

This presentation premiered at WaterSmart Innovations

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GPCD Simple Math with Complex Problems

October, 2009

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San Antonio Water System

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Topics

- What is GPCD?
- How is GPCD used?
 - Total
 - Billed
 - Subsets
- Why is this so hard? What water & what people?
 - Service population vs. city population
 - Water to be included
- Advisory Council Proposals in Texas
 - Acknowledge how GPCD should and SHOULD NOT be used
 - Solve service population question
 - Analysis of Water Use Break Down

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What is GPCD?

- Gallons per capita per day
 - Water/Population
- But...there are MANY versions of this:
 - Total GPCD
 - Total Potable GPCD
 - “Municipal” GPCD
 - “Billed Potable” GPCD
 - Residential GPCD
 - Commercial GPCD
 - Non-Revenue GPCD

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GPCD; Why so hard?

- Comparing communities on total is hard
 - Industrial consumption varies
 - Agricultural consumption varies
 - Commuter population varies
- A “bedroom” community should have the lowest “Total GPCD”
- Water providers have different mechanisms to adjust for this
- State agencies have interesting ways to adjust
- Result: “Total GPCD” is impossible to interpret

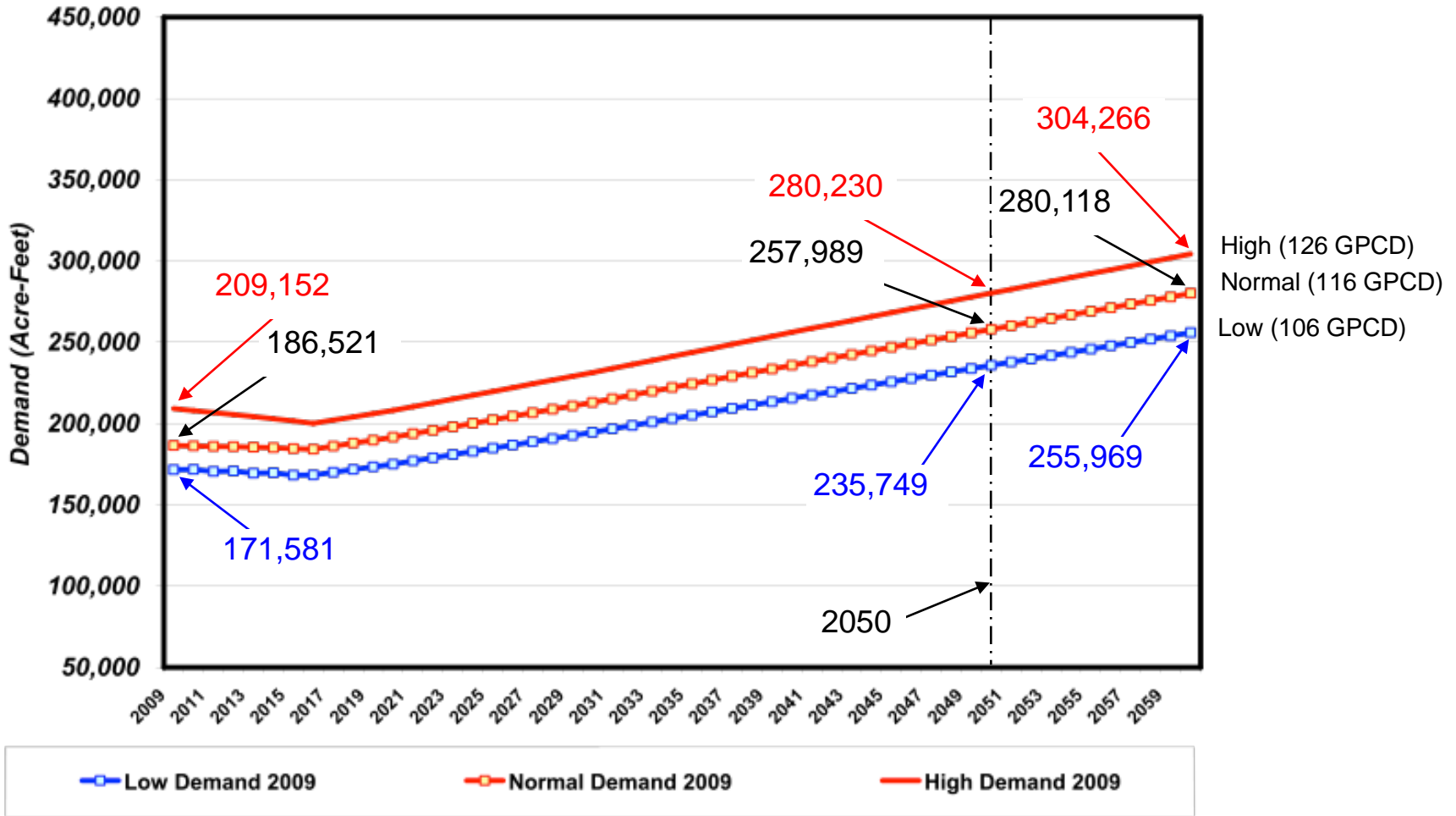
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Why Calculate Total GPCD

Water Demand in Future Depends On It



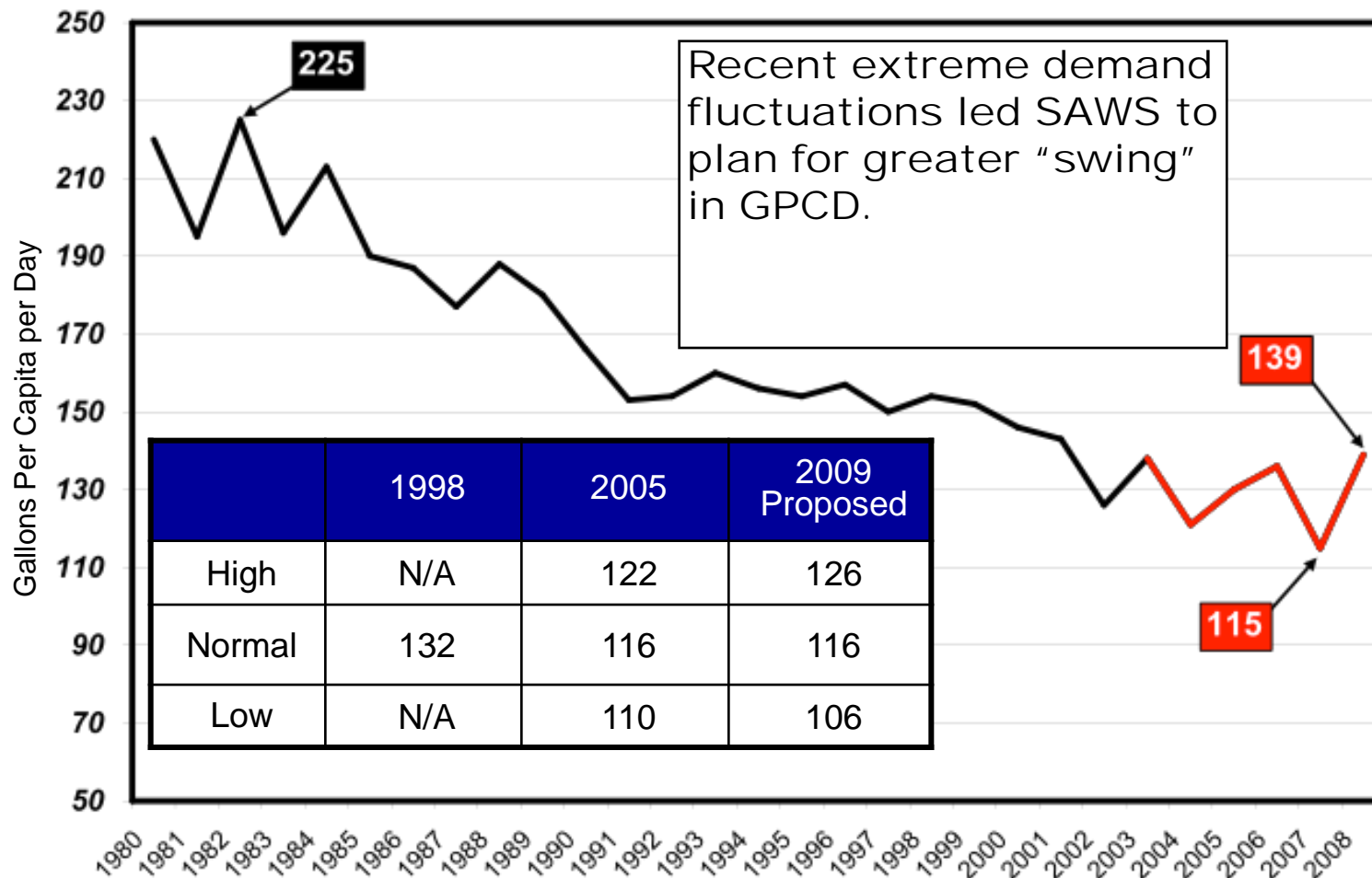
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Water Management Plan GPCD Goals

San Antonio Goals vary by demand conditions

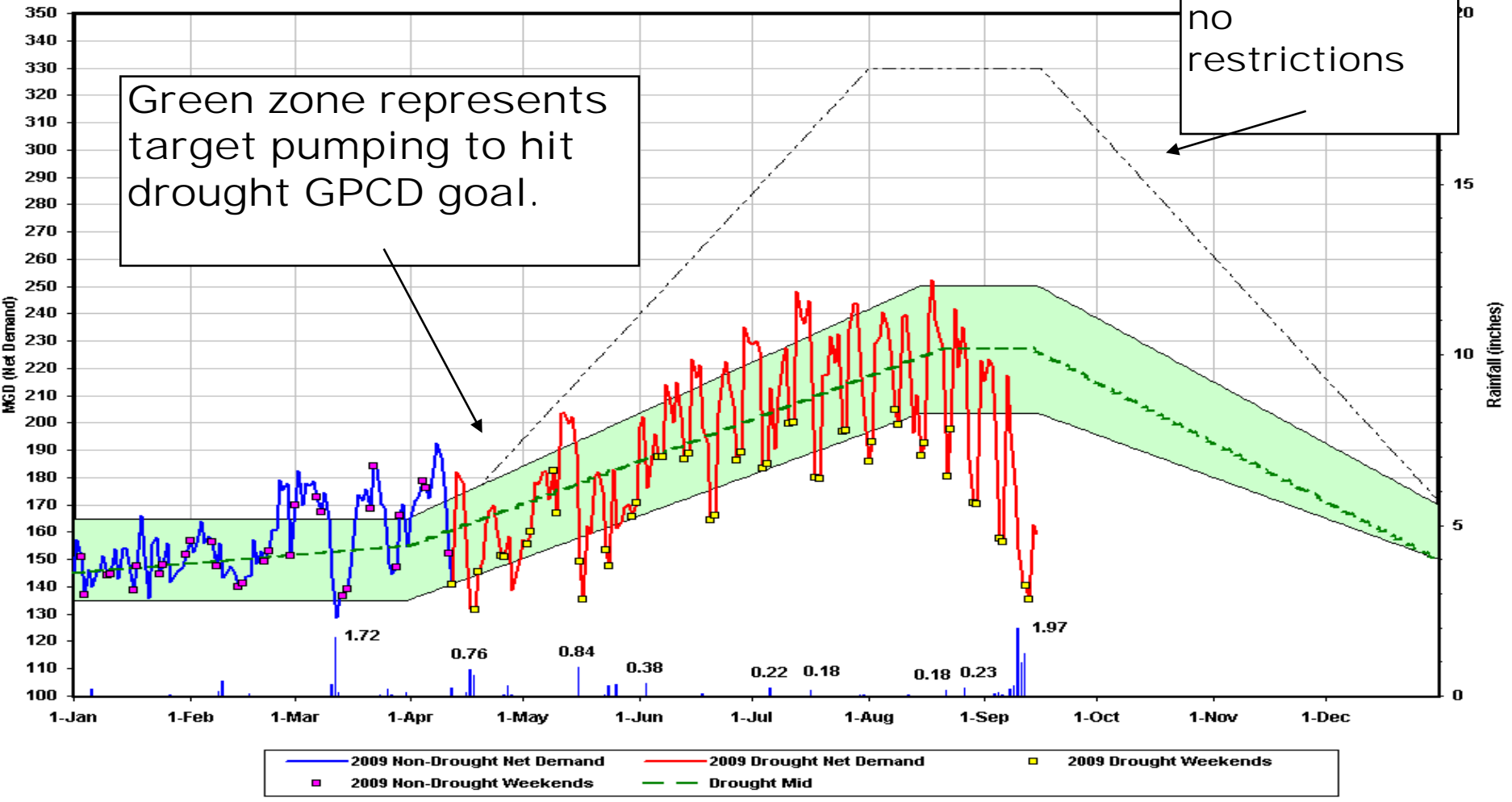


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2009 GPCD Planning

Drought Savings Assessment Tool
Net Demand



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Statewide GPCD Concerns

- Need way for state to calculate GPCD for each water provider & region
 - GPCD used to rate “conservation success” for consideration of state funding
- Current system is best they can do now, but it is “black box” calculation
- State Water Conservation Advisory Council asked to address issue
- Have been working through challenge for a year; complete solution still in the future

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Texas State Needs

- Reasonable way to estimate population within each service area
 - Working on solution through State Demographer using census updates and GIS
 - Still technical disputes to be worked out
- Consistent reporting by Water Providers that divides water into categories for GPCD calculation
 - Work group clarifying how water should be reported to state

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Proposed State GPCD Reports

- No total to be put on state reports, but easily calculated if water use reports on-line
- Residential GPCD by provider and city
 - Ideal will divide single family and multifamily
 - This takes out commuter issues
- Commercial GPCD
- Institutional GPCD
- Nonrevenue GPCD

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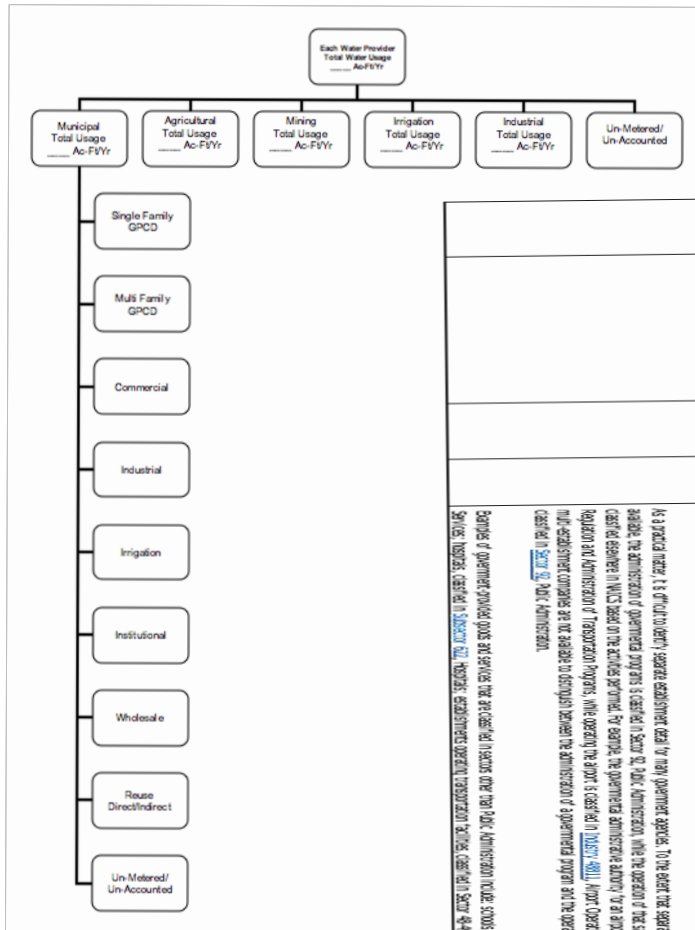
GPCD Tasks to Finish by 2011

- Exact boundaries of water providers with GIS coordinates; TWDB/ TCEQ task
- Census data tool to allow calculation of population within any polygon
 - State Demographer working on this in 2010
- Updated water use surveys with clarification on how to divide water uses
 - Proposed project for TWDB
- State report on-line reporting and posting
 - Proposed for TWDB

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Water Use Category- Muni Only

Descriptions reference NAICS codes; suggest using these in CS software



Category	Description	Examples	NAICS Code	NAICS Description
Residential	Called metered to house people (for non permanent residential purposes)	Universities Schools	91	Educational Services
		Hospitals	62	Health Care and Social Assistance
		Prisons	92	Public Administration

The health care and social assistance sector consists of establishments primarily health care and social assistance by individuals. The sector includes both health care and social assistance, which is sometimes offered in conjunction with the activities of the education in the sector. The sector is divided into a continuum starting with those establishments providing medical care (excluding) continuing with those providing health care and social assistance, and finally, those providing only social assistance. The services provided by establishments in the sector are delivered by the professionals, all included in the sector. The continuum of services ranges from those of health practitioners of social workers with the highest expertise, then of the nurses, the sector is divided into the health care and social assistance and commercial and other health-related services. [NAICS 62](#), Personal and Laundry Services. Although these can be viewed as health services, these services are not typically viewed as health care.

Government establishments and agencies in a wide range of public activities, including both public works and services, and public administration. The public administration sector consists of establishments of federal, state, and local government agencies, the administrative, executive, and legislative branches of public administration, and public works and services. The sector includes both public works and services, and public administration. The public administration sector consists of establishments of federal, state, and local government agencies, the administrative, executive, and legislative branches of public administration, and public works and services. The sector includes both public works and services, and public administration.

As a public sector, it is often difficult to separate establishments from those of many government agencies. To the extent the separate establishment records are available, the administration of government programs is covered in Sector 91, Public Administration, while the operation of the same government program is covered elsewhere in NAICS based on the activities performed. For example, the operation of administrative activities is a part of Sector 91, [NAICS 9111](#), Administration and Management of Transportation Programs, while operating the same is covered in [NAICS 4811](#), Motor Carriers. When separate records for multiple establishments are available to describe the operation of a government program and the operation of a, the establishments is covered in [Sector 91](#), Public Administration.

Examples of government-provided goods and services are provided in the sectors cover the Public Administration code. Some examples of Sector 91, Public Administration, include: [NAICS 9111](#), Administration and Management of Transportation Programs, [NAICS 9121](#), Management of Air and Space Transportation, [NAICS 9131](#), Management of Water Transportation, [NAICS 9141](#), Management of Rail Transportation, [NAICS 9151](#), Management of Highway Transportation, [NAICS 9161](#), Management of Postal and Mail Services, [NAICS 9171](#), Management of Air and Space Transportation, [NAICS 9181](#), Management of Water Transportation, [NAICS 9191](#), Management of Other Transportation and Public Administration.

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Conclusions

- Total GPCD is highly useful for water supply planning within a community
 - It is not appropriate for comparisons of utilities or communities
- Residential GPCD can be a future benchmark metric
 - We can teach people to know their “water footprint”
 - Can design rates and programs to support reasonable household usage based on GPCD goals
- Need to use newer technologies for estimates of current population and future population
- Improved common GPCD language would help

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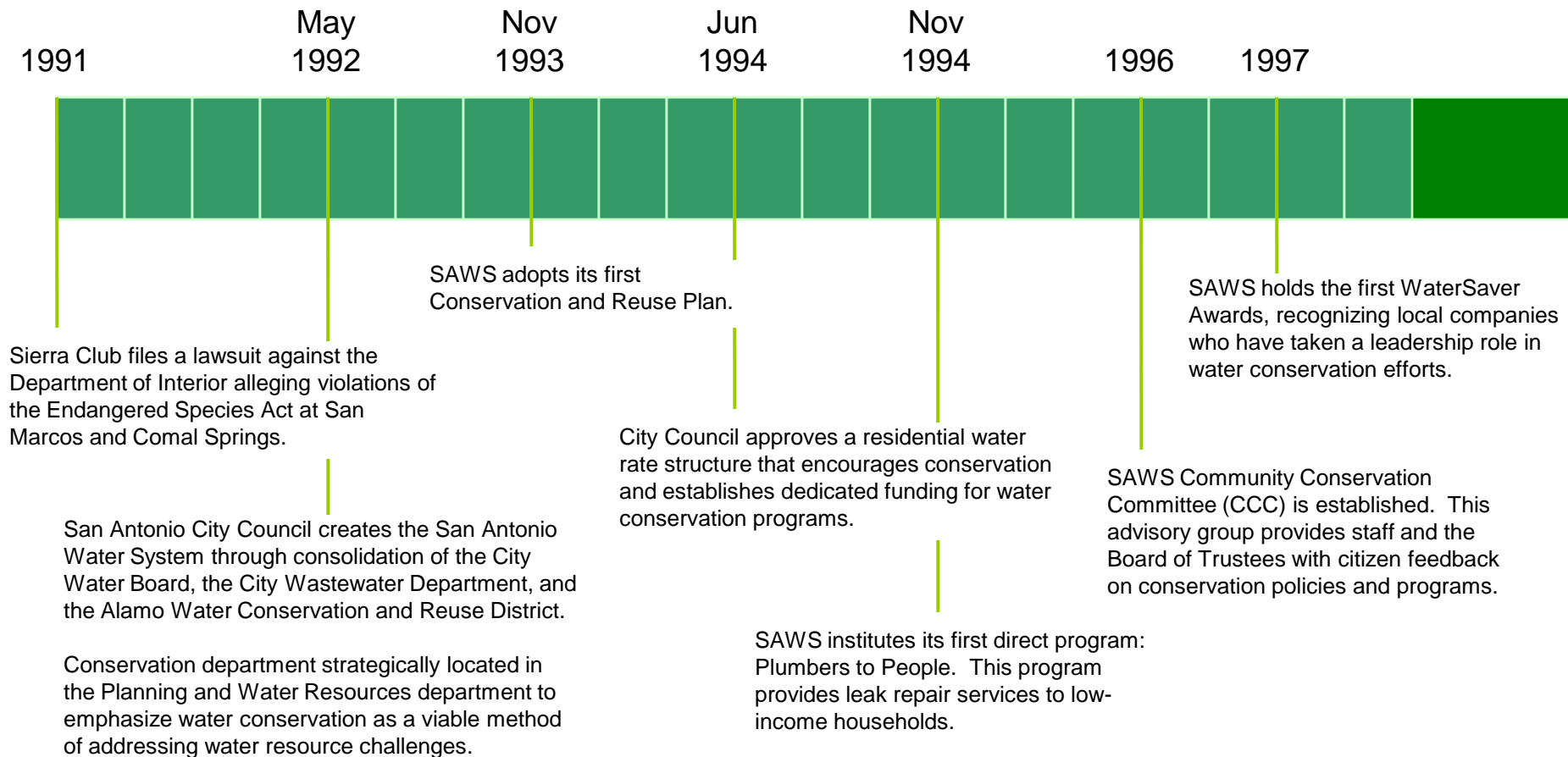
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Other Resources

- Water Conservation Advisory Council website:
 - look for “Metrics Workgroup” for notes/reports
- Texas Water Development Board
- SAWS website: www.saws.org
 - look for Water Supply Plan for details on GPCD goals, population projections & supply plans
 - click on more aquifer statistics for pumping data correlated with weather, aquifer etc.
 - Does not show “net demand” reflecting only customer use. ASR storage in pumping data.

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History of San Antonio Conservation



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History of San Antonio Conservation

Jan 1998 Mar 1998 Oct 1998 Jan 2001 Dec 2001 Jan 2002



San Antonio City Council approves a fee on all commercial water accounts in support of commercial conservation programs.

SAWS Board of Trustees approves the first Water Resource Plan, titled "Securing our Water Future Together." This plan identified methods for meeting future water needs through diversification of our water resources.

SAWS per capita consumption drops to 143 gallons per person per day.

With input from Region L and regional planning groups throughout the state, TWDB adopts the first state water plan. In this plan, the San Antonio region is the only area in the state that adopts "advanced conservation" as a significant resource option.

Texas Water Development Board (TWDB) appoints SAWS representative to the South Central Texas Regional Water Planning Group (Region L). Region L is one of 16 regional planning groups in Texas, tasked with the development of a 50-year water plan for inclusion in the state water plan.

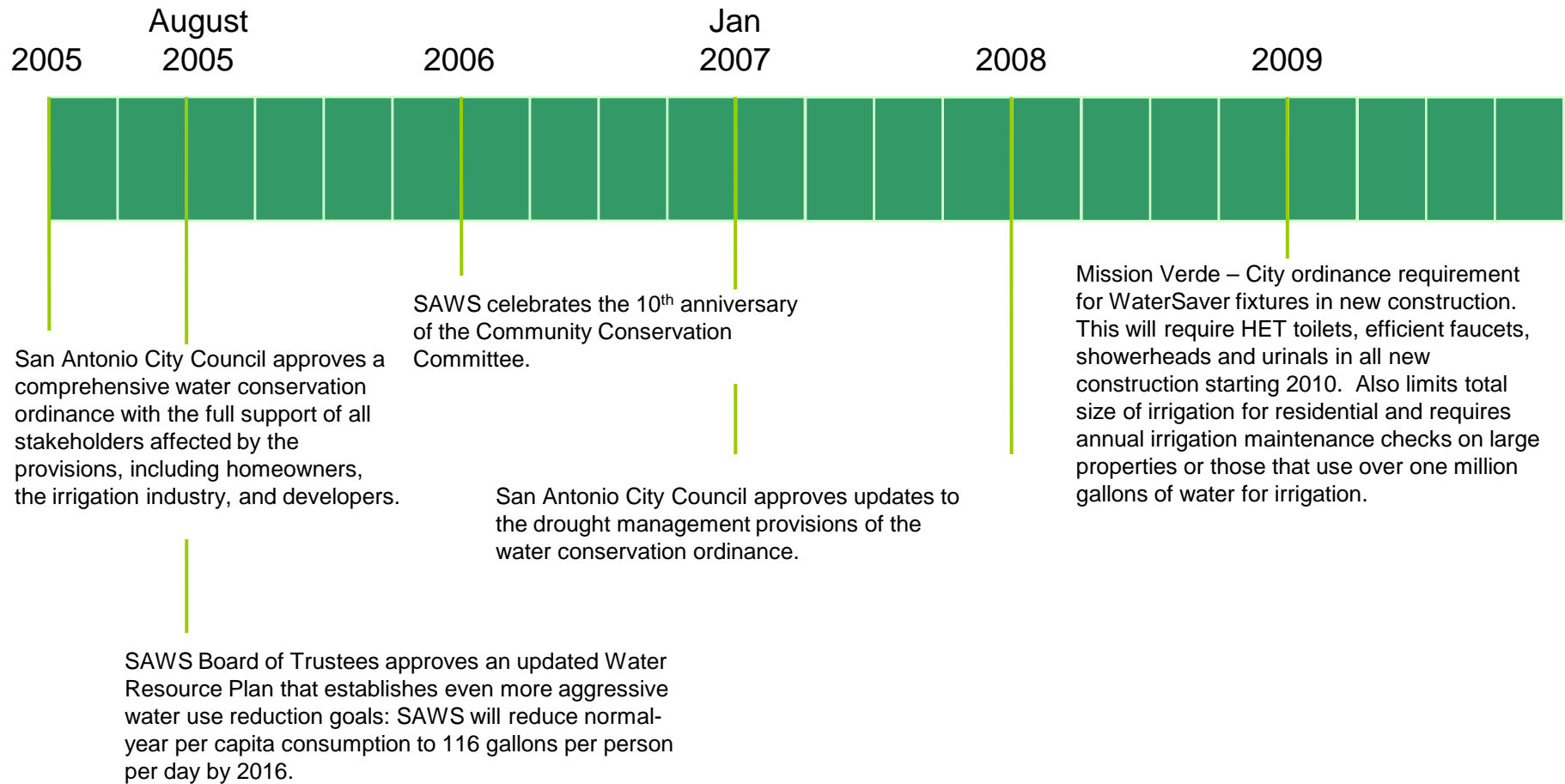
Water use reduction goals established in the 1993 Conservation and Reuse Plan for 2008 are achieved a full 7 years in advance.

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