Overview of the City’s Demand Management Programs – Providing Water for Future Growth

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Utton Center
Land and Water Planning in the Middle Valley
The City’s existing sources of supply

- Buckman Well Field
- City Well Field
- Treated Effluent (Reuse)
- Water rights determine ability to use these supplies

Buckman Direct Diversion (2011)

The City’s existing sources of supply include Buckman Well Field, City Well Field, and Treated Effluent (Reuse). Water rights determine the ability to use these supplies. Buckman Direct Diversion (2011) is also mentioned.
Variability in Supply

19,900 AFY

- Buckman Direct Diversion
- Existing Reuse
- Buckman Wells
- Urban Wells
- Santa Fe River

15,400 AFY

- Buckman Direct Diversion
- Existing Reuse
- Buckman Wells
- Urban Wells
- Santa Fe River

Baseline Production (Typical)
Baseline Production (Drought)
Santa Fe River Variable Yield

Santa Fe River Hydrographs

- Dry- 1250 in 1971
- Mean- 2105 in 1978
- Wet- 4217 in 1997
- Very Wet- 5146 in 1993
- Critical Dry- 1080 in 2000

Annual Flow vs. cubic feet per second
Annual Demand Increase Projection

2045 Demand: 18,100 AFY

Drought Year Supply: 15,400 AFY

Gap: 2,700 AFY

Annual Demand (acre-feet/year)

Additional County Commitment (Drought)
Outside Obligations (County, Las Campanas, Acequias)
City Service Area (Potable + Non-Potable)
Driver to action

- **CRISIS:** Droughts of 1996 and 2002 - peak summer demand exceeded peak system capacity
What policies and programs did we implement?

Water Rights for New Growth

Toilet Retrofits for New Growth

Use Restrictions & Conservation Education

Rates

System Improvement

Replace Potable with Effluent on Turf

Incentives for indoor efficiency (Rebates)

It all began with the Comprehensive Water Conservation Ordinance in 1997…
Effectiveness

Gallons per capita per day 1995-2007

Gallons per Capita per Day

With 1% Growth Rate
With 1.5-1.7% Growth Rate
With SF Trends Growth Rates
Development Water Budget Determines form of WDO

New Development Demand on City Water Utility (AFY)

- Residential <10 AFY
  - Offset New Demand with Conservation
- Commercial <5 AFY
- Residential >10 AFY
  - Offset New Demand with Water Rights
- Commercial >5 AFY
Current Water Right Transfer Program

- Requires land developers to bring valid water rights for project in order to build
- Water rights can also be banked, marketed to developers
- Water rights currently being transferred to the City’s Buckman Well permit for offsets
Current Retrofit Program

- Developers are required to offset anticipated new water system demand by increasing conservation in existing development through toilet retrofits.
- For example: One new housing unit retrofits between 8-12 toilets dependent upon lot size.
Problems with Current Retrofit Program

- Running out of toilets to retrofit – approx. only 20% left
- Speculators, not involved in development, have acquired retrofit credits, partially controlling price developers pay
- Developers prefer to pay a fee for offset water rather than be responsible for doing conservation
Proposed New Water Demand Offset Program – Replacement of the Current Retrofit Program

- Rebate Program for Water Fixtures and Appliances
- Free Stuff Program
- Water Conservation Credit Program
- Donation to parks, affordable housing
- Conserved Water Deposited in City Water Bank
- Conserved Water Sold to Developers

$ = City Pays Program Participant
City Water Bank - WDO

Conservation

City Water Bank

Developer Payment to City for Offset Water

New Water Demand

Water Demand Offset for New Development
Rebate Program

Water Customer with Old Fixtures & Appliances

Customer Purchases and Installs New Fixtures/Appliances

Verification of Retrofits: City Inspection and Purchase Receipt

City Pays Property Owner Rebate

Conservation

City Water Bank

[Diagram showing the process of a rebate program for customers who purchase and install new fixtures/appliances, with verification by city inspection and purchase receipt, leading to a rebate for the property owner.]
Water Conservation Credit Program

Water Conservation? AF/Y?

Water Customer Signs Conservation Contract

Retrofits or Changes in Use

City Monitoring of Customer Water Use

City Pays Water Customer

City Water Bank

Conservation
Free Stuff Program

City Water Conservation Group

City Water Bank

Conservation

50% of Conservation to Water Bank
Evolution of the City’s Demand Management Programs

- Despite the fact that conservation requires a great deal of effort, and buy-in from stakeholders can be a difficult and long process, conservation still remains the cheapest source of water.

- Because of the importance of conserved water to the City’s future, the City and stakeholders will continue to explore new ways to conserve water.