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Chapter 5C: Water Conservation Recommendations

2026 Initially Prepared Plan

Prepared for:

East Texas Regional Water Planning Group

January 2025

Chapter 5C. Water Conservation Recommendations

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LIST OF ABBREVIATIONS

ABBREVIATION	DESCRIPTION
ASTM	American Society for Testing and Materials
BMP	Best Management Practice
CII	Commercial, Industrial, and Institutional
ETRWPA	East Texas Regional Water Planning Area
ETRWPG	East Texas Regional Water Planning Group
ft/yr	Feet per Year
FWSD	Fresh Water Supply District
GPCD	Gallons Per Capita Per Day
gcd	Gallons per connection per day
LNVA	Lower Neches Valley Authority
MUD	Municipal Utility District
MWA	Municipal Water Authority
MWD	Municipal Water District
PVC	Polyvinyl Chloride
PWS	Public Water System
RWP	Regional Water Plan
RWPA	Regional Water Planning Area
RWPG	Regional Water Planning Group
SUD	Special Utility District
SWIFT	State Water Implementation Fund for Texas
TAC	Texas Administrative Code
TCEQ	Texas Commission on Environmental Quality
TWDB	Texas Water Development Board
UCM	Utility Conservation Measures
UPC	Uniform Plumbing Code
WCAC	Water Conservation Advisory Council
WCID	Water Control and Improvement District
WCITF	Water Conservation Implementation Task Force
WCP	Water Conservation Plan
WMSs	Water Management Strategies
WSC	Water Supply Corporation
WUG	Water User Group
WWP	Wholesale Water Provider

5C WATER CONSERVATION RECOMMENDATIONS

Water conservation is defined by Texas Water Code §11.002(8) as "the development of water resources; and those practices, techniques and technologies that will reduce the consumption of water, reduce the loss or waste of water, improve the efficiency in the use of water, or increase the recycling and reuse of water so that a water supply is made available for future or alternative uses." Water conservation measures are long-term, permanent strategies to reduce water use.

Title 31 Texas Administrative Code (31 TAC) §357.34(h) requires the 2026 Regional Water Plan to consolidate and present recommendations that may include Best Management Practices (BMPs) appropriate for the region. Further, for water user groups (WUGs) with identified water needs, conservation water management strategies (WMSs) must be included as part of the WUG list of strategies to meet shortages or a summary of reasons must be provided in the plan for not including conservation WMSs.

Following Section 5C.1 is a discussion of water conservation practices and trends in the East Texas Regional Water Planning Area (ETRWPA). This will be followed by a summary and discussion in Section 5C.2 of water conservation plans in use by WUGs in the region and BMPs in use currently or which could be implemented by WUGs in the future.

Conservation WMSs are recommended for all Region I WUGs, regardless of their needs, as water conservation is considered a best management practice in the ETRWPA.

5C.1 WATER CONSERVATION PRACTICES AND TRENDS IN THE EAST TEXAS REGIONAL WATER PLANNING AREA

The ETRWPA water demand projections incorporate an expected level of conservation to be implemented over the planning period. For municipal use, the assumed reductions in per capita water use are the result of the implementation of the following regulatory initiatives:

- The Water Saving Performance Standards Act, implemented by Texas in 1992. This act prohibits the sale, distribution, or importation of plumbing fixtures that do not meet certain low flow performance standards. House Bill 2667, implemented September 1, 2009, updated the water savings performance standards. For new fixtures, the average toilet flush volume is limited to 1.28 gallons, and the maximum showerhead flow is limited to 2.5 gallons per minute.
- A federal requirement that residential clothes washers manufactured on or after January 1, 2007, must achieve a water factor[1] of 9.5 gallons per cubic foot of capacity. For front-loading machines, the maximum integrated water factor[2] decreases to 4.5 gallons per cubic foot on March 7, 2015. For top-loading machines, the maximum integrated water factor decreases to 8.4 gallons per cubic foot on March 7, 2015, and 6.5 gallons per cubic foot on January 1, 2018.

[1] Total weighted per-cycle water consumption for the cold wash/cold rinse cycle divided by the clothes container capacity.

[2] Total weighted per-cycle water consumption for all wash cycles divided by the clothes container capacity.

- A federal requirement that residential dishwashers manufactured on or after May 30, 2013, must achieve water consumption of 5.0 gallons per cycle or less.
- As of June 2021, the 2018 edition of the Uniform Plumbing Code (UPC) and the 2018 edition of the International Code Council's International Plumbing Code have been adopted by the State Board's Rule 367.2 in Title 22 of the Texas Administrative Code. These codes maintain or increase the efficiency of shower heads and faucet aerators, as shown in Table 5C.1 below. The 2024 UPC was released in January 2024, and the standards for plumbing fixtures in the 2024 UPC align with those shown in the table below.

Table 5C.1: Standards for Plumbing Fixtures

Fixture	Standard
Toilets	1.28 gallons per flush
Shower Heads	2.5 gallons per minute at 80 psi
Urinals	0.5 gallon per flush
Faucet Aerators	1.5 gallons per minute at 60 psi
Drinking Water Fountains	Shall be self-closing

The “low flow plumbing fixture rules” measure assumes that all new construction will be built with water saving plumbing fixtures and that existing plumbing fixtures will be replaced over time with low flow fixtures. The “efficient new residential clothes washer standards” and “efficient new residential dishwasher standards” measures assume that all new construction will be built with efficient clothes washers and dishwashers and that existing clothes washers and dishwashers will be replaced over time with efficient appliances. On a regional basis, these regulatory initiatives are projected to reduce municipal water use by 2.9 percent (over 6,800 acre-feet (ac-ft) per year) by 2080. See Appendix 5C-A for Table 5C-A-1: Estimated Plumbing Code Efficiency Savings by County.

The ETRWPA is a water-rich region, and water conservation in the region is generally driven by economics rather than by lack of water supply. The East Texas Regional Water Planning Group (ETRWPG) believes that water users in the ETRWPA will implement advanced water conservation measures (i.e., savings associated with active conservation measures) as economic conditions dictate to each individual user. Given the general abundance of accessible water supply to the water users in the ETRWPA, the ETRWPG believes the water conservation strategies included in this planning period represent an economically achievable level, or “highest practicable level,” of conservation.

5C.1.1 Water Use in the East Texas Regional Water Planning Area

The State of Texas Water Conservation Implementation Task Force (WCITF) set a statewide goal of an average per capita consumption of 140 gallons per capita per day (GPCD) in 2001. The WCITF also set a recommended goal for municipal water suppliers to have a minimum annual reduction of one percent in total GPCD until the entity achieves a total GPCD of 140 or less. In 2007, the 80th Texas Legislature, via the passage of Senate Bill 3 and House Bill 4, directed the TWDB to appoint the members of the newly-created Water Conservation Advisory Council (WCAC), which was established to continue the work initiated by the WCITF. The WCAC has submitted a Report and Recommendations to the 88th Texas Legislature, [1] with the following updates:

- Recent trends indicate that regional water planning groups should eliminate the 140 GPCD target.
- A recommended methodology is to reduce the planning year GPCD by one percent each year. However, the Council acknowledges that the cumulative reduction might not be feasible beyond 2040.

It must be recognized that long-term changes to water supplies can be brought on by impacts on water quality or quantity, or by changing economic conditions. Such changes could require additional emphasis on water conservation in the future. The need for additional water conservation will continue to be evaluated in future plans.

The base per-capita values used to calculate demand projections in Chapter 2 are presented in Table 5C.1 for every WUG in the ETRWPA. In the 2021 RWP, the base GPCD for each WUG was calculated by the Texas Water Development Board (TWDB) using 2011 water-use surveys, setting a minimum GPCD value of 60 GPCD. Those baselines were carried forward to the 2026 RWP, with adjustment for plumbing code savings. However, about 143 out of the 243 municipal WUGs requested a new dry year baseline GPCD which is reflective of their recent water use pattern.

House Bill 807 was passed by the Texas State Legislature on June 10th, 2019. This bill requires planning groups to set specific GPCD goals in each decade of the planning period for municipal water user groups in Region I. These goals and the baseline usages are provided in Table 5C-B-1: GPCD Goals of Region I WUGs in Appendix 5C-B.

5C.1.2 Water Loss in the East Texas Regional Water Planning Area

Since 2003, retail public water utilities have been required to complete and submit a water loss audit form to the TWDB once every five years. Since 2013, retail public utilities that supply potable water to more than 3,300 connections or receive financial assistance from the TWDB must file an annual water audit with the TWDB. The most recent available data were reported in 2024 for water loss during calendar year 2022. The TWDB compiled the data from these reports. The water audit reporting requirements follow the International Water Association and American Water Works Association Water Loss Control Committee methodology.

The primary purposes of a water loss audit are to account for all of the water being used and to identify potential areas where water can be saved. Water audits track multiple sources of water loss that are commonly described as apparent loss and real loss. Apparent loss is water that was used but for which the utility did not receive compensation. Apparent losses are associated with customer meters under-registering, billing adjustment and waivers, and unauthorized consumption. Real loss is water that was physically lost from the system before it could be used, including main breaks and leaks, customer service line breaks and leaks, and storage overflows. The sum of the apparent loss and the real loss make up the total water loss for a utility.

In the ETRWPA, 55 public water suppliers submitted a water loss audit to TWDB for calendar year 2022. These water suppliers represent a retail service population of approximately 452,000 people, or about 42 percent of the regional population. Table 5C.2 shows a summary of reported 2022 water loss accounting for the ETRWPA.

Table 5C.2: Reported 2022 Water Loss Accounting in the East Texas Regional Water Planning Area

<table>
<tr><td rowspan="8">Corrected input volume
100.0%
22,611,100,740 gallons</td><td rowspan="4">Authorized consumption
80.7%
18,236,202,037</td><td rowspan="2">Billed authorized consumption
78.3%
17,711,457,658</td><td>Billed metered consumption
78.2%
17,678,493,611</td><td rowspan="2">Revenue water
78.3%
17,711,457,658</td></tr>
<tr><td>Billed unmetered consumption
0.1%
32,964,047</td></tr>
<tr><td rowspan="2">Unbilled authorized consumption
2.3%
524,744,379</td><td>Unbilled metered consumption
1.6%
350,620,193</td><td rowspan="5">Non-revenue water
21.7%
4,899,643,082</td></tr>
<tr><td>Unbilled unmetered consumption
0.8%
174,124,186</td></tr>
<tr><td rowspan="4">Water losses
19.3%
4,374,898,703</td><td rowspan="3">Apparent losses
3.3%
736,660,517
$4,953,295</td><td>Unauthorized consumption
0.2%
45,319,717</td></tr>
<tr><td>Customer meter under-registering
2.9%
646,155,199</td></tr>
<tr><td>Data handling discrepancies
0.2%
45,185,601</td></tr>
<tr><td rowspan="2">Real losses
16.1%
3,638,238,186
$9,980,001</td><td>Reported breaks and leaks
5.4%
1,214,838,320</td></tr>
<tr><td>Unreported loss
10.7%
2,423,399,866</td></tr>
</table>

On a regional basis, the reported percentage of total water loss for the ETRWPA was 19.3 percent. Based on this figure, it appears that enhanced water loss control programs may be a potentially feasible water conservation strategy for some WUGs in the East Texas Region.

5C.2 WATER CONSERVATION PLANS

The Texas Commission on Environmental Quality (TCEQ) requires water conservation plans for all municipal, industrial, and other non-irrigation water users with surface water rights of 1,000 ac-ft per year or more, all irrigation water users with surface water rights of 10,000 ac-ft per year or more, and all retail public water suppliers providing water service to 3,300 connections or more. Water conservation

plans are also required for all water users applying for a new or amended State water right and for entities seeking more than $500,000 in State funding for water supply projects.

All conservation plans must specify quantifiable 5-year and 10-year conservation goals and targets. While these goals are not enforceable, they must be identified. Updated water conservation plans for WUGs in the region were to be submitted to the TCEQ and to the ETRWPG by May 1, 2024. Failure to submit a water conservation plan is a violation of the Texas Water Code, Section 11.1272 and the Texas Administrative Code, Section 288.30, and is subject to enforcement by the TCEQ.

A list of the 59 users in the ETRWPG required to submit water conservation plans is shown in Table 5C.3.

Other entities have contracts with regional and wholesale water providers (WWPs) for greater than 1,000 ac-ft per year. Presently, these water users are not required to develop water conservation plans unless the user is seeking State funding; however, a WWP may request that its customers prepare a conservation plan to assist in meeting the goals and targets of the WWP's plan.

To assist entities in the ETRWPA with developing water conservation plans, model plans for municipal water users (major or retail public water suppliers), industrial users, mining, and irrigation districts are available on the TCEQ's website (https://www.tceq.texas.gov/permitting/water_rights/wr_technical-resources/conserve.html). Each of these model plans addresses the latest TCEQ requirements and is intended to be modified by each user to best reflect the activities appropriate to the entity.

Table 5C.3: Water Users and Types of Use That Are Required to Develop, Implement, and Submit Water Conservation Plans

WUG Name	PWS Name
Alto	City of Alto
Arp	City of Arp
Beaumont	City of Beaumont Water Utility Dept
Bridge City	City of Bridge City
Brookeland FWSD	Brookeland FWSD
Carthage	City of Carthage
Center	City of Center
Chandler	City of Chandler
China	City of China
Corrigan	City of Corrigan
County-Other, Anderson	Dogwood Springs WSC Plant 1
County-Other, Jasper	Holmwood Angelina & Neches River Authority
County-Other, Nacogdoches	Nacogdoches County MUD 1
County-Other, Sabine	Beechwood WSC
Craft Turney WSC	Craft Turney WSC Main
Crockett	City of Crockett
Cushing	City of Cushing
D & M WSC	D & M WSC
Diboll	City of Diboll
G M WSC	G-M WSC

WUG Name	PWS Name
Groves	City of Groves
Henderson	City of Henderson
Hudson WSC	Hudson WSC
Huntington	City of Huntington
Jacksonville	City of Jacksonville
Jasper	City of Jasper
Jasper County WCID 1	Jasper County WCID 1
Jefferson County WCID 10	Jefferson County WCID 10
Kirbyville	City of Kirbyville
Lufkin	City of Lufkin
Lumberton MUD	Lumberton MUD
M & M WSC	M & M WSC
Mauriceville SUD	Mauriceville MUD
Meeker MWD	Meeker MWD
NA - Wholesaler	Athens Municipal Water Authority
NA - Wholesaler	Houston County WCID 1
NA - Wholesaler	Sabine River Authority
NA - Wholesaler	Upper Neches River MWA
Nacogdoches	City of Nacogdoches
Nederland	City of Nederland
Newton	City of Newton
Orange	City of Orange
Orange County WCID 1	Orange County WCID 1
Orange County WCID 2	Orange County WCID 2
Palestine	City of Palestine
Pleasant Springs WSC	Pleasant Springs WSC
Port Arthur	City of Port Arthur
Port Neches	City of Port Neches
Rayburn Country MUD	Rayburn Country MUD
Rusk	City of Rusk
San Augustine	City of San Augustine
Silsbee	City of Silsbee
South Newton WSC	South Newton WSC
Southern Utilities	Southern Utilities
The Consolidated WSC	The Consolidated WSC Rural System
Troup	City of Troup
Tyler	City of Tyler
Tyler County SUD	Tyler County SUD
Upper Jasper County Water Authority	Upper Jasper County Water Authority 1

Implemented water conservation strategies vary by water user and are shown in Table 5C.4. This table lists the number of entities who have implemented the various water conservation strategies among the 43 Region I primary utilities that have submitted the 2016 to 2022 annual water conservation reports to the TWDB. The focus of the conservation activities for municipal water users in the ETRWPA are:

- Metering New Connections & Retrofitting Existing Connections
- Public Information
- Utility Water Audit & Water Loss

Table 5C.4: Best Management Practices by Region I Entities from the Conservation Annual Reports

BMP	2016	2017	2018	2019	2020	2021	2022	Average
Athletic Fields Conservation	1	N/A	N/A	N/A	N/A	N/A	N/A	1
Conservation Coordinator	3	7	9	8	9	8	10	8
Conservation Ordinance Planning & Development	N/A	N/A	N/A	N/A	N/A	2	1	2
Cost Effective Analysis	N/A	1	N/A	1	1	1	2	1
Customer Characterization	N/A	N/A	N/A	N/A	N/A	1	3	2
Enforcement of Irrigation Standards	N/A	N/A	N/A	N/A	N/A	N/A	1	1
Golf Course Conservation	2	N/A	1	1	1	1	1	1
Landscape Irrigation Conservation & Incentives	2	1	1	2	1	1	1	1
Metering New Connections & Retrofitting Existing Connections	9	15	12	14	17	13	10	13
Other	1	3	3	1	1	1	N/A	2
Outdoor Watering Schedule	N/A	N/A	N/A	N/A	1	2	1	1
Park Conservation	2	1	N/A	N/A	N/A	N/A	N/A	2
Prohibition on Wasting Water	4	3	4	7	8	9	8	6
Public Information	17	20	16	18	18	21	17	18
Public Outreach & Education	1	N/A	N/A	2	4	6	5	4
Rainwater Harvesting & Condensate Reuse	N/A	N/A	1	1	1	1	1	1
Residential Landscape Irrigation Evaluation	N/A	1	N/A	N/A	N/A	N/A	2	2
Residential Toilet Replacement Programs	N/A	1	N/A	N/A	N/A	N/A	1	1
Reuse for Agriculture	1	1	N/A	N/A	N/A	N/A	N/A	1
Reuse for Chlorination/Dechlorination	2	4	3	3	2	2	1	2
Reuse for Industry	N/A	1	N/A	N/A	N/A	N/A	N/A	1
Reuse for On-site Irrigation	N/A	1	1	N/A	N/A	1	N/A	1
Reuse for Plant Washdown	4	8	6	5	5	5	4	5
School Education	6	3	6	5	4	8	4	5
Showerhead, Aerator, & Toilet Flapper Retrofit	1	N/A	1	1	1	1	2	1
Utility Water Audit & Water Loss	8	12	9	10	21	17	18	14

BMP	2016	2017	2018	2019	2020	2021	2022	Average
Water Conservation Pricing	3	2	5	6	8	7	6	5
Water Survey for Single Family & Multi-family Customers	2	2	4	2	2	2	3	2
Water Wise Landscape Design & Conversion Programs	1	N/A	1	1	1	1	1	1

Note: Includes 43 entities that are within the ETRWPA.

5C.3 RECOMMENDED WATER CONSERVATION STRATEGIES IN ETRWPA

Water conservation actions implemented as strategies would result in savings above that assumed for the TWDB water demand projections. The Texas Water Development Board, in conjunction with the Texas Commission on Environmental Quality and the Water Conservation Advisory Council has developed guidelines for conservation BMPs. These BMP guidelines are available online at https://www.twdb.texas.gov/conservation/BMPs/. Recommended water conservation strategies are presented by WUG type in the following sections.

5C.3.1 Municipal Water Conservation Strategies

In the 2026 Regional Water Planning effort, a new requirement distinguishes water conservation strategies into two separate categories:

- Water Use Reduction Strategy: This category focuses on measures that directly reduce water consumption by end users.
- Water Loss Mitigation Strategy: This category addresses the reduction of water loss within the distribution system.

Water Use Reduction Strategies

Based on the recommendation from the WCAC to eliminate the 140 GPCD planning target, the ETRWPG conducted a comprehensive review of baseline GPCD values for the Region I WUGs, as presented in Figure 5C.1. This analysis revealed that GPCD values are influenced by various factors, including the size of the entity, the composition of customer bases (e.g., residential versus commercial, industrial, and institutional), the nature of industrial activities, geographic location, and prevailing economic conditions. These findings underscore that GPCD is not an ideal metric for comparing water conservation efficiency across entities.

In response, the ETRWPG categorized the Region I WUGs by population size and analyzed their GPCD distributions. The analysis revealed that smaller WUGs generally have higher GPCDs, potentially due to their rural locations and larger lot sizes. Mid-sized WUGs tend to exhibit lower GPCDs, while larger WUGs show higher GPCDs again, likely due to increased commercial, industrial, and institutional (CII) activities.

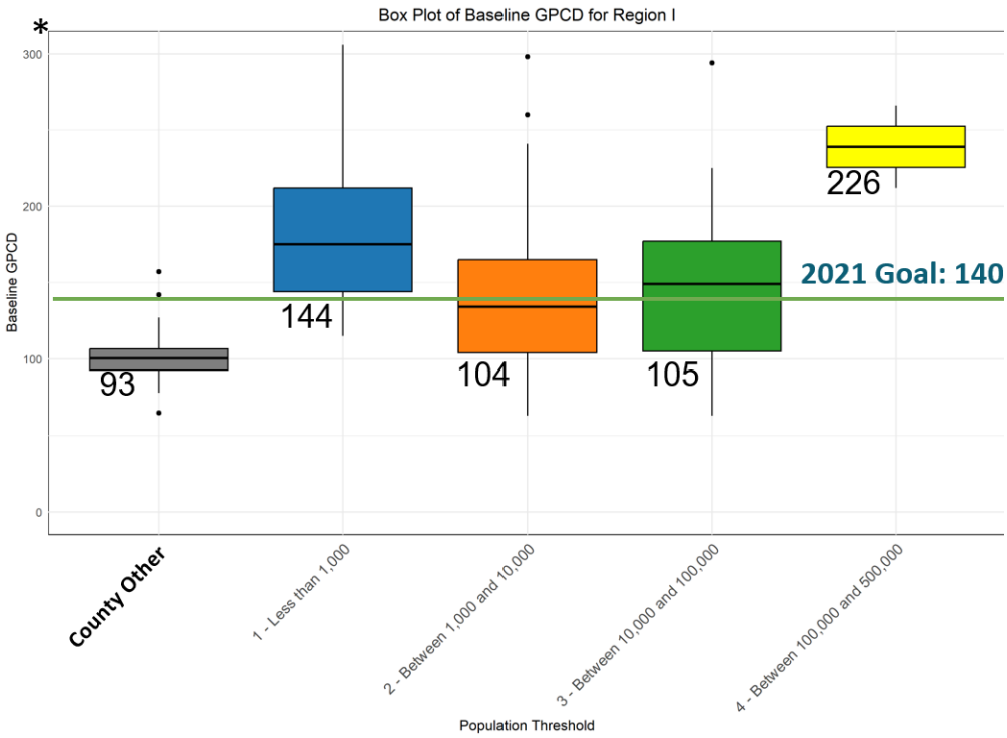

Figure 5C.1: Baseline GPCD Distribution of Region I WUGs

1) Note: y-axis cap at 300 GPCD.

Smaller WUGs with populations under 1,000 and entities that are too small to be WUGs and fall under the county-other WUG often lack the resources to implement advanced water conservation strategies. As a result, the ETRWPG decided to keep the 140 GPCD trigger from the 2021 RWP for those smaller entities rather than set a trigger lower than what was recommended in the previous plan. The ETRWPG noted that even though Region I is a water-rich region, Region I seeks to promote water conservation as a mindset among its water users and views it as a best management practice. Thus, GPCD thresholds were developed for all WUGs, shown in Table 5C.5. When these thresholds are exceeded, advanced conservation measures for water use reduction are recommended.

To address water use reduction, the ETRWPG evaluated various strategies for municipal WUGs projected to exceed their respective GPCD thresholds, regardless of whether a demonstrated need for additional water supplies was present. The evaluated conservation practices include initiatives such as enhanced public and school education programs and the adoption of water conservation pricing structures.

Table 5C.5: GPCD Thresholds by WUG Category

Category	25th Percentile	GPCD Threshold
County-Other	93	140
1 – Population Less than 1,000	144	140
2 - Population Between 1,000 and 10,000	104	104
3 - Population Between 10,000 and 100,000	105	105
4 - Population Between 100,000 and 500,000	226	140

Enhanced Education

Enhanced education would involve providing formal and indirect means of information on how to conserve water beyond current efforts. Education costs were applied to all the entities meeting the above criteria. Assumptions made in evaluating the efficiency of this measure included restrictions that the annual budget spent on education would be limited to approximately $1.50 per capita. The total budget available will be an indication as to the effectiveness of the program. Table 5C.6 indicated efficiencies assigned to various ranges of available budget.

Table 5C.6: Water Conservation Efficiencies for Enhanced Public and School Education

Budget		Efficiency of Conservation
Low	High	
$1,500 (minimum)	$14,999	1.5%
$15,000	$29,999	2.0%
$30,000	$44,999	2.5%
$45,000	$60,000 (maximum)	3.0%

SOURCE: EAST TEXAS REGIONAL WATER PLANNING GROUP

Water Conservation Pricing

Water conservation pricing requires an increasing rate structure with increasing use. The minimum price increase between rate blocks should be 25 percent. For maximum effectiveness, the price increase between rate blocks should be at least 50 percent. The effectiveness of this measure is, in part, determined by whether water conservation pricing is currently implemented. Water conservation pricing is assumed to achieve a 1.5 percent reduction in demand.

Water Loss Mitigation Strategy

The water loss mitigation control program involves committing more resources towards identifying and repairing leaks, replacing inaccurate water meters, minimizing billing errors, and replacing mains with chronic leakage. Utilities would strive to achieve target water loss percentages that depend on water system characteristics. For more rural utilities with fewer than 32 connections per mile of mains, the target water loss is 57 gallons per connection per day (gcd) (Table 5C.7). For more urban or suburban utilities with 32 or more connections per mile of main, the target water loss is 30 gcd. For WUGs with severe water loss, achieving the water loss target may involve replacing a substantial portion of the potable water transmission and distribution system.

Municipal water entities pursuing infrastructure replacement programs to reduce water loss may qualify for funding from state-supported initiatives, including the State Water Implementation Fund for Texas (SWIFT). According to the TWDB website as of January 2025, SWIFT has been allocated $11.5 billion to make water project financing more affordable and to provide consistent state financial assistance for developing water supply projects identified in the State Water Plan. The ETRWPG encourages all Region I WUGs to consider utilizing the SWIFT program if they are interested in mitigating water loss through water main replacements.

Table 5C.7 Water Loss Mitigation Targets

Service Connections per Mile of Main	Real Water Loss Target (gallons per connection per day)
Less than 32	30
32 or more	57

For a given WUG, the projected water savings from the water loss mitigation strategy is calculated as the difference between the WUG's actual water loss and the TWDB water loss thresholds. The implementation schedule assumes that the measure will be 25% complete by 2030, 75% complete by 2040, and 100% complete by 2050. To ensure a conservative estimate, a cap of 30% of the demand projection has been applied to the calculated savings.

To maintain the target water loss levels, it is assumed that entities will invest appropriate resources in leak detection and management programs during the planning horizon. This ongoing effort is critical to sustaining the projected savings.

Water savings from main replacement were estimated at 0.5% of the total water demand for each WUG. It is assumed that main replacements would begin in 2030 with a capital cost and loan service. The length of main to be replaced is based on the water loss per mile and the total length of the distribution system in miles. The following assumptions are utilized in the water loss mitigation cost estimates.

- Capital Cost:
  - The unit cost of main replacement is derived from the TWDB UCM model for an 8-inch PVC pipe: $198 per linear foot in rural rocky areas and $287 per linear foot in urban rocky areas.
  - An interest rate of 3.5% and a 20-year term are assumed.
- Annual O&M Cost: Leak Detection and Management Program
  - To achieve and maintain the projected water loss reduction, entities are expected to spend $300 per acre-foot per year (ac-ft/yr) to achieve a 34.7% reduction in water loss from their baseline year and $600/ac-ft/yr to achieve additional savings beyond the 34.7%. These cost estimates are based on a 2022 water loss study that analyzed data from over 800 utilities in California, Texas, and Georgia. The study found that it is economically efficient for a median utility to reduce water losses by 34.7% at a cost of $277/ac-ft/yr.[2] Adjusted for inflation, the rounded cost of $300/ac-ft/yr was adopted. Achieving savings beyond 34.7% is expected to be significantly more challenging, warranting a doubled cost factor to reflect the increased difficulty and expense.

Projected Total Conservation Savings and Cost

With the recommended strategies, total conservation savings are projected to range from approximately 7,400 acre-feet in 2030 to 23,900 acre-feet in 2080, as shown in Figure 5C.2. Estimated savings will be from Enhanced Education, Conservation Rate Pricing, and water loss mitigation strategies. Estimated conservation savings for each WUG are listed in Table 5C.8.

The estimated annual cost of each strategy is also shown in Figure 5C.2. Conservation Rate Pricing is excluded since this method does not have costs associated with increasing rates. Water loss mitigation

has unit costs ranging from approximately $410 to $890 per acre-ft per year and has a higher capital cost due to the initial replacement of water mains (with a payback period of 20 years) and ongoing leak detection programs. Enhanced Education has unit costs ranging from approximately $180 to $460 per acre-foot per year and has a decreasing cost trend due to the increasing percent implementation of conservation. Estimated annual costs for each WUG are listed in Table 5C.9.

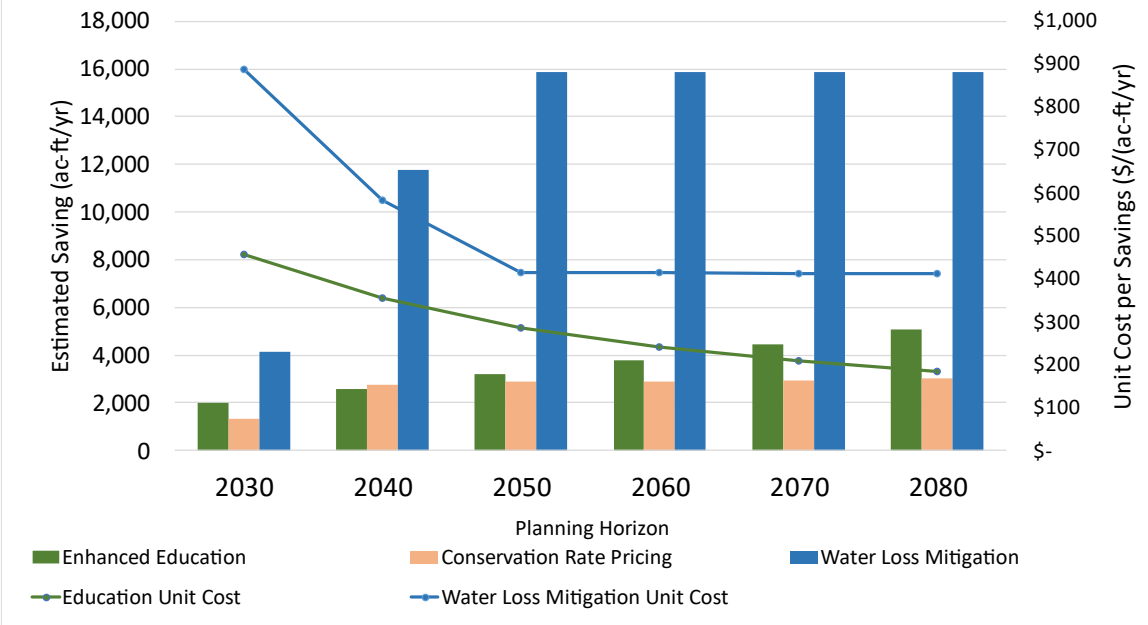

Figure 5C.2: Estimates of Total Conservation Savings and Weighted Average Cost

Table 5C.8: Water Conservation Savings for Water User Groups

Water User Group	Counties	Amount Conserved (ac-ft per year)					
		2030	2040	2050	2060	2070	2080
Afton Grove WSC	Cherokee	4	6	6	7	8	9
Alto	Cherokee	4	6	6	6	7	7
Alto Rural WSC	Cherokee	18	29	34	38	45	51
Anderson County Cedar Creek WSC	Anderson	3	4	4	4	4	5
Angelina WSC	Angelina	2	2	2	2	2	2
Appleby WSC	Nacogdoches	20	30	34	37	40	44
Arp	Smith	13	33	41	37	34	29
B B S WSC	Henderson, Anderson	3	4	4	5	5	5
B C Y WSC	Anderson	5	7	8	8	8	9
Beaumont	Jefferson	2,094	5,506	7,320	7,327	7,332	7,336
Beckville	Panola	0.4	0.4	0.3	0.3	0.3	0.3
Berryville	Anderson, Henderson	0.5	0.5	0.5	1	1	1
Bethel Ash WSC	Henderson, Van Zandt	4	4	4	4	4	4
Bevil Oaks	Jefferson	0.5	1	1	0.5	0.5	0.5
Blackjack WSC	Cherokee	3	4	2	2	2	2
Bon Wier WSC	Newton	2	2	2	2	2	0
Bridge City	Orange	6	7	7	7	7	7
Brookeland FWSD	Jasper, Newton, Sabine	3	5	5	5	5	5
Brownsboro	Henderson	5	7	8	8	9	9
Brushy Creek WSC	Henderson, Anderson	10	17	19	20	21	22
Bullard	Cherokee, Smith	20	35	40	46	52	58
Caro WSC	Nacogdoches	7	11	12	13	14	16
Carthage	Panola	31	46	48	50	52	54
Center	Shelby	80	194	241	238	236	232
Centerville WSC	Trinity	6	15	15	14	12	10
Central WCID of Angelina County	Angelina	3	3	3	3	3	3
Chalk Hill SUD	Gregg, Rusk	1	1	1	1	1	1
Chandler	Henderson	13	23	30	40	52	77
Chester WSC	Polk, Tyler	3	4	4	4	5	5
China	Jefferson	3	5	6	6	6	7
Choice WSC	San Augustine, Shelby	1	1	1	1	1	1
Clayton WSC	Panola	5	7	10	11	12	12
Colmesneil	Tyler	3	4	5	5	5	5
Corrigan	Polk	13	36	48	50	52	54

Water User Group	Counties	Amount Conserved (ac-ft per year)					
		2030	2040	2050	2060	2070	2080
County-Other, Anderson	Anderson	3	3	3	3	3	2
County-Other, Angelina	Angelina	3	3	3	3	3	3
County-Other, Cherokee	Cherokee	2	2	1	1	1	0.1
County-Other, Hardin	Hardin	5	5	4	4	3	2
County-Other, Houston	Houston	8	10	6	5	2	0
County-Other, Jasper	Jasper	6	5	5	4	4	3
County-Other, Jefferson	Jefferson	10	9	6	5	5	4
County-Other, Nacogdoches	Nacogdoches	3	3	3	3	3	4
County-Other, Newton	Newton	3	3	3	2	2	2
County-Other, Orange	Orange	10	9	8	7	6	5
County-Other, Panola	Panola	5	5	5	5	4	4
County-Other, Rusk	Rusk	5	4	4	3	2	1
County-Other, Sabine	Sabine	1	0.5	0.4	0.4	0.4	0.4
County-Other, San Augustine	San Augustine	1	1	1	0.5	0.4	0.2
County-Other, Shelby	Shelby	5	5	5	5	4	4
County-Other, Smith	Smith	7	6	6	5	5	4
County-Other, Trinity	Trinity	1	1	1	1	1	1
County-Other, Tyler	Tyler	4	3	3	2	2	1
Craft Turney WSC	Cherokee	57	155	199	196	193	190
Crockett	Houston	96	251	298	289	280	267
Cross Roads SUD	Gregg, Rusk	2	2	2	2	2	2
Crystal Farms WSC	Rusk	1	1	1	1	1	1
Cushing	Nacogdoches	3	6	7	9	9	11
Cypress Creek WSC	Tyler	3	4	4	4	4	3
D & M WSC	Nacogdoches	20	30	34	38	40	44
Damascus-Stryker WSC	Polk	3	6	6	7	7	9
Dean WSC	Smith	14	22	24	27	29	33
Deberry WSC	Panola	2	2	2	2	2	2
Denning WSC	San Augustine	11	27	31	29	27	25
Diboll	Angelina	13	19	22	23	25	26
East Lamar WSC	Shelby	1	1	1	1	1	1
Ebenezer WSC	Rusk	3	5	5	5	5	5
Elkhart	Anderson	6	10	8	8	9	9
Emerald Bay MUD	Smith	5	7	8	8	9	9
Etoile WSC	Nacogdoches	7	10	11	12	13	14
Federal Correctional Complex Beaumont	Jefferson	12	17	18	19	20	21
Five Way WSC	Shelby	3	4	5	5	5	5
Flat Fork WSC	Shelby	3	2	2	2	2	2
Four Pines WSC	Anderson	1	1	1	1	1	1

Water User Group	Counties	Amount Conserved (ac-ft per year)					
		2030	2040	2050	2060	2070	2080
Four Way SUD	Angelina	2	2	2	2	2	2
Frankston	Anderson, Henderson	4	6	6	6	7	7
Frankston Rural WSC	Anderson	5	7	6	7	7	7
G M WSC	Sabine, San Augustine	35	97	118	111	104	97
Garrison	Nacogdoches, Rusk	24	66	89	93	97	102
Gaston WSC	Rusk	1	1	1	1	1	1
Goodsprings WSC	Rusk	1	1	1	1	1	1
Grapeland	Houston	5	6	7	8	8	9
Groves	Jefferson	167	447	582	587	593	598
Gum Creek WSC	Cherokee	1	1	0.5	0.5	0.5	0.5
Hardin County WCID 1	Hardin	1	1	1	1	1	1
Hemphill	Sabine	9	12	12	12	12	12
Henderson	Rusk	65	94	100	107	113	121
Hollands Quarter WSC	Panola	1	1	1	1	1	0.5
Hudson WSC	Angelina	5	5	5	5	5	5
Huntington	Angelina	12	31	40	40	42	42
Huxley	Shelby	5	6	6	6	5	5
Jackson WSC	Smith	2	3	3	3	3	3
Jacksonville	Cherokee	114	279	349	348	345	343
Jacobs WSC	Rusk	2	2	2	2	2	2
Jasper	Jasper	34	47	48	46	47	47
Jasper County WCID 1	Jasper	4	11	15	15	15	16
Jefferson County WCID 10	Jefferson	11	17	18	19	20	21
Joaquin	Shelby	3	2	2	2	2	2
Kelly G Brewer	Orange	6	10	10	11	11	9
Kirbyville	Jasper	8	11	12	13	14	16
Kountze	Hardin	1	1	1	1	1	1
Leagueville WSC	Henderson	1	1	1	1	1	1
Lilly Grove SUD	Nacogdoches	26	69	91	96	103	107
Lovelady	Houston	3	4	4	2	2	2
Lufkin	Angelina	208	427	526	553	582	610
Lumberton MUD	Hardin	1	5	8	8	8	8
M & M WSC	Angelina	1	1	1	1	1	1
Mauriceville SUD	Jasper, Newton, Orange	4	4	4	4	4	4
McClelland WSC	Shelby	15	39	42	36	30	24
Meeker MWD	Jefferson	8	11	12	12	13	14
Melrose WSC	Nacogdoches	15	24	26	30	32	35
Minden Brachfield WSC	Panola, Rusk	1	1	1	1	1	1

Water User Group	Counties	Amount Conserved (ac-ft per year)					
		2030	2040	2050	2060	2070	2080
Moore Station WSC	Henderson	8	11	12	13	14	16
Moscow WSC	Polk, Tyler	1	1	1	1	1	1
Mt Enterprise WSC	Rusk	4	6	6	6	6	7
Murchison	Henderson	3	4	4	4	5	5
Nacogdoches	Nacogdoches	364	884	1,152	1,223	1,295	1,369
Neches WSC	Anderson	3	4	5	5	5	5
Nederland	Jefferson	154	406	524	523	523	521
New London	Rusk	5	7	8	8	7	7
New Prospect WSC	Rusk	3	1	1	1	1	3
New Summerfield	Cherokee	1	1	1	1	1	1
New WSC	Sabine, San Augustine, Shelby	7	19	24	22	21	20
Newton	Newton	23	57	66	59	52	46
Nome	Jefferson	9	25	32	33	32	32
North Cherokee WSC	Cherokee	9	13	14	14	15	14
North Hardin WSC	Hardin	3	3	3	3	3	3
Norwood WSC	Anderson	1	1	1	1	1	1
Orange	Orange	329	910	1,193	1,190	1,189	1,169
Orange County WCID 1	Orange	53	118	148	141	134	122
Orange County WCID 2	Orange	29	81	105	102	99	97
Orangefield WSC	Orange	18	30	36	48	59	72
Overton	Smith, Rusk	9	13	14	13	13	14
Palestine	Anderson	145	299	358	367	374	382
Panola-Bethany WSC	Harrison, Panola	14	33	37	33	29	26
Pennington WSC	Trinity, Houston	4	6	6	5	5	5
Pinehurst	Orange	7	10	11	11	12	12
Pineland	Sabine	5	11	13	13	13	12
Pleasant Springs WSC	Anderson	3	6	6	6	6	7
Pollok-Redtown WSC	Angelina, Cherokee	1	1	1	1	1	1
Port Arthur	Jefferson	473	677	736	788	838	887
Port Neches	Jefferson	7	21	27	27	27	26
Rayburn Country MUD	Jasper	13	31	37	35	33	31
Redland WSC	Angelina	1	1	1	1	1	1
Rehobeth WSC	Panola	2	2	2	2	2	2
Rural WSC	Jasper	1	1	0.5	0.4	0.4	0.4
Rusk	Cherokee	16	24	26	27	29	30
Rusk Rural WSC	Cherokee	6	17	23	22	22	21
San Augustine	San Augustine	12	17	18	19	20	21
San Augustine Rural WSC	San Augustine	17	51	68	68	66	66
Sand Hills WSC	San Augustine,	27	85	129	141	153	167

Water User Group	Counties	Amount Conserved (ac-ft per year)					
		2030	2040	2050	2060	2070	2080
	Shelby						
Seneca WSC	Tyler	3	4	4	4	4	2
Silsbee	Hardin	30	72	94	102	109	124
Slocum WSC	Anderson	2	2	2	2	2	2
Sour Lake	Hardin	5	7	8	8	9	9
South Jasper County WSC	Jasper	1	1	1	1	1	1
South Kirbyville Rural WSC	Jasper, Newton	1	1	1	1	1	1
South Newton WSC	Newton, Orange	8	11	12	11	11	12
South Rusk County WSC	Cherokee, Rusk	20	52	63	60	57	54
Southern Utilities	Smith, Cherokee, Rusk	680	1,815	2,438	2,552	2,668	2,786
Swift WSC	Nacogdoches	8	13	13	14	16	19
Tatum	Panola, Rusk	5	7	8	7	7	7
TDCJ Beto Gurney & Powledge Units	Anderson	34	49	52	55	58	61
TDCJ Coffield Michael	Anderson	66	98	104	109	115	121
TDCJ Eastham Unit	Houston	20	30	32	34	36	37
Tenaha	Shelby	23	55	60	50	42	31
The Consolidated WSC	Anderson, Houston	38	57	64	69	75	80
Timpson	Shelby	3	4	4	4	2	2
Troup	Cherokee, Smith	8	11	12	13	14	14
Tucker WSC	Anderson	1	1	1	1	1	1
Tyler	Smith	991	2,115	2,842	3,161	3,507	3,883
Tyler County SUD	Tyler	22	52	63	62	61	60
Upper Jasper County Water Authority	Angelina, Jasper	16	46	57	54	51	47
Virginia Hill WSC	Henderson	8	11	12	13	14	14
Walnut Grove WSC	Cherokee, Smith	26	42	47	52	58	62
Walston Springs WSC	Anderson	8	13	16	19	21	23
Warren WSC	Tyler	5	7	8	8	9	9
Wells	Cherokee	1	1	1	1	1	1
West Hardin WSC	Liberty, Hardin	2	2	2	2	2	2
West Jacksonville WSC	Cherokee	21	56	72	71	70	68
West Jefferson County MWD	Jefferson	5	5	5	5	5	5
Whitehouse	Smith	20	28	30	32	33	35
Wildwood POA	Hardin, Tyler	3	6	6	6	5	5
Woden WSC	Nacogdoches	10	24	31	33	36	38
Woodlawn WSC	Angelina	1	1	1	1	1	1
Woodville	Tyler	17	27	30	32	36	40
Wright City WSC	Cherokee, Rusk, Smith	5	9	12	12	13	13

Water User Group	Counties	Amount Conserved (ac-ft per year)					
		2030	2040	2050	2060	2070	2080
Zavalla	Angelina	1	1	1	1	1	1
Total		**7,452**	**17,094**	**21,933**	**22,578**	**23,262**	**23,976**

Note: Draft values are subject to change and represent WUG total, including splits. All Region I primary WUGs are presented above.

Table 5C.9: Estimated Water Conservation Cost

Water User Group	Capital Cost	Annual Cost					
		2030	2040	2050	2060	2070	2080
Afton Grove WSC	$13,000	$3,200	$3,300	$2,300	$2,300	$2,400	$2,400
Alto	$20,000	$2,700	$2,700	$1,300	$1,300	$1,300	$1,300
Alto Rural WSC	$97,000	$14,300	$15,400	$8,700	$9,800	$11,000	$12,200
Anderson County Cedar Creek WSC	$9,000	$1,800	$1,800	$1,200	$1,200	$1,200	$1,200
Angelina WSC	$23,000	$2,100	$2,100	$500	$500	$600	$600
Appleby WSC	$401,000	$34,800	$35,900	$7,700	$7,700	$7,800	$8,900
Arp	$11,000	$6,900	$15,700	$18,300	$16,700	$15,200	$13,600
B B S WSC	$11,000	$3,000	$3,000	$2,200	$2,200	$2,200	$2,200
B C Y WSC	$310,000	$24,200	$24,200	$2,400	$2,400	$2,400	$2,400
Beaumont	$1,679,000	$858,400	$2,268,500	$2,924,200	$2,887,100	$2,850,200	$2,813,900
Beckville	$6,000	$500	$500	$100	$100	$100	$100
Berryville	$6,000	$600	$600	$100	$200	$200	$200
Bethel Ash WSC	$228,000	$17,100	$17,200	$1,200	$1,200	$1,300	$1,300
Bevil Oaks	$6,000	$600	$600	$200	$100	$100	$100
Blackjack WSC	$8,000	$1,700	$1,700	$1,100	$1,100	$1,100	$1,100
Bon Wier WSC	$6,000	$1,600	$1,500	$100	$100	$100	$0
Bridge City	$71,000	$6,900	$7,000	$2,100	$2,100	$2,200	$2,200
Brookeland FWSD	$14,000	$3,300	$3,300	$1,200	$1,200	$1,200	$1,200
Brownsboro	$9,000	$3,000	$3,000	$2,400	$2,400	$2,400	$2,400
Brushy Creek WSC	$351,000	$30,100	$31,100	$6,900	$6,900	$6,900	$6,800
Bullard	$122,000	$17,200	$18,500	$10,000	$11,200	$12,300	$12,500
Caro WSC	$32,000	$6,800	$6,800	$4,600	$4,600	$4,600	$5,700
Carthage	$173,000	$23,600	$23,600	$11,400	$11,400	$11,300	$11,300
Center	$125,000	$39,300	$85,100	$97,000	$94,700	$92,500	$89,300
Centerville WSC	$10,000	$3,100	$5,400	$5,200	$4,800	$4,200	$2,700
Central WCID of Angelina County	$48,000	$4,300	$4,300	$1,000	$1,000	$1,000	$1,000
Chalk Hill SUD	$15,000	$1,400	$1,400	$300	$300	$300	$300
Chandler	$38,000	$9,700	$11,900	$10,500	$12,900	$16,300	$19,900
Chester WSC	$12,000	$2,000	$2,000	$1,200	$1,200	$1,200	$1,200
China	$13,000	$2,200	$2,200	$1,300	$1,300	$1,300	$1,300
Choice WSC	$8,000	$700	$700	$200	$200	$200	$200
Clayton WSC	$32,000	$2,600	$2,600	$500	$500	$500	$500
Colmesneil	$14,000	$2,200	$2,200	$1,200	$1,200	$1,200	$1,200
Corrigan	$18,000	$6,700	$14,200	$17,100	$17,600	$19,100	$19,700
County-Other, Anderson	$70,000	$5,800	$5,800	$900	$800	$800	$700
County-Other, Angelina	$54,000	$4,600	$4,600	$800	$800	$800	$900
County-Other, Cherokee	$43,000	$3,700	$3,600	$400	$300	$200	$0

Water User Group	Capital Cost	Annual Cost					
		2030	2040	2050	2060	2070	2080
County-Other, Hardin	$120,000	$10,100	$10,000	$1,300	$1,100	$900	$600
County-Other, Houston	$53,000	$8,400	$7,200	$2,300	$1,200	$1,100	$0
County-Other, Jasper	$115,000	$9,800	$9,700	$1,400	$1,300	$1,100	$1,000
County-Other, Jefferson	$250,000	$20,700	$20,300	$1,700	$1,600	$1,400	$1,300
County-Other, Nacogdoches	$59,000	$5,000	$5,000	$900	$1,000	$1,000	$1,100
County-Other, Newton	$69,000	$5,900	$5,800	$800	$700	$600	$500
County-Other, Orange	$197,000	$16,700	$16,500	$2,400	$2,100	$1,800	$1,400
County-Other, Panola	$107,000	$9,100	$9,100	$1,500	$1,400	$1,300	$1,300
County-Other, Rusk	$97,000	$8,300	$8,100	$1,100	$800	$500	$200
County-Other, Sabine	$9,000	$800	$800	$100	$100	$100	$100
County-Other, San Augustine	$19,000	$1,600	$1,500	$200	$100	$100	$100
County-Other, Shelby	$97,000	$8,200	$8,200	$1,400	$1,400	$1,300	$1,200
County-Other, Smith	$216,000	$17,400	$17,100	$1,800	$1,600	$1,400	$1,300
County-Other, Trinity	$51,000	$3,900	$3,900	$300	$300	$300	$300
County-Other, Tyler	$87,000	$7,300	$7,100	$800	$700	$500	$400
Craft Turney WSC	$44,000	$25,400	$55,300	$66,000	$64,800	$63,400	$61,100
Crockett	$35,000	$46,900	$111,200	$128,000	$124,500	$118,800	$113,100
Cross Roads SUD	$31,000	$2,700	$2,700	$500	$600	$600	$600
Crystal Farms WSC	$8,000	$800	$800	$200	$300	$300	$300
Cushing	$21,000	$2,800	$3,400	$2,300	$2,400	$2,400	$2,500
Cypress Creek WSC	$20,000	$2,600	$2,900	$1,600	$1,500	$500	$400
D & M WSC	$131,000	$21,800	$22,800	$13,700	$14,800	$14,800	$15,900
Damascus-Stryker WSC	$13,000	$3,200	$4,200	$3,300	$3,300	$3,300	$3,400
Dean WSC	$65,000	$12,700	$12,700	$9,200	$9,300	$9,300	$10,400
Deberry WSC	$7,000	$1,600	$1,600	$1,100	$100	$100	$100
Denning WSC	$1,000	$3,400	$8,900	$10,600	$9,900	$9,100	$8,400
Diboll	$60,000	$12,200	$12,200	$8,100	$8,100	$8,100	$8,100
East Lamar WSC	$8,000	$700	$700	$200	$200	$200	$200
Ebenezer WSC	$16,000	$2,400	$2,400	$1,200	$1,200	$1,200	$1,200
Elkhart	$22,000	$5,000	$5,000	$3,400	$3,400	$3,400	$3,400
Emerald Bay MUD	$6,000	$2,800	$2,800	$2,400	$2,400	$2,400	$2,400
Etoile WSC	$31,000	$4,700	$4,700	$2,500	$2,600	$3,600	$3,600
Federal Correctional Complex Beaumont	$51,000	$11,500	$11,500	$7,900	$7,900	$7,900	$7,900
Five Way WSC	$11,000	$3,000	$3,000	$2,200	$2,200	$2,200	$2,200
Flat Fork WSC	$9,000	$1,800	$1,800	$1,100	$100	$100	$100
Four Pines WSC	$26,000	$2,200	$2,200	$400	$400	$400	$400
Four Way SUD	$131,000	$9,800	$9,900	$700	$700	$700	$700

Water User Group	Capital Cost	Annual Cost					
		2030	2040	2050	2060	2070	2080
Frankston	$19,000	$3,700	$3,700	$2,300	$2,300	$2,300	$1,300
Frankston Rural WSC	$19,000	$3,700	$3,700	$2,300	$2,300	$2,300	$2,300
G M WSC	$48,000	$18,200	$44,000	$49,400	$46,500	$43,500	$40,600
Garrison	$6,000	$9,400	$26,000	$34,600	$36,000	$37,300	$39,600
Gaston WSC	$10,000	$900	$900	$200	$200	$200	$200
Goodsprings WSC	$19,000	$1,700	$1,700	$300	$300	$300	$300
Grapeland	$19,000	$3,700	$3,700	$2,400	$2,400	$2,400	$2,400
Groves	$118,000	$85,700	$189,900	$233,800	$233,800	$233,800	$233,800
Gum Creek WSC	$11,000	$900	$900	$100	$100	$100	$100
Hardin County WCID 1	$10,000	$900	$900	$200	$200	$200	$200
Hemphill	$55,000	$5,600	$5,500	$1,600	$1,600	$1,500	$1,500
Henderson	$87,000	$29,700	$28,700	$22,500	$22,500	$22,500	$23,500
Hollands Quarter WSC	$45,000	$3,300	$3,300	$200	$200	$200	$100
Hudson WSC	$91,000	$7,900	$7,900	$1,500	$1,600	$1,600	$1,600
Huntington	$50,000	$9,500	$15,700	$15,300	$15,400	$15,500	$15,700
Huxley	$17,000	$3,600	$3,500	$2,300	$2,300	$1,200	$1,200
Jackson WSC	$89,000	$7,000	$7,000	$800	$800	$900	$900
Jacksonville	$257,000	$68,700	$128,600	$137,400	$134,900	$132,500	$129,000
Jacobs WSC	$24,000	$2,200	$2,200	$500	$600	$600	$600
Jasper	$585,000	$54,900	$53,700	$12,400	$11,200	$11,100	$10,000
Jasper County WCID 1	$45,000	$4,300	$6,500	$4,400	$4,500	$4,600	$4,800
Jefferson County WCID 10	$172,000	$19,000	$19,000	$6,900	$6,900	$6,900	$6,900
Joaquin	$10,000	$1,900	$1,800	$1,100	$100	$100	$100
Kelly G Brewer	$31,000	$4,600	$4,700	$2,500	$2,500	$2,500	$2,400
Kirbyville	$13,000	$4,500	$4,500	$3,600	$3,600	$3,600	$3,700
Kountze	$26,000	$2,200	$2,200	$400	$400	$300	$300
Leagueville WSC	$24,000	$2,000	$2,100	$400	$400	$400	$400
Lilly Grove SUD	$149,000	$21,600	$36,500	$34,200	$35,600	$37,000	$38,400
Lovelady	$24,000	$2,800	$2,800	$1,200	$1,100	$1,100	$1,100
Lufkin	$740,000	$133,400	$176,800	$147,000	$147,800	$148,700	$149,500
Lumberton MUD	$1,516,000	$107,100	$108,300	$2,500	$2,400	$2,400	$2,300
M & M WSC	$16,000	$1,500	$1,500	$400	$400	$400	$400
Mauriceville SUD	$362,000	$26,600	$26,700	$1,200	$1,300	$1,200	$1,200
McClelland WSC	$27,000	$8,300	$17,300	$16,900	$14,700	$12,400	$10,000
Meeker MWD	$273,000	$23,800	$23,800	$4,600	$4,600	$4,600	$4,600
Melrose WSC	$95,000	$11,900	$11,900	$5,300	$5,400	$5,400	$6,500
Minden Brachfield WSC	$54,000	$4,200	$4,200	$300	$300	$300	$300
Moore Station WSC	$36,000	$6,100	$6,100	$3,600	$4,600	$4,600	$4,700
Moscow WSC	$13,000	$1,100	$1,100	$200	$200	$200	$200

Water User Group	Capital Cost	Annual Cost					
		2030	2040	2050	2060	2070	2080
Mt Enterprise WSC	$42,000	$5,300	$5,300	$2,300	$2,300	$2,300	$2,300
Murchison	$8,000	$1,800	$1,800	$1,200	$1,200	$1,200	$1,200
Nacogdoches	$652,000	$188,100	$370,300	$425,000	$440,900	$454,600	$468,400
Neches WSC	$12,000	$3,100	$3,100	$2,200	$2,200	$2,200	$2,200
Nederland	$115,000	$85,800	$183,800	$224,100	$221,700	$219,400	$216,100
New London	$28,000	$3,400	$3,400	$1,400	$1,400	$1,300	$1,300
New Prospect WSC	$12,000	$2,000	$1,000	$200	$200	$200	$1,200
New Summerfield	$26,000	$2,000	$2,000	$200	$200	$200	$200
New WSC	$19,000	$3,900	$8,400	$8,700	$8,000	$7,600	$7,100
Newton	$31,000	$12,300	$26,300	$28,300	$25,400	$21,500	$18,900
Nome	$16,000	$5,400	$11,900	$13,900	$13,900	$13,700	$13,500
North Cherokee WSC	$131,000	$15,900	$15,900	$6,700	$6,700	$6,700	$5,600
North Hardin WSC	$65,000	$5,300	$5,400	$900	$900	$900	$900
Norwood WSC	$103,000	$7,500	$7,500	$200	$200	$200	$200
Orange	$120,000	$155,200	$395,600	$507,900	$502,000	$497,200	$492,500
Orange County WCID 1	$212,000	$41,500	$57,400	$49,600	$46,500	$43,400	$40,500
Orange County WCID 2	$31,000	$16,900	$36,000	$43,500	$41,400	$40,200	$39,100
Orangefield WSC	$78,000	$17,900	$20,000	$15,800	$19,000	$21,300	$24,700
Overton	$48,000	$7,100	$7,100	$3,700	$3,600	$3,600	$3,600
Palestine	$1,029,000	$113,600	$143,800	$85,800	$85,000	$84,300	$82,600
Panola-Bethany WSC	$22,000	$7,900	$13,600	$13,800	$12,200	$10,800	$9,700
Pennington WSC	$43,000	$5,400	$5,300	$2,300	$1,200	$1,200	$1,200
Pinehurst	$16,000	$4,600	$4,600	$3,500	$3,500	$3,500	$3,500
Pineland	$16,000	$3,000	$4,600	$4,000	$3,800	$3,600	$3,400
Pleasant Springs WSC	$10,000	$2,000	$2,000	$1,300	$1,300	$1,300	$1,300
Pollok-Redtown WSC	$47,000	$3,600	$3,600	$300	$300	$300	$300
Port Arthur	$1,518,000	$194,300	$194,500	$87,600	$87,300	$86,900	$86,600
Port Neches	$577,000	$42,700	$46,800	$8,200	$8,100	$8,000	$7,900
Rayburn Country MUD	$25,000	$6,100	$12,400	$13,000	$12,300	$11,500	$10,800
Redland WSC	$11,000	$1,100	$1,100	$300	$300	$300	$300
Rehobeth WSC	$6,000	$1,500	$1,500	$1,100	$1,100	$100	$100
Rural WSC	$6,000	$600	$600	$100	$100	$100	$100
Rusk	$38,000	$12,000	$12,000	$9,300	$9,300	$9,300	$9,300
Rusk Rural WSC	$351,000	$26,500	$29,900	$6,800	$6,700	$6,600	$6,400
San Augustine	$24,000	$5,700	$5,600	$3,900	$2,900	$2,900	$3,900
San Augustine Rural WSC	$322,000	$29,100	$40,200	$23,600	$23,200	$22,600	$22,100
Sand Hills WSC	$7,000	$12,700	$34,900	$52,800	$57,000	$61,300	$66,700
Seneca WSC	$9,000	$1,800	$1,800	$1,200	$1,200	$1,200	$1,100
Silsbee	$257,000	$34,500	$44,100	$32,800	$34,900	$37,100	$38,300

Water User Group	Capital Cost	Annual Cost					
		2030	2040	2050	2060	2070	2080
Slocum WSC	$25,000	$2,300	$2,300	$500	$500	$500	$500
Sour Lake	$26,000	$4,300	$4,300	$2,400	$2,400	$2,400	$2,400
South Jasper County WSC	$14,000	$1,300	$1,300	$300	$300	$200	$200
South Kirbyville Rural WSC	$6,000	$500	$500	$200	$200	$200	$200
South Newton WSC	$87,000	$10,800	$10,800	$4,600	$4,500	$4,500	$3,500
South Rusk County WSC	$23,000	$10,700	$24,200	$28,000	$26,500	$24,900	$23,300
Southern Utilities	$931,000	$313,100	$723,500	$891,700	$916,900	$941,800	$966,300
Swift WSC	$20,000	$6,000	$6,000	$4,700	$4,700	$4,700	$5,800
Tatum	$24,000	$4,100	$4,100	$2,400	$2,300	$2,300	$2,300
TDCJ Beto Gurney & Powledge Units	$214,000	$23,700	$23,700	$8,600	$8,600	$8,600	$8,600
TDCJ Coffield Michael	$419,000	$43,700	$43,700	$14,200	$14,200	$14,200	$14,200
TDCJ Eastham Unit	$134,000	$15,100	$15,100	$5,600	$5,600	$5,600	$5,600
Tenaha	$27,000	$11,200	$24,900	$25,200	$21,500	$17,700	$12,900
The Consolidated WSC	$167,000	$30,400	$30,500	$19,900	$19,900	$21,000	$21,000
Timpson	$15,000	$2,300	$2,300	$1,200	$1,200	$1,100	$100
Troup	$77,000	$9,000	$9,000	$3,600	$3,600	$3,600	$3,600
Tucker WSC	$9,000	$800	$800	$200	$200	$200	$200
Tyler	$6,731,000	$613,000	$799,600	$457,100	$480,000	$504,400	$530,200
Tyler County SUD	$207,000	$23,500	$29,800	$18,400	$18,000	$17,700	$17,300
Upper Jasper County Water Authority	$105,000	$12,200	$21,100	$17,200	$16,200	$15,200	$14,200
Virginia Hill WSC	$74,000	$10,800	$10,800	$5,600	$5,600	$5,600	$5,600
Walnut Grove WSC	$631,000	$62,300	$63,400	$20,100	$20,200	$21,300	$21,300
Walston Springs WSC	$23,000	$7,300	$7,400	$6,800	$6,900	$8,000	$8,000
Warren WSC	$22,000	$4,900	$4,900	$3,400	$3,400	$3,400	$3,400
Wells	$27,000	$2,100	$2,100	$200	$200	$200	$200
West Hardin WSC	$91,000	$7,100	$7,100	$600	$600	$600	$600
West Jacksonville WSC	$53,000	$12,900	$26,800	$29,400	$28,900	$28,300	$27,700
West Jefferson County MWD	$74,000	$6,600	$6,600	$1,400	$1,400	$1,400	$1,500
Whitehouse	$52,000	$16,200	$16,200	$12,500	$12,500	$12,500	$12,500
Wildwood POA	$15,000	$3,400	$2,400	$1,300	$1,300	$1,200	$1,200
Woden WSC	$27,000	$6,600	$10,200	$11,300	$11,700	$12,000	$12,400
Woodlawn WSC	$18,000	$1,600	$1,600	$400	$400	$400	$400
Woodville	$82,000	$13,100	$14,200	$8,500	$8,500	$9,600	$9,700
Wright City WSC	$170,000	$15,300	$16,000	$4,400	$4,400	$4,500	$4,500
Zavalla	$7,000	$700	$700	$200	$200	$200	$200

Note: Draft values are subject to change and represent WUG total, including splits. All Region I primary WUGs are presented above.

5C.3.2 Non-Municipal Water User Groups

Water conservation measures for non-municipal water user groups are described in the following sections.

Manufacturing. Industrial water users include large petrochemical industries as well as smaller local manufacturers. The current state of water conservation at existing manufacturing facilities is unknown. Conservation measures associated with industries are highly industry- and site-specific. For example, some industries can utilize brackish water supplies or wastewater effluent while others require only potable water. In addition, the water demand types of future industries are unknown.

It is important in evaluating conservation strategies for industries to balance the water savings from conservation to economic benefits to the industry and the region. In the ETRWPA, where water is readily available, requiring costly changes to processes and equipment may not be practical economically. However, the region recommends water conservation as a BMP, encouraging manufacturers to implement water reuse and other conservation measures. Many water providers have a tiered rate structure, so it will be in the manufacturers' best interest to continue promoting water conservation should water rates increase due to limited supply. Despite the expectation that manufacturers will adopt these measures during the planning period, the ETRWPG lacks the specific information needed to assess the current status of water conservation in manufacturing or to prescribe specific measures. Consequently, the ETRWPG has not recommended specific water conservation strategies for manufacturing WUGs. The ETRWPG will evaluate potential strategies and savings in the next planning cycle should any new information become available. Manufacturing customers can refer to the latest TWDB website for the best management practices for industrial, commercial, and institutional water users: https://www.twdb.texas.gov/conservation/BMPs/index.asp.

Irrigation. Most irrigation occurs in the lower parts of the Neches and Sabine Basins. Much of the irrigation water is delivered by canals and is used for rice farming along the coast. The LNVA is the largest provider of agricultural irrigation water in the ETRWPA. LNVA has implemented significant irrigation water conservation measures, including:

- Information and education program.
- Meter repair and replacement program.
- Water billing based on water usage: In 2005, LNVA began billing rice farmers based on metered water use rather than farmed acreage. After implementation of this measure, average water consumption was reduced from 3.79 ac-ft per acre farmed in 2004 to 2.84 ac-ft per acre farmed in 2005, a reduction of about 25 percent.
- Canal water loss reduction: From 2009 to 2013, LNVA reduced its canal water loss from 25 percent to 14 percent through aggressive leak detection and repair along with vegetation control. This represents a reduction in canal water loss of more than 23,000 ac-ft per year.
- Neches River saltwater barrier: This measure is estimated to conserve an average of 200,000 ac-ft per year of stored, fresh water that does not have to be released to prevent saltwater intrusion into the river.

Individual farmers also apply measures such as minimization of water loss from on-farm water distribution, irrigation scheduling, land leveling, and tailwater recovery. As described above, significant increases in efficiency have already been achieved. In addition, the appropriate water conservation

strategies for individual farms are site-specific. The ETRWPG encourages Region I irrigation WUGs to consider the implementation of irrigation water conservation measures, although the ETRWPG does not have the farm-specific information necessary to identify the status of on-farm water conservation or to recommend specific measures. The ETRWPG will evaluate potential strategies and savings in the next planning cycle should any new information become available. Farmers can refer to the latest TWDB website for best management practices for agricultural water users: https://www.twdb.texas.gov/conservation/BMPs/index.asp.

Other. Steam-electric power, livestock, and mining WUGs together account for XX percent of the total 2030 water demand in the Region C RWPA. Although the cost of water in these industries comprises a small percentage of the overall business cost, it is still important to consider the benefits of water conservation. Implementing water conservation measures can contribute to the sustainability of water resources and ensure long-term availability as water becomes more severe. Therefore, the ETRWPG encourages steam-electric power, livestock, and mining WUGs to adopt water conservation strategies. These customers can refer to the latest TWDB website for best management practices: https://www.twdb.texas.gov/conservation/BMPs/index.asp.

REFERENCE

1. Water Conservation Advisory Council, Progress Made in Water Conservation in Texas: Report and Recommendations to the 88th Texas Legislature, December 1, 2022. https://savetexaswater.org/resources/doc/2022%20WCAC%20Report_Final.pdf
2. ScienceDaily. "Leaks an untapped opportunity for water savings." ScienceDaily, 8 March 2022. https://www.sciencedaily.com/releases/2022/03/220308102834.htm

Appendix 5C-A
Estimated Plumbing Code Efficiency Savings by County

Table 5C-A-1: Estimated Plumbing Code Efficiency Savings

County	Plumbing Code Efficiency Savings (ac-ft)					
	2030	2040	2050	2060	2070	2080
Anderson	314	356	354	351	348	345
Angelina	426	487	491	496	501	505
Cherokee	259	289	283	276	269	262
Hardin	321	398	434	422	411	400
Henderson	134	152	155	157	160	162
Houston	106	114	107	103	98	94
Jasper	166	179	168	158	148	138
Jefferson	1,398	1,609	1,601	1,579	1,558	1,537
Nacogdoches	377	439	451	470	489	507
Newton	50	50	44	39	33	28
Orange	430	485	485	476	467	458
Panola	119	131	125	120	115	110
Polk	45	54	56	58	60	63
Rusk	251	277	265	250	236	221
Sabine	21	22	20	19	17	16
San Augustine	38	39	35	33	30	28
Shelby	126	142	138	135	131	128
Smith	1,128	1,398	1,517	1,584	1,655	1,729
Trinity	16	16	15	14	13	13
Tyler	100	106	99	94	89	84
Total	**5,828**	**6,744**	**6,841**	**6,833**	**6,829**	**6,829**

Note: Values presented herein reflect the plumbing code savings associated with the municipal demand that are assigned to Region I.

Appendix 5C-B
GPCD Goals of Region I WUGs

Gallon per capita per day goals for municipal water user groups in Region I can be found in the following attachment.

Table 5C-B-1: GPCD Goals of Region I WUGs

Water User Group	Base GPCD	GPCD Goals					
		2030	2040	2050	2060	2070	2080
Afton Grove WSC	137	130	128	128	128	127	127
Alto	212	203	200	200	200	200	199
Alto Rural WSC	212	205	202	202	202	201	201
Anderson County Cedar Creek WSC	149	141	139	139	138	139	138
Angelina WSC	87	82	82	82	82	82	82
Appleby WSC	260	251	248	247	247	247	246
Arp	173	155	128	116	116	115	116
B B S WSC	120	114	112	112	111	111	111
B C Y WSC	148	140	138	137	137	137	138
Beaumont	212	192	168	157	157	156	155
Beckville	123	118	117	118	118	118	118
Berryville	121	116	114	114	115	115	115
Bethel Ash WSC	92	87	87	87	87	87	87
Bevil Oaks	90	85	85	85	85	85	85
Blackjack WSC	182	173	169	171	171	171	172
Bon Wier WSC	188	179	176	177	176	173	181
Bridge City	100	96	95	95	95	95	95
Brookeland FWSD	143	137	133	135	133	133	133
Brownsboro	176	167	166	166	166	165	165
Brushy Creek WSC	141	135	132	131	131	131	130
Bullard	218	210	207	207	206	206	205
Caro WSC	134	127	125	125	125	125	124
Carthage	241	232	229	229	229	228	228
Center	405	385	363	353	351	352	350
Centerville WSC	172	159	144	138	139	139	137
Central WCID of Angelina County	95	92	92	92	92	92	92
Chalk Hill SUD	79	75	74	74	74	74	74
Chandler	152	144	143	143	142	142	141
Chester WSC	156	149	148	147	147	145	144
China	167	159	157	157	156	156	155
Choice WSC	126	118	117	117	117	118	118
Clayton WSC	1225	1196	1186	1181	1179	1177	1179
Colmesneil	216	208	206	204	204	203	203
Corrigan	156	143	129	123	123	122	123
County-Other, Anderson	127	119	119	119	119	119	119
County-Other, Angelina	102	96	96	96	96	96	96
County-Other, Cherokee	105	100	99	99	99	99	99
County-Other, Hardin	107	101	100	100	101	101	100
County-Other, Houston	157	147	146	146	145	144	148
County-Other, Jasper	95	90	89	89	89	89	89
County-Other, Jefferson	142	136	135	135	135	135	134

Table 5C-B-1: GPCD Goals of Region I WUGs

Water User Group	Base GPCD	GPCD Goals					
		2030	2040	2050	2060	2070	2080
County-Other, Nacogdoches	92	86	85	85	85	86	85
County-Other, Newton	98	93	93	93	93	93	93
County-Other, Orange	104	99	98	98	98	98	98
County-Other, Panola	90	85	84	84	84	84	84
County-Other, Rusk	98	93	92	92	92	92	92
County-Other, Sabine	78	73	72	72	72	72	72
County-Other, San Augustine	87	82	81	81	81	81	82
County-Other, Shelby	99	94	94	94	94	94	94
County-Other, Smith	106	100	100	100	100	100	100
County-Other, Trinity	65	60	60	60	60	60	60
County-Other, Tyler	114	108	107	107	107	107	107
Craft Turney WSC	125	109	90	81	81	81	80
Crockett	163	144	119	107	107	106	106
Cross Roads SUD	98	94	93	93	93	93	93
Crystal Farms WSC	90	86	85	85	85	85	85
Cushing	162	154	150	149	148	148	146
Cypress Creek WSC	178	169	165	164	165	163	163
D & M WSC	130	124	121	121	121	121	121
Damascus-Stryker WSC	113	107	105	105	104	105	104
Dean WSC	145	138	136	136	135	135	135
Deberry WSC	180	171	169	170	169	168	163
Denning WSC	564	507	416	381	380	379	377
Diboll	139	131	130	130	130	128	128
East Lamar WSC	132	127	125	125	126	125	126
Ebenezer WSC	230	221	218	218	218	217	218
Elkhart	156	148	146	146	147	146	146
Emerald Bay MUD	225	215	214	213	214	213	213
Etoile WSC	212	204	201	201	200	200	200
Federal Correctional Complex Beaumont	124	119	118	117	117	117	117
Five Way WSC	120	113	112	111	111	111	110
Flat Fork WSC	198	190	187	187	186	184	184
Four Pines WSC	84	79	79	79	79	79	79
Four Way SUD	79	74	74	74	74	74	74
Frankston	194	185	183	183	183	183	182
Frankston Rural WSC	139	132	130	130	130	130	130
G M WSC	100	94	83	78	78	78	78
Garrison	273	244	201	181	181	180	178
Gaston WSC	104	99	99	99	99	99	99
Goodsprings WSC	95	91	90	90	90	90	90
Grapeland	155	147	145	145	144	145	144
Groves	125	111	96	89	89	89	89

Table 5C-B-1: GPCD Goals of Region I WUGs

Water User Group	Base GPCD	GPCD Goals					
		2030	2040	2050	2060	2070	2080
Gum Creek WSC	88	83	82	82	82	83	82
Hardin County WCID 1	122	117	116	116	116	116	116
Hemphill	433	419	415	414	415	413	412
Henderson	225	215	213	213	212	212	211
Hollands Quarter WSC	124	118	118	118	118	118	118
Hudson WSC	87	86	86	86	86	86	86
Huntington	115	105	96	93	93	92	92
Huxley	155	148	146	146	145	145	145
Jackson WSC	100	96	95	95	95	95	95
Jacksonville	177	164	153	148	148	147	147
Jacobs WSC	108	103	103	103	103	103	103
Jasper	221	212	210	209	209	209	208
Jasper County WCID 1	99	92	89	87	86	87	87
Jefferson County WCID 10	140	133	131	131	131	130	130
Joaquin	193	185	183	182	181	180	176
Kelly G Brewer	262	253	249	249	248	248	249
Kirbyville	185	176	175	175	174	174	172
Kountze	108	102	102	102	102	102	102
Leagueville WSC	96	92	91	91	91	91	91
Lilly Grove SUD	186	172	157	150	150	149	149
Lovelady	207	196	195	195	197	197	196
Lufkin	149	139	134	132	131	131	130
Lumberton MUD	94	90	89	89	89	89	89
M & M WSC	77	72	72	72	72	72	72
Mauriceville SUD	63	60	60	60	60	60	60
McClelland WSC	182	163	135	123	123	124	123
Meeker MWD	137	129	128	127	128	127	127
Melrose WSC	298	288	284	283	282	282	282
Minden Brachfield WSC	101	100	100	100	100	100	100
Moore Station WSC	164	157	155	155	154	155	154
Moscow WSC	133	128	127	127	127	127	128
Mt Enterprise WSC	147	139	138	138	138	137	136
Murchison	175	167	164	165	164	162	163
Nacogdoches	187	173	160	154	154	153	152
Neches WSC	118	112	109	108	109	109	109
Nederland	116	104	92	87	87	87	86
New London	325	314	311	310	308	309	309
New Prospect WSC	146	138	139	139	139	139	138
New Summerfield	115	110	109	109	109	109	108
New WSC	66	57	47	43	42	42	42
Newton	208	189	166	155	154	154	154

Table 5C-B-1: GPCD Goals of Region I WUGs

Water User Group	Base GPCD	GPCD Goals					
		2030	2040	2050	2060	2070	2080
Nome	257	236	208	196	195	195	194
North Cherokee WSC	110	103	102	102	102	101	102
North Hardin WSC	63	60	60	60	60	60	60
Norwood WSC	142	136	135	135	135	136	136
Orange	162	142	117	105	105	104	104
Orange County WCID 1	111	102	97	95	94	94	94
Orange County WCID 2	137	123	108	101	101	100	100
Orangefield WSC	115	109	107	107	106	106	106
Overton	208	199	196	197	196	196	195
Palestine	294	282	273	270	269	268	268
Panola-Bethany WSC	178	163	143	135	134	133	133
Pennington WSC	152	145	142	142	142	142	142
Pinehurst	151	143	141	141	141	140	140
Pineland	173	163	155	153	151	151	149
Pleasant Springs WSC	197	189	187	186	187	187	185
Pollok-Redtown WSC	103	98	98	98	98	98	97
Port Arthur	348	334	330	329	328	327	326
Port Neches	105	100	99	98	98	98	98
Rayburn Country MUD	306	287	266	256	255	255	254
Redland WSC	74	69	69	69	69	69	69
Rehobeth WSC	149	140	139	139	139	139	138
Rural WSC	93	88	88	88	88	88	88
Rusk	151	143	142	142	140	141	141
Rusk Rural WSC	92	85	82	81	81	81	81
San Augustine	320	309	306	305	305	304	304
San Augustine Rural WSC	165	151	134	128	127	127	126
Sand Hills WSC	154	137	112	101	101	100	100
Seneca WSC	154	146	143	143	144	144	145
Silsbee	119	111	106	104	104	104	103
Slocum WSC	107	102	101	101	101	101	101
Sour Lake	172	164	163	162	161	161	160
South Jasper County WSC	92	88	88	88	88	88	87
South Kirbyville Rural WSC	94	89	89	89	89	89	89
South Newton WSC	127	125	124	123	123	123	122
South Rusk County WSC	164	146	124	115	114	113	112
Southern Utilities	177	162	145	137	136	136	135
Swift WSC	152	144	143	143	142	142	142
Tatum	173	166	163	162	163	161	162
TDCJ Beto Gurney & Powledge Units	364	354	350	349	349	348	347
TDCJ Coffield Michael	543	528	523	522	521	520	519
TDCJ Eastham Unit	399	388	383	382	382	381	380

Table 5C-B-1: GPCD Goals of Region I WUGs

Water User Group	Base GPCD	GPCD Goals					
		2030	2040	2050	2060	2070	2080
Tenaha	278	248	205	184	183	182	185
The Consolidated WSC	155	149	146	146	146	145	145
Timpson	191	183	182	180	179	181	179
Troup	178	170	168	168	168	167	167
Tucker WSC	125	119	118	118	119	118	118
Tyler	266	254	246	243	242	241	240
Tyler County SUD	186	176	166	161	161	161	161
Upper Jasper County Water Authority	108	100	93	89	89	89	89
Virginia Hill WSC	111	104	103	103	103	102	103
Walnut Grove WSC	112	106	104	103	103	103	103
Walston Springs WSC	134	128	125	125	125	125	125
Warren WSC	122	116	115	114	114	114	114
Wells	144	139	138	138	138	138	138
West Hardin WSC	93	92	92	92	92	92	92
West Jacksonville WSC	132	117	96	86	86	86	86
West Jefferson County MWD	106	100	100	100	100	100	100
Whitehouse	126	119	118	117	117	117	117
Wildwood POA	174	166	163	163	163	163	164
Woden WSC	110	102	96	93	93	93	92
Woodlawn WSC	106	100	100	100	100	100	100
Woodville	192	183	182	181	180	181	181
Wright City WSC	135	127	124	124	124	123	124
Zavalla	137	131	131	131	130	130	131