. Residential Indoor & Outdoor
- b. Multifamily Indoor & Outdoor
- c. Industrial (Gallons per Pound of Product)
- d. Hospitality
- e. Institutional
- f. Recreational
- g. Low-Income
- h. Commercial
- i. Utilities
- j. Agricultural

HOW DO WE CONSERVE? MICRO VIEW

PROGRAM DEVELOPMENT & IMPLEMENTATION

- a. Incentives & Rebates
- b. Distribution of Fixtures
- c. Direct Installs
- d. Cost Sharing
- e. Audits
- f. Ordinance Development
- g. Pricing
- h. Community Based Programs
- i. Low Income Programs
- j. Certification Programs
- k. Enforcement

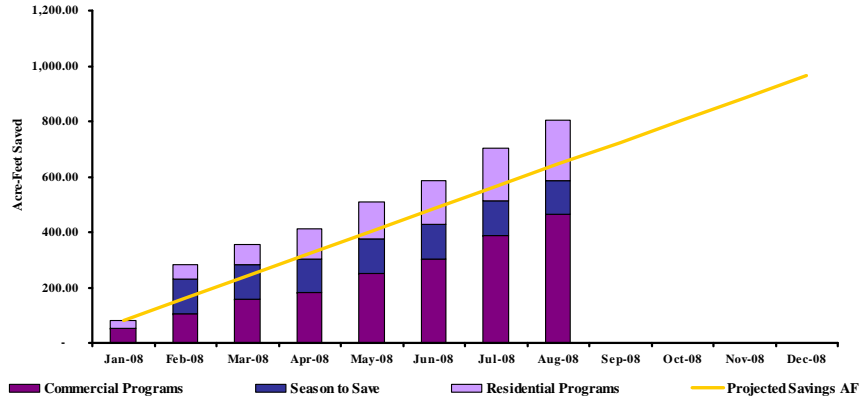
HOW DO WE CONSERVE? MICRO VIEW

PROGRAM TRACKING & EVALUATION

- a. Assumed Savings (REUWS) Data
- b. Actual Savings – Pre vs Post Retrofit Analysis
- c. Reductions in Gallons per Pound of Product
- d. Normalized Data to Account for Weather
- e. Project or Equipment Life
- f. Water & Sewer Savings
- g. Energy Savings
- h. Cost of Additional Water Resources
- i. Pumping & Treatment Costs
- j. Program Costs

COMMERCIAL AND RESIDENTIAL TOILET PROGRAMS

Monthly Performance



Performance Data

Unit: Acre-Feet per Year

	Total	Commercial	Season to Save	Residential
Jan-08	79.35	53.89		25.46
Feb-08	284.40	51.80	124.42	28.83
Mar-08	71.36	50.90		20.46
Apr-08	55.96	23.30		32.66
May-08	96.93	69.55		27.38
Jun-08	77.02	53.12		23.90
Jul-08	117.44	87.17		30.27
Aug-08	99.69	73.19		26.50
Sep-08				
Oct-08				
Nov-08				
Dec-08				

Year to Date 882.15AF
Goal 967 AF
% of Goal 91%

Program Description

Goals: 2008 Direct Program Goal =
 Annual Objectives: 21,500 Toilet Retrofits
 965 Acre-feet Saved in 2008

Year-to-Date Accomplishments:

17,134 Toilet Retrofits
99.69 Acre-Feet Saved in **Aug** 2008
882.15 Acre-Feet Saved in 2008
91% of Total Goal Accomplished thru **Aug** 2008

Contracts: Ferguson Enterprises: \$500,000 (Exp. 12-31-08);
 Morrison Plumbing: \$1,250,000 (11/1/08); J.R.'s Plumbing: Share
 of \$600k (6/21/08); ARAM Plumbing: Share of \$600k (6/21/08);
 Quartermoon Plumbing: Share of \$600k (6/21/08)

Problem/Opportunity/Threat Analysis

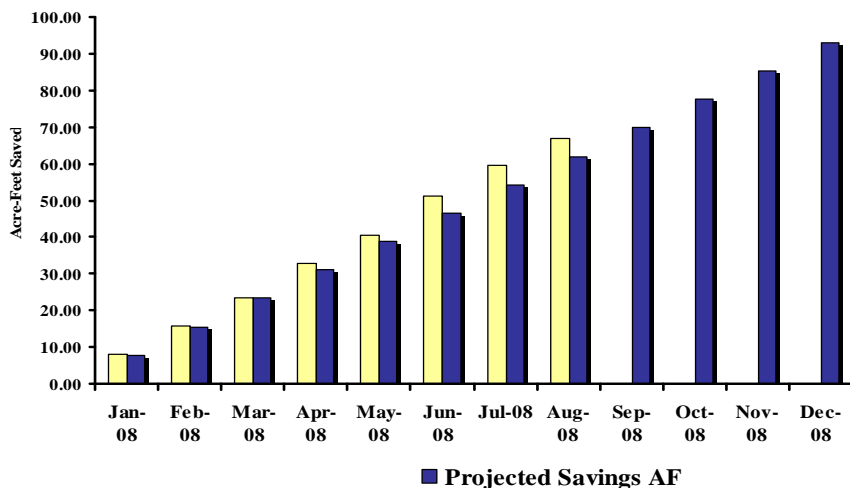
Commercial Programs		Brandon Leister	31-Dec-08
Kick the Can		Caroline Gonzales	31-Dec-08
Season to Save		Brandon Leister	31-Dec-08

PLUMBERS TO PEOPLE PROGRAM

Monthly Performance

Plumbers to People Program Performance Data

Unit: Acre-Feet per Year



	AF	SITE VISITS
Jan-08	7.93	44
Feb-08	7.75	43
Mar-08	7.75	43
Apr-08	9.19	51
May-08	7.93	44
Jun-08	10.46	58
Jul-08	8.65	48
Aug-08	7.21	40
Sep-08		
Oct-08		
Nov-08		
Dec-08		

Year to Date	66.87 AF	371
Goal	93 AF	
% of Goal	72%	

Program Description

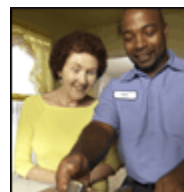
Goals: 2008 Direct Program Goal = 93 Acre-Feet Saved
 Annual Objectives: 517 Site Visits
 Savings/Retrofit: 58,744 Gallons
 Gallons/Acre-foot: 325,851

Year-to-Date Accomplishments:

371 Site Visits
40 Site Visits in **August** 2008
7.21 Acre-Feet Saved in **August** 2008
66.87 Acre-Feet Saved in 2008
72% of Total Goal Accomplished in 2008

Problem/Opportunity/Threat Analysis

Issue	Action	Owner	Due



Affordability Programs
Plumbers to People

COST/BENEFIT ANALYSIS

In conducting a cost/benefit analysis, one must determine a cost per unit of water saved. That cost is based on a variety of factors that determine the viability of the option.

For the Conservation Planner, the cost benefit analysis is based on the cost per acre-foot of water saved, as compared to the cost per acre-foot for other water sources.

For the Homeowner, the cost benefit analysis is based on the water and/or energy savings, convenience, and cost.

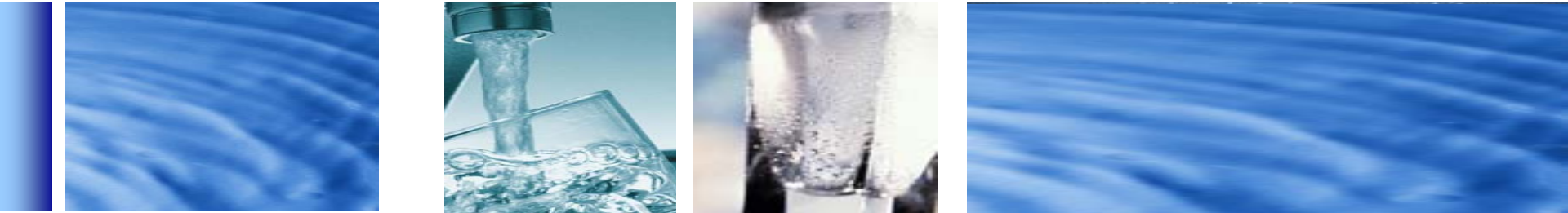
For the Business owner, the cost benefit analysis is generally based on productivity, water and/or energy savings, a return of no more than three to five years.

SUCCESS IS BEST ACHIEVED WHEN PROGRAMS ARE DEVELOPED THAT WORK FOR BOTH THE CONSERVATION PLANNER AND THE CUSTOMER

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