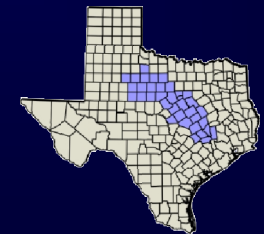


***Agenda Item 6.11
Proposed Methodology for
Considering Water Conservation as a
Water Management Strategy***

August 19, 2009

BRAZOS G
WATER PLANNING GROUP

HDR



Conservation Requirements – TAC

Chapter 357

§357.7. Regional Water Plan Development.

(a) Regional water plan development shall include the following:

...

(7) evaluation of all water management strategies the regional water planning group determines to be potentially feasible, including:

(A) water conservation practices...The regional water planning group must consider water conservation practices for each need identified in paragraph (4) of this subsection.

(i) The regional water planning group shall include water conservation practices for each user group to which Texas Water Code §11.1271 applies.

(ii) The regional water planning group shall consider water conservation practices for each user group beyond the minimum requirements of clause (i) of this subparagraph, whether or not the water user group is subject to Texas Water Code §11.1271. If it does not adopt a water conservation strategy that exceeds minimum levels, it shall document the reason.

Conservation Considerations

- ✓ TWDB demand projections (municipal) already include some level of conservation – any additional conservation will be considered as “advanced” conservation
- ✓ RWPGs must consider conservation **first** for any WUG with **needs**
- ✓ In 2006, Brazos G RWPG defined “**needs**” as occurring when supply less than **105% of demand**, and planned to meet the first 5% with conservation if possible
- ✓ Task force recommendation for target GPCD is **140 GPCD**

Background

- ✓ September 15, 2004: **Adopted** approach to consider **municipal** water conservation as a water management strategy for water user groups (WUGs) with needs
- ✓ February 23, 2005: **Adopted** approach to consider water conservation as a water management strategy for **non-municipal** water user groups with needs
- ✓ Conservation strategies described in Volume II, Section 4B.2 of the 2006 Brazos G Regional Water Plan
- ✓ Conservation approach summarized in August 13, 2009 memorandum

Municipal Water Conservation

- ✓ **GPCD projections**
 - **140 gpcd target: State Water Conservation Implementation Task Force (2004)**

- ✓ **Best Management Practices (BMPs)**
 - **Texas Water Development Board/GDS Associates (2003)**
 - **State Water Conservation Implementation Task Force (2004)**

- ✓ **Approach adopted for 2006 Plan (recommended for 2011 Plan)**

TWDB GPCD Projections (through Year 2060)

- ✓ **Current TWDB demand projections reflect 1991 State Water-Efficient Plumbing Act:**
 - **100% replacement by Year 2045 (at rate of 2% per year)**
 - **100% of new construction contains water-efficient plumbing fixtures**

- ✓ **For all municipal WUGs in Brazos G, this translates to a “built-in” GPCD reduction of 2 to 13 gpcd (average 7 gpcd decrease) from Year 2010 to 2060**

Consideration of Additional BMPs

✓ Indoor water conservation BMPs

- Clothes washer rebate (GDS Associates)
- Rainwater harvesting (GDS Associates)
- Rain barrels (GDS Associates)
- Showerhead and Toilet Flapper Retrofit (Task Force BMP Guide)
- Water Efficient Plumbing Fixtures (TCEQ)

✓ Outdoor water conservation BMPs

- Landscape Conservation and Irrigation (Task Force BMP Guide)

✓ Both Indoor/Outdoor water conservation BMPs

- Unaccounted for losses (TCEQ)
- Seasonal water use reduction (TCEQ)
- Public education programs

Challenge: Costs and savings (when available) can be difficult to quantify and apply for regional water planning

Adopted Municipal Conservation BMPs for WUGs with Needs

Conservation BMPs	Water Savings (gpcd)	Estimated Cost (\$ per acft water saved)
Advanced Conservation -Toilet Retrofit -Showerhead/Aerators -Irrigation Audit	7	\$325-385
Landscape Irrigation	11	\$400
Public Education Programs	3	N/A
Total	21	\$325- \$400

Adopted Approach for Municipal Water Conservation

- ✓ For WUGs with needs (anytime during 2000-2060) and usage less than 140 gpcd
 - Adopt current TWDB projections (assumes 100% replacement by 2045)
- ✓ For WUGs with needs (anytime during 2000-2060) and usage greater than 140 gpcd
 - Reduce 2010 TWDB projections by **21 gpcd** by 2020
 - Maintain constant GPCD from 2020 through 2060
 - Includes projected conservation + additional conservation
 - Includes “accelerated” effects of 1991 Plumbing Act
- ✓ Reason: Simplify conservation approach and address both short term & long term needs

Non-Municipal Water Conservation

- ✓ **Irrigation**
- ✓ **Steam-electric**
- ✓ **Manufacturing**
- ✓ **Mining**

Summary of Non-Municipal Needs

<u>WUG Type</u>	<u>Counties with Needs in 2060</u>	<u>Sum of Needs (acft/yr)</u>
Livestock	0	0
Manufacturing	7	10,919
Steam Electric	9	149,687
Mining	2	2,889
Irrigation	4	<u>36,737</u>
Total		200,232

Note: Livestock demands are fully met through local groundwater and riparian surface water supplies.

Considerations

- ✓ **TWDB guidance identifies multiple BMPs for irrigation and industrial water conservation**
 - **Data to quantify savings & costs not generally available**

- ✓ **Conservation savings and costs are by nature facility-specific**

- ✓ **Non-municipal WUGs are county-aggregated**
 - **Individual facilities not identified**
 - **Identification of specific water management strategies not a reasonable expectation**

Adopted Approach for Non-Municipal Water Conservation

- ✓ **For non-municipal WUG needs:**
 - **Adopt common 7 percent conservation savings**
 - ✓ **Graduated schedule**
 - **3% by 2010, 5% by 2020, 7% in 2030 – 2060**
 - ✓ **Provide list of BMPs for each use in the plan that could be used to enact those savings**
 - **When apparent costs are not economically reasonable, do not select conservation as a strategy**

Recommendation

Adopt the identical approach regarding municipal and non-municipal water conservation for the 2011 Brazos G Regional Water Plan as was used in the 2006 Plan, as documented in Volume II, Section 4B.2 of the 2006 Plan.