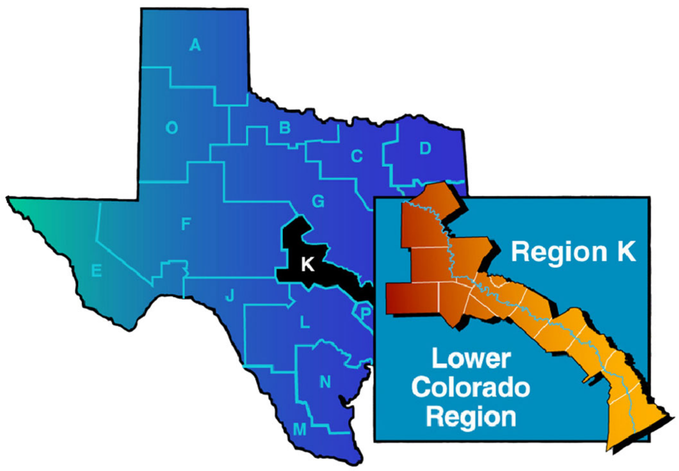
October
2020




# 2021 Region K Water Plan

## for the Lower Colorado Regional Water Planning Group

## Volume 1 of 2
## (Executive Summary through Chapter 4)

*prepared by*
Lower Colorado Regional
Water Planning Group

*with funding assistance from*
Texas Water Development Board

*prepared for*
Texas Water Development Board

*with assistance from*
AECOM Technical Services, Inc.
James Kowis Consulting, LLC
Trungale Engineering & Science

# 2021 Region K Water Plan

*prepared by*

**Lower Colorado Regional Water Planning Group**
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TBPE Reg. No. F-3580

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TBPE Reg. No F-7692

10/30/2020

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**October 2020**
**AECOM Project 60493678**

**ABBREVIATIONS USED IN THE REPORT**

| | |
|---|---|
| ac-ft/yr | Acre-Feet per Year |
| cfs | Cubic Feet per Second |
| DOR | Drought of Record |
| GAM | Groundwater Availability Model |
| GCD | Groundwater Conservation District |
| GMA | Groundwater Management Area |
| GPCD | Gallons Per Capita Daily |
| GPM | Gallons Per Minute |
| LCRA | Lower Colorado River Authority |
| LCRWPA | Lower Colorado Regional Water Planning Area |
| LCRWPG | Lower Colorado Regional Water Planning Group |
| MAG | Modeled Available Groundwater |
| MGD | Million Gallons per Day |
| MWP | Major Water Provider |
| nPF | Not Potentially Feasible |
| PF | Potentially Feasible |
| ROR | Run-of-River |
| RWPG | Regional Water Planning Group |
| SWP | State Water Plan |
| TCEQ | Texas Commission on Environmental Quality |
| TPWD | Texas Parks and Wildlife Department |
| TWDB | Texas Water Development Board |
| WAM | Water Availability Model |
| WMS | Water Management Strategy |
| WRAP | Water Rights Analysis Package |
| WUG | Water User Group |
| WWP | Wholesale Water Provider |

**WATER MEASUREMENTS**

Acre-foot (ac-ft) = 43,560 cubic feet = 325,851 gallons
Acre-foot per year (ac-ft/yr) = 325,851 gallons per year = 893 gallons per day
Gallon per minute (gpm) = 1,440 gallons per day = 1.6 ac-ft/yr
Million gallons per day (MGD) = 1,000,000 gallons per day = 1,120 ac-ft/yr

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# ES. EXECUTIVE SUMMARY

## ES.1 INTRODUCTION

Following the guidelines provided by the Texas Water Development Board (TWDB), the Lower Colorado Regional Water Planning Group (LCRWPG) developed this *Initially Prepared 2021 Region K Water Plan* for the Lower Colorado Regional Water Planning Area (LCRWPA) covering the 2020 to 2070 time period. This plan has been submitted to the TWDB for review and integration into a statewide water plan.

The Plan includes a description of the region, population and water demand projections, water supply analyses, water management strategies for ensuring supplies during Drought of Record (DOR) conditions, water conservation and drought management plans, consistency with the state's long-term resource protection goals, policy recommendations related to improving water management and preserving the environment, and public involvement activities. The LCRWPG, representing the twelve (12) TWDB-required interest groups and one (1) additional regional interest group, was responsible for the development of the Initially Prepared 2021 Region K Water Plan

Plan data developed for the 2021 Region K Water Plan was entered into the TWDB database DB22. Summaries of the DB22 report tables are included as an Appendix to this Executive Summary and are presented as **ES.A** through **ES.Y**.

**SCOPE OF WORK**

The scope of work was prepared through a public process and is reflected in the tasks below.

### ES.1.1 Task 1 – Planning Area Description

Task 1 was intended to collect data and to provide a physical, social, and economic description of the Lower Colorado Regional Water Planning Area. The geographical boundaries of the LCRWPA, designated as Region K, are shown in **Figure 1.2** in **Chapter 1**. The Lower Colorado Region consists of all or parts of 14 counties roughly consistent with the Lower Colorado River Basin.

This area relies primarily on the Colorado River; the Gulf Coast, Carrizo-Wilcox, Edwards (BFZ), Trinity, and "Edwards-Trinity (Plateau), Pecos Valley, and Trinity" aquifers; and several minor aquifers for its water supply. The majority of the region lies within the Colorado River Basin, but small portions of the Brazos, Guadalupe, and Lavaca River Basins, and the Brazos-Colorado and Colorado-Lavaca Coastal Basins also lie within the region.

The system of Highland Lakes managed by the Lower Colorado River Authority (LCRA) is a major hydrologic feature of the region that provides flood control, power generation, water supply, and recreational benefits. The Arbuckle Reservoir is a new LCRA off-channel reservoir that will increase LCRA's water supply yield, particularly for uses near the coast.

### ES.1.2 Task 2A and 2B – Non-Population Related Water Demand Projections and Population and Population-Related Water Demand Projections

Task 2 was intended to prepare population and water demand projections for Region K. **Chapter 2** summarizes this data and discusses the procedures used to obtain revised population and demand projections. For this cycle, representation of the municipal Water User Groups (WUGs) has been modified from previous cycles to reflect utility service areas rather than city boundaries. In addition, the water supply threshold for being identified as a municipal WUG has been lowered from 280 acre-feet/year to 100 acre-feet/year, thus introducing many new municipal WUGs for this planning cycle.

The Lower Colorado Region has experienced rapid population expansion in recent decades and this trend is expected to continue over the planning horizon. Total regional population projections estimate a near-doubling of population to more than 3.2 million people by 2070. The vast majority of the population growth is expected in the geographic "middle" counties (i.e., Bastrop, Blanco, Burnet, Fayette, Hays, Travis, and Williamson counties).

Total water demand for the Lower Colorado Region is projected to increase 17 percent to approximately 1.31 million acre-feet per year by 2070 as shown in **Table ES.1**. While demands such as municipal and manufacturing are anticipated to increase due to population growth and economic activity, other water demand categories are projected to stay constant or decline. The distribution of water demands in the region for all decades is shown in **Table ES.1**, as projected for the years 2020 through 2070.

**Table ES.1: Water Demand Projections for the Lower Colorado Region (acre-feet/year)**

| Regional Projections | 2020 | 2030 | 2040 | 2050 | 2060 | 2070 |
|---|---|---|---|---|---|---|
| Municipal Water Demand (ac-ft/yr) | 315,777 | 368,598 | 422,628 | 470,073 | 516,278 | 569,788 |
| Manufacturing Water Demand (ac-ft/yr) | 19,708 | 22,493 | 22,493 | 22,493 | 22,493 | 22,493 |
| Irrigation Water Demand (ac-ft/yr) | 582,407 | 567,509 | 553,013 | 538,906 | 525,179 | 511,822 |
| Steam-Electric Water Demand (ac-ft/yr) | 166,095 | 166,095 | 166,095 | 166,095 | 166,095 | 166,095 |
| Mining Water Demand (ac-ft/yr) | 20,848 | 26,104 | 27,991 | 27,492 | 23,207 | 25,441 |
| Livestock Demand (ac-ft/yr) | 12,004 | 12,004 | 12,004 | 12,004 | 12,004 | 12,004 |
| **TOTAL WATER DEMAND** | **1,116,839** | **1,162,803** | **1,204,224** | **1,237,063** | **1,265,256** | **1,307,643** |

### ES.1.3 Task 3 – Water Supply Analyses

The availability of surface water and groundwater supplies were determined in Task 3.

Water supplies in the LCRWPA are available from eleven (11) aquifer systems and alluvial groundwater and six (6) river and coastal basins.

The Colorado River Basin makes up the single largest source of surface water for the region with large volumes of water available from both run-of-river (ROR) diversion rights and water stored in reservoirs. Surface water supplies for DOR conditions for the Colorado River Basin were determined using a modified version of the Texas Commission on Environmental Quality (TCEQ) WAM (Water Availability Model) Run 3 that was developed originally during the 2011 planning cycle and has been updated for use in the 2021 planning cycle and is referred to as the Region K Cutoff Model. This model predicts surface water availability under DOR conditions and assumes maximum permitted surface water diversions with no return flows to streams.

Groundwater supply availability estimates were developed from the best information available from the WUGs themselves, TWDB groundwater pumping data, local information from Groundwater Conservation Districts (GCDs), or information from the 2016 Region K Plan. Early in the 2016-2021 regional water planning cycle, the Groundwater Management Areas (GMAs) in the region adopted their updated Desired Future Condition (DFC) for their aquifers and the TWDB established the Modeled Available Groundwater (MAG) values for such aquifers. If a MAG has been established for a particular aquifer, the TWDB requires that the MAG be considered the maximum amount of groundwater available for the regional water planning process. In cases where a MAG is not established for an aquifer, other analyses were used or the local GCD or GMA representative was consulted regarding an appropriate availability volume. Documentation of these methodologies is included in **Chapter 3**.

The TWDB guidelines for regional water planning process require that a summary of the water sources available to the region be presented. This information is presented graphically in **Figure ES.1** and is summarized in **Table ES.2**. As indicated, under current conditions, a total of approximately 1.3 million ac-ft of water is available annually to the LCRWPA under DOR conditions. Of this amount, approximately 71 percent is from surface water sources and 29 percent is from groundwater sources.

**Figure ES.1: Total Water Available to Region K During a Drought of Record**

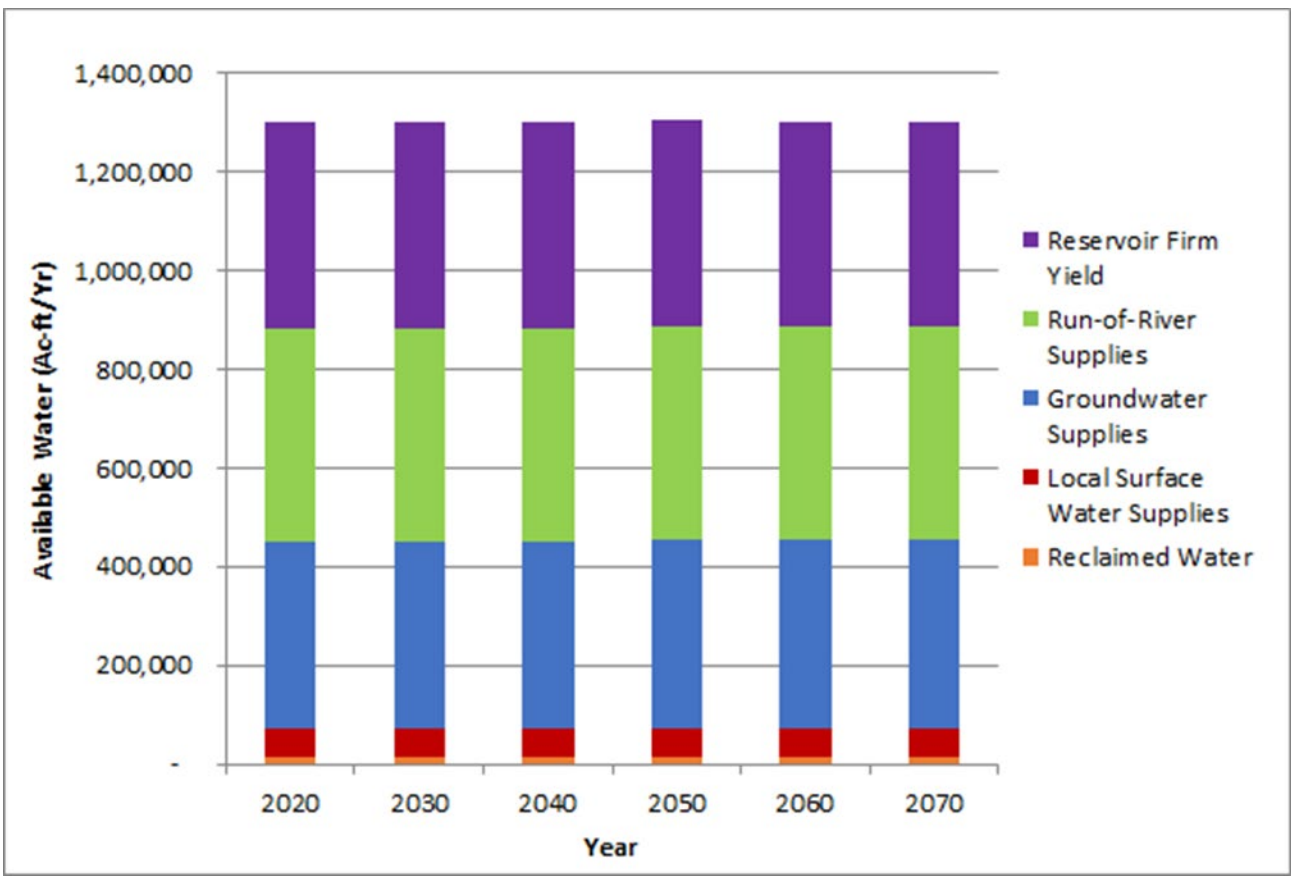


**Table ES.2: Total Water Available to the Lower Colorado Regional Planning Area During a Drought of Record (ac-ft/yr)**

| Water Source | 2020 | 2030 | 2040 | 2050 | 2060 | 2070 |
|---|---|---|---|---|---|---|
| **Run-of-River Water** | **432,896** | **432,896** | **432,896** | **432,896** | **432,896** | **432,896** |
| City of Austin - ROR Municipal [1] | 201,393 | 201,393 | 201,393 | 201,393 | 201,393 | 201,393 |
| City of Austin - ROR Steam Electric [1] | 9,636 | 9,636 | 9,636 | 9,636 | 9,636 | 9,636 |
| LCRA - Garwood ROR | 121,845 | 121,845 | 121,845 | 121,845 | 121,845 | 121,845 |
| LCRA - Gulf Coast ROR | 53,815 | 53,815 | 53,815 | 53,815 | 53,815 | 53,815 |
| LCRA - Lakeside ROR | 5,692 | 5,692 | 5,692 | 5,692 | 5,692 | 5,692 |
| LCRA - Pierce Ranch ROR | 2,912 | 2,912 | 2,912 | 2,912 | 2,912 | 2,912 |
| San Bernard ROR | 2,332 | 2,332 | 2,332 | 2,332 | 2,332 | 2,332 |
| Llano ROR | 271 | 271 | 271 | 271 | 271 | 271 |
| Garwood (Corpus Christi) ROR | 35,000 | 35,000 | 35,000 | 35,000 | 35,000 | 35,000 |
| **Reservoir Water** | **418,749** | **418,046** | **417,292** | **416,640** | **415,897** | **415,124** |
| Highland Lakes [2] | 352,026 | 351,323 | 350,569 | 349,917 | 349,174 | 348,401 |
| STPNOC Reservoir | 66,260 | 66,260 | 66,260 | 66,260 | 66,260 | 66,260 |
| Goldthwaite Reservoir | 0 | 0 | 0 | 0 | 0 | 0 |
| Llano Reservoir | 0 | 0 | 0 | 0 | 0 | 0 |
| Blanco Reservoir | 463 | 463 | 463 | 463 | 463 | 463 |
| **Reclaimed Water** | **12,567** | **12,567** | **12,567** | **12,567** | **12,567** | **12,567** |
| Reclaimed Water (Reuse) | 12,567 | 12,567 | 12,567 | 12,567 | 12,567 | 12,567 |
| **Local Surface Water [3]** | **59,599** | **59,599** | **59,599** | **59,599** | **59,599** | **59,599** |
| Irrigation Local Supply [4] | 41,106 | 41,106 | 41,106 | 41,106 | 41,106 | 41,106 |
| Livestock Local Supply | 10,918 | 10,918 | 10,918 | 10,918 | 10,918 | 10,918 |
| Other Local Supply | 7,575 | 7,575 | 7,575 | 7,575 | 7,575 | 7,575 |
| **Groundwater** | **376,748** | **379,160** | **379,283** | **382,906** | **381,321** | **381,214** |
| Carrizo-Wilcox Aquifer | 27,134 | 29,699 | 31,750 | 35,525 | 34,577 | 34,577 |
| Edwards (BFZ) Aquifer (includes Saline Zone) | 14,124 | 14,124 | 14,124 | 14,124 | 14,124 | 14,124 |
| Edwards-Trinity-Plateau, Pecos Valley, and Trinity Aquifer | 4,979 | 4,979 | 4,979 | 4,979 | 4,979 | 4,979 |
| Ellenburger-San Saba Aquifer | 27,902 | 27,864 | 27,902 | 27,864 | 27,902 | 27,864 |
| Gulf Coast Aquifer | 219,775 | 219,775 | 217,796 | 217,796 | 217,096 | 217,096 |
| Hickory Aquifer | 15,300 | 15,283 | 15,300 | 15,283 | 15,300 | 15,283 |
| Marble Falls Aquifer | 7,323 | 7,303 | 7,323 | 7,303 | 7,323 | 7,303 |
| Queen City Aquifer | 3,266 | 3,249 | 3,231 | 3,213 | 3,194 | 3,194 |
| Sparta Aquifer | 3,738 | 3,729 | 3,704 | 3,693 | 3,698 | 3,698 |
| Trinity Aquifer | 29,155 | 29,103 | 29,122 | 29,074 | 29,077 | 29,045 |
| Yegua-Jackson Aquifer | 9,262 | 9,262 | 9,262 | 9,262 | 9,261 | 9,261 |
| Other Aquifer | 14,790 | 14,790 | 14,790 | 14,790 | 14,790 | 14,790 |
| **Totals** | **1,300,559** | **1,302,268** | **1,301,637** | **1,304,608** | **1,302,280** | **1,301,400** |

Notes: Downstream water availability does not include return flows.
The water availability numbers in this table reflect water that is physically present in the region. This does not necessarily mean that this water is available to WUGs for immediate use as defined in *Table 3.33*.
Groundwater availabilities are discussed in Section 3.2.2.

[1] Refer to *Table 3.3* and *Table 3.28* for a breakdown of what is included in the COA ROR rights.
[2] Refer to *Table 3.1* for a breakdown of the Highland Lakes.
[3] Local Supply Sources are presented in *Tables 3.4, 3.6, 3.7, 3.8, 3.9, and 3.10*.
[4] Irrigation Local Supply Sources are included in the TWDB database (DB22) with the Run-of-River sources.

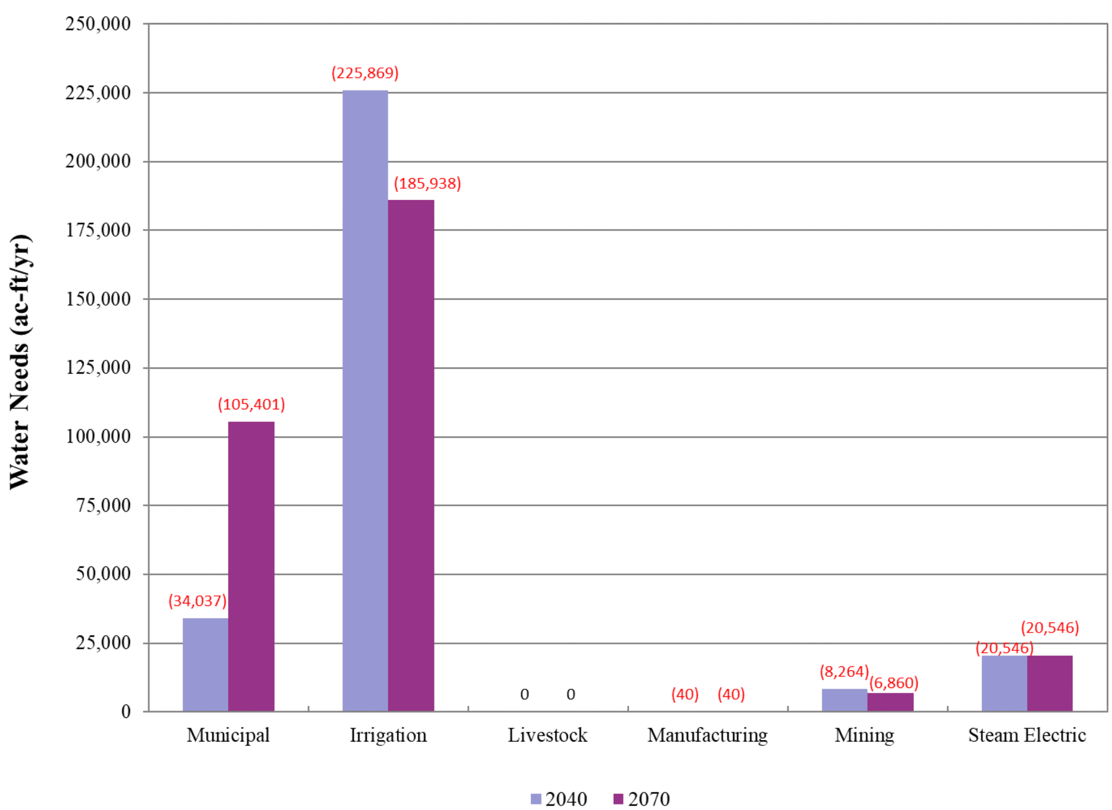
## ES.1.4 Task 4 – Identification of Water Needs

Task 4 was to determine the surpluses and shortages resulting from the division of available resources performed for Task 3. **Chapter 4** summarizes the comparison of water demands to the water supplies in two (2) different ways: 1) a comparison of water demands and supplies on a county-by-county basis, and 2) a comparison of the water demands and supplies for the three (3) designated Major Water Providers within Region K – LCRA, Austin, and West Travis County Public Utility Agency.

The comparison of supplies and demands identified 50 separate WUGs that have projected water supply shortages, or "needs," by the year 2040, and an additional 20 WUGs with projected water supply shortages before the year 2070. The estimated water need is approximately 288,000 acre-feet per year (ac-ft/yr) in 2040 and 321,000 ac-ft/yr in 2070. This identified shortage is based on conservative water availability estimates, which assume (1) only water that is available during a repeat of the historical Drought of Record (DOR), (2) that all water rights in the basin are being fully and simultaneously utilized, and (3) excludes both water available from the LCRA on an interruptible basis and water projected to potentially be available, as a water management strategy for planning purposes, as a result of municipal return flows to the Colorado River.

Based upon these assumptions, water needs have been identified in five of the six (6) water use categories. **Figure ES.2** shows the magnitude of the identified needs by water use category for the years 2040 and 2070.

**Figure ES.2: Identified Amount of Water Needs in Region K (ac-ft/yr)**



### ES.1.5 Task 5 – Evaluation and Recommendation of Water Management Strategies and Water Conservation Recommendations

A process for identifying and evaluating the feasibility of strategy implementation was developed in Task 5. Potential strategies were presented in a form so that potential alternatives were identified and evaluated in accordance with local desires and needs. Water management strategies were recommended to provide for the majority of water needs identified as part of the Task 4 effort. Many of the shortages were met by reducing demands using conservation, drought management, and reuse, while many others involved the expansion of existing contracts or creation of new contracts. Other strategies are more extensive and will require the implementation and construction of additional infrastructure. If a project sponsor wishes to be considered for certain types of State funding, the project that the funding is requested for must be included in the Regional and State Water Plan.

Further discussion of recommended and alternative water management strategies is included in **Chapter 5**. In addition, a section was included in **Chapter 5** to discuss recommended conservation strategies. Water conservation plans are required for any entity seeking a TWDB loan, a new or amended surface water right, or current holders of existing surface water diversion permits under certain circumstances.

Recommended Water Management Strategies are described in **Chapter 5** in the following categories:

- Return Flows
- Conservation
- Wholesale Water Provider Management Strategies
- Regional Water Management Strategies
- Municipal Water Management Strategies
- Irrigation Water Management Strategies
- Manufacturing Water Management Strategies
- Mining Water Management Strategies
- Steam Electric Power Water Management Strategies

In addition, alternative water management strategies are identified, and discussion of strategies that were considered, but were ultimately not recommended occurred. At the beginning of **Chapter 5**, there is a table that lists the WUGs in alphabetical order and identifies which water management strategies are included for them and what sections to find them in.

### ES.1.6 Task 6 – Impacts of the Regional Water Plan

The purpose of Task 6 was to determine the effects of water management strategies on water resources, agricultural resources, and natural resources. In addition, determination of social and economic impacts resulting from voluntary redistribution of water from rural regions to population centers was discussed. This activity was part of a consensus-based planning effort to include local concerns in the statewide water supply planning process.

For the 2021 Region K Plan, many of the recommended water management strategies that impact the Colorado River and Matagorda Bay utilize water under existing water rights or utilize water such as wastewater effluent that was already assumed to be used 100 percent under the required surface water availability modeling guidelines. Thus, it is difficult to determine quantifiable impacts of those strategies.

Return flows are likely to show the largest impact to the instream flows and bay and estuary inflows. They provide a consistent source of flow in the river, even when a portion of the return flows are reused. Return flows are a source of flow that is not included in the surface water availability modeling, and so would show a positive impact to the system as a water management strategy.

The recommendation by the LCRWPG of strategies such as conservation, reuse, and drought management will reduce demands, which will help to maintain springflows in the region, especially during times of drought. In addition, recommended strategies such as off-channel reservoirs and aquifer storage and recovery may aid in balancing peak demands for surface water and groundwater, which could also help maintain spring flows in the region.

Several of the strategies recommended in the 2021 Region K Water Plan have been included in a cumulative impacts analysis on environmental flows. The strategy evaluation began with the creation of a base model (Region K Cutoff Model – strategy version.) The results from the model runs from this base model were compared to the results from the model runs from the base model with the addition of select water management strategies. As mentioned earlier, the return flow strategies provide positive impacts to the instream flows and freshwater inflow to Matagorda Bay, while the other strategies tend to have either negligible impacts or in some cases may remove some flows from the river and bay.

### ES.1.7 Task 7 – Drought Response Information, Activities, and Recommendations

**Chapter 7** presents all necessary requirements for drought response, management and contingency plans. Drought Contingency Plans (DCPs) are required of certain water right owners and applicants. These documents have become integral to providing a reliable supply of water throughout the State.

The TCEQ, in accordance with the Texas Administrative Code (TAC), requires all wholesale public water suppliers, retail public supplier, and irrigation districts to prepare and submit DCPs meeting the requirements of 30 TAC Chapter§288(b) and to update these plans at least every five (5) years. Drought Contingency Plans for all WUGs, as available, were reviewed for information on their drought triggers and responses and potential for emergency interconnects. This information is included in **Chapter 7**.

The LCRWPG acknowledges that the Major Water Providers in Region K have extensive knowledge regarding surface water sources in the region, and they may play a leadership role developing appropriate drought response actions for themselves and their customers. One area the LCRWPG feels could potentially be improved upon is the coordination and uniformity of Drought Stage levels for all users of a particular source. It has been acknowledged that there can be some confusion when two (2) water users of the same water source are at different Drought Stage levels, even if they are implementing similar drought responses.

Throughout the region, the DCPs for groundwater users are developed specifically to their use and location. Aquifer characteristics can vary across the region and it can be difficult to require the same triggers for all users of a particular groundwater source that covers several counties. The LCRWPG acknowledges that the municipalities and water utilities that rely upon groundwater should have the best knowledge to develop their Drought Contingency Plan triggers and responses. Even so, the LCRWPG encourages ongoing coordination between groundwater users, Groundwater Conservation Districts, and the Groundwater Management Areas to monitor local conditions for necessary modifications to the Drought Contingency Plans.

Region-specific model Drought Contingency Plan templates are included as an Appendix to **Chapter 7**. Based on recommendations from the Drought Preparedness Council, templates are provided for Utility/Water Suppliers, Irrigation Users, Wholesale Water Providers, and Steam-Electric Uses (new this planning cycle.)

### ES.1.8 Task 8 – Unique Stream Segments, Reservoir Sites, and Legislative Recommendations

Task 8 presents the RWPG's unique stream segments, unique reservoir sites, and legislative, administrative, and regulatory recommendations.

No unique ecological stream segments are recommended by the LCRWPG for this planning cycle. The LCRWPG hopes to review those identified for potential further study in more detail next planning cycle.

No new potential reservoir sites are recommended by the LCRWPG for this planning cycle.

Several policy issues have been updated and adopted by the LCRWPG concerning regulatory and legislative issues. These recommendations are listed below and are described in detail in **Chapter 8**.

- Management of Surface Water Resources: Inter-Basin Transfers and Model Linking
- Environmental – Sustainable Growth, Including Impacts of Growth
- Groundwater
- Protection of Agricultural and Rural Water Supplies
- Agricultural Water Conservation
- Municipal/Industrial Conservation
- Reuse (including basin-specific assessment of reuse potential and impacts)
- Brush Management
- Inflows to Highland Lakes
- Coordination of Planning Cycles for Determination of Desired Future Conditions by GCDs and Generation of the Regional Water Plan by RWPGs
- Recommended Improvements to the Regional Planning Process (SB 1 – 75$^{th}$ Legislature)
- Radionuclides in the Hickory and Marble Falls Aquifers
- Planning for Droughts worse than the Drought of Record

### ES.1.9 Task 9 – Water Infrastructure Financing Recommendations

Task 9 includes information on how sponsors of the recommended water management strategies propose to finance projects. In SB 2 of the 77$^{th}$ Texas Legislature, the preparation of an infrastructure financing report was added to the regional planning process. **Chapter 9** of the Initially Prepared Plan provides the introduction to a task that will identify the following:

- The number of political subdivisions with identified needs that will be unable to finance their water infrastructure needs
- The amount of infrastructure costs in the RWPs that cannot be financed by the local political subdivisions
- Funding options, including state funding, that are proposed by the political subdivisions to finance water infrastructure costs that cannot be financed locally

- Additional roles the RWPG proposes for the state in financing the recommended water supply projects

### ES.1.10 Task 10 – Public Participation

The LCRWPG made a commitment to conducting public outreach as a part of their duties as Planning Group members. Major aspects of this effort included:

- Holding 25 open regular meetings of the Planning Group
- Holding a public meeting to receive input by the public and referring to that input throughout the planning process
- Holding a Water Planning 101 meeting for new members, and open to the public
- Holding a public hearing to receive public comments on the Initially Prepared Plan (IPP)
- Making the IPP available to the public through the Region K website and placing copies of the IPP in libraries and county clerk offices throughout the region
- Serving as speakers at various civic and interest group meetings
- Conducting surveys
- Maintaining a web page
- Using committees to assist in the development of the plan. Committee meetings were open to the public and allowed for dialogue between the public and members of the committees.
- Developing policy statements

All of these efforts made information and updates on the regional water planning process available to thousands of people throughout the entire region. Additional information concerning public involvement can be found in **Chapter 10**.

### ES.1.11 Task 11 – Implementation and Comparison to the Previous Regional Water Plan

**Chapter 11** presents a discussion and survey of water management strategy projects that were recommended in the 2016 Regional Water Plan and have since been implemented or have started the process, as well as providing a summary comparison of the 2021 Regional Water Plan to the 2016 Regional Water Plan with respect to population, demands, water availability and supplies, and water management strategies.

Additionally, **Chapter 11** addresses the progress that Region K has made towards more "regionalization." The 2021 Region K Water Plan has recommended a number of water management strategies that encourage cooperation between water user groups and that have the ability to benefit a large part of the region. Recommended strategies in the 2021 Region K Water Plan that make progress towards "regionalization" include other proposed LCRA off-channel reservoirs, importing return flows from Williamson County, the Burnet County Regional Projects (Buena Vista, East Lake Buchanan, and Marble Falls), the proposed Bastrop Regional Project (future surface water infrastructure for Aqua WSC, Bastrop, and Bastrop County WCID 1), and the Hays County Pipeline project.

# *APPENDIX ES*

ES.A – TWDB DB22 Report – WUG Population
ES.B – TWDB DB22 Report – WUG Demand
ES.C – TWDB DB22 Report – WUG Category Summary
ES.D – TWDB DB22 Report – Source Availability
ES.E – TWDB DB22 Report – WUG Existing Water Supply
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ES.H – TWDB DB22 Report – WUG Second-Tier Identified Water Needs Summary
ES.I – TWDB DB22 Report – Source Water Balance (Availability – WUG Supply)
ES.J – TWDB DB22 Report – WUG Data Comparison to 2016 Regional Water Plan
ES.K – TWDB DB22 Report – Source Data Comparison to 2016 Regional Water Plan
ES.L – TWDB DB22 Report – WUG Unmet Needs
ES.M – TWDB DB22 Report – WUG Unmet Needs Summary
ES.N – TWDB DB22 Report – Recommended WUG WMS
ES.O – TWDB DB22 Report – Recommended Projects Associated with WMS
ES.P – TWDB DB22 Report – Alternative WUG WMS
ES.Q – TWDB DB22 Report – Alternative Projects Associated with WMS
ES.R – TWDB DB22 Report – WUG Management Supply Factor
ES.S – TWDB DB22 Report – Recommended WMS Supply Associated with New or Amended Inter-Basin Transfer Permit
ES.T – TWDB DB22 Report – WUGs Recommended WMS Supply Associated with a New or Amended Inter-Basin Transfer Permit and Total Recommended Conservation WMS Supply
ES.U – TWDB DB22 Report – Sponsored Recommended Water WMS Supplies Unallocated to WUG
ES.V – TWDB DB22 Report – WMS Strategy Supplies by WMS Type
ES.W – TWDB DB22 Report – WMS Strategy Supplies by Source Type
ES.X – TWDB DB22 Report – Major Water Provider Existing Sales and Transfers
ES.Y – TWDB DB22 Report – Major Water Provider WMS Summary

# Region K Water User Group (WUG) Population

| | WUG POPULATION | | | | | |
|---|---|---|---|---|---|---|
| | 2020 | 2030 | 2040 | 2050 | 2060 | 2070 |
| AQUA WSC* | 551 | 725 | 950 | 1,256 | 1,668 | 2,217 |
| LEE COUNTY WSC* | 423 | 556 | 729 | 963 | 1,280 | 1,702 |
| COUNTY-OTHER | 47 | 54 | 64 | 77 | 94 | 117 |
| **BRAZOS BASIN TOTAL** | **1,021** | **1,335** | **1,743** | **2,296** | **3,042** | **4,036** |
| AQUA WSC* | 55,243 | 72,640 | 95,256 | 125,894 | 167,279 | 222,301 |
| BASTROP | 11,069 | 15,008 | 20,129 | 27,068 | 36,439 | 48,898 |
| BASTROP COUNTY WCID 2 | 5,007 | 7,450 | 10,626 | 14,930 | 20,741 | 28,469 |
| CREEDMOOR-MAHA WSC* | 22 | 25 | 29 | 33 | 37 | 40 |
| ELGIN | 9,380 | 12,273 | 16,034 | 21,128 | 28,009 | 37,158 |
| LEE COUNTY WSC* | 575 | 755 | 990 | 1,310 | 1,741 | 2,313 |
| POLONIA WSC* | 236 | 300 | 385 | 498 | 653 | 858 |
| SMITHVILLE | 4,797 | 6,308 | 8,273 | 10,933 | 14,527 | 19,306 |
| COUNTY-OTHER | 7,559 | 8,735 | 10,256 | 12,323 | 15,115 | 18,828 |
| **COLORADO BASIN TOTAL** | **93,888** | **123,494** | **161,978** | **214,117** | **284,541** | **378,171** |
| AQUA WSC* | 390 | 513 | 672 | 889 | 1,181 | 1,569 |
| COUNTY-OTHER | 188 | 217 | 255 | 306 | 376 | 468 |
| **GUADALUPE BASIN TOTAL** | **578** | **730** | **927** | **1,195** | **1,557** | **2,037** |
| **BASTROP COUNTY TOTAL** | **95,487** | **125,559** | **164,648** | **217,608** | **289,140** | **384,244** |
| JOHNSON CITY | 2,053 | 2,441 | 2,668 | 2,787 | 2,867 | 2,914 |
| COUNTY-OTHER | 4,650 | 5,448 | 5,851 | 5,986 | 6,025 | 5,989 |
| **COLORADO BASIN TOTAL** | **6,703** | **7,889** | **8,519** | **8,773** | **8,892** | **8,903** |
| BLANCO | 2,156 | 2,563 | 2,802 | 2,927 | 3,010 | 3,061 |
| CANYON LAKE WATER SERVICE* | 665 | 933 | 1,204 | 1,478 | 1,749 | 2,011 |
| COUNTY-OTHER | 3,491 | 4,090 | 4,392 | 4,494 | 4,524 | 4,497 |
| **GUADALUPE BASIN TOTAL** | **6,312** | **7,586** | **8,398** | **8,899** | **9,283** | **9,569** |
| **BLANCO COUNTY TOTAL** | **13,015** | **15,475** | **16,917** | **17,672** | **18,175** | **18,472** |
| BERTRAM | 1,764 | 2,134 | 2,445 | 2,745 | 3,007 | 3,235 |
| BURNET | 30 | 36 | 42 | 47 | 51 | 55 |
| GEORGETOWN* | 379 | 460 | 527 | 591 | 647 | 696 |
| KEMPNER WSC* | 759 | 852 | 937 | 1,019 | 1,097 | 1,171 |
| COUNTY-OTHER | 7,998 | 9,104 | 9,230 | 10,215 | 11,119 | 11,898 |
| **BRAZOS BASIN TOTAL** | **10,930** | **12,586** | **13,181** | **14,617** | **15,921** | **17,055** |
| BURNET | 7,394 | 8,947 | 10,256 | 11,508 | 12,609 | 13,564 |
| CORIX UTILITIES TEXAS INC* | 809 | 979 | 1,122 | 1,259 | 1,379 | 1,484 |
| COTTONWOOD SHORES | 1,395 | 1,688 | 1,935 | 2,171 | 2,379 | 2,559 |
| GRANITE SHOALS | 5,401 | 6,211 | 6,832 | 7,515 | 8,643 | 10,371 |
| HORSESHOE BAY | 1,192 | 1,683 | 2,097 | 2,493 | 2,841 | 3,142 |
| KINGSLAND WSC | 425 | 515 | 590 | 662 | 726 | 781 |
| MARBLE FALLS | 8,784 | 12,906 | 18,684 | 21,713 | 23,732 | 24,741 |
| MEADOWLAKES | 2,540 | 2,540 | 2,540 | 2,540 | 2,540 | 2,540 |
| COUNTY-OTHER | 14,244 | 16,213 | 16,436 | 18,190 | 19,801 | 21,189 |
| **COLORADO BASIN TOTAL** | **42,184** | **51,682** | **60,492** | **68,051** | **74,650** | **80,371** |
| **BURNET COUNTY TOTAL** | **53,114** | **64,268** | **73,673** | **82,668** | **90,571** | **97,426** |
| EAGLE LAKE | 1,160 | 1,210 | 1,248 | 1,302 | 1,349 | 1,393 |
| COUNTY-OTHER | 1,253 | 1,308 | 1,348 | 1,408 | 1,457 | 1,505 |
| **BRAZOS-COLORADO BASIN TOTAL** | **2,413** | **2,518** | **2,596** | **2,710** | **2,806** | **2,898** |
| COLUMBUS | 3,832 | 3,999 | 4,123 | 4,305 | 4,457 | 4,605 |
| CORIX UTILITIES TEXAS INC* | 275 | 287 | 296 | 309 | 320 | 331 |

*A single asterisk next to a WUG's name denotes that the WUG is split by two or more planning regions.

# Region K Water User Group (WUG) Population

| | WUG POPULATION | | | | | |
|---|---|---|---|---|---|---|
| | **2020** | **2030** | **2040** | **2050** | **2060** | **2070** |
| EAGLE LAKE | 2,643 | 2,758 | 2,843 | 2,968 | 3,072 | 3,175 |
| WEIMAR | 710 | 741 | 764 | 798 | 825 | 853 |
| COUNTY-OTHER | 7,871 | 8,214 | 8,467 | 8,842 | 9,154 | 9,457 |
| **COLORADO BASIN TOTAL** | **15,331** | **15,999** | **16,493** | **17,222** | **17,828** | **18,421** |
| WEIMAR | 1,454 | 1,516 | 1,565 | 1,633 | 1,691 | 1,747 |
| COUNTY-OTHER | 2,686 | 2,803 | 2,890 | 3,017 | 3,124 | 3,227 |
| **LAVACA BASIN TOTAL** | **4,140** | **4,319** | **4,455** | **4,650** | **4,815** | **4,974** |
| **COLORADO COUNTY TOTAL** | **21,884** | **22,836** | **23,544** | **24,582** | **25,449** | **26,293** |
| AQUA WSC* | 24 | 27 | 30 | 31 | 33 | 34 |
| FAYETTE COUNTY WCID MONUMENT HILL | 760 | 803 | 870 | 926 | 970 | 1,003 |
| FAYETTE WSC | 4,350 | 4,965 | 5,383 | 5,728 | 5,997 | 6,206 |
| LA GRANGE | 5,478 | 6,253 | 6,778 | 7,212 | 7,552 | 7,816 |
| LEE COUNTY WSC* | 1,435 | 1,638 | 1,775 | 1,889 | 1,979 | 2,047 |
| WEST END WSC* | 1,197 | 1,366 | 1,521 | 1,686 | 1,855 | 2,032 |
| COUNTY-OTHER | 6,241 | 7,166 | 7,743 | 8,192 | 8,522 | 8,744 |
| **COLORADO BASIN TOTAL** | **19,485** | **22,218** | **24,100** | **25,664** | **26,908** | **27,882** |
| FAYETTE WSC | 282 | 322 | 349 | 371 | 389 | 402 |
| FLATONIA | 313 | 357 | 387 | 412 | 432 | 446 |
| COUNTY-OTHER | 375 | 430 | 465 | 492 | 512 | 525 |
| **GUADALUPE BASIN TOTAL** | **970** | **1,109** | **1,201** | **1,275** | **1,333** | **1,373** |
| FAYETTE WSC | 510 | 582 | 631 | 671 | 703 | 728 |
| FLATONIA | 1,345 | 1,536 | 1,665 | 1,771 | 1,855 | 1,919 |
| SCHULENBURG | 3,147 | 3,592 | 3,894 | 4,143 | 4,339 | 4,490 |
| COUNTY-OTHER | 2,916 | 3,347 | 3,617 | 3,827 | 3,981 | 4,084 |
| **LAVACA BASIN TOTAL** | **7,918** | **9,057** | **9,807** | **10,412** | **10,878** | **11,221** |
| **FAYETTE COUNTY TOTAL** | **28,373** | **32,384** | **35,108** | **37,351** | **39,119** | **40,476** |
| FREDERICKSBURG | 12,056 | 12,938 | 13,666 | 14,519 | 15,304 | 16,067 |
| COUNTY-OTHER | 14,172 | 15,302 | 16,233 | 17,324 | 18,328 | 19,303 |
| **COLORADO BASIN TOTAL** | **26,228** | **28,240** | **29,899** | **31,843** | **33,632** | **35,370** |
| COUNTY-OTHER | 567 | 612 | 649 | 693 | 733 | 772 |
| **GUADALUPE BASIN TOTAL** | **567** | **612** | **649** | **693** | **733** | **772** |
| **GILLESPIE COUNTY TOTAL** | **26,795** | **28,852** | **30,548** | **32,536** | **34,365** | **36,142** |
| AUSTIN | 1,074 | 4,796 | 7,560 | 11,957 | 17,535 | 25,255 |
| BUDA* | 9,831 | 14,132 | 19,369 | 25,916 | 33,315 | 41,735 |
| CIMARRON PARK WATER | 2,115 | 2,115 | 2,115 | 2,115 | 2,115 | 2,115 |
| DEER CREEK RANCH WATER | 331 | 392 | 451 | 494 | 529 | 569 |
| DRIPPING SPRINGS WSC | 11,000 | 18,500 | 24,000 | 31,000 | 39,500 | 44,000 |
| GOFORTH SUD* | 1,366 | 1,801 | 2,329 | 2,985 | 3,724 | 4,564 |
| HAYS | 1,222 | 1,606 | 2,038 | 2,429 | 3,036 | 3,727 |
| HAYS COUNTY WCID 1 | 3,647 | 3,647 | 3,647 | 3,647 | 3,647 | 3,647 |
| HAYS COUNTY WCID 2 | 1,224 | 1,608 | 2,041 | 2,433 | 3,041 | 3,732 |
| WEST TRAVIS COUNTY PUBLIC UTILITY AGENCY | 12,788 | 15,985 | 17,981 | 22,131 | 26,281 | 30,431 |
| COUNTY-OTHER* | 10,986 | 8,661 | 13,216 | 16,522 | 19,284 | 26,804 |
| **COLORADO BASIN TOTAL** | **55,584** | **73,243** | **94,747** | **121,629** | **152,007** | **186,579** |
| **HAYS COUNTY TOTAL** | **55,584** | **73,243** | **94,747** | **121,629** | **152,007** | **186,579** |
| CORIX UTILITIES TEXAS INC* | 1,199 | 1,211 | 1,223 | 1,235 | 1,248 | 1,260 |
| HORSESHOE BAY | 4,933 | 5,117 | 4,989 | 5,058 | 4,984 | 4,872 |
| KINGSLAND WSC | 8,419 | 9,716 | 9,680 | 9,247 | 10,078 | 10,938 |

*A single asterisk next to a WUG's name denotes that the WUG is split by two or more planning regions.

# Region K Water User Group (WUG) Population

| | WUG POPULATION | | | | | |
|---|---|---|---|---|---|---|
| | 2020 | 2030 | 2040 | 2050 | 2060 | 2070 |
| LLANO | 3,565 | 3,759 | 3,754 | 3,689 | 3,814 | 3,943 |
| SUNRISE BEACH VILLAGE | 720 | 724 | 723 | 721 | 723 | 726 |
| COUNTY-OTHER | 2,455 | 1,926 | 2,053 | 2,085 | 1,932 | 1,810 |
| **COLORADO BASIN TOTAL** | **21,291** | **22,453** | **22,422** | **22,035** | **22,779** | **23,549** |
| **LLANO COUNTY TOTAL** | **21,291** | **22,453** | **22,422** | **22,035** | **22,779** | **23,549** |
| BAY CITY | 19,246 | 20,259 | 20,908 | 21,410 | 21,766 | 22,021 |
| CANEY CREEK MUD OF MATAGORDA COUNTY | 2,088 | 2,198 | 2,270 | 2,324 | 2,362 | 2,390 |
| CORIX UTILITIES TEXAS INC* | 36 | 39 | 39 | 40 | 41 | 42 |
| MATAGORDA COUNTY WCID 6 | 1,099 | 1,158 | 1,194 | 1,223 | 1,244 | 1,258 |
| MATAGORDA WASTE DISPOSAL & WSC | 276 | 291 | 300 | 308 | 312 | 317 |
| COUNTY-OTHER | 4,304 | 4,529 | 4,674 | 4,787 | 4,867 | 4,924 |
| **BRAZOS-COLORADO BASIN TOTAL** | **27,049** | **28,474** | **29,385** | **30,092** | **30,592** | **30,952** |
| BAY CITY | 39 | 41 | 42 | 43 | 44 | 45 |
| CORIX UTILITIES TEXAS INC* | 7 | 7 | 8 | 8 | 8 | 8 |
| MATAGORDA WASTE DISPOSAL & WSC | 415 | 437 | 451 | 461 | 469 | 475 |
| COUNTY-OTHER | 914 | 962 | 993 | 1,017 | 1,034 | 1,046 |
| **COLORADO BASIN TOTAL** | **1,375** | **1,447** | **1,494** | **1,529** | **1,555** | **1,574** |
| MARKHAM MUD | 1,013 | 1,066 | 1,101 | 1,127 | 1,146 | 1,159 |
| PALACIOS | 5,019 | 5,283 | 5,453 | 5,584 | 5,677 | 5,743 |
| COUNTY-OTHER | 4,710 | 4,956 | 5,115 | 5,238 | 5,326 | 5,387 |
| **COLORADO-LAVACA BASIN TOTAL** | **10,742** | **11,305** | **11,669** | **11,949** | **12,149** | **12,289** |
| **MATAGORDA COUNTY TOTAL** | **39,166** | **41,226** | **42,548** | **43,570** | **44,296** | **44,815** |
| GOLDTHWAITE | 54 | 56 | 57 | 60 | 62 | 64 |
| COUNTY-OTHER | 1,108 | 1,145 | 1,175 | 1,222 | 1,269 | 1,322 |
| **BRAZOS BASIN TOTAL** | **1,162** | **1,201** | **1,232** | **1,282** | **1,331** | **1,386** |
| BROOKESMITH SUD* | 48 | 50 | 51 | 53 | 55 | 57 |
| CORIX UTILITIES TEXAS INC* | 74 | 76 | 78 | 81 | 84 | 87 |
| GOLDTHWAITE | 2,021 | 2,088 | 2,146 | 2,229 | 2,315 | 2,411 |
| ZEPHYR WSC* | 39 | 40 | 42 | 43 | 45 | 47 |
| COUNTY-OTHER | 1,568 | 1,621 | 1,664 | 1,729 | 1,795 | 1,871 |
| **COLORADO BASIN TOTAL** | **3,750** | **3,875** | **3,981** | **4,135** | **4,294** | **4,473** |
| **MILLS COUNTY TOTAL** | **4,912** | **5,076** | **5,213** | **5,417** | **5,625** | **5,859** |
| CORIX UTILITIES TEXAS INC* | 94 | 99 | 100 | 98 | 100 | 103 |
| NORTH SAN SABA WSC | 647 | 678 | 681 | 671 | 686 | 702 |
| RICHLAND SUD* | 956 | 1,002 | 1,007 | 991 | 1,015 | 1,038 |
| SAN SABA | 3,384 | 3,546 | 3,565 | 3,507 | 3,591 | 3,673 |
| COUNTY-OTHER | 1,403 | 1,468 | 1,480 | 1,455 | 1,487 | 1,523 |
| **COLORADO BASIN TOTAL** | **6,484** | **6,793** | **6,833** | **6,722** | **6,879** | **7,039** |
| **SAN SABA COUNTY TOTAL** | **6,484** | **6,793** | **6,833** | **6,722** | **6,879** | **7,039** |
| AQUA WSC* | 6,627 | 7,652 | 8,618 | 9,700 | 10,656 | 11,544 |
| AUSTIN | 976,785 | 1,153,560 | 1,337,673 | 1,464,157 | 1,564,930 | 1,701,504 |
| BARTON CREEK WEST WSC | 1,337 | 1,337 | 1,337 | 1,337 | 1,337 | 1,337 |
| BARTON CREEK WSC | 702 | 832 | 956 | 1,047 | 1,121 | 1,206 |
| BRIARCLIFF | 2,009 | 2,320 | 2,613 | 2,942 | 3,231 | 3,500 |
| CEDAR PARK* | 10,913 | 11,641 | 12,521 | 12,521 | 12,521 | 12,521 |
| COTTONWOOD CREEK MUD 1 | 1,447 | 1,715 | 1,970 | 2,158 | 2,312 | 2,485 |
| CREEDMOOR-MAHA WSC* | 5,429 | 6,241 | 7,007 | 7,864 | 8,625 | 9,336 |

*A single asterisk next to a WUG's name denotes that the WUG is split by two or more planning regions.

## Region K Water User Group (WUG) Population

| | WUG POPULATION | | | | | |
|---|---|---|---|---|---|---|
| | 2020 | 2030 | 2040 | 2050 | 2060 | 2070 |
| CYPRESS RANCH WCID 1 | 1,233 | 1,416 | 1,551 | 1,661 | 1,786 | 1,786 |
| DEER CREEK RANCH WATER | 556 | 659 | 757 | 829 | 888 | 954 |
| ELGIN | 1,814 | 2,615 | 3,371 | 4,217 | 4,963 | 5,658 |
| GARFIELD WSC | 1,772 | 2,100 | 2,412 | 2,641 | 2,830 | 3,042 |
| HORNSBY BEND UTILITY | 7,066 | 8,372 | 9,616 | 10,531 | 11,282 | 12,130 |
| HURST CREEK MUD | 3,095 | 3,095 | 3,095 | 3,095 | 3,095 | 3,095 |
| JONESTOWN WSC | 3,948 | 4,222 | 4,481 | 4,768 | 5,022 | 5,259 |
| KELLY LANE WCID 1 | 1,693 | 1,693 | 1,693 | 1,693 | 1,693 | 1,693 |
| LAGO VISTA | 7,580 | 8,964 | 10,269 | 11,730 | 13,020 | 14,220 |
| LAKEWAY MUD | 10,906 | 11,546 | 12,186 | 12,826 | 13,025 | 13,025 |
| LEANDER* | 11,246 | 26,735 | 28,349 | 29,963 | 30,689 | 32,033 |
| LOOP 360 WSC | 2,086 | 2,169 | 2,262 | 2,344 | 2,420 | 2,556 |
| MANOR | 8,650 | 12,017 | 15,193 | 18,750 | 21,889 | 24,808 |
| MANVILLE WSC* | 15,661 | 19,292 | 22,716 | 26,550 | 29,934 | 33,081 |
| NORTH AUSTIN MUD 1 | 780 | 780 | 780 | 780 | 780 | 780 |
| NORTHTOWN MUD | 10,834 | 12,509 | 14,091 | 15,859 | 17,421 | 18,874 |
| OAK SHORES WATER SYSTEM | 546 | 632 | 632 | 632 | 632 | 632 |
| PFLUGERVILLE* | 62,745 | 78,245 | 95,599 | 112,807 | 130,167 | 130,167 |
| ROLLINGWOOD | 1,421 | 1,429 | 1,436 | 1,444 | 1,451 | 1,458 |
| ROUGH HOLLOW IN TRAVIS COUNTY | 2,767 | 5,698 | 5,698 | 5,698 | 5,698 | 5,698 |
| ROUND ROCK* | 1,732 | 2,003 | 2,258 | 2,544 | 2,796 | 3,030 |
| SENNA HILLS MUD | 1,219 | 1,445 | 1,660 | 1,818 | 1,947 | 2,093 |
| SHADY HOLLOW MUD | 4,366 | 4,366 | 4,366 | 4,366 | 4,366 | 4,366 |
| SUNSET VALLEY | 930 | 1,063 | 1,234 | 1,432 | 1,662 | 1,929 |
| SWEETWATER COMMUNITY | 2,760 | 5,832 | 5,832 | 5,832 | 5,832 | 5,832 |
| TRAVIS COUNTY MUD 10 | 348 | 412 | 474 | 519 | 556 | 597 |
| TRAVIS COUNTY MUD 14 | 2,015 | 2,388 | 2,742 | 3,003 | 3,218 | 3,459 |
| TRAVIS COUNTY MUD 2 | 2,527 | 2,994 | 3,439 | 3,767 | 4,036 | 4,338 |
| TRAVIS COUNTY MUD 4 | 2,446 | 2,825 | 3,182 | 3,581 | 3,934 | 4,263 |
| TRAVIS COUNTY WCID 10 | 7,628 | 8,364 | 9,058 | 9,835 | 10,521 | 11,160 |
| TRAVIS COUNTY WCID 17 | 36,720 | 39,741 | 43,715 | 44,473 | 45,671 | 47,125 |
| TRAVIS COUNTY WCID 18 | 6,344 | 7,324 | 8,250 | 9,287 | 10,201 | 11,051 |
| TRAVIS COUNTY WCID 19 | 682 | 682 | 682 | 682 | 682 | 682 |
| TRAVIS COUNTY WCID 20 | 1,130 | 1,130 | 1,130 | 1,130 | 1,130 | 1,130 |
| TRAVIS COUNTY WCID POINT VENTURE | 1,036 | 1,325 | 1,568 | 1,900 | 2,273 | 2,601 |
| WELLS BRANCH MUD | 18,750 | 18,750 | 18,750 | 18,750 | 18,750 | 18,750 |
| WEST TRAVIS COUNTY PUBLIC UTILITY AGENCY | 19,039 | 21,037 | 22,715 | 25,324 | 26,990 | 28,480 |
| WILLIAMSON COUNTY WSID 3* | 910 | 1,143 | 1,143 | 1,143 | 1,143 | 1,143 |
| WILLIAMSON TRAVIS COUNTIES MUD 1* | 1,113 | 1,113 | 1,113 | 1,113 | 1,113 | 1,113 |
| WINDERMERE UTILITY | 17,866 | 17,866 | 17,866 | 17,866 | 17,866 | 17,866 |
| COUNTY-OTHER \| AQUA TEXAS - RIVERCREST | 774 | 774 | 774 | 774 | 774 | 774 |
| COUNTY-OTHER | 6,130 | 6,130 | 6,130 | 6,130 | 6,130 | 6,130 |
| **COLORADO BASIN TOTAL** | **1,298,113** | **1,538,193** | **1,766,963** | **1,935,813** | **2,075,009** | **2,232,294** |
| CREEDMOOR-MAHA WSC* | 348 | 400 | 449 | 504 | 553 | 598 |
| GOFORTH SUD* | 87 | 115 | 148 | 190 | 237 | 291 |
| COUNTY-OTHER | 76 | 76 | 76 | 76 | 76 | 76 |
| **GUADALUPE BASIN TOTAL** | **511** | **591** | **673** | **770** | **866** | **965** |
| **TRAVIS COUNTY TOTAL** | **1,298,624** | **1,538,784** | **1,767,636** | **1,936,583** | **2,075,875** | **2,233,259** |

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# Region K Water User Group (WUG) Population

| | WUG POPULATION | | | | | |
|---|---|---|---|---|---|---|
| | 2020 | 2030 | 2040 | 2050 | 2060 | 2070 |
| BOLING MWD | 855 | 910 | 954 | 992 | 1,027 | 1,058 |
| WHARTON | 5,185 | 5,518 | 5,784 | 6,014 | 6,226 | 6,414 |
| WHARTON COUNTY WCID 2 | 2,235 | 2,379 | 2,493 | 2,593 | 2,684 | 2,765 |
| COUNTY-OTHER* | 8,614 | 9,165 | 9,608 | 9,991 | 10,344 | 10,656 |
| **BRAZOS-COLORADO BASIN TOTAL** | **16,889** | **17,972** | **18,839** | **19,590** | **20,281** | **20,893** |
| EL CAMPO* | 27 | 29 | 30 | 31 | 32 | 33 |
| WHARTON | 4,242 | 4,515 | 4,732 | 4,920 | 5,094 | 5,248 |
| COUNTY-OTHER* | 4,452 | 4,737 | 4,966 | 5,163 | 5,346 | 5,508 |
| **COLORADO BASIN TOTAL** | **8,721** | **9,281** | **9,728** | **10,114** | **10,472** | **10,789** |
| COUNTY-OTHER* | 1,434 | 1,526 | 1,599 | 1,663 | 1,722 | 1,774 |
| **COLORADO-LAVACA BASIN TOTAL** | **1,434** | **1,526** | **1,599** | **1,663** | **1,722** | **1,774** |
| COUNTY-OTHER* | 140 | 149 | 156 | 162 | 168 | 173 |
| **LAVACA BASIN TOTAL** | **140** | **149** | **156** | **162** | **168** | **173** |
| **WHARTON COUNTY TOTAL** | **27,184** | **28,928** | **30,322** | **31,529** | **32,643** | **33,629** |
| AUSTIN | 61,729 | 79,661 | 93,459 | 108,319 | 125,171 | 143,660 |
| NORTH AUSTIN MUD 1 | 7,442 | 7,442 | 7,442 | 7,442 | 7,442 | 7,442 |
| WELLS BRANCH MUD | 1,073 | 1,073 | 1,073 | 1,073 | 1,073 | 1,073 |
| COUNTY-OTHER* | 434 | 611 | 592 | 570 | 546 | 520 |
| **BRAZOS BASIN TOTAL** | **70,678** | **88,787** | **102,566** | **117,404** | **134,232** | **152,695** |
| **WILLIAMSON COUNTY TOTAL** | **70,678** | **88,787** | **102,566** | **117,404** | **134,232** | **152,695** |
| **REGION K POPULATION TOTAL** | **1,762,591** | **2,094,664** | **2,416,725** | **2,697,306** | **2,971,155** | **3,290,477** |

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# Region K Water User Group (WUG) Demand

| | WUG DEMAND (ACRE-FEET PER YEAR) | | | | | |
|---|---|---|---|---|---|---|
| | 2020 | 2030 | 2040 | 2050 | 2060 | 2070 |
| AQUA WSC* | 90 | 116 | 150 | 197 | 262 | 347 |
| LEE COUNTY WSC* | 54 | 68 | 88 | 115 | 153 | 203 |
| COUNTY-OTHER | 9 | 10 | 11 | 14 | 17 | 21 |
| MINING | 173 | 409 | 450 | 360 | 24 | 29 |
| LIVESTOCK | 70 | 70 | 70 | 70 | 70 | 70 |
| IRRIGATION | 257 | 257 | 257 | 257 | 257 | 257 |
| **BRAZOS BASIN TOTAL** | **653** | **930** | **1,026** | **1,013** | **783** | **927** |
| AQUA WSC* | 9,072 | 11,636 | 15,054 | 19,775 | 26,231 | 34,832 |
| BASTROP | 2,046 | 2,709 | 3,590 | 4,803 | 6,458 | 8,660 |
| BASTROP COUNTY WCID 2 | 479 | 690 | 971 | 1,357 | 1,882 | 2,580 |
| CREEDMOOR-MAHA WSC* | 2 | 3 | 3 | 3 | 4 | 4 |
| ELGIN | 1,317 | 1,674 | 2,155 | 2,822 | 3,734 | 4,950 |
| LEE COUNTY WSC* | 73 | 93 | 120 | 157 | 208 | 276 |
| POLONIA WSC* | 29 | 36 | 45 | 58 | 76 | 100 |
| SMITHVILLE | 821 | 1,048 | 1,351 | 1,774 | 2,353 | 3,125 |
| COUNTY-OTHER | 1,375 | 1,567 | 1,828 | 2,187 | 2,677 | 3,333 |
| MANUFACTURING | 188 | 215 | 215 | 215 | 215 | 215 |
| MINING | 2,567 | 6,064 | 6,674 | 5,339 | 355 | 423 |
| STEAM ELECTRIC POWER | 10,288 | 10,288 | 10,288 | 10,288 | 10,288 | 10,288 |
| LIVESTOCK | 1,011 | 1,011 | 1,011 | 1,011 | 1,011 | 1,011 |
| IRRIGATION | 3,808 | 3,808 | 3,808 | 3,808 | 3,808 | 3,808 |
| **COLORADO BASIN TOTAL** | **33,076** | **40,842** | **47,113** | **53,597** | **59,300** | **73,605** |
| AQUA WSC* | 64 | 82 | 106 | 140 | 185 | 246 |
| COUNTY-OTHER | 34 | 39 | 45 | 54 | 67 | 83 |
| MINING | 144 | 340 | 374 | 299 | 20 | 24 |
| LIVESTOCK | 54 | 54 | 54 | 54 | 54 | 54 |
| IRRIGATION | 215 | 215 | 215 | 215 | 215 | 215 |
| **GUADALUPE BASIN TOTAL** | **511** | **730** | **794** | **762** | **541** | **622** |
| **BASTROP COUNTY TOTAL** | **34,240** | **42,502** | **48,933** | **55,372** | **60,624** | **75,154** |
| JOHNSON CITY | 353 | 411 | 443 | 460 | 473 | 480 |
| COUNTY-OTHER | 576 | 653 | 688 | 698 | 701 | 696 |
| MINING | 5 | 5 | 5 | 5 | 5 | 5 |
| LIVESTOCK | 255 | 255 | 255 | 255 | 255 | 255 |
| IRRIGATION | 934 | 934 | 934 | 934 | 934 | 934 |
| **COLORADO BASIN TOTAL** | **2,123** | **2,258** | **2,325** | **2,352** | **2,368** | **2,370** |
| BLANCO | 316 | 365 | 393 | 407 | 418 | 425 |
| CANYON LAKE WATER SERVICE* | 83 | 115 | 147 | 180 | 213 | 245 |
| COUNTY-OTHER | 432 | 490 | 517 | 524 | 526 | 523 |
| LIVESTOCK | 76 | 76 | 76 | 76 | 76 | 76 |
| IRRIGATION | 393 | 393 | 393 | 393 | 393 | 393 |
| **GUADALUPE BASIN TOTAL** | **1,300** | **1,439** | **1,526** | **1,580** | **1,626** | **1,662** |
| **BLANCO COUNTY TOTAL** | **3,423** | **3,697** | **3,851** | **3,932** | **3,994** | **4,032** |
| BERTRAM | 430 | 511 | 581 | 649 | 710 | 764 |
| BURNET | 7 | 8 | 9 | 10 | 11 | 12 |
| GEORGETOWN* | 84 | 100 | 114 | 128 | 140 | 150 |
| KEMPNER WSC* | 132 | 146 | 158 | 171 | 184 | 196 |
| COUNTY-OTHER | 1,228 | 1,366 | 1,364 | 1,499 | 1,627 | 1,740 |
| MINING | 1,123 | 1,354 | 1,595 | 1,815 | 2,067 | 2,354 |

*A single asterisk next to a WUG's name denotes that the WUG is split by more than one planning region.

# Region K Water User Group (WUG) Demand

| | WUG DEMAND (ACRE-FEET PER YEAR) | | | | | |
|---|---|---|---|---|---|---|
| | 2020 | 2030 | 2040 | 2050 | 2060 | 2070 |
| LIVESTOCK | 630 | 630 | 630 | 630 | 630 | 630 |
| IRRIGATION | 160 | 160 | 160 | 160 | 160 | 160 |
| **BRAZOS BASIN TOTAL** | **3,794** | **4,275** | **4,611** | **5,062** | **5,529** | **6,006** |
| BURNET | 1,654 | 1,968 | 2,235 | 2,496 | 2,731 | 2,937 |
| CORIX UTILITIES TEXAS INC* | 126 | 149 | 168 | 187 | 204 | 220 |
| COTTONWOOD SHORES | 245 | 291 | 330 | 368 | 402 | 433 |
| GRANITE SHOALS | 578 | 646 | 701 | 765 | 877 | 1,052 |
| HORSESHOE BAY | 548 | 767 | 952 | 1,128 | 1,285 | 1,421 |
| KINGSLAND WSC | 46 | 55 | 62 | 69 | 75 | 81 |
| MARBLE FALLS | 2,354 | 3,400 | 4,884 | 5,661 | 6,184 | 6,446 |
| MEADOWLAKES | 852 | 843 | 838 | 836 | 835 | 835 |
| COUNTY-OTHER | 2,186 | 2,432 | 2,428 | 2,668 | 2,897 | 3,098 |
| MANUFACTURING | 251 | 299 | 299 | 299 | 299 | 299 |
| MINING | 3,367 | 4,058 | 4,784 | 5,440 | 6,196 | 7,058 |
| LIVESTOCK | 1,061 | 1,061 | 1,061 | 1,061 | 1,061 | 1,061 |
| IRRIGATION | 1,338 | 1,338 | 1,338 | 1,338 | 1,338 | 1,338 |
| **COLORADO BASIN TOTAL** | **14,606** | **17,307** | **20,080** | **22,316** | **24,384** | **26,279** |
| **BURNET COUNTY TOTAL** | **18,400** | **21,582** | **24,691** | **27,378** | **29,913** | **32,285** |
| EAGLE LAKE | 159 | 160 | 160 | 165 | 170 | 176 |
| COUNTY-OTHER | 154 | 155 | 156 | 160 | 165 | 170 |
| MANUFACTURING | 13 | 15 | 15 | 15 | 15 | 15 |
| MINING | 160 | 162 | 163 | 165 | 167 | 168 |
| LIVESTOCK | 163 | 163 | 163 | 163 | 163 | 163 |
| IRRIGATION | 50,709 | 49,345 | 48,017 | 46,726 | 45,469 | 44,246 |
| **BRAZOS-COLORADO BASIN TOTAL** | **51,358** | **50,000** | **48,674** | **47,394** | **46,149** | **44,938** |
| COLUMBUS | 1,134 | 1,164 | 1,185 | 1,229 | 1,271 | 1,313 |
| CORIX UTILITIES TEXAS INC* | 43 | 44 | 44 | 46 | 47 | 49 |
| EAGLE LAKE | 362 | 365 | 366 | 375 | 388 | 400 |
| WEIMAR | 163 | 166 | 169 | 175 | 181 | 187 |
| COUNTY-OTHER | 969 | 975 | 977 | 1,005 | 1,038 | 1,072 |
| MANUFACTURING | 50 | 59 | 59 | 59 | 59 | 59 |
| MINING | 4,899 | 4,947 | 4,999 | 5,048 | 5,098 | 5,149 |
| STEAM ELECTRIC POWER | 228 | 228 | 228 | 228 | 228 | 228 |
| LIVESTOCK | 740 | 740 | 740 | 740 | 740 | 740 |
| IRRIGATION | 34,346 | 33,422 | 32,523 | 31,648 | 30,797 | 29,969 |
| **COLORADO BASIN TOTAL** | **42,934** | **42,110** | **41,290** | **40,553** | **39,847** | **39,166** |
| WEIMAR | 333 | 341 | 346 | 358 | 370 | 382 |
| COUNTY-OTHER | 330 | 333 | 334 | 343 | 354 | 365 |
| MANUFACTURING | 897 | 1,058 | 1,058 | 1,058 | 1,058 | 1,058 |
| MINING | 266 | 269 | 271 | 274 | 277 | 280 |
| STEAM ELECTRIC POWER | 4,743 | 4,743 | 4,743 | 4,743 | 4,743 | 4,743 |
| LIVESTOCK | 373 | 373 | 373 | 373 | 373 | 373 |
| IRRIGATION | 88,057 | 85,688 | 83,384 | 81,140 | 78,957 | 76,833 |
| **LAVACA BASIN TOTAL** | **94,999** | **92,805** | **90,509** | **88,289** | **86,132** | **84,034** |
| **COLORADO COUNTY TOTAL** | **189,291** | **184,915** | **180,473** | **176,236** | **172,128** | **168,138** |
| AQUA WSC* | 4 | 4 | 5 | 5 | 5 | 5 |
| FAYETTE COUNTY WCID MONUMENT HILL | 184 | 192 | 205 | 217 | 227 | 235 |
| FAYETTE WSC | 610 | 679 | 725 | 765 | 799 | 827 |

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# Region K Water User Group (WUG) Demand

| | WUG DEMAND (ACRE-FEET PER YEAR) | | | | | |
|---|---|---|---|---|---|---|
| | **2020** | **2030** | **2040** | **2050** | **2060** | **2070** |
| LA GRANGE | 957 | 1,063 | 1,132 | 1,194 | 1,248 | 1,292 |
| LEE COUNTY WSC* | 182 | 202 | 215 | 226 | 236 | 244 |
| WEST END WSC* | 130 | 142 | 153 | 167 | 183 | 201 |
| COUNTY-OTHER | 810 | 897 | 945 | 988 | 1,025 | 1,052 |
| MANUFACTURING | 2 | 3 | 3 | 3 | 3 | 3 |
| MINING | 2,046 | 1,646 | 1,187 | 743 | 291 | 284 |
| STEAM ELECTRIC POWER | 49,211 | 49,211 | 49,211 | 49,211 | 49,211 | 49,211 |
| LIVESTOCK | 1,370 | 1,370 | 1,370 | 1,370 | 1,370 | 1,370 |
| IRRIGATION | 521 | 521 | 521 | 521 | 521 | 521 |
| **COLORADO BASIN TOTAL** | **56,027** | **55,930** | **55,672** | **55,410** | **55,119** | **55,245** |
| FAYETTE WSC | 40 | 44 | 47 | 50 | 52 | 54 |
| FLATONIA | 65 | 73 | 78 | 82 | 86 | 89 |
| COUNTY-OTHER | 49 | 54 | 57 | 59 | 62 | 63 |
| MINING | 126 | 101 | 73 | 46 | 18 | 17 |
| LIVESTOCK | 78 | 78 | 78 | 78 | 78 | 78 |
| IRRIGATION | 83 | 83 | 83 | 83 | 83 | 83 |
| **GUADALUPE BASIN TOTAL** | **441** | **433** | **416** | **398** | **379** | **384** |
| FAYETTE WSC | 72 | 80 | 85 | 90 | 94 | 97 |
| FLATONIA | 281 | 313 | 334 | 353 | 369 | 381 |
| SCHULENBURG | 701 | 783 | 838 | 885 | 926 | 958 |
| COUNTY-OTHER | 379 | 419 | 442 | 462 | 479 | 491 |
| MANUFACTURING | 394 | 439 | 439 | 439 | 439 | 439 |
| MINING | 354 | 285 | 205 | 129 | 50 | 49 |
| LIVESTOCK | 278 | 278 | 278 | 278 | 278 | 278 |
| IRRIGATION | 224 | 224 | 224 | 224 | 224 | 224 |
| **LAVACA BASIN TOTAL** | **2,683** | **2,821** | **2,845** | **2,860** | **2,859** | **2,917** |
| **FAYETTE COUNTY TOTAL** | **59,151** | **59,184** | **58,933** | **58,668** | **58,357** | **58,546** |
| FREDERICKSBURG | 3,351 | 3,543 | 3,703 | 3,911 | 4,118 | 4,322 |
| COUNTY-OTHER | 1,668 | 1,738 | 1,797 | 1,891 | 1,995 | 2,100 |
| MANUFACTURING | 77 | 93 | 93 | 93 | 93 | 93 |
| MINING | 4 | 4 | 4 | 4 | 4 | 4 |
| LIVESTOCK | 1,175 | 1,175 | 1,175 | 1,175 | 1,175 | 1,175 |
| IRRIGATION | 2,383 | 2,383 | 2,383 | 2,383 | 2,383 | 2,383 |
| **COLORADO BASIN TOTAL** | **8,658** | **8,936** | **9,155** | **9,457** | **9,768** | **10,077** |
| COUNTY-OTHER | 67 | 70 | 72 | 76 | 80 | 84 |
| LIVESTOCK | 37 | 37 | 37 | 37 | 37 | 37 |
| **GUADALUPE BASIN TOTAL** | **104** | **107** | **109** | **113** | **117** | **121** |
| **GILLESPIE COUNTY TOTAL** | **8,762** | **9,043** | **9,264** | **9,570** | **9,885** | **10,198** |
| AUSTIN | 188 | 827 | 1,304 | 2,063 | 3,025 | 4,357 |
| BUDA* | 1,768 | 2,508 | 3,419 | 4,563 | 5,860 | 7,338 |
| CIMARRON PARK WATER | 244 | 236 | 230 | 226 | 225 | 225 |
| DEER CREEK RANCH WATER | 26 | 29 | 33 | 35 | 38 | 41 |
| DRIPPING SPRINGS WSC | 1,930 | 3,190 | 4,103 | 5,278 | 6,716 | 7,476 |
| GOFORTH SUD* | 153 | 196 | 249 | 317 | 395 | 484 |
| HAYS | 183 | 235 | 294 | 348 | 435 | 533 |
| HAYS COUNTY WCID 1 | 821 | 808 | 801 | 798 | 797 | 797 |
| HAYS COUNTY WCID 2 | 285 | 369 | 464 | 551 | 688 | 844 |
| WEST TRAVIS COUNTY PUBLIC UTILITY AGENCY | 4,499 | 5,590 | 6,273 | 7,711 | 9,151 | 10,593 |

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# Region K Water User Group (WUG) Demand

| | WUG DEMAND (ACRE-FEET PER YEAR) | | | | | |
|---|---|---|---|---|---|---|
| | **2020** | **2030** | **2040** | **2050** | **2060** | **2070** |
| COUNTY-OTHER* | 1,351 | 1,038 | 1,553 | 1,929 | 2,245 | 3,118 |
| MANUFACTURING* | 277 | 324 | 324 | 324 | 324 | 324 |
| MINING | 845 | 1,075 | 1,361 | 1,445 | 1,654 | 1,893 |
| STEAM ELECTRIC POWER | 1,187 | 1,187 | 1,187 | 1,187 | 1,187 | 1,187 |
| LIVESTOCK* | 17 | 17 | 17 | 17 | 17 | 17 |
| IRRIGATION* | 525 | 525 | 525 | 525 | 525 | 525 |
| **COLORADO BASIN TOTAL** | **14,299** | **18,154** | **22,137** | **27,317** | **33,282** | **39,752** |
| **HAYS COUNTY TOTAL** | **14,299** | **18,154** | **22,137** | **27,317** | **33,282** | **39,752** |
| CORIX UTILITIES TEXAS INC* | 187 | 184 | 183 | 184 | 185 | 187 |
| HORSESHOE BAY | 2,268 | 2,333 | 2,264 | 2,289 | 2,255 | 2,203 |
| KINGSLAND WSC | 918 | 1,032 | 1,015 | 962 | 1,045 | 1,133 |
| LLANO | 862 | 891 | 877 | 855 | 883 | 913 |
| SUNRISE BEACH VILLAGE | 74 | 71 | 69 | 68 | 68 | 68 |
| COUNTY-OTHER | 260 | 202 | 215 | 217 | 200 | 187 |
| MANUFACTURING | 3 | 4 | 4 | 4 | 4 | 4 |
| MINING | 3 | 3 | 3 | 3 | 3 | 3 |
| STEAM ELECTRIC POWER | 1,748 | 1,748 | 1,748 | 1,748 | 1,748 | 1,748 |
| LIVESTOCK | 580 | 580 | 580 | 580 | 580 | 580 |
| IRRIGATION | 998 | 998 | 998 | 998 | 998 | 998 |
| **COLORADO BASIN TOTAL** | **7,901** | **8,046** | **7,956** | **7,908** | **7,969** | **8,024** |
| **LLANO COUNTY TOTAL** | **7,901** | **8,046** | **7,956** | **7,908** | **7,969** | **8,024** |
| BAY CITY | 2,910 | 2,963 | 2,979 | 3,025 | 3,068 | 3,104 |
| CANEY CREEK MUD OF MATAGORDA COUNTY | 252 | 255 | 255 | 258 | 261 | 264 |
| CORIX UTILITIES TEXAS INC* | 6 | 6 | 6 | 6 | 6 | 6 |
| MATAGORDA COUNTY WCID 6 | 113 | 113 | 112 | 113 | 115 | 116 |
| MATAGORDA WASTE DISPOSAL & WSC | 51 | 52 | 52 | 53 | 54 | 55 |
| COUNTY-OTHER | 449 | 451 | 448 | 450 | 456 | 461 |
| MINING | 53 | 56 | 42 | 30 | 19 | 12 |
| LIVESTOCK | 475 | 475 | 475 | 475 | 475 | 475 |
| IRRIGATION | 92,589 | 90,098 | 87,675 | 85,316 | 83,021 | 80,788 |
| **BRAZOS-COLORADO BASIN TOTAL** | **96,898** | **94,469** | **92,044** | **89,726** | **87,475** | **85,281** |
| BAY CITY | 6 | 6 | 6 | 6 | 6 | 6 |
| CORIX UTILITIES TEXAS INC* | 1 | 1 | 1 | 1 | 1 | 1 |
| MATAGORDA WASTE DISPOSAL & WSC | 76 | 78 | 79 | 80 | 81 | 82 |
| COUNTY-OTHER | 95 | 96 | 95 | 96 | 97 | 98 |
| MANUFACTURING | 4,199 | 4,916 | 4,916 | 4,916 | 4,916 | 4,916 |
| MINING | 8 | 8 | 6 | 5 | 3 | 2 |
| STEAM ELECTRIC POWER | 80,536 | 80,536 | 80,536 | 80,536 | 80,536 | 80,536 |
| LIVESTOCK | 94 | 94 | 94 | 94 | 94 | 94 |
| IRRIGATION | 1,719 | 1,672 | 1,627 | 1,584 | 1,541 | 1,500 |
| **COLORADO BASIN TOTAL** | **86,734** | **87,407** | **87,360** | **87,318** | **87,275** | **87,235** |
| MARKHAM MUD | 97 | 96 | 96 | 96 | 98 | 99 |
| PALACIOS | 615 | 623 | 624 | 629 | 638 | 645 |
| COUNTY-OTHER | 492 | 493 | 491 | 492 | 499 | 505 |
| MINING | 35 | 36 | 27 | 20 | 13 | 8 |
| LIVESTOCK | 506 | 506 | 506 | 506 | 506 | 506 |

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# Region K Water User Group (WUG) Demand

| | WUG DEMAND (ACRE-FEET PER YEAR) | | | | | |
|---|---|---|---|---|---|---|
| | 2020 | 2030 | 2040 | 2050 | 2060 | 2070 |
| IRRIGATION | 97,280 | 94,664 | 92,117 | 89,639 | 87,228 | 84,881 |
| **COLORADO-LAVACA BASIN TOTAL** | **99,025** | **96,418** | **93,861** | **91,382** | **88,982** | **86,644** |
| **MATAGORDA COUNTY TOTAL** | **282,657** | **278,294** | **273,265** | **268,426** | **263,732** | **259,160** |
| GOLDTHWAITE | 10 | 10 | 11 | 11 | 11 | 12 |
| COUNTY-OTHER | 142 | 141 | 140 | 144 | 149 | 155 |
| MINING | 2 | 2 | 2 | 2 | 2 | 2 |
| LIVESTOCK | 293 | 293 | 293 | 293 | 293 | 293 |
| IRRIGATION | 2,988 | 2,988 | 2,988 | 2,988 | 2,988 | 2,988 |
| **BRAZOS BASIN TOTAL** | **3,435** | **3,434** | **3,434** | **3,438** | **3,443** | **3,450** |
| BROOKESMITH SUD* | 7 | 7 | 7 | 7 | 8 | 8 |
| CORIX UTILITIES TEXAS INC* | 12 | 12 | 12 | 12 | 12 | 13 |
| GOLDTHWAITE | 390 | 393 | 395 | 407 | 422 | 439 |
| ZEPHYR WSC* | 3 | 3 | 3 | 3 | 3 | 4 |
| COUNTY-OTHER | 201 | 200 | 198 | 204 | 211 | 220 |
| MANUFACTURING | 2 | 2 | 2 | 2 | 2 | 2 |
| MINING | 2 | 2 | 2 | 2 | 2 | 2 |
| LIVESTOCK | 570 | 570 | 570 | 570 | 570 | 570 |
| IRRIGATION | 1,755 | 1,755 | 1,755 | 1,755 | 1,755 | 1,755 |
| **COLORADO BASIN TOTAL** | **2,942** | **2,944** | **2,944** | **2,962** | **2,985** | **3,013** |
| **MILLS COUNTY TOTAL** | **6,377** | **6,378** | **6,378** | **6,400** | **6,428** | **6,463** |
| CORIX UTILITIES TEXAS INC* | 15 | 15 | 15 | 15 | 15 | 15 |
| NORTH SAN SABA WSC | 185 | 191 | 190 | 187 | 191 | 195 |
| RICHLAND SUD* | 224 | 231 | 229 | 224 | 229 | 235 |
| SAN SABA | 1,175 | 1,216 | 1,212 | 1,186 | 1,213 | 1,241 |
| COUNTY-OTHER | 218 | 220 | 217 | 213 | 217 | 222 |
| MANUFACTURING | 10 | 12 | 12 | 12 | 12 | 12 |
| MINING | 1,088 | 1,093 | 944 | 900 | 864 | 838 |
| LIVESTOCK | 779 | 779 | 779 | 779 | 779 | 779 |
| IRRIGATION | 7,199 | 7,199 | 7,199 | 7,199 | 7,199 | 7,199 |
| **COLORADO BASIN TOTAL** | **10,893** | **10,956** | **10,797** | **10,715** | **10,719** | **10,736** |
| **SAN SABA COUNTY TOTAL** | **10,893** | **10,956** | **10,797** | **10,715** | **10,719** | **10,736** |
| AQUA WSC* | 1,088 | 1,226 | 1,362 | 1,524 | 1,671 | 1,809 |
| AUSTIN | 170,686 | 198,992 | 230,751 | 252,570 | 269,954 | 293,513 |
| BARTON CREEK WEST WSC | 436 | 433 | 430 | 428 | 427 | 427 |
| BARTON CREEK WSC | 524 | 619 | 709 | 776 | 830 | 893 |
| BRIARCLIFF | 300 | 340 | 380 | 425 | 466 | 504 |
| CEDAR PARK* | 2,251 | 2,387 | 2,554 | 2,550 | 2,547 | 2,546 |
| COTTONWOOD CREEK MUD 1 | 95 | 107 | 120 | 129 | 138 | 148 |
| CREEDMOOR-MAHA WSC* | 602 | 662 | 721 | 797 | 872 | 944 |
| CYPRESS RANCH WCID 1 | 121 | 134 | 144 | 153 | 164 | 163 |
| DEER CREEK RANCH WATER | 43 | 49 | 55 | 59 | 63 | 68 |
| ELGIN | 255 | 357 | 453 | 563 | 662 | 754 |
| GARFIELD WSC | 199 | 230 | 259 | 281 | 301 | 323 |
| HORNSBY BEND UTILITY | 594 | 678 | 761 | 823 | 879 | 944 |
| HURST CREEK MUD | 1,718 | 1,709 | 1,703 | 1,700 | 1,699 | 1,699 |
| JONESTOWN WSC | 675 | 709 | 744 | 787 | 828 | 866 |
| KELLY LANE WCID 1 | 322 | 317 | 313 | 312 | 311 | 311 |

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# Region K Water User Group (WUG) Demand

| | WUG DEMAND (ACRE-FEET PER YEAR) | | | | | |
|---|---|---|---|---|---|---|
| | 2020 | 2030 | 2040 | 2050 | 2060 | 2070 |
| LAGO VISTA | 1,868 | 2,184 | 2,487 | 2,832 | 3,140 | 3,428 |
| LAKEWAY MUD | 2,757 | 2,882 | 3,019 | 3,166 | 3,212 | 3,211 |
| LEANDER* | 1,519 | 3,550 | 3,747 | 3,953 | 4,046 | 4,222 |
| LOOP 360 WSC | 1,225 | 1,268 | 1,318 | 1,363 | 1,407 | 1,486 |
| MANOR | 1,110 | 1,517 | 1,907 | 2,346 | 2,736 | 3,099 |
| MANVILLE WSC* | 2,439 | 2,946 | 3,435 | 3,994 | 4,496 | 4,966 |
| NORTH AUSTIN MUD 1 | 81 | 78 | 76 | 75 | 75 | 75 |
| NORTHTOWN MUD | 728 | 841 | 947 | 1,066 | 1,171 | 1,268 |
| OAK SHORES WATER SYSTEM | 150 | 171 | 170 | 169 | 169 | 169 |
| PFLUGERVILLE* | 10,403 | 12,819 | 15,598 | 18,364 | 21,167 | 21,156 |
| ROLLINGWOOD | 383 | 379 | 375 | 374 | 375 | 377 |
| ROUGH HOLLOW IN TRAVIS COUNTY | 589 | 1,213 | 1,213 | 1,213 | 1,213 | 1,213 |
| ROUND ROCK* | 278 | 315 | 352 | 395 | 434 | 470 |
| SENNA HILLS MUD | 420 | 493 | 564 | 616 | 659 | 708 |
| SHADY HOLLOW MUD | 793 | 775 | 759 | 750 | 749 | 749 |
| SUNSET VALLEY | 368 | 417 | 483 | 559 | 649 | 753 |
| SWEETWATER COMMUNITY | 408 | 862 | 862 | 862 | 862 | 862 |
| TRAVIS COUNTY MUD 10 | 74 | 87 | 99 | 108 | 115 | 124 |
| TRAVIS COUNTY MUD 14 | 172 | 196 | 220 | 238 | 254 | 273 |
| TRAVIS COUNTY MUD 2 | 322 | 372 | 421 | 457 | 489 | 525 |
| TRAVIS COUNTY MUD 4 | 1,500 | 1,728 | 1,945 | 2,188 | 2,402 | 2,603 |
| TRAVIS COUNTY WCID 10 | 3,499 | 3,802 | 4,094 | 4,433 | 4,739 | 5,026 |
| TRAVIS COUNTY WCID 17 | 9,370 | 10,053 | 11,016 | 11,186 | 11,479 | 11,841 |
| TRAVIS COUNTY WCID 18 | 1,070 | 1,207 | 1,341 | 1,499 | 1,643 | 1,779 |
| TRAVIS COUNTY WCID 19 | 449 | 447 | 445 | 444 | 444 | 444 |
| TRAVIS COUNTY WCID 20 | 584 | 581 | 579 | 577 | 577 | 577 |
| TRAVIS COUNTY WCID POINT VENTURE | 255 | 322 | 378 | 456 | 545 | 624 |
| WELLS BRANCH MUD | 1,397 | 1,352 | 1,321 | 1,303 | 1,298 | 1,297 |
| WEST TRAVIS COUNTY PUBLIC UTILITY AGENCY | 6,698 | 7,357 | 7,925 | 8,824 | 9,398 | 9,914 |
| WILLIAMSON COUNTY WSID 3* | 120 | 147 | 145 | 144 | 144 | 144 |
| WILLIAMSON TRAVIS COUNTIES MUD 1* | 145 | 141 | 139 | 139 | 138 | 138 |
| WINDERMERE UTILITY | 2,920 | 2,864 | 2,831 | 2,815 | 2,810 | 2,809 |
| COUNTY-OTHER \| AQUA TEXAS - RIVERCREST | 317 | 315 | 313 | 312 | 312 | 312 |
| COUNTY-OTHER | 859 | 852 | 850 | 847 | 841 | 839 |
| MANUFACTURING | 13,164 | 14,853 | 14,853 | 14,853 | 14,853 | 14,853 |
| MINING | 3,467 | 4,067 | 4,714 | 5,320 | 5,986 | 6,749 |
| STEAM ELECTRIC POWER | 10,253 | 10,253 | 10,253 | 10,253 | 10,253 | 10,253 |
| LIVESTOCK | 509 | 509 | 509 | 509 | 509 | 509 |
| IRRIGATION | 4,816 | 4,816 | 4,816 | 4,816 | 4,816 | 4,816 |
| **COLORADO BASIN TOTAL** | **267,388** | **307,980** | **347,978** | **377,695** | **402,417** | **430,573** |
| CREEDMOOR-MAHA WSC* | 39 | 42 | 46 | 51 | 56 | 60 |
| GOFORTH SUD* | 10 | 12 | 16 | 20 | 25 | 31 |
| COUNTY-OTHER | 11 | 11 | 10 | 10 | 10 | 10 |
| MINING | 35 | 41 | 48 | 54 | 60 | 68 |
| LIVESTOCK | 18 | 18 | 18 | 18 | 18 | 18 |
| **GUADALUPE BASIN TOTAL** | **113** | **124** | **138** | **153** | **169** | **187** |
| **TRAVIS COUNTY TOTAL** | **267,501** | **308,104** | **348,116** | **377,848** | **402,586** | **430,760** |
| BOLING MWD | 105 | 107 | 109 | 112 | 115 | 119 |

*A single asterisk next to a WUG's name denotes that the WUG is split by more than one planning region.

# Region K Water User Group (WUG) Demand

| | WUG DEMAND (ACRE-FEET PER YEAR) | | | | | |
|---|---|---|---|---|---|---|
| | 2020 | 2030 | 2040 | 2050 | 2060 | 2070 |
| WHARTON | 924 | 956 | 980 | 1,010 | 1,044 | 1,075 |
| WHARTON COUNTY WCID 2 | 456 | 474 | 488 | 503 | 520 | 535 |
| COUNTY-OTHER* | 1,136 | 1,160 | 1,181 | 1,225 | 1,264 | 1,303 |
| MANUFACTURING* | 63 | 69 | 69 | 69 | 69 | 69 |
| MINING* | 39 | 41 | 30 | 23 | 14 | 10 |
| STEAM ELECTRIC POWER* | 1 | 1 | 1 | 1 | 1 | 1 |
| LIVESTOCK* | 404 | 404 | 404 | 404 | 404 | 404 |
| IRRIGATION* | 106,320 | 103,461 | 100,678 | 97,969 | 95,334 | 92,770 |
| **BRAZOS-COLORADO BASIN TOTAL** | **109,448** | **106,673** | **103,940** | **101,316** | **98,765** | **96,286** |
| EL CAMPO* | 5 | 5 | 5 | 6 | 6 | 6 |
| WHARTON | 756 | 782 | 802 | 827 | 854 | 880 |
| COUNTY-OTHER* | 587 | 599 | 611 | 633 | 654 | 673 |
| MANUFACTURING* | 93 | 102 | 102 | 102 | 102 | 102 |
| MINING* | 26 | 27 | 20 | 15 | 10 | 6 |
| STEAM ELECTRIC POWER* | 7,900 | 7,900 | 7,900 | 7,900 | 7,900 | 7,900 |
| LIVESTOCK* | 301 | 301 | 301 | 301 | 301 | 301 |
| IRRIGATION* | 65,853 | 64,081 | 62,357 | 60,680 | 59,048 | 57,460 |
| **COLORADO BASIN TOTAL** | **75,521** | **73,797** | **72,098** | **70,464** | **68,875** | **67,328** |
| COUNTY-OTHER* | 189 | 193 | 197 | 204 | 211 | 217 |
| MINING* | 6 | 6 | 5 | 3 | 2 | 1 |
| LIVESTOCK* | 87 | 87 | 87 | 87 | 87 | 87 |
| IRRIGATION* | 16,937 | 16,481 | 16,038 | 15,607 | 15,187 | 14,778 |
| **COLORADO-LAVACA BASIN TOTAL** | **17,219** | **16,767** | **16,327** | **15,901** | **15,487** | **15,083** |
| COUNTY-OTHER* | 18 | 19 | 19 | 20 | 21 | 21 |
| **LAVACA BASIN TOTAL** | **18** | **19** | **19** | **20** | **21** | **21** |
| **WHARTON COUNTY TOTAL** | **202,206** | **197,256** | **192,384** | **187,701** | **183,148** | **178,718** |
| AUSTIN | 10,787 | 13,742 | 16,122 | 18,685 | 21,592 | 24,782 |
| NORTH AUSTIN MUD 1 | 774 | 747 | 726 | 714 | 711 | 711 |
| WELLS BRANCH MUD | 80 | 77 | 76 | 75 | 74 | 74 |
| COUNTY-OTHER* | 67 | 93 | 89 | 85 | 81 | 77 |
| MANUFACTURING* | 25 | 30 | 30 | 30 | 30 | 30 |
| MINING* | 5 | 3 | 3 | 3 | 3 | 3 |
| **BRAZOS BASIN TOTAL** | **11,738** | **14,692** | **17,046** | **19,592** | **22,491** | **25,677** |
| **WILLIAMSON COUNTY TOTAL** | **11,738** | **14,692** | **17,046** | **19,592** | **22,491** | **25,677** |
| **REGION K DEMAND TOTAL** | **1,116,839** | **1,162,803** | **1,204,224** | **1,237,063** | **1,265,256** | **1,307,643** |

*A single asterisk next to a WUG's name denotes that the WUG is split by more than one planning region.

# Region K Water User Group (WUG) Category Summary

| MUNICIPAL | 2020 | 2030 | 2040 | 2050 | 2060 | 2070 |
|---|---|---|---|---|---|---|
| POPULATION | 1,638,831 | 1,963,185 | 2,274,558 | 2,543,336 | 2,806,190 | 3,109,576 |
| DEMAND (acre-feet per year) | 299,119 | 351,317 | 404,340 | 450,364 | 495,100 | 546,479 |
| EXISTING SUPPLIES (acre-feet per year) | 453,316 | 453,172 | 455,181 | 456,704 | 455,570 | 454,197 |
| NEEDS (acre-feet per year)* | 4,400 | 12,718 | 33,287 | 49,285 | 71,490 | 103,299 |

| COUNTY-OTHER | 2020 | 2030 | 2040 | 2050 | 2060 | 2070 |
|---|---|---|---|---|---|---|
| POPULATION | 123,760 | 131,479 | 142,167 | 153,970 | 164,965 | 180,901 |
| DEMAND (acre-feet per year) | 16,658 | 17,281 | 18,288 | 19,709 | 21,178 | 23,309 |
| EXISTING SUPPLIES (acre-feet per year) | 36,425 | 36,610 | 36,864 | 37,223 | 37,717 | 38,379 |
| NEEDS (acre-feet per year)* | 527 | 660 | 750 | 885 | 1,060 | 2,102 |

| MANUFACTURING | 2020 | 2030 | 2040 | 2050 | 2060 | 2070 |
|---|---|---|---|---|---|---|
| DEMAND (acre-feet per year) | 19,708 | 22,493 | 22,493 | 22,493 | 22,493 | 22,493 |
| EXISTING SUPPLIES (acre-feet per year) | 35,383 | 37,072 | 37,358 | 37,814 | 37,814 | 37,814 |
| NEEDS (acre-feet per year)* | 0 | 40 | 40 | 40 | 40 | 40 |

| MINING | 2020 | 2030 | 2040 | 2050 | 2060 | 2070 |
|---|---|---|---|---|---|---|
| DEMAND (acre-feet per year) | 20,848 | 26,104 | 27,991 | 27,492 | 23,207 | 25,441 |
| EXISTING SUPPLIES (acre-feet per year) | 19,897 | 20,388 | 20,931 | 21,524 | 21,773 | 22,528 |
| NEEDS (acre-feet per year)* | 2,677 | 6,937 | 8,264 | 7,708 | 5,472 | 6,860 |

| STEAM ELECTRIC POWER | 2020 | 2030 | 2040 | 2050 | 2060 | 2070 |
|---|---|---|---|---|---|---|
| DEMAND (acre-feet per year) | 166,095 | 166,095 | 166,095 | 166,095 | 166,095 | 166,095 |
| EXISTING SUPPLIES (acre-feet per year) | 150,200 | 150,200 | 150,200 | 150,200 | 150,200 | 150,200 |
| NEEDS (acre-feet per year)* | 20,546 | 20,546 | 20,546 | 20,546 | 20,546 | 20,546 |

| LIVESTOCK | 2020 | 2030 | 2040 | 2050 | 2060 | 2070 |
|---|---|---|---|---|---|---|
| DEMAND (acre-feet per year) | 12,004 | 12,004 | 12,004 | 12,004 | 12,004 | 12,004 |
| EXISTING SUPPLIES (acre-feet per year) | 15,346 | 15,346 | 15,346 | 15,346 | 15,346 | 15,346 |
| NEEDS (acre-feet per year)* | 0 | 0 | 0 | 0 | 0 | 0 |

| IRRIGATION | 2020 | 2030 | 2040 | 2050 | 2060 | 2070 |
|---|---|---|---|---|---|---|
| DEMAND (acre-feet per year) | 582,407 | 567,509 | 553,013 | 538,906 | 525,179 | 511,822 |
| EXISTING SUPPLIES (acre-feet per year) | 331,568 | 331,566 | 331,548 | 331,530 | 331,511 | 331,511 |
| NEEDS (acre-feet per year)* | 254,364 | 239,922 | 225,869 | 212,193 | 198,886 | 185,938 |

*WUG supplies and projected demands are entered for each of a WUG's region-county-basin divisions. The needs shown in the WUG Category Summary report are calculated by first deducting the WUG split's projected demand from its total existing water supply volume. If the WUG split has a greater existing supply volume than projected demand in any given decade, this amount is considered a surplus volume. Before aggregating the difference between supplies and demands to the WUG category level, calculated surpluses are updated to zero so that only the WUGs with needs in the decade are included with the Needs totals.

# Region K Source Availability

| GROUNDWATER SOURCE TYPE | | | | SOURCE AVAILABILITY (ACRE-FEET PER YEAR) | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| SOURCE NAME | COUNTY | BASIN | SALINITY * | 2020 | 2030 | 2040 | 2050 | 2060 | 2070 |
| CARRIZO-WILCOX AQUIFER | BASTROP | BRAZOS | FRESH | 752 | 847 | 960 | 1,233 | 1,113 | 1,113 |
| CARRIZO-WILCOX AQUIFER | BASTROP | COLORADO | FRESH | 20,696 | 23,206 | 25,169 | 28,570 | 27,823 | 27,823 |
| CARRIZO-WILCOX AQUIFER | BASTROP | GUADALUPE | FRESH | 212 | 172 | 147 | 248 | 167 | 167 |
| CARRIZO-WILCOX AQUIFER | FAYETTE | COLORADO | FRESH | 4,565 | 4,565 | 4,565 | 4,565 | 4,565 | 4,565 |
| CARRIZO-WILCOX AQUIFER | FAYETTE | GUADALUPE | FRESH | 909 | 909 | 909 | 909 | 909 | 909 |
| CARRIZO-WILCOX AQUIFER | FAYETTE | LAVACA | FRESH | 0 | 0 | 0 | 0 | 0 | 0 |
| EDWARDS-BFZ AQUIFER | HAYS | COLORADO | FRESH | 2,292 | 2,292 | 2,292 | 2,292 | 2,292 | 2,292 |
| EDWARDS-BFZ AQUIFER | HAYS | COLORADO | SALINE | 66 | 66 | 66 | 66 | 66 | 66 |
| EDWARDS-BFZ AQUIFER | TRAVIS | BRAZOS | FRESH | 275 | 275 | 275 | 275 | 275 | 275 |
| EDWARDS-BFZ AQUIFER | TRAVIS | COLORADO | FRESH | 1,166 | 1,166 | 1,166 | 1,166 | 1,166 | 1,166 |
| EDWARDS-BFZ AQUIFER | TRAVIS | COLORADO | FRESH/ BRACKISH | 4,962 | 4,962 | 4,962 | 4,962 | 4,962 | 4,962 |
| EDWARDS-BFZ AQUIFER | TRAVIS | COLORADO | SALINE | 5,073 | 5,073 | 5,073 | 5,073 | 5,073 | 5,073 |
| EDWARDS-BFZ AQUIFER | TRAVIS | GUADALUPE | SALINE | 280 | 280 | 280 | 280 | 280 | 280 |
| EDWARDS-BFZ AQUIFER | WILLIAMSON | BRAZOS | FRESH | 6 | 6 | 6 | 6 | 6 | 6 |
| EDWARDS-BFZ AQUIFER | WILLIAMSON | COLORADO | FRESH | 4 | 4 | 4 | 4 | 4 | 4 |
| EDWARDS-TRINITY-PLATEAU AQUIFER | BLANCO | COLORADO | FRESH | 0 | 0 | 0 | 0 | 0 | 0 |
| EDWARDS-TRINITY-PLATEAU AQUIFER | BLANCO | GUADALUPE | FRESH | 0 | 0 | 0 | 0 | 0 | 0 |
| EDWARDS-TRINITY-PLATEAU, PECOS VALLEY, AND TRINITY AQUIFERS | GILLESPIE | COLORADO | FRESH | 4,843 | 4,843 | 4,843 | 4,843 | 4,843 | 4,843 |
| EDWARDS-TRINITY-PLATEAU, PECOS VALLEY, AND TRINITY AQUIFERS | GILLESPIE | GUADALUPE | FRESH | 136 | 136 | 136 | 136 | 136 | 136 |
| ELLENBURGER-SAN SABA AQUIFER | BLANCO | COLORADO | FRESH | 1,952 | 1,946 | 1,952 | 1,946 | 1,952 | 1,946 |
| ELLENBURGER-SAN SABA AQUIFER | BURNET | BRAZOS | FRESH | 3,833 | 3,822 | 3,833 | 3,822 | 3,833 | 3,822 |
| ELLENBURGER-SAN SABA AQUIFER | BURNET | COLORADO | FRESH | 7,024 | 7,005 | 7,024 | 7,005 | 7,024 | 7,005 |
| ELLENBURGER-SAN SABA AQUIFER | GILLESPIE | COLORADO | FRESH | 6,294 | 6,294 | 6,294 | 6,294 | 6,294 | 6,294 |
| ELLENBURGER-SAN SABA AQUIFER | GILLESPIE | GUADALUPE | FRESH | 0 | 0 | 0 | 0 | 0 | 0 |
| ELLENBURGER-SAN SABA AQUIFER | LLANO | COLORADO | FRESH | 409 | 408 | 409 | 408 | 409 | 408 |
| ELLENBURGER-SAN SABA AQUIFER | MILLS | BRAZOS | FRESH | 93 | 93 | 93 | 93 | 93 | 93 |
| ELLENBURGER-SAN SABA AQUIFER | MILLS | COLORADO | FRESH | 407 | 406 | 407 | 406 | 407 | 406 |
| ELLENBURGER-SAN SABA AQUIFER | SAN SABA | COLORADO | FRESH | 7,890 | 7,890 | 7,890 | 7,890 | 7,890 | 7,890 |
| GULF COAST AQUIFER SYSTEM | COLORADO | BRAZOS-COLORADO | FRESH | 15,391 | 15,391 | 15,391 | 15,391 | 15,391 | 15,391 |
| GULF COAST AQUIFER SYSTEM | COLORADO | COLORADO | FRESH | 20,779 | 20,779 | 20,339 | 20,339 | 20,339 | 20,339 |
| GULF COAST AQUIFER SYSTEM | COLORADO | LAVACA | FRESH | 39,712 | 39,712 | 37,953 | 37,953 | 36,806 | 36,806 |
| GULF COAST AQUIFER SYSTEM | FAYETTE | BRAZOS | FRESH | 2 | 2 | 2 | 2 | 2 | 2 |
| GULF COAST AQUIFER SYSTEM | FAYETTE | COLORADO | FRESH | 989 | 989 | 989 | 989 | 989 | 989 |
| GULF COAST AQUIFER SYSTEM | FAYETTE | LAVACA | FRESH | 862 | 862 | 862 | 862 | 862 | 862 |
| GULF COAST AQUIFER SYSTEM | MATAGORDA | BRAZOS-COLORADO | FRESH | 15,282 | 15,282 | 15,282 | 15,282 | 15,282 | 15,282 |
| GULF COAST AQUIFER SYSTEM | MATAGORDA | COLORADO | FRESH/ BRACKISH | 3,217 | 3,217 | 3,217 | 3,217 | 3,217 | 3,217 |
| GULF COAST AQUIFER SYSTEM | MATAGORDA | COLORADO-LAVACA | FRESH | 20,329 | 20,329 | 20,329 | 20,329 | 20,329 | 20,329 |
| GULF COAST AQUIFER SYSTEM | WHARTON | BRAZOS-COLORADO | FRESH | 50,527 | 50,527 | 50,527 | 50,527 | 50,527 | 50,527 |
| GULF COAST AQUIFER SYSTEM | WHARTON | COLORADO | FRESH | 35,910 | 35,910 | 35,910 | 35,910 | 35,910 | 35,910 |

* Salinity field indicates whether the source availability is considered ‘fresh’ (less than 1,000 mg/L), ‘brackish’ (1,000 to 10,000 mg/L), ‘saline’ (10,001 mg/L to 34,999 mg/L), or ‘seawater’ (35,000 mg/L or greater). Sources can also be labeled as ‘fresh/brackish’ or ‘brackish/saline’, if a combination of the salinity types is appropriate.
** Since reservoir sources can exist across multiple counties, the county field value, ‘reservoir’ is applied to all reservoir sources.

# Region K Source Availability

| GROUNDWATER SOURCE TYPE | | | | SOURCE AVAILABILITY (ACRE-FEET PER YEAR) | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| SOURCE NAME | COUNTY | BASIN | SALINITY * | 2020 | 2030 | 2040 | 2050 | 2060 | 2070 |
| GULF COAST AQUIFER SYSTEM | WHARTON | COLORADO-LAVACA | FRESH | 16,196 | 16,196 | 16,196 | 16,196 | 16,196 | 16,196 |
| GULF COAST AQUIFER SYSTEM | WHARTON | LAVACA | FRESH | 579 | 579 | 579 | 579 | 579 | 579 |
| HICKORY AQUIFER | BLANCO | COLORADO | FRESH | 383 | 382 | 383 | 382 | 383 | 382 |
| HICKORY AQUIFER | BURNET | BRAZOS | FRESH | 1,240 | 1,236 | 1,240 | 1,236 | 1,240 | 1,236 |
| HICKORY AQUIFER | BURNET | COLORADO | FRESH | 2,183 | 2,177 | 2,183 | 2,177 | 2,183 | 2,177 |
| HICKORY AQUIFER | GILLESPIE | COLORADO | FRESH | 1,751 | 1,751 | 1,751 | 1,751 | 1,751 | 1,751 |
| HICKORY AQUIFER | GILLESPIE | GUADALUPE | FRESH | 0 | 0 | 0 | 0 | 0 | 0 |
| HICKORY AQUIFER | HAYS | COLORADO | FRESH | 0 | 0 | 0 | 0 | 0 | 0 |
| HICKORY AQUIFER | LLANO | COLORADO | FRESH | 2,027 | 2,021 | 2,027 | 2,021 | 2,027 | 2,021 |
| HICKORY AQUIFER | MILLS | BRAZOS | FRESH | 7 | 7 | 7 | 7 | 7 | 7 |
| HICKORY AQUIFER | MILLS | COLORADO | FRESH | 29 | 29 | 29 | 29 | 29 | 29 |
| HICKORY AQUIFER | SAN SABA | COLORADO | FRESH | 7,680 | 7,680 | 7,680 | 7,680 | 7,680 | 7,680 |
| MARBLE FALLS AQUIFER | BLANCO | COLORADO | FRESH | 199 | 199 | 199 | 199 | 199 | 199 |
| MARBLE FALLS AQUIFER | BURNET | BRAZOS | FRESH | 1,387 | 1,383 | 1,387 | 1,383 | 1,387 | 1,383 |
| MARBLE FALLS AQUIFER | BURNET | COLORADO | FRESH | 1,357 | 1,353 | 1,357 | 1,353 | 1,357 | 1,353 |
| MARBLE FALLS AQUIFER | MILLS | BRAZOS | FRESH | 1 | 1 | 1 | 1 | 1 | 1 |
| MARBLE FALLS AQUIFER | MILLS | COLORADO | FRESH | 24 | 24 | 24 | 24 | 24 | 24 |
| MARBLE FALLS AQUIFER | SAN SABA | COLORADO | FRESH | 4,355 | 4,343 | 4,355 | 4,343 | 4,355 | 4,343 |
| OTHER AQUIFER | BASTROP | COLORADO | FRESH | 5,340 | 5,340 | 5,340 | 5,340 | 5,340 | 5,340 |
| OTHER AQUIFER | BURNET | BRAZOS | FRESH | 433 | 433 | 433 | 433 | 433 | 433 |
| OTHER AQUIFER | BURNET | COLORADO | FRESH | 3,672 | 3,672 | 3,672 | 3,672 | 3,672 | 3,672 |
| OTHER AQUIFER | FAYETTE | COLORADO | FRESH | 834 | 834 | 834 | 834 | 834 | 834 |
| OTHER AQUIFER | LLANO | COLORADO | FRESH | 629 | 629 | 629 | 629 | 629 | 629 |
| OTHER AQUIFER | TRAVIS | COLORADO | FRESH | 3,770 | 3,770 | 3,770 | 3,770 | 3,770 | 3,770 |
| OTHER AQUIFER | TRAVIS | GUADALUPE | FRESH | 112 | 112 | 112 | 112 | 112 | 112 |
| QUEEN CITY AQUIFER | BASTROP | BRAZOS | FRESH | 49 | 47 | 46 | 44 | 42 | 42 |
| QUEEN CITY AQUIFER | BASTROP | COLORADO | FRESH | 353 | 333 | 311 | 288 | 264 | 264 |
| QUEEN CITY AQUIFER | BASTROP | GUADALUPE | FRESH | 156 | 161 | 166 | 173 | 180 | 180 |
| QUEEN CITY AQUIFER | FAYETTE | COLORADO | FRESH | 2,278 | 2,278 | 2,278 | 2,278 | 2,278 | 2,278 |
| QUEEN CITY AQUIFER | FAYETTE | GUADALUPE | FRESH | 430 | 430 | 430 | 430 | 430 | 430 |
| QUEEN CITY AQUIFER | FAYETTE | LAVACA | FRESH | 0 | 0 | 0 | 0 | 0 | 0 |
| SPARTA AQUIFER | BASTROP | BRAZOS | FRESH | 89 | 87 | 85 | 84 | 82 | 82 |
| SPARTA AQUIFER | BASTROP | COLORADO | FRESH | 785 | 784 | 783 | 782 | 781 | 781 |
| SPARTA AQUIFER | BASTROP | GUADALUPE | FRESH | 33 | 33 | 33 | 33 | 33 | 33 |
| SPARTA AQUIFER | FAYETTE | COLORADO | FRESH | 1,659 | 1,649 | 1,626 | 1,612 | 1,619 | 1,619 |
| SPARTA AQUIFER | FAYETTE | GUADALUPE | FRESH | 1,172 | 1,176 | 1,177 | 1,182 | 1,183 | 1,183 |
| SPARTA AQUIFER | FAYETTE | LAVACA | FRESH | 0 | 0 | 0 | 0 | 0 | 0 |
| TRINITY AQUIFER | BLANCO | COLORADO | FRESH | 1,322 | 1,322 | 1,322 | 1,322 | 1,322 | 1,322 |
| TRINITY AQUIFER | BLANCO | GUADALUPE | FRESH | 1,251 | 1,251 | 1,251 | 1,251 | 1,251 | 1,251 |
| TRINITY AQUIFER | BURNET | BRAZOS | FRESH | 3,138 | 3,131 | 3,138 | 3,131 | 3,138 | 3,131 |
| TRINITY AQUIFER | BURNET | COLORADO | FRESH | 759 | 756 | 759 | 756 | 759 | 756 |
| TRINITY AQUIFER | HAYS | COLORADO | FRESH | 5,690 | 5,687 | 5,686 | 5,686 | 5,686 | 5,686 |
| TRINITY AQUIFER | HAYS | GUADALUPE | FRESH | 9 | 9 | 9 | 9 | 9 | 9 |
| TRINITY AQUIFER | MILLS | BRAZOS | FRESH | 808 | 805 | 808 | 805 | 808 | 805 |

* Salinity field indicates whether the source availability is considered ‘fresh’ (less than 1,000 mg/L), ‘brackish’ (1,000 to 10,000 mg/L), ‘saline’ (10,001 mg/L to 34,999 mg/L), or ‘seawater’ (35,000 mg/L or greater). Sources can also be labeled as ‘fresh/brackish’ or ‘brackish/saline’, if a combination of the salinity types is appropriate.
** Since reservoir sources can exist across multiple counties, the county field value, ‘reservoir’ is applied to all reservoir sources.

# Region K Source Availability

| GROUNDWATER SOURCE TYPE | | | | SOURCE AVAILABILITY (ACRE-FEET PER YEAR) | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| **SOURCE NAME** | **COUNTY** | **BASIN** | **SALINITY *** | **2020** | **2030** | **2040** | **2050** | **2060** | **2070** |
| TRINITY AQUIFER | MILLS | COLORADO | FRESH | 1,669 | 1,665 | 1,669 | 1,665 | 1,669 | 1,665 |
| TRINITY AQUIFER | TRAVIS | BRAZOS | FRESH | 1 | 1 | 1 | 1 | 1 | 1 |
| TRINITY AQUIFER | TRAVIS | COLORADO | FRESH | 5,767 | 5,752 | 5,767 | 5,752 | 5,767 | 5,752 |
| TRINITY AQUIFER | TRAVIS | COLORADO | FRESH/ BRACKISH | 8,672 | 8,655 | 8,643 | 8,627 | 8,598 | 8,598 |
| TRINITY AQUIFER | TRAVIS | GUADALUPE | FRESH | 2 | 2 | 2 | 2 | 2 | 2 |
| TRINITY AQUIFER | WILLIAMSON | BRAZOS | FRESH | 0 | 0 | 0 | 0 | 0 | 0 |
| TRINITY AQUIFER | WILLIAMSON | COLORADO | FRESH | 67 | 67 | 67 | 67 | 67 | 67 |
| YEGUA-JACKSON AQUIFER | FAYETTE | COLORADO | FRESH | 7,075 | 7,075 | 7,075 | 7,075 | 7,074 | 7,074 |
| YEGUA-JACKSON AQUIFER | FAYETTE | GUADALUPE | FRESH | 694 | 694 | 694 | 694 | 694 | 694 |
| YEGUA-JACKSON AQUIFER | FAYETTE | LAVACA | FRESH | 1,493 | 1,493 | 1,493 | 1,493 | 1,493 | 1,493 |
| **GROUNDWATER SOURCE AVAILABILITY TOTAL** | | | | **376,748** | **379,160** | **379,063** | **382,686** | **380,654** | **380,547** |

| REUSE SOURCE TYPE | | | | SOURCE AVAILABILITY (ACRE-FEET PER YEAR) | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| **SOURCE NAME** | **COUNTY** | **BASIN** | **SALINITY *** | **2020** | **2030** | **2040** | **2050** | **2060** | **2070** |
| DIRECT REUSE | BURNET | COLORADO | FRESH | 2,200 | 2,200 | 2,200 | 2,200 | 2,200 | 2,200 |
| DIRECT REUSE | HAYS | COLORADO | FRESH | 100 | 1,120 | 1,120 | 1,120 | 1,680 | 1,680 |
| DIRECT REUSE | LLANO | COLORADO | FRESH | 589 | 589 | 589 | 589 | 589 | 589 |
| DIRECT REUSE | TRAVIS | COLORADO | FRESH | 9,778 | 9,778 | 9,778 | 9,778 | 9,778 | 9,778 |
| **REUSE SOURCE AVAILABILITY TOTAL** | | | | **12,667** | **13,687** | **13,687** | **13,687** | **14,247** | **14,247** |

| SURFACE WATER SOURCE TYPE | | | | SOURCE AVAILABILITY (ACRE-FEET PER YEAR) | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| **SOURCE NAME** | **COUNTY** | **BASIN** | **SALINITY *** | **2020** | **2030** | **2040** | **2050** | **2060** | **2070** |
| BLANCO LAKE/RESERVOIR | RESERVOIR** | GUADALUPE | FRESH | 463 | 463 | 463 | 463 | 463 | 463 |
| BRAZOS LIVESTOCK LOCAL SUPPLY | BASTROP | BRAZOS | FRESH | 94 | 94 | 94 | 94 | 94 | 94 |
| BRAZOS LIVESTOCK LOCAL SUPPLY | BURNET | BRAZOS | FRESH | 630 | 630 | 630 | 630 | 630 | 630 |
| BRAZOS LIVESTOCK LOCAL SUPPLY | MILLS | BRAZOS | FRESH | 321 | 321 | 321 | 321 | 321 | 321 |
| BRAZOS LIVESTOCK LOCAL SUPPLY | WILLIAMSON | BRAZOS | FRESH | 1 | 1 | 1 | 1 | 1 | 1 |
| BRAZOS OTHER LOCAL SUPPLY | BURNET | BRAZOS | FRESH/ BRACKISH | 966 | 966 | 966 | 966 | 966 | 966 |
| BRAZOS-COLORADO LIVESTOCK LOCAL SUPPLY | COLORADO | BRAZOS-COLORADO | FRESH | 203 | 203 | 203 | 203 | 203 | 203 |
| BRAZOS-COLORADO LIVESTOCK LOCAL SUPPLY | MATAGORDA | BRAZOS-COLORADO | FRESH | 664 | 664 | 664 | 664 | 664 | 664 |
| BRAZOS-COLORADO LIVESTOCK LOCAL SUPPLY | WHARTON | BRAZOS-COLORADO | FRESH | 371 | 371 | 371 | 371 | 371 | 371 |
| BRAZOS-COLORADO RUN-OF-RIVER | MATAGORDA | BRAZOS-COLORADO | FRESH | 4,000 | 4,000 | 4,000 | 4,000 | 4,000 | 4,000 |
| BRAZOS-COLORADO RUN-OF-RIVER | WHARTON | BRAZOS-COLORADO | FRESH | 4,332 | 4,332 | 4,332 | 4,332 | 4,332 | 4,332 |
| COLORADO LIVESTOCK LOCAL SUPPLY | BASTROP | COLORADO | FRESH | 696 | 696 | 696 | 696 | 696 | 696 |
| COLORADO LIVESTOCK LOCAL SUPPLY | BLANCO | COLORADO | FRESH | 101 | 101 | 101 | 101 | 101 | 101 |
| COLORADO LIVESTOCK LOCAL SUPPLY | BURNET | COLORADO | FRESH | 582 | 582 | 582 | 582 | 582 | 582 |
| COLORADO LIVESTOCK LOCAL SUPPLY | COLORADO | COLORADO | FRESH | 860 | 860 | 860 | 860 | 860 | 860 |
| COLORADO LIVESTOCK LOCAL SUPPLY | FAYETTE | COLORADO | FRESH | 1,370 | 1,370 | 1,370 | 1,370 | 1,370 | 1,370 |
| COLORADO LIVESTOCK LOCAL SUPPLY | GILLESPIE | COLORADO | FRESH | 515 | 515 | 515 | 515 | 515 | 515 |
| COLORADO LIVESTOCK LOCAL SUPPLY | HAYS | COLORADO | FRESH | 220 | 220 | 220 | 220 | 220 | 220 |

* Salinity field indicates whether the source availability is considered 'fresh' (less than 1,000 mg/L), 'brackish' (1,000 to 10,000 mg/L), 'saline' (10,001 mg/L to 34,999 mg/L), or 'seawater' (35,000 mg/L or greater). Sources can also be labeled as 'fresh/brackish' or 'brackish/saline', if a combination of the salinity types is appropriate.
** Since reservoir sources can exist across multiple counties, the county field value, 'reservoir' is applied to all reservoir sources.

# Region K Source Availability

| SURFACE WATER SOURCE TYPE | | | | SOURCE AVAILABILITY (ACRE-FEET PER YEAR) | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| **SOURCE NAME** | **COUNTY** | **BASIN** | **SALINITY *** | **2020** | **2030** | **2040** | **2050** | **2060** | **2070** |
| COLORADO LIVESTOCK LOCAL SUPPLY | LLANO | COLORADO | FRESH | 414 | 414 | 414 | 414 | 414 | 414 |
| COLORADO LIVESTOCK LOCAL SUPPLY | MILLS | COLORADO | FRESH | 360 | 360 | 360 | 360 | 360 | 360 |
| COLORADO LIVESTOCK LOCAL SUPPLY | SAN SABA | COLORADO | FRESH | 900 | 900 | 900 | 900 | 900 | 900 |
| COLORADO LIVESTOCK LOCAL SUPPLY | TRAVIS | COLORADO | FRESH | 463 | 463 | 463 | 463 | 463 | 463 |
| COLORADO LIVESTOCK LOCAL SUPPLY | WHARTON | COLORADO | FRESH | 115 | 115 | 115 | 115 | 115 | 115 |
| COLORADO OTHER LOCAL SUPPLY | BASTROP | COLORADO | FRESH | 58 | 58 | 58 | 58 | 58 | 58 |
| COLORADO OTHER LOCAL SUPPLY | GILLESPIE | COLORADO | FRESH | 158 | 158 | 158 | 158 | 158 | 158 |
| COLORADO OTHER LOCAL SUPPLY | TRAVIS | COLORADO | FRESH | 6,336 | 6,336 | 6,336 | 6,336 | 6,336 | 6,336 |
| COLORADO RUN-OF-RIVER | BASTROP | COLORADO | FRESH | 786 | 786 | 786 | 786 | 786 | 786 |
| COLORADO RUN-OF-RIVER | BLANCO | COLORADO | FRESH | 67 | 67 | 67 | 67 | 67 | 67 |
| COLORADO RUN-OF-RIVER | BURNET | COLORADO | FRESH | 843 | 843 | 843 | 843 | 843 | 843 |
| COLORADO RUN-OF-RIVER | COLORADO | COLORADO | FRESH | 130,537 | 130,537 | 130,537 | 130,537 | 130,537 | 130,537 |
| COLORADO RUN-OF-RIVER | FAYETTE | COLORADO | FRESH | 534 | 534 | 534 | 534 | 534 | 534 |
| COLORADO RUN-OF-RIVER | GILLESPIE | COLORADO | FRESH | 880 | 880 | 880 | 880 | 880 | 880 |
| COLORADO RUN-OF-RIVER | HAYS | COLORADO | FRESH | 41 | 41 | 41 | 41 | 41 | 41 |
| COLORADO RUN-OF-RIVER | LLANO | COLORADO | FRESH | 440 | 440 | 440 | 440 | 440 | 440 |
| COLORADO RUN-OF-RIVER | MATAGORDA | COLORADO | FRESH | 89,715 | 89,715 | 89,715 | 89,715 | 89,715 | 89,715 |
| COLORADO RUN-OF-RIVER | MILLS | COLORADO | FRESH | 2,378 | 2,378 | 2,378 | 2,378 | 2,378 | 2,378 |
| COLORADO RUN-OF-RIVER | SAN SABA | COLORADO | FRESH | 8,800 | 8,800 | 8,800 | 8,800 | 8,800 | 8,800 |
| COLORADO RUN-OF-RIVER | TRAVIS | COLORADO | FRESH | 211,785 | 211,785 | 211,785 | 211,785 | 211,785 | 211,785 |
| COLORADO RUN-OF-RIVER | WHARTON | COLORADO | FRESH | 10,562 | 10,562 | 10,562 | 10,562 | 10,562 | 10,562 |
| COLORADO-LAVACA LIVESTOCK LOCAL SUPPLY | MATAGORDA | COLORADO-LAVACA | FRESH | 708 | 708 | 708 | 708 | 708 | 708 |
| COLORADO-LAVACA LIVESTOCK LOCAL SUPPLY | WHARTON | COLORADO-LAVACA | FRESH | 80 | 80 | 80 | 80 | 80 | 80 |
| COLORADO-LAVACA RUN-OF-RIVER | MATAGORDA | COLORADO-LAVACA | FRESH | 4,000 | 4,000 | 4,000 | 4,000 | 4,000 | 4,000 |
| GOLDTHWAITE LAKE/RESERVOIR | RESERVOIR** | COLORADO | FRESH | 0 | 0 | 0 | 0 | 0 | 0 |
| GUADALUPE LIVESTOCK LOCAL SUPPLY | BASTROP | GUADALUPE | FRESH | 72 | 72 | 72 | 72 | 72 | 72 |
| GUADALUPE LIVESTOCK LOCAL SUPPLY | BLANCO | GUADALUPE | FRESH | 129 | 129 | 129 | 129 | 129 | 129 |
| GUADALUPE LIVESTOCK LOCAL SUPPLY | FAYETTE | GUADALUPE | FRESH | 142 | 142 | 142 | 142 | 142 | 142 |
| GUADALUPE LIVESTOCK LOCAL SUPPLY | GILLESPIE | GUADALUPE | FRESH | 32 | 32 | 32 | 32 | 32 | 32 |
| GUADALUPE LIVESTOCK LOCAL SUPPLY | TRAVIS | GUADALUPE | FRESH | 24 | 24 | 24 | 24 | 24 | 24 |
| GUADALUPE RUN-OF-RIVER | BLANCO | GUADALUPE | FRESH | 9 | 9 | 9 | 9 | 9 | 9 |
| HIGHLAND LAKES LAKE/RESERVOIR SYSTEM | RESERVOIR** | COLORADO | FRESH | 352,026 | 351,323 | 350,569 | 349,917 | 349,174 | 348,401 |
| LAVACA LIVESTOCK LOCAL SUPPLY | COLORADO | LAVACA | FRESH | 465 | 465 | 465 | 465 | 465 | 465 |
| LAVACA LIVESTOCK LOCAL SUPPLY | FAYETTE | LAVACA | FRESH | 386 | 386 | 386 | 386 | 386 | 386 |
| LAVACA RUN-OF-RIVER | COLORADO | LAVACA | FRESH | 4,002 | 4,002 | 4,002 | 4,002 | 4,002 | 4,002 |
| LAVACA RUN-OF-RIVER | FAYETTE | LAVACA | FRESH | 20 | 20 | 20 | 20 | 20 | 20 |
| LLANO LAKE/RESERVOIR | RESERVOIR** | COLORADO | FRESH | 0 | 0 | 0 | 0 | 0 | 0 |
| LLANO RUN-OF-RIVER | LLANO | COLORADO | FRESH | 271 | 271 | 271 | 271 | 271 | 271 |
| STPNOC LAKE/RESERVOIR | RESERVOIR** | COLORADO | FRESH/ BRACKISH | 66,260 | 66,260 | 66,260 | 66,260 | 66,260 | 66,260 |
| | | | **SURFACE WATER SOURCE AVAILABILITY TOTAL** | **911,187** | **910,484** | **909,730** | **909,078** | **908,335** | **907,562** |

| | | | | | | |
|---|---|---|---|---|---|---|
| **REGION K SOURCE AVAILABILITY TOTAL** | **1,300,602** | **1,303,331** | **1,302,480** | **1,305,451** | **1,303,236** | **1,302,356** |

* Salinity field indicates whether the source availability is considered 'fresh' (less than 1,000 mg/L), 'brackish' (1,000 to 10,000 mg/L), 'saline' (10,001 mg/L to 34,999 mg/L), or 'seawater' (35,000 mg/L or greater). Sources can also be labeled as 'fresh/brackish' or 'brackish/saline', if a combination of the salinity types is appropriate.
** Since reservoir sources can exist across multiple counties, the county field value, 'reservoir' is applied to all reservoir sources.

## Region K Source Availability

* Salinity field indicates whether the source availability is considered 'fresh' (less than 1,000 mg/L), 'brackish' (1,000 to 10,000 mg/L), 'saline' (10,001 mg/L to 34,999 mg/L), or 'seawater' (35,000 mg/L or greater). Sources can also be labeled as 'fresh/brackish' or 'brackish/saline', if a combination of the salinity types is appropriate.

** Since reservoir sources can exist across multiple counties, the county field value, 'reservoir' is applied to all reservoir sources.

# Region K Water User Group (WUG) Existing Water Supply

| WUG NAME | SOURCE REGION | SOURCE DESCRIPTION | EXISTING SUPPLY (ACRE-FEET PER YEAR) | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | | 2020 | 2030 | 2040 | 2050 | 2060 | 2070 |
| AQUA WSC* | K | CARRIZO-WILCOX AQUIFER \| BASTROP COUNTY | 90 | 116 | 150 | 197 | 262 | 347 |
| LEE COUNTY WSC* | G | CARRIZO-WILCOX AQUIFER \| LEE COUNTY | 168 | 190 | 228 | 282 | 351 | 432 |
| LEE COUNTY WSC* | G | QUEEN CITY AQUIFER \| LEE COUNTY | 6 | 6 | 8 | 10 | 12 | 15 |
| LEE COUNTY WSC* | G | SPARTA AQUIFER \| LEE COUNTY | 12 | 13 | 16 | 20 | 24 | 30 |
| COUNTY-OTHER | K | CARRIZO-WILCOX AQUIFER \| BASTROP COUNTY | 21 | 21 | 21 | 21 | 21 | 21 |
| MINING | K | CARRIZO-WILCOX AQUIFER \| BASTROP COUNTY | 450 | 450 | 450 | 450 | 29 | 29 |
| LIVESTOCK | K | LOCAL SURFACE WATER SUPPLY | 94 | 94 | 94 | 94 | 94 | 94 |
| IRRIGATION | K | CARRIZO-WILCOX AQUIFER \| BASTROP COUNTY | 215 | 215 | 215 | 215 | 215 | 215 |
| IRRIGATION | K | QUEEN CITY AQUIFER \| BASTROP COUNTY | 49 | 47 | 46 | 44 | 42 | 42 |
| | | **BRAZOS BASIN TOTAL** | **1,105** | **1,152** | **1,228** | **1,333** | **1,050** | **1,225** |
| AQUA WSC* | K | CARRIZO-WILCOX AQUIFER \| BASTROP COUNTY | 8,848 | 8,848 | 9,356 | 10,547 | 9,528 | 8,745 |
| BASTROP | K | OTHER AQUIFER \| BASTROP COUNTY | 2,758 | 2,758 | 2,758 | 2,758 | 2,758 | 2,758 |
| BASTROP COUNTY WCID 2 | K | CARRIZO-WILCOX AQUIFER \| BASTROP COUNTY | 766 | 854 | 915 | 1,026 | 968 | 930 |
| BASTROP COUNTY WCID 2 | K | OTHER AQUIFER \| BASTROP COUNTY | 472 | 472 | 472 | 472 | 472 | 472 |
| CREEDMOOR-MAHA WSC* | K | CARRIZO-WILCOX AQUIFER \| BASTROP COUNTY | 145 | 145 | 145 | 145 | 145 | 145 |
| ELGIN | K | CARRIZO-WILCOX AQUIFER \| BASTROP COUNTY | 1,317 | 1,674 | 2,155 | 2,288 | 2,189 | 2,097 |
| LEE COUNTY WSC* | G | CARRIZO-WILCOX AQUIFER \| LEE COUNTY | 226 | 260 | 311 | 385 | 477 | 587 |
| LEE COUNTY WSC* | G | QUEEN CITY AQUIFER \| LEE COUNTY | 8 | 9 | 11 | 13 | 16 | 20 |
| LEE COUNTY WSC* | G | SPARTA AQUIFER \| LEE COUNTY | 16 | 18 | 22 | 27 | 33 | 41 |
| POLONIA WSC* | L | CARRIZO-WILCOX AQUIFER \| CALDWELL COUNTY | 81 | 84 | 91 | 102 | 118 | 138 |
| SMITHVILLE | K | CARRIZO-WILCOX AQUIFER \| BASTROP COUNTY | 1,464 | 1,632 | 1,749 | 1,961 | 1,850 | 1,777 |
| COUNTY-OTHER | K | CARRIZO-WILCOX AQUIFER \| BASTROP COUNTY | 631 | 823 | 1,084 | 1,443 | 1,933 | 2,589 |
| COUNTY-OTHER | K | HIGHLAND LAKES LAKE/RESERVOIR SYSTEM | 744 | 744 | 744 | 744 | 744 | 744 |
| MANUFACTURING | K | CARRIZO-WILCOX AQUIFER \| BASTROP COUNTY | 215 | 215 | 215 | 215 | 215 | 215 |
| MINING | K | LOCAL SURFACE WATER SUPPLY | 8 | 7 | 7 | 9 | 9 | 9 |
| MINING | K | OTHER AQUIFER \| BASTROP COUNTY | 2,110 | 2,110 | 2,110 | 2,110 | 2,110 | 2,110 |
| STEAM ELECTRIC POWER | K | CARRIZO-WILCOX AQUIFER \| BASTROP COUNTY | 2,609 | 3,522 | 4,022 | 5,156 | 4,836 | 4,727 |
| STEAM ELECTRIC POWER | K | HIGHLAND LAKES LAKE/RESERVOIR SYSTEM | 7,679 | 6,766 | 6,266 | 5,132 | 5,452 | 5,561 |
| LIVESTOCK | K | LOCAL SURFACE WATER SUPPLY | 696 | 696 | 696 | 696 | 696 | 696 |
| LIVESTOCK | K | QUEEN CITY AQUIFER \| BASTROP COUNTY | 17 | 17 | 17 | 17 | 17 | 17 |
| LIVESTOCK | K | SPARTA AQUIFER \| BASTROP COUNTY | 298 | 298 | 298 | 298 | 298 | 298 |
| IRRIGATION | K | CARRIZO-WILCOX AQUIFER \| BASTROP COUNTY | 2,471 | 2,471 | 2,471 | 2,471 | 2,471 | 2,471 |
| IRRIGATION | K | HIGHLAND LAKES LAKE/RESERVOIR SYSTEM | 850 | 850 | 850 | 850 | 850 | 850 |
| IRRIGATION | K | QUEEN CITY AQUIFER \| BASTROP COUNTY | 321 | 316 | 294 | 271 | 247 | 247 |
| IRRIGATION | K | SPARTA AQUIFER \| BASTROP COUNTY | 240 | 240 | 240 | 240 | 240 | 240 |
| | | **COLORADO BASIN TOTAL** | **34,990** | **35,829** | **37,299** | **39,376** | **38,672** | **38,484** |
| AQUA WSC* | K | CARRIZO-WILCOX AQUIFER \| BASTROP COUNTY | 64 | 82 | 106 | 140 | 185 | 246 |
| COUNTY-OTHER | K | CARRIZO-WILCOX AQUIFER \| BASTROP COUNTY | 34 | 39 | 45 | 54 | 67 | 83 |
| MINING | K | CARRIZO-WILCOX AQUIFER \| BASTROP COUNTY | 142 | 97 | 66 | 66 | 64 | 48 |
| LIVESTOCK | K | LOCAL SURFACE WATER SUPPLY | 72 | 72 | 72 | 72 | 72 | 72 |
| IRRIGATION | K | CARRIZO-WILCOX AQUIFER \| BASTROP COUNTY | 36 | 36 | 36 | 36 | 36 | 36 |
| IRRIGATION | K | QUEEN CITY AQUIFER \| BASTROP COUNTY | 156 | 161 | 166 | 173 | 180 | 180 |
| IRRIGATION | K | SPARTA AQUIFER \| BASTROP COUNTY | 23 | 23 | 23 | 23 | 23 | 23 |
| | | **GUADALUPE BASIN TOTAL** | **527** | **510** | **514** | **564** | **627** | **688** |
| | | **BASTROP COUNTY TOTAL** | **36,622** | **37,491** | **39,041** | **41,273** | **40,349** | **40,397** |
| JOHNSON CITY | K | ELLENBURGER-SAN SABA AQUIFER \| BLANCO COUNTY | 118 | 118 | 118 | 118 | 118 | 118 |
| JOHNSON CITY | K | TRINITY AQUIFER \| BLANCO COUNTY | 282 | 282 | 282 | 282 | 282 | 282 |
| COUNTY-OTHER | K | ELLENBURGER-SAN SABA AQUIFER \| BLANCO COUNTY | 249 | 249 | 249 | 249 | 249 | 249 |

*A single asterisk next to a WUG's name denotes that the WUG is split by two or more planning regions.

# Region K Water User Group (WUG) Existing Water Supply

| WUG NAME | SOURCE REGION | SOURCE DESCRIPTION | EXISTING SUPPLY (ACRE-FEET PER YEAR) | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | | 2020 | 2030 | 2040 | 2050 | 2060 | 2070 |
| COUNTY-OTHER | K | HICKORY AQUIFER \| BLANCO COUNTY | 76 | 76 | 76 | 76 | 76 | 76 |
| COUNTY-OTHER | K | TRINITY AQUIFER \| BLANCO COUNTY | 514 | 514 | 514 | 514 | 514 | 514 |
| MINING | K | ELLENBURGER-SAN SABA AQUIFER \| BLANCO COUNTY | 5 | 5 | 5 | 5 | 5 | 5 |
| LIVESTOCK | K | ELLENBURGER-SAN SABA AQUIFER \| BLANCO COUNTY | 255 | 255 | 255 | 255 | 255 | 255 |
| LIVESTOCK | K | LOCAL SURFACE WATER SUPPLY | 101 | 101 | 101 | 101 | 101 | 101 |
| LIVESTOCK | K | TRINITY AQUIFER \| BLANCO COUNTY | 161 | 161 | 161 | 161 | 161 | 161 |
| IRRIGATION | K | ELLENBURGER-SAN SABA AQUIFER \| BLANCO COUNTY | 816 | 816 | 816 | 816 | 816 | 816 |
| IRRIGATION | K | HICKORY AQUIFER \| BLANCO COUNTY | 163 | 163 | 163 | 163 | 163 | 163 |
| | | **COLORADO BASIN TOTAL** | **2,740** | **2,740** | **2,740** | **2,740** | **2,740** | **2,740** |
| BLANCO | K | BLANCO LAKE/RESERVOIR | 463 | 463 | 463 | 463 | 463 | 463 |
| BLANCO | L | CANYON LAKE/RESERVOIR | 600 | 600 | 600 | 600 | 600 | 600 |
| CANYON LAKE WATER SERVICE* | L | CANYON LAKE/RESERVOIR | 118 | 119 | 118 | 118 | 118 | 119 |
| CANYON LAKE WATER SERVICE* | K | TRINITY AQUIFER \| BLANCO COUNTY | 2 | 2 | 2 | 2 | 3 | 3 |
| CANYON LAKE WATER SERVICE* | L | TRINITY AQUIFER \| COMAL COUNTY | 105 | 113 | 116 | 118 | 120 | 121 |
| COUNTY-OTHER | K | TRINITY AQUIFER \| BLANCO COUNTY | 674 | 674 | 674 | 674 | 674 | 674 |
| LIVESTOCK | K | LOCAL SURFACE WATER SUPPLY | 101 | 101 | 101 | 101 | 101 | 101 |
| LIVESTOCK | K | TRINITY AQUIFER \| BLANCO COUNTY | 48 | 48 | 48 | 48 | 48 | 48 |
| IRRIGATION | K | TRINITY AQUIFER \| BLANCO COUNTY | 419 | 419 | 419 | 419 | 419 | 419 |
| | | **GUADALUPE BASIN TOTAL** | **2,530** | **2,539** | **2,541** | **2,543** | **2,546** | **2,548** |
| | | **BLANCO COUNTY TOTAL** | **5,270** | **5,279** | **5,281** | **5,283** | **5,286** | **5,288** |
| BERTRAM | K | ELLENBURGER-SAN SABA AQUIFER \| BURNET COUNTY | 367 | 367 | 367 | 367 | 367 | 367 |
| BERTRAM | K | TRINITY AQUIFER \| BURNET COUNTY | 3 | 3 | 3 | 3 | 3 | 3 |
| BURNET | K | ELLENBURGER-SAN SABA AQUIFER \| BURNET COUNTY | 14 | 14 | 14 | 14 | 14 | 14 |
| GEORGETOWN* | G | BRAZOS RIVER AUTHORITY LITTLE RIVER LAKE/RESERVOIR SYSTEM | 84 | 100 | 114 | 128 | 140 | 150 |
| KEMPNER WSC* | G | BRAZOS RIVER AUTHORITY LITTLE RIVER LAKE/RESERVOIR SYSTEM | 132 | 146 | 158 | 171 | 184 | 196 |
| COUNTY-OTHER | K | TRINITY AQUIFER \| BURNET COUNTY | 1,578 | 1,578 | 1,578 | 1,578 | 1,578 | 1,578 |
| MINING | K | LOCAL SURFACE WATER SUPPLY | 966 | 966 | 966 | 966 | 966 | 966 |
| MINING | K | OTHER AQUIFER \| BURNET COUNTY | 433 | 433 | 433 | 433 | 433 | 433 |
| MINING | K | TRINITY AQUIFER \| BURNET COUNTY | 300 | 300 | 300 | 300 | 300 | 300 |
| LIVESTOCK | K | LOCAL SURFACE WATER SUPPLY | 444 | 444 | 444 | 444 | 444 | 444 |
| LIVESTOCK | K | TRINITY AQUIFER \| BURNET COUNTY | 186 | 186 | 186 | 186 | 186 | 186 |
| IRRIGATION | K | TRINITY AQUIFER \| BURNET COUNTY | 430 | 430 | 430 | 430 | 430 | 430 |
| | | **BRAZOS BASIN TOTAL** | **4,937** | **4,967** | **4,993** | **5,020** | **5,045** | **5,067** |
| BURNET | K | DIRECT REUSE | 520 | 520 | 520 | 520 | 520 | 520 |
| BURNET | K | ELLENBURGER-SAN SABA AQUIFER \| BURNET COUNTY | 887 | 887 | 887 | 887 | 887 | 887 |
| BURNET | K | HIGHLAND LAKES LAKE/RESERVOIR SYSTEM | 3,226 | 3,226 | 3,226 | 3,226 | 3,226 | 3,226 |
| CORIX UTILITIES TEXAS INC* | K | ELLENBURGER-SAN SABA AQUIFER \| BURNET COUNTY | 9 | 9 | 9 | 9 | 9 | 9 |
| CORIX UTILITIES TEXAS INC* | K | HIGHLAND LAKES LAKE/RESERVOIR SYSTEM | 185 | 185 | 185 | 185 | 185 | 185 |
| CORIX UTILITIES TEXAS INC* | K | OTHER AQUIFER \| BURNET COUNTY | 104 | 104 | 104 | 104 | 104 | 104 |
| COTTONWOOD SHORES | K | HIGHLAND LAKES LAKE/RESERVOIR SYSTEM | 495 | 495 | 495 | 495 | 495 | 495 |
| GRANITE SHOALS | K | HIGHLAND LAKES LAKE/RESERVOIR SYSTEM | 830 | 830 | 830 | 830 | 830 | 830 |
| HORSESHOE BAY | K | DIRECT REUSE | 83 | 83 | 83 | 83 | 83 | 83 |
| HORSESHOE BAY | K | HIGHLAND LAKES LAKE/RESERVOIR SYSTEM | 398 | 398 | 398 | 398 | 398 | 398 |
| KINGSLAND WSC | K | HIGHLAND LAKES LAKE/RESERVOIR SYSTEM | 64 | 64 | 64 | 64 | 64 | 64 |
| KINGSLAND WSC | K | OTHER AQUIFER \| LLANO COUNTY | 17 | 17 | 17 | 17 | 17 | 17 |

*A single asterisk next to a WUG's name denotes that the WUG is split by two or more planning regions.

# Region K Water User Group (WUG) Existing Water Supply

| WUG NAME | SOURCE REGION | SOURCE DESCRIPTION | EXISTING SUPPLY (ACRE-FEET PER YEAR) | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | | 2020 | 2030 | 2040 | 2050 | 2060 | 2070 |
| MARBLE FALLS | K | DIRECT REUSE | 1,680 | 1,680 | 1,680 | 1,680 | 1,680 | 1,680 |
| MARBLE FALLS | K | HIGHLAND LAKES LAKE/RESERVOIR SYSTEM | 3,000 | 3,000 | 3,000 | 3,000 | 3,000 | 3,000 |
| MEADOWLAKES | K | COLORADO RUN-OF-RIVER | 567 | 567 | 567 | 567 | 567 | 567 |
| COUNTY-OTHER | K | ELLENBURGER-SAN SABA AQUIFER \| BURNET COUNTY | 1,363 | 1,363 | 1,363 | 1,363 | 1,363 | 1,363 |
| COUNTY-OTHER | K | HICKORY AQUIFER \| BURNET COUNTY | 184 | 184 | 184 | 184 | 184 | 184 |
| COUNTY-OTHER | K | HIGHLAND LAKES LAKE/RESERVOIR SYSTEM | 2,249 | 2,249 | 2,249 | 2,249 | 2,249 | 2,249 |
| COUNTY-OTHER | K | MARBLE FALLS AQUIFER \| BURNET COUNTY | 134 | 134 | 134 | 134 | 134 | 134 |
| COUNTY-OTHER | K | OTHER AQUIFER \| BURNET COUNTY | 958 | 958 | 958 | 958 | 958 | 958 |
| COUNTY-OTHER | K | TRINITY AQUIFER \| BURNET COUNTY | 477 | 477 | 477 | 477 | 477 | 477 |
| MANUFACTURING | K | HIGHLAND LAKES LAKE/RESERVOIR SYSTEM | 500 | 500 | 500 | 500 | 500 | 500 |
| MANUFACTURING | K | TRINITY AQUIFER \| BURNET COUNTY | 12 | 12 | 12 | 12 | 12 | 12 |
| MINING | K | ELLENBURGER-SAN SABA AQUIFER \| BURNET COUNTY | 1 | 1 | 1 | 1 | 1 | 1 |
| MINING | K | OTHER AQUIFER \| BURNET COUNTY | 2,351 | 2,351 | 2,351 | 2,351 | 2,351 | 2,351 |
| MINING | K | TRINITY AQUIFER \| BURNET COUNTY | 80 | 80 | 80 | 80 | 80 | 80 |
| LIVESTOCK | K | ELLENBURGER-SAN SABA AQUIFER \| BURNET COUNTY | 327 | 327 | 327 | 327 | 327 | 327 |
| LIVESTOCK | K | HICKORY AQUIFER \| BURNET COUNTY | 10 | 10 | 10 | 10 | 10 | 10 |
| LIVESTOCK | K | LOCAL SURFACE WATER SUPPLY | 582 | 582 | 582 | 582 | 582 | 582 |
| LIVESTOCK | K | MARBLE FALLS AQUIFER \| BURNET COUNTY | 20 | 20 | 20 | 20 | 20 | 20 |
| LIVESTOCK | K | TRINITY AQUIFER \| BURNET COUNTY | 122 | 122 | 122 | 122 | 122 | 122 |
| IRRIGATION | K | COLORADO RUN-OF-RIVER | 276 | 276 | 276 | 276 | 276 | 276 |
| IRRIGATION | K | ELLENBURGER-SAN SABA AQUIFER \| BURNET COUNTY | 675 | 675 | 675 | 675 | 675 | 675 |
| IRRIGATION | K | HICKORY AQUIFER \| BURNET COUNTY | 52 | 52 | 52 | 52 | 52 | 52 |
| IRRIGATION | K | HIGHLAND LAKES LAKE/RESERVOIR SYSTEM | 333 | 333 | 333 | 333 | 333 | 333 |
| IRRIGATION | K | TRINITY AQUIFER \| BURNET COUNTY | 65 | 65 | 65 | 65 | 65 | 65 |
| | | **COLORADO BASIN TOTAL** | **22,836** | **22,836** | **22,836** | **22,836** | **22,836** | **22,836** |
| | | **BURNET COUNTY TOTAL** | **27,773** | **27,803** | **27,829** | **27,856** | **27,881** | **27,903** |
| EAGLE LAKE | K | GULF COAST AQUIFER SYSTEM \| COLORADO COUNTY | 176 | 176 | 176 | 176 | 176 | 176 |
| COUNTY-OTHER | K | GULF COAST AQUIFER SYSTEM \| COLORADO COUNTY | 210 | 210 | 210 | 210 | 210 | 210 |
| MANUFACTURING | K | GULF COAST AQUIFER SYSTEM \| COLORADO COUNTY | 15 | 15 | 15 | 15 | 15 | 15 |
| MINING | K | GULF COAST AQUIFER SYSTEM \| COLORADO COUNTY | 170 | 170 | 170 | 170 | 170 | 170 |
| LIVESTOCK | K | GULF COAST AQUIFER SYSTEM \| COLORADO COUNTY | 164 | 164 | 164 | 164 | 164 | 164 |
| LIVESTOCK | K | LOCAL SURFACE WATER SUPPLY | 39 | 39 | 39 | 39 | 39 | 39 |
| IRRIGATION | K | COLORADO RUN-OF-RIVER | 17,818 | 17,818 | 17,818 | 17,818 | 17,818 | 17,818 |
| IRRIGATION | K | GULF COAST AQUIFER SYSTEM \| COLORADO COUNTY | 11,722 | 11,722 | 11,722 | 11,722 | 11,722 | 11,722 |
| | | **BRAZOS-COLORADO BASIN TOTAL** | **30,314** | **30,314** | **30,314** | **30,314** | **30,314** | **30,314** |
| COLUMBUS | K | GULF COAST AQUIFER SYSTEM \| COLORADO COUNTY | 1,720 | 1,720 | 1,720 | 1,720 | 1,720 | 1,720 |
| CORIX UTILITIES TEXAS INC* | K | GULF COAST AQUIFER SYSTEM \| COLORADO COUNTY | 36 | 36 | 36 | 36 | 36 | 36 |
| EAGLE LAKE | K | GULF COAST AQUIFER SYSTEM \| COLORADO COUNTY | 400 | 400 | 400 | 400 | 400 | 400 |
| WEIMAR | K | GULF COAST AQUIFER SYSTEM \| COLORADO COUNTY | 187 | 187 | 187 | 187 | 187 | 187 |
| COUNTY-OTHER | K | GULF COAST AQUIFER SYSTEM \| COLORADO COUNTY | 877 | 877 | 877 | 877 | 877 | 877 |
| MANUFACTURING | K | GULF COAST AQUIFER SYSTEM \| COLORADO COUNTY | 59 | 59 | 59 | 59 | 59 | 59 |
| MINING | K | COLORADO RUN-OF-RIVER | 1,808 | 1,808 | 1,808 | 1,808 | 1,808 | 1,808 |
| MINING | K | GULF COAST AQUIFER SYSTEM \| COLORADO COUNTY | 3,398 | 3,398 | 3,398 | 3,398 | 3,398 | 3,398 |
| STEAM ELECTRIC POWER | | NO WATER SUPPLY ASSOCIATED WITH WUG | 0 | 0 | 0 | 0 | 0 | 0 |
| LIVESTOCK | K | GULF COAST AQUIFER SYSTEM \| COLORADO COUNTY | 265 | 265 | 265 | 265 | 265 | 265 |
| LIVESTOCK | K | LOCAL SURFACE WATER SUPPLY | 860 | 860 | 860 | 860 | 860 | 860 |
| IRRIGATION | K | COLORADO RUN-OF-RIVER | 15,068 | 15,068 | 15,068 | 15,068 | 15,068 | 15,068 |
| IRRIGATION | K | GULF COAST AQUIFER SYSTEM \| COLORADO COUNTY | 12,700 | 12,700 | 12,700 | 12,700 | 12,700 | 12,700 |

*A single asterisk next to a WUG's name denotes that the WUG is split by two or more planning regions.

# Region K Water User Group (WUG) Existing Water Supply

| WUG NAME | SOURCE REGION | SOURCE DESCRIPTION | EXISTING SUPPLY (ACRE-FEET PER YEAR) | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | | 2020 | 2030 | 2040 | 2050 | 2060 | 2070 |
| | | **COLORADO BASIN TOTAL** | **37,378** | **37,378** | **37,378** | **37,378** | **37,378** | **37,378** |
| WEIMAR | K | GULF COAST AQUIFER SYSTEM \| COLORADO COUNTY | 382 | 382 | 382 | 382 | 382 | 382 |
| COUNTY-OTHER | K | GULF COAST AQUIFER SYSTEM \| COLORADO COUNTY | 502 | 502 | 502 | 502 | 502 | 502 |
| MANUFACTURING | K | GULF COAST AQUIFER SYSTEM \| COLORADO COUNTY | 1,058 | 1,058 | 1,058 | 1,058 | 1,058 | 1,058 |
| MINING | K | GULF COAST AQUIFER SYSTEM \| COLORADO COUNTY | 280 | 280 | 280 | 280 | 280 | 280 |
| STEAM ELECTRIC POWER | | NO WATER SUPPLY ASSOCIATED WITH WUG | 0 | 0 | 0 | 0 | 0 | 0 |
| LIVESTOCK | K | GULF COAST AQUIFER SYSTEM \| COLORADO COUNTY | 174 | 174 | 174 | 174 | 174 | 174 |
| LIVESTOCK | K | LOCAL SURFACE WATER SUPPLY | 199 | 199 | 199 | 199 | 199 | 199 |
| IRRIGATION | K | COLORADO RUN-OF-RIVER | 30,941 | 30,941 | 30,941 | 30,941 | 30,941 | 30,941 |
| IRRIGATION | K | GULF COAST AQUIFER SYSTEM \| COLORADO COUNTY | 26,543 | 26,543 | 26,543 | 26,543 | 26,543 | 26,543 |
| IRRIGATION | K | LAVACA RUN-OF-RIVER | 4,002 | 4,002 | 4,002 | 4,002 | 4,002 | 4,002 |
| | | **LAVACA BASIN TOTAL** | **64,081** | **64,081** | **64,081** | **64,081** | **64,081** | **64,081** |
| | | **COLORADO COUNTY TOTAL** | **131,773** | **131,773** | **131,773** | **131,773** | **131,773** | **131,773** |
| AQUA WSC* | K | CARRIZO-WILCOX AQUIFER \| BASTROP COUNTY | 4 | 4 | 5 | 5 | 5 | 5 |
| FAYETTE COUNTY WCID MONUMENT HILL | K | GULF COAST AQUIFER SYSTEM \| FAYETTE COUNTY | 235 | 235 | 235 | 235 | 235 | 235 |
| FAYETTE WSC | K | OTHER AQUIFER \| FAYETTE COUNTY | 675 | 675 | 675 | 675 | 675 | 675 |
| FAYETTE WSC | K | SPARTA AQUIFER \| FAYETTE COUNTY | 225 | 225 | 225 | 225 | 225 | 225 |
| LA GRANGE | K | YEGUA-JACKSON AQUIFER \| FAYETTE COUNTY | 1,294 | 1,294 | 1,294 | 1,294 | 1,294 | 1,294 |
| LEE COUNTY WSC* | G | CARRIZO-WILCOX AQUIFER \| LEE COUNTY | 565 | 564 | 558 | 554 | 541 | 519 |
| LEE COUNTY WSC* | G | QUEEN CITY AQUIFER \| LEE COUNTY | 19 | 19 | 19 | 19 | 19 | 18 |
| LEE COUNTY WSC* | G | SPARTA AQUIFER \| LEE COUNTY | 39 | 39 | 39 | 38 | 37 | 36 |
| WEST END WSC* | H | GULF COAST AQUIFER SYSTEM \| AUSTIN COUNTY | 130 | 142 | 153 | 167 | 183 | 201 |
| COUNTY-OTHER | K | GULF COAST AQUIFER SYSTEM \| FAYETTE COUNTY | 526 | 526 | 526 | 526 | 526 | 526 |
| COUNTY-OTHER | K | HIGHLAND LAKES LAKE/RESERVOIR SYSTEM | 27 | 27 | 27 | 27 | 27 | 27 |
| COUNTY-OTHER | K | OTHER AQUIFER \| FAYETTE COUNTY | 159 | 159 | 159 | 159 | 159 | 159 |
| COUNTY-OTHER | K | SPARTA AQUIFER \| FAYETTE COUNTY | 29 | 29 | 29 | 29 | 29 | 29 |
| MANUFACTURING | K | GULF COAST AQUIFER SYSTEM \| FAYETTE COUNTY | 3 | 3 | 3 | 3 | 3 | 3 |
| MINING | K | SPARTA AQUIFER \| FAYETTE COUNTY | 367 | 367 | 367 | 367 | 367 | 367 |
| MINING | K | YEGUA-JACKSON AQUIFER \| FAYETTE COUNTY | 919 | 919 | 919 | 919 | 919 | 919 |
| STEAM ELECTRIC POWER | K | COLORADO RUN-OF-RIVER | 396 | 396 | 396 | 396 | 396 | 396 |
| STEAM ELECTRIC POWER | K | HIGHLAND LAKES LAKE/RESERVOIR SYSTEM | 44,516 | 44,516 | 44,516 | 44,516 | 44,516 | 44,516 |
| LIVESTOCK | K | GULF COAST AQUIFER SYSTEM \| FAYETTE COUNTY | 185 | 185 | 185 | 185 | 185 | 185 |
| LIVESTOCK | K | LOCAL SURFACE WATER SUPPLY | 1,370 | 1,370 | 1,370 | 1,370 | 1,370 | 1,370 |
| IRRIGATION | K | COLORADO RUN-OF-RIVER | 534 | 534 | 534 | 534 | 534 | 534 |
| IRRIGATION | K | SPARTA AQUIFER \| FAYETTE COUNTY | 77 | 77 | 77 | 77 | 77 | 77 |
| | | **COLORADO BASIN TOTAL** | **52,294** | **52,305** | **52,311** | **52,320** | **52,322** | **52,316** |
| FAYETTE WSC | K | SPARTA AQUIFER \| FAYETTE COUNTY | 150 | 150 | 150 | 150 | 150 | 150 |
| FLATONIA | K | YEGUA-JACKSON AQUIFER \| FAYETTE COUNTY | 89 | 89 | 89 | 89 | 89 | 89 |
| COUNTY-OTHER | K | YEGUA-JACKSON AQUIFER \| FAYETTE COUNTY | 124 | 124 | 124 | 124 | 124 | 124 |
| MINING | K | SPARTA AQUIFER \| FAYETTE COUNTY | 159 | 159 | 159 | 159 | 159 | 159 |
| LIVESTOCK | K | LOCAL SURFACE WATER SUPPLY | 142 | 142 | 142 | 142 | 142 | 142 |
| IRRIGATION | K | SPARTA AQUIFER \| FAYETTE COUNTY | 109 | 109 | 109 | 109 | 109 | 109 |
| | | **GUADALUPE BASIN TOTAL** | **773** | **773** | **773** | **773** | **773** | **773** |
| FAYETTE WSC | K | SPARTA AQUIFER \| FAYETTE COUNTY | 101 | 101 | 101 | 101 | 101 | 101 |
| FLATONIA | K | YEGUA-JACKSON AQUIFER \| FAYETTE COUNTY | 386 | 386 | 386 | 386 | 386 | 386 |
| SCHULENBURG | K | GULF COAST AQUIFER SYSTEM \| FAYETTE COUNTY | 218 | 218 | 218 | 218 | 218 | 218 |
| SCHULENBURG | K | YEGUA-JACKSON AQUIFER \| FAYETTE COUNTY | 622 | 622 | 622 | 622 | 622 | 622 |

*A single asterisk next to a WUG's name denotes that the WUG is split by two or more planning regions.

# Region K Water User Group (WUG) Existing Water Supply

| WUG NAME | SOURCE REGION | SOURCE DESCRIPTION | EXISTING SUPPLY (ACRE-FEET PER YEAR) | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | | 2020 | 2030 | 2040 | 2050 | 2060 | 2070 |
| COUNTY-OTHER | K | GULF COAST AQUIFER SYSTEM \| FAYETTE COUNTY | 13 | 13 | 13 | 13 | 13 | 13 |
| MANUFACTURING | K | GULF COAST AQUIFER SYSTEM \| FAYETTE COUNTY | 399 | 399 | 399 | 399 | 399 | 399 |
| MINING | K | GULF COAST AQUIFER SYSTEM \| FAYETTE COUNTY | 224 | 224 | 205 | 184 | 184 | 184 |
| MINING | K | YEGUA-JACKSON AQUIFER \| FAYETTE COUNTY | 130 | 61 | 0 | 0 | 0 | 0 |
| LIVESTOCK | K | GULF COAST AQUIFER SYSTEM \| FAYETTE COUNTY | 7 | 7 | 7 | 7 | 7 | 7 |
| LIVESTOCK | K | LOCAL SURFACE WATER SUPPLY | 278 | 278 | 278 | 278 | 278 | 278 |
| IRRIGATION | K | YEGUA-JACKSON AQUIFER \| FAYETTE COUNTY | 302 | 302 | 302 | 302 | 302 | 302 |
| | | **LAVACA BASIN TOTAL** | **2,680** | **2,611** | **2,531** | **2,510** | **2,510** | **2,510** |
| | | **FAYETTE COUNTY TOTAL** | **55,747** | **55,689** | **55,615** | **55,603** | **55,605** | **55,599** |
| FREDERICKSBURG | K | ELLENBURGER-SAN SABA AQUIFER \| GILLESPIE COUNTY | 3,831 | 3,831 | 3,831 | 3,831 | 3,831 | 3,831 |
| FREDERICKSBURG | K | HICKORY AQUIFER \| GILLESPIE COUNTY | 612 | 612 | 612 | 612 | 612 | 612 |
| COUNTY-OTHER | K | EDWARDS-TRINITY-PLATEAU, PECOS VALLEY, AND TRINITY AQUIFERS \| GILLESPIE COUNTY | 1,534 | 1,534 | 1,534 | 1,534 | 1,534 | 1,534 |
| COUNTY-OTHER | K | ELLENBURGER-SAN SABA AQUIFER \| GILLESPIE COUNTY | 542 | 542 | 542 | 542 | 542 | 542 |
| COUNTY-OTHER | K | HICKORY AQUIFER \| GILLESPIE COUNTY | 183 | 183 | 183 | 183 | 183 | 183 |
| COUNTY-OTHER | K | HIGHLAND LAKES LAKE/RESERVOIR SYSTEM | 56 | 56 | 56 | 56 | 56 | 56 |
| MANUFACTURING | K | EDWARDS-TRINITY-PLATEAU, PECOS VALLEY, AND TRINITY AQUIFERS \| GILLESPIE COUNTY | 34 | 34 | 34 | 34 | 34 | 34 |
| MANUFACTURING | K | ELLENBURGER-SAN SABA AQUIFER \| GILLESPIE COUNTY | 398 | 398 | 398 | 398 | 398 | 398 |
| MANUFACTURING | K | HICKORY AQUIFER \| GILLESPIE COUNTY | 150 | 150 | 150 | 150 | 150 | 150 |
| MANUFACTURING | K | LOCAL SURFACE WATER SUPPLY | 158 | 158 | 158 | 158 | 158 | 158 |
| MINING | K | EDWARDS-TRINITY-PLATEAU, PECOS VALLEY, AND TRINITY AQUIFERS \| GILLESPIE COUNTY | 50 | 50 | 50 | 50 | 50 | 50 |
| MINING | K | HICKORY AQUIFER \| GILLESPIE COUNTY | 5 | 5 | 5 | 5 | 5 | 5 |
| LIVESTOCK | K | EDWARDS-TRINITY-PLATEAU, PECOS VALLEY, AND TRINITY AQUIFERS \| GILLESPIE COUNTY | 511 | 511 | 511 | 511 | 511 | 511 |
| LIVESTOCK | K | ELLENBURGER-SAN SABA AQUIFER \| GILLESPIE COUNTY | 266 | 266 | 266 | 266 | 266 | 266 |
| LIVESTOCK | K | HICKORY AQUIFER \| GILLESPIE COUNTY | 266 | 266 | 266 | 266 | 266 | 266 |
| LIVESTOCK | K | LOCAL SURFACE WATER SUPPLY | 515 | 515 | 515 | 515 | 515 | 515 |
| IRRIGATION | K | EDWARDS-TRINITY-PLATEAU, PECOS VALLEY, AND TRINITY AQUIFERS \| GILLESPIE COUNTY | 1,640 | 1,640 | 1,640 | 1,640 | 1,640 | 1,640 |
| IRRIGATION | K | ELLENBURGER-SAN SABA AQUIFER \| GILLESPIE COUNTY | 652 | 652 | 652 | 652 | 652 | 652 |
| IRRIGATION | K | HICKORY AQUIFER \| GILLESPIE COUNTY | 210 | 210 | 210 | 210 | 210 | 210 |
| | | **COLORADO BASIN TOTAL** | **11,613** | **11,613** | **11,613** | **11,613** | **11,613** | **11,613** |
| COUNTY-OTHER | K | EDWARDS-TRINITY-PLATEAU, PECOS VALLEY, AND TRINITY AQUIFERS \| GILLESPIE COUNTY | 90 | 90 | 90 | 90 | 90 | 90 |
| LIVESTOCK | K | EDWARDS-TRINITY-PLATEAU, PECOS VALLEY, AND TRINITY AQUIFERS \| GILLESPIE COUNTY | 41 | 41 | 41 | 41 | 41 | 41 |
| LIVESTOCK | K | LOCAL SURFACE WATER SUPPLY | 13 | 13 | 13 | 13 | 13 | 13 |
| | | **GUADALUPE BASIN TOTAL** | **144** | **144** | **144** | **144** | **144** | **144** |
| | | **GILLESPIE COUNTY TOTAL** | **11,757** | **11,757** | **11,757** | **11,757** | **11,757** | **11,757** |
| AUSTIN | K | COLORADO RUN-OF-RIVER | 188 | 827 | 1,304 | 2,063 | 3,025 | 4,357 |
| BUDA* | L | CANYON LAKE/RESERVOIR | 1,381 | 1,292 | 1,181 | 1,041 | 882 | 701 |
| BUDA* | L | CARRIZO-WILCOX AQUIFER \| GONZALES COUNTY | 1,120 | 1,120 | 1,120 | 1,120 | 1,120 | 1,120 |
| BUDA* | K | EDWARDS-BFZ AQUIFER \| HAYS COUNTY | 678 | 678 | 678 | 678 | 678 | 678 |
| CIMARRON PARK WATER | K | EDWARDS-BFZ AQUIFER \| HAYS COUNTY | 291 | 291 | 291 | 291 | 291 | 291 |
| DEER CREEK RANCH WATER | K | HIGHLAND LAKES LAKE/RESERVOIR SYSTEM | 125 | 125 | 125 | 125 | 125 | 125 |
| DRIPPING SPRINGS WSC | K | HIGHLAND LAKES LAKE/RESERVOIR SYSTEM | 1,632 | 1,632 | 1,632 | 1,632 | 1,632 | 1,632 |
| DRIPPING SPRINGS WSC | K | TRINITY AQUIFER \| HAYS COUNTY | 1,025 | 1,025 | 1,025 | 1,025 | 1,025 | 1,025 |
| GOFORTH SUD* | L | EDWARDS-BFZ AQUIFER \| HAYS COUNTY | 6 | 7 | 8 | 10 | 10 | 10 |

*A single asterisk next to a WUG's name denotes that the WUG is split by two or more planning regions.

# Region K Water User Group (WUG) Existing Water Supply

| WUG NAME | SOURCE REGION | SOURCE DESCRIPTION | EXISTING SUPPLY (ACRE-FEET PER YEAR) | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | | 2020 | 2030 | 2040 | 2050 | 2060 | 2070 |
| GOFORTH SUD* | L | TRINITY AQUIFER \| HAYS COUNTY | 87 | 76 | 73 | 75 | 77 | 81 |
| HAYS | K | EDWARDS-BFZ AQUIFER \| HAYS COUNTY | 183 | 180 | 180 | 180 | 180 | 180 |
| HAYS COUNTY WCID 1 | K | HIGHLAND LAKES LAKE/RESERVOIR SYSTEM | 821 | 808 | 801 | 798 | 717 | 717 |
| HAYS COUNTY WCID 2 | K | HIGHLAND LAKES LAKE/RESERVOIR SYSTEM | 580 | 593 | 600 | 603 | 684 | 684 |
| WEST TRAVIS COUNTY PUBLIC UTILITY AGENCY | K | DIRECT REUSE | 278 | 278 | 278 | 278 | 278 | 278 |
| WEST TRAVIS COUNTY PUBLIC UTILITY AGENCY | K | HIGHLAND LAKES LAKE/RESERVOIR SYSTEM | 4,349 | 4,349 | 4,349 | 4,349 | 4,349 | 4,349 |
| COUNTY-OTHER* | K | EDWARDS-BFZ AQUIFER \| HAYS COUNTY | 663 | 663 | 663 | 663 | 663 | 663 |
| COUNTY-OTHER* | K | TRINITY AQUIFER \| HAYS COUNTY | 1,654 | 1,654 | 1,654 | 1,654 | 1,654 | 1,654 |
| MANUFACTURING* | K | EDWARDS-BFZ AQUIFER \| HAYS COUNTY | 468 | 468 | 468 | 468 | 468 | 468 |
| MINING | K | TRINITY AQUIFER \| HAYS COUNTY | 314 | 314 | 314 | 314 | 314 | 314 |
| STEAM ELECTRIC POWER | L | CANYON LAKE/RESERVOIR | 1,389 | 1,389 | 1,389 | 1,389 | 1,389 | 1,389 |
| STEAM ELECTRIC POWER | L | DIRECT REUSE | 309 | 309 | 309 | 309 | 309 | 309 |
| LIVESTOCK* | K | LOCAL SURFACE WATER SUPPLY | 220 | 220 | 220 | 220 | 220 | 220 |
| LIVESTOCK* | K | TRINITY AQUIFER \| HAYS COUNTY | 700 | 700 | 700 | 700 | 700 | 700 |
| IRRIGATION* | K | EDWARDS-BFZ AQUIFER \| HAYS COUNTY | 8 | 8 | 8 | 8 | 8 | 8 |
| IRRIGATION* | K | TRINITY AQUIFER \| HAYS COUNTY | 774 | 774 | 774 | 774 | 774 | 774 |
| | | **COLORADO BASIN TOTAL** | **19,243** | **19,780** | **20,144** | **20,767** | **21,572** | **22,727** |
| | | **HAYS COUNTY TOTAL** | **19,243** | **19,780** | **20,144** | **20,767** | **21,572** | **22,727** |
| CORIX UTILITIES TEXAS INC* | K | HIGHLAND LAKES LAKE/RESERVOIR SYSTEM | 262 | 262 | 262 | 262 | 262 | 262 |
| HORSESHOE BAY | K | DIRECT REUSE | 506 | 506 | 506 | 506 | 506 | 506 |
| HORSESHOE BAY | K | HIGHLAND LAKES LAKE/RESERVOIR SYSTEM | 1,827 | 1,827 | 1,827 | 1,827 | 1,827 | 1,827 |
| KINGSLAND WSC | K | HIGHLAND LAKES LAKE/RESERVOIR SYSTEM | 1,086 | 1,086 | 1,086 | 1,086 | 1,086 | 1,086 |
| KINGSLAND WSC | K | OTHER AQUIFER \| LLANO COUNTY | 53 | 53 | 53 | 53 | 53 | 53 |
| LLANO | K | LLANO LAKE/RESERVOIR | 0 | 0 | 0 | 0 | 0 | 0 |
| LLANO | K | LLANO RUN-OF-RIVER | 271 | 271 | 271 | 271 | 271 | 271 |
| SUNRISE BEACH VILLAGE | K | ELLENBURGER-SAN SABA AQUIFER \| LLANO COUNTY | 60 | 60 | 60 | 60 | 60 | 60 |
| SUNRISE BEACH VILLAGE | K | HIGHLAND LAKES LAKE/RESERVOIR SYSTEM | 200 | 200 | 200 | 200 | 200 | 200 |
| COUNTY-OTHER | K | ELLENBURGER-SAN SABA AQUIFER \| LLANO COUNTY | 115 | 115 | 115 | 115 | 115 | 115 |
| COUNTY-OTHER | K | HICKORY AQUIFER \| LLANO COUNTY | 143 | 143 | 143 | 143 | 143 | 143 |
| COUNTY-OTHER | K | HIGHLAND LAKES LAKE/RESERVOIR SYSTEM | 2,272 | 2,272 | 2,272 | 2,272 | 2,272 | 2,272 |
| COUNTY-OTHER | K | OTHER AQUIFER \| LLANO COUNTY | 412 | 412 | 412 | 412 | 412 | 412 |
| MANUFACTURING | K | HICKORY AQUIFER \| LLANO COUNTY | 4 | 4 | 4 | 4 | 4 | 4 |
| MINING | K | ELLENBURGER-SAN SABA AQUIFER \| LLANO COUNTY | 3 | 3 | 3 | 3 | 3 | 3 |
| STEAM ELECTRIC POWER | K | HIGHLAND LAKES LAKE/RESERVOIR SYSTEM | 1,748 | 1,748 | 1,748 | 1,748 | 1,748 | 1,748 |
| LIVESTOCK | K | ELLENBURGER-SAN SABA AQUIFER \| LLANO COUNTY | 20 | 20 | 20 | 20 | 20 | 20 |
| LIVESTOCK | K | HICKORY AQUIFER \| LLANO COUNTY | 179 | 179 | 179 | 179 | 179 | 179 |
| LIVESTOCK | K | LOCAL SURFACE WATER SUPPLY | 414 | 414 | 414 | 414 | 414 | 414 |
| LIVESTOCK | K | OTHER AQUIFER \| LLANO COUNTY | 138 | 138 | 138 | 138 | 138 | 138 |
| IRRIGATION | K | HICKORY AQUIFER \| LLANO COUNTY | 400 | 400 | 400 | 400 | 400 | 400 |
| IRRIGATION | K | HIGHLAND LAKES LAKE/RESERVOIR SYSTEM | 1,514 | 1,514 | 1,514 | 1,514 | 1,514 | 1,514 |
| | | **COLORADO BASIN TOTAL** | **11,627** | **11,627** | **11,627** | **11,627** | **11,627** | **11,627** |
| | | **LLANO COUNTY TOTAL** | **11,627** | **11,627** | **11,627** | **11,627** | **11,627** | **11,627** |
| BAY CITY | K | GULF COAST AQUIFER SYSTEM \| MATAGORDA COUNTY | 2,906 | 2,906 | 2,906 | 2,906 | 2,906 | 2,906 |
| CANEY CREEK MUD OF MATAGORDA COUNTY | K | GULF COAST AQUIFER SYSTEM \| MATAGORDA COUNTY | 1,226 | 1,226 | 1,226 | 1,226 | 1,226 | 1,226 |
| CORIX UTILITIES TEXAS INC* | K | GULF COAST AQUIFER SYSTEM \| MATAGORDA COUNTY | 70 | 70 | 70 | 70 | 70 | 70 |
| MATAGORDA COUNTY WCID 6 | K | GULF COAST AQUIFER SYSTEM \| MATAGORDA COUNTY | 116 | 116 | 116 | 116 | 116 | 116 |

*A single asterisk next to a WUG's name denotes that the WUG is split by two or more planning regions.

# Region K Water User Group (WUG) Existing Water Supply

| WUG NAME | SOURCE REGION | SOURCE DESCRIPTION | EXISTING SUPPLY (ACRE-FEET PER YEAR) 2020 | 2030 | 2040 | 2050 | 2060 | 2070 |
|---|---|---|---|---|---|---|---|---|
| MATAGORDA WASTE DISPOSAL & WSC | K | GULF COAST AQUIFER SYSTEM \| MATAGORDA COUNTY | 55 | 55 | 55 | 55 | 55 | 55 |
| COUNTY-OTHER | K | GULF COAST AQUIFER SYSTEM \| MATAGORDA COUNTY | 544 | 544 | 544 | 544 | 544 | 544 |
| MINING | K | GULF COAST AQUIFER SYSTEM \| MATAGORDA COUNTY | 56 | 56 | 56 | 56 | 56 | 56 |
| LIVESTOCK | K | GULF COAST AQUIFER SYSTEM \| MATAGORDA COUNTY | 280 | 280 | 280 | 280 | 280 | 280 |
| LIVESTOCK | K | LOCAL SURFACE WATER SUPPLY | 329 | 329 | 329 | 329 | 329 | 329 |
| IRRIGATION | K | BRAZOS-COLORADO RUN-OF-RIVER | 4,000 | 4,000 | 4,000 | 4,000 | 4,000 | 4,000 |
| IRRIGATION | K | COLORADO RUN-OF-RIVER | 16,657 | 16,657 | 16,657 | 16,657 | 16,657 | 16,657 |
| IRRIGATION | K | GULF COAST AQUIFER SYSTEM \| MATAGORDA COUNTY | 10,000 | 10,000 | 10,000 | 10,000 | 10,000 | 10,000 |
| | | **BRAZOS-COLORADO BASIN TOTAL** | **36,239** | **36,239** | **36,239** | **36,239** | **36,239** | **36,239** |
| BAY CITY | K | GULF COAST AQUIFER SYSTEM \| MATAGORDA COUNTY | 6 | 6 | 6 | 6 | 6 | 6 |
| CORIX UTILITIES TEXAS INC* | K | GULF COAST AQUIFER SYSTEM \| MATAGORDA COUNTY | 14 | 14 | 14 | 14 | 14 | 14 |
| MATAGORDA WASTE DISPOSAL & WSC | K | GULF COAST AQUIFER SYSTEM \| MATAGORDA COUNTY | 330 | 330 | 330 | 330 | 330 | 330 |
| COUNTY-OTHER | K | GULF COAST AQUIFER SYSTEM \| MATAGORDA COUNTY | 174 | 174 | 174 | 174 | 174 | 174 |
| MANUFACTURING | K | COLORADO RUN-OF-RIVER | 13,803 | 13,803 | 13,803 | 13,803 | 13,803 | 13,803 |
| MANUFACTURING | K | GULF COAST AQUIFER SYSTEM \| MATAGORDA COUNTY | 1,576 | 1,576 | 1,576 | 1,576 | 1,576 | 1,576 |
| MANUFACTURING | K | HIGHLAND LAKES LAKE/RESERVOIR SYSTEM | 3,152 | 3,152 | 3,152 | 3,152 | 3,152 | 3,152 |
| MINING | K | GULF COAST AQUIFER SYSTEM \| MATAGORDA COUNTY | 8 | 8 | 8 | 8 | 8 | 8 |
| STEAM ELECTRIC POWER | K | GULF COAST AQUIFER SYSTEM \| MATAGORDA COUNTY | 3,000 | 3,000 | 3,000 | 3,000 | 3,000 | 3,000 |
| STEAM ELECTRIC POWER | K | STPNOC LAKE/RESERVOIR | 66,260 | 66,260 | 66,260 | 66,260 | 66,260 | 66,260 |
| LIVESTOCK | K | GULF COAST AQUIFER SYSTEM \| MATAGORDA COUNTY | 94 | 94 | 94 | 94 | 94 | 94 |
| IRRIGATION | K | COLORADO RUN-OF-RIVER | 1,209 | 1,209 | 1,209 | 1,209 | 1,209 | 1,209 |
| | | **COLORADO BASIN TOTAL** | **89,626** | **89,626** | **89,626** | **89,626** | **89,626** | **89,626** |
| MARKHAM MUD | K | GULF COAST AQUIFER SYSTEM \| MATAGORDA COUNTY | 116 | 116 | 116 | 116 | 116 | 116 |
| PALACIOS | K | GULF COAST AQUIFER SYSTEM \| MATAGORDA COUNTY | 1,064 | 1,064 | 1,064 | 1,064 | 1,064 | 1,064 |
| COUNTY-OTHER | K | GULF COAST AQUIFER SYSTEM \| MATAGORDA COUNTY | 574 | 574 | 574 | 574 | 574 | 574 |
| MINING | K | GULF COAST AQUIFER SYSTEM \| MATAGORDA COUNTY | 36 | 36 | 36 | 36 | 36 | 36 |
| LIVESTOCK | K | GULF COAST AQUIFER SYSTEM \| MATAGORDA COUNTY | 299 | 299 | 299 | 299 | 299 | 299 |
| LIVESTOCK | K | LOCAL SURFACE WATER SUPPLY | 215 | 215 | 215 | 215 | 215 | 215 |
| IRRIGATION | K | COLORADO RUN-OF-RIVER | 17,500 | 17,500 | 17,500 | 17,500 | 17,500 | 17,500 |
| IRRIGATION | K | COLORADO-LAVACA RUN-OF-RIVER | 4,000 | 4,000 | 4,000 | 4,000 | 4,000 | 4,000 |
| IRRIGATION | K | GULF COAST AQUIFER SYSTEM \| MATAGORDA COUNTY | 15,000 | 15,000 | 15,000 | 15,000 | 15,000 | 15,000 |
| | | **COLORADO-LAVACA BASIN TOTAL** | **38,804** | **38,804** | **38,804** | **38,804** | **38,804** | **38,804** |
| | | **MATAGORDA COUNTY TOTAL** | **164,669** | **164,669** | **164,669** | **164,669** | **164,669** | **164,669** |
| GOLDTHWAITE | K | TRINITY AQUIFER \| MILLS COUNTY | 12 | 12 | 12 | 12 | 12 | 12 |
| COUNTY-OTHER | K | ELLENBURGER-SAN SABA AQUIFER \| MILLS COUNTY | 71 | 71 | 71 | 71 | 71 | 71 |
| COUNTY-OTHER | K | TRINITY AQUIFER \| MILLS COUNTY | 84 | 84 | 84 | 84 | 84 | 84 |
| MINING | K | TRINITY AQUIFER \| MILLS COUNTY | 2 | 2 | 2 | 2 | 2 | 2 |
| LIVESTOCK | K | LOCAL SURFACE WATER SUPPLY | 321 | 321 | 321 | 321 | 321 | 321 |
| IRRIGATION | K | TRINITY AQUIFER \| MILLS COUNTY | 1,251 | 1,251 | 1,251 | 1,251 | 1,251 | 1,251 |
| | | **BRAZOS BASIN TOTAL** | **1,741** | **1,741** | **1,741** | **1,741** | **1,741** | **1,741** |
| BROOKESMITH SUD* | F | BROWNWOOD LAKE/RESERVOIR | 7 | 7 | 7 | 7 | 7 | 7 |
| CORIX UTILITIES TEXAS INC* | K | HIGHLAND LAKES LAKE/RESERVOIR SYSTEM | 13 | 13 | 13 | 13 | 13 | 13 |
| GOLDTHWAITE | K | ELLENBURGER-SAN SABA AQUIFER \| SAN SABA COUNTY | 245 | 245 | 245 | 245 | 245 | 245 |
| GOLDTHWAITE | K | TRINITY AQUIFER \| MILLS COUNTY | 176 | 176 | 176 | 176 | 176 | 176 |
| ZEPHYR WSC* | F | BROWNWOOD LAKE/RESERVOIR | 3 | 3 | 3 | 3 | 3 | 4 |
| COUNTY-OTHER | K | TRINITY AQUIFER \| MILLS COUNTY | 331 | 331 | 331 | 331 | 331 | 331 |
| MANUFACTURING | K | TRINITY AQUIFER \| MILLS COUNTY | 2 | 2 | 2 | 2 | 2 | 2 |

*A single asterisk next to a WUG's name denotes that the WUG is split by two or more planning regions.

# Region K Water User Group (WUG) Existing Water Supply

| WUG NAME | SOURCE REGION | SOURCE DESCRIPTION | EXISTING SUPPLY (ACRE-FEET PER YEAR) 2020 | 2030 | 2040 | 2050 | 2060 | 2070 |
|---|---|---|---|---|---|---|---|---|
| MINING | K | TRINITY AQUIFER \| MILLS COUNTY | 2 | 2 | 2 | 2 | 2 | 2 |
| LIVESTOCK | K | ELLENBURGER-SAN SABA AQUIFER \| MILLS COUNTY | 89 | 89 | 89 | 89 | 89 | 89 |
| LIVESTOCK | K | LOCAL SURFACE WATER SUPPLY | 360 | 360 | 360 | 360 | 360 | 360 |
| LIVESTOCK | K | TRINITY AQUIFER \| MILLS COUNTY | 161 | 161 | 161 | 161 | 161 | 161 |
| IRRIGATION | K | COLORADO RUN-OF-RIVER | 2,378 | 2,378 | 2,378 | 2,378 | 2,378 | 2,378 |
| | | **COLORADO BASIN TOTAL** | **3,767** | **3,767** | **3,767** | **3,767** | **3,767** | **3,768** |
| | | **MILLS COUNTY TOTAL** | **5,508** | **5,508** | **5,508** | **5,508** | **5,508** | **5,509** |
| CORIX UTILITIES TEXAS INC* | K | HIGHLAND LAKES LAKE/RESERVOIR SYSTEM | 15 | 15 | 15 | 15 | 15 | 15 |
| NORTH SAN SABA WSC | K | ELLENBURGER-SAN SABA AQUIFER \| SAN SABA COUNTY | 195 | 195 | 195 | 195 | 195 | 195 |
| RICHLAND SUD* | K | ELLENBURGER-SAN SABA AQUIFER \| SAN SABA COUNTY | 150 | 150 | 150 | 148 | 150 | 151 |
| RICHLAND SUD* | K | MARBLE FALLS AQUIFER \| SAN SABA COUNTY | 150 | 150 | 150 | 148 | 150 | 151 |
| SAN SABA | K | COLORADO RUN-OF-RIVER | 0 | 0 | 0 | 0 | 0 | 0 |
| SAN SABA | K | ELLENBURGER-SAN SABA AQUIFER \| SAN SABA COUNTY | 1,246 | 1,246 | 1,246 | 1,246 | 1,246 | 1,246 |
| COUNTY-OTHER | K | ELLENBURGER-SAN SABA AQUIFER \| SAN SABA COUNTY | 120 | 120 | 120 | 120 | 120 | 120 |
| COUNTY-OTHER | K | HICKORY AQUIFER \| SAN SABA COUNTY | 80 | 80 | 80 | 80 | 80 | 80 |
| COUNTY-OTHER | K | HIGHLAND LAKES LAKE/RESERVOIR SYSTEM | 20 | 20 | 20 | 20 | 20 | 20 |
| COUNTY-OTHER | K | MARBLE FALLS AQUIFER \| SAN SABA COUNTY | 24 | 24 | 24 | 24 | 24 | 24 |
| MANUFACTURING | K | MARBLE FALLS AQUIFER \| SAN SABA COUNTY | 12 | 12 | 12 | 12 | 12 | 12 |
| MINING | K | HICKORY AQUIFER \| SAN SABA COUNTY | 301 | 301 | 301 | 301 | 301 | 301 |
| MINING | K | MARBLE FALLS AQUIFER \| SAN SABA COUNTY | 1,238 | 1,238 | 1,238 | 1,238 | 1,238 | 1,238 |
| LIVESTOCK | K | ELLENBURGER-SAN SABA AQUIFER \| SAN SABA COUNTY | 198 | 198 | 198 | 198 | 198 | 198 |
| LIVESTOCK | K | HICKORY AQUIFER \| SAN SABA COUNTY | 111 | 111 | 111 | 111 | 111 | 111 |
| LIVESTOCK | K | LOCAL SURFACE WATER SUPPLY | 900 | 900 | 900 | 900 | 900 | 900 |
| LIVESTOCK | K | MARBLE FALLS AQUIFER \| SAN SABA COUNTY | 9 | 9 | 9 | 9 | 9 | 9 |
| IRRIGATION | K | COLORADO RUN-OF-RIVER | 3,300 | 3,300 | 3,300 | 3,300 | 3,300 | 3,300 |
| IRRIGATION | K | ELLENBURGER-SAN SABA AQUIFER \| SAN SABA COUNTY | 3,045 | 3,045 | 3,045 | 3,045 | 3,045 | 3,045 |
| IRRIGATION | K | HICKORY AQUIFER \| SAN SABA COUNTY | 877 | 877 | 877 | 877 | 877 | 877 |
| | | **COLORADO BASIN TOTAL** | **11,991** | **11,991** | **11,991** | **11,987** | **11,991** | **11,993** |
| | | **SAN SABA COUNTY TOTAL** | **11,991** | **11,991** | **11,991** | **11,987** | **11,991** | **11,993** |
| AQUA WSC* | K | CARRIZO-WILCOX AQUIFER \| BASTROP COUNTY | 1,088 | 1,226 | 1,362 | 1,524 | 1,671 | 1,809 |
| AUSTIN | K | COLORADO RUN-OF-RIVER | 165,981 | 160,981 | 170,904 | 167,135 | 163,267 | 158,745 |
| AUSTIN | K | DIRECT REUSE | 2,691 | 2,391 | 2,391 | 2,391 | 2,391 | 2,391 |
| AUSTIN | K | HIGHLAND LAKES LAKE/RESERVOIR SYSTEM | 123,607 | 123,607 | 123,607 | 123,607 | 123,607 | 123,607 |
| BARTON CREEK WEST WSC | K | HIGHLAND LAKES LAKE/RESERVOIR SYSTEM | 440 | 440 | 440 | 440 | 440 | 440 |
| BARTON CREEK WSC | K | HIGHLAND LAKES LAKE/RESERVOIR SYSTEM | 307 | 307 | 307 | 307 | 307 | 307 |
| BRIARCLIFF | K | HIGHLAND LAKES LAKE/RESERVOIR SYSTEM | 400 | 400 | 400 | 400 | 400 | 400 |
| CEDAR PARK* | K | HIGHLAND LAKES LAKE/RESERVOIR SYSTEM | 1,638 | 1,574 | 1,822 | 1,888 | 1,887 | 1,887 |
| COTTONWOOD CREEK MUD 1 | G | CARRIZO-WILCOX AQUIFER \| BURLESON COUNTY | 95 | 107 | 120 | 129 | 138 | 148 |
| CREEDMOOR-MAHA WSC* | K | COLORADO RUN-OF-RIVER | 839 | 839 | 0 | 0 | 0 | 0 |
| CREEDMOOR-MAHA WSC* | K | EDWARDS-BFZ AQUIFER \| TRAVIS COUNTY | 318 | 296 | 273 | 245 | 216 | 187 |
| CYPRESS RANCH WCID 1 | K | HIGHLAND LAKES LAKE/RESERVOIR SYSTEM | 1 | 1 | 1 | 1 | 1 | 1 |
| CYPRESS RANCH WCID 1 | K | TRINITY AQUIFER \| TRAVIS COUNTY | 222 | 222 | 222 | 222 | 222 | 222 |
| DEER CREEK RANCH WATER | K | HIGHLAND LAKES LAKE/RESERVOIR SYSTEM | 125 | 125 | 125 | 125 | 125 | 125 |
| ELGIN | K | CARRIZO-WILCOX AQUIFER \| BASTROP COUNTY | 255 | 357 | 453 | 563 | 662 | 754 |
| GARFIELD WSC | K | TRINITY AQUIFER \| TRAVIS COUNTY | 260 | 260 | 260 | 260 | 260 | 260 |
| HORNSBY BEND UTILITY | G | CARRIZO-WILCOX AQUIFER \| BURLESON COUNTY | 944 | 944 | 944 | 944 | 944 | 944 |
| HURST CREEK MUD | K | DIRECT REUSE | 106 | 106 | 106 | 106 | 106 | 106 |
| HURST CREEK MUD | K | HIGHLAND LAKES LAKE/RESERVOIR SYSTEM | 1,600 | 1,600 | 1,600 | 1,600 | 1,600 | 1,600 |

*A single asterisk next to a WUG's name denotes that the WUG is split by two or more planning regions.

# Region K Water User Group (WUG) Existing Water Supply

| WUG NAME | SOURCE REGION | SOURCE DESCRIPTION | EXISTING SUPPLY (ACRE-FEET PER YEAR) | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | | 2020 | 2030 | 2040 | 2050 | 2060 | 2070 |
| JONESTOWN WSC | K | HIGHLAND LAKES LAKE/RESERVOIR SYSTEM | 750 | 750 | 750 | 750 | 750 | 750 |
| KELLY LANE WCID 1 | K | TRINITY AQUIFER \| TRAVIS COUNTY | 388 | 388 | 388 | 388 | 388 | 388 |
| LAGO VISTA | K | DIRECT REUSE | 415 | 415 | 415 | 415 | 415 | 415 |
| LAGO VISTA | K | HIGHLAND LAKES LAKE/RESERVOIR SYSTEM | 3,451 | 3,451 | 3,451 | 3,451 | 3,451 | 3,451 |
| LAKEWAY MUD | K | HIGHLAND LAKES LAKE/RESERVOIR SYSTEM | 3,069 | 3,069 | 3,069 | 3,069 | 3,069 | 3,069 |
| LEANDER* | K | HIGHLAND LAKES LAKE/RESERVOIR SYSTEM | 1,202 | 1,684 | 1,738 | 1,269 | 1,079 | 941 |
| LOOP 360 WSC | K | HIGHLAND LAKES LAKE/RESERVOIR SYSTEM | 1,250 | 1,250 | 1,250 | 1,250 | 1,250 | 1,250 |
| MANOR | G | CARRIZO-WILCOX AQUIFER \| BURLESON COUNTY | 404 | 504 | 996 | 1,329 | 1,810 | 1,873 |
| MANOR | K | COLORADO RUN-OF-RIVER | 1,680 | 1,680 | 0 | 0 | 0 | 0 |
| MANOR | K | EDWARDS-BFZ AQUIFER \| TRAVIS COUNTY | 10 | 10 | 10 | 10 | 10 | 10 |
| MANOR | K | OTHER AQUIFER \| TRAVIS COUNTY | 679 | 679 | 679 | 679 | 679 | 679 |
| MANOR | K | TRINITY AQUIFER \| TRAVIS COUNTY | 547 | 547 | 547 | 547 | 547 | 547 |
| MANVILLE WSC* | G | CARRIZO-WILCOX AQUIFER \| BURLESON COUNTY | 213 | 268 | 315 | 355 | 368 | 354 |
| MANVILLE WSC* | G | CARRIZO-WILCOX AQUIFER \| LEE COUNTY | 1,478 | 1,504 | 1,486 | 1,460 | 918 | 208 |
| MANVILLE WSC* | K | EDWARDS-BFZ AQUIFER \| TRAVIS COUNTY | 325 | 324 | 320 | 317 | 313 | 308 |
| MANVILLE WSC* | K | HIGHLAND LAKES LAKE/RESERVOIR SYSTEM | 1,929 | 1,932 | 1,930 | 1,927 | 1,920 | 1,910 |
| MANVILLE WSC* | G | OTHER AQUIFER \| WILLIAMSON COUNTY | 152 | 153 | 152 | 150 | 146 | 141 |
| MANVILLE WSC* | K | TRINITY AQUIFER \| TRAVIS COUNTY | 375 | 373 | 367 | 362 | 355 | 349 |
| NORTH AUSTIN MUD 1 | K | COLORADO RUN-OF-RIVER | 81 | 78 | 0 | 0 | 0 | 0 |
| NORTHTOWN MUD | K | COLORADO RUN-OF-RIVER | 728 | 841 | 0 | 0 | 0 | 0 |
| OAK SHORES WATER SYSTEM | K | HIGHLAND LAKES LAKE/RESERVOIR SYSTEM | 203 | 203 | 203 | 203 | 203 | 203 |
| OAK SHORES WATER SYSTEM | K | TRINITY AQUIFER \| TRAVIS COUNTY | 82 | 82 | 82 | 82 | 82 | 82 |
| PFLUGERVILLE* | K | EDWARDS-BFZ AQUIFER \| TRAVIS COUNTY | 2,531 | 2,531 | 2,530 | 2,530 | 2,529 | 2,526 |
| PFLUGERVILLE* | K | HIGHLAND LAKES LAKE/RESERVOIR SYSTEM | 9,513 | 9,498 | 9,479 | 9,458 | 9,435 | 9,410 |
| ROLLINGWOOD | K | COLORADO RUN-OF-RIVER | 1,120 | 1,120 | 0 | 0 | 0 | 0 |
| ROUGH HOLLOW IN TRAVIS COUNTY | K | HIGHLAND LAKES LAKE/RESERVOIR SYSTEM | 1,795 | 1,795 | 1,795 | 1,795 | 1,795 | 1,795 |
| ROUND ROCK* | K | HIGHLAND LAKES LAKE/RESERVOIR SYSTEM | 278 | 315 | 352 | 395 | 434 | 470 |
| SENNA HILLS MUD | K | HIGHLAND LAKES LAKE/RESERVOIR SYSTEM | 404 | 404 | 404 | 404 | 404 | 404 |
| SHADY HOLLOW MUD | K | COLORADO RUN-OF-RIVER | 793 | 775 | 759 | 750 | 749 | 749 |
| SUNSET VALLEY | K | COLORADO RUN-OF-RIVER | 716 | 716 | 0 | 0 | 0 | 0 |
| SUNSET VALLEY | K | EDWARDS-BFZ AQUIFER \| TRAVIS COUNTY | 40 | 40 | 40 | 40 | 40 | 40 |
| SWEETWATER COMMUNITY | K | HIGHLAND LAKES LAKE/RESERVOIR SYSTEM | 1,514 | 1,514 | 1,514 | 1,514 | 1,514 | 1,514 |
| TRAVIS COUNTY MUD 10 | K | HIGHLAND LAKES LAKE/RESERVOIR SYSTEM | 96 | 96 | 96 | 96 | 96 | 96 |
| TRAVIS COUNTY MUD 14 | K | CARRIZO-WILCOX AQUIFER \| BASTROP COUNTY | 224 | 224 | 224 | 224 | 224 | 224 |
| TRAVIS COUNTY MUD 2 | G | CARRIZO-WILCOX AQUIFER \| BURLESON COUNTY | 322 | 322 | 322 | 322 | 322 | 322 |
| TRAVIS COUNTY MUD 2 | K | TRINITY AQUIFER \| TRAVIS COUNTY | 218 | 218 | 218 | 218 | 218 | 218 |
| TRAVIS COUNTY MUD 4 | K | HIGHLAND LAKES LAKE/RESERVOIR SYSTEM | 3,560 | 3,562 | 3,564 | 3,565 | 3,565 | 3,565 |
| TRAVIS COUNTY WCID 10 | K | COLORADO RUN-OF-RIVER | 3,360 | 3,360 | 0 | 0 | 0 | 0 |
| TRAVIS COUNTY WCID 17 | K | DIRECT REUSE | 1,205 | 1,205 | 1,205 | 1,205 | 1,205 | 1,205 |
| TRAVIS COUNTY WCID 17 | K | HIGHLAND LAKES LAKE/RESERVOIR SYSTEM | 8,800 | 8,800 | 8,800 | 8,800 | 8,800 | 8,800 |
| TRAVIS COUNTY WCID 18 | K | HIGHLAND LAKES LAKE/RESERVOIR SYSTEM | 1,400 | 1,400 | 1,400 | 1,400 | 1,400 | 1,400 |
| TRAVIS COUNTY WCID 19 | K | HIGHLAND LAKES LAKE/RESERVOIR SYSTEM | 449 | 447 | 445 | 444 | 444 | 444 |
| TRAVIS COUNTY WCID 20 | K | HIGHLAND LAKES LAKE/RESERVOIR SYSTEM | 1,135 | 1,135 | 1,135 | 1,135 | 1,135 | 1,135 |
| TRAVIS COUNTY WCID POINT VENTURE | K | HIGHLAND LAKES LAKE/RESERVOIR SYSTEM | 285 | 285 | 285 | 285 | 285 | 285 |
| WELLS BRANCH MUD | K | COLORADO RUN-OF-RIVER | 1,397 | 1,352 | 0 | 0 | 0 | 0 |
| WEST TRAVIS COUNTY PUBLIC UTILITY AGENCY | K | DIRECT REUSE | 414 | 414 | 414 | 414 | 414 | 414 |

*A single asterisk next to a WUG's name denotes that the WUG is split by two or more planning regions.

## Region K Water User Group (WUG) Existing Water Supply

| WUG NAME | SOURCE REGION | SOURCE DESCRIPTION | EXISTING SUPPLY (ACRE-FEET PER YEAR) | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | | 2020 | 2030 | 2040 | 2050 | 2060 | 2070 |
| WEST TRAVIS COUNTY PUBLIC UTILITY AGENCY | K | HIGHLAND LAKES LAKE/RESERVOIR SYSTEM | 4,500 | 4,500 | 4,500 | 4,500 | 4,500 | 4,500 |
| WILLIAMSON COUNTY WSID 3* | G | CARRIZO-WILCOX AQUIFER \| LEE COUNTY | 111 | 130 | 125 | 121 | 117 | 114 |
| WILLIAMSON COUNTY WSID 3* | K | TRINITY AQUIFER \| TRAVIS COUNTY | 29 | 35 | 33 | 32 | 31 | 30 |
| WILLIAMSON TRAVIS COUNTIES MUD 1* | K | HIGHLAND LAKES LAKE/RESERVOIR SYSTEM | 201 | 201 | 201 | 202 | 201 | 202 |
| WINDERMERE UTILITY | K | COLORADO RUN-OF-RIVER | 2,240 | 2,240 | 0 | 0 | 0 | 0 |
| WINDERMERE UTILITY | K | EDWARDS-BFZ AQUIFER \| TRAVIS COUNTY | 1,062 | 1,062 | 1,062 | 1,062 | 1,062 | 1,062 |
| WINDERMERE UTILITY | K | HIGHLAND LAKES LAKE/RESERVOIR SYSTEM | 307 | 307 | 307 | 307 | 307 | 307 |
| COUNTY-OTHER \| AQUA TEXAS - RIVERCREST | K | HIGHLAND LAKES LAKE/RESERVOIR SYSTEM | 467 | 467 | 467 | 467 | 467 | 467 |
| COUNTY-OTHER | G | CARRIZO-WILCOX AQUIFER \| BURLESON COUNTY | 299 | 287 | 274 | 265 | 256 | 246 |
| COUNTY-OTHER | K | HIGHLAND LAKES LAKE/RESERVOIR SYSTEM | 6,681 | 6,681 | 6,681 | 6,681 | 6,681 | 6,681 |
| COUNTY-OTHER | K | TRINITY AQUIFER \| TRAVIS COUNTY | 4,451 | 4,451 | 4,451 | 4,451 | 4,451 | 4,451 |
| MANUFACTURING | K | COLORADO RUN-OF-RIVER | 10,542 | 11,931 | 12,217 | 12,673 | 12,673 | 12,673 |
| MANUFACTURING | K | DIRECT REUSE | 1,880 | 2,180 | 2,180 | 2,180 | 2,180 | 2,180 |
| MANUFACTURING | K | EDWARDS-BFZ AQUIFER \| TRAVIS COUNTY | 666 | 666 | 666 | 666 | 666 | 666 |
| MANUFACTURING | K | HIGHLAND LAKES LAKE/RESERVOIR SYSTEM | 76 | 76 | 76 | 76 | 76 | 76 |
| MINING | K | LOCAL SURFACE WATER SUPPLY | 2,230 | 2,830 | 3,477 | 4,083 | 4,749 | 5,512 |
| MINING | K | TRINITY AQUIFER \| TRAVIS COUNTY | 1,237 | 1,237 | 1,237 | 1,237 | 1,237 | 1,237 |
| STEAM ELECTRIC POWER | K | COLORADO RUN-OF-RIVER | 9,240 | 9,240 | 9,240 | 9,240 | 9,240 | 9,240 |
| STEAM ELECTRIC POWER | K | HIGHLAND LAKES LAKE/RESERVOIR SYSTEM | 5,153 | 5,153 | 5,153 | 5,153 | 5,153 | 5,153 |
| LIVESTOCK | K | LOCAL SURFACE WATER SUPPLY | 463 | 463 | 463 | 463 | 463 | 463 |
| LIVESTOCK | K | TRINITY AQUIFER \| TRAVIS COUNTY | 46 | 46 | 46 | 46 | 46 | 46 |
| IRRIGATION | K | EDWARDS-BFZ AQUIFER \| TRAVIS COUNTY | 150 | 150 | 150 | 150 | 150 | 150 |
| IRRIGATION | K | HIGHLAND LAKES LAKE/RESERVOIR SYSTEM | 4,018 | 4,018 | 4,018 | 4,018 | 4,018 | 4,018 |
| IRRIGATION | K | LOCAL SURFACE WATER SUPPLY | 756 | 756 | 756 | 756 | 756 | 756 |
| IRRIGATION | K | TRINITY AQUIFER \| TRAVIS COUNTY | 800 | 800 | 800 | 800 | 800 | 800 |
| | | **COLORADO BASIN TOTAL** | **419,502** | **417,403** | **417,046** | **414,523** | **411,285** | **406,907** |
| CREEDMOOR-MAHA WSC* | K | EDWARDS-BFZ AQUIFER \| TRAVIS COUNTY | 60 | 60 | 60 | 60 | 60 | 60 |
| GOFORTH SUD* | L | EDWARDS-BFZ AQUIFER \| HAYS COUNTY | 1 | 1 | 1 | 0 | 0 | 0 |
| GOFORTH SUD* | L | TRINITY AQUIFER \| HAYS COUNTY | 5 | 5 | 5 | 5 | 5 | 5 |
| COUNTY-OTHER | K | OTHER AQUIFER \| TRAVIS COUNTY | 112 | 112 | 112 | 112 | 112 | 112 |
| MINING | K | LOCAL SURFACE WATER SUPPLY | 35 | 41 | 48 | 54 | 60 | 68 |
| LIVESTOCK | K | LOCAL SURFACE WATER SUPPLY | 18 | 18 | 18 | 18 | 18 | 18 |
| | | **GUADALUPE BASIN TOTAL** | **231** | **237** | **244** | **249** | **255** | **263** |
| | | **TRAVIS COUNTY TOTAL** | **419,733** | **417,640** | **417,290** | **414,772** | **411,540** | **407,170** |
| BOLING MWD | K | GULF COAST AQUIFER SYSTEM \| WHARTON COUNTY | 156 | 156 | 156 | 156 | 156 | 156 |
| WHARTON | K | GULF COAST AQUIFER SYSTEM \| WHARTON COUNTY | 1,112 | 1,086 | 1,066 | 1,041 | 1,014 | 988 |
| WHARTON COUNTY WCID 2 | K | GULF COAST AQUIFER SYSTEM \| WHARTON COUNTY | 1,218 | 1,218 | 1,218 | 1,218 | 1,218 | 1,218 |
| COUNTY-OTHER* | K | GULF COAST AQUIFER SYSTEM \| WHARTON COUNTY | 1,164 | 1,164 | 1,164 | 1,164 | 1,164 | 1,164 |
| MANUFACTURING* | K | GULF COAST AQUIFER SYSTEM \| WHARTON COUNTY | 69 | 69 | 69 | 69 | 69 | 69 |
| MINING* | K | GULF COAST AQUIFER SYSTEM \| WHARTON COUNTY | 41 | 41 | 41 | 41 | 41 | 41 |
| STEAM ELECTRIC POWER* | K | GULF COAST AQUIFER SYSTEM \| WHARTON COUNTY | 1 | 1 | 1 | 1 | 1 | 1 |
| LIVESTOCK* | K | GULF COAST AQUIFER SYSTEM \| WHARTON COUNTY | 302 | 302 | 302 | 302 | 302 | 302 |
| LIVESTOCK* | K | LOCAL SURFACE WATER SUPPLY | 149 | 149 | 149 | 149 | 149 | 149 |
| IRRIGATION* | K | BRAZOS-COLORADO RUN-OF-RIVER | 1,900 | 1,900 | 1,900 | 1,900 | 1,900 | 1,900 |
| IRRIGATION* | K | COLORADO RUN-OF-RIVER | 14,751 | 14,751 | 14,751 | 14,751 | 14,751 | 14,751 |
| IRRIGATION* | K | GULF COAST AQUIFER SYSTEM \| WHARTON COUNTY | 38,091 | 38,091 | 38,091 | 38,091 | 38,091 | 38,091 |

*A single asterisk next to a WUG's name denotes that the WUG is split by two or more planning regions.

## Region K Water User Group (WUG) Existing Water Supply

| WUG NAME | SOURCE REGION | SOURCE DESCRIPTION | EXISTING SUPPLY (ACRE-FEET PER YEAR) | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | | 2020 | 2030 | 2040 | 2050 | 2060 | 2070 |
| | | **BRAZOS-COLORADO BASIN TOTAL** | **58,954** | **58,928** | **58,908** | **58,883** | **58,856** | **58,830** |
| EL CAMPO* | P | GULF COAST AQUIFER SYSTEM \| WHARTON COUNTY | 6 | 6 | 6 | 6 | 6 | 6 |
| WHARTON | K | GULF COAST AQUIFER SYSTEM \| WHARTON COUNTY | 756 | 782 | 802 | 827 | 854 | 880 |
| COUNTY-OTHER* | K | GULF COAST AQUIFER SYSTEM \| WHARTON COUNTY | 600 | 600 | 600 | 600 | 600 | 600 |
| COUNTY-OTHER* | P | GULF COAST AQUIFER SYSTEM \| WHARTON COUNTY | 57 | 57 | 57 | 57 | 57 | 57 |
| MANUFACTURING* | K | GULF COAST AQUIFER SYSTEM \| WHARTON COUNTY | 102 | 102 | 102 | 102 | 102 | 102 |
| MINING* | K | GULF COAST AQUIFER SYSTEM \| WHARTON COUNTY | 27 | 27 | 27 | 27 | 27 | 27 |
| STEAM ELECTRIC POWER* | K | GULF COAST AQUIFER SYSTEM \| WHARTON COUNTY | 7,900 | 7,900 | 7,900 | 7,900 | 7,900 | 7,900 |
| LIVESTOCK* | K | GULF COAST AQUIFER SYSTEM \| WHARTON COUNTY | 206 | 206 | 206 | 206 | 206 | 206 |
| LIVESTOCK* | K | LOCAL SURFACE WATER SUPPLY | 115 | 115 | 115 | 115 | 115 | 115 |
| IRRIGATION* | K | COLORADO RUN-OF-RIVER | 16,786 | 16,786 | 16,786 | 16,786 | 16,786 | 16,786 |
| IRRIGATION* | K | GULF COAST AQUIFER SYSTEM \| WHARTON COUNTY | 25,558 | 25,558 | 25,558 | 25,558 | 25,558 | 25,558 |
| | | **COLORADO BASIN TOTAL** | **52,113** | **52,139** | **52,159** | **52,184** | **52,211** | **52,237** |
| COUNTY-OTHER* | K | GULF COAST AQUIFER SYSTEM \| WHARTON COUNTY | 231 | 231 | 231 | 231 | 231 | 231 |
| MINING* | K | GULF COAST AQUIFER SYSTEM \| WHARTON COUNTY | 6 | 6 | 6 | 6 | 6 | 6 |
| LIVESTOCK* | K | GULF COAST AQUIFER SYSTEM \| WHARTON COUNTY | 107 | 107 | 107 | 107 | 107 | 107 |
| LIVESTOCK* | K | LOCAL SURFACE WATER SUPPLY | 74 | 74 | 74 | 74 | 74 | 74 |
| IRRIGATION* | K | COLORADO RUN-OF-RIVER | 2,350 | 2,350 | 2,350 | 2,350 | 2,350 | 2,350 |
| IRRIGATION* | K | GULF COAST AQUIFER SYSTEM \| WHARTON COUNTY | 14,587 | 14,587 | 14,587 | 14,587 | 14,587 | 14,587 |
| | | **COLORADO-LAVACA BASIN TOTAL** | **17,355** | **17,355** | **17,355** | **17,355** | **17,355** | **17,355** |
| COUNTY-OTHER* | K | GULF COAST AQUIFER SYSTEM \| WHARTON COUNTY | 231 | 231 | 231 | 231 | 231 | 231 |
| | | **LAVACA BASIN TOTAL** | **231** | **231** | **231** | **231** | **231** | **231** |
| | | **WHARTON COUNTY TOTAL** | **128,653** | **128,653** | **128,653** | **128,653** | **128,653** | **128,653** |
| AUSTIN | K | COLORADO RUN-OF-RIVER | 10,787 | 13,742 | 16,122 | 18,685 | 21,592 | 24,782 |
| NORTH AUSTIN MUD 1 | K | COLORADO RUN-OF-RIVER | 774 | 747 | 0 | 0 | 0 | 0 |
| WELLS BRANCH MUD | K | COLORADO RUN-OF-RIVER | 80 | 77 | 0 | 0 | 0 | 0 |
| COUNTY-OTHER* | K | COLORADO RUN-OF-RIVER | 87 | 87 | 87 | 87 | 87 | 87 |
| COUNTY-OTHER* | K | EDWARDS-BFZ AQUIFER \| WILLIAMSON COUNTY | 6 | 6 | 6 | 6 | 6 | 6 |
| MANUFACTURING* | K | TRINITY AQUIFER \| WILLIAMSON COUNTY | 30 | 30 | 30 | 30 | 30 | 30 |
| MINING* | K | TRINITY AQUIFER \| WILLIAMSON COUNTY | 5 | 5 | 5 | 5 | 5 | 5 |
| | | **BRAZOS BASIN TOTAL** | **11,769** | **14,694** | **16,250** | **18,813** | **21,720** | **24,910** |
| | | **WILLIAMSON COUNTY TOTAL** | **11,769** | **14,694** | **16,250** | **18,813** | **21,720** | **24,910** |
| | | **REGION K EXISTING WATER SUPPLY TOTAL** | **1,042,135** | **1,044,354** | **1,047,428** | **1,050,341** | **1,049,931** | **1,049,975** |

*A single asterisk next to a WUG's name denotes that the WUG is split by two or more planning regions.

# Region K Water User Group (WUG) Needs/Surplus

WUG supplies and projected demands are entered for each of a WUG's region-county-basin divisions. The needs shown in the WUG Needs/Surplus report are calculated by first deducting the WUG split's projected demand from its total existing water supply volume. If the WUG split has a greater existing supply volume than projected demand in any given decade, this amount is considered a surplus volume. Surplus volumes are shown as positive values, and needs are shown as negative values in parentheses.

| | (NEEDS)/SURPLUS (ACRE-FEET PER YEAR) | | | | | |
|---|---|---|---|---|---|---|
| | 2020 | 2030 | 2040 | 2050 | 2060 | 2070 |
| **BASTROP COUNTY - BRAZOS BASIN** | | | | | | |
| AQUA WSC* | 0 | 0 | 0 | 0 | 0 | 0 |
| LEE COUNTY WSC* | 132 | 141 | 164 | 197 | 234 | 274 |
| COUNTY-OTHER | 12 | 11 | 10 | 7 | 4 | 0 |
| MINING | 277 | 41 | 0 | 90 | 5 | 0 |
| LIVESTOCK | 24 | 24 | 24 | 24 | 24 | 24 |
| IRRIGATION | 7 | 5 | 4 | 2 | 0 | 0 |
| **BASTROP COUNTY - COLORADO BASIN** | | | | | | |
| AQUA WSC* | (224) | (2,788) | (5,698) | (9,228) | (16,703) | (26,087) |
| BASTROP | 712 | 49 | (832) | (2,045) | (3,700) | (5,902) |
| BASTROP COUNTY WCID 2 | 759 | 636 | 416 | 141 | (442) | (1,178) |
| CREEDMOOR-MAHA WSC* | 143 | 142 | 142 | 142 | 141 | 141 |
| ELGIN | 0 | 0 | 0 | (534) | (1,545) | (2,853) |
| LEE COUNTY WSC* | 177 | 194 | 224 | 268 | 318 | 372 |
| POLONIA WSC* | 52 | 48 | 46 | 44 | 42 | 38 |
| SMITHVILLE | 643 | 584 | 398 | 187 | (503) | (1,348) |
| COUNTY-OTHER | 0 | 0 | 0 | 0 | 0 | 0 |
| MANUFACTURING | 27 | 0 | 0 | 0 | 0 | 0 |
| MINING | (449) | (3,947) | (4,557) | (3,220) | 1,764 | 1,696 |
| STEAM ELECTRIC POWER | 0 | 0 | 0 | 0 | 0 | 0 |
| LIVESTOCK | 0 | 0 | 0 | 0 | 0 | 0 |
| IRRIGATION | 74 | 69 | 47 | 24 | 0 | 0 |
| **BASTROP COUNTY - GUADALUPE BASIN** | | | | | | |
| AQUA WSC* | 0 | 0 | 0 | 0 | 0 | 0 |
| COUNTY-OTHER | 0 | 0 | 0 | 0 | 0 | 0 |
| MINING | (2) | (243) | (308) | (233) | 44 | 24 |
| LIVESTOCK | 18 | 18 | 18 | 18 | 18 | 18 |
| IRRIGATION | 0 | 5 | 10 | 17 | 24 | 24 |
| **BLANCO COUNTY - COLORADO BASIN** | | | | | | |
| JOHNSON CITY | 47 | (11) | (43) | (60) | (73) | (80) |
| COUNTY-OTHER | 263 | 186 | 151 | 141 | 138 | 143 |
| MINING | 0 | 0 | 0 | 0 | 0 | 0 |
| LIVESTOCK | 262 | 262 | 262 | 262 | 262 | 262 |
| IRRIGATION | 45 | 45 | 45 | 45 | 45 | 45 |
| **BLANCO COUNTY - GUADALUPE BASIN** | | | | | | |
| BLANCO | 747 | 698 | 670 | 656 | 645 | 638 |
| CANYON LAKE WATER SERVICE* | 142 | 119 | 89 | 58 | 28 | (2) |
| COUNTY-OTHER | 242 | 184 | 157 | 150 | 148 | 151 |
| LIVESTOCK | 73 | 73 | 73 | 73 | 73 | 73 |
| IRRIGATION | 26 | 26 | 26 | 26 | 26 | 26 |
| **BURNET COUNTY - BRAZOS BASIN** | | | | | | |
| BERTRAM | (60) | (141) | (211) | (279) | (340) | (394) |
| BURNET | 7 | 6 | 5 | 4 | 3 | 2 |
| GEORGETOWN* | 0 | 0 | 0 | 0 | 0 | 0 |

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# Region K Water User Group (WUG) Needs/Surplus

| | | | | | | |
|---|---|---|---|---|---|---|
| KEMPNER WSC* | 0 | 0 | 0 | 0 | 0 | 0 |
| COUNTY-OTHER | 350 | 212 | 214 | 79 | (49) | (162) |
| MINING | 576 | 345 | 104 | (116) | (368) | (655) |
| LIVESTOCK | 0 | 0 | 0 | 0 | 0 | 0 |
| IRRIGATION | 270 | 270 | 270 | 270 | 270 | 270 |
| **BURNET COUNTY - COLORADO BASIN** | | | | | | |
| BURNET | 2,979 | 2,665 | 2,398 | 2,137 | 1,902 | 1,696 |
| CORIX UTILITIES TEXAS INC* | 172 | 149 | 130 | 111 | 94 | 78 |
| COTTONWOOD SHORES | 250 | 204 | 165 | 127 | 93 | 62 |
| GRANITE SHOALS | 252 | 184 | 129 | 65 | (47) | (222) |
| HORSESHOE BAY | (67) | (286) | (471) | (647) | (804) | (940) |
| KINGSLAND WSC | 35 | 26 | 19 | 12 | 6 | 0 |
| MARBLE FALLS | 2,326 | 1,280 | (204) | (981) | (1,504) | (1,766) |
| MEADOWLAKES | (285) | (276) | (271) | (269) | (268) | (268) |
| COUNTY-OTHER | 3,179 | 2,933 | 2,937 | 2,697 | 2,468 | 2,267 |
| MANUFACTURING | 261 | 213 | 213 | 213 | 213 | 213 |
| MINING | (935) | (1,626) | (2,352) | (3,008) | (3,764) | (4,626) |
| LIVESTOCK | 0 | 0 | 0 | 0 | 0 | 0 |
| IRRIGATION | 63 | 63 | 63 | 63 | 63 | 63 |
| **COLORADO COUNTY - BRAZOS-COLORADO BASIN** | | | | | | |
| EAGLE LAKE | 17 | 16 | 16 | 11 | 6 | 0 |
| COUNTY-OTHER | 56 | 55 | 54 | 50 | 45 | 40 |
| MANUFACTURING | 2 | 0 | 0 | 0 | 0 | 0 |
| MINING | 10 | 8 | 7 | 5 | 3 | 2 |
| LIVESTOCK | 40 | 40 | 40 | 40 | 40 | 40 |
| IRRIGATION | (21,169) | (19,805) | (18,477) | (17,186) | (15,929) | (14,706) |
| **COLORADO COUNTY - COLORADO BASIN** | | | | | | |
| COLUMBUS | 586 | 556 | 535 | 491 | 449 | 407 |
| CORIX UTILITIES TEXAS INC* | (7) | (8) | (8) | (10) | (11) | (13) |
| EAGLE LAKE | 38 | 35 | 34 | 25 | 12 | 0 |
| WEIMAR | 24 | 21 | 18 | 12 | 6 | 0 |
| COUNTY-OTHER | (92) | (98) | (100) | (128) | (161) | (195) |
| MANUFACTURING | 9 | 0 | 0 | 0 | 0 | 0 |
| MINING | 307 | 259 | 207 | 158 | 108 | 57 |
| STEAM ELECTRIC POWER | (228) | (228) | (228) | (228) | (228) | (228) |
| LIVESTOCK | 385 | 385 | 385 | 385 | 385 | 385 |
| IRRIGATION | (6,578) | (5,654) | (4,755) | (3,880) | (3,029) | (2,201) |
| **COLORADO COUNTY - LAVACA BASIN** | | | | | | |
| WEIMAR | 49 | 41 | 36 | 24 | 12 | 0 |
| COUNTY-OTHER | 172 | 169 | 168 | 159 | 148 | 137 |
| MANUFACTURING | 161 | 0 | 0 | 0 | 0 | 0 |
| MINING | 14 | 11 | 9 | 6 | 3 | 0 |
| STEAM ELECTRIC POWER | (4,743) | (4,743) | (4,743) | (4,743) | (4,743) | (4,743) |
| LIVESTOCK | 0 | 0 | 0 | 0 | 0 | 0 |
| IRRIGATION | (26,571) | (24,202) | (21,898) | (19,654) | (17,471) | (15,347) |
| **FAYETTE COUNTY - COLORADO BASIN** | | | | | | |
| AQUA WSC* | 0 | 0 | 0 | 0 | 0 | 0 |
| FAYETTE COUNTY WCID MONUMENT HILL | 51 | 43 | 30 | 18 | 8 | 0 |
| FAYETTE WSC | 290 | 221 | 175 | 135 | 101 | 73 |
| LA GRANGE | 337 | 231 | 162 | 100 | 46 | 2 |

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# Region K Water User Group (WUG) Needs/Surplus

| | | | | | | |
|---|---|---|---|---|---|---|
| LEE COUNTY WSC* | 441 | 420 | 401 | 385 | 361 | 329 |
| WEST END WSC* | 0 | 0 | 0 | 0 | 0 | 0 |
| COUNTY-OTHER | (69) | (156) | (204) | (247) | (284) | (311) |
| MANUFACTURING | 1 | 0 | 0 | 0 | 0 | 0 |
| MINING | (760) | (360) | 99 | 543 | 995 | 1,002 |
| STEAM ELECTRIC POWER | (4,299) | (4,299) | (4,299) | (4,299) | (4,299) | (4,299) |
| LIVESTOCK | 185 | 185 | 185 | 185 | 185 | 185 |
| IRRIGATION | 90 | 90 | 90 | 90 | 90 | 90 |
| **FAYETTE COUNTY - GUADALUPE BASIN** | | | | | | |
| FAYETTE WSC | 110 | 106 | 103 | 100 | 98 | 96 |
| FLATONIA | 24 | 16 | 11 | 7 | 3 | 0 |
| COUNTY-OTHER | 75 | 70 | 67 | 65 | 62 | 61 |
| MINING | 33 | 58 | 86 | 113 | 141 | 142 |
| LIVESTOCK | 64 | 64 | 64 | 64 | 64 | 64 |
| IRRIGATION | 26 | 26 | 26 | 26 | 26 | 26 |
| **FAYETTE COUNTY - LAVACA BASIN** | | | | | | |
| FAYETTE WSC | 29 | 21 | 16 | 11 | 7 | 4 |
| FLATONIA | 105 | 73 | 52 | 33 | 17 | 5 |
| SCHULENBURG | 139 | 57 | 2 | (45) | (86) | (118) |
| COUNTY-OTHER | (366) | (406) | (429) | (449) | (466) | (478) |
| MANUFACTURING | 5 | (40) | (40) | (40) | (40) | (40) |
| MINING | 0 | 0 | 0 | 55 | 134 | 135 |
| LIVESTOCK | 7 | 7 | 7 | 7 | 7 | 7 |
| IRRIGATION | 78 | 78 | 78 | 78 | 78 | 78 |
| **GILLESPIE COUNTY - COLORADO BASIN** | | | | | | |
| FREDERICKSBURG | 1,092 | 900 | 740 | 532 | 325 | 121 |
| COUNTY-OTHER | 647 | 577 | 518 | 424 | 320 | 215 |
| MANUFACTURING | 663 | 647 | 647 | 647 | 647 | 647 |
| MINING | 51 | 51 | 51 | 51 | 51 | 51 |
| LIVESTOCK | 383 | 383 | 383 | 383 | 383 | 383 |
| IRRIGATION | 119 | 119 | 119 | 119 | 119 | 119 |
| **GILLESPIE COUNTY - GUADALUPE BASIN** | | | | | | |
| COUNTY-OTHER | 23 | 20 | 18 | 14 | 10 | 6 |
| LIVESTOCK | 17 | 17 | 17 | 17 | 17 | 17 |
| **HAYS COUNTY - COLORADO BASIN** | | | | | | |
| AUSTIN | 0 | 0 | 0 | 0 | 0 | 0 |
| BUDA* | 1,411 | 582 | (440) | (1,724) | (3,180) | (4,839) |
| CIMARRON PARK WATER | 47 | 55 | 61 | 65 | 66 | 66 |
| DEER CREEK RANCH WATER | 99 | 96 | 92 | 90 | 87 | 84 |
| DRIPPING SPRINGS WSC | 727 | (533) | (1,446) | (2,621) | (4,059) | (4,819) |
| GOFORTH SUD* | (60) | (113) | (168) | (232) | (308) | (393) |
| HAYS | 0 | (55) | (114) | (168) | (255) | (353) |
| HAYS COUNTY WCID 1 | 0 | 0 | 0 | 0 | (80) | (80) |
| HAYS COUNTY WCID 2 | 295 | 224 | 136 | 52 | (4) | (160) |
| WEST TRAVIS COUNTY PUBLIC UTILITY AGENCY | 128 | (963) | (1,646) | (3,084) | (4,524) | (5,966) |
| COUNTY-OTHER* | 966 | 1,279 | 764 | 388 | 72 | (801) |
| MANUFACTURING* | 191 | 144 | 144 | 144 | 144 | 144 |
| MINING | (531) | (761) | (1,047) | (1,131) | (1,340) | (1,579) |
| STEAM ELECTRIC POWER | 511 | 511 | 511 | 511 | 511 | 511 |
| LIVESTOCK* | 903 | 903 | 903 | 903 | 903 | 903 |

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# Region K Water User Group (WUG) Needs/Surplus

| | | | | | | |
|---|---|---|---|---|---|---|
| IRRIGATION* | 257 | 257 | 257 | 257 | 257 | 257 |
| **LLANO COUNTY - COLORADO BASIN** | | | | | | |
| CORIX UTILITIES TEXAS INC* | 75 | 78 | 79 | 78 | 77 | 75 |
| HORSESHOE BAY | 65 | 0 | 69 | 44 | 78 | 130 |
| KINGSLAND WSC | 221 | 107 | 124 | 177 | 94 | 6 |
| LLANO | (591) | (620) | (606) | (584) | (612) | (642) |
| SUNRISE BEACH VILLAGE | 186 | 189 | 191 | 192 | 192 | 192 |
| COUNTY-OTHER | 2,682 | 2,740 | 2,727 | 2,725 | 2,742 | 2,755 |
| MANUFACTURING | 1 | 0 | 0 | 0 | 0 | 0 |
| MINING | 0 | 0 | 0 | 0 | 0 | 0 |
| STEAM ELECTRIC POWER | 0 | 0 | 0 | 0 | 0 | 0 |
| LIVESTOCK | 171 | 171 | 171 | 171 | 171 | 171 |
| IRRIGATION | 916 | 916 | 916 | 916 | 916 | 916 |
| **MATAGORDA COUNTY - BRAZOS-COLORADO BASIN** | | | | | | |
| BAY CITY | (4) | (57) | (73) | (119) | (162) | (198) |
| CANEY CREEK MUD OF MATAGORDA COUNTY | 974 | 971 | 971 | 968 | 965 | 962 |
| CORIX UTILITIES TEXAS INC* | 64 | 64 | 64 | 64 | 64 | 64 |
| MATAGORDA COUNTY WCID 6 | 3 | 3 | 4 | 3 | 1 | 0 |
| MATAGORDA WASTE DISPOSAL & WSC | 4 | 3 | 3 | 2 | 1 | 0 |
| COUNTY-OTHER | 95 | 93 | 96 | 94 | 88 | 83 |
| MINING | 3 | 0 | 14 | 26 | 37 | 44 |
| LIVESTOCK | 134 | 134 | 134 | 134 | 134 | 134 |
| IRRIGATION | (61,932) | (59,441) | (57,018) | (54,659) | (52,364) | (50,131) |
| **MATAGORDA COUNTY - COLORADO BASIN** | | | | | | |
| BAY CITY | 0 | 0 | 0 | 0 | 0 | 0 |
| CORIX UTILITIES TEXAS INC* | 13 | 13 | 13 | 13 | 13 | 13 |
| MATAGORDA WASTE DISPOSAL & WSC | 254 | 252 | 251 | 250 | 249 | 248 |
| COUNTY-OTHER | 79 | 78 | 79 | 78 | 77 | 76 |
| MANUFACTURING | 14,332 | 13,615 | 13,615 | 13,615 | 13,615 | 13,615 |
| MINING | 0 | 0 | 2 | 3 | 5 | 6 |
| STEAM ELECTRIC POWER | (11,276) | (11,276) | (11,276) | (11,276) | (11,276) | (11,276) |
| LIVESTOCK | 0 | 0 | 0 | 0 | 0 | 0 |
| IRRIGATION | (510) | (463) | (418) | (375) | (332) | (291) |
| **MATAGORDA COUNTY - COLORADO-LAVACA BASIN** | | | | | | |
| MARKHAM MUD | 19 | 20 | 20 | 20 | 18 | 17 |
| PALACIOS | 449 | 441 | 440 | 435 | 426 | 419 |
| COUNTY-OTHER | 82 | 81 | 83 | 82 | 75 | 69 |
| MINING | 1 | 0 | 9 | 16 | 23 | 28 |
| LIVESTOCK | 8 | 8 | 8 | 8 | 8 | 8 |
| IRRIGATION | (60,780) | (58,164) | (55,617) | (53,139) | (50,728) | (48,381) |
| **MILLS COUNTY - BRAZOS BASIN** | | | | | | |
| GOLDTHWAITE | 2 | 2 | 1 | 1 | 1 | 0 |
| COUNTY-OTHER | 13 | 14 | 15 | 11 | 6 | 0 |
| MINING | 0 | 0 | 0 | 0 | 0 | 0 |
| LIVESTOCK | 28 | 28 | 28 | 28 | 28 | 28 |
| IRRIGATION | (1,737) | (1,737) | (1,737) | (1,737) | (1,737) | (1,737) |
| **MILLS COUNTY - COLORADO BASIN** | | | | | | |
| BROOKESMITH SUD* | 0 | 0 | 0 | 0 | (1) | (1) |
| CORIX UTILITIES TEXAS INC* | 1 | 1 | 1 | 1 | 1 | 0 |
| GOLDTHWAITE | 31 | 28 | 26 | 14 | (1) | (18) |

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## Region K Water User Group (WUG) Needs/Surplus

| | | | | | | |
|---|---|---|---|---|---|---|
| ZEPHYR WSC* | 0 | 0 | 0 | 0 | 0 | 0 |
| COUNTY-OTHER | 130 | 131 | 133 | 127 | 120 | 111 |
| MANUFACTURING | 0 | 0 | 0 | 0 | 0 | 0 |
| MINING | 0 | 0 | 0 | 0 | 0 | 0 |
| LIVESTOCK | 40 | 40 | 40 | 40 | 40 | 40 |
| IRRIGATION | 623 | 623 | 623 | 623 | 623 | 623 |
| **SAN SABA COUNTY - COLORADO BASIN** | | | | | | |
| CORIX UTILITIES TEXAS INC* | 0 | 0 | 0 | 0 | 0 | 0 |
| NORTH SAN SABA WSC | 10 | 4 | 5 | 8 | 4 | 0 |
| RICHLAND SUD* | 76 | 69 | 71 | 72 | 71 | 67 |
| SAN SABA | 71 | 30 | 34 | 60 | 33 | 5 |
| COUNTY-OTHER | 26 | 24 | 27 | 31 | 27 | 22 |
| MANUFACTURING | 2 | 0 | 0 | 0 | 0 | 0 |
| MINING | 451 | 446 | 595 | 639 | 675 | 701 |
| LIVESTOCK | 439 | 439 | 439 | 439 | 439 | 439 |
| IRRIGATION | 23 | 23 | 23 | 23 | 23 | 23 |
| **TRAVIS COUNTY - COLORADO BASIN** | | | | | | |
| AQUA WSC* | 0 | 0 | 0 | 0 | 0 | 0 |
| AUSTIN | 121,593 | 87,987 | 66,151 | 40,563 | 19,311 | (8,770) |
| BARTON CREEK WEST WSC | 4 | 7 | 10 | 12 | 13 | 13 |
| BARTON CREEK WSC | (217) | (312) | (402) | (469) | (523) | (586) |
| BRIARCLIFF | 100 | 60 | 20 | (25) | (66) | (104) |
| CEDAR PARK* | (613) | (813) | (732) | (662) | (660) | (659) |
| COTTONWOOD CREEK MUD 1 | 0 | 0 | 0 | 0 | 0 | 0 |
| CREEDMOOR-MAHA WSC* | 555 | 473 | (448) | (552) | (656) | (757) |
| CYPRESS RANCH WCID 1 | 102 | 89 | 79 | 70 | 59 | 60 |
| DEER CREEK RANCH WATER | 82 | 76 | 70 | 66 | 62 | 57 |
| ELGIN | 0 | 0 | 0 | 0 | 0 | 0 |
| GARFIELD WSC | 61 | 30 | 1 | (21) | (41) | (63) |
| HORNSBY BEND UTILITY | 350 | 266 | 183 | 121 | 65 | 0 |
| HURST CREEK MUD | (12) | (3) | 3 | 6 | 7 | 7 |
| JONESTOWN WSC | 75 | 41 | 6 | (37) | (78) | (116) |
| KELLY LANE WCID 1 | 66 | 71 | 75 | 76 | 77 | 77 |
| LAGO VISTA | 1,998 | 1,682 | 1,379 | 1,034 | 726 | 438 |
| LAKEWAY MUD | 312 | 187 | 50 | (97) | (143) | (142) |
| LEANDER* | (317) | (1,866) | (2,009) | (2,684) | (2,967) | (3,281) |
| LOOP 360 WSC | 25 | (18) | (68) | (113) | (157) | (236) |
| MANOR | 2,210 | 1,903 | 325 | 219 | 310 | 10 |
| MANVILLE WSC* | 2,033 | 1,608 | 1,135 | 577 | (476) | (1,696) |
| NORTH AUSTIN MUD 1 | 0 | 0 | (76) | (75) | (75) | (75) |
| NORTHTOWN MUD | 0 | 0 | (947) | (1,066) | (1,171) | (1,268) |
| OAK SHORES WATER SYSTEM | 135 | 114 | 115 | 116 | 116 | 116 |
| PFLUGERVILLE* | 1,641 | (790) | (3,589) | (6,376) | (9,203) | (9,220) |
| ROLLINGWOOD | 737 | 741 | (375) | (374) | (375) | (377) |
| ROUGH HOLLOW IN TRAVIS COUNTY | 1,206 | 582 | 582 | 582 | 582 | 582 |
| ROUND ROCK* | 0 | 0 | 0 | 0 | 0 | 0 |
| SENNA HILLS MUD | (16) | (89) | (160) | (212) | (255) | (304) |
| SHADY HOLLOW MUD | 0 | 0 | 0 | 0 | 0 | 0 |
| SUNSET VALLEY | 388 | 339 | (443) | (519) | (609) | (713) |
| SWEETWATER COMMUNITY | 1,106 | 652 | 652 | 652 | 652 | 652 |

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## Region K Water User Group (WUG) Needs/Surplus

| | | | | | | |
|---|---|---|---|---|---|---|
| TRAVIS COUNTY MUD 10 | 22 | 9 | (3) | (12) | (19) | (28) |
| TRAVIS COUNTY MUD 14 | 52 | 28 | 4 | (14) | (30) | (49) |
| TRAVIS COUNTY MUD 2 | 218 | 168 | 119 | 83 | 51 | 15 |
| TRAVIS COUNTY MUD 4 | 2,060 | 1,834 | 1,619 | 1,377 | 1,163 | 962 |
| TRAVIS COUNTY WCID 10 | (139) | (442) | (4,094) | (4,433) | (4,739) | (5,026) |
| TRAVIS COUNTY WCID 17 | 635 | (48) | (1,011) | (1,181) | (1,474) | (1,836) |
| TRAVIS COUNTY WCID 18 | 330 | 193 | 59 | (99) | (243) | (379) |
| TRAVIS COUNTY WCID 19 | 0 | 0 | 0 | 0 | 0 | 0 |
| TRAVIS COUNTY WCID 20 | 551 | 554 | 556 | 558 | 558 | 558 |
| TRAVIS COUNTY WCID POINT VENTURE | 30 | (37) | (93) | (171) | (260) | (339) |
| WELLS BRANCH MUD | 0 | 0 | (1,321) | (1,303) | (1,298) | (1,297) |
| WEST TRAVIS COUNTY PUBLIC UTILITY AGENCY | (1,784) | (2,443) | (3,011) | (3,910) | (4,484) | (5,000) |
| WILLIAMSON COUNTY WSID 3* | 20 | 18 | 13 | 9 | 4 | 0 |
| WILLIAMSON TRAVIS COUNTIES MUD 1* | 56 | 60 | 62 | 63 | 63 | 64 |
| WINDERMERE UTILITY | 689 | 745 | (1,462) | (1,446) | (1,441) | (1,440) |
| COUNTY-OTHER \| AQUA TEXAS - RIVERCREST | 150 | 152 | 154 | 155 | 155 | 155 |
| COUNTY-OTHER | 10,572 | 10,567 | 10,556 | 10,550 | 10,547 | 10,539 |
| MANUFACTURING | 0 | 0 | 286 | 742 | 742 | 742 |
| MINING | 0 | 0 | 0 | 0 | 0 | 0 |
| STEAM ELECTRIC POWER | 4,140 | 4,140 | 4,140 | 4,140 | 4,140 | 4,140 |
| LIVESTOCK | 0 | 0 | 0 | 0 | 0 | 0 |
| IRRIGATION | 908 | 908 | 908 | 908 | 908 | 908 |
| **TRAVIS COUNTY - GUADALUPE BASIN** | | | | | | |
| CREEDMOOR-MAHA WSC* | 21 | 18 | 14 | 9 | 4 | 0 |
| GOFORTH SUD* | (4) | (6) | (10) | (15) | (20) | (26) |
| COUNTY-OTHER | 101 | 101 | 102 | 102 | 102 | 102 |
| MINING | 0 | 0 | 0 | 0 | 0 | 0 |
| LIVESTOCK | 0 | 0 | 0 | 0 | 0 | 0 |
| **WHARTON COUNTY - BRAZOS-COLORADO BASIN** | | | | | | |
| BOLING MWD | 51 | 49 | 47 | 44 | 41 | 37 |
| WHARTON | 188 | 130 | 86 | 31 | (30) | (87) |
| WHARTON COUNTY WCID 2 | 762 | 744 | 730 | 715 | 698 | 683 |
| COUNTY-OTHER* | 28 | 4 | (17) | (61) | (100) | (139) |
| MANUFACTURING* | 6 | 0 | 0 | 0 | 0 | 0 |
| MINING* | 2 | 0 | 11 | 18 | 27 | 31 |
| STEAM ELECTRIC POWER* | 0 | 0 | 0 | 0 | 0 | 0 |
| LIVESTOCK* | 47 | 47 | 47 | 47 | 47 | 47 |
| IRRIGATION* | (51,578) | (48,719) | (45,936) | (43,227) | (40,592) | (38,028) |
| **WHARTON COUNTY - COLORADO BASIN** | | | | | | |
| EL CAMPO* | 1 | 1 | 1 | 0 | 0 | 0 |
| WHARTON | 0 | 0 | 0 | 0 | 0 | 0 |
| COUNTY-OTHER* | 70 | 58 | 46 | 24 | 3 | (16) |
| MANUFACTURING* | 9 | 0 | 0 | 0 | 0 | 0 |
| MINING* | 1 | 0 | 7 | 12 | 17 | 21 |
| STEAM ELECTRIC POWER* | 0 | 0 | 0 | 0 | 0 | 0 |
| LIVESTOCK* | 20 | 20 | 20 | 20 | 20 | 20 |
| IRRIGATION* | (23,509) | (21,737) | (20,013) | (18,336) | (16,704) | (15,116) |
| **WHARTON COUNTY - COLORADO-LAVACA BASIN** | | | | | | |
| COUNTY-OTHER* | 42 | 38 | 34 | 27 | 20 | 14 |
| MINING* | 0 | 0 | 1 | 3 | 4 | 5 |

*A single asterisk next to a WUG's name denotes that the WUG is split by two or more planning regions.

# Region K Water User Group (WUG) Needs/Surplus

| | | | | | | |
|---|---|---|---|---|---|---|
| LIVESTOCK* | 94 | 94 | 94 | 94 | 94 | 94 |
| IRRIGATION* | 0 | 456 | 899 | 1,330 | 1,750 | 2,159 |
| **WHARTON COUNTY - LAVACA BASIN** | | | | | | |
| COUNTY-OTHER* | 213 | 212 | 212 | 211 | 210 | 210 |
| **WILLIAMSON COUNTY - BRAZOS BASIN** | | | | | | |
| AUSTIN | 0 | 0 | 0 | 0 | 0 | 0 |
| NORTH AUSTIN MUD 1 | 0 | 0 | (726) | (714) | (711) | (711) |
| WELLS BRANCH MUD | 0 | 0 | (76) | (75) | (74) | (74) |
| COUNTY-OTHER* | 26 | 0 | 4 | 8 | 12 | 16 |
| MANUFACTURING* | 5 | 0 | 0 | 0 | 0 | 0 |
| MINING* | 0 | 2 | 2 | 2 | 2 | 2 |

*A single asterisk next to a WUG's name denotes that the WUG is split by two or more planning regions.

# Region K Water User Group (WUG) Second-Tier Identified Water Needs

Second-tier needs are WUG split needs adjusted to include the implementation of recommended demand reduction and direct reuse water management strategies.

| | WUG SECOND-TIER NEEDS (ACRE-FEET PER YEAR) | | | | | |
|---|---|---|---|---|---|---|
| | 2020 | 2030 | 2040 | 2050 | 2060 | 2070 |
| **BASTROP COUNTY - BRAZOS BASIN** | | | | | | |
| AQUA WSC* | 0 | 0 | 0 | 0 | 0 | 0 |
| LEE COUNTY WSC* | 0 | 0 | 0 | 0 | 0 | 0 |
| COUNTY-OTHER | 0 | 0 | 0 | 0 | 0 | 0 |
| MINING | 0 | 0 | 0 | 0 | 0 | 0 |
| LIVESTOCK | 0 | 0 | 0 | 0 | 0 | 0 |
| IRRIGATION | 0 | 0 | 0 | 0 | 0 | 0 |
| **BASTROP COUNTY - COLORADO BASIN** | | | | | | |
| AQUA WSC* | 0 | 254 | 2,506 | 5,218 | 11,415 | 19,062 |
| BASTROP | 0 | 0 | 0 | 638 | 1,813 | 3,376 |
| BASTROP COUNTY WCID 2 | 0 | 0 | 0 | 0 | 255 | 924 |
| CREEDMOOR-MAHA WSC* | 0 | 0 | 0 | 0 | 0 | 0 |
| ELGIN | 0 | 0 | 0 | 0 | 804 | 1,874 |
| LEE COUNTY WSC* | 0 | 0 | 0 | 0 | 0 | 0 |
| POLONIA WSC* | 0 | 0 | 0 | 0 | 0 | 0 |
| SMITHVILLE | 0 | 0 | 0 | 0 | 0 | 645 |
| COUNTY-OTHER | 0 | 0 | 0 | 0 | 0 | 0 |
| MANUFACTURING | 0 | 0 | 0 | 0 | 0 | 0 |
| MINING | 449 | 3,947 | 4,557 | 3,220 | 0 | 0 |
| STEAM ELECTRIC POWER | 0 | 0 | 0 | 0 | 0 | 0 |
| LIVESTOCK | 0 | 0 | 0 | 0 | 0 | 0 |
| IRRIGATION | 0 | 0 | 0 | 0 | 0 | 0 |
| **BASTROP COUNTY - GUADALUPE BASIN** | | | | | | |
| AQUA WSC* | 0 | 0 | 0 | 0 | 0 | 0 |
| COUNTY-OTHER | 0 | 0 | 0 | 0 | 0 | 0 |
| MINING | 0 | 0 | 0 | 0 | 0 | 0 |
| LIVESTOCK | 0 | 0 | 0 | 0 | 0 | 0 |
| IRRIGATION | 0 | 0 | 0 | 0 | 0 | 0 |
| **BLANCO COUNTY - COLORADO BASIN** | | | | | | |
| JOHNSON CITY | 0 | 0 | 0 | 0 | 0 | 0 |
| COUNTY-OTHER | 0 | 0 | 0 | 0 | 0 | 0 |
| MINING | 0 | 0 | 0 | 0 | 0 | 0 |
| LIVESTOCK | 0 | 0 | 0 | 0 | 0 | 0 |
| IRRIGATION | 0 | 0 | 0 | 0 | 0 | 0 |
| **BLANCO COUNTY - GUADALUPE BASIN** | | | | | | |
| BLANCO | 0 | 0 | 0 | 0 | 0 | 0 |
| CANYON LAKE WATER SERVICE* | 0 | 0 | 0 | 0 | 0 | 0 |
| COUNTY-OTHER | 0 | 0 | 0 | 0 | 0 | 0 |
| LIVESTOCK | 0 | 0 | 0 | 0 | 0 | 0 |
| IRRIGATION | 0 | 0 | 0 | 0 | 0 | 0 |
| **BURNET COUNTY - BRAZOS BASIN** | | | | | | |
| BERTRAM | 0 | 0 | 0 | 0 | 8 | 36 |
| BURNET | 0 | 0 | 0 | 0 | 0 | 0 |
| GEORGETOWN* | 0 | 0 | 0 | 0 | 0 | 0 |
| KEMPNER WSC* | 0 | 0 | 0 | 0 | 0 | 0 |

*A single asterisk next to a WUG's name denotes that the WUG is split by two or more planning regions.

# Region K Water User Group (WUG) Second-Tier Identified Water Needs

| | WUG SECOND-TIER NEEDS (ACRE-FEET PER YEAR) | | | | | |
|---|---|---|---|---|---|---|
| | 2020 | 2030 | 2040 | 2050 | 2060 | 2070 |
| **BURNET COUNTY - BRAZOS BASIN** | | | | | | |
| COUNTY-OTHER | 0 | 0 | 0 | 0 | 0 | 0 |
| MINING | 0 | 0 | 0 | 116 | 368 | 655 |
| LIVESTOCK | 0 | 0 | 0 | 0 | 0 | 0 |
| IRRIGATION | 0 | 0 | 0 | 0 | 0 | 0 |
| **BURNET COUNTY - COLORADO BASIN** | | | | | | |
| BURNET | 0 | 0 | 0 | 0 | 0 | 0 |
| CORIX UTILITIES TEXAS INC* | 0 | 0 | 0 | 0 | 0 | 0 |
| COTTONWOOD SHORES | 0 | 0 | 0 | 0 | 0 | 0 |
| GRANITE SHOALS | 0 | 0 | 0 | 0 | 3 | 169 |
| HORSESHOE BAY | 0 | 0 | 0 | 0 | 0 | 0 |
| KINGSLAND WSC | 0 | 0 | 0 | 0 | 0 | 0 |
| MARBLE FALLS | 0 | 0 | 0 | 0 | 0 | 0 |
| MEADOWLAKES | 0 | 0 | 0 | 0 | 0 | 0 |
| COUNTY-OTHER | 0 | 0 | 0 | 0 | 0 | 0 |
| MANUFACTURING | 0 | 0 | 0 | 0 | 0 | 0 |
| MINING | 0 | 326 | 1,052 | 1,708 | 2,464 | 2,826 |
| LIVESTOCK | 0 | 0 | 0 | 0 | 0 | 0 |
| IRRIGATION | 0 | 0 | 0 | 0 | 0 | 0 |
| **COLORADO COUNTY - BRAZOS-COLORADO BASIN** | | | | | | |
| EAGLE LAKE | 0 | 0 | 0 | 0 | 0 | 0 |
| COUNTY-OTHER | 0 | 0 | 0 | 0 | 0 | 0 |
| MANUFACTURING | 0 | 0 | 0 | 0 | 0 | 0 |
| MINING | 0 | 0 | 0 | 0 | 0 | 0 |
| LIVESTOCK | 0 | 0 | 0 | 0 | 0 | 0 |
| IRRIGATION | 11,896 | 9,061 | 6,115 | 3,554 | 1,371 | 0 |
| **COLORADO COUNTY - COLORADO BASIN** | | | | | | |
| COLUMBUS | 0 | 0 | 0 | 0 | 0 | 0 |
| CORIX UTILITIES TEXAS INC* | 0 | 0 | 0 | 1 | 2 | 3 |
| EAGLE LAKE | 0 | 0 | 0 | 0 | 0 | 0 |
| WEIMAR | 0 | 0 | 0 | 0 | 0 | 0 |
| COUNTY-OTHER | 0 | 8 | 29 | 67 | 100 | 133 |
| MANUFACTURING | 0 | 0 | 0 | 0 | 0 | 0 |
| MINING | 0 | 0 | 0 | 0 | 0 | 0 |
| STEAM ELECTRIC POWER | 228 | 228 | 228 | 228 | 228 | 228 |
| LIVESTOCK | 0 | 0 | 0 | 0 | 0 | 0 |
| IRRIGATION | 3,697 | 2,315 | 912 | 0 | 0 | 0 |
| **COLORADO COUNTY - LAVACA BASIN** | | | | | | |
| WEIMAR | 0 | 0 | 0 | 0 | 0 | 0 |
| COUNTY-OTHER | 0 | 0 | 0 | 0 | 0 | 0 |
| MANUFACTURING | 0 | 0 | 0 | 0 | 0 | 0 |
| MINING | 0 | 0 | 0 | 0 | 0 | 0 |
| STEAM ELECTRIC POWER | 4,743 | 4,743 | 4,743 | 4,743 | 4,743 | 4,743 |
| LIVESTOCK | 0 | 0 | 0 | 0 | 0 | 0 |
| IRRIGATION | 14,932 | 10,716 | 6,381 | 2,542 | 0 | 0 |
| **FAYETTE COUNTY - COLORADO BASIN** | | | | | | |
| AQUA WSC* | 0 | 0 | 0 | 0 | 0 | 0 |
| FAYETTE COUNTY WCID MONUMENT HILL | 0 | 0 | 0 | 0 | 0 | 0 |

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## Region K Water User Group (WUG) Second-Tier Identified Water Needs

| | WUG SECOND-TIER NEEDS (ACRE-FEET PER YEAR) | | | | | |
|---|---|---|---|---|---|---|
| | 2020 | 2030 | 2040 | 2050 | 2060 | 2070 |
| **FAYETTE COUNTY - COLORADO BASIN** | | | | | | |
| FAYETTE WSC | 0 | 0 | 0 | 0 | 0 | 0 |
| LA GRANGE | 0 | 0 | 0 | 0 | 0 | 0 |
| LEE COUNTY WSC* | 0 | 0 | 0 | 0 | 0 | 0 |
| WEST END WSC* | 0 | 0 | 0 | 0 | 0 | 0 |
| COUNTY-OTHER | 0 | 40 | 98 | 145 | 180 | 204 |
| MANUFACTURING | 0 | 0 | 0 | 0 | 0 | 0 |
| MINING | 760 | 360 | 0 | 0 | 0 | 0 |
| STEAM ELECTRIC POWER | 3,819 | 3,739 | 3,659 | 3,579 | 3,579 | 3,579 |
| LIVESTOCK | 0 | 0 | 0 | 0 | 0 | 0 |
| IRRIGATION | 0 | 0 | 0 | 0 | 0 | 0 |
| **FAYETTE COUNTY - GUADALUPE BASIN** | | | | | | |
| FAYETTE WSC | 0 | 0 | 0 | 0 | 0 | 0 |
| FLATONIA | 0 | 0 | 0 | 0 | 0 | 0 |
| COUNTY-OTHER | 0 | 0 | 0 | 0 | 0 | 0 |
| MINING | 0 | 0 | 0 | 0 | 0 | 0 |
| LIVESTOCK | 0 | 0 | 0 | 0 | 0 | 0 |
| IRRIGATION | 0 | 0 | 0 | 0 | 0 | 0 |
| **FAYETTE COUNTY - LAVACA BASIN** | | | | | | |
| FAYETTE WSC | 0 | 0 | 0 | 0 | 0 | 0 |
| FLATONIA | 0 | 0 | 0 | 0 | 0 | 0 |
| SCHULENBURG | 0 | 0 | 0 | 0 | 0 | 0 |
| COUNTY-OTHER | 308 | 352 | 380 | 401 | 417 | 428 |
| MANUFACTURING | 0 | 40 | 40 | 40 | 40 | 40 |
| MINING | 0 | 0 | 0 | 0 | 0 | 0 |
| LIVESTOCK | 0 | 0 | 0 | 0 | 0 | 0 |
| IRRIGATION | 0 | 0 | 0 | 0 | 0 | 0 |
| **GILLESPIE COUNTY - COLORADO BASIN** | | | | | | |
| FREDERICKSBURG | 0 | 0 | 0 | 0 | 0 | 0 |
| COUNTY-OTHER | 0 | 0 | 0 | 0 | 0 | 0 |
| MANUFACTURING | 0 | 0 | 0 | 0 | 0 | 0 |
| MINING | 0 | 0 | 0 | 0 | 0 | 0 |
| LIVESTOCK | 0 | 0 | 0 | 0 | 0 | 0 |
| IRRIGATION | 0 | 0 | 0 | 0 | 0 | 0 |
| **GILLESPIE COUNTY - GUADALUPE BASIN** | | | | | | |
| COUNTY-OTHER | 0 | 0 | 0 | 0 | 0 | 0 |
| LIVESTOCK | 0 | 0 | 0 | 0 | 0 | 0 |
| **HAYS COUNTY - COLORADO BASIN** | | | | | | |
| AUSTIN | 0 | 0 | 0 | 0 | 0 | 0 |
| BUDA* | 0 | 0 | 0 | 0 | 0 | 0 |
| CIMARRON PARK WATER | 0 | 0 | 0 | 0 | 0 | 0 |
| DEER CREEK RANCH WATER | 0 | 0 | 0 | 0 | 0 | 0 |
| DRIPPING SPRINGS WSC | 0 | 0 | 0 | 141 | 1,137 | 1,631 |
| GOFORTH SUD* | 46 | 103 | 156 | 216 | 288 | 366 |
| HAYS | 0 | 8 | 55 | 98 | 168 | 246 |
| HAYS COUNTY WCID 1 | 0 | 0 | 0 | 0 | 0 | 0 |
| HAYS COUNTY WCID 2 | 0 | 0 | 0 | 0 | 0 | 0 |
| WEST TRAVIS COUNTY PUBLIC UTILITY AGENCY | 0 | 0 | 0 | 0 | 0 | 0 |

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## Region K Water User Group (WUG) Second-Tier Identified Water Needs

| | WUG SECOND-TIER NEEDS (ACRE-FEET PER YEAR) | | | | | |
|---|---|---|---|---|---|---|
| | 2020 | 2030 | 2040 | 2050 | 2060 | 2070 |
| **HAYS COUNTY - COLORADO BASIN** | | | | | | |
| COUNTY-OTHER* | 0 | 0 | 0 | 0 | 0 | 558 |
| MANUFACTURING* | 0 | 0 | 0 | 0 | 0 | 0 |
| MINING | 531 | 561 | 447 | 531 | 540 | 579 |
| STEAM ELECTRIC POWER | 0 | 0 | 0 | 0 | 0 | 0 |
| LIVESTOCK* | 0 | 0 | 0 | 0 | 0 | 0 |
| IRRIGATION* | 0 | 0 | 0 | 0 | 0 | 0 |
| **LLANO COUNTY - COLORADO BASIN** | | | | | | |
| CORIX UTILITIES TEXAS INC* | 0 | 0 | 0 | 0 | 0 | 0 |
| HORSESHOE BAY | 0 | 0 | 0 | 0 | 0 | 0 |
| KINGSLAND WSC | 0 | 0 | 0 | 0 | 0 | 0 |
| LLANO | 176 | 0 | 0 | 0 | 0 | 0 |
| SUNRISE BEACH VILLAGE | 0 | 0 | 0 | 0 | 0 | 0 |
| COUNTY-OTHER | 0 | 0 | 0 | 0 | 0 | 0 |
| MANUFACTURING | 0 | 0 | 0 | 0 | 0 | 0 |
| MINING | 0 | 0 | 0 | 0 | 0 | 0 |
| STEAM ELECTRIC POWER | 0 | 0 | 0 | 0 | 0 | 0 |
| LIVESTOCK | 0 | 0 | 0 | 0 | 0 | 0 |
| IRRIGATION | 0 | 0 | 0 | 0 | 0 | 0 |
| **MATAGORDA COUNTY - BRAZOS-COLORADO BASIN** | | | | | | |
| BAY CITY | 0 | 0 | 0 | 0 | 0 | 0 |
| CANEY CREEK MUD OF MATAGORDA COUNTY | 0 | 0 | 0 | 0 | 0 | 0 |
| CORIX UTILITIES TEXAS INC* | 0 | 0 | 0 | 0 | 0 | 0 |
| MATAGORDA COUNTY WCID 6 | 0 | 0 | 0 | 0 | 0 | 0 |
| MATAGORDA WASTE DISPOSAL & WSC | 0 | 0 | 0 | 0 | 0 | 0 |
| COUNTY-OTHER | 0 | 0 | 0 | 0 | 0 | 0 |
| MINING | 0 | 0 | 0 | 0 | 0 | 0 |
| LIVESTOCK | 0 | 0 | 0 | 0 | 0 | 0 |
| IRRIGATION | 51,009 | 45,863 | 40,665 | 35,809 | 31,295 | 26,839 |
| **MATAGORDA COUNTY - COLORADO BASIN** | | | | | | |
| BAY CITY | 0 | 0 | 0 | 0 | 0 | 0 |
| CORIX UTILITIES TEXAS INC* | 0 | 0 | 0 | 0 | 0 | 0 |
| MATAGORDA WASTE DISPOSAL & WSC | 0 | 0 | 0 | 0 | 0 | 0 |
| COUNTY-OTHER | 0 | 0 | 0 | 0 | 0 | 0 |
| MANUFACTURING | 0 | 0 | 0 | 0 | 0 | 0 |
| MINING | 0 | 0 | 0 | 0 | 0 | 0 |
| STEAM ELECTRIC POWER | 11,276 | 11,276 | 11,276 | 11,276 | 11,276 | 11,276 |
| LIVESTOCK | 0 | 0 | 0 | 0 | 0 | 0 |
| IRRIGATION | 420 | 351 | 284 | 220 | 158 | 98 |
| **MATAGORDA COUNTY - COLORADO-LAVACA BASIN** | | | | | | |
| MARKHAM MUD | 0 | 0 | 0 | 0 | 0 | 0 |
| PALACIOS | 0 | 0 | 0 | 0 | 0 | 0 |
| COUNTY-OTHER | 0 | 0 | 0 | 0 | 0 | 0 |
| MINING | 0 | 0 | 0 | 0 | 0 | 0 |
| LIVESTOCK | 0 | 0 | 0 | 0 | 0 | 0 |
| IRRIGATION | 50,059 | 44,838 | 39,569 | 34,640 | 30,052 | 25,522 |
| **MILLS COUNTY - BRAZOS BASIN** | | | | | | |
| GOLDTHWAITE | 0 | 0 | 0 | 0 | 0 | 0 |

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## Region K Water User Group (WUG) Second-Tier Identified Water Needs

| | WUG SECOND-TIER NEEDS (ACRE-FEET PER YEAR) | | | | | |
|---|---|---|---|---|---|---|
| | 2020 | 2030 | 2040 | 2050 | 2060 | 2070 |
| **MILLS COUNTY - BRAZOS BASIN** | | | | | | |
| COUNTY-OTHER | 0 | 0 | 0 | 0 | 0 | 0 |
| MINING | 0 | 0 | 0 | 0 | 0 | 0 |
| LIVESTOCK | 0 | 0 | 0 | 0 | 0 | 0 |
| IRRIGATION | 1,129 | 1,133 | 1,137 | 1,141 | 1,144 | 1,148 |
| **MILLS COUNTY - COLORADO BASIN** | | | | | | |
| BROOKESMITH SUD* | 0 | 0 | 0 | 0 | 0 | 0 |
| CORIX UTILITIES TEXAS INC* | 0 | 0 | 0 | 0 | 0 | 0 |
| GOLDTHWAITE | 0 | 0 | 0 | 0 | 0 | 0 |
| ZEPHYR WSC* | 0 | 0 | 0 | 0 | 0 | 0 |
| COUNTY-OTHER | 0 | 0 | 0 | 0 | 0 | 0 |
| MANUFACTURING | 0 | 0 | 0 | 0 | 0 | 0 |
| MINING | 0 | 0 | 0 | 0 | 0 | 0 |
| LIVESTOCK | 0 | 0 | 0 | 0 | 0 | 0 |
| IRRIGATION | 0 | 0 | 0 | 0 | 0 | 0 |
| **SAN SABA COUNTY - COLORADO BASIN** | | | | | | |
| CORIX UTILITIES TEXAS INC* | 0 | 0 | 0 | 0 | 0 | 0 |
| NORTH SAN SABA WSC | 0 | 0 | 0 | 0 | 0 | 0 |
| RICHLAND SUD* | 0 | 0 | 0 | 0 | 0 | 0 |
| SAN SABA | 0 | 0 | 0 | 0 | 0 | 0 |
| COUNTY-OTHER | 0 | 0 | 0 | 0 | 0 | 0 |
| MANUFACTURING | 0 | 0 | 0 | 0 | 0 | 0 |
| MINING | 0 | 0 | 0 | 0 | 0 | 0 |
| LIVESTOCK | 0 | 0 | 0 | 0 | 0 | 0 |
| IRRIGATION | 0 | 0 | 0 | 0 | 0 | 0 |
| **TRAVIS COUNTY - COLORADO BASIN** | | | | | | |
| AQUA WSC* | 0 | 0 | 0 | 0 | 0 | 0 |
| AUSTIN | 0 | 0 | 0 | 0 | 0 | 0 |
| BARTON CREEK WEST WSC | 0 | 0 | 0 | 0 | 0 | 0 |
| BARTON CREEK WSC | 51 | 75 | 88 | 81 | 68 | 56 |
| BRIARCLIFF | 0 | 0 | 0 | 0 | 0 | 0 |
| CEDAR PARK* | 0 | 0 | 0 | 0 | 0 | 0 |
| COTTONWOOD CREEK MUD 1 | 0 | 0 | 0 | 0 | 0 | 0 |
| CREEDMOOR-MAHA WSC* | 0 | 0 | 360 | 430 | 524 | 615 |
| CYPRESS RANCH WCID 1 | 0 | 0 | 0 | 0 | 0 | 0 |
| DEER CREEK RANCH WATER | 0 | 0 | 0 | 0 | 0 | 0 |
| ELGIN | 0 | 0 | 0 | 0 | 0 | 0 |
| GARFIELD WSC | 0 | 0 | 0 | 7 | 26 | 47 |
| HORNSBY BEND UTILITY | 0 | 0 | 0 | 0 | 0 | 0 |
| HURST CREEK MUD | 0 | 0 | 0 | 0 | 0 | 0 |
| JONESTOWN WSC | 0 | 0 | 0 | 0 | 0 | 0 |
| KELLY LANE WCID 1 | 0 | 0 | 0 | 0 | 0 | 0 |
| LAGO VISTA | 0 | 0 | 0 | 0 | 0 | 0 |
| LAKEWAY MUD | 0 | 0 | 0 | 0 | 0 | 0 |
| LEANDER* | 0 | 1,272 | 1,393 | 2,039 | 2,308 | 2,595 |
| LOOP 360 WSC | 0 | 0 | 0 | 0 | 0 | 0 |
| MANOR | 0 | 0 | 0 | 0 | 0 | 0 |
| MANVILLE WSC* | 0 | 0 | 0 | 0 | 0 | 703 |

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## Region K Water User Group (WUG) Second-Tier Identified Water Needs

| | WUG SECOND-TIER NEEDS (ACRE-FEET PER YEAR) | | | | | |
|---|---|---|---|---|---|---|
| | 2020 | 2030 | 2040 | 2050 | 2060 | 2070 |
| **TRAVIS COUNTY - COLORADO BASIN** | | | | | | |
| NORTH AUSTIN MUD 1 | 0 | 0 | 72 | 71 | 71 | 71 |
| NORTHTOWN MUD | 0 | 0 | 900 | 1,013 | 1,112 | 1,205 |
| OAK SHORES WATER SYSTEM | 0 | 0 | 0 | 0 | 0 | 0 |
| PFLUGERVILLE* | 0 | 0 | 0 | 490 | 2,458 | 2,385 |
| ROLLINGWOOD | 0 | 0 | 228 | 206 | 186 | 183 |
| ROUGH HOLLOW IN TRAVIS COUNTY | 0 | 0 | 0 | 0 | 0 | 0 |
| ROUND ROCK* | 0 | 0 | 0 | 0 | 0 | 0 |
| SENNA HILLS MUD | 0 | 0 | 0 | 0 | 0 | 0 |
| SHADY HOLLOW MUD | 0 | 0 | 0 | 0 | 0 | 0 |
| SUNSET VALLEY | 0 | 0 | 248 | 261 | 274 | 288 |
| SWEETWATER COMMUNITY | 0 | 0 | 0 | 0 | 0 | 0 |
| TRAVIS COUNTY MUD 10 | 0 | 0 | 0 | 0 | 0 | 0 |
| TRAVIS COUNTY MUD 14 | 0 | 0 | 0 | 2 | 17 | 35 |
| TRAVIS COUNTY MUD 2 | 0 | 0 | 0 | 0 | 0 | 0 |
| TRAVIS COUNTY MUD 4 | 0 | 0 | 0 | 0 | 0 | 0 |
| TRAVIS COUNTY WCID 10 | 0 | 0 | 2,297 | 2,245 | 2,161 | 2,063 |
| TRAVIS COUNTY WCID 17 | 0 | 0 | 0 | 0 | 0 | 0 |
| TRAVIS COUNTY WCID 18 | 0 | 0 | 0 | 0 | 0 | 0 |
| TRAVIS COUNTY WCID 19 | 0 | 0 | 0 | 0 | 0 | 0 |
| TRAVIS COUNTY WCID 20 | 0 | 0 | 0 | 0 | 0 | 0 |
| TRAVIS COUNTY WCID POINT VENTURE | 0 | 0 | 0 | 0 | 0 | 41 |
| WELLS BRANCH MUD | 0 | 0 | 1,255 | 1,238 | 1,233 | 1,232 |
| WEST TRAVIS COUNTY PUBLIC UTILITY AGENCY | 0 | 0 | 0 | 0 | 0 | 0 |
| WILLIAMSON COUNTY WSID 3* | 0 | 0 | 0 | 0 | 0 | 0 |
| WILLIAMSON TRAVIS COUNTIES MUD 1* | 0 | 0 | 0 | 0 | 0 | 0 |
| WINDERMERE UTILITY | 0 | 0 | 873 | 873 | 873 | 873 |
| COUNTY-OTHER | 0 | 0 | 0 | 0 | 0 | 0 |
| COUNTY-OTHER \| AQUA TEXAS - RIVERCREST | 0 | 0 | 0 | 0 | 0 | 0 |
| MANUFACTURING | 0 | 0 | 0 | 0 | 0 | 0 |
| MINING | 0 | 0 | 0 | 0 | 0 | 0 |
| STEAM ELECTRIC POWER | 0 | 0 | 0 | 0 | 0 | 0 |
| LIVESTOCK | 0 | 0 | 0 | 0 | 0 | 0 |
| IRRIGATION | 0 | 0 | 0 | 0 | 0 | 0 |
| **TRAVIS COUNTY - GUADALUPE BASIN** | | | | | | |
| CREEDMOOR-MAHA WSC* | 0 | 0 | 0 | 0 | 0 | 0 |
| GOFORTH SUD* | 4 | 5 | 9 | 14 | 19 | 24 |
| COUNTY-OTHER | 0 | 0 | 0 | 0 | 0 | 0 |
| MINING | 0 | 0 | 0 | 0 | 0 | 0 |
| LIVESTOCK | 0 | 0 | 0 | 0 | 0 | 0 |
| **WHARTON COUNTY - BRAZOS-COLORADO BASIN** | | | | | | |
| BOLING MWD | 0 | 0 | 0 | 0 | 0 | 0 |
| WHARTON | 0 | 0 | 0 | 0 | 0 | 0 |
| WHARTON COUNTY WCID 2 | 0 | 0 | 0 | 0 | 0 | 0 |
| COUNTY-OTHER* | 0 | 0 | 0 | 0 | 0 | 0 |
| MANUFACTURING* | 0 | 0 | 0 | 0 | 0 | 0 |
| MINING* | 0 | 0 | 0 | 0 | 0 | 0 |
| STEAM ELECTRIC POWER* | 0 | 0 | 0 | 0 | 0 | 0 |

*A single asterisk next to a WUG's name denotes that the WUG is split by two or more planning regions.

## Region K Water User Group (WUG) Second-Tier Identified Water Needs

| | WUG SECOND-TIER NEEDS (ACRE-FEET PER YEAR) | | | | | |
|---|---|---|---|---|---|---|
| | 2020 | 2030 | 2040 | 2050 | 2060 | 2070 |
| **WHARTON COUNTY - BRAZOS-COLORADO BASIN** | | | | | | |
| LIVESTOCK* | 0 | 0 | 0 | 0 | 0 | 0 |
| IRRIGATION* | 25,508 | 19,079 | 12,489 | 6,522 | 1,178 | 0 |
| **WHARTON COUNTY - COLORADO BASIN** | | | | | | |
| EL CAMPO* | 0 | 0 | 0 | 0 | 0 | 0 |
| WHARTON | 0 | 0 | 0 | 0 | 0 | 0 |
| COUNTY-OTHER* | 0 | 0 | 0 | 0 | 0 | 0 |
| MANUFACTURING* | 0 | 0 | 0 | 0 | 0 | 0 |
| MINING* | 0 | 0 | 0 | 0 | 0 | 0 |
| STEAM ELECTRIC POWER* | 0 | 0 | 0 | 0 | 0 | 0 |
| LIVESTOCK* | 0 | 0 | 0 | 0 | 0 | 0 |
| IRRIGATION* | 11,627 | 8,227 | 4,769 | 1,605 | 0 | 0 |
| **WHARTON COUNTY - COLORADO-LAVACA BASIN** | | | | | | |
| COUNTY-OTHER* | 0 | 0 | 0 | 0 | 0 | 0 |
| MINING* | 0 | 0 | 0 | 0 | 0 | 0 |
| LIVESTOCK* | 0 | 0 | 0 | 0 | 0 | 0 |
| IRRIGATION* | 0 | 0 | 0 | 0 | 0 | 0 |
| **WHARTON COUNTY - LAVACA BASIN** | | | | | | |
| COUNTY-OTHER* | 0 | 0 | 0 | 0 | 0 | 0 |
| **WILLIAMSON COUNTY - BRAZOS BASIN** | | | | | | |
| AUSTIN | 0 | 0 | 0 | 0 | 0 | 0 |
| NORTH AUSTIN MUD 1 | 0 | 0 | 690 | 678 | 675 | 675 |
| WELLS BRANCH MUD | 0 | 0 | 72 | 71 | 70 | 70 |
| COUNTY-OTHER* | 0 | 0 | 0 | 0 | 0 | 0 |
| MANUFACTURING* | 0 | 0 | 0 | 0 | 0 | 0 |
| MINING* | 0 | 0 | 0 | 0 | 0 | 0 |

*A single asterisk next to a WUG's name denotes that the WUG is split by two or more planning regions.

# Region K Water User Group (WUG) Second-Tier Identified Water Needs Summary

Second-tier needs are WUG split needs adjusted to include the implementation of recommended demand reduction and direct reuse water management strategies.

| WUG CATEGORY | NEEDS (ACRE-FEET PER YEAR) | | | | | |
|---|---|---|---|---|---|---|
| | 2020 | 2030 | 2040 | 2050 | 2060 | 2070 |
| MUNICIPAL | 277 | 1,717 | 11,202 | 16,031 | 27,968 | 41,493 |
| COUNTY-OTHER | 308 | 400 | 507 | 613 | 697 | 1,323 |
| MANUFACTURING | 0 | 40 | 40 | 40 | 40 | 40 |
| MINING | 1,740 | 5,194 | 6,056 | 5,575 | 3,372 | 4,060 |
| STEAM ELECTRIC POWER | 20,066 | 19,986 | 19,906 | 19,826 | 19,826 | 19,826 |
| LIVESTOCK | 0 | 0 | 0 | 0 | 0 | 0 |
| IRRIGATION | 170,277 | 141,583 | 112,321 | 86,033 | 65,198 | 53,607 |

# Region K Source Water Balance (Availability - WUG Supply)

| GROUNDWATER SOURCE TYPE | | | | SOURCE WATER BALANCE (ACRE-FEET PER YEAR) | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| **SOURCE NAME** | **COUNTY** | **BASIN** | **SALINITY*** | **2020** | **2030** | **2040** | **2050** | **2060** | **2070** |
| CARRIZO-WILCOX AQUIFER | BASTROP | BRAZOS | FRESH | 66 | 161 | 274 | 547 | 848 | 848 |
| CARRIZO-WILCOX AQUIFER | BASTROP | COLORADO | FRESH | 0 | 463 | 182 | 82 | 89 | 148 |
| CARRIZO-WILCOX AQUIFER | BASTROP | GUADALUPE | FRESH | 0 | 0 | 0 | 92 | 0 | 0 |
| CARRIZO-WILCOX AQUIFER | FAYETTE | COLORADO | FRESH | 4,565 | 4,565 | 4,565 | 4,565 | 4,565 | 4,565 |
| CARRIZO-WILCOX AQUIFER | FAYETTE | GUADALUPE | FRESH | 909 | 909 | 909 | 909 | 909 | 909 |
| CARRIZO-WILCOX AQUIFER | FAYETTE | LAVACA | FRESH | 0 | 0 | 0 | 0 | 0 | 0 |
| EDWARDS-BFZ AQUIFER | HAYS | COLORADO | FRESH | 1 | 4 | 4 | 4 | 4 | 4 |
| EDWARDS-BFZ AQUIFER | HAYS | COLORADO | SALINE | 66 | 66 | 66 | 66 | 66 | 66 |
| EDWARDS-BFZ AQUIFER | TRAVIS | BRAZOS | FRESH | 275 | 275 | 275 | 275 | 275 | 275 |
| EDWARDS-BFZ AQUIFER | TRAVIS | COLORADO | FRESH | 116 | 116 | 116 | 116 | 116 | 116 |
| EDWARDS-BFZ AQUIFER | TRAVIS | COLORADO | FRESH/ BRACKISH | 20 | 20 | 20 | 20 | 20 | 20 |
| EDWARDS-BFZ AQUIFER | TRAVIS | COLORADO | SALINE | 5,073 | 5,073 | 5,073 | 5,073 | 5,073 | 5,073 |
| EDWARDS-BFZ AQUIFER | TRAVIS | GUADALUPE | SALINE | 280 | 280 | 280 | 280 | 280 | 280 |
| EDWARDS-BFZ AQUIFER | WILLIAMSON | BRAZOS | FRESH | 0 | 0 | 0 | 0 | 0 | 0 |
| EDWARDS-BFZ AQUIFER | WILLIAMSON | COLORADO | FRESH | 4 | 4 | 4 | 4 | 4 | 4 |
| EDWARDS-TRINITY-PLATEAU AQUIFER | BLANCO | COLORADO | FRESH | 0 | 0 | 0 | 0 | 0 | 0 |
| EDWARDS-TRINITY-PLATEAU AQUIFER | BLANCO | GUADALUPE | FRESH | 0 | 0 | 0 | 0 | 0 | 0 |
| EDWARDS-TRINITY-PLATEAU, PECOS VALLEY, AND TRINITY AQUIFERS | GILLESPIE | COLORADO | FRESH | 1,074 | 1,074 | 1,074 | 1,074 | 1,074 | 1,074 |
| EDWARDS-TRINITY-PLATEAU, PECOS VALLEY, AND TRINITY AQUIFERS | GILLESPIE | GUADALUPE | FRESH | 5 | 5 | 5 | 5 | 5 | 5 |
| ELLENBURGER-SAN SABA AQUIFER | BLANCO | COLORADO | FRESH | 509 | 503 | 509 | 503 | 509 | 503 |
| ELLENBURGER-SAN SABA AQUIFER | BURNET | BRAZOS | FRESH | 3,833 | 3,822 | 3,833 | 3,822 | 3,833 | 3,822 |
| ELLENBURGER-SAN SABA AQUIFER | BURNET | COLORADO | FRESH | 3,381 | 3,362 | 3,381 | 3,362 | 3,381 | 3,362 |
| ELLENBURGER-SAN SABA AQUIFER | GILLESPIE | COLORADO | FRESH | 605 | 605 | 605 | 605 | 605 | 605 |
| ELLENBURGER-SAN SABA AQUIFER | GILLESPIE | GUADALUPE | FRESH | 0 | 0 | 0 | 0 | 0 | 0 |
| ELLENBURGER-SAN SABA AQUIFER | LLANO | COLORADO | FRESH | 211 | 210 | 211 | 210 | 211 | 210 |
| ELLENBURGER-SAN SABA AQUIFER | MILLS | BRAZOS | FRESH | 22 | 22 | 22 | 22 | 22 | 22 |
| ELLENBURGER-SAN SABA AQUIFER | MILLS | COLORADO | FRESH | 318 | 317 | 318 | 317 | 318 | 317 |
| ELLENBURGER-SAN SABA AQUIFER | SAN SABA | COLORADO | FRESH | 2,535 | 2,535 | 2,535 | 2,535 | 2,535 | 2,535 |
| GULF COAST AQUIFER SYSTEM | COLORADO | BRAZOS-COLORADO | FRESH | 2,934 | 2,934 | 2,934 | 2,934 | 2,934 | 2,934 |
| GULF COAST AQUIFER SYSTEM | COLORADO | COLORADO | FRESH | 1,137 | 1,137 | 697 | 697 | 697 | 697 |
| GULF COAST AQUIFER SYSTEM | COLORADO | LAVACA | FRESH | 10,773 | 10,773 | 9,014 | 9,014 | 7,867 | 7,867 |
| GULF COAST AQUIFER SYSTEM | FAYETTE | BRAZOS | FRESH | 2 | 2 | 2 | 2 | 2 | 2 |
| GULF COAST AQUIFER SYSTEM | FAYETTE | COLORADO | FRESH | 40 | 40 | 40 | 40 | 40 | 40 |
| GULF COAST AQUIFER SYSTEM | FAYETTE | LAVACA | FRESH | 1 | 1 | 20 | 41 | 41 | 41 |
| GULF COAST AQUIFER SYSTEM | MATAGORDA | BRAZOS-COLORADO | FRESH | 78 | 78 | 78 | 78 | 78 | 78 |
| GULF COAST AQUIFER SYSTEM | MATAGORDA | COLORADO | FRESH/ BRACKISH | 850 | 850 | 850 | 850 | 850 | 850 |
| GULF COAST AQUIFER SYSTEM | MATAGORDA | COLORADO-LAVACA | FRESH | 356 | 356 | 356 | 356 | 356 | 356 |
| GULF COAST AQUIFER SYSTEM | WHARTON | BRAZOS-COLORADO | FRESH | 8,374 | 8,400 | 8,420 | 8,445 | 8,472 | 8,498 |
| GULF COAST AQUIFER SYSTEM | WHARTON | COLORADO | FRESH | 760 | 734 | 714 | 689 | 662 | 636 |

* Salinity field indicates whether the source availability is considered 'fresh' (less than 1,000 mg/L), 'brackish' (1,000 to 10,000 mg/L), 'saline' (10,001 mg/L to 34,999 mg/L), or 'seawater' (35,000 mg/L or greater). Sources can also be labeled as 'fresh/brackish' or 'brackish/saline', if a combination of the salinity types is appropriate.

** Since reservoir sources can exist across multiple counties, the county field value, 'reservoir' is applied to all reservoir sources.

# Region K Source Water Balance (Availability - WUG Supply)

| GROUNDWATER SOURCE TYPE | | | | SOURCE WATER BALANCE (ACRE-FEET PER YEAR) | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| **SOURCE NAME** | **COUNTY** | **BASIN** | **SALINITY*** | **2020** | **2030** | **2040** | **2050** | **2060** | **2070** |
| GULF COAST AQUIFER SYSTEM | WHARTON | COLORADO-LAVACA | FRESH | 1,265 | 1,265 | 1,265 | 1,265 | 1,265 | 1,265 |
| GULF COAST AQUIFER SYSTEM | WHARTON | LAVACA | FRESH | 348 | 348 | 348 | 348 | 348 | 348 |
| HICKORY AQUIFER | BLANCO | COLORADO | FRESH | 144 | 143 | 144 | 143 | 144 | 143 |
| HICKORY AQUIFER | BURNET | BRAZOS | FRESH | 1,240 | 1,236 | 1,240 | 1,236 | 1,240 | 1,236 |
| HICKORY AQUIFER | BURNET | COLORADO | FRESH | 1,937 | 1,931 | 1,937 | 1,931 | 1,937 | 1,931 |
| HICKORY AQUIFER | GILLESPIE | COLORADO | FRESH | 325 | 325 | 325 | 325 | 325 | 325 |
| HICKORY AQUIFER | GILLESPIE | GUADALUPE | FRESH | 0 | 0 | 0 | 0 | 0 | 0 |
| HICKORY AQUIFER | HAYS | COLORADO | FRESH | 0 | 0 | 0 | 0 | 0 | 0 |
| HICKORY AQUIFER | LLANO | COLORADO | FRESH | 1,301 | 1,295 | 1,301 | 1,295 | 1,301 | 1,295 |
| HICKORY AQUIFER | MILLS | BRAZOS | FRESH | 7 | 7 | 7 | 7 | 7 | 7 |
| HICKORY AQUIFER | MILLS | COLORADO | FRESH | 29 | 29 | 29 | 29 | 29 | 29 |
| HICKORY AQUIFER | SAN SABA | COLORADO | FRESH | 6,311 | 6,311 | 6,311 | 6,311 | 6,311 | 6,311 |
| MARBLE FALLS AQUIFER | BLANCO | COLORADO | FRESH | 199 | 199 | 199 | 199 | 199 | 199 |
| MARBLE FALLS AQUIFER | BURNET | BRAZOS | FRESH | 1,387 | 1,383 | 1,387 | 1,383 | 1,387 | 1,383 |
| MARBLE FALLS AQUIFER | BURNET | COLORADO | FRESH | 1,203 | 1,199 | 1,203 | 1,199 | 1,203 | 1,199 |
| MARBLE FALLS AQUIFER | MILLS | BRAZOS | FRESH | 1 | 1 | 1 | 1 | 1 | 1 |
| MARBLE FALLS AQUIFER | MILLS | COLORADO | FRESH | 24 | 24 | 24 | 24 | 24 | 24 |
| MARBLE FALLS AQUIFER | SAN SABA | COLORADO | FRESH | 2,766 | 2,754 | 2,766 | 2,754 | 2,766 | 2,754 |
| OTHER AQUIFER | BASTROP | COLORADO | FRESH | 0 | 0 | 0 | 0 | 0 | 0 |
| OTHER AQUIFER | BURNET | BRAZOS | FRESH | 0 | 0 | 0 | 0 | 0 | 0 |
| OTHER AQUIFER | BURNET | COLORADO | FRESH | 259 | 259 | 259 | 259 | 259 | 259 |
| OTHER AQUIFER | FAYETTE | COLORADO | FRESH | 0 | 0 | 0 | 0 | 0 | 0 |
| OTHER AQUIFER | LLANO | COLORADO | FRESH | 9 | 9 | 9 | 9 | 9 | 9 |
| OTHER AQUIFER | TRAVIS | COLORADO | FRESH | 3,091 | 3,091 | 3,091 | 3,091 | 3,091 | 3,091 |
| OTHER AQUIFER | TRAVIS | GUADALUPE | FRESH | 0 | 0 | 0 | 0 | 0 | 0 |
| QUEEN CITY AQUIFER | BASTROP | BRAZOS | FRESH | 0 | 0 | 0 | 0 | 0 | 0 |
| QUEEN CITY AQUIFER | BASTROP | COLORADO | FRESH | 15 | 0 | 0 | 0 | 0 | 0 |
| QUEEN CITY AQUIFER | BASTROP | GUADALUPE | FRESH | 0 | 0 | 0 | 0 | 0 | 0 |
| QUEEN CITY AQUIFER | FAYETTE | COLORADO | FRESH | 2,278 | 2,278 | 2,278 | 2,278 | 2,278 | 2,278 |
| QUEEN CITY AQUIFER | FAYETTE | GUADALUPE | FRESH | 430 | 430 | 430 | 430 | 430 | 430 |
| QUEEN CITY AQUIFER | FAYETTE | LAVACA | FRESH | 0 | 0 | 0 | 0 | 0 | 0 |
| SPARTA AQUIFER | BASTROP | BRAZOS | FRESH | 89 | 87 | 85 | 84 | 82 | 82 |
| SPARTA AQUIFER | BASTROP | COLORADO | FRESH | 247 | 246 | 245 | 244 | 243 | 243 |
| SPARTA AQUIFER | BASTROP | GUADALUPE | FRESH | 10 | 10 | 10 | 10 | 10 | 10 |
| SPARTA AQUIFER | FAYETTE | COLORADO | FRESH | 961 | 951 | 928 | 914 | 921 | 921 |
| SPARTA AQUIFER | FAYETTE | GUADALUPE | FRESH | 653 | 657 | 658 | 663 | 664 | 664 |
| SPARTA AQUIFER | FAYETTE | LAVACA | FRESH | 0 | 0 | 0 | 0 | 0 | 0 |
| TRINITY AQUIFER | BLANCO | COLORADO | FRESH | 332 | 332 | 332 | 332 | 332 | 332 |
| TRINITY AQUIFER | BLANCO | GUADALUPE | FRESH | 0 | 0 | 0 | 0 | 0 | 0 |
| TRINITY AQUIFER | BURNET | BRAZOS | FRESH | 641 | 634 | 641 | 634 | 641 | 634 |
| TRINITY AQUIFER | BURNET | COLORADO | FRESH | 3 | 0 | 3 | 0 | 3 | 0 |
| TRINITY AQUIFER | HAYS | COLORADO | FRESH | 1,223 | 1,220 | 1,219 | 1,219 | 1,219 | 1,219 |
| TRINITY AQUIFER | HAYS | GUADALUPE | FRESH | 9 | 9 | 9 | 9 | 9 | 9 |
| TRINITY AQUIFER | MILLS | BRAZOS | FRESH | 324 | 321 | 324 | 321 | 324 | 321 |

* Salinity field indicates whether the source availability is considered 'fresh' (less than 1,000 mg/L), 'brackish' (1,000 to 10,000 mg/L), 'saline' (10,001 mg/L to 34,999 mg/L), or 'seawater' (35,000 mg/L or greater). Sources can also be labeled as 'fresh/brackish' or 'brackish/saline', if a combination of the salinity types is appropriate.
** Since reservoir sources can exist across multiple counties, the county field value, 'reservoir' is applied to all reservoir sources.

## Region K Source Water Balance (Availability - WUG Supply)

| GROUNDWATER SOURCE TYPE | | | | SOURCE WATER BALANCE (ACRE-FEET PER YEAR) | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| **SOURCE NAME** | **COUNTY** | **BASIN** | **SALINITY*** | **2020** | **2030** | **2040** | **2050** | **2060** | **2070** |
| TRINITY AQUIFER | MILLS | COLORADO | FRESH | 132 | 128 | 132 | 128 | 132 | 128 |
| TRINITY AQUIFER | TRAVIS | BRAZOS | FRESH | 1 | 1 | 1 | 1 | 1 | 1 |
| TRINITY AQUIFER | TRAVIS | COLORADO | FRESH | 1,864 | 1,849 | 1,864 | 1,849 | 1,864 | 1,849 |
| TRINITY AQUIFER | TRAVIS | COLORADO | FRESH/ BRACKISH | 3,549 | 3,532 | 3,520 | 3,504 | 3,475 | 3,475 |
| TRINITY AQUIFER | TRAVIS | GUADALUPE | FRESH | 2 | 2 | 2 | 2 | 2 | 2 |
| TRINITY AQUIFER | WILLIAMSON | BRAZOS | FRESH | 0 | 0 | 0 | 0 | 0 | 0 |
| TRINITY AQUIFER | WILLIAMSON | COLORADO | FRESH | 32 | 32 | 32 | 32 | 32 | 32 |
| YEGUA-JACKSON AQUIFER | FAYETTE | COLORADO | FRESH | 4,862 | 4,862 | 4,862 | 4,862 | 4,861 | 4,861 |
| YEGUA-JACKSON AQUIFER | FAYETTE | GUADALUPE | FRESH | 481 | 481 | 481 | 481 | 481 | 481 |
| YEGUA-JACKSON AQUIFER | FAYETTE | LAVACA | FRESH | 53 | 122 | 183 | 183 | 183 | 183 |
| | | | **GROUNDWATER SOURCE WATER BALANCE TOTAL** | **89,210** | **89,689** | **87,471** | **87,623** | **86,774** | **86,726** |

| REUSE SOURCE TYPE | | | | SOURCE WATER BALANCE (ACRE-FEET PER YEAR) | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| **SOURCE NAME** | **COUNTY** | **BASIN** | **SALINITY*** | **2020** | **2030** | **2040** | **2050** | **2060** | **2070** |
| DIRECT REUSE | BURNET | COLORADO | FRESH | 0 | 0 | 0 | 0 | 0 | 0 |
| DIRECT REUSE | HAYS | COLORADO | FRESH | 100 | 1,120 | 1,120 | 1,120 | 1,680 | 1,680 |
| DIRECT REUSE | LLANO | COLORADO | FRESH | 0 | 0 | 0 | 0 | 0 | 0 |
| DIRECT REUSE | TRAVIS | COLORADO | FRESH | 2,789 | 2,789 | 2,789 | 2,789 | 2,789 | 2,789 |
| | | | **REUSE SOURCE WATER BALANCE TOTAL** | **2,889** | **3,909** | **3,909** | **3,909** | **4,469** | **4,469** |

| SURFACE WATER SOURCE TYPE | | | | SOURCE WATER BALANCE (ACRE-FEET PER YEAR) | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| **SOURCE NAME** | **COUNTY** | **BASIN** | **SALINITY*** | **2020** | **2030** | **2040** | **2050** | **2060** | **2070** |
| BLANCO LAKE/RESERVOIR | RESERVOIR** | GUADALUPE | FRESH | 0 | 0 | 0 | 0 | 0 | 0 |
| BRAZOS LIVESTOCK LOCAL SUPPLY | BASTROP | BRAZOS | FRESH | 0 | 0 | 0 | 0 | 0 | 0 |
| BRAZOS LIVESTOCK LOCAL SUPPLY | BURNET | BRAZOS | FRESH | 186 | 186 | 186 | 186 | 186 | 186 |
| BRAZOS LIVESTOCK LOCAL SUPPLY | MILLS | BRAZOS | FRESH | 0 | 0 | 0 | 0 | 0 | 0 |
| BRAZOS LIVESTOCK LOCAL SUPPLY | WILLIAMSON | BRAZOS | FRESH | 1 | 1 | 1 | 1 | 1 | 1 |
| BRAZOS OTHER LOCAL SUPPLY | BURNET | BRAZOS | FRESH/ BRACKISH | 0 | 0 | 0 | 0 | 0 | 0 |
| BRAZOS-COLORADO LIVESTOCK LOCAL SUPPLY | COLORADO | BRAZOS-COLORADO | FRESH | 164 | 164 | 164 | 164 | 164 | 164 |
| BRAZOS-COLORADO LIVESTOCK LOCAL SUPPLY | MATAGORDA | BRAZOS-COLORADO | FRESH | 335 | 335 | 335 | 335 | 335 | 335 |
| BRAZOS-COLORADO LIVESTOCK LOCAL SUPPLY | WHARTON | BRAZOS-COLORADO | FRESH | 222 | 222 | 222 | 222 | 222 | 222 |
| BRAZOS-COLORADO RUN-OF-RIVER | MATAGORDA | BRAZOS-COLORADO | FRESH | 0 | 0 | 0 | 0 | 0 | 0 |
| BRAZOS-COLORADO RUN-OF-RIVER | WHARTON | BRAZOS-COLORADO | FRESH | 2,432 | 2,432 | 2,432 | 2,432 | 2,432 | 2,432 |
| COLORADO LIVESTOCK LOCAL SUPPLY | BASTROP | COLORADO | FRESH | 0 | 0 | 0 | 0 | 0 | 0 |
| COLORADO LIVESTOCK LOCAL SUPPLY | BLANCO | COLORADO | FRESH | 0 | 0 | 0 | 0 | 0 | 0 |
| COLORADO LIVESTOCK LOCAL SUPPLY | BURNET | COLORADO | FRESH | 0 | 0 | 0 | 0 | 0 | 0 |
| COLORADO LIVESTOCK LOCAL SUPPLY | COLORADO | COLORADO | FRESH | 0 | 0 | 0 | 0 | 0 | 0 |
| COLORADO LIVESTOCK LOCAL SUPPLY | FAYETTE | COLORADO | FRESH | 0 | 0 | 0 | 0 | 0 | 0 |
| COLORADO LIVESTOCK LOCAL SUPPLY | GILLESPIE | COLORADO | FRESH | 0 | 0 | 0 | 0 | 0 | 0 |
| COLORADO LIVESTOCK LOCAL SUPPLY | HAYS | COLORADO | FRESH | 0 | 0 | 0 | 0 | 0 | 0 |

* Salinity field indicates whether the source availability is considered 'fresh' (less than 1,000 mg/L), 'brackish' (1,000 to 10,000 mg/L), 'saline' (10,001 mg/L to 34,999 mg/L), or 'seawater' (35,000 mg/L or greater). Sources can also be labeled as 'fresh/brackish' or 'brackish/saline', if a combination of the salinity types is appropriate.
** Since reservoir sources can exist across multiple counties, the county field value, 'reservoir' is applied to all reservoir sources.

## Region K Source Water Balance (Availability - WUG Supply)

| SURFACE WATER SOURCE TYPE | | | | SOURCE WATER BALANCE (ACRE-FEET PER YEAR) | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| SOURCE NAME | COUNTY | BASIN | SALINITY* | 2020 | 2030 | 2040 | 2050 | 2060 | 2070 |
| COLORADO LIVESTOCK LOCAL SUPPLY | LLANO | COLORADO | FRESH | 0 | 0 | 0 | 0 | 0 | 0 |
| COLORADO LIVESTOCK LOCAL SUPPLY | MILLS | COLORADO | FRESH | 0 | 0 | 0 | 0 | 0 | 0 |
| COLORADO LIVESTOCK LOCAL SUPPLY | SAN SABA | COLORADO | FRESH | 0 | 0 | 0 | 0 | 0 | 0 |
| COLORADO LIVESTOCK LOCAL SUPPLY | TRAVIS | COLORADO | FRESH | 0 | 0 | 0 | 0 | 0 | 0 |
| COLORADO LIVESTOCK LOCAL SUPPLY | WHARTON | COLORADO | FRESH | 0 | 0 | 0 | 0 | 0 | 0 |
| COLORADO OTHER LOCAL SUPPLY | BASTROP | COLORADO | FRESH | 50 | 51 | 51 | 49 | 49 | 49 |
| COLORADO OTHER LOCAL SUPPLY | GILLESPIE | COLORADO | FRESH | 0 | 0 | 0 | 0 | 0 | 0 |
| COLORADO OTHER LOCAL SUPPLY | TRAVIS | COLORADO | FRESH | 3,315 | 2,709 | 2,055 | 1,443 | 771 | 0 |
| COLORADO RUN-OF-RIVER | BASTROP | COLORADO | FRESH | 786 | 786 | 786 | 786 | 786 | 786 |
| COLORADO RUN-OF-RIVER | BLANCO | COLORADO | FRESH | 67 | 67 | 67 | 67 | 67 | 67 |
| COLORADO RUN-OF-RIVER | BURNET | COLORADO | FRESH | 0 | 0 | 0 | 0 | 0 | 0 |
| COLORADO RUN-OF-RIVER | COLORADO | COLORADO | FRESH | 0 | 0 | 0 | 0 | 0 | 0 |
| COLORADO RUN-OF-RIVER | FAYETTE | COLORADO | FRESH | 0 | 0 | 0 | 0 | 0 | 0 |
| COLORADO RUN-OF-RIVER | GILLESPIE | COLORADO | FRESH | 880 | 880 | 880 | 880 | 880 | 880 |
| COLORADO RUN-OF-RIVER | HAYS | COLORADO | FRESH | 41 | 41 | 41 | 41 | 41 | 41 |
| COLORADO RUN-OF-RIVER | LLANO | COLORADO | FRESH | 440 | 440 | 440 | 440 | 440 | 440 |
| COLORADO RUN-OF-RIVER | MATAGORDA | COLORADO | FRESH | 0 | 0 | 0 | 0 | 0 | 0 |
| COLORADO RUN-OF-RIVER | MILLS | COLORADO | FRESH | 0 | 0 | 0 | 0 | 0 | 0 |
| COLORADO RUN-OF-RIVER | SAN SABA | COLORADO | FRESH | 5,500 | 5,500 | 5,500 | 5,500 | 5,500 | 5,500 |
| COLORADO RUN-OF-RIVER | TRAVIS | COLORADO | FRESH | 756 | 756 | 756 | 756 | 756 | 756 |
| COLORADO RUN-OF-RIVER | WHARTON | COLORADO | FRESH | 0 | 0 | 0 | 0 | 0 | 0 |
| COLORADO-LAVACA LIVESTOCK LOCAL SUPPLY | MATAGORDA | COLORADO-LAVACA | FRESH | 493 | 493 | 493 | 493 | 493 | 493 |
| COLORADO-LAVACA LIVESTOCK LOCAL SUPPLY | WHARTON | COLORADO-LAVACA | FRESH | 6 | 6 | 6 | 6 | 6 | 6 |
| COLORADO-LAVACA RUN-OF-RIVER | MATAGORDA | COLORADO-LAVACA | FRESH | 0 | 0 | 0 | 0 | 0 | 0 |
| GOLDTHWAITE LAKE/RESERVOIR | RESERVOIR** | COLORADO | FRESH | 0 | 0 | 0 | 0 | 0 | 0 |
| GUADALUPE LIVESTOCK LOCAL SUPPLY | BASTROP | GUADALUPE | FRESH | 0 | 0 | 0 | 0 | 0 | 0 |
| GUADALUPE LIVESTOCK LOCAL SUPPLY | BLANCO | GUADALUPE | FRESH | 28 | 28 | 28 | 28 | 28 | 28 |
| GUADALUPE LIVESTOCK LOCAL SUPPLY | FAYETTE | GUADALUPE | FRESH | 0 | 0 | 0 | 0 | 0 | 0 |
| GUADALUPE LIVESTOCK LOCAL SUPPLY | GILLESPIE | GUADALUPE | FRESH | 19 | 19 | 19 | 19 | 19 | 19 |
| GUADALUPE LIVESTOCK LOCAL SUPPLY | TRAVIS | GUADALUPE | FRESH | 6 | 6 | 6 | 6 | 6 | 6 |
| GUADALUPE RUN-OF-RIVER | BLANCO | GUADALUPE | FRESH | 9 | 9 | 9 | 9 | 9 | 9 |
| HIGHLAND LAKES LAKE/RESERVOIR SYSTEM | RESERVOIR** | COLORADO | FRESH | 0 | 0 | 0 | 0 | 0 | 0 |
| LAVACA LIVESTOCK LOCAL SUPPLY | COLORADO | LAVACA | FRESH | 266 | 266 | 266 | 266 | 266 | 266 |
| LAVACA LIVESTOCK LOCAL SUPPLY | FAYETTE | LAVACA | FRESH | 108 | 108 | 108 | 108 | 108 | 108 |
| LAVACA RUN-OF-RIVER | COLORADO | LAVACA | FRESH | 0 | 0 | 0 | 0 | 0 | 0 |
| LAVACA RUN-OF-RIVER | FAYETTE | LAVACA | FRESH | 20 | 20 | 20 | 20 | 20 | 20 |
| LLANO LAKE/RESERVOIR | RESERVOIR** | COLORADO | FRESH | 0 | 0 | 0 | 0 | 0 | 0 |
| LLANO RUN-OF-RIVER | LLANO | COLORADO | FRESH | 0 | 0 | 0 | 0 | 0 | 0 |

* Salinity field indicates whether the source availability is considered ‘fresh’ (less than 1,000 mg/L), ‘brackish’ (1,000 to 10,000 mg/L), ‘saline’ (10,001 mg/L to 34,999 mg/L), or ‘seawater’ (35,000 mg/L or greater). Sources can also be labeled as ‘fresh/brackish’ or ‘brackish/saline’, if a combination of the salinity types is appropriate.
** Since reservoir sources can exist across multiple counties, the county field value, ‘reservoir’ is applied to all reservoir sources.

## Region K Source Water Balance (Availability - WUG Supply)

| SURFACE WATER SOURCE TYPE | | | | SOURCE WATER BALANCE (ACRE-FEET PER YEAR) | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| **SOURCE NAME** | **COUNTY** | **BASIN** | **SALINITY*** | **2020** | **2030** | **2040** | **2050** | **2060** | **2070** |
| STPNOC LAKE/RESERVOIR | RESERVOIR** | COLORADO | FRESH/ BRACKISH | 0 | 0 | 0 | 0 | 0 | 0 |
| **SURFACE WATER SOURCE WATER BALANCE TOTAL** | | | | **16,130** | **15,525** | **14,871** | **14,257** | **13,585** | **12,814** |

| | | | | | | |
|---|---|---|---|---|---|---|
| **REGION K SOURCE WATER BALANCE TOTAL** | **108,229** | **109,123** | **106,251** | **105,789** | **104,828** | **104,009** |

* Salinity field indicates whether the source availability is considered 'fresh' (less than 1,000 mg/L), 'brackish' (1,000 to 10,000 mg/L), 'saline' (10,001 mg/L to 34,999 mg/L), or 'seawater' (35,000 mg/L or greater). Sources can also be labeled as 'fresh/brackish' or 'brackish/saline', if a combination of the salinity types is appropriate.
** Since reservoir sources can exist across multiple counties, the county field value, 'reservoir' is applied to all reservoir sources.

# Region K Water User Group (WUG) Data Comparison to 2016 Regional Water Plan (RWP)

| | 2020 PLANNING DECADE | | | 2070 PLANNING DECADE | | |
|---|---|---|---|---|---|---|
| | 2016 RWP | 2021 RWP | DIFFERENCE (%) | 2016 RWP | 2021 RWP | DIFFERENCE (%) |
| **BASTROP COUNTY \| COUNTY-OTHER WUG TYPE** | | | | | | |
| EXISTING WUG SUPPLY TOTAL (acre-feet per year) | 1,579 | 1,430 | -9.4% | 4,152 | 3,437 | -17.2% |
| PROJECTED DEMAND TOTAL (acre-feet per year) | 1,873 | 1,418 | -24.3% | 5,634 | 3,437 | -39.0% |
| WATER SUPPLY NEEDS TOTAL (acre-feet per year)* | 361 | 0 | -100.0% | 1,490 | 0 | -100.0% |
| **BASTROP COUNTY \| IRRIGATION WUG TYPE** | | | | | | |
| EXISTING WUG SUPPLY TOTAL (acre-feet per year) | 1,287 | 4,361 | 238.9% | 878 | 4,304 | 390.2% |
| PROJECTED DEMAND TOTAL (acre-feet per year) | 852 | 4,280 | 402.3% | 443 | 4,280 | 866.1% |
| WATER SUPPLY NEEDS TOTAL (acre-feet per year)* | 0 | 0 | 0.0% | 0 | 0 | 0.0% |
| **BASTROP COUNTY \| LIVESTOCK WUG TYPE** | | | | | | |
| EXISTING WUG SUPPLY TOTAL (acre-feet per year) | 1,522 | 1,177 | -22.7% | 1,522 | 1,177 | -22.7% |
| PROJECTED DEMAND TOTAL (acre-feet per year) | 1,522 | 1,135 | -25.4% | 1,522 | 1,135 | -25.4% |
| WATER SUPPLY NEEDS TOTAL (acre-feet per year)* | 0 | 0 | 0.0% | 0 | 0 | 0.0% |
| **BASTROP COUNTY \| MANUFACTURING WUG TYPE** | | | | | | |
| EXISTING WUG SUPPLY TOTAL (acre-feet per year) | 146 | 215 | 47.3% | 146 | 215 | 47.3% |
| PROJECTED DEMAND TOTAL (acre-feet per year) | 194 | 188 | -3.1% | 345 | 215 | -37.7% |
| WATER SUPPLY NEEDS TOTAL (acre-feet per year)* | 55 | 0 | -100.0% | 199 | 0 | -100.0% |
| **BASTROP COUNTY \| MINING WUG TYPE** | | | | | | |
| EXISTING WUG SUPPLY TOTAL (acre-feet per year) | 2,152 | 2,710 | 25.9% | 2,153 | 2,196 | 2.0% |
| PROJECTED DEMAND TOTAL (acre-feet per year) | 2,884 | 2,884 | 0.0% | 9,996 | 476 | -95.2% |
| WATER SUPPLY NEEDS TOTAL (acre-feet per year)* | 732 | 451 | -38.4% | 7,843 | 0 | -100.0% |
| **BASTROP COUNTY \| MUNICIPAL WUG TYPE** | | | | | | |
| EXISTING WUG SUPPLY TOTAL (acre-feet per year) | 13,282 | 16,441 | 23.8% | 17,283 | 18,780 | 8.7% |
| PROJECTED DEMAND TOTAL (acre-feet per year) | 13,859 | 14,047 | 1.4% | 54,424 | 55,323 | 1.7% |
| WATER SUPPLY NEEDS TOTAL (acre-feet per year)* | 3,036 | 224 | -92.6% | 37,655 | 37,368 | -0.8% |
| **BASTROP COUNTY \| STEAM ELECTRIC POWER WUG TYPE** | | | | | | |
| EXISTING WUG SUPPLY TOTAL (acre-feet per year) | 16,720 | 10,288 | -38.5% | 16,720 | 10,288 | -38.5% |
| PROJECTED DEMAND TOTAL (acre-feet per year) | 14,000 | 10,288 | -26.5% | 16,720 | 10,288 | -38.5% |
| WATER SUPPLY NEEDS TOTAL (acre-feet per year)* | 0 | 0 | 0.0% | 0 | 0 | 0.0% |
| **BLANCO COUNTY \| COUNTY-OTHER WUG TYPE** | | | | | | |
| EXISTING WUG SUPPLY TOTAL (acre-feet per year) | 1,639 | 1,513 | -7.7% | 1,646 | 1,513 | -8.1% |
| PROJECTED DEMAND TOTAL (acre-feet per year) | 964 | 1,008 | 4.6% | 1,286 | 1,219 | -5.2% |
| WATER SUPPLY NEEDS TOTAL (acre-feet per year)* | 0 | 0 | 0.0% | 55 | 0 | -100.0% |
| **BLANCO COUNTY \| IRRIGATION WUG TYPE** | | | | | | |
| EXISTING WUG SUPPLY TOTAL (acre-feet per year) | 324 | 1,398 | 331.5% | 324 | 1,398 | 331.5% |
| PROJECTED DEMAND TOTAL (acre-feet per year) | 256 | 1,327 | 418.4% | 204 | 1,327 | 550.5% |
| WATER SUPPLY NEEDS TOTAL (acre-feet per year)* | 0 | 0 | 0.0% | 0 | 0 | 0.0% |
| **BLANCO COUNTY \| LIVESTOCK WUG TYPE** | | | | | | |
| EXISTING WUG SUPPLY TOTAL (acre-feet per year) | 601 | 666 | 10.8% | 601 | 666 | 10.8% |
| PROJECTED DEMAND TOTAL (acre-feet per year) | 564 | 331 | -41.3% | 564 | 331 | -41.3% |
| WATER SUPPLY NEEDS TOTAL (acre-feet per year)* | 0 | 0 | 0.0% | 0 | 0 | 0.0% |
| **BLANCO COUNTY \| MANUFACTURING WUG TYPE** | | | | | | |
| EXISTING WUG SUPPLY TOTAL (acre-feet per year) | 20 | 0 | -100.0% | 20 | 0 | -100.0% |
| PROJECTED DEMAND TOTAL (acre-feet per year) | 20 | 0 | -100.0% | 20 | 0 | -100.0% |
| WATER SUPPLY NEEDS TOTAL (acre-feet per year)* | 0 | 0 | 0.0% | 0 | 0 | 0.0% |

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## Region K Water User Group (WUG) Data Comparison to 2016 Regional Water Plan (RWP)

| | 2020 PLANNING DECADE | | | 2070 PLANNING DECADE | | |
|---|---|---|---|---|---|---|
| | 2016 RWP | 2021 RWP | DIFFERENCE (%) | 2016 RWP | 2021 RWP | DIFFERENCE (%) |
| **BLANCO COUNTY \| MINING WUG TYPE** | | | | | | |
| EXISTING WUG SUPPLY TOTAL (acre-feet per year) | 5 | 5 | 0.0% | 5 | 5 | 0.0% |
| PROJECTED DEMAND TOTAL (acre-feet per year) | 5 | 5 | 0.0% | 5 | 5 | 0.0% |
| WATER SUPPLY NEEDS TOTAL (acre-feet per year)* | 0 | 0 | 0.0% | 0 | 0 | 0.0% |
| **BLANCO COUNTY \| MUNICIPAL WUG TYPE** | | | | | | |
| EXISTING WUG SUPPLY TOTAL (acre-feet per year) | 1,630 | 1,688 | 3.6% | 1,679 | 1,706 | 1.6% |
| PROJECTED DEMAND TOTAL (acre-feet per year) | 847 | 752 | -11.2% | 1,152 | 1,150 | -0.2% |
| WATER SUPPLY NEEDS TOTAL (acre-feet per year)* | 48 | 0 | -100.0% | 175 | 82 | -53.1% |
| **BURNET COUNTY \| COUNTY-OTHER WUG TYPE** | | | | | | |
| EXISTING WUG SUPPLY TOTAL (acre-feet per year) | 6,899 | 6,943 | 0.6% | 6,899 | 6,943 | 0.6% |
| PROJECTED DEMAND TOTAL (acre-feet per year) | 3,506 | 3,414 | -2.6% | 4,736 | 4,838 | 2.2% |
| WATER SUPPLY NEEDS TOTAL (acre-feet per year)* | 0 | 0 | 0.0% | 460 | 162 | -64.8% |
| **BURNET COUNTY \| IRRIGATION WUG TYPE** | | | | | | |
| EXISTING WUG SUPPLY TOTAL (acre-feet per year) | 2,127 | 1,831 | -13.9% | 2,127 | 1,831 | -13.9% |
| PROJECTED DEMAND TOTAL (acre-feet per year) | 1,504 | 1,498 | -0.4% | 1,504 | 1,498 | -0.4% |
| WATER SUPPLY NEEDS TOTAL (acre-feet per year)* | 0 | 0 | 0.0% | 0 | 0 | 0.0% |
| **BURNET COUNTY \| LIVESTOCK WUG TYPE** | | | | | | |
| EXISTING WUG SUPPLY TOTAL (acre-feet per year) | 1,184 | 1,691 | 42.8% | 1,184 | 1,691 | 42.8% |
| PROJECTED DEMAND TOTAL (acre-feet per year) | 835 | 1,691 | 102.5% | 835 | 1,691 | 102.5% |
| WATER SUPPLY NEEDS TOTAL (acre-feet per year)* | 0 | 0 | 0.0% | 0 | 0 | 0.0% |
| **BURNET COUNTY \| MANUFACTURING WUG TYPE** | | | | | | |
| EXISTING WUG SUPPLY TOTAL (acre-feet per year) | 2,012 | 512 | -74.6% | 2,012 | 512 | -74.6% |
| PROJECTED DEMAND TOTAL (acre-feet per year) | 1,109 | 251 | -77.4% | 1,782 | 299 | -83.2% |
| WATER SUPPLY NEEDS TOTAL (acre-feet per year)* | 0 | 0 | 0.0% | 0 | 0 | 0.0% |
| **BURNET COUNTY \| MINING WUG TYPE** | | | | | | |
| EXISTING WUG SUPPLY TOTAL (acre-feet per year) | 3,479 | 4,131 | 18.7% | 4,709 | 4,131 | -12.3% |
| PROJECTED DEMAND TOTAL (acre-feet per year) | 4,490 | 4,490 | 0.0% | 9,412 | 9,412 | 0.0% |
| WATER SUPPLY NEEDS TOTAL (acre-feet per year)* | 1,011 | 935 | -7.5% | 4,703 | 5,281 | 12.3% |
| **BURNET COUNTY \| MUNICIPAL WUG TYPE** | | | | | | |
| EXISTING WUG SUPPLY TOTAL (acre-feet per year) | 11,843 | 12,665 | 6.9% | 12,023 | 12,795 | 6.4% |
| PROJECTED DEMAND TOTAL (acre-feet per year) | 7,317 | 7,056 | -3.6% | 15,865 | 14,547 | -8.3% |
| WATER SUPPLY NEEDS TOTAL (acre-feet per year)* | 247 | 412 | 66.8% | 5,294 | 3,590 | -32.2% |
| **COLORADO COUNTY \| COUNTY-OTHER WUG TYPE** | | | | | | |
| EXISTING WUG SUPPLY TOTAL (acre-feet per year) | 2,025 | 1,589 | -21.5% | 2,025 | 1,589 | -21.5% |
| PROJECTED DEMAND TOTAL (acre-feet per year) | 1,475 | 1,453 | -1.5% | 1,631 | 1,607 | -1.5% |
| WATER SUPPLY NEEDS TOTAL (acre-feet per year)* | 121 | 92 | -24.0% | 226 | 195 | -13.7% |
| **COLORADO COUNTY \| IRRIGATION WUG TYPE** | | | | | | |
| EXISTING WUG SUPPLY TOTAL (acre-feet per year) | 106,892 | 118,794 | 11.1% | 106,892 | 118,794 | 11.1% |
| PROJECTED DEMAND TOTAL (acre-feet per year) | 165,846 | 173,112 | 4.4% | 144,708 | 151,048 | 4.4% |
| WATER SUPPLY NEEDS TOTAL (acre-feet per year)* | 58,954 | 54,318 | -7.9% | 37,816 | 32,254 | -14.7% |
| **COLORADO COUNTY \| LIVESTOCK WUG TYPE** | | | | | | |
| EXISTING WUG SUPPLY TOTAL (acre-feet per year) | 1,655 | 1,701 | 2.8% | 1,655 | 1,701 | 2.8% |
| PROJECTED DEMAND TOTAL (acre-feet per year) | 1,590 | 1,276 | -19.7% | 1,590 | 1,276 | -19.7% |
| WATER SUPPLY NEEDS TOTAL (acre-feet per year)* | 0 | 0 | 0.0% | 0 | 0 | 0.0% |

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## Region K Water User Group (WUG) Data Comparison to 2016 Regional Water Plan (RWP)

| | 2020 PLANNING DECADE | | | 2070 PLANNING DECADE | | |
|---|---|---|---|---|---|---|
| | 2016 RWP | 2021 RWP | DIFFERENCE (%) | 2016 RWP | 2021 RWP | DIFFERENCE (%) |
| **COLORADO COUNTY \| MANUFACTURING WUG TYPE** | | | | | | |
| EXISTING WUG SUPPLY TOTAL (acre-feet per year) | 844 | 1,132 | 34.1% | 844 | 1,132 | 34.1% |
| PROJECTED DEMAND TOTAL (acre-feet per year) | 383 | 960 | 150.7% | 528 | 1,132 | 114.4% |
| WATER SUPPLY NEEDS TOTAL (acre-feet per year)* | 0 | 0 | 0.0% | 0 | 0 | 0.0% |
| **COLORADO COUNTY \| MINING WUG TYPE** | | | | | | |
| EXISTING WUG SUPPLY TOTAL (acre-feet per year) | 5,656 | 5,656 | 0.0% | 5,656 | 5,656 | 0.0% |
| PROJECTED DEMAND TOTAL (acre-feet per year) | 5,325 | 5,325 | 0.0% | 5,597 | 5,597 | 0.0% |
| WATER SUPPLY NEEDS TOTAL (acre-feet per year)* | 0 | 0 | 0.0% | 0 | 0 | 0.0% |
| **COLORADO COUNTY \| MUNICIPAL WUG TYPE** | | | | | | |
| EXISTING WUG SUPPLY TOTAL (acre-feet per year) | 2,368 | 2,901 | 22.5% | 2,368 | 2,901 | 22.5% |
| PROJECTED DEMAND TOTAL (acre-feet per year) | 2,214 | 2,194 | -0.9% | 2,531 | 2,507 | -0.9% |
| WATER SUPPLY NEEDS TOTAL (acre-feet per year)* | 0 | 7 | 100.0% | 163 | 13 | -92.0% |
| **COLORADO COUNTY \| STEAM ELECTRIC POWER WUG TYPE** | | | | | | |
| PROJECTED DEMAND TOTAL (acre-feet per year) | 0 | 4,971 | 100.0% | 0 | 4,971 | 100.0% |
| WATER SUPPLY NEEDS TOTAL (acre-feet per year)* | 0 | 4,971 | 100.0% | 0 | 4,971 | 100.0% |
| **FAYETTE COUNTY \| COUNTY-OTHER WUG TYPE** | | | | | | |
| EXISTING WUG SUPPLY TOTAL (acre-feet per year) | 1,002 | 878 | -12.4% | 1,002 | 878 | -12.4% |
| PROJECTED DEMAND TOTAL (acre-feet per year) | 1,236 | 1,238 | 0.2% | 1,615 | 1,606 | -0.6% |
| WATER SUPPLY NEEDS TOTAL (acre-feet per year)* | 272 | 435 | 59.9% | 639 | 789 | 23.5% |
| **FAYETTE COUNTY \| IRRIGATION WUG TYPE** | | | | | | |
| EXISTING WUG SUPPLY TOTAL (acre-feet per year) | 1,190 | 1,022 | -14.1% | 1,190 | 1,022 | -14.1% |
| PROJECTED DEMAND TOTAL (acre-feet per year) | 623 | 828 | 32.9% | 453 | 828 | 82.8% |
| WATER SUPPLY NEEDS TOTAL (acre-feet per year)* | 0 | 0 | 0.0% | 0 | 0 | 0.0% |
| **FAYETTE COUNTY \| LIVESTOCK WUG TYPE** | | | | | | |
| EXISTING WUG SUPPLY TOTAL (acre-feet per year) | 3,468 | 1,982 | -42.8% | 3,468 | 1,982 | -42.8% |
| PROJECTED DEMAND TOTAL (acre-feet per year) | 2,397 | 1,726 | -28.0% | 2,397 | 1,726 | -28.0% |
| WATER SUPPLY NEEDS TOTAL (acre-feet per year)* | 0 | 0 | 0.0% | 0 | 0 | 0.0% |
| **FAYETTE COUNTY \| MANUFACTURING WUG TYPE** | | | | | | |
| EXISTING WUG SUPPLY TOTAL (acre-feet per year) | 152 | 402 | 164.5% | 152 | 402 | 164.5% |
| PROJECTED DEMAND TOTAL (acre-feet per year) | 358 | 396 | 10.6% | 543 | 442 | -18.6% |
| WATER SUPPLY NEEDS TOTAL (acre-feet per year)* | 206 | 0 | -100.0% | 391 | 40 | -89.8% |
| **FAYETTE COUNTY \| MINING WUG TYPE** | | | | | | |
| EXISTING WUG SUPPLY TOTAL (acre-feet per year) | 540 | 1,799 | 233.1% | 540 | 1,629 | 201.7% |
| PROJECTED DEMAND TOTAL (acre-feet per year) | 2,526 | 2,526 | 0.0% | 350 | 350 | 0.0% |
| WATER SUPPLY NEEDS TOTAL (acre-feet per year)* | 1,986 | 760 | -61.7% | 39 | 0 | -100.0% |
| **FAYETTE COUNTY \| MUNICIPAL WUG TYPE** | | | | | | |
| EXISTING WUG SUPPLY TOTAL (acre-feet per year) | 4,069 | 4,752 | 16.8% | 4,034 | 4,774 | 18.3% |
| PROJECTED DEMAND TOTAL (acre-feet per year) | 2,843 | 3,226 | 13.5% | 3,840 | 4,383 | 14.1% |
| WATER SUPPLY NEEDS TOTAL (acre-feet per year)* | 0 | 0 | 0.0% | 267 | 118 | -55.8% |
| **FAYETTE COUNTY \| STEAM ELECTRIC POWER WUG TYPE** | | | | | | |
| EXISTING WUG SUPPLY TOTAL (acre-feet per year) | 45,988 | 44,912 | -2.3% | 45,988 | 44,912 | -2.3% |
| PROJECTED DEMAND TOTAL (acre-feet per year) | 35,702 | 49,211 | 37.8% | 53,402 | 49,211 | -7.8% |
| WATER SUPPLY NEEDS TOTAL (acre-feet per year)* | 0 | 4,299 | 100.0% | 7,414 | 4,299 | -42.0% |
| **GILLESPIE COUNTY \| COUNTY-OTHER WUG TYPE** | | | | | | |

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# Region K Water User Group (WUG) Data Comparison to 2016 Regional Water Plan (RWP)

| | 2020 PLANNING DECADE | | | 2070 PLANNING DECADE | | |
|---|---|---|---|---|---|---|
| | 2016 RWP | 2021 RWP | DIFFERENCE (%) | 2016 RWP | 2021 RWP | DIFFERENCE (%) |
| EXISTING WUG SUPPLY TOTAL (acre-feet per year) | 2,410 | 2,405 | -0.2% | 2,410 | 2,405 | -0.2% |
| PROJECTED DEMAND TOTAL (acre-feet per year) | 1,823 | 1,735 | -4.8% | 2,291 | 2,184 | -4.7% |
| WATER SUPPLY NEEDS TOTAL (acre-feet per year)* | 0 | 0 | 0.0% | 0 | 0 | 0.0% |
| **GILLESPIE COUNTY \| IRRIGATION WUG TYPE** | | | | | | |
| EXISTING WUG SUPPLY TOTAL (acre-feet per year) | 2,502 | 2,502 | 0.0% | 2,502 | 2,502 | 0.0% |
| PROJECTED DEMAND TOTAL (acre-feet per year) | 2,058 | 2,383 | 15.8% | 1,928 | 2,383 | 23.6% |
| WATER SUPPLY NEEDS TOTAL (acre-feet per year)* | 0 | 0 | 0.0% | 0 | 0 | 0.0% |
| **GILLESPIE COUNTY \| LIVESTOCK WUG TYPE** | | | | | | |
| EXISTING WUG SUPPLY TOTAL (acre-feet per year) | 1,612 | 1,612 | 0.0% | 1,612 | 1,612 | 0.0% |
| PROJECTED DEMAND TOTAL (acre-feet per year) | 1,062 | 1,212 | 14.1% | 1,062 | 1,212 | 14.1% |
| WATER SUPPLY NEEDS TOTAL (acre-feet per year)* | 0 | 0 | 0.0% | 0 | 0 | 0.0% |
| **GILLESPIE COUNTY \| MANUFACTURING WUG TYPE** | | | | | | |
| EXISTING WUG SUPPLY TOTAL (acre-feet per year) | 740 | 740 | 0.0% | 740 | 740 | 0.0% |
| PROJECTED DEMAND TOTAL (acre-feet per year) | 1,049 | 77 | -92.7% | 1,366 | 93 | -93.2% |
| WATER SUPPLY NEEDS TOTAL (acre-feet per year)* | 309 | 0 | -100.0% | 626 | 0 | -100.0% |
| **GILLESPIE COUNTY \| MINING WUG TYPE** | | | | | | |
| EXISTING WUG SUPPLY TOTAL (acre-feet per year) | 55 | 55 | 0.0% | 55 | 55 | 0.0% |
| PROJECTED DEMAND TOTAL (acre-feet per year) | 4 | 4 | 0.0% | 4 | 4 | 0.0% |
| WATER SUPPLY NEEDS TOTAL (acre-feet per year)* | 0 | 0 | 0.0% | 0 | 0 | 0.0% |
| **GILLESPIE COUNTY \| MUNICIPAL WUG TYPE** | | | | | | |
| EXISTING WUG SUPPLY TOTAL (acre-feet per year) | 3,836 | 4,443 | 15.8% | 3,836 | 4,443 | 15.8% |
| PROJECTED DEMAND TOTAL (acre-feet per year) | 3,146 | 3,351 | 6.5% | 4,058 | 4,322 | 6.5% |
| WATER SUPPLY NEEDS TOTAL (acre-feet per year)* | 0 | 0 | 0.0% | 222 | 0 | -100.0% |
| **HAYS COUNTY \| COUNTY-OTHER WUG TYPE** | | | | | | |
| EXISTING WUG SUPPLY TOTAL (acre-feet per year) | 4,090 | 2,317 | -43.3% | 4,090 | 2,317 | -43.3% |
| PROJECTED DEMAND TOTAL (acre-feet per year) | 3,107 | 1,351 | -56.5% | 7,472 | 3,118 | -58.3% |
| WATER SUPPLY NEEDS TOTAL (acre-feet per year)* | 0 | 0 | 0.0% | 3,382 | 801 | -76.3% |
| **HAYS COUNTY \| IRRIGATION WUG TYPE** | | | | | | |
| EXISTING WUG SUPPLY TOTAL (acre-feet per year) | 440 | 782 | 77.7% | 440 | 782 | 77.7% |
| PROJECTED DEMAND TOTAL (acre-feet per year) | 107 | 525 | 390.7% | 107 | 525 | 390.7% |
| WATER SUPPLY NEEDS TOTAL (acre-feet per year)* | 0 | 0 | 0.0% | 0 | 0 | 0.0% |
| **HAYS COUNTY \| LIVESTOCK WUG TYPE** | | | | | | |
| EXISTING WUG SUPPLY TOTAL (acre-feet per year) | 222 | 920 | 314.4% | 222 | 920 | 314.4% |
| PROJECTED DEMAND TOTAL (acre-feet per year) | 220 | 17 | -92.3% | 220 | 17 | -92.3% |
| WATER SUPPLY NEEDS TOTAL (acre-feet per year)* | 0 | 0 | 0.0% | 0 | 0 | 0.0% |
| **HAYS COUNTY \| MANUFACTURING WUG TYPE** | | | | | | |
| EXISTING WUG SUPPLY TOTAL (acre-feet per year) | 583 | 468 | -19.7% | 583 | 468 | -19.7% |
| PROJECTED DEMAND TOTAL (acre-feet per year) | 347 | 277 | -20.2% | 583 | 324 | -44.4% |
| WATER SUPPLY NEEDS TOTAL (acre-feet per year)* | 0 | 0 | 0.0% | 0 | 0 | 0.0% |
| **HAYS COUNTY \| MINING WUG TYPE** | | | | | | |
| EXISTING WUG SUPPLY TOTAL (acre-feet per year) | 314 | 314 | 0.0% | 314 | 314 | 0.0% |
| PROJECTED DEMAND TOTAL (acre-feet per year) | 845 | 845 | 0.0% | 1,893 | 1,893 | 0.0% |
| WATER SUPPLY NEEDS TOTAL (acre-feet per year)* | 531 | 531 | 0.0% | 1,579 | 1,579 | 0.0% |
| **HAYS COUNTY \| MUNICIPAL WUG TYPE** | | | | | | |

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# Region K Water User Group (WUG) Data Comparison to 2016 Regional Water Plan (RWP)

| | 2020 PLANNING DECADE | | | 2070 PLANNING DECADE | | |
|---|---|---|---|---|---|---|
| | 2016 RWP | 2021 RWP | DIFFERENCE (%) | 2016 RWP | 2021 RWP | DIFFERENCE (%) |
| EXISTING WUG SUPPLY TOTAL (acre-feet per year) | 8,357 | 12,744 | 52.5% | 11,902 | 16,228 | 36.3% |
| PROJECTED DEMAND TOTAL (acre-feet per year) | 7,441 | 10,097 | 35.7% | 30,215 | 32,688 | 8.2% |
| WATER SUPPLY NEEDS TOTAL (acre-feet per year)* | 0 | 60 | 100.0% | 18,333 | 16,610 | -9.4% |
| **HAYS COUNTY \| STEAM ELECTRIC POWER WUG TYPE** | | | | | | |
| EXISTING WUG SUPPLY TOTAL (acre-feet per year) | 0 | 1,698 | 100.0% | 0 | 1,698 | 100.0% |
| PROJECTED DEMAND TOTAL (acre-feet per year) | 0 | 1,187 | 100.0% | 0 | 1,187 | 100.0% |
| WATER SUPPLY NEEDS TOTAL (acre-feet per year)* | 0 | 0 | 0.0% | 0 | 0 | 0.0% |
| **LLANO COUNTY \| COUNTY-OTHER WUG TYPE** | | | | | | |
| EXISTING WUG SUPPLY TOTAL (acre-feet per year) | 4,256 | 2,942 | -30.9% | 4,256 | 2,942 | -30.9% |
| PROJECTED DEMAND TOTAL (acre-feet per year) | 610 | 260 | -57.4% | 500 | 187 | -62.6% |
| WATER SUPPLY NEEDS TOTAL (acre-feet per year)* | 0 | 0 | 0.0% | 0 | 0 | 0.0% |
| **LLANO COUNTY \| IRRIGATION WUG TYPE** | | | | | | |
| EXISTING WUG SUPPLY TOTAL (acre-feet per year) | 2,353 | 1,914 | -18.7% | 2,353 | 1,914 | -18.7% |
| PROJECTED DEMAND TOTAL (acre-feet per year) | 1,936 | 998 | -48.5% | 1,781 | 998 | -44.0% |
| WATER SUPPLY NEEDS TOTAL (acre-feet per year)* | 0 | 0 | 0.0% | 0 | 0 | 0.0% |
| **LLANO COUNTY \| LIVESTOCK WUG TYPE** | | | | | | |
| EXISTING WUG SUPPLY TOTAL (acre-feet per year) | 751 | 751 | 0.0% | 751 | 751 | 0.0% |
| PROJECTED DEMAND TOTAL (acre-feet per year) | 751 | 580 | -22.8% | 751 | 580 | -22.8% |
| WATER SUPPLY NEEDS TOTAL (acre-feet per year)* | 0 | 0 | 0.0% | 0 | 0 | 0.0% |
| **LLANO COUNTY \| MANUFACTURING WUG TYPE** | | | | | | |
| EXISTING WUG SUPPLY TOTAL (acre-feet per year) | 3 | 4 | 33.3% | 3 | 4 | 33.3% |
| PROJECTED DEMAND TOTAL (acre-feet per year) | 3 | 3 | 0.0% | 3 | 4 | 33.3% |
| WATER SUPPLY NEEDS TOTAL (acre-feet per year)* | 0 | 0 | 0.0% | 0 | 0 | 0.0% |
| **LLANO COUNTY \| MINING WUG TYPE** | | | | | | |
| EXISTING WUG SUPPLY TOTAL (acre-feet per year) | 3 | 3 | 0.0% | 3 | 3 | 0.0% |
| PROJECTED DEMAND TOTAL (acre-feet per year) | 3 | 3 | 0.0% | 3 | 3 | 0.0% |
| WATER SUPPLY NEEDS TOTAL (acre-feet per year)* | 0 | 0 | 0.0% | 0 | 0 | 0.0% |
| **LLANO COUNTY \| MUNICIPAL WUG TYPE** | | | | | | |
| EXISTING WUG SUPPLY TOTAL (acre-feet per year) | 3,722 | 4,265 | 14.6% | 3,698 | 4,265 | 15.3% |
| PROJECTED DEMAND TOTAL (acre-feet per year) | 3,696 | 4,309 | 16.6% | 4,125 | 4,504 | 9.2% |
| WATER SUPPLY NEEDS TOTAL (acre-feet per year)* | 445 | 591 | 32.8% | 629 | 642 | 2.1% |
| **LLANO COUNTY \| STEAM ELECTRIC POWER WUG TYPE** | | | | | | |
| EXISTING WUG SUPPLY TOTAL (acre-feet per year) | 2,500 | 1,748 | -30.1% | 2,500 | 1,748 | -30.1% |
| PROJECTED DEMAND TOTAL (acre-feet per year) | 2,500 | 1,748 | -30.1% | 2,500 | 1,748 | -30.1% |
| WATER SUPPLY NEEDS TOTAL (acre-feet per year)* | 0 | 0 | 0.0% | 0 | 0 | 0.0% |
| **MATAGORDA COUNTY \| COUNTY-OTHER WUG TYPE** | | | | | | |
| EXISTING WUG SUPPLY TOTAL (acre-feet per year) | 2,164 | 1,292 | -40.3% | 2,164 | 1,292 | -40.3% |
| PROJECTED DEMAND TOTAL (acre-feet per year) | 1,601 | 1,036 | -35.3% | 1,644 | 1,064 | -35.3% |
| WATER SUPPLY NEEDS TOTAL (acre-feet per year)* | 0 | 0 | 0.0% | 0 | 0 | 0.0% |
| **MATAGORDA COUNTY \| IRRIGATION WUG TYPE** | | | | | | |
| EXISTING WUG SUPPLY TOTAL (acre-feet per year) | 42,539 | 68,366 | 60.7% | 42,539 | 68,366 | 60.7% |
| PROJECTED DEMAND TOTAL (acre-feet per year) | 209,087 | 191,588 | -8.4% | 182,055 | 167,169 | -8.2% |
| WATER SUPPLY NEEDS TOTAL (acre-feet per year)* | 166,548 | 123,222 | -26.0% | 139,516 | 98,803 | -29.2% |
| **MATAGORDA COUNTY \| LIVESTOCK WUG TYPE** | | | | | | |

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## Region K Water User Group (WUG) Data Comparison to 2016 Regional Water Plan (RWP)

| | 2020 PLANNING DECADE | | | 2070 PLANNING DECADE | | |
|---|---|---|---|---|---|---|
| | 2016 RWP | 2021 RWP | DIFFERENCE (%) | 2016 RWP | 2021 RWP | DIFFERENCE (%) |
| EXISTING WUG SUPPLY TOTAL (acre-feet per year) | 1,503 | 1,217 | -19.0% | 1,503 | 1,217 | -19.0% |
| PROJECTED DEMAND TOTAL (acre-feet per year) | 1,503 | 1,075 | -28.5% | 1,503 | 1,075 | -28.5% |
| WATER SUPPLY NEEDS TOTAL (acre-feet per year)* | 0 | 0 | 0.0% | 0 | 0 | 0.0% |
| **MATAGORDA COUNTY \| MANUFACTURING WUG TYPE** | | | | | | |
| EXISTING WUG SUPPLY TOTAL (acre-feet per year) | 20,351 | 18,531 | -8.9% | 20,351 | 18,531 | -8.9% |
| PROJECTED DEMAND TOTAL (acre-feet per year) | 16,253 | 4,199 | -74.2% | 20,342 | 4,916 | -75.8% |
| WATER SUPPLY NEEDS TOTAL (acre-feet per year)* | 0 | 0 | 0.0% | 0 | 0 | 0.0% |
| **MATAGORDA COUNTY \| MINING WUG TYPE** | | | | | | |
| EXISTING WUG SUPPLY TOTAL (acre-feet per year) | 100 | 100 | 0.0% | 100 | 100 | 0.0% |
| PROJECTED DEMAND TOTAL (acre-feet per year) | 96 | 96 | 0.0% | 22 | 22 | 0.0% |
| WATER SUPPLY NEEDS TOTAL (acre-feet per year)* | 0 | 0 | 0.0% | 0 | 0 | 0.0% |
| **MATAGORDA COUNTY \| MUNICIPAL WUG TYPE** | | | | | | |
| EXISTING WUG SUPPLY TOTAL (acre-feet per year) | 5,789 | 5,903 | 2.0% | 5,789 | 5,903 | 2.0% |
| PROJECTED DEMAND TOTAL (acre-feet per year) | 3,522 | 4,127 | 17.2% | 3,750 | 4,378 | 16.7% |
| WATER SUPPLY NEEDS TOTAL (acre-feet per year)* | 0 | 4 | 100.0% | 0 | 198 | 100.0% |
| **MATAGORDA COUNTY \| STEAM ELECTRIC POWER WUG TYPE** | | | | | | |
| EXISTING WUG SUPPLY TOTAL (acre-feet per year) | 79,637 | 69,260 | -13.0% | 79,517 | 69,260 | -12.9% |
| PROJECTED DEMAND TOTAL (acre-feet per year) | 105,000 | 80,536 | -23.3% | 105,000 | 80,536 | -23.3% |
| WATER SUPPLY NEEDS TOTAL (acre-feet per year)* | 25,363 | 11,276 | -55.5% | 25,483 | 11,276 | -55.8% |
| **MILLS COUNTY \| COUNTY-OTHER WUG TYPE** | | | | | | |
| EXISTING WUG SUPPLY TOTAL (acre-feet per year) | 459 | 486 | 5.9% | 459 | 486 | 5.9% |
| PROJECTED DEMAND TOTAL (acre-feet per year) | 385 | 343 | -10.9% | 420 | 375 | -10.7% |
| WATER SUPPLY NEEDS TOTAL (acre-feet per year)* | 16 | 0 | -100.0% | 29 | 0 | -100.0% |
| **MILLS COUNTY \| IRRIGATION WUG TYPE** | | | | | | |
| EXISTING WUG SUPPLY TOTAL (acre-feet per year) | 3,263 | 3,629 | 11.2% | 3,263 | 3,629 | 11.2% |
| PROJECTED DEMAND TOTAL (acre-feet per year) | 3,074 | 4,743 | 54.3% | 2,759 | 4,743 | 71.9% |
| WATER SUPPLY NEEDS TOTAL (acre-feet per year)* | 605 | 1,737 | 187.1% | 460 | 1,737 | 277.6% |
| **MILLS COUNTY \| LIVESTOCK WUG TYPE** | | | | | | |
| EXISTING WUG SUPPLY TOTAL (acre-feet per year) | 944 | 931 | -1.4% | 944 | 931 | -1.4% |
| PROJECTED DEMAND TOTAL (acre-feet per year) | 944 | 863 | -8.6% | 944 | 863 | -8.6% |
| WATER SUPPLY NEEDS TOTAL (acre-feet per year)* | 0 | 0 | 0.0% | 0 | 0 | 0.0% |
| **MILLS COUNTY \| MANUFACTURING WUG TYPE** | | | | | | |
| EXISTING WUG SUPPLY TOTAL (acre-feet per year) | 2 | 2 | 0.0% | 2 | 2 | 0.0% |
| PROJECTED DEMAND TOTAL (acre-feet per year) | 2 | 2 | 0.0% | 2 | 2 | 0.0% |
| WATER SUPPLY NEEDS TOTAL (acre-feet per year)* | 0 | 0 | 0.0% | 0 | 0 | 0.0% |
| **MILLS COUNTY \| MINING WUG TYPE** | | | | | | |
| EXISTING WUG SUPPLY TOTAL (acre-feet per year) | 4 | 4 | 0.0% | 4 | 4 | 0.0% |
| PROJECTED DEMAND TOTAL (acre-feet per year) | 4 | 4 | 0.0% | 4 | 4 | 0.0% |
| WATER SUPPLY NEEDS TOTAL (acre-feet per year)* | 0 | 0 | 0.0% | 0 | 0 | 0.0% |
| **MILLS COUNTY \| MUNICIPAL WUG TYPE** | | | | | | |
| EXISTING WUG SUPPLY TOTAL (acre-feet per year) | 321 | 456 | 42.1% | 321 | 457 | 42.4% |
| PROJECTED DEMAND TOTAL (acre-feet per year) | 369 | 422 | 14.4% | 415 | 476 | 14.7% |
| WATER SUPPLY NEEDS TOTAL (acre-feet per year)* | 48 | 0 | -100.0% | 94 | 19 | -79.8% |
| **SAN SABA COUNTY \| COUNTY-OTHER WUG TYPE** | | | | | | |

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## Region K Water User Group (WUG) Data Comparison to 2016 Regional Water Plan (RWP)

| | 2020 PLANNING DECADE | | | 2070 PLANNING DECADE | | |
|---|---|---|---|---|---|---|
| | 2016 RWP | 2021 RWP | DIFFERENCE (%) | 2016 RWP | 2021 RWP | DIFFERENCE (%) |
| EXISTING WUG SUPPLY TOTAL (acre-feet per year) | 531 | 244 | -54.0% | 531 | 244 | -54.0% |
| PROJECTED DEMAND TOTAL (acre-feet per year) | 316 | 218 | -31.0% | 322 | 222 | -31.1% |
| WATER SUPPLY NEEDS TOTAL (acre-feet per year)* | 0 | 0 | 0.0% | 0 | 0 | 0.0% |
| **SAN SABA COUNTY \| IRRIGATION WUG TYPE** | | | | | | |
| EXISTING WUG SUPPLY TOTAL (acre-feet per year) | 6,000 | 7,222 | 20.4% | 6,000 | 7,222 | 20.4% |
| PROJECTED DEMAND TOTAL (acre-feet per year) | 5,539 | 7,199 | 30.0% | 4,709 | 7,199 | 52.9% |
| WATER SUPPLY NEEDS TOTAL (acre-feet per year)* | 0 | 0 | 0.0% | 0 | 0 | 0.0% |
| **SAN SABA COUNTY \| LIVESTOCK WUG TYPE** | | | | | | |
| EXISTING WUG SUPPLY TOTAL (acre-feet per year) | 1,218 | 1,218 | 0.0% | 1,218 | 1,218 | 0.0% |
| PROJECTED DEMAND TOTAL (acre-feet per year) | 1,191 | 779 | -34.6% | 1,191 | 779 | -34.6% |
| WATER SUPPLY NEEDS TOTAL (acre-feet per year)* | 0 | 0 | 0.0% | 0 | 0 | 0.0% |
| **SAN SABA COUNTY \| MANUFACTURING WUG TYPE** | | | | | | |
| EXISTING WUG SUPPLY TOTAL (acre-feet per year) | 8 | 12 | 50.0% | 8 | 12 | 50.0% |
| PROJECTED DEMAND TOTAL (acre-feet per year) | 8 | 10 | 25.0% | 8 | 12 | 50.0% |
| WATER SUPPLY NEEDS TOTAL (acre-feet per year)* | 0 | 0 | 0.0% | 0 | 0 | 0.0% |
| **SAN SABA COUNTY \| MINING WUG TYPE** | | | | | | |
| EXISTING WUG SUPPLY TOTAL (acre-feet per year) | 1,539 | 1,539 | 0.0% | 1,539 | 1,539 | 0.0% |
| PROJECTED DEMAND TOTAL (acre-feet per year) | 1,088 | 1,088 | 0.0% | 838 | 838 | 0.0% |
| WATER SUPPLY NEEDS TOTAL (acre-feet per year)* | 0 | 0 | 0.0% | 0 | 0 | 0.0% |
| **SAN SABA COUNTY \| MUNICIPAL WUG TYPE** | | | | | | |
| EXISTING WUG SUPPLY TOTAL (acre-feet per year) | 1,349 | 1,756 | 30.2% | 1,352 | 1,758 | 30.0% |
| PROJECTED DEMAND TOTAL (acre-feet per year) | 1,306 | 1,599 | 22.4% | 1,374 | 1,686 | 22.7% |
| WATER SUPPLY NEEDS TOTAL (acre-feet per year)* | 88 | 0 | -100.0% | 152 | 0 | -100.0% |
| **TRAVIS COUNTY \| COUNTY-OTHER WUG TYPE** | | | | | | |
| EXISTING WUG SUPPLY TOTAL (acre-feet per year) | 19,102 | 12,010 | -37.1% | 16,137 | 11,957 | -25.9% |
| PROJECTED DEMAND TOTAL (acre-feet per year) | 8,395 | 1,187 | -85.9% | 2,928 | 1,161 | -60.3% |
| WATER SUPPLY NEEDS TOTAL (acre-feet per year)* | 0 | 0 | 0.0% | 0 | 0 | 0.0% |
| **TRAVIS COUNTY \| IRRIGATION WUG TYPE** | | | | | | |
| EXISTING WUG SUPPLY TOTAL (acre-feet per year) | 5,131 | 5,724 | 11.6% | 5,131 | 5,724 | 11.6% |
| PROJECTED DEMAND TOTAL (acre-feet per year) | 4,322 | 4,816 | 11.4% | 2,885 | 4,816 | 66.9% |
| WATER SUPPLY NEEDS TOTAL (acre-feet per year)* | 0 | 0 | 0.0% | 0 | 0 | 0.0% |
| **TRAVIS COUNTY \| LIVESTOCK WUG TYPE** | | | | | | |
| EXISTING WUG SUPPLY TOTAL (acre-feet per year) | 707 | 527 | -25.5% | 707 | 527 | -25.5% |
| PROJECTED DEMAND TOTAL (acre-feet per year) | 704 | 527 | -25.1% | 704 | 527 | -25.1% |
| WATER SUPPLY NEEDS TOTAL (acre-feet per year)* | 0 | 0 | 0.0% | 0 | 0 | 0.0% |
| **TRAVIS COUNTY \| MANUFACTURING WUG TYPE** | | | | | | |
| EXISTING WUG SUPPLY TOTAL (acre-feet per year) | 35,790 | 13,164 | -63.2% | 91,630 | 15,595 | -83.0% |
| PROJECTED DEMAND TOTAL (acre-feet per year) | 35,790 | 13,164 | -63.2% | 91,630 | 14,853 | -83.8% |
| WATER SUPPLY NEEDS TOTAL (acre-feet per year)* | 0 | 0 | 0.0% | 0 | 0 | 0.0% |
| **TRAVIS COUNTY \| MINING WUG TYPE** | | | | | | |
| EXISTING WUG SUPPLY TOTAL (acre-feet per year) | 3,502 | 3,502 | 0.0% | 6,817 | 6,817 | 0.0% |
| PROJECTED DEMAND TOTAL (acre-feet per year) | 3,502 | 3,502 | 0.0% | 6,817 | 6,817 | 0.0% |
| WATER SUPPLY NEEDS TOTAL (acre-feet per year)* | 0 | 0 | 0.0% | 0 | 0 | 0.0% |
| **TRAVIS COUNTY \| MUNICIPAL WUG TYPE** | | | | | | |

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# Region K Water User Group (WUG) Data Comparison to 2016 Regional Water Plan (RWP)

| | 2020 PLANNING DECADE | | | 2070 PLANNING DECADE | | |
|---|---|---|---|---|---|---|
| | 2016 RWP | 2021 RWP | DIFFERENCE (%) | 2016 RWP | 2021 RWP | DIFFERENCE (%) |
| EXISTING WUG SUPPLY TOTAL (acre-feet per year) | 337,938 | 370,413 | 9.6% | 266,668 | 352,157 | 32.1% |
| PROJECTED DEMAND TOTAL (acre-feet per year) | 219,484 | 234,052 | 6.6% | 377,571 | 392,333 | 3.9% |
| WATER SUPPLY NEEDS TOTAL (acre-feet per year)* | 3,199 | 3,102 | -3.0% | 112,908 | 43,787 | -61.2% |
| **TRAVIS COUNTY \| STEAM ELECTRIC POWER WUG TYPE** | | | | | | |
| EXISTING WUG SUPPLY TOTAL (acre-feet per year) | 21,126 | 14,393 | -31.9% | 4,970 | 14,393 | 189.6% |
| PROJECTED DEMAND TOTAL (acre-feet per year) | 18,500 | 10,253 | -44.6% | 26,500 | 10,253 | -61.3% |
| WATER SUPPLY NEEDS TOTAL (acre-feet per year)* | 0 | 0 | 0.0% | 21,530 | 0 | -100.0% |
| **WHARTON COUNTY \| COUNTY-OTHER WUG TYPE** | | | | | | |
| EXISTING WUG SUPPLY TOTAL (acre-feet per year) | 3,309 | 2,283 | -31.0% | 3,309 | 2,283 | -31.0% |
| PROJECTED DEMAND TOTAL (acre-feet per year) | 1,993 | 1,930 | -3.2% | 2,283 | 2,214 | -3.0% |
| WATER SUPPLY NEEDS TOTAL (acre-feet per year)* | 0 | 0 | 0.0% | 0 | 155 | 100.0% |
| **WHARTON COUNTY \| IRRIGATION WUG TYPE** | | | | | | |
| EXISTING WUG SUPPLY TOTAL (acre-feet per year) | 102,847 | 114,023 | 10.9% | 102,847 | 114,023 | 10.9% |
| PROJECTED DEMAND TOTAL (acre-feet per year) | 212,229 | 189,110 | -10.9% | 185,179 | 165,008 | -10.9% |
| WATER SUPPLY NEEDS TOTAL (acre-feet per year)* | 109,382 | 75,087 | -31.4% | 82,332 | 53,144 | -35.5% |
| **WHARTON COUNTY \| LIVESTOCK WUG TYPE** | | | | | | |
| EXISTING WUG SUPPLY TOTAL (acre-feet per year) | 844 | 953 | 12.9% | 844 | 953 | 12.9% |
| PROJECTED DEMAND TOTAL (acre-feet per year) | 728 | 792 | 8.8% | 728 | 792 | 8.8% |
| WATER SUPPLY NEEDS TOTAL (acre-feet per year)* | 0 | 0 | 0.0% | 0 | 0 | 0.0% |
| **WHARTON COUNTY \| MANUFACTURING WUG TYPE** | | | | | | |
| EXISTING WUG SUPPLY TOTAL (acre-feet per year) | 732 | 171 | -76.6% | 732 | 171 | -76.6% |
| PROJECTED DEMAND TOTAL (acre-feet per year) | 503 | 156 | -69.0% | 699 | 171 | -75.5% |
| WATER SUPPLY NEEDS TOTAL (acre-feet per year)* | 0 | 0 | 0.0% | 0 | 0 | 0.0% |
| **WHARTON COUNTY \| MINING WUG TYPE** | | | | | | |
| EXISTING WUG SUPPLY TOTAL (acre-feet per year) | 74 | 74 | 0.0% | 74 | 74 | 0.0% |
| PROJECTED DEMAND TOTAL (acre-feet per year) | 71 | 71 | 0.0% | 17 | 17 | 0.0% |
| WATER SUPPLY NEEDS TOTAL (acre-feet per year)* | 0 | 0 | 0.0% | 0 | 0 | 0.0% |
| **WHARTON COUNTY \| MUNICIPAL WUG TYPE** | | | | | | |
| EXISTING WUG SUPPLY TOTAL (acre-feet per year) | 2,817 | 3,248 | 15.3% | 2,817 | 3,248 | 15.3% |
| PROJECTED DEMAND TOTAL (acre-feet per year) | 2,057 | 2,246 | 9.2% | 2,395 | 2,615 | 9.2% |
| WATER SUPPLY NEEDS TOTAL (acre-feet per year)* | 0 | 0 | 0.0% | 0 | 87 | 100.0% |
| **WHARTON COUNTY \| STEAM ELECTRIC POWER WUG TYPE** | | | | | | |
| EXISTING WUG SUPPLY TOTAL (acre-feet per year) | 2,997 | 7,901 | 163.6% | 2,997 | 7,901 | 163.6% |
| PROJECTED DEMAND TOTAL (acre-feet per year) | 2,751 | 7,901 | 187.2% | 3,197 | 7,901 | 147.1% |
| WATER SUPPLY NEEDS TOTAL (acre-feet per year)* | 0 | 0 | 0.0% | 200 | 0 | -100.0% |
| **WILLIAMSON COUNTY \| COUNTY-OTHER WUG TYPE** | | | | | | |
| EXISTING WUG SUPPLY TOTAL (acre-feet per year) | 2,586 | 93 | -96.4% | 3,441 | 93 | -97.3% |
| PROJECTED DEMAND TOTAL (acre-feet per year) | 2,586 | 67 | -97.4% | 3,441 | 77 | -97.8% |
| WATER SUPPLY NEEDS TOTAL (acre-feet per year)* | 0 | 0 | 0.0% | 0 | 0 | 0.0% |
| **WILLIAMSON COUNTY \| LIVESTOCK WUG TYPE** | | | | | | |
| EXISTING WUG SUPPLY TOTAL (acre-feet per year) | 1 | 0 | -100.0% | 1 | 0 | -100.0% |
| PROJECTED DEMAND TOTAL (acre-feet per year) | 1 | 0 | -100.0% | 1 | 0 | -100.0% |
| WATER SUPPLY NEEDS TOTAL (acre-feet per year)* | 0 | 0 | 0.0% | 0 | 0 | 0.0% |
| **WILLIAMSON COUNTY \| MANUFACTURING WUG TYPE** | | | | | | |

*WUG supplies and projected demands are entered for each of a WUG's region-county-basin divisions. The needs shown in the WUG Data Comparison to 2016 RWP report are calculated by first deducting the WUG split's projected demand from its total existing water supply volume. If the WUG split has a greater existing supply volume than projected demand in any given decade, this amount is considered a surplus volume. Before aggregating the difference between supplies and demands to the WUG county and category level, calculated surpluses are updated to zero so that only the WUGs with needs in the decade are included with the Needs totals.

## Region K Water User Group (WUG) Data Comparison to 2016 Regional Water Plan (RWP)

| | 2020 PLANNING DECADE | | | 2070 PLANNING DECADE | | |
|---|---|---|---|---|---|---|
| | 2016 RWP | 2021 RWP | DIFFERENCE (%) | 2016 RWP | 2021 RWP | DIFFERENCE (%) |
| EXISTING WUG SUPPLY TOTAL (acre-feet per year) | 0 | 30 | 100.0% | 0 | 30 | 100.0% |
| PROJECTED DEMAND TOTAL (acre-feet per year) | 0 | 25 | 100.0% | 0 | 30 | 100.0% |
| WATER SUPPLY NEEDS TOTAL (acre-feet per year)* | 0 | 0 | 0.0% | 0 | 0 | 0.0% |
| **WILLIAMSON COUNTY \| MINING WUG TYPE** | | | | | | |
| EXISTING WUG SUPPLY TOTAL (acre-feet per year) | 5 | 5 | 0.0% | 5 | 5 | 0.0% |
| PROJECTED DEMAND TOTAL (acre-feet per year) | 5 | 5 | 0.0% | 3 | 3 | 0.0% |
| WATER SUPPLY NEEDS TOTAL (acre-feet per year)* | 0 | 0 | 0.0% | 0 | 0 | 0.0% |
| **WILLIAMSON COUNTY \| MUNICIPAL WUG TYPE** | | | | | | |
| EXISTING WUG SUPPLY TOTAL (acre-feet per year) | 8,589 | 11,641 | 35.5% | 21,031 | 24,782 | 17.8% |
| PROJECTED DEMAND TOTAL (acre-feet per year) | 8,589 | 11,641 | 35.5% | 21,031 | 25,567 | 21.6% |
| WATER SUPPLY NEEDS TOTAL (acre-feet per year)* | 0 | 0 | 0.0% | 0 | 785 | 100.0% |
| **REGION K** | | | | | | |
| EXISTING WUG SUPPLY TOTAL (acre-feet per year) | 998,867 | 1,042,135 | 4.3% | 991,929 | 1,049,975 | 5.9% |
| PROJECTED DEMAND TOTAL (acre-feet per year) | 1,183,325 | 1,116,839 | -5.6% | 1,461,807 | 1,307,643 | -10.5% |
| WATER SUPPLY NEEDS TOTAL (acre-feet per year)* | 373,563 | 282,514 | -24.4% | 512,304 | 318,785 | -37.8% |

*WUG supplies and projected demands are entered for each of a WUG's region-county-basin divisions. The needs shown in the WUG Data Comparison to 2016 RWP report are calculated by first deducting the WUG split's projected demand from its total existing water supply volume. If the WUG split has a greater existing supply volume than projected demand in any given decade, this amount is considered a surplus volume. Before aggregating the difference between supplies and demands to the WUG county and category level, calculated surpluses are updated to zero so that only the WUGs with needs in the decade are included with the Needs totals.

# Region K Source Data Comparison to 2016 Regional Water Plan (RWP)

| | 2020 PLANNING DECADE | | | 2070 PLANNING DECADE | | |
|---|---|---|---|---|---|---|
| | 2016 RWP | 2021 RWP | DIFFERENCE (%) | 2016 RWP | 2021 RWP | DIFFERENCE (%) |
| **BASTROP COUNTY** | | | | | | |
| GROUNDWATER AVAILABILITY TOTAL (acre-feet per year) | 28,327 | 28,465 | 0.5% | 36,443 | 35,825 | -1.7% |
| SURFACE WATER AVAILABILITY TOTAL (acre-feet per year) | 2,366 | 1,706 | -27.9% | 2,366 | 1,706 | -27.9% |
| **BLANCO COUNTY** | | | | | | |
| GROUNDWATER AVAILABILITY TOTAL (acre-feet per year) | 6,658 | 5,107 | -23.3% | 6,658 | 5,100 | -23.4% |
| SURFACE WATER AVAILABILITY TOTAL (acre-feet per year) | 697 | 306 | -56.1% | 697 | 306 | -56.1% |
| **BURNET COUNTY** | | | | | | |
| GROUNDWATER AVAILABILITY TOTAL (acre-feet per year) | 18,923 | 25,026 | 32.3% | 18,923 | 24,968 | 31.9% |
| REUSE AVAILABILITY TOTAL (acre-feet per year) | 1,270 | 2,200 | 73.2% | 1,270 | 2,200 | 73.2% |
| SURFACE WATER AVAILABILITY TOTAL (acre-feet per year) | 4,356 | 3,021 | -30.6% | 4,356 | 3,021 | -30.6% |
| **COLORADO COUNTY** | | | | | | |
| GROUNDWATER AVAILABILITY TOTAL (acre-feet per year) | 48,953 | 75,882 | 55.0% | 48,953 | 72,536 | 48.2% |
| SURFACE WATER AVAILABILITY TOTAL (acre-feet per year) | 154,989 | 136,067 | -12.2% | 154,989 | 136,067 | -12.2% |
| **FAYETTE COUNTY** | | | | | | |
| GROUNDWATER AVAILABILITY TOTAL (acre-feet per year) | 20,697 | 22,962 | 10.9% | 20,751 | 22,932 | 10.5% |
| SURFACE WATER AVAILABILITY TOTAL (acre-feet per year) | 2,951 | 2,452 | -16.9% | 2,951 | 2,452 | -16.9% |
| **GILLESPIE COUNTY** | | | | | | |
| GROUNDWATER AVAILABILITY TOTAL (acre-feet per year) | 12,972 | 13,024 | 0.4% | 12,972 | 13,024 | 0.4% |
| SURFACE WATER AVAILABILITY TOTAL (acre-feet per year) | 2,100 | 1,585 | -24.5% | 2,100 | 1,585 | -24.5% |
| **HAYS COUNTY** | | | | | | |
| GROUNDWATER AVAILABILITY TOTAL (acre-feet per year) | 7,966 | 8,057 | 1.1% | 7,962 | 8,053 | 1.1% |
| REUSE AVAILABILITY TOTAL (acre-feet per year) | 2,240 | 100 | -95.5% | 2,240 | 1,680 | -25.0% |
| SURFACE WATER AVAILABILITY TOTAL (acre-feet per year) | 261 | 261 | 0.0% | 261 | 261 | 0.0% |
| **LLANO COUNTY** | | | | | | |
| GROUNDWATER AVAILABILITY TOTAL (acre-feet per year) | 4,704 | 3,065 | -34.8% | 4,704 | 3,058 | -35.0% |
| REUSE AVAILABILITY TOTAL (acre-feet per year) | 516 | 589 | 14.1% | 516 | 589 | 14.1% |
| SURFACE WATER AVAILABILITY TOTAL (acre-feet per year) | 1,191 | 1,125 | -5.5% | 1,191 | 1,125 | -5.5% |
| **MATAGORDA COUNTY** | | | | | | |
| GROUNDWATER AVAILABILITY TOTAL (acre-feet per year) | 45,896 | 38,828 | -15.4% | 45,896 | 38,828 | -15.4% |
| SURFACE WATER AVAILABILITY TOTAL (acre-feet per year) | 108,324 | 99,087 | -8.5% | 108,324 | 99,087 | -8.5% |
| **MILLS COUNTY** | | | | | | |
| GROUNDWATER AVAILABILITY TOTAL (acre-feet per year) | 2,936 | 3,038 | 3.5% | 2,936 | 3,030 | 3.2% |
| SURFACE WATER AVAILABILITY TOTAL (acre-feet per year) | 3,322 | 3,059 | -7.9% | 3,322 | 3,059 | -7.9% |
| **RESERVOIR* COUNTY** | | | | | | |
| SURFACE WATER AVAILABILITY TOTAL (acre-feet per year) | 419,825 | 418,749 | -0.3% | 390,138 | 415,124 | 6.4% |
| **SAN SABA COUNTY** | | | | | | |
| GROUNDWATER AVAILABILITY TOTAL (acre-feet per year) | 23,435 | 19,925 | -15.0% | 23,435 | 19,913 | -15.0% |
| SURFACE WATER AVAILABILITY TOTAL (acre-feet per year) | 9,991 | 9,700 | -2.9% | 9,991 | 9,700 | -2.9% |
| **TRAVIS COUNTY** | | | | | | |
| GROUNDWATER AVAILABILITY TOTAL (acre-feet per year) | 21,931 | 30,080 | 37.2% | 21,857 | 29,991 | 37.2% |
| REUSE AVAILABILITY TOTAL (acre-feet per year) | 19,500 | 9,778 | -49.9% | 60,848 | 9,778 | -83.9% |
| SURFACE WATER AVAILABILITY TOTAL (acre-feet per year) | 215,745 | 218,608 | 1.3% | 215,812 | 218,608 | 1.3% |
| **WHARTON COUNTY** | | | | | | |
| GROUNDWATER AVAILABILITY TOTAL (acre-feet per year) | 78,740 | 103,212 | 31.1% | 78,740 | 103,212 | 31.1% |
| SURFACE WATER AVAILABILITY TOTAL (acre-feet per year) | 15,787 | 15,460 | -2.1% | 15,787 | 15,460 | -2.1% |
| **WILLIAMSON COUNTY** | | | | | | |
| GROUNDWATER AVAILABILITY TOTAL (acre-feet per year) | 228 | 77 | -66.2% | 228 | 77 | -66.2% |

* Since reservoir sources can exist across multiple counties, the county field value, 'reservoir' is applied to all reservoir sources.

## Region K Source Data Comparison to 2016 Regional Water Plan (RWP)

| | 2020 PLANNING DECADE | | | 2070 PLANNING DECADE | | |
|---|---|---|---|---|---|---|
| | 2016 RWP | 2021 RWP | DIFFERENCE (%) | 2016 RWP | 2021 RWP | DIFFERENCE (%) |
| SURFACE WATER AVAILABILITY TOTAL (acre-feet per year) | 1 | 1 | 0.0% | 1 | 1 | 0.0% |
| **REGION K** | | | | | | |
| GROUNDWATER AVAILABILITY TOTAL (acre-feet per year) | 322,366 | 376,748 | 16.9% | 330,458 | 380,547 | 15.2% |
| REUSE AVAILABILITY TOTAL (acre-feet per year) | 23,526 | 12,667 | -46.2% | 64,874 | 14,247 | -78.0% |
| SURFACE WATER AVAILABILITY TOTAL (acre-feet per year) | 941,906 | 911,187 | -3.3% | 912,286 | 907,562 | -0.5% |

* Since reservoir sources can exist across multiple counties, the county field value, ‘reservoir’ is applied to all reservoir sources.

# Region K Water User Group (WUG) Unmet Needs

WUG supplies and projected demands are entered for each of a WUG's region-county-basin divisions. The unmet needs shown in the WUG Unmet Needs report are calculated by first deducting the WUG split's projected demand from the sum of its total existing water supply volume and all associated recommended water management strategy water volumes. If the WUG split has a greater future supply volume than projected demand in any given decade, this amount is considered a surplus volume. In order to display only unmet needs associated with the WUG split, these surplus volumes are updated to a zero and the unmet needs water volumes are shown as absolute values.

| | WUG UNMET NEEDS (ACRE-FEET PER YEAR) | | | | | |
|---|---|---|---|---|---|---|
| | **2020** | **2030** | **2040** | **2050** | **2060** | **2070** |
| **BASTROP COUNTY - COLORADO BASIN** | | | | | | |
| MINING | 449 | 3,947 | 4,557 | 3,220 | 0 | 0 |
| **COLORADO COUNTY - BRAZOS-COLORADO BASIN** | | | | | | |
| IRRIGATION | 2,886 | 2,811 | 1,217 | 0 | 0 | 0 |
| **COLORADO COUNTY - COLORADO BASIN** | | | | | | |
| STEAM ELECTRIC POWER | 228 | 228 | 228 | 228 | 228 | 228 |
| IRRIGATION | 1,124 | 635 | 0 | 0 | 0 | 0 |
| **COLORADO COUNTY - LAVACA BASIN** | | | | | | |
| STEAM ELECTRIC POWER | 4,743 | 4,743 | 4,743 | 4,743 | 4,743 | 4,743 |
| IRRIGATION | 1,761 | 1,055 | 0 | 0 | 0 | 0 |
| **MATAGORDA COUNTY - BRAZOS-COLORADO BASIN** | | | | | | |
| IRRIGATION | 34,428 | 37,223 | 33,935 | 31,579 | 27,033 | 22,537 |
| **MATAGORDA COUNTY - COLORADO-LAVACA BASIN** | | | | | | |
| IRRIGATION | 33,487 | 36,071 | 32,689 | 30,228 | 25,623 | 21,070 |
| **MILLS COUNTY - BRAZOS BASIN** | | | | | | |
| IRRIGATION | 829 | 833 | 837 | 841 | 844 | 848 |
| **WHARTON COUNTY - BRAZOS-COLORADO BASIN** | | | | | | |
| IRRIGATION* | 0 | 3,173 | 380 | 0 | 0 | 0 |
| **WHARTON COUNTY - COLORADO BASIN** | | | | | | |
| IRRIGATION* | 1,381 | 2,689 | 996 | 0 | 0 | 0 |

*A single asterisk next to a WUG's name denotes that the WUG is split by two or more planning regions.

# Region K Water User Group (WUG) Unmet Needs Summary

WUG supplies and projected demands are entered for each of a WUG's region-county-basin divisions. The unmet needs shown in the WUG Unmet Needs Summary report are calculated by first deducting the WUG split's projected demand from the sum of its total existing water supply volume and all associated recommended water management strategy water volumes. If the WUG split has a greater future supply volume than projected demand in any given decade, this amount is considered a surplus volume. Before aggregating the difference between supplies and demands to the WUG category level, calculated surpluses are updated to zero so that only the WUGs with unmet needs in the decade are included with the Needs totals. Unmet needs water volumes are shown as absolute values.

| WUG CATEGORY | NEEDS (ACRE-FEET PER YEAR) | | | | | |
|---|---|---|---|---|---|---|
| | 2020 | 2030 | 2040 | 2050 | 2060 | 2070 |
| MUNICIPAL | 0 | 0 | 0 | 0 | 0 | 0 |
| COUNTY-OTHER | 0 | 0 | 0 | 0 | 0 | 0 |
| MANUFACTURING | 0 | 0 | 0 | 0 | 0 | 0 |
| MINING | 449 | 3,947 | 4,557 | 3,220 | 0 | 0 |
| STEAM ELECTRIC POWER | 4,971 | 4,971 | 4,971 | 4,971 | 4,971 | 4,971 |
| LIVESTOCK | 0 | 0 | 0 | 0 | 0 | 0 |
| IRRIGATION | 75,896 | 84,490 | 70,054 | 62,648 | 53,500 | 44,455 |

# Region K Recommended Water User Group (WUG) Water Management Strategies (WMS)

| | | | | | | WATER MANAGEMENT STRATEGY SUPPLY (ACRE-FEET PER YEAR) | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| WUG ENTITY NAME | WMS SPONSOR REGION | WMS NAME | SOURCE NAME | UNIT COST 2020 | UNIT COST 2070 | 2020 | 2030 | 2040 | 2050 | 2060 | 2070 |
| AQUA WSC* | K | DOWNSTREAM RETURN FLOWS | K \| COLORADO INDIRECT REUSE | N/A | $145 | 0 | 0 | 0 | 0 | 0 | 1,200 |
| AQUA WSC* | K | DROUGHT MANAGEMENT | DEMAND REDUCTION | $66 | $66 | 1,971 | 2,558 | 3,380 | 4,321 | 5,670 | 7,447 |
| AQUA WSC* | K | EXPANDED USE OF LOCAL GROUNDWATER | K \| CARRIZO-WILCOX AQUIFER \| BASTROP COUNTY | N/A | $1001 | 0 | 300 | 350 | 550 | 800 | 800 |
| AQUA WSC* | K | LCRA - IMPORT RETURN FLOWS FROM WILLIAMSON COUNTY | G \| BRAZOS RUN-OF-RIVER | N/A | $145 | 0 | 0 | 2,500 | 6,000 | 12,000 | 18,800 |
| AQUA WSC* | K | MUNICIPAL CONSERVATION | DEMAND REDUCTION | $3167 | N/A | 464 | 274 | 128 | 36 | 0 | 0 |
| AQUA WSC* | L | MUNICIPAL WATER CONSERVATION | DEMAND REDUCTION | $770 | $770 | 8 | 13 | 20 | 30 | 45 | 63 |
| AUSTIN | K | AUSTIN - AQUIFER STORAGE AND RECOVERY | K \| CARRIZO-WILCOX AQUIFER ASR \| BASTROP COUNTY | N/A | $2234 | 0 | 0 | 7,900 | 10,500 | 13,200 | 15,800 |
| AUSTIN | K | AUSTIN - BLACKWATER AND GREYWATER REUSE | K \| DIRECT NON-POTABLE REUSE | N/A | $2534 | 0 | 1,450 | 3,450 | 5,400 | 7,340 | 9,290 |
| AUSTIN | K | AUSTIN - BRACKISH GROUNDWATER DESALINATION | K \| EDWARDS-BFZ AQUIFER SALINE \| TRAVIS COUNTY | N/A | $2995 | 0 | 0 | 0 | 0 | 0 | 2,700 |
| AUSTIN | K | AUSTIN - BRACKISH GROUNDWATER DESALINATION | K \| TRINITY AQUIFER FRESH/BRACKISH \| TRAVIS COUNTY | N/A | $2995 | 0 | 0 | 0 | 0 | 0 | 2,300 |
| AUSTIN | K | AUSTIN - CAPTURE LOCAL INFLOWS TO LADY BIRD LAKE | K \| COLORADO RUN-OF-RIVER | N/A | $213 | 0 | 0 | 3,000 | 3,000 | 3,000 | 3,000 |
| AUSTIN | K | AUSTIN - CENTRALIZED DIRECT NON-POTABLE REUSE | K \| DIRECT NON-POTABLE REUSE | $995 | $995 | 500 | 2,990 | 10,250 | 14,583 | 18,917 | 23,250 |
| AUSTIN | K | AUSTIN - COMMUNITY-SCALE STORMWATER HARVESTING | K \| RAINWATER HARVESTING | N/A | $645 | 0 | 66 | 158 | 184 | 210 | 236 |
| AUSTIN | K | AUSTIN - CONSERVATION | DEMAND REDUCTION | $1343 | $1343 | 4,910 | 14,890 | 24,870 | 30,120 | 35,370 | 40,620 |
| AUSTIN | K | AUSTIN - DECENTRALIZED DIRECT NON-POTABLE REUSE | K \| DIRECT NON-POTABLE REUSE | N/A | $366 | 0 | 1,400 | 4,160 | 8,330 | 12,510 | 16,680 |
| AUSTIN | K | AUSTIN - INDIRECT POTABLE REUSE THROUGH LADY BIRD LAKE | K \| COLORADO INDIRECT REUSE | N/A | $457 | 0 | 0 | 11,000 | 14,000 | 17,000 | 20,000 |
| AUSTIN | K | AUSTIN - LAKE AUSTIN OPERATIONS | K \| COLORADO RUN-OF-RIVER | $436 | $436 | 1,250 | 1,250 | 1,250 | 1,250 | 1,250 | 1,250 |
| AUSTIN | K | AUSTIN - LONGHORN DAM OPERATION IMPROVEMENTS | K \| COLORADO RUN-OF-RIVER | N/A | $36 | 0 | 3,000 | 3,000 | 3,000 | 3,000 | 3,000 |
| AUSTIN | K | AUSTIN - OFF-CHANNEL RESERVOIR AND EVAPORATION SUPPRESSION | K \| AUSTIN OFF-CHANNEL LAKE/RESERVOIR | N/A | $1018 | 0 | 0 | 0 | 0 | 0 | 25,827 |
| AUSTIN | K | AUSTIN - ONSITE RAINWATER AND STORMWATER HARVESTING | K \| RAINWATER HARVESTING | N/A | $1165 | 0 | 790 | 1,880 | 2,890 | 3,890 | 4,900 |
| AUSTIN | K | DROUGHT MANAGEMENT | DEMAND REDUCTION | $66 | $66 | 8,266 | 9,708 | 11,281 | 12,423 | 13,389 | 14,666 |
| BARTON CREEK WEST WSC | K | DROUGHT MANAGEMENT | DEMAND REDUCTION | $66 | $66 | 79 | 71 | 64 | 58 | 52 | 47 |
| BARTON CREEK WEST WSC | K | MUNICIPAL CONSERVATION | DEMAND REDUCTION | $429 | $429 | 39 | 76 | 109 | 139 | 167 | 193 |
| BARTON CREEK WSC | K | DROUGHT MANAGEMENT | DEMAND REDUCTION | $66 | $66 | 119 | 127 | 131 | 130 | 125 | 121 |
| BARTON CREEK WSC | K | MUNICIPAL CONSERVATION | DEMAND REDUCTION | $397 | $397 | 47 | 110 | 183 | 258 | 330 | 409 |

*A single asterisk next to a WUG's name denotes that the WUG is split by two or more planning regions.

## Region K Recommended Water User Group (WUG) Water Management Strategies (WMS)

| | | | | | | WATER MANAGEMENT STRATEGY SUPPLY (ACRE-FEET PER YEAR) | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| WUG ENTITY NAME | WMS SPONSOR REGION | WMS NAME | SOURCE NAME | UNIT COST 2020 | UNIT COST 2070 | 2020 | 2030 | 2040 | 2050 | 2060 | 2070 |
| BARTON CREEK WSC | K | WATER PURCHASE AMENDMENT - BARTON CREEK WSC | K \| HIGHLAND LAKES LAKE/RESERVOIR SYSTEM | $1629 | $1629 | 90 | 90 | 90 | 90 | 90 | 90 |
| BASTROP | K | DROUGHT MANAGEMENT | DEMAND REDUCTION | $66 | $66 | 372 | 471 | 631 | 849 | 1,143 | 1,534 |
| BASTROP | K | LCRA - IMPORT RETURN FLOWS FROM WILLIAMSON COUNTY | G \| BRAZOS RUN-OF-RIVER | N/A | $145 | 0 | 0 | 0 | 1,000 | 2,500 | 4,000 |
| BASTROP | K | MUNICIPAL CONSERVATION | DEMAND REDUCTION | $1109 | $1109 | 184 | 355 | 433 | 558 | 744 | 992 |
| BASTROP COUNTY WCID 2 | K | DROUGHT MANAGEMENT | DEMAND REDUCTION | $66 | $66 | 24 | 35 | 49 | 68 | 94 | 129 |
| BASTROP COUNTY WCID 2 | K | LCRA - IMPORT RETURN FLOWS FROM WILLIAMSON COUNTY | G \| BRAZOS RUN-OF-RIVER | N/A | $145 | 0 | 0 | 0 | 0 | 500 | 1,500 |
| BASTROP COUNTY WCID 2 | K | MUNICIPAL CONSERVATION - BASTROP | DEMAND REDUCTION | N/A | $250 | 0 | 0 | 0 | 0 | 93 | 125 |
| BAY CITY | K | DROUGHT MANAGEMENT | DEMAND REDUCTION | $66 | $66 | 583 | 594 | 597 | 606 | 615 | 622 |
| BAY CITY | K | EXPANDED USE OF LOCAL GROUNDWATER | K \| GULF COAST AQUIFER SYSTEM \| MATAGORDA COUNTY | N/A | $53 | 0 | 75 | 75 | 75 | 75 | 75 |
| BERTRAM | K | DROUGHT MANAGEMENT | DEMAND REDUCTION | $66 | $66 | 78 | 85 | 88 | 89 | 94 | 101 |
| BERTRAM | K | EXPANDED USE OF LOCAL GROUNDWATER | K \| ELLENBURGER-SAN SABA AQUIFER \| BURNET COUNTY | N/A | $1235 | 0 | 750 | 2,000 | 2,000 | 2,000 | 2,000 |
| BERTRAM | K | MUNICIPAL CONSERVATION | DEMAND REDUCTION | $541 | $541 | 39 | 85 | 142 | 205 | 238 | 257 |
| BLANCO | K | DIRECT REUSE | K \| DIRECT NON-POTABLE REUSE | N/A | $705 | 0 | 146 | 146 | 146 | 146 | 146 |
| BLANCO | K | DROUGHT MANAGEMENT | DEMAND REDUCTION | $66 | $66 | 63 | 55 | 60 | 63 | 65 | 66 |
| BLANCO | K | MUNICIPAL CONSERVATION | DEMAND REDUCTION | N/A | $5265 | 0 | 27 | 23 | 21 | 21 | 21 |
| BOLING MWD | K | DROUGHT MANAGEMENT | DEMAND REDUCTION | $66 | $66 | 12 | 9 | 7 | 6 | 6 | 6 |
| BRIARCLIFF | K | DROUGHT MANAGEMENT | DEMAND REDUCTION | $66 | $66 | 60 | 68 | 76 | 85 | 93 | 106 |
| BROOKESMITH SUD* | F | WATER AUDITS AND LEAK - BROOKESMITH SUD | DEMAND REDUCTION | $2569 | $2711 | 1 | 1 | 1 | 1 | 1 | 1 |
| BROOKESMITH SUD* | K | DROUGHT MANAGEMENT | DEMAND REDUCTION | $66 | $66 | 1 | 1 | 1 | 1 | 2 | 2 |
| BUDA* | K | DIRECT POTABLE REUSE | K \| DIRECT POTABLE REUSE | N/A | $1440 | 0 | 2,240 | 2,240 | 2,240 | 2,240 | 2,240 |
| BUDA* | K | DIRECT REUSE | K \| DIRECT NON-POTABLE REUSE | N/A | $0 | 0 | 920 | 520 | 520 | 880 | 680 |
| BUDA* | K | DROUGHT MANAGEMENT | DEMAND REDUCTION | $66 | $66 | 322 | 443 | 607 | 813 | 1,045 | 1,309 |
| BUDA* | K | EDWARDS / MIDDLE TRINITY ASR | K \| TRINITY AQUIFER ASR \| HAYS COUNTY | $1398 | $1398 | 150 | 600 | 600 | 600 | 600 | 600 |
| BUDA* | K | MUNICIPAL CONSERVATION | DEMAND REDUCTION | $1148 | $1148 | 159 | 292 | 382 | 499 | 636 | 793 |
| BUDA* | K | SALINE EDWARDS DESALINATION AND ASR | K \| EDWARDS-BFZ AQUIFER (SALINE PORTION) ASR \| TRAVIS COUNTY | N/A | $1951 | 0 | 0 | 800 | 800 | 800 | 800 |
| BUDA* | L | ARWA - PHASE 2 | L \| CARRIZO-WILCOX AQUIFER \| CALDWELL COUNTY | N/A | $200 | 0 | 0 | 1,067 | 1,067 | 1,067 | 1,067 |
| BUDA* | L | ARWA - PHASE 3 | L \| DIRECT NON-POTABLE REUSE | N/A | $1995 | 0 | 0 | 0 | 0 | 157 | 157 |
| BUDA* | L | ARWA/GBRA PROJECT (PHASE 1) | L \| CARRIZO-WILCOX AQUIFER \| CALDWELL COUNTY | $1430 | $358 | 762 | 762 | 762 | 762 | 762 | 762 |
| BUDA* | L | MUNICIPAL WATER CONSERVATION | DEMAND REDUCTION | $681 | $681 | 11 | 42 | 61 | 90 | 126 | 172 |
| BURNET | K | DROUGHT MANAGEMENT | DEMAND REDUCTION | $66 | $66 | 302 | 329 | 339 | 362 | 397 | 427 |

*A single asterisk next to a WUG's name denotes that the WUG is split by two or more planning regions.

# Region K Recommended Water User Group (WUG) Water Management Strategies (WMS)

| | | | | | | WATER MANAGEMENT STRATEGY SUPPLY (ACRE-FEET PER YEAR) | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| WUG ENTITY NAME | WMS SPONSOR REGION | WMS NAME | SOURCE NAME | UNIT COST 2020 | UNIT COST 2070 | 2020 | 2030 | 2040 | 2050 | 2060 | 2070 |
| BURNET | K | LCRA - EXCESS FLOWS RESERVOIR | K \| LCRA NEW OFF-CHANNEL RESERVOIR (2030 DECADE) | N/A | $719 | 0 | 1,000 | 2,000 | 2,000 | 2,000 | 2,000 |
| BURNET | K | MUNICIPAL CONSERVATION | DEMAND REDUCTION | $684 | $684 | 150 | 330 | 545 | 694 | 757 | 813 |
| CANEY CREEK MUD OF MATAGORDA COUNTY | K | DROUGHT MANAGEMENT | DEMAND REDUCTION | $66 | $66 | 26 | 19 | 13 | 13 | 13 | 13 |
| CANYON LAKE WATER SERVICE* | K | DROUGHT MANAGEMENT | DEMAND REDUCTION | $66 | $66 | 11 | 14 | 16 | 20 | 23 | 27 |
| CANYON LAKE WATER SERVICE* | L | GBRA - MBWSP | L \| CARRIZO-WILCOX AQUIFER ASR FRESH/BRACKISH \| GONZALES COUNTY | N/A | $442 | 0 | 0 | 0 | 0 | 0 | 3 |
| CANYON LAKE WATER SERVICE* | L | MUNICIPAL WATER CONSERVATION | DEMAND REDUCTION | N/A | $681 | 0 | 0 | 0 | 1 | 6 | 9 |
| CEDAR PARK* | K | DROUGHT MANAGEMENT | DEMAND REDUCTION | $66 | $66 | 410 | 393 | 393 | 393 | 393 | 393 |
| CEDAR PARK* | K | MUNICIPAL CONSERVATION | DEMAND REDUCTION | $824 | $824 | 203 | 420 | 590 | 586 | 583 | 582 |
| CIMARRON PARK WATER | K | DROUGHT MANAGEMENT | DEMAND REDUCTION | $66 | $66 | 18 | 12 | 12 | 11 | 11 | 11 |
| COLUMBUS | K | DROUGHT MANAGEMENT | DEMAND REDUCTION | $66 | $66 | 206 | 194 | 180 | 169 | 157 | 146 |
| COLUMBUS | K | MUNICIPAL CONSERVATION | DEMAND REDUCTION | $537 | $537 | 102 | 195 | 286 | 384 | 484 | 581 |
| CORIX UTILITIES TEXAS INC* | K | DROUGHT MANAGEMENT | DEMAND REDUCTION | $66 | $66 | 77 | 82 | 86 | 89 | 93 | 98 |
| CORIX UTILITIES TEXAS INC* | K | EXPANDED USE OF LOCAL GROUNDWATER | K \| GULF COAST AQUIFER SYSTEM \| COLORADO COUNTY | N/A | $50 | 0 | 0 | 0 | 1 | 2 | 4 |
| COTTONWOOD CREEK MUD 1 | K | DROUGHT MANAGEMENT | DEMAND REDUCTION | $66 | $66 | 5 | 5 | 6 | 6 | 7 | 7 |
| COTTONWOOD SHORES | K | DROUGHT MANAGEMENT | DEMAND REDUCTION | $66 | $66 | 45 | 53 | 61 | 68 | 75 | 80 |
| COTTONWOOD SHORES | K | MUNICIPAL CONSERVATION | DEMAND REDUCTION | $2512 | $2512 | 22 | 26 | 27 | 28 | 29 | 32 |
| COUNTY-OTHER, BASTROP | K | DROUGHT MANAGEMENT | DEMAND REDUCTION | $66 | $66 | 258 | 283 | 332 | 398 | 489 | 610 |
| COUNTY-OTHER, BASTROP | K | MUNICIPAL CONSERVATION | DEMAND REDUCTION | $1264 | $1264 | 128 | 204 | 225 | 263 | 317 | 392 |
| COUNTY-OTHER, BLANCO | K | BRUSH MANAGEMENT | K \| TRINITY AQUIFER \| BLANCO COUNTY | N/A | $1190 | 0 | 708 | 708 | 708 | 708 | 708 |
| COUNTY-OTHER, BLANCO | K | DROUGHT MANAGEMENT | DEMAND REDUCTION | $66 | $66 | 123 | 114 | 103 | 98 | 95 | 94 |
| COUNTY-OTHER, BURNET | K | DROUGHT MANAGEMENT | DEMAND REDUCTION | $66 | $66 | 683 | 759 | 759 | 834 | 904 | 968 |
| COUNTY-OTHER, BURNET | K | LCRA - EXCESS FLOWS RESERVOIR | K \| LCRA NEW OFF-CHANNEL RESERVOIR (2030 DECADE) | N/A | $779 | 0 | 3,141 | 5,397 | 5,397 | 5,397 | 5,397 |
| COUNTY-OTHER, BURNET | K | MUNICIPAL CONSERVATION | DEMAND REDUCTION | $2090 | $2090 | 175 | 253 | 198 | 190 | 195 | 205 |
| COUNTY-OTHER, COLORADO | K | DROUGHT MANAGEMENT | DEMAND REDUCTION | $66 | $66 | 170 | 135 | 106 | 92 | 92 | 93 |
| COUNTY-OTHER, COLORADO | K | EXPANDED USE OF LOCAL GROUNDWATER | K \| GULF COAST AQUIFER SYSTEM \| COLORADO COUNTY | N/A | $1218 | 0 | 133 | 133 | 133 | 133 | 133 |
| COUNTY-OTHER, FAYETTE | K | DEVELOPMENT OF NEW GROUNDWATER SUPPLIES | K \| SPARTA AQUIFER \| FAYETTE COUNTY | $1693 | $1693 | 400 | 400 | 400 | 400 | 400 | 400 |
| COUNTY-OTHER, FAYETTE | K | DROUGHT MANAGEMENT | DEMAND REDUCTION | $66 | $66 | 189 | 177 | 161 | 156 | 159 | 163 |
| COUNTY-OTHER, FAYETTE | K | EXPANDED USE OF LOCAL GROUNDWATER | K \| GULF COAST AQUIFER SYSTEM \| FAYETTE COUNTY | $49 | $49 | 1 | 1 | 20 | 41 | 41 | 41 |

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## Region K Recommended Water User Group (WUG) Water Management Strategies (WMS)

| | | | | | | WATER MANAGEMENT STRATEGY SUPPLY (ACRE-FEET PER YEAR) | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| WUG ENTITY NAME | WMS SPONSOR REGION | WMS NAME | SOURCE NAME | UNIT COST 2020 | UNIT COST 2070 | 2020 | 2030 | 2040 | 2050 | 2060 | 2070 |
| COUNTY-OTHER, FAYETTE | K | EXPANDED USE OF LOCAL GROUNDWATER | K \| SPARTA AQUIFER \| FAYETTE COUNTY | N/A | $1127 | 0 | 40 | 98 | 145 | 180 | 204 |
| COUNTY-OTHER, GILLESPIE | K | BRUSH MANAGEMENT | K \| EDWARDS-TRINITY-PLATEAU, PECOS VALLEY, AND TRINITY AQUIFERS \| GILLESPIE COUNTY | N/A | $1190 | 0 | 1,125 | 1,125 | 1,125 | 1,125 | 1,125 |
| COUNTY-OTHER, GILLESPIE | K | DROUGHT MANAGEMENT | DEMAND REDUCTION | $66 | $66 | 150 | 109 | 94 | 99 | 104 | 109 |
| COUNTY-OTHER, HAYS* | K | BRUSH MANAGEMENT | K \| TRINITY AQUIFER \| HAYS COUNTY | N/A | $1190 | 0 | 83 | 83 | 83 | 83 | 83 |
| COUNTY-OTHER, HAYS* | K | DROUGHT MANAGEMENT | DEMAND REDUCTION | $66 | $66 | 158 | 103 | 132 | 155 | 176 | 243 |
| COUNTY-OTHER, HAYS* | K | EDWARDS / MIDDLE TRINITY ASR | K \| TRINITY AQUIFER ASR \| HAYS COUNTY | N/A | $2190 | 0 | 289 | 289 | 289 | 289 | 289 |
| COUNTY-OTHER, HAYS* | K | EXPANDED USE OF LOCAL GROUNDWATER | K \| TRINITY AQUIFER \| HAYS COUNTY | N/A | $1180 | 0 | 0 | 0 | 0 | 0 | 200 |
| COUNTY-OTHER, HAYS* | K | RAINWATER HARVESTING | K \| RAINWATER HARVESTING | N/A | $24962 | 0 | 16 | 24 | 31 | 36 | 50 |
| COUNTY-OTHER, HAYS* | K | SALINE EDWARDS DESALINATION AND ASR | K \| EDWARDS-BFZ AQUIFER (SALINE PORTION) ASR \| TRAVIS COUNTY | N/A | $1951 | 0 | 0 | 500 | 500 | 500 | 500 |
| COUNTY-OTHER, HAYS* | L | GBRA - MBWSP | L \| CARRIZO-WILCOX AQUIFER ASR FRESH/BRACKISH \| GONZALES COUNTY | N/A | $442 | 0 | 1,000 | 1,000 | 1,000 | 1,000 | 1,000 |
| COUNTY-OTHER, LLANO | K | DROUGHT MANAGEMENT | DEMAND REDUCTION | $66 | $66 | 13 | 10 | 11 | 11 | 10 | 9 |
| COUNTY-OTHER, MATAGORDA | K | DROUGHT MANAGEMENT | DEMAND REDUCTION | $66 | $66 | 52 | 53 | 52 | 53 | 53 | 53 |
| COUNTY-OTHER, MILLS | K | DROUGHT MANAGEMENT | DEMAND REDUCTION | $66 | $66 | 50 | 41 | 32 | 31 | 31 | 32 |
| COUNTY-OTHER, SAN SABA | K | DROUGHT MANAGEMENT | DEMAND REDUCTION | $66 | $66 | 44 | 44 | 43 | 43 | 43 | 44 |
| COUNTY-OTHER, TRAVIS | K | BRUSH MANAGEMENT | K \| TRINITY AQUIFER FRESH/BRACKISH \| TRAVIS COUNTY | N/A | $1190 | 0 | 83 | 83 | 83 | 83 | 83 |
| COUNTY-OTHER, TRAVIS | K | DROUGHT MANAGEMENT | DEMAND REDUCTION | $66 | $66 | 232 | 221 | 214 | 206 | 197 | 192 |
| COUNTY-OTHER, TRAVIS | K | MUNICIPAL CONSERVATION | DEMAND REDUCTION | $7585 | $7585 | 29 | 55 | 79 | 102 | 123 | 142 |
| COUNTY-OTHER, WHARTON* | K | DROUGHT MANAGEMENT | DEMAND REDUCTION | $66 | $66 | 315 | 269 | 234 | 239 | 243 | 249 |
| COUNTY-OTHER, WILLIAMSON* | K | DROUGHT MANAGEMENT | DEMAND REDUCTION | $66 | $66 | 13 | 19 | 18 | 17 | 16 | 15 |
| CREEDMOOR-MAHA WSC* | K | DROUGHT MANAGEMENT | DEMAND REDUCTION | $66 | $66 | 31 | 33 | 35 | 38 | 41 | 45 |
| CREEDMOOR-MAHA WSC* | K | EDWARDS / MIDDLE TRINITY ASR | K \| TRINITY AQUIFER ASR \| HAYS COUNTY | N/A | $2190 | 0 | 289 | 289 | 289 | 289 | 289 |
| CREEDMOOR-MAHA WSC* | K | MUNICIPAL CONSERVATION | DEMAND REDUCTION | $2506 | $2506 | 32 | 39 | 59 | 92 | 99 | 106 |
| CREEDMOOR-MAHA WSC* | K | WATER PURCHASE AMENDMENT - CREEDMOOR-MAHA WSC | K \| CARRIZO-WILCOX AQUIFER \| BASTROP COUNTY | N/A | $1222 | 0 | 0 | 335 | 335 | 335 | 335 |
| CYPRESS RANCH WCID 1 | K | DROUGHT MANAGEMENT | DEMAND REDUCTION | $66 | $66 | 6 | 6 | 7 | 7 | 7 | 7 |
| CYPRESS RANCH WCID 1 | K | MUNICIPAL CONSERVATION | DEMAND REDUCTION | $2502 | $2502 | 6 | 9 | 14 | 20 | 21 | 20 |
| DEER CREEK RANCH WATER | K | DROUGHT MANAGEMENT | DEMAND REDUCTION | $66 | $66 | 3 | 3 | 5 | 5 | 5 | 5 |

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## Region K Recommended Water User Group (WUG) Water Management Strategies (WMS)

| | | | | | | WATER MANAGEMENT STRATEGY SUPPLY (ACRE-FEET PER YEAR) | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| WUG ENTITY NAME | WMS SPONSOR REGION | WMS NAME | SOURCE NAME | UNIT COST 2020 | UNIT COST 2070 | 2020 | 2030 | 2040 | 2050 | 2060 | 2070 |
| DRIPPING SPRINGS WSC | K | DIRECT POTABLE REUSE | K \| DIRECT POTABLE REUSE | N/A | $2582 | 0 | 560 | 560 | 560 | 560 | 560 |
| DRIPPING SPRINGS WSC | K | DIRECT REUSE | K \| DIRECT NON-POTABLE REUSE | N/A | $251 | 0 | 390 | 460 | 531 | 601 | 672 |
| DRIPPING SPRINGS WSC | K | DROUGHT MANAGEMENT | DEMAND REDUCTION | $66 | $66 | 351 | 580 | 753 | 972 | 1,239 | 1,380 |
| DRIPPING SPRINGS WSC | K | EXPANDED USE OF LOCAL GROUNDWATER | K \| TRINITY AQUIFER \| HAYS COUNTY | N/A | $1023 | 0 | 0 | 300 | 300 | 300 | 300 |
| DRIPPING SPRINGS WSC | K | LCRA - MID BASIN RESERVOIR | K \| LCRA NEW OFF-CHANNEL RESERVOIR (2030 DECADE) | N/A | $145 | 0 | 0 | 0 | 1,000 | 2,000 | 2,000 |
| DRIPPING SPRINGS WSC | K | MUNICIPAL CONSERVATION | DEMAND REDUCTION | $1593 | $1593 | 174 | 289 | 339 | 417 | 522 | 576 |
| DRIPPING SPRINGS WSC | K | RAINWATER HARVESTING | K \| RAINWATER HARVESTING | N/A | $24961 | 0 | 34 | 44 | 57 | 73 | 81 |
| EAGLE LAKE | K | DROUGHT MANAGEMENT | DEMAND REDUCTION | $66 | $66 | 98 | 86 | 78 | 73 | 75 | 77 |
| EL CAMPO* | K | DROUGHT MANAGEMENT | DEMAND REDUCTION | $66 | $66 | 1 | 1 | 1 | 1 | 1 | 1 |
| ELGIN | K | DEVELOPMENT OF NEW GROUNDWATER SUPPLIES | K \| TRINITY AQUIFER \| TRAVIS COUNTY | N/A | $953 | 0 | 0 | 0 | 0 | 1,000 | 1,050 |
| ELGIN | K | DEVELOPMENT OF NEW GROUNDWATER SUPPLIES | K \| TRINITY AQUIFER FRESH/BRACKISH \| TRAVIS COUNTY | N/A | $953 | 0 | 0 | 0 | 0 | 0 | 775 |
| ELGIN | K | DROUGHT MANAGEMENT | DEMAND REDUCTION | $66 | $66 | 254 | 258 | 239 | 190 | 247 | 321 |
| ELGIN | K | EXPANDED USE OF LOCAL GROUNDWATER | K \| CARRIZO-WILCOX AQUIFER \| BASTROP COUNTY | N/A | $80 | 0 | 0 | 0 | 0 | 50 | 50 |
| ELGIN | K | MUNICIPAL CONSERVATION | DEMAND REDUCTION | $1208 | $1208 | 79 | 144 | 271 | 486 | 625 | 807 |
| FAYETTE COUNTY WCID MONUMENT HIL | K | DROUGHT MANAGEMENT | DEMAND REDUCTION | $66 | $66 | 33 | 32 | 31 | 30 | 30 | 31 |
| FAYETTE COUNTY WCID MONUMENT HIL | K | MUNICIPAL CONSERVATION | DEMAND REDUCTION | $563 | $563 | 17 | 33 | 50 | 68 | 75 | 78 |
| FAYETTE WSC | K | DROUGHT MANAGEMENT | DEMAND REDUCTION | $66 | $66 | 144 | 149 | 151 | 155 | 161 | 166 |
| FLATONIA | K | DROUGHT MANAGEMENT | DEMAND REDUCTION | $66 | $66 | 63 | 65 | 64 | 69 | 72 | 74 |
| FLATONIA | K | MUNICIPAL CONSERVATION | DEMAND REDUCTION | $1154 | $1154 | 31 | 63 | 90 | 92 | 96 | 99 |
| FREDERICKSBURG | K | DIRECT REUSE | K \| DIRECT NON-POTABLE REUSE | N/A | $5977 | 0 | 132 | 132 | 132 | 132 | 132 |
| FREDERICKSBURG | K | DROUGHT MANAGEMENT | DEMAND REDUCTION | $66 | $66 | 610 | 589 | 560 | 535 | 508 | 504 |
| FREDERICKSBURG | K | MUNICIPAL CONSERVATION | DEMAND REDUCTION | $574 | $574 | 302 | 598 | 903 | 1,234 | 1,578 | 1,802 |
| GARFIELD WSC | K | DROUGHT MANAGEMENT | DEMAND REDUCTION | $66 | $66 | 10 | 12 | 13 | 14 | 15 | 16 |
| GARFIELD WSC | K | EXPANDED USE OF LOCAL GROUNDWATER | K \| TRINITY AQUIFER \| TRAVIS COUNTY | N/A | $85 | 0 | 0 | 0 | 7 | 26 | 47 |
| GEORGETOWN* | K | DROUGHT MANAGEMENT | DEMAND REDUCTION | $66 | $66 | 15 | 17 | 17 | 19 | 20 | 22 |
| GEORGETOWN* | K | MUNICIPAL CONSERVATION | DEMAND REDUCTION | $1326 | $1326 | 8 | 17 | 28 | 35 | 39 | 41 |
| GOFORTH SUD* | K | DROUGHT MANAGEMENT | DEMAND REDUCTION | $66 | $66 | 8 | 11 | 13 | 17 | 21 | 26 |
| GOFORTH SUD* | L | ARWA/GBRA PROJECT (PHASE 1) | L \| CARRIZO-WILCOX AQUIFER \| CALDWELL COUNTY | $721 | $283 | 115 | 101 | 97 | 130 | 204 | 281 |
| GOFORTH SUD* | L | ARWA/GBRA PROJECT (PHASE 1) | L \| CARRIZO-WILCOX AQUIFER FRESH/BRACKISH \| GONZALES COUNTY | $721 | $283 | 117 | 102 | 98 | 100 | 103 | 109 |
| GOFORTH SUD* | L | DROUGHT MANAGEMENT – GOFORTH SUD | DEMAND REDUCTION | $89 | N/A | 6 | 0 | 0 | 0 | 0 | 0 |
| GOFORTH SUD* | L | MUNICIPAL WATER CONSERVATION | DEMAND REDUCTION | N/A | $681 | 0 | 0 | 0 | 0 | 0 | 3 |

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# Region K Recommended Water User Group (WUG) Water Management Strategies (WMS)

| | | | | | | WATER MANAGEMENT STRATEGY SUPPLY (ACRE-FEET PER YEAR) | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| WUG ENTITY NAME | WMS SPONSOR REGION | WMS NAME | SOURCE NAME | UNIT COST 2020 | UNIT COST 2070 | 2020 | 2030 | 2040 | 2050 | 2060 | 2070 |
| GOLDTHWAITE | K | DROUGHT MANAGEMENT | DEMAND REDUCTION | $66 | $66 | 73 | 68 | 69 | 72 | 75 | 78 |
| GOLDTHWAITE | K | MUNICIPAL CONSERVATION | DEMAND REDUCTION | $1800 | $1800 | 36 | 65 | 61 | 59 | 61 | 63 |
| GRANITE SHOALS | K | DROUGHT MANAGEMENT | DEMAND REDUCTION | $66 | $66 | 29 | 32 | 35 | 38 | 44 | 53 |
| GRANITE SHOALS | K | LCRA - MID BASIN RESERVOIR | K \| LCRA NEW OFF-CHANNEL RESERVOIR (2030 DECADE) | N/A | $145 | 0 | 0 | 0 | 0 | 50 | 170 |
| HAYS | K | DEVELOPMENT OF NEW GROUNDWATER SUPPLIES | K \| TRINITY AQUIFER \| HAYS COUNTY | N/A | $3830 | 0 | 100 | 100 | 100 | 100 | 100 |
| HAYS | K | DROUGHT MANAGEMENT | DEMAND REDUCTION | $66 | $66 | 37 | 47 | 59 | 70 | 87 | 107 |
| HAYS | K | EDWARDS / MIDDLE TRINITY ASR | K \| TRINITY AQUIFER ASR \| HAYS COUNTY | N/A | $3842 | 0 | 146 | 146 | 146 | 146 | 146 |
| HAYS | K | NEW WATER PURCHASE - HAYS | K \| EDWARDS-BFZ AQUIFER \| HAYS COUNTY | N/A | $1536 | 0 | 0 | 0 | 0 | 70 | 140 |
| HAYS | K | RAINWATER HARVESTING | K \| RAINWATER HARVESTING | N/A | $24966 | 0 | 3 | 4 | 4 | 6 | 7 |
| HAYS COUNTY WCID 1 | K | DROUGHT MANAGEMENT | DEMAND REDUCTION | $66 | $66 | 149 | 134 | 121 | 114 | 114 | 114 |
| HAYS COUNTY WCID 1 | K | MUNICIPAL CONSERVATION | DEMAND REDUCTION | $892 | $892 | 74 | 136 | 196 | 226 | 225 | 225 |
| HAYS COUNTY WCID 2 | K | DROUGHT MANAGEMENT | DEMAND REDUCTION | $66 | $66 | 52 | 61 | 70 | 76 | 95 | 117 |
| HAYS COUNTY WCID 2 | K | MUNICIPAL CONSERVATION | DEMAND REDUCTION | $598 | $598 | 26 | 62 | 114 | 169 | 211 | 259 |
| HORNSBY BEND UTILITY | K | DROUGHT MANAGEMENT | DEMAND REDUCTION | $66 | $66 | 30 | 34 | 38 | 41 | 44 | 47 |
| HORSESHOE BAY | K | DIRECT REUSE | K \| DIRECT NON-POTABLE REUSE | N/A | $669 | 0 | 154 | 154 | 154 | 154 | 154 |
| HORSESHOE BAY | K | DROUGHT MANAGEMENT | DEMAND REDUCTION | $66 | $66 | 641 | 640 | 601 | 576 | 537 | 495 |
| HORSESHOE BAY | K | LCRA - MID BASIN RESERVOIR | K \| LCRA NEW OFF-CHANNEL RESERVOIR (2030 DECADE) | N/A | $145 | 0 | 0 | 400 | 600 | 800 | 800 |
| HORSESHOE BAY | K | MUNICIPAL CONSERVATION | DEMAND REDUCTION | $542 | $542 | 253 | 540 | 815 | 1,114 | 1,392 | 1,645 |
| HURST CREEK MUD | K | DROUGHT MANAGEMENT | DEMAND REDUCTION | $66 | $66 | 313 | 281 | 253 | 228 | 205 | 185 |
| HURST CREEK MUD | K | MUNICIPAL CONSERVATION | DEMAND REDUCTION | $336 | $336 | 155 | 302 | 437 | 560 | 673 | 776 |
| IRRIGATION, COLORADO | K | AUSTIN RETURN FLOWS | K \| COLORADO INDIRECT REUSE | $11 | $11 | 3,657 | 3,496 | 3,328 | 3,151 | 2,966 | 2,768 |
| IRRIGATION, COLORADO | K | DROUGHT MANAGEMENT | DEMAND REDUCTION | $66 | $66 | 8,385 | 8,159 | 7,940 | 7,727 | 7,519 | 7,316 |
| IRRIGATION, COLORADO | K | EXPANDED USE OF LOCAL GROUNDWATER | K \| GULF COAST AQUIFER SYSTEM \| COLORADO COUNTY | $178 | $178 | 8,050 | 8,050 | 8,050 | 8,050 | 8,050 | 8,050 |
| IRRIGATION, COLORADO | K | IRRIGATION CONSERVATION | DEMAND REDUCTION | $116 | $144 | 15,408 | 19,410 | 23,782 | 27,254 | 29,836 | 32,422 |
| IRRIGATION, COLORADO | K | LCRA - INTERRUPTIBLE WATER FOR AGRICULTURE (LCRA WMP AMENDMENTS) | K \| HIGHLAND LAKES LAKE/RESERVOIR SYSTEM | $60 | N/A | 13,047 | 6,045 | 2,659 | 0 | 0 | 0 |
| IRRIGATION, GILLESPIE | K | IRRIGATION | DEMAND REDUCTION | $643 | $643 | 28 | 28 | 28 | 28 | 28 | 28 |
| IRRIGATION, MATAGORDA | K | AUSTIN RETURN FLOWS | K \| COLORADO INDIRECT REUSE | $11 | $11 | 8,294 | 8,311 | 8,336 | 8,371 | 8,418 | 8,479 |
| IRRIGATION, MATAGORDA | K | DEVELOPMENT OF NEW GROUNDWATER SUPPLIES | K \| GULF COAST AQUIFER SYSTEM FRESH/BRACKISH \| MATAGORDA COUNTY | $180 | $180 | 510 | 510 | 510 | 510 | 510 | 510 |
| IRRIGATION, MATAGORDA | K | DROUGHT MANAGEMENT | DEMAND REDUCTION | $66 | $66 | 8,480 | 8,251 | 8,030 | 7,813 | 7,603 | 7,400 |
| IRRIGATION, MATAGORDA | K | EXPANDED USE OF LOCAL GROUNDWATER | K \| GULF COAST AQUIFER SYSTEM \| MATAGORDA COUNTY | $430 | $430 | 300 | 300 | 300 | 300 | 300 | 300 |
| IRRIGATION, MATAGORDA | K | IRRIGATION CONSERVATION | DEMAND REDUCTION | $128 | $161 | 13,254 | 18,765 | 24,505 | 29,691 | 34,316 | 38,944 |

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# Region K Recommended Water User Group (WUG) Water Management Strategies (WMS)

| | | | | | | WATER MANAGEMENT STRATEGY SUPPLY (ACRE-FEET PER YEAR) | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| WUG ENTITY NAME | WMS SPONSOR REGION | WMS NAME | SOURCE NAME | UNIT COST 2020 | UNIT COST 2070 | 2020 | 2030 | 2040 | 2050 | 2060 | 2070 |
| IRRIGATION, MATAGORDA | K | LCRA - INTERRUPTIBLE WATER FOR AGRICULTURE (LCRA WMP AMENDMENTS) | K \| HIGHLAND LAKES LAKE/RESERVOIR SYSTEM | $60 | N/A | 24,695 | 8,866 | 5,026 | 0 | 0 | 0 |
| IRRIGATION, MILLS | K | DROUGHT MANAGEMENT | DEMAND REDUCTION | $66 | $66 | 149 | 145 | 141 | 137 | 134 | 130 |
| IRRIGATION, MILLS | K | EXPANDED USE OF LOCAL GROUNDWATER | K \| TRINITY AQUIFER \| MILLS COUNTY | $403 | $403 | 300 | 300 | 300 | 300 | 300 | 300 |
| IRRIGATION, MILLS | K | IRRIGATION | DEMAND REDUCTION | $534 | $534 | 459 | 459 | 459 | 459 | 459 | 459 |
| IRRIGATION, SAN SABA | K | IRRIGATION | DEMAND REDUCTION | $382 | $382 | 626 | 626 | 626 | 626 | 626 | 626 |
| IRRIGATION, WHARTON* | K | AUSTIN RETURN FLOWS | K \| COLORADO INDIRECT REUSE | $11 | $11 | 5,055 | 4,958 | 4,862 | 4,765 | 4,663 | 4,562 |
| IRRIGATION, WHARTON* | K | DROUGHT MANAGEMENT | DEMAND REDUCTION | $66 | $66 | 17,139 | 16,678 | 16,229 | 15,793 | 15,369 | 14,955 |
| IRRIGATION, WHARTON* | K | EXPANDED USE OF LOCAL GROUNDWATER | K \| GULF COAST AQUIFER SYSTEM \| WHARTON COUNTY | $174 | $174 | 5,600 | 5,600 | 5,600 | 5,600 | 5,600 | 5,600 |
| IRRIGATION, WHARTON* | K | IRRIGATION CONSERVATION | DEMAND REDUCTION | $117 | $140 | 20,813 | 26,472 | 32,462 | 37,643 | 42,009 | 46,381 |
| IRRIGATION, WHARTON* | K | LCRA - INTERRUPTIBLE WATER FOR AGRICULTURE (LCRA WMP AMENDMENTS) | K \| HIGHLAND LAKES LAKE/RESERVOIR SYSTEM | $60 | N/A | 25,753 | 10,886 | 5,420 | 0 | 0 | 0 |
| JOHNSON CITY | K | DROUGHT MANAGEMENT | DEMAND REDUCTION | $66 | $66 | 64 | 77 | 84 | 87 | 90 | 91 |
| JOHNSON CITY | K | EXPANDED USE OF LOCAL GROUNDWATER | K \| ELLENBURGER-SAN SABA AQUIFER \| BLANCO COUNTY | N/A | $70 | 0 | 100 | 100 | 100 | 100 | 100 |
| JOHNSON CITY | K | MUNICIPAL CONSERVATION | DEMAND REDUCTION | $3255 | $3255 | 31 | 28 | 25 | 23 | 23 | 23 |
| JONESTOWN WSC | K | DROUGHT MANAGEMENT | DEMAND REDUCTION | $66 | $66 | 124 | 132 | 141 | 150 | 158 | 165 |
| JONESTOWN WSC | K | MUNICIPAL CONSERVATION | DEMAND REDUCTION | $3825 | $3825 | 56 | 47 | 41 | 39 | 40 | 41 |
| KELLY LANE WCID 1 | K | DROUGHT MANAGEMENT | DEMAND REDUCTION | $66 | $66 | 73 | 66 | 66 | 66 | 66 | 66 |
| KELLY LANE WCID 1 | K | MUNICIPAL CONSERVATION | DEMAND REDUCTION | $1353 | $1353 | 29 | 52 | 48 | 47 | 46 | 46 |
| KEMPNER WSC* | K | DROUGHT MANAGEMENT | DEMAND REDUCTION | $66 | $66 | 32 | 35 | 39 | 42 | 45 | 49 |
| KEMPNER WSC* | K | MUNICIPAL CONSERVATION | DEMAND REDUCTION | $3635 | $3635 | 12 | 12 | 11 | 11 | 12 | 12 |
| KINGSLAND WSC | K | DROUGHT MANAGEMENT | DEMAND REDUCTION | $66 | $66 | 48 | 55 | 54 | 51 | 56 | 61 |
| LA GRANGE | K | DROUGHT MANAGEMENT | DEMAND REDUCTION | $66 | $66 | 174 | 196 | 213 | 226 | 237 | 245 |
| LA GRANGE | K | MUNICIPAL CONSERVATION | DEMAND REDUCTION | $2835 | $2835 | 86 | 82 | 69 | 63 | 64 | 66 |
| LAGO VISTA | K | DIRECT REUSE | K \| DIRECT NON-POTABLE REUSE | N/A | $140 | 0 | 224 | 336 | 448 | 560 | 673 |
| LAGO VISTA | K | DROUGHT MANAGEMENT | DEMAND REDUCTION | $66 | $66 | 340 | 362 | 373 | 384 | 408 | 446 |
| LAGO VISTA | K | MUNICIPAL CONSERVATION | DEMAND REDUCTION | $697 | $697 | 168 | 375 | 622 | 914 | 1,098 | 1,198 |
| LAKEWAY MUD | K | DIRECT REUSE | K \| DIRECT NON-POTABLE REUSE | N/A | $306 | 0 | 450 | 450 | 900 | 900 | 900 |
| LAKEWAY MUD | K | DROUGHT MANAGEMENT | DEMAND REDUCTION | $66 | $66 | 502 | 478 | 454 | 430 | 409 | 409 |
| LAKEWAY MUD | K | MUNICIPAL CONSERVATION | DEMAND REDUCTION | $588 | $588 | 248 | 492 | 748 | 1,015 | 1,169 | 1,168 |
| LEANDER* | K | DROUGHT MANAGEMENT | DEMAND REDUCTION | $66 | $66 | 320 | 594 | 616 | 645 | 659 | 686 |
| LEANDER* | K | LCRA - MID BASIN RESERVOIR | K \| LCRA NEW OFF-CHANNEL RESERVOIR (2030 DECADE) | N/A | $145 | 0 | 1,400 | 1,400 | 2,600 | 2,600 | 2,600 |
| LEE COUNTY WSC* | K | DROUGHT MANAGEMENT | DEMAND REDUCTION | $66 | $66 | 42 | 43 | 45 | 48 | 58 | 68 |
| LLANO | K | DIRECT POTABLE REUSE | K \| DIRECT POTABLE REUSE | N/A | $3764 | 0 | 280 | 280 | 280 | 280 | 280 |
| LLANO | K | DROUGHT MANAGEMENT | DEMAND REDUCTION | $66 | $66 | 337 | 296 | 221 | 144 | 150 | 171 |
| LLANO | K | MUNICIPAL CONSERVATION | DEMAND REDUCTION | $931 | $931 | 78 | 147 | 208 | 263 | 285 | 295 |

*A single asterisk next to a WUG's name denotes that the WUG is split by two or more planning regions.

# Region K Recommended Water User Group (WUG) Water Management Strategies (WMS)

| | | | | | | WATER MANAGEMENT STRATEGY SUPPLY (ACRE-FEET PER YEAR) | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| WUG ENTITY NAME | WMS SPONSOR REGION | WMS NAME | SOURCE NAME | UNIT COST 2020 | UNIT COST 2070 | 2020 | 2030 | 2040 | 2050 | 2060 | 2070 |
| LLANO | K | NEW WATER PURCHASE - LLANO | K \| HIGHLAND LAKES LAKE/RESERVOIR SYSTEM | $45619 | N/A | 177 | 0 | 0 | 0 | 0 | 0 |
| LOOP 360 WSC | K | DROUGHT MANAGEMENT | DEMAND REDUCTION | $66 | $66 | 223 | 209 | 196 | 183 | 170 | 161 |
| LOOP 360 WSC | K | MUNICIPAL CONSERVATION | DEMAND REDUCTION | $324 | $324 | 110 | 225 | 339 | 450 | 559 | 679 |
| MANOR | K | DROUGHT MANAGEMENT | DEMAND REDUCTION | $66 | $66 | 161 | 204 | 249 | 302 | 350 | 395 |
| MANUFACTURING, FAYETTE | K | DEVELOPMENT OF NEW GROUNDWATER SUPPLIES | K \| YEGUA-JACKSON AQUIFER \| FAYETTE COUNTY | N/A | $3960 | 0 | 100 | 100 | 100 | 100 | 100 |
| MANVILLE WSC* | K | DROUGHT MANAGEMENT | DEMAND REDUCTION | $66 | $66 | 488 | 589 | 687 | 799 | 899 | 993 |
| MANVILLE WSC* | K | EXPANDED USE OF LOCAL GROUNDWATER | K \| TRINITY AQUIFER \| TRAVIS COUNTY | N/A | $643 | 0 | 0 | 0 | 0 | 0 | 703 |
| MARBLE FALLS | K | DIRECT REUSE | K \| DIRECT NON-POTABLE REUSE | N/A | $296 | 0 | 100 | 200 | 300 | 400 | 500 |
| MARBLE FALLS | K | DROUGHT MANAGEMENT | DEMAND REDUCTION | $66 | $66 | 428 | 567 | 738 | 772 | 759 | 776 |
| MARBLE FALLS | K | LCRA - EXCESS FLOWS RESERVOIR | K \| LCRA NEW OFF-CHANNEL RESERVOIR (2030 DECADE) | N/A | $1436 | 0 | 4,000 | 4,000 | 4,000 | 4,000 | 4,000 |
| MARBLE FALLS | K | MUNICIPAL CONSERVATION | DEMAND REDUCTION | $473 | $473 | 212 | 567 | 1,193 | 1,801 | 2,387 | 2,566 |
| MARKHAM MUD | K | DROUGHT MANAGEMENT | DEMAND REDUCTION | $66 | $66 | 5 | 5 | 5 | 5 | 5 | 5 |
| MATAGORDA COUNTY WCID 6 | K | DROUGHT MANAGEMENT | DEMAND REDUCTION | $66 | $66 | 6 | 6 | 6 | 6 | 6 | 6 |
| MATAGORDA WASTE DISPOSAL & WSC | K | DROUGHT MANAGEMENT | DEMAND REDUCTION | $66 | $66 | 23 | 23 | 23 | 24 | 25 | 25 |
| MATAGORDA WASTE DISPOSAL & WSC | K | MUNICIPAL CONSERVATION | DEMAND REDUCTION | $5140 | $5140 | 12 | 16 | 13 | 12 | 13 | 13 |
| MEADOWLAKES | K | DIRECT REUSE | K \| DIRECT NON-POTABLE REUSE | $0 | $0 | 75 | 75 | 75 | 75 | 75 | 75 |
| MEADOWLAKES | K | DROUGHT MANAGEMENT | DEMAND REDUCTION | $66 | $66 | 155 | 140 | 126 | 113 | 102 | 92 |
| MEADOWLAKES | K | MUNICIPAL CONSERVATION | DEMAND REDUCTION | $582 | $582 | 77 | 145 | 210 | 271 | 326 | 377 |
| MINING, BASTROP | K | MINING CONSERVATION - BASTROP COUNTY | DEMAND REDUCTION | $16 | N/A | 2 | 243 | 308 | 233 | 0 | 0 |
| MINING, BURNET | K | DEVELOPMENT OF NEW GROUNDWATER SUPPLIES | K \| ELLENBURGER-SAN SABA AQUIFER \| BURNET COUNTY | N/A | $534 | 0 | 0 | 0 | 300 | 400 | 700 |
| MINING, BURNET | K | DEVELOPMENT OF NEW GROUNDWATER SUPPLIES | K \| HICKORY AQUIFER \| BURNET COUNTY | N/A | $432 | 0 | 1,000 | 1,000 | 1,000 | 1,000 | 1,000 |
| MINING, BURNET | K | DEVELOPMENT OF NEW GROUNDWATER SUPPLIES | K \| MARBLE FALLS AQUIFER \| BURNET COUNTY | N/A | $307 | 0 | 0 | 1,000 | 1,000 | 1,000 | 1,000 |
| MINING, BURNET | K | EXPANDED USE OF LOCAL GROUNDWATER | K \| ELLENBURGER-SAN SABA AQUIFER \| BURNET COUNTY | N/A | $581 | 0 | 1,000 | 1,000 | 1,000 | 1,000 | 1,000 |
| MINING, BURNET | K | MINING CONSERVATION - BURNET COUNTY | DEMAND REDUCTION | $33 | $33 | 1,300 | 1,300 | 1,300 | 1,300 | 1,300 | 1,800 |
| MINING, FAYETTE | K | EXPANDED USE OF LOCAL GROUNDWATER | K \| YEGUA-JACKSON AQUIFER \| FAYETTE COUNTY | $567 | N/A | 760 | 760 | 0 | 0 | 0 | 0 |
| MINING, HAYS | K | DIRECT REUSE | K \| DIRECT NON-POTABLE REUSE | N/A | $1597 | 0 | 200 | 600 | 600 | 800 | 1,000 |
| MINING, HAYS | K | EXPANDED USE OF LOCAL GROUNDWATER | K \| TRINITY AQUIFER \| HAYS COUNTY | $373 | $373 | 600 | 600 | 600 | 600 | 600 | 600 |
| NORTH AUSTIN MUD 1 | K | DROUGHT MANAGEMENT | DEMAND REDUCTION | $66 | $66 | 43 | 41 | 40 | 40 | 40 | 40 |
| NORTH AUSTIN MUD 1 | K | LCRA - MID BASIN RESERVOIR | K \| LCRA NEW OFF-CHANNEL RESERVOIR (2030 DECADE) | N/A | $145 | 0 | 0 | 770 | 770 | 770 | 770 |
| NORTH SAN SABA WSC | K | DROUGHT MANAGEMENT | DEMAND REDUCTION | $66 | $66 | 34 | 32 | 29 | 25 | 23 | 22 |

*A single asterisk next to a WUG's name denotes that the WUG is split by two or more planning regions.

## Region K Recommended Water User Group (WUG) Water Management Strategies (WMS)

| | | | | | | WATER MANAGEMENT STRATEGY SUPPLY (ACRE-FEET PER YEAR) | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| WUG ENTITY NAME | WMS SPONSOR REGION | WMS NAME | SOURCE NAME | UNIT COST 2020 | UNIT COST 2070 | 2020 | 2030 | 2040 | 2050 | 2060 | 2070 |
| NORTH SAN SABA WSC | K | MUNICIPAL CONSERVATION | DEMAND REDUCTION | $2030 | $2030 | 17 | 32 | 46 | 60 | 74 | 85 |
| NORTHTOWN MUD | K | DROUGHT MANAGEMENT | DEMAND REDUCTION | $66 | $66 | 36 | 42 | 47 | 53 | 59 | 63 |
| NORTHTOWN MUD | K | LCRA - MID BASIN RESERVOIR | K \| LCRA NEW OFF-CHANNEL RESERVOIR (2030 DECADE) | N/A | $145 | 0 | 0 | 900 | 1,100 | 1,300 | 1,300 |
| OAK SHORES WATER SYSTEM | K | DROUGHT MANAGEMENT | DEMAND REDUCTION | $66 | $66 | 27 | 28 | 26 | 23 | 21 | 20 |
| OAK SHORES WATER SYSTEM | K | MUNICIPAL CONSERVATION | DEMAND REDUCTION | $516 | $516 | 14 | 29 | 42 | 54 | 65 | 70 |
| PALACIOS | K | DROUGHT MANAGEMENT | DEMAND REDUCTION | $66 | $66 | 70 | 55 | 41 | 34 | 33 | 34 |
| PFLUGERVILLE* | G | MUNICIPAL WATER CONSERVATION - PFLUGERVILLE | DEMAND REDUCTION | N/A | $560 | 0 | 598 | 684 | 789 | 888 | 989 |
| PFLUGERVILLE* | K | DROUGHT MANAGEMENT | DEMAND REDUCTION | $66 | $66 | 2,460 | 3,068 | 3,748 | 4,423 | 5,103 | 5,103 |
| PFLUGERVILLE* | K | EXPANDED USE OF LOCAL GROUNDWATER | K \| EDWARDS-BFZ AQUIFER FRESH/BRACKISH \| TRAVIS COUNTY | N/A | $50 | 0 | 0 | 20 | 20 | 20 | 20 |
| PFLUGERVILLE* | K | LCRA - MID BASIN RESERVOIR | K \| LCRA NEW OFF-CHANNEL RESERVOIR (2030 DECADE) | N/A | $145 | 0 | 0 | 0 | 1,300 | 3,400 | 3,400 |
| PFLUGERVILLE* | K | MUNICIPAL CONSERVATION | DEMAND REDUCTION | $1607 | $1607 | 563 | 549 | 606 | 674 | 754 | 743 |
| POLONIA WSC* | K | DROUGHT MANAGEMENT | DEMAND REDUCTION | $66 | $66 | 3 | 4 | 4 | 5 | 6 | 8 |
| RICHLAND SUD* | K | DROUGHT MANAGEMENT | DEMAND REDUCTION | $66 | $66 | 41 | 38 | 35 | 31 | 32 | 33 |
| RICHLAND SUD* | K | MUNICIPAL CONSERVATION | DEMAND REDUCTION | $974 | $974 | 20 | 39 | 55 | 69 | 70 | 72 |
| ROLLINGWOOD | K | DROUGHT MANAGEMENT | DEMAND REDUCTION | $66 | $66 | 70 | 63 | 57 | 52 | 47 | 46 |
| ROLLINGWOOD | K | LCRA - MID BASIN RESERVOIR | K \| LCRA NEW OFF-CHANNEL RESERVOIR (2030 DECADE) | N/A | $145 | 0 | 0 | 250 | 250 | 250 | 250 |
| ROLLINGWOOD | K | MUNICIPAL CONSERVATION | DEMAND REDUCTION | $678 | $678 | 34 | 64 | 90 | 116 | 142 | 148 |
| ROUGH HOLLOW IN TRAVIS COUNTY | K | DROUGHT MANAGEMENT | DEMAND REDUCTION | $66 | $66 | 107 | 199 | 179 | 179 | 179 | 179 |
| ROUGH HOLLOW IN TRAVIS COUNTY | K | MUNICIPAL CONSERVATION | DEMAND REDUCTION | $750 | $750 | 53 | 220 | 319 | 319 | 319 | 319 |
| ROUND ROCK* | K | DROUGHT MANAGEMENT | DEMAND REDUCTION | $66 | $66 | 68 | 79 | 88 | 99 | 109 | 118 |
| ROUND ROCK* | K | MUNICIPAL CONSERVATION | DEMAND REDUCTION | $1489 | N/A | 6 | 1 | 0 | 0 | 0 | 0 |
| SAN SABA | K | DROUGHT MANAGEMENT | DEMAND REDUCTION | $66 | $66 | 214 | 202 | 182 | 162 | 149 | 137 |
| SAN SABA | K | MUNICIPAL CONSERVATION | DEMAND REDUCTION | $623 | $623 | 106 | 208 | 300 | 378 | 469 | 556 |
| SCHULENBURG | K | DROUGHT MANAGEMENT | DEMAND REDUCTION | $66 | $66 | 128 | 131 | 128 | 130 | 136 | 141 |
| SCHULENBURG | K | MUNICIPAL CONSERVATION | DEMAND REDUCTION | $828 | $828 | 63 | 128 | 199 | 235 | 246 | 254 |
| SENNA HILLS MUD | K | DROUGHT MANAGEMENT | DEMAND REDUCTION | $66 | $66 | 76 | 82 | 84 | 83 | 80 | 77 |
| SENNA HILLS MUD | K | MUNICIPAL CONSERVATION | DEMAND REDUCTION | $365 | $365 | 38 | 85 | 142 | 200 | 258 | 321 |
| SHADY HOLLOW MUD | K | DROUGHT MANAGEMENT | DEMAND REDUCTION | $66 | $66 | 144 | 137 | 137 | 137 | 137 | 137 |
| SHADY HOLLOW MUD | K | MUNICIPAL CONSERVATION | DEMAND REDUCTION | $1402 | $1402 | 71 | 90 | 74 | 65 | 64 | 64 |
| SMITHVILLE | K | DEVELOPMENT OF NEW GROUNDWATER SUPPLIES | K \| YEGUA-JACKSON AQUIFER \| FAYETTE COUNTY | N/A | $1887 | 0 | 700 | 700 | 700 | 700 | 700 |
| SMITHVILLE | K | DROUGHT MANAGEMENT | DEMAND REDUCTION | $66 | $66 | 150 | 198 | 259 | 343 | 456 | 606 |
| SMITHVILLE | K | LCRA - IMPORT RETURN FLOWS FROM WILLIAMSON COUNTY | G \| BRAZOS RUN-OF-RIVER | N/A | $145 | 0 | 0 | 0 | 0 | 0 | 700 |
| SMITHVILLE | K | MUNICIPAL CONSERVATION | DEMAND REDUCTION | $1736 | $1736 | 69 | 59 | 54 | 59 | 75 | 97 |

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# Region K Recommended Water User Group (WUG) Water Management Strategies (WMS)

| WUG ENTITY NAME | WMS SPONSOR REGION | WMS NAME | SOURCE NAME | UNIT COST 2020 | UNIT COST 2070 | WATER MANAGEMENT STRATEGY SUPPLY (ACRE-FEET PER YEAR) 2020 | 2030 | 2040 | 2050 | 2060 | 2070 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| STEAM ELECTRIC POWER, BASTROP | K | LCRA - ENHANCED MUNICIPAL AND INDUSTRIAL CONSERVATION | DEMAND REDUCTION | $262 | $262 | 55 | 64 | 73 | 82 | 82 | 82 |
| STEAM ELECTRIC POWER, FAYETTE | K | AUSTIN RETURN FLOWS | K \| COLORADO INDIRECT REUSE | $145 | $145 | 4,300 | 4,300 | 4,300 | 4,300 | 4,300 | 4,300 |
| STEAM ELECTRIC POWER, FAYETTE | K | LCRA - ENHANCED MUNICIPAL AND INDUSTRIAL CONSERVATION | DEMAND REDUCTION | $262 | $262 | 480 | 560 | 640 | 720 | 720 | 720 |
| STEAM ELECTRIC POWER, LLANO | K | LCRA - ENHANCED MUNICIPAL AND INDUSTRIAL CONSERVATION | DEMAND REDUCTION | $262 | $262 | 66 | 77 | 88 | 99 | 99 | 99 |
| STEAM ELECTRIC POWER, MATAGORDA | K | AUSTIN RETURN FLOWS | K \| COLORADO INDIRECT REUSE | $114 | $123 | 10,696 | 12,076 | 12,030 | 11,984 | 11,937 | 11,891 |
| STEAM ELECTRIC POWER, MATAGORDA | K | BLEND BRACKISH SURFACE WATER IN STPNOC RESERVOIR | K \| GULF OF MEXICO SALINE | $0 | $0 | 3,000 | 3,000 | 3,000 | 3,000 | 3,000 | 3,000 |
| STEAM ELECTRIC POWER, MATAGORDA | K | DOWNSTREAM RETURN FLOWS | K \| COLORADO INDIRECT REUSE | N/A | $149 | 0 | 3,000 | 3,000 | 3,000 | 3,000 | 3,000 |
| STEAM ELECTRIC POWER, TRAVIS | K | AUSTIN - CENTRALIZED DIRECT NON-POTABLE REUSE | K \| DIRECT NON-POTABLE REUSE | N/A | $995 | 0 | 1,750 | 1,750 | 1,750 | 1,750 | 1,750 |
| SUNSET VALLEY | K | DEVELOPMENT OF NEW GROUNDWATER SUPPLIES | K \| TRINITY AQUIFER FRESH/BRACKISH \| TRAVIS COUNTY | N/A | $2063 | 0 | 0 | 300 | 300 | 300 | 300 |
| SUNSET VALLEY | K | DROUGHT MANAGEMENT | DEMAND REDUCTION | $66 | $66 | 67 | 69 | 72 | 75 | 79 | 82 |
| SUNSET VALLEY | K | EXPANDED USE OF LOCAL GROUNDWATER | K \| EDWARDS-BFZ AQUIFER \| TRAVIS COUNTY | N/A | $120 | 0 | 0 | 50 | 50 | 50 | 50 |
| SUNSET VALLEY | K | LCRA - MID BASIN RESERVOIR | K \| LCRA NEW OFF-CHANNEL RESERVOIR (2030 DECADE) | N/A | $145 | 0 | 0 | 300 | 300 | 300 | 300 |
| SUNSET VALLEY | K | MUNICIPAL CONSERVATION | DEMAND REDUCTION | $369 | $369 | 33 | 73 | 123 | 183 | 256 | 343 |
| SUNSET VALLEY | K | RAINWATER HARVESTING | K \| RAINWATER HARVESTING | N/A | $22918 | 0 | 2 | 2 | 3 | 3 | 4 |
| SWEETWATER COMMUNITY | K | DROUGHT MANAGEMENT | DEMAND REDUCTION | $66 | $66 | 82 | 172 | 172 | 172 | 172 | 172 |
| TRAVIS COUNTY MUD 10 | K | DEVELOPMENT OF NEW GROUNDWATER SUPPLIES | K \| TRINITY AQUIFER FRESH/BRACKISH \| TRAVIS COUNTY | N/A | $3830 | 0 | 100 | 100 | 100 | 100 | 100 |
| TRAVIS COUNTY MUD 10 | K | DROUGHT MANAGEMENT | DEMAND REDUCTION | $66 | $66 | 17 | 18 | 19 | 20 | 22 | 23 |
| TRAVIS COUNTY MUD 10 | K | MUNICIPAL CONSERVATION | DEMAND REDUCTION | $925 | $925 | 7 | 15 | 25 | 27 | 28 | 30 |
| TRAVIS COUNTY MUD 14 | K | DROUGHT MANAGEMENT | DEMAND REDUCTION | $66 | $66 | 9 | 10 | 11 | 12 | 13 | 14 |
| TRAVIS COUNTY MUD 14 | K | WATER PURCHASE AMENDMENT - TRAVIS COUNTY MUD 14 | K \| CARRIZO-WILCOX AQUIFER \| BASTROP COUNTY | N/A | $1222 | 0 | 0 | 0 | 35 | 35 | 35 |
| TRAVIS COUNTY MUD 2 | K | DROUGHT MANAGEMENT | DEMAND REDUCTION | $66 | $66 | 45 | 46 | 48 | 49 | 52 | 56 |
| TRAVIS COUNTY MUD 4 | K | DROUGHT MANAGEMENT | DEMAND REDUCTION | $66 | $66 | 341 | 355 | 360 | 364 | 360 | 351 |
| TRAVIS COUNTY MUD 4 | K | MUNICIPAL CONSERVATION | DEMAND REDUCTION | $399 | $399 | 135 | 309 | 507 | 731 | 962 | 1,198 |
| TRAVIS COUNTY WCID 10 | K | DROUGHT MANAGEMENT | DEMAND REDUCTION | $66 | $66 | 796 | 786 | 766 | 748 | 720 | 688 |

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# Region K Recommended Water User Group (WUG) Water Management Strategies (WMS)

| WUG ENTITY NAME | WMS SPONSOR REGION | WMS NAME | SOURCE NAME | UNIT COST 2020 | UNIT COST 2070 | WATER MANAGEMENT STRATEGY SUPPLY (ACRE-FEET PER YEAR) 2020 | 2030 | 2040 | 2050 | 2060 | 2070 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| TRAVIS COUNTY WCID 10 | K | LCRA - MID BASIN RESERVOIR | K \| LCRA NEW OFF-CHANNEL RESERVOIR (2030 DECADE) | N/A | $145 | 0 | 0 | 2,300 | 2,300 | 2,300 | 2,300 |
| TRAVIS COUNTY WCID 10 | K | MUNICIPAL CONSERVATION | DEMAND REDUCTION | $389 | $389 | 315 | 660 | 1,031 | 1,440 | 1,858 | 2,275 |
| TRAVIS COUNTY WCID 17 | K | DIRECT REUSE | K \| DIRECT NON-POTABLE REUSE | N/A | $1410 | 0 | 510 | 510 | 510 | 510 | 510 |
| TRAVIS COUNTY WCID 17 | K | DROUGHT MANAGEMENT | DEMAND REDUCTION | $66 | $66 | 2,132 | 2,076 | 2,056 | 1,882 | 1,791 | 1,848 |
| TRAVIS COUNTY WCID 17 | K | MUNICIPAL CONSERVATION | DEMAND REDUCTION | $549 | $549 | 843 | 1,748 | 2,794 | 3,658 | 4,317 | 4,451 |
| TRAVIS COUNTY WCID 18 | K | DROUGHT MANAGEMENT | DEMAND REDUCTION | $66 | $66 | 263 | 304 | 342 | 385 | 423 | 458 |
| TRAVIS COUNTY WCID 18 | K | MUNICIPAL CONSERVATION | DEMAND REDUCTION | $2129 | $2129 | 75 | 58 | 47 | 43 | 43 | 46 |
| TRAVIS COUNTY WCID 19 | K | DROUGHT MANAGEMENT | DEMAND REDUCTION | $66 | $66 | 82 | 74 | 66 | 60 | 54 | 48 |
| TRAVIS COUNTY WCID 19 | K | MUNICIPAL CONSERVATION | DEMAND REDUCTION | $300 | $300 | 40 | 79 | 114 | 146 | 176 | 203 |
| TRAVIS COUNTY WCID 20 | K | DROUGHT MANAGEMENT | DEMAND REDUCTION | $66 | $66 | 106 | 96 | 86 | 77 | 70 | 63 |
| TRAVIS COUNTY WCID 20 | K | MUNICIPAL CONSERVATION | DEMAND REDUCTION | $400 | $400 | 53 | 103 | 149 | 190 | 228 | 263 |
| TRAVIS COUNTY WCID POINT VENTURE | K | DROUGHT MANAGEMENT | DEMAND REDUCTION | $66 | $66 | 46 | 53 | 57 | 62 | 71 | 82 |
| TRAVIS COUNTY WCID POINT VENTURE | K | LCRA - MID BASIN RESERVOIR | K \| LCRA NEW OFF-CHANNEL RESERVOIR (2030 DECADE) | N/A | $145 | 0 | 0 | 0 | 0 | 0 | 50 |
| TRAVIS COUNTY WCID POINT VENTURE | K | MUNICIPAL CONSERVATION | DEMAND REDUCTION | $544 | $544 | 23 | 55 | 94 | 146 | 189 | 216 |
| WEIMAR | K | DROUGHT MANAGEMENT | DEMAND REDUCTION | $66 | $66 | 91 | 85 | 79 | 76 | 79 | 82 |
| WEIMAR | K | MUNICIPAL CONSERVATION | DEMAND REDUCTION | $849 | $849 | 45 | 83 | 122 | 152 | 156 | 161 |
| WELLS BRANCH MUD | K | DROUGHT MANAGEMENT | DEMAND REDUCTION | $66 | $66 | 74 | 72 | 70 | 69 | 69 | 69 |
| WELLS BRANCH MUD | K | LCRA - MID BASIN RESERVOIR | K \| LCRA NEW OFF-CHANNEL RESERVOIR (2030 DECADE) | N/A | $145 | 0 | 0 | 1,400 | 1,400 | 1,400 | 1,400 |
| WEST END WSC* | K | DROUGHT MANAGEMENT | DEMAND REDUCTION | $66 | $66 | 7 | 7 | 8 | 8 | 9 | 10 |
| WEST TRAVIS COUNTY PUBLIC UTILITY AGENCY | K | DIRECT POTABLE REUSE | K \| DIRECT POTABLE REUSE | N/A | $2893 | 0 | 336 | 336 | 336 | 336 | 336 |
| WEST TRAVIS COUNTY PUBLIC UTILITY AGENCY | K | DIRECT REUSE | K \| DIRECT NON-POTABLE REUSE | N/A | $121 | 0 | 224 | 224 | 224 | 224 | 224 |
| WEST TRAVIS COUNTY PUBLIC UTILITY AGENCY | K | DROUGHT MANAGEMENT | DEMAND REDUCTION | $66 | $66 | 2,038 | 2,133 | 2,111 | 2,215 | 2,238 | 2,228 |
| WEST TRAVIS COUNTY PUBLIC UTILITY AGENCY | K | LCRA - EXCESS FLOWS RESERVOIR | K \| LCRA NEW OFF-CHANNEL RESERVOIR (2030 DECADE) | N/A | $329 | 0 | 2,400 | 2,400 | 4,600 | 4,600 | 5,500 |
| WEST TRAVIS COUNTY PUBLIC UTILITY AGENCY | K | MUNICIPAL CONSERVATION | DEMAND REDUCTION | $401 | $401 | 1,008 | 2,279 | 3,644 | 5,460 | 7,360 | 9,370 |
| WEST TRAVIS COUNTY PUBLIC UTILITY AGENCY | L | GBRA - MBWSP | L \| CARRIZO-WILCOX AQUIFER ASR FRESH/BRACKISH \| GONZALES COUNTY | N/A | $2119 | 0 | 3,000 | 3,000 | 3,000 | 3,000 | 3,000 |
| WHARTON | K | DROUGHT MANAGEMENT | DEMAND REDUCTION | $66 | $66 | 306 | 315 | 329 | 343 | 355 | 366 |

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# Region K Recommended Water User Group (WUG) Water Management Strategies (WMS)

| | | | | | | WATER MANAGEMENT STRATEGY SUPPLY (ACRE-FEET PER YEAR) | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| WUG ENTITY NAME | WMS SPONSOR REGION | WMS NAME | SOURCE NAME | UNIT COST 2020 | UNIT COST 2070 | 2020 | 2030 | 2040 | 2050 | 2060 | 2070 |
| WHARTON | K | EXPANDED USE OF LOCAL GROUNDWATER | K \| GULF COAST AQUIFER SYSTEM \| WHARTON COUNTY | N/A | $272 | 0 | 3,000 | 3,000 | 3,000 | 3,000 | 3,000 |
| WHARTON | K | MUNICIPAL CONSERVATION | DEMAND REDUCTION | $2655 | $2655 | 151 | 165 | 133 | 122 | 123 | 126 |
| WHARTON COUNTY WCID 2 | K | DROUGHT MANAGEMENT | DEMAND REDUCTION | $66 | $66 | 83 | 80 | 78 | 81 | 84 | 87 |
| WHARTON COUNTY WCID 2 | K | MUNICIPAL CONSERVATION | DEMAND REDUCTION | $1318 | $1318 | 41 | 76 | 97 | 96 | 99 | 101 |
| WILLIAMSON COUNTY WSID 3* | K | DROUGHT MANAGEMENT | DEMAND REDUCTION | $66 | $66 | 20 | 22 | 20 | 19 | 19 | 19 |
| WILLIAMSON TRAVIS COUNTIES MUD 1* | K | DROUGHT MANAGEMENT | DEMAND REDUCTION | $66 | $66 | 22 | 19 | 18 | 18 | 17 | 17 |
| WINDERMERE UTILITY | K | DROUGHT MANAGEMENT | DEMAND REDUCTION | $66 | $66 | 560 | 560 | 560 | 560 | 560 | 560 |
| WINDERMERE UTILITY | K | LCRA - MID BASIN RESERVOIR | K \| LCRA NEW OFF-CHANNEL RESERVOIR (2030 DECADE) | N/A | $145 | 0 | 0 | 400 | 400 | 400 | 400 |
| WINDERMERE UTILITY | K | MUNICIPAL CONSERVATION | DEMAND REDUCTION | $2060 | $2060 | 118 | 62 | 29 | 13 | 8 | 7 |
| WINDERMERE UTILITY | K | WATER PURCHASE - WINDERMERE UTILITY | G \| CARRIZO-WILCOX AQUIFER \| BURLESON COUNTY | N/A | $1167 | 0 | 500 | 500 | 500 | 500 | 500 |

| | | | | | | |
|---|---|---|---|---|---|---|
| REGION K RECOMMENDED WMS SUPPLY TOTAL | 250,682 | 297,235 | 372,918 | 417,672 | 475,584 | 564,814 |

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# Region K Recommended Projects Associated with Water Management Strategies

| SPONSOR NAME | SPONSOR IS WWP? | ONLINE DECADE | PROJECT NAME | PROJECT DESCRIPTION | CAPITAL COST |
|---|---|---|---|---|---|
| AQUA WSC | YES | 2030 | EXPANSION OF CARRIZO-WILCOX AQUIFER SUPPLIES - AQUA WSC | CONVEYANCE/TRANSMISSION PIPELINE; MULTIPLE WELLS/WELL FIELD | $9,163,000 |
| AQUA WSC | YES | 2020 | MUNICIPAL CONSERVATION - AQUA WSC | DATA GATHERING/MONITORING TECHNOLOGY; CONSERVATION - MUNICIPAL (DOES NOT INCLUDE METER REPLACEMENT OR WATER LOSS); WATER LOSS CONTROL | $16,162,569 |
| AQUA WSC | YES | 2050 | NEW SURFACE WATER INFRASTRUCTURE - BASTROP REGIONAL PROJECT | CONVEYANCE/TRANSMISSION PIPELINE; NEW SURFACE WATER INTAKE; NEW WATER TREATMENT PLANT; PUMP STATION; DIVERSION AND CONTROL STRUCTURE; NEW CONTRACT; STORAGE TANK | $132,037,000 |
| AUSTIN | YES | 2040 | AUSTIN - AQUIFER STORAGE AND RECOVERY | CONVEYANCE/TRANSMISSION PIPELINE; INJECTION WELL; MULTIPLE WELLS/WELL FIELD; PUMP STATION; WATER TREATMENT PLANT EXPANSION | $370,527,000 |
| AUSTIN | YES | 2070 | AUSTIN - BRACKISH GROUNDWATER DESALINATION | CONVEYANCE/TRANSMISSION PIPELINE; INJECTION WELL; MULTIPLE WELLS/WELL FIELD; NEW WATER TREATMENT PLANT; STORAGE TANK; EVAPORATIVE POND; PUMP STATION | $167,689,000 |
| AUSTIN | YES | 2030 | AUSTIN - DECENTRALIZED DIRECT NON-POTABLE REUSE | NEW WATER TREATMENT PLANT; STORAGE TANK; WATER TREATMENT PLANT EXPANSION | $7,703,000 |
| AUSTIN | YES | 2020 | AUSTIN - DIRECT REUSE | CONVEYANCE/TRANSMISSION PIPELINE; PUMP STATION; WATER TREATMENT PLANT EXPANSION; STORAGE TANK; NEW WATER TREATMENT PLANT | $286,031,000 |
| AUSTIN | YES | 2040 | AUSTIN - INDIRECT POTABLE REUSE THROUGH LADY BIRD LAKE | CONVEYANCE/TRANSMISSION PIPELINE; NEW SURFACE WATER INTAKE; PUMP STATION; WATER TREATMENT PLANT EXPANSION | $35,839,000 |
| AUSTIN | YES | 2030 | AUSTIN - LONGHORN DAM OPERATIONS IMPROVEMENTS | WATER LOSS CONTROL; DATA GATHERING/MONITORING TECHNOLOGY; DIVERSION AND CONTROL STRUCTURE | $1,388,000 |
| AUSTIN | YES | 2070 | AUSTIN - OFF-CHANNEL RESERVOIR AND EVAPORATION SUPPRESSION | CONVEYANCE/TRANSMISSION PIPELINE; NEW SURFACE WATER INTAKE; PUMP STATION; RESERVOIR CONSTRUCTION; WATER LOSS CONTROL | $334,642,000 |
| AUSTIN | YES | 2030 | AUSTIN BLACKWATER AND GREYWATER REUSE | STORAGE TANK | $47,031,000 |
| AUSTIN | YES | 2030 | AUSTIN COMMUNITY-SCALE STORMWATER HARVESTING | RAINWATER HARVESTING SYSTEM | $288,000 |
| AUSTIN | YES | 2020 | AUSTIN CONSERVATION | DATA GATHERING/MONITORING TECHNOLOGY; CONSERVATION - MUNICIPAL (DOES NOT INCLUDE METER REPLACEMENT OR WATER LOSS); WATER LOSS CONTROL | $719,616,000 |
| AUSTIN | YES | 2030 | AUSTIN ONSITE RAINWATER AND STORMWATER HARVESTING | RAINWATER HARVESTING SYSTEM | $11,768,000 |
| BARTON CREEK WEST WSC | YES | 2020 | MUNICIPAL CONSERVATION - BARTON CREEK WEST WSC | DATA GATHERING/MONITORING TECHNOLOGY; CONSERVATION - MUNICIPAL (DOES NOT INCLUDE METER REPLACEMENT OR WATER LOSS); WATER LOSS CONTROL | $444,000 |
| BARTON CREEK WSC | YES | 2020 | MUNICIPAL CONSERVATION - BARTON CREEK WSC | CONSERVATION - MUNICIPAL (DOES NOT INCLUDE METER REPLACEMENT OR WATER LOSS); DATA GATHERING/MONITORING TECHNOLOGY; WATER LOSS CONTROL | $956,000 |
| BASTROP | YES | 2020 | MUNICIPAL CONSERVATION - BASTROP | DATA GATHERING/MONITORING TECHNOLOGY; CONSERVATION - MUNICIPAL (DOES NOT INCLUDE METER REPLACEMENT OR WATER LOSS); WATER LOSS CONTROL | $8,306,000 |
| BASTROP | YES | 2050 | NEW SURFACE WATER INFRASTRUCTURE - BASTROP REGIONAL PROJECT | CONVEYANCE/TRANSMISSION PIPELINE; NEW SURFACE WATER INTAKE; NEW WATER TREATMENT PLANT; PUMP STATION; DIVERSION AND CONTROL STRUCTURE; NEW CONTRACT; STORAGE TANK | $26,407,000 |
| BASTROP COUNTY WCID 2 | YES | 2050 | NEW SURFACE WATER INFRASTRUCTURE - BASTROP REGIONAL PROJECT | CONVEYANCE/TRANSMISSION PIPELINE; NEW SURFACE WATER INTAKE; NEW WATER TREATMENT PLANT; PUMP STATION; DIVERSION AND CONTROL STRUCTURE; NEW CONTRACT; STORAGE TANK | $9,903,000 |
| BERTRAM | YES | 2030 | EXPANSION OF ELLENBURGER-SAN SABA AQUIFER SUPPLIES - BERTRAM | CONVEYANCE/TRANSMISSION PIPELINE; MULTIPLE WELLS/WELL FIELD; NEW WATER TREATMENT PLANT | $20,829,000 |
| BERTRAM | YES | 2020 | MUNICIPAL CONSERVATION - BERTRAM | DATA GATHERING/MONITORING TECHNOLOGY; CONSERVATION - MUNICIPAL (DOES NOT INCLUDE METER REPLACEMENT OR WATER LOSS); WATER LOSS CONTROL | $868,000 |

## Region K Recommended Projects Associated with Water Management Strategies

| SPONSOR NAME | SPONSOR IS WWP? | ONLINE DECADE | PROJECT NAME | PROJECT DESCRIPTION | CAPITAL COST |
|---|---|---|---|---|---|
| BLANCO | YES | 2030 | DIRECT REUSE - BLANCO | CONVEYANCE/TRANSMISSION PIPELINE; PUMP STATION; STORAGE TANK | $1,110,000 |
| BLANCO | YES | 2030 | MUNICIPAL CONSERVATION - BLANCO | DATA GATHERING/MONITORING TECHNOLOGY; CONSERVATION - MUNICIPAL (DOES NOT INCLUDE METER REPLACEMENT OR WATER LOSS); WATER LOSS CONTROL | $1,700,238 |
| BUDA | YES | 2020 | BS/EACD EDWARDS / MIDDLE TRINITY ASR - BUDA | CONVEYANCE/TRANSMISSION PIPELINE; INJECTION WELL; MULTIPLE WELLS/WELL FIELD; NEW WATER TREATMENT PLANT; PUMP STATION | $7,349,000 |
| BUDA | YES | 2040 | BS/EACD SALINE EDWARDS DESALINATION AND ASR | CONVEYANCE/TRANSMISSION PIPELINE; INJECTION WELL; MULTIPLE WELLS/WELL FIELD; NEW WATER TREATMENT PLANT; PUMP STATION | $10,332,000 |
| BUDA | YES | 2030 | DIRECT POTABLE REUSE - BUDA | CONVEYANCE/TRANSMISSION PIPELINE; INJECTION WELL; NEW WATER TREATMENT PLANT; PUMP STATION; STORAGE TANK | $33,503,000 |
| BUDA | YES | 2020 | MUNICIPAL CONSERVATION - BUDA | DATA GATHERING/MONITORING TECHNOLOGY; CONSERVATION - MUNICIPAL (DOES NOT INCLUDE METER REPLACEMENT OR WATER LOSS); WATER LOSS CONTROL | $6,871,000 |
| BURNET | YES | 2030 | BUENA VISTA REGIONAL PROJECT | CONVEYANCE/TRANSMISSION PIPELINE; NEW SURFACE WATER INTAKE; PUMP STATION; STORAGE TANK; WATER TREATMENT PLANT EXPANSION; CONTRACT AMENDMENT; NEW CONTRACT; NEW WATER RIGHT/PERMIT EXEMPT IBT | $11,828,829 |
| BURNET | YES | 2020 | MUNICIPAL CONSERVATION - BURNET | DATA GATHERING/MONITORING TECHNOLOGY; CONSERVATION - MUNICIPAL (DOES NOT INCLUDE METER REPLACEMENT OR WATER LOSS); WATER LOSS CONTROL | $4,107,000 |
| CEDAR PARK | YES | 2020 | MUNICIPAL CONSERVATION - CEDAR PARK | DATA GATHERING/MONITORING TECHNOLOGY; CONSERVATION - MUNICIPAL (DOES NOT INCLUDE METER REPLACEMENT OR WATER LOSS); WATER LOSS CONTROL | $3,932,000 |
| COLUMBUS | YES | 2020 | MUNICIPAL CONSERVATION - COLUMBUS | DATA GATHERING/MONITORING TECHNOLOGY; CONSERVATION - MUNICIPAL (DOES NOT INCLUDE METER REPLACEMENT OR WATER LOSS); WATER LOSS CONTROL | $2,160,000 |
| COTTONWOOD SHORES | YES | 2020 | MUNICIPAL CONSERVATION - COTTONWOOD SHORES | DATA GATHERING/MONITORING TECHNOLOGY; CONSERVATION - MUNICIPAL (DOES NOT INCLUDE METER REPLACEMENT OR WATER LOSS); WATER LOSS CONTROL | $830,020 |
| COUNTY-OTHER, BASTROP | YES | 2020 | MUNICIPAL CONSERVATION - BASTROP COUNTY-OTHER | DATA GATHERING/MONITORING TECHNOLOGY; CONSERVATION - MUNICIPAL (DOES NOT INCLUDE METER REPLACEMENT OR WATER LOSS); WATER LOSS CONTROL | $4,150,000 |
| COUNTY-OTHER, BLANCO | YES | 2030 | BRUSH MANAGEMENT - BLANCO COUNTY | BRUSH CONTROL | $10,522,274 |
| COUNTY-OTHER, BURNET | YES | 2030 | BUENA VISTA REGIONAL PROJECT | CONVEYANCE/TRANSMISSION PIPELINE; NEW SURFACE WATER INTAKE; PUMP STATION; STORAGE TANK; WATER TREATMENT PLANT EXPANSION; CONTRACT AMENDMENT; NEW CONTRACT; NEW WATER RIGHT/PERMIT EXEMPT IBT | $17,057,171 |
| COUNTY-OTHER, BURNET | YES | 2030 | EAST LAKE BUCHANAN REGIONAL PROJECT | CONVEYANCE/TRANSMISSION PIPELINE; NEW SURFACE WATER INTAKE; NEW WATER TREATMENT PLANT; PUMP STATION; STORAGE TANK; NEW CONTRACT | $11,925,000 |
| COUNTY-OTHER, BURNET | YES | 2030 | MARBLE FALLS REGIONAL PROJECT | CONVEYANCE/TRANSMISSION PIPELINE; NEW SURFACE WATER INTAKE; NEW WATER TREATMENT PLANT; PUMP STATION; STORAGE TANK; CONTRACT AMENDMENT; NEW CONTRACT | $16,014,200 |
| COUNTY-OTHER, BURNET | YES | 2020 | MUNICIPAL CONSERVATION - BURNET COUNTY-OTHER | DATA GATHERING/MONITORING TECHNOLOGY; CONSERVATION - MUNICIPAL (DOES NOT INCLUDE METER REPLACEMENT OR WATER LOSS); WATER LOSS CONTROL | $4,746,933 |
| COUNTY-OTHER, COLORADO | YES | 2030 | EXPANSION OF GULF COAST AQUIFER SUPPLIES - COLORADO COUNTY-OTHER | CONVEYANCE/TRANSMISSION PIPELINE; MULTIPLE WELLS/WELL FIELD | $2,003,000 |
| COUNTY-OTHER, FAYETTE | YES | 2020 | DEVELOPMENT OF NEW SPARTA AQUIFER SUPPLIES - FAYETTE COUNTY-OTHER | CONVEYANCE/TRANSMISSION PIPELINE; MULTIPLE WELLS/WELL FIELD; NEW WATER TREATMENT PLANT | $6,056,000 |

## Region K Recommended Projects Associated with Water Management Strategies

| SPONSOR NAME | SPONSOR IS WWP? | ONLINE DECADE | PROJECT NAME | PROJECT DESCRIPTION | CAPITAL COST |
|---|---|---|---|---|---|
| COUNTY-OTHER, FAYETTE | YES | 2030 | EXPANSION OF SPARTA AQUIFER SUPPLIES - FAYETTE COUNTY-OTHER | CONVEYANCE/TRANSMISSION PIPELINE; MULTIPLE WELLS/WELL FIELD | $2,638,000 |
| COUNTY-OTHER, GILLESPIE | YES | 2030 | BRUSH MANAGEMENT - GILLESPIE COUNTY | BRUSH CONTROL | $16,708,308 |
| COUNTY-OTHER, HAYS | YES | 2030 | BRUSH MANAGEMENT - HAYS COUNTY | BRUSH CONTROL | $1,238,209 |
| COUNTY-OTHER, HAYS | YES | 2030 | BS/EACD EDWARDS / MIDDLE TRINITY ASR - HAYS COUNTY-OTHER | CONVEYANCE/TRANSMISSION PIPELINE; INJECTION WELL; MULTIPLE WELLS/WELL FIELD; NEW WATER TREATMENT PLANT; PUMP STATION | $5,975,000 |
| COUNTY-OTHER, HAYS | YES | 2040 | BS/EACD SALINE EDWARDS DESALINATION AND ASR | CONVEYANCE/TRANSMISSION PIPELINE; INJECTION WELL; MULTIPLE WELLS/WELL FIELD; NEW WATER TREATMENT PLANT; PUMP STATION | $6,332,000 |
| COUNTY-OTHER, HAYS | YES | 2070 | EXPANSION OF TRINITY AQUIFER SUPPLIES - HAYS COUNTY-OTHER | CONVEYANCE/TRANSMISSION PIPELINE; MULTIPLE WELLS/WELL FIELD | $2,674,000 |
| COUNTY-OTHER, HAYS | YES | 2030 | HAYS COUNTY PIPELINE - REGION K PORTION | CONVEYANCE/TRANSMISSION PIPELINE; PUMP STATION; NEW CONTRACT | $7,485,500 |
| COUNTY-OTHER, HAYS | YES | 2030 | RAINWATER HARVESTING - COUNTY-OTHER HAYS | RAINWATER HARVESTING SYSTEM | $10,275,000 |
| COUNTY-OTHER, TRAVIS | YES | 2030 | BRUSH MANAGEMENT - TRAVIS COUNTY | BRUSH CONTROL | $1,238,209 |
| COUNTY-OTHER, TRAVIS | YES | 2020 | MUNICIPAL CONSERVATION - TRAVIS COUNTY-OTHER (AQUA TEXAS - RIVERCREST) | CONSERVATION - MUNICIPAL (DOES NOT INCLUDE METER REPLACEMENT OR WATER LOSS); DATA GATHERING/MONITORING TECHNOLOGY; WATER LOSS CONTROL | $1,100,000 |
| CREEDMOOR-MAHA WSC | YES | 2030 | BS/EACD EDWARDS / MIDDLE TRINITY ASR - CREEDMOOR-MAHA WSC | CONVEYANCE/TRANSMISSION PIPELINE; INJECTION WELL; MULTIPLE WELLS/WELL FIELD; NEW WATER TREATMENT PLANT; PUMP STATION | $5,975,000 |
| CREEDMOOR-MAHA WSC | YES | 2020 | MUNICIPAL CONSERVATION - CREEDMOOR-MAHA WSC | CONSERVATION - MUNICIPAL (DOES NOT INCLUDE METER REPLACEMENT OR WATER LOSS); DATA GATHERING/MONITORING TECHNOLOGY; WATER LOSS CONTROL | $2,445,000 |
| CYPRESS RANCH WCID 1 | YES | 2020 | MUNICIPAL CONSERVATION - CYPRESS RANCH WCID 1 | CONSERVATION - MUNICIPAL (DOES NOT INCLUDE METER REPLACEMENT OR WATER LOSS); DATA GATHERING/MONITORING TECHNOLOGY; WATER LOSS CONTROL | $494,000 |
| DRIPPING SPRINGS WSC | YES | 2030 | DIRECT POTABLE REUSE - DRIPPING SPRINGS WSC | CONVEYANCE/TRANSMISSION PIPELINE; DIVERSION AND CONTROL STRUCTURE; PUMP STATION; WATER TREATMENT PLANT EXPANSION | $12,119,000 |
| DRIPPING SPRINGS WSC | YES | 2030 | DIRECT REUSE - DRIPPING SPRINGS WSC | CONVEYANCE/TRANSMISSION PIPELINE; PUMP STATION; STORAGE TANK | $1,450,000 |
| DRIPPING SPRINGS WSC | YES | 2040 | EXPANSION OF TRINITY AQUIFER SUPPLIES - DRIPPING SPRINGS WSC | CONVEYANCE/TRANSMISSION PIPELINE; MULTIPLE WELLS/WELL FIELD | $3,507,000 |
| DRIPPING SPRINGS WSC | YES | 2020 | MUNICIPAL CONSERVATION - DRIPPING SPRINGS WSC | DATA GATHERING/MONITORING TECHNOLOGY; CONSERVATION - MUNICIPAL (DOES NOT INCLUDE METER REPLACEMENT OR WATER LOSS); WATER LOSS CONTROL | $7,627,247 |
| DRIPPING SPRINGS WSC | YES | 2030 | RAINWATER HARVESTING - DRIPPING SPRINGS WSC | RAINWATER HARVESTING SYSTEM | $16,867,000 |
| ELGIN | YES | 2060 | DEVELOPMENT OF NEW TRINITY AQUIFER SUPPLIES - ELGIN | CONVEYANCE/TRANSMISSION PIPELINE; MULTIPLE WELLS/WELL FIELD; STORAGE TANK | $14,774,000 |
| ELGIN | YES | 2020 | MUNICIPAL CONSERVATION - ELGIN | CONSERVATION - MUNICIPAL (DOES NOT INCLUDE METER REPLACEMENT OR WATER LOSS); DATA GATHERING/MONITORING TECHNOLOGY; WATER LOSS CONTROL | $7,130,000 |
| FAYETTE COUNTY WCID MONUMENT HILL | YES | 2020 | MUNICIPAL CONSERVATION - FAYETTE COUNTY WCID MONUMENT HILL | CONSERVATION - MUNICIPAL (DOES NOT INCLUDE METER REPLACEMENT OR WATER LOSS); DATA GATHERING/MONITORING TECHNOLOGY; WATER LOSS CONTROL | $288,000 |
| FLATONIA | YES | 2020 | MUNICIPAL CONSERVATION - FLATONIA | DATA GATHERING/MONITORING TECHNOLOGY; CONSERVATION - MUNICIPAL (DOES NOT INCLUDE METER REPLACEMENT OR WATER LOSS); WATER LOSS CONTROL | $1,106,000 |
| FREDERICKSBURG | YES | 2030 | DIRECT REUSE - FREDERICKSBURG | PUMP STATION; STORAGE TANK; EVAPORATIVE POND | $10,175,000 |
| FREDERICKSBURG | YES | 2020 | MUNICIPAL CONSERVATION - FREDERICKSBURG | DATA GATHERING/MONITORING TECHNOLOGY; CONSERVATION - MUNICIPAL (DOES NOT INCLUDE METER REPLACEMENT OR WATER LOSS); WATER LOSS CONTROL | $7,476,000 |

# Region K Recommended Projects Associated with Water Management Strategies

| SPONSOR NAME | SPONSOR IS WWP? | ONLINE DECADE | PROJECT NAME | PROJECT DESCRIPTION | CAPITAL COST |
|---|---|---|---|---|---|
| GEORGETOWN | YES | 2020 | MUNICIPAL CONSERVATION - GEORGETOWN | CONSERVATION - MUNICIPAL (DOES NOT INCLUDE METER REPLACEMENT OR WATER LOSS); DATA GATHERING/MONITORING TECHNOLOGY; WATER LOSS CONTROL | $579,000 |
| GOLDTHWAITE | YES | 2020 | MUNICIPAL CONSERVATION - GOLDTHWAITE | DATA GATHERING/MONITORING TECHNOLOGY; CONSERVATION - MUNICIPAL (DOES NOT INCLUDE METER REPLACEMENT OR WATER LOSS); WATER LOSS CONTROL | $1,229,000 |
| HAYS | YES | 2030 | BS/EACD EDWARDS / MIDDLE TRINITY ASR - HAYS | CONVEYANCE/TRANSMISSION PIPELINE; INJECTION WELL; MULTIPLE WELLS/WELL FIELD; NEW WATER TREATMENT PLANT; PUMP STATION | $5,673,000 |
| HAYS | YES | 2030 | DEVELOPMENT OF NEW TRINITY AQUIFER SUPPLIES - HAYS | CONVEYANCE/TRANSMISSION PIPELINE; MULTIPLE WELLS/WELL FIELD; WATER TREATMENT PLANT EXPANSION | $3,719,000 |
| HAYS | YES | 2030 | RAINWATER HARVESTING - HAYS | RAINWATER HARVESTING SYSTEM | $1,429,000 |
| HAYS | YES | 2060 | WATER PURCHASE CONTRACTS & AMENDMENTS - HAYS | CONVEYANCE/TRANSMISSION PIPELINE; NEW CONTRACT | $213,000 |
| HAYS COUNTY WCID 1 | YES | 2020 | MUNICIPAL CONSERVATION - HAYS COUNTY WCID 1 | CONSERVATION - MUNICIPAL (DOES NOT INCLUDE METER REPLACEMENT OR WATER LOSS); DATA GATHERING/MONITORING TECHNOLOGY; WATER LOSS CONTROL | $1,815,000 |
| HAYS COUNTY WCID 2 | YES | 2020 | MUNICIPAL CONSERVATION - HAYS COUNTY WCID 2 | CONSERVATION - MUNICIPAL (DOES NOT INCLUDE METER REPLACEMENT OR WATER LOSS); DATA GATHERING/MONITORING TECHNOLOGY; WATER LOSS CONTROL | $1,032,000 |
| HORSESHOE BAY | YES | 2030 | DIRECT REUSE - HORSESHOE BAY | CONVEYANCE/TRANSMISSION PIPELINE; PUMP STATION | $1,084,000 |
| HORSESHOE BAY | YES | 2020 | MUNICIPAL CONSERVATION - HORSESHOE BAY | DATA GATHERING/MONITORING TECHNOLOGY; CONSERVATION - MUNICIPAL (DOES NOT INCLUDE METER REPLACEMENT OR WATER LOSS); WATER LOSS CONTROL | $6,832,000 |
| HURST CREEK MUD | YES | 2020 | MUNICIPAL CONSERVATION - HURST CREEK MUD | CONSERVATION - MUNICIPAL (DOES NOT INCLUDE METER REPLACEMENT OR WATER LOSS); DATA GATHERING/MONITORING TECHNOLOGY; WATER LOSS CONTROL | $1,041,000 |
| IRRIGATION, COLORADO | YES | 2020 | EXPANSION OF GULF COAST AQUIFER SUPPLIES - COLORADO COUNTY IRRIGATION | CONVEYANCE/TRANSMISSION PIPELINE; MULTIPLE WELLS/WELL FIELD | $14,680,000 |
| IRRIGATION, COLORADO | YES | 2020 | IRRIGATION CONSERVATION - ON FARM - COLORADO COUNTY | CONSERVATION - AGRICULTURAL | $16,465,031 |
| IRRIGATION, COLORADO | YES | 2020 | IRRIGATION CONSERVATION - REAL-TIME USE METERING AND MONITORING - COLORADO COUNTY | CONSERVATION - AGRICULTURAL; DATA GATHERING/MONITORING TECHNOLOGY | $9,859,973 |
| IRRIGATION, COLORADO | YES | 2020 | IRRIGATION CONSERVATION - SPRINKLER - COLORADO COUNTY | CONSERVATION - AGRICULTURAL | $4,671,137 |
| IRRIGATION, COLORADO | YES | 2020 | IRRIGATION OPERATIONS CONVEYANCE IMPROVEMENTS - COLORADO COUNTY | CANAL LINING; CONSERVATION - AGRICULTURAL; DATA GATHERING/MONITORING TECHNOLOGY | $21,711,976 |
| IRRIGATION, GILLESPIE | YES | 2020 | IRRIGATION CONSERVATION - DRIP IRRIGATION - GILLESPIE COUNTY | CONSERVATION - AGRICULTURAL; CONVEYANCE/TRANSMISSION PIPELINE | $64,000 |
| IRRIGATION, MATAGORDA | YES | 2020 | DEVELOPMENT OF NEW GULF COAST AQUIFER SUPPLIES - MATAGORDA COUNTY IRRIGATION | MULTIPLE WELLS/WELL FIELD | $1,195,000 |
| IRRIGATION, MATAGORDA | YES | 2020 | EXPANSION OF GULF COAST AQUIFER SUPPLIES - MATAGORDA COUNTY IRRIGATION | CONVEYANCE/TRANSMISSION PIPELINE; MULTIPLE WELLS/WELL FIELD | $1,431,000 |
| IRRIGATION, MATAGORDA | YES | 2020 | IRRIGATION CONSERVATION - ON FARM - MATAGORDA COUNTY | CONSERVATION - AGRICULTURAL | $14,677,716 |
| IRRIGATION, MATAGORDA | YES | 2020 | IRRIGATION CONSERVATION - REAL-TIME USE METERING AND MONITORING - MATAGORDA COUNTY | CONSERVATION - AGRICULTURAL; DATA GATHERING/MONITORING TECHNOLOGY | $6,154,934 |
| IRRIGATION, MATAGORDA | YES | 2020 | IRRIGATION CONSERVATION - SPRINKLER - MATAGORDA COUNTY | CONSERVATION - AGRICULTURAL | $2,915,884 |
| IRRIGATION, MATAGORDA | YES | 2020 | IRRIGATION OPERATIONS CONVEYANCE IMPROVEMENTS - MATAGORDA COUNTY | CANAL LINING; CONSERVATION - AGRICULTURAL; DATA GATHERING/MONITORING TECHNOLOGY | $49,254,266 |
| IRRIGATION, MILLS | YES | 2020 | EXPANSION OF TRINITY AQUIFER SUPPLIES - MILLS COUNTY IRRIGATION | CONVEYANCE/TRANSMISSION PIPELINE; MULTIPLE WELLS/WELL FIELD | $1,323,000 |
| IRRIGATION, MILLS | YES | 2020 | IRRIGATION CONSERVATION - DRIP IRRIGATION - MILLS COUNTY | CONSERVATION - AGRICULTURAL; CONVEYANCE/TRANSMISSION PIPELINE | $857,000 |
| IRRIGATION, SAN SABA | YES | 2020 | IRRIGATION CONSERVATION - DRIP IRRIGATION - SAN SABA COUNTY | CONSERVATION - AGRICULTURAL; CONVEYANCE/TRANSMISSION PIPELINE | $834,000 |

# Region K Recommended Projects Associated with Water Management Strategies

| SPONSOR NAME | SPONSOR IS WWP? | ONLINE DECADE | PROJECT NAME | PROJECT DESCRIPTION | CAPITAL COST |
|---|---|---|---|---|---|
| IRRIGATION, WHARTON | YES | 2020 | EXPANSION OF GULF COAST AQUIFER SUPPLIES - WHARTON COUNTY IRRIGATION | CONVEYANCE/TRANSMISSION PIPELINE; MULTIPLE WELLS/WELL FIELD | $11,049,000 |
| IRRIGATION, WHARTON | YES | 2020 | IRRIGATION CONSERVATION - ON FARM - WHARTON COUNTY | CONSERVATION - AGRICULTURAL | $33,010,253 |
| IRRIGATION, WHARTON | YES | 2020 | IRRIGATION CONSERVATION - REAL-TIME USE METERING AND MONITORING - WHARTON COUNTY | CONSERVATION - AGRICULTURAL; DATA GATHERING/MONITORING TECHNOLOGY | $8,954,093 |
| IRRIGATION, WHARTON | YES | 2020 | IRRIGATION CONSERVATION - SPRINKLER - WHARTON COUNTY | CONSERVATION - AGRICULTURAL | $4,241,979 |
| IRRIGATION, WHARTON | YES | 2020 | IRRIGATION OPERATIONS CONVEYANCE IMPROVEMENTS - WHARTON COUNTY | CANAL LINING; CONSERVATION - AGRICULTURAL; DATA GATHERING/MONITORING TECHNOLOGY | $30,013,756 |
| JOHNSON CITY | YES | 2020 | MUNICIPAL CONSERVATION - JOHNSON CITY | DATA GATHERING/MONITORING TECHNOLOGY; CONSERVATION - MUNICIPAL (DOES NOT INCLUDE METER REPLACEMENT OR WATER LOSS); WATER LOSS CONTROL | $1,131,823 |
| JONESTOWN WSC | YES | 2020 | MUNICIPAL CONSERVATION - JONESTOWN WSC | DATA GATHERING/MONITORING TECHNOLOGY; CONSERVATION - MUNICIPAL (DOES NOT INCLUDE METER REPLACEMENT OR WATER LOSS); WATER LOSS CONTROL | $2,502,106 |
| KELLY LANE WCID 1 | YES | 2020 | MUNICIPAL CONSERVATION - KELLY LANE WCID 1 | CONSERVATION - MUNICIPAL (DOES NOT INCLUDE METER REPLACEMENT OR WATER LOSS); DATA GATHERING/MONITORING TECHNOLOGY; WATER LOSS CONTROL | $681,000 |
| KEMPNER WSC | YES | 2020 | MUNICIPAL CONSERVATION - KEMPNER WSC | CONSERVATION - MUNICIPAL (DOES NOT INCLUDE METER REPLACEMENT OR WATER LOSS); DATA GATHERING/MONITORING TECHNOLOGY; WATER LOSS CONTROL | $519,566 |
| LA GRANGE | YES | 2020 | MUNICIPAL CONSERVATION - LA GRANGE | DATA GATHERING/MONITORING TECHNOLOGY; CONSERVATION - MUNICIPAL (DOES NOT INCLUDE METER REPLACEMENT OR WATER LOSS); WATER LOSS CONTROL | $2,637,312 |
| LAGO VISTA | YES | 2030 | DIRECT REUSE - LAGO VISTA | CONVEYANCE/TRANSMISSION PIPELINE; STORAGE TANK | $212,000 |
| LAGO VISTA | YES | 2020 | MUNICIPAL CONSERVATION - LAGO VISTA | DATA GATHERING/MONITORING TECHNOLOGY; CONSERVATION - MUNICIPAL (DOES NOT INCLUDE METER REPLACEMENT OR WATER LOSS); WATER LOSS CONTROL | $6,769,000 |
| LAKEWAY MUD | YES | 2030 | DIRECT REUSE - LAKEWAY MUD | CONVEYANCE/TRANSMISSION PIPELINE; EVAPORATIVE POND; PUMP STATION; STORAGE TANK | $2,736,000 |
| LAKEWAY MUD | YES | 2020 | MUNICIPAL CONSERVATION - LAKEWAY MUD | DATA GATHERING/MONITORING TECHNOLOGY; CONSERVATION - MUNICIPAL (DOES NOT INCLUDE METER REPLACEMENT OR WATER LOSS); WATER LOSS CONTROL | $4,588,000 |
| LLANO | YES | 2030 | DIRECT POTABLE REUSE - LLANO | CONVEYANCE/TRANSMISSION PIPELINE; NEW WATER TREATMENT PLANT; PUMP STATION | $10,415,000 |
| LLANO | YES | 2020 | MUNICIPAL CONSERVATION - LLANO | DATA GATHERING/MONITORING TECHNOLOGY; CONSERVATION - MUNICIPAL (DOES NOT INCLUDE METER REPLACEMENT OR WATER LOSS); WATER LOSS CONTROL | $2,619,000 |
| LOOP 360 WSC | YES | 2020 | MUNICIPAL CONSERVATION - LOOP 360 WSC | DATA GATHERING/MONITORING TECHNOLOGY; CONSERVATION - MUNICIPAL (DOES NOT INCLUDE METER REPLACEMENT OR WATER LOSS); WATER LOSS CONTROL | $801,000 |
| LOWER COLORADO RIVER AUTHORITY | YES | 2030 | EXPANSION OF CARRIZO-WILCOX AQUIFER SUPPLIES - LCRA | CONVEYANCE/TRANSMISSION PIPELINE; SINGLE WELL | $331,000 |
| LOWER COLORADO RIVER AUTHORITY | YES | 2030 | LCRA - ACQUIRE ADDITIONAL WATER RIGHTS | WATER RIGHT/PERMIT LEASE OR PURCHASE | $125,000 |
| LOWER COLORADO RIVER AUTHORITY | YES | 2040 | LCRA - AQUIFER STORAGE AND RECOVERY | CONVEYANCE/TRANSMISSION PIPELINE; INJECTION WELL; MULTIPLE WELLS/WELL FIELD; NEW WATER TREATMENT PLANT; PUMP STATION; STORAGE TANK; NEW SURFACE WATER INTAKE; DIVERSION AND CONTROL STRUCTURE | $146,592,000 |
| LOWER COLORADO RIVER AUTHORITY | YES | 2040 | LCRA - BAYLOR CREEK RESERVOIR | CONVEYANCE/TRANSMISSION PIPELINE; NEW SURFACE WATER INTAKE; PUMP STATION; RESERVOIR CONSTRUCTION; DIVERSION AND CONTROL STRUCTURE; WATER RIGHT/PERMIT AMENDMENT NO IBT | $219,883,000 |

## Region K Recommended Projects Associated with Water Management Strategies

| SPONSOR NAME | SPONSOR IS WWP? | ONLINE DECADE | PROJECT NAME | PROJECT DESCRIPTION | CAPITAL COST |
|---|---|---|---|---|---|
| LOWER COLORADO RIVER AUTHORITY | YES | 2020 | LCRA - ENHANCED MUNICIPAL AND INDUSTRIAL CONSERVATION | CONSERVATION - MUNICIPAL (DOES NOT INCLUDE METER REPLACEMENT OR WATER LOSS); WATER LOSS CONTROL | $74,415,000 |
| LOWER COLORADO RIVER AUTHORITY | YES | 2040 | LCRA - ENHANCED RECHARGE AND CONJUNCTIVE USE | CONVEYANCE/TRANSMISSION PIPELINE; MULTIPLE WELLS/WELL FIELD; NEW SURFACE WATER INTAKE; PUMP STATION; RESERVOIR CONSTRUCTION; DIVERSION AND CONTROL STRUCTURE; NEW WATER RIGHT/PERMIT NO IBT; WATER RIGHT/PERMIT AMENDMENT NO IBT | $71,125,000 |
| LOWER COLORADO RIVER AUTHORITY | YES | 2030 | LCRA - EXCESS FLOWS PERMIT OFF-CHANNEL RESERVOIR | CONVEYANCE/TRANSMISSION PIPELINE; NEW SURFACE WATER INTAKE; PUMP STATION; RESERVOIR CONSTRUCTION; DIVERSION AND CONTROL STRUCTURE | $540,110,000 |
| LOWER COLORADO RIVER AUTHORITY | YES | 2030 | LCRA - IMPORT RETURN FLOWS FROM WILLIAMSON COUNTY | CONVEYANCE/TRANSMISSION PIPELINE; PUMP STATION; STORAGE TANK; WATER TREATMENT PLANT EXPANSION; NEW WATER RIGHT/PERMIT EXEMPT IBT; NEW WATER RIGHT/PERMIT NON-EXEMPT IBT | $75,734,000 |
| LOWER COLORADO RIVER AUTHORITY | YES | 2030 | LCRA - MID-BASIN OFF-CHANNEL RESERVOIR | CONVEYANCE/TRANSMISSION PIPELINE; NEW SURFACE WATER INTAKE; PUMP STATION; RESERVOIR CONSTRUCTION; DIVERSION AND CONTROL STRUCTURE | $344,259,000 |
| LOWER COLORADO RIVER AUTHORITY | YES | 2030 | LCRA - PRAIRIE SITE OFF-CHANNEL RESERVOIR | CONVEYANCE/TRANSMISSION PIPELINE; NEW SURFACE WATER INTAKE; PUMP STATION; RESERVOIR CONSTRUCTION; CANAL LINING; DIVERSION AND CONTROL STRUCTURE | $16,690,000 |
| MANUFACTURING, FAYETTE | YES | 2030 | DEVELOPMENT OF NEW YEGUA-JACKSON AQUIFER SUPPLIES - FAYETTE COUNTY MANUFACTURING | CONVEYANCE/TRANSMISSION PIPELINE; MULTIPLE WELLS/WELL FIELD; NEW WATER TREATMENT PLANT | $3,425 |
| MANVILLE WSC | YES | 2070 | EXPANSION OF TRINITY AQUIFER SUPPLIES - MANVILLE WSC | CONVEYANCE/TRANSMISSION PIPELINE; MULTIPLE WELLS/WELL FIELD | $5,035,000 |
| MARBLE FALLS | YES | 2030 | DIRECT REUSE - MARBLE FALLS | CONVEYANCE/TRANSMISSION PIPELINE; PUMP STATION; STORAGE TANK | $1,388,000 |
| MARBLE FALLS | YES | 2030 | MARBLE FALLS REGIONAL PROJECT | CONVEYANCE/TRANSMISSION PIPELINE; NEW SURFACE WATER INTAKE; NEW WATER TREATMENT PLANT; PUMP STATION; STORAGE TANK; CONTRACT AMENDMENT; NEW CONTRACT | $40,593,800 |
| MARBLE FALLS | YES | 2020 | MUNICIPAL CONSERVATION - MARBLE FALLS | DATA GATHERING/MONITORING TECHNOLOGY; CONSERVATION - MUNICIPAL (DOES NOT INCLUDE METER REPLACEMENT OR WATER LOSS); WATER LOSS CONTROL | $6,780,000 |
| MATAGORDA WASTE DISPOSAL & WSC | YES | 2020 | MUNICIPAL CONSERVATION - MATAGORDA WASTE DISPOSAL & WSC | CONSERVATION - MUNICIPAL (DOES NOT INCLUDE METER REPLACEMENT OR WATER LOSS); DATA GATHERING/MONITORING TECHNOLOGY; WATER LOSS CONTROL | $1,030,000 |
| MEADOWLAKES | YES | 2020 | MUNICIPAL CONSERVATION - MEADOWLAKES | DATA GATHERING/MONITORING TECHNOLOGY; CONSERVATION - MUNICIPAL (DOES NOT INCLUDE METER REPLACEMENT OR WATER LOSS); WATER LOSS CONTROL | $1,706,000 |
| MINING, BURNET | YES | 2050 | DEVELOPMENT OF NEW ELLENBURGER-SAN SABA AQUIFER SUPPLIES - BURNET COUNTY MINING | CONVEYANCE/TRANSMISSION PIPELINE; MULTIPLE WELLS/WELL FIELD | $4,495,000 |
| MINING, BURNET | YES | 2030 | DEVELOPMENT OF NEW HICKORY AQUIFER SUPPLIES - BURNET COUNTY MINING | MULTIPLE WELLS/WELL FIELD | $4,863,000 |
| MINING, BURNET | YES | 2040 | DEVELOPMENT OF NEW MARBLE FALLS AQUIFER SUPPLIES - BURNET COUNTY MINING | MULTIPLE WELLS/WELL FIELD | $3,345,000 |
| MINING, BURNET | YES | 2030 | EXPANSION OF ELLENBURGER-SAN SABA AQUIFER SUPPLIES - BURNET COUNTY MINING | CONVEYANCE/TRANSMISSION PIPELINE; MULTIPLE WELLS/WELL FIELD | $7,097,000 |
| MINING, FAYETTE | YES | 2020 | EXPANSION OF YEGUA-JACKSON AQUIFER SUPPLIES - FAYETTE COUNTY MINING | CONVEYANCE/TRANSMISSION PIPELINE; MULTIPLE WELLS/WELL FIELD | $5,463,000 |
| MINING, HAYS | YES | 2020 | EXPANSION OF TRINITY AQUIFER SUPPLIES - HAYS COUNTY MINING | CONVEYANCE/TRANSMISSION PIPELINE; MULTIPLE WELLS/WELL FIELD | $2,409,000 |
| NORTH SAN SABA WSC | YES | 2020 | MUNICIPAL CONSERVATION - NORTH SAN SABA WSC | CONSERVATION - MUNICIPAL (DOES NOT INCLUDE METER REPLACEMENT OR WATER LOSS); DATA GATHERING/MONITORING TECHNOLOGY; WATER LOSS CONTROL | $2,122,000 |

## Region K Recommended Projects Associated with Water Management Strategies

| SPONSOR NAME | SPONSOR IS WWP? | ONLINE DECADE | PROJECT NAME | PROJECT DESCRIPTION | CAPITAL COST |
|---|---|---|---|---|---|
| OAK SHORES WATER SYSTEM | YES | 2020 | MUNICIPAL CONSERVATION - OAK SHORES WATER SYSTEM | CONSERVATION - MUNICIPAL (DOES NOT INCLUDE METER REPLACEMENT OR WATER LOSS); DATA GATHERING/MONITORING TECHNOLOGY; WATER LOSS CONTROL | $237,000 |
| PFLUGERVILLE | YES | 2020 | MUNICIPAL CONSERVATION - PFLUGERVILLE | DATA GATHERING/MONITORING TECHNOLOGY; CONSERVATION - MUNICIPAL (DOES NOT INCLUDE METER REPLACEMENT OR WATER LOSS); WATER LOSS CONTROL | $9,804,939 |
| RICHLAND SUD | YES | 2020 | MUNICIPAL CONSERVATION - RICHLAND SUD | CONSERVATION - MUNICIPAL (DOES NOT INCLUDE METER REPLACEMENT OR WATER LOSS); DATA GATHERING/MONITORING TECHNOLOGY; WATER LOSS CONTROL | $680,000 |
| ROLLINGWOOD | YES | 2020 | MUNICIPAL CONSERVATION - ROLLINGWOOD | DATA GATHERING/MONITORING TECHNOLOGY; CONSERVATION - MUNICIPAL (DOES NOT INCLUDE METER REPLACEMENT OR WATER LOSS); WATER LOSS CONTROL | $822,000 |
| ROUGH HOLLOW IN TRAVIS COUNTY | YES | 2020 | MUNICIPAL CONSERVATION - ROUGH HOLLOW IN TRAVIS COUNTY | CONSERVATION - MUNICIPAL (DOES NOT INCLUDE METER REPLACEMENT OR WATER LOSS); DATA GATHERING/MONITORING TECHNOLOGY; WATER LOSS CONTROL | $1,892,000 |
| ROUND ROCK | YES | 2020 | MUNICIPAL CONSERVATION - ROUND ROCK | DATA GATHERING/MONITORING TECHNOLOGY; CONSERVATION - MUNICIPAL (DOES NOT INCLUDE METER REPLACEMENT OR WATER LOSS); WATER LOSS CONTROL | $69,787 |
| SAN SABA | YES | 2020 | MUNICIPAL CONSERVATION - SAN SABA | DATA GATHERING/MONITORING TECHNOLOGY; CONSERVATION - MUNICIPAL (DOES NOT INCLUDE METER REPLACEMENT OR WATER LOSS); WATER LOSS CONTROL | $2,830,000 |
| SCHULENBURG | YES | 2020 | MUNICIPAL CONSERVATION - SCHULENBURG | DATA GATHERING/MONITORING TECHNOLOGY; CONSERVATION - MUNICIPAL (DOES NOT INCLUDE METER REPLACEMENT OR WATER LOSS); WATER LOSS CONTROL | $1,794,000 |
| SENNA HILLS MUD | YES | 2020 | MUNICIPAL CONSERVATION - SENNA HILLS MUD | CONSERVATION - MUNICIPAL (DOES NOT INCLUDE METER REPLACEMENT OR WATER LOSS); DATA GATHERING/MONITORING TECHNOLOGY; WATER LOSS CONTROL | $454,000 |
| SHADY HOLLOW MUD | YES | 2020 | MUNICIPAL CONSERVATION - SHADY HOLLOW MUD | DATA GATHERING/MONITORING TECHNOLOGY; CONSERVATION - MUNICIPAL (DOES NOT INCLUDE METER REPLACEMENT OR WATER LOSS); WATER LOSS CONTROL | $1,132,000 |
| SMITHVILLE | YES | 2030 | DEVELOPMENT OF NEW YEGUA-JACKSON AQUIFER SUPPLIES - SMITHVILLE | CONVEYANCE/TRANSMISSION PIPELINE; MULTIPLE WELLS/WELL FIELD; WATER TREATMENT PLANT EXPANSION | $13,421,000 |
| SMITHVILLE | YES | 2020 | MUNICIPAL CONSERVATION - SMITHVILLE | DATA GATHERING/MONITORING TECHNOLOGY; CONSERVATION - MUNICIPAL (DOES NOT INCLUDE METER REPLACEMENT OR WATER LOSS); WATER LOSS CONTROL | $1,440,741 |
| SMITHVILLE | YES | 2030 | NEW SURFACE WATER INFRASTRUCTURE - SMITHVILLE | CONVEYANCE/TRANSMISSION PIPELINE; NEW SURFACE WATER INTAKE; NEW WATER TREATMENT PLANT; PUMP STATION; STORAGE TANK; DIVERSION AND CONTROL STRUCTURE; NEW CONTRACT | $10,589,000 |
| STEAM ELECTRIC POWER, MATAGORDA | YES | 2030 | ALTERNATE CANAL DELIVERY - STPNOC | CONVEYANCE/TRANSMISSION PIPELINE; PUMP STATION | $18,127,000 |
| SUNSET VALLEY | YES | 2040 | DEVELOPMENT OF NEW TRINITY AQUIFER SUPPLIES - SUNSET VALLEY | CONVEYANCE/TRANSMISSION PIPELINE; MULTIPLE WELLS/WELL FIELD; STORAGE TANK; WATER TREATMENT PLANT EXPANSION | $5,401,000 |
| SUNSET VALLEY | YES | 2020 | MUNICIPAL CONSERVATION - SUNSET VALLEY | DATA GATHERING/MONITORING TECHNOLOGY; CONSERVATION - MUNICIPAL (DOES NOT INCLUDE METER REPLACEMENT OR WATER LOSS); WATER LOSS CONTROL | $556,000 |
| SUNSET VALLEY | YES | 2030 | RAINWATER HARVESTING - SUNSET VALLEY | RAINWATER HARVESTING SYSTEM | $739,000 |
| TRAVIS COUNTY MUD 10 | YES | 2030 | DEVELOPMENT OF NEW TRINITY AQUIFER SUPPLIES - TRAVIS COUNTY MUD 10 | CONVEYANCE/TRANSMISSION PIPELINE; MULTIPLE WELLS/WELL FIELD | $3,719,000 |
| TRAVIS COUNTY MUD 10 | YES | 2020 | MUNICIPAL CONSERVATION - TRAVIS COUNTY MUD 10 | CONSERVATION - MUNICIPAL (DOES NOT INCLUDE METER REPLACEMENT OR WATER LOSS); DATA GATHERING/MONITORING TECHNOLOGY; WATER LOSS CONTROL | $261,000 |

## Region K Recommended Projects Associated with Water Management Strategies

| SPONSOR NAME | SPONSOR IS WWP? | ONLINE DECADE | PROJECT NAME | PROJECT DESCRIPTION | CAPITAL COST |
|---|---|---|---|---|---|
| TRAVIS COUNTY MUD 4 | YES | 2020 | MUNICIPAL CONSERVATION - TRAVIS COUNTY MUD 4 | DATA GATHERING/MONITORING TECHNOLOGY; CONSERVATION - MUNICIPAL (DOES NOT INCLUDE METER REPLACEMENT OR WATER LOSS); WATER LOSS CONTROL | $2,740,000 |
| TRAVIS COUNTY WCID 10 | YES | 2020 | MUNICIPAL CONSERVATION - TRAVIS COUNTY WCID 10 | DATA GATHERING/MONITORING TECHNOLOGY; CONSERVATION - MUNICIPAL (DOES NOT INCLUDE METER REPLACEMENT OR WATER LOSS); WATER LOSS CONTROL | $4,498,000 |
| TRAVIS COUNTY WCID 17 | YES | 2030 | DIRECT REUSE - TRAVIS COUNTY WCID 17 | CONVEYANCE/TRANSMISSION PIPELINE; PUMP STATION; STORAGE TANK | $9,030,000 |
| TRAVIS COUNTY WCID 17 | YES | 2020 | MUNICIPAL CONSERVATION - TRAVIS COUNTY WCID 17 | DATA GATHERING/MONITORING TECHNOLOGY; CONSERVATION - MUNICIPAL (DOES NOT INCLUDE METER REPLACEMENT OR WATER LOSS); WATER LOSS CONTROL | $16,270,000 |
| TRAVIS COUNTY WCID 18 | YES | 2020 | MUNICIPAL CONSERVATION - TRAVIS COUNTY WCID 18 | DATA GATHERING/MONITORING TECHNOLOGY; CONSERVATION - MUNICIPAL (DOES NOT INCLUDE METER REPLACEMENT OR WATER LOSS); WATER LOSS CONTROL | $1,524,479 |
| TRAVIS COUNTY WCID 19 | YES | 2020 | MUNICIPAL CONSERVATION - TRAVIS COUNTY WCID 19 | DATA GATHERING/MONITORING TECHNOLOGY; CONSERVATION - MUNICIPAL (DOES NOT INCLUDE METER REPLACEMENT OR WATER LOSS); WATER LOSS CONTROL | $187,000 |
| TRAVIS COUNTY WCID 20 | YES | 2020 | MUNICIPAL CONSERVATION - TRAVIS COUNTY WCID 20 | DATA GATHERING/MONITORING TECHNOLOGY; CONSERVATION - MUNICIPAL (DOES NOT INCLUDE METER REPLACEMENT OR WATER LOSS); WATER LOSS CONTROL | $582,000 |
| TRAVIS COUNTY WCID POINT VENTURE | YES | 2020 | MUNICIPAL CONSERVATION - TRAVIS COUNTY WCID POINT VENTURE | DATA GATHERING/MONITORING TECHNOLOGY; CONSERVATION - MUNICIPAL (DOES NOT INCLUDE METER REPLACEMENT OR WATER LOSS); WATER LOSS CONTROL | $757,000 |
| WEIMAR | YES | 2020 | MUNICIPAL CONSERVATION - WEIMAR | DATA GATHERING/MONITORING TECHNOLOGY; CONSERVATION - MUNICIPAL (DOES NOT INCLUDE METER REPLACEMENT OR WATER LOSS); WATER LOSS CONTROL | $1,203,000 |
| WEST TRAVIS COUNTY PUBLIC UTILITY AGENCY | YES | 2030 | DIRECT POTABLE REUSE - WEST TRAVIS COUNTY PUA | CONVEYANCE/TRANSMISSION PIPELINE; NEW WATER TREATMENT PLANT; PUMP STATION | $7,788,000 |
| WEST TRAVIS COUNTY PUBLIC UTILITY AGENCY | YES | 2030 | DIRECT REUSE - WEST TRAVIS COUNTY PUA | CONVEYANCE/TRANSMISSION PIPELINE; PUMP STATION; STORAGE TANK | $207,000 |
| WEST TRAVIS COUNTY PUBLIC UTILITY AGENCY | YES | 2030 | HAYS COUNTY PIPELINE - REGION K PORTION | CONVEYANCE/TRANSMISSION PIPELINE; PUMP STATION; NEW CONTRACT | $22,456,500 |
| WEST TRAVIS COUNTY PUBLIC UTILITY AGENCY | YES | 2020 | MUNICIPAL CONSERVATION - WEST TRAVIS COUNTY PUA | DATA GATHERING/MONITORING TECHNOLOGY; CONSERVATION - MUNICIPAL (DOES NOT INCLUDE METER REPLACEMENT OR WATER LOSS); WATER LOSS CONTROL | $18,416,000 |
| WEST TRAVIS COUNTY PUBLIC UTILITY AGENCY | YES | 2030 | SURFACE WATER INFRASTRUCTURE EXPANSION - WTCPUA | CONVEYANCE/TRANSMISSION PIPELINE; PUMP STATION; STORAGE TANK; SURFACE WATER INTAKE MODIFICATION | $35,402,000 |
| WHARTON | YES | 2030 | EXPANSION OF GULF COAST AQUIFER SUPPLIES - WHARTON | CONVEYANCE/TRANSMISSION PIPELINE; MULTIPLE WELLS/WELL FIELD | $6,354,000 |
| WHARTON | YES | 2020 | MUNICIPAL CONSERVATION - WHARTON | DATA GATHERING/MONITORING TECHNOLOGY; CONSERVATION - MUNICIPAL (DOES NOT INCLUDE METER REPLACEMENT OR WATER LOSS); WATER LOSS CONTROL | $4,681,000 |
| WHARTON COUNTY WCID 2 | YES | 2020 | MUNICIPAL CONSERVATION - WHARTON COUNTY WCID 2 | CONSERVATION - MUNICIPAL (DOES NOT INCLUDE METER REPLACEMENT OR WATER LOSS); DATA GATHERING/MONITORING TECHNOLOGY; WATER LOSS CONTROL | $1,345,000 |
| WINDERMERE UTILITY | YES | 2020 | MUNICIPAL CONSERVATION - WINDERMERE UTILITY | CONSERVATION - MUNICIPAL (DOES NOT INCLUDE METER REPLACEMENT OR WATER LOSS); DATA GATHERING/MONITORING TECHNOLOGY; WATER LOSS CONTROL | $2,259,450 |

| | |
|---|---|
| **REGION K RECOMMENDED CAPITAL COST TOTAL** | **$4,589,778,633** |

# Region K Alternative Water User Group (WUG) Water Management Strategies (WMS)

| | | | | | | WATER MANAGEMENT STRATEGY SUPPLY (ACRE-FEET PER YEAR) | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **WUG ENTITY NAME** | **WMS SPONSOR REGION** | **WMS NAME** | **SOURCE NAME** | **UNIT COST 2020** | **UNIT COST 2070** | **2020** | **2030** | **2040** | **2050** | **2060** | **2070** |
| AQUA WSC* | K | EXPANSION LOCAL USE OF GROUNDWATER - CARRIZO-WILCOX AQUIFER - ALTERNATIVE VERSION | K \| CARRIZO-WILCOX AQUIFER \| BASTROP COUNTY | N/A | $123 | 0 | 5,500 | 5,500 | 5,500 | 13,385 | 19,121 |
| | | | | | | | | | | | |
| **REGION K ALTERNATIVE WMS SUPPLY TOTAL** | | | | | | 0 | 5,500 | 5,500 | 5,500 | 13,385 | 19,121 |

*A single asterisk next to a WUG's name denotes that the WUG is split by two or more planning regions.

# Region K Alternative Projects Associated with Water Management Strategies

| SPONSOR NAME | SPONSOR IS WWP? | ONLINE DECADE | PROJECT NAME | PROJECT DESCRIPTION | CAPITAL COST |
|---|---|---|---|---|---|
| AQUA WSC | YES | 2030 | EXPANSION OF CARRIZO-WILCOX AQUIFER - AQUA WSC ALTERNATIVE | CONVEYANCE/TRANSMISSION PIPELINE; MULTIPLE WELLS/WELL FIELD; PUMP STATION | $37,682,000 |
| LOWER COLORADO RIVER AUTHORITY | YES | 2030 | EXPANSION OF CARRIZO-WILCOX AQUIFER - LCRA ALTERNATIVE | CONVEYANCE/TRANSMISSION PIPELINE; MULTIPLE WELLS/WELL FIELD; PUMP STATION | $38,139,000 |
| LOWER COLORADO RIVER AUTHORITY | YES | 2040 | LCRA - BRACKISH GROUNDWATER DESALINATION | CONVEYANCE/TRANSMISSION PIPELINE; INJECTION WELL; MULTIPLE WELLS/WELL FIELD; NEW WATER TREATMENT PLANT; PUMP STATION; STORAGE TANK | $229,006,000 |
| LOWER COLORADO RIVER AUTHORITY | YES | 2030 | LCRA - SUPPLEMENT BAY AND ESTUARY INFLOWS WITH BRACKISH GROUNDWATER | CONVEYANCE/TRANSMISSION PIPELINE; DIVERSION AND CONTROL STRUCTURE; MULTIPLE WELLS/WELL FIELD | $47,269,000 |

| | |
|---|---|
| **REGION K ALTERNATIVE CAPITAL COST TOTAL** | **$352,096,000** |

## Region K Water User Group (WUG) Management Supply Factor

WUG supplies and projected demands are entered for each of a WUG's region-county-basin divisions. To calculate the Management Supply Factor for each WUG as a whole, not split by region-county-basin, the combined total of existing and future supply is divided by the total projected demand. If a WUG is split by more than one planning region, the whole WUG's management supply factor will show up in each of its planning region's management supply factor reports.

| | WUG MANAGEMENT SUPPLY FACTOR | | | | | |
|---|---|---|---|---|---|---|
| **WUG NAME** | **2020** | **2030** | **2040** | **2050** | **2060** | **2070** |
| AQUA WSC* | 1.2 | 1.0 | 1.0 | 1.1 | 1.1 | 1.0 |
| AUSTIN | 1.8 | 1.6 | 1.6 | 1.5 | 1.5 | 1.5 |
| BARTON CREEK WEST WSC | 1.3 | 1.4 | 1.4 | 1.5 | 1.5 | 1.6 |
| BARTON CREEK WSC | 1.1 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 |
| BASTROP | 1.6 | 1.3 | 1.1 | 1.1 | 1.1 | 1.1 |
| BASTROP COUNTY WCID 2 | 2.6 | 2.0 | 1.5 | 1.2 | 1.1 | 1.2 |
| BAY CITY | 1.2 | 1.2 | 1.2 | 1.2 | 1.2 | 1.2 |
| BERTRAM | 1.1 | 2.5 | 4.5 | 4.1 | 3.8 | 3.6 |
| BLANCO | 3.6 | 3.5 | 3.3 | 3.2 | 3.1 | 3.0 |
| BOLING MWD | 1.6 | 1.5 | 1.5 | 1.4 | 1.4 | 1.4 |
| BRIARCLIFF | 1.5 | 1.4 | 1.3 | 1.1 | 1.1 | 1.0 |
| BROOKESMITH SUD* | 1.1 | 1.1 | 1.1 | 1.1 | 1.1 | 1.1 |
| BUDA* | 2.4 | 3.0 | 2.7 | 2.1 | 1.8 | 1.4 |
| BURNET | 3.0 | 3.2 | 3.4 | 3.1 | 2.8 | 2.7 |
| CANEY CREEK MUD OF MATAGORDA COUNTY | 5.0 | 4.9 | 4.9 | 4.8 | 4.7 | 4.7 |
| CANYON LAKE WATER SERVICE* | 2.4 | 1.9 | 1.5 | 1.3 | 1.1 | 1.0 |
| CEDAR PARK* | 1.0 | 1.0 | 1.0 | 1.1 | 1.2 | 1.2 |
| CIMARRON PARK WATER | 1.3 | 1.3 | 1.3 | 1.3 | 1.3 | 1.3 |
| COLUMBUS | 1.8 | 1.8 | 1.8 | 1.8 | 1.9 | 1.9 |
| CORIX UTILITIES TEXAS INC* | 1.3 | 1.3 | 1.3 | 1.2 | 1.2 | 1.2 |
| COTTONWOOD CREEK MUD 1 | 1.1 | 1.0 | 1.1 | 1.0 | 1.1 | 1.0 |
| COTTONWOOD SHORES | 2.3 | 2.0 | 1.8 | 1.6 | 1.5 | 1.4 |
| COUNTY-OTHER, BASTROP | 1.3 | 1.3 | 1.3 | 1.3 | 1.3 | 1.3 |
| COUNTY-OTHER, BLANCO | 1.6 | 2.0 | 1.9 | 1.9 | 1.9 | 1.9 |
| COUNTY-OTHER, BURNET | 2.3 | 2.9 | 3.5 | 3.2 | 3.0 | 2.8 |
| COUNTY-OTHER, COLORADO | 1.2 | 1.3 | 1.2 | 1.2 | 1.2 | 1.1 |
| COUNTY-OTHER, FAYETTE | 1.2 | 1.1 | 1.1 | 1.1 | 1.1 | 1.0 |
| COUNTY-OTHER, GILLESPIE | 1.5 | 2.0 | 1.9 | 1.8 | 1.8 | 1.7 |
| COUNTY-OTHER, HAYS* | 1.4 | 2.9 | 1.9 | 1.6 | 1.2 | 1.1 |
| COUNTY-OTHER, LLANO | 11.4 | 14.6 | 13.7 | 13.6 | 14.8 | 15.8 |
| COUNTY-OTHER, MATAGORDA | 1.3 | 1.3 | 1.3 | 1.3 | 1.3 | 1.3 |
| COUNTY-OTHER, MILLS | 1.6 | 1.5 | 1.5 | 1.5 | 1.4 | 1.4 |
| COUNTY-OTHER, SAN SABA | 1.3 | 1.3 | 1.3 | 1.3 | 1.3 | 1.3 |
| COUNTY-OTHER, TRAVIS | 13.5 | 13.7 | 13.7 | 13.7 | 13.8 | 13.8 |
| COUNTY-OTHER, TRAVIS \| AQUA TEXAS - RIVERCREST | 1.7 | 1.8 | 1.9 | 2.0 | 2.0 | 2.1 |
| COUNTY-OTHER, WHARTON* | 1.3 | 1.3 | 1.2 | 1.2 | 1.1 | 1.1 |
| COUNTY-OTHER, WILLIAMSON* | 1.0 | 3.6 | 2.1 | 1.5 | 1.2 | 1.2 |
| CREEDMOOR-MAHA WSC* | 1.9 | 2.1 | 1.4 | 1.3 | 1.2 | 1.1 |
| CYPRESS RANCH WCID 1 | 1.9 | 1.8 | 1.7 | 1.6 | 1.5 | 1.5 |
| DEER CREEK RANCH WATER | 3.7 | 3.2 | 2.9 | 2.7 | 2.5 | 2.3 |
| DRIPPING SPRINGS WSC | 1.6 | 1.4 | 1.2 | 1.2 | 1.2 | 1.1 |
| EAGLE LAKE | 1.3 | 1.3 | 1.2 | 1.2 | 1.2 | 1.1 |
| EL CAMPO* | 1.1 | 1.2 | 1.2 | 1.2 | 1.2 | 1.2 |
| ELGIN | 1.2 | 1.2 | 1.2 | 1.0 | 1.1 | 1.0 |

*A single asterisk next to a WUG's name denotes that the WUG is split by more than one planning region.

## Region K Water User Group (WUG) Management Supply Factor

| | WUG MANAGEMENT SUPPLY FACTOR | | | | | |
|---|---|---|---|---|---|---|
| **WUG NAME** | **2020** | **2030** | **2040** | **2050** | **2060** | **2070** |
| FAYETTE COUNTY WCID MONUMENT HILL | 1.5 | 1.6 | 1.5 | 1.5 | 1.5 | 1.5 |
| FAYETTE WSC | 1.8 | 1.6 | 1.5 | 1.4 | 1.4 | 1.3 |
| FLATONIA | 1.6 | 1.6 | 1.5 | 1.5 | 1.4 | 1.4 |
| FREDERICKSBURG | 1.6 | 1.6 | 1.6 | 1.6 | 1.6 | 1.6 |
| GARFIELD WSC | 1.4 | 1.2 | 1.1 | 1.0 | 1.0 | 1.0 |
| GEORGETOWN* | 0.6 | 1.1 | 1.2 | 1.0 | 1.0 | 1.0 |
| GOFORTH SUD* | 3.6 | 2.4 | 1.8 | 1.5 | 1.2 | 1.0 |
| GOLDTHWAITE | 1.4 | 1.4 | 1.4 | 1.3 | 1.3 | 1.3 |
| GRANITE SHOALS | 1.5 | 1.3 | 1.2 | 1.1 | 1.1 | 1.0 |
| HAYS | 1.2 | 2.0 | 1.7 | 1.4 | 1.4 | 1.3 |
| HAYS COUNTY WCID 1 | 1.3 | 1.3 | 1.4 | 1.4 | 1.3 | 1.3 |
| HAYS COUNTY WCID 2 | 2.3 | 1.9 | 1.7 | 1.5 | 1.4 | 1.3 |
| HORNSBY BEND UTILITY | 1.6 | 1.4 | 1.3 | 1.2 | 1.1 | 1.0 |
| HORSESHOE BAY | 1.3 | 1.3 | 1.5 | 1.5 | 1.6 | 1.6 |
| HURST CREEK MUD | 1.3 | 1.3 | 1.4 | 1.5 | 1.5 | 1.6 |
| IRRIGATION, BASTROP | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 |
| IRRIGATION, BLANCO | 1.1 | 1.1 | 1.1 | 1.1 | 1.1 | 1.1 |
| IRRIGATION, BURNET | 1.2 | 1.2 | 1.2 | 1.2 | 1.2 | 1.2 |
| IRRIGATION, COLORADO | 1.0 | 1.0 | 1.0 | 1.0 | 1.1 | 1.1 |
| IRRIGATION, FAYETTE | 1.2 | 1.2 | 1.2 | 1.2 | 1.2 | 1.2 |
| IRRIGATION, GILLESPIE | 1.1 | 1.1 | 1.1 | 1.1 | 1.1 | 1.1 |
| IRRIGATION, HAYS* | 1.9 | 1.9 | 1.9 | 1.9 | 1.9 | 1.9 |
| IRRIGATION, LLANO | 1.9 | 1.9 | 1.9 | 1.9 | 1.9 | 1.9 |
| IRRIGATION, MATAGORDA | 0.6 | 0.6 | 0.6 | 0.7 | 0.7 | 0.7 |
| IRRIGATION, MILLS | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 |
| IRRIGATION, SAN SABA | 1.1 | 1.1 | 1.1 | 1.1 | 1.1 | 1.1 |
| IRRIGATION, TRAVIS | 1.2 | 1.2 | 1.2 | 1.2 | 1.2 | 1.2 |
| IRRIGATION, WHARTON* | 1.0 | 1.0 | 1.0 | 1.0 | 1.1 | 1.1 |
| JOHNSON CITY | 1.4 | 1.5 | 1.4 | 1.3 | 1.3 | 1.3 |
| JONESTOWN WSC | 1.4 | 1.3 | 1.3 | 1.2 | 1.1 | 1.1 |
| KELLY LANE WCID 1 | 1.5 | 1.6 | 1.6 | 1.6 | 1.6 | 1.6 |
| KEMPNER WSC* | 1.3 | 1.7 | 1.6 | 1.8 | 1.7 | 1.6 |
| KINGSLAND WSC | 1.3 | 1.2 | 1.2 | 1.2 | 1.1 | 1.1 |
| LA GRANGE | 1.6 | 1.5 | 1.4 | 1.3 | 1.3 | 1.2 |
| LAGO VISTA | 2.3 | 2.2 | 2.1 | 2.0 | 1.9 | 1.8 |
| LAKEWAY MUD | 1.4 | 1.6 | 1.6 | 1.7 | 1.7 | 1.7 |
| LEANDER* | 3.0 | 1.9 | 1.6 | 1.4 | 1.1 | 1.0 |
| LEE COUNTY WSC* | 3.5 | 3.1 | 2.9 | 2.7 | 2.6 | 2.4 |
| LIVESTOCK, BASTROP | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 |
| LIVESTOCK, BLANCO | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 |
| LIVESTOCK, BURNET | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 |
| LIVESTOCK, COLORADO | 1.3 | 1.3 | 1.3 | 1.3 | 1.3 | 1.3 |
| LIVESTOCK, FAYETTE | 1.1 | 1.1 | 1.1 | 1.1 | 1.1 | 1.1 |
| LIVESTOCK, GILLESPIE | 1.3 | 1.3 | 1.3 | 1.3 | 1.3 | 1.3 |
| LIVESTOCK, HAYS* | 1.3 | 1.3 | 1.3 | 1.3 | 1.3 | 1.3 |
| LIVESTOCK, LLANO | 1.3 | 1.3 | 1.3 | 1.3 | 1.3 | 1.3 |
| LIVESTOCK, MATAGORDA | 1.1 | 1.1 | 1.1 | 1.1 | 1.1 | 1.1 |
| LIVESTOCK, MILLS | 1.1 | 1.1 | 1.1 | 1.1 | 1.1 | 1.1 |

*A single asterisk next to a WUG's name denotes that the WUG is split by more than one planning region.

# Region K Water User Group (WUG) Management Supply Factor

| | WUG MANAGEMENT SUPPLY FACTOR | | | | | |
|---|---|---|---|---|---|---|
| **WUG NAME** | **2020** | **2030** | **2040** | **2050** | **2060** | **2070** |
| LIVESTOCK, SAN SABA | 1.6 | 1.6 | 1.6 | 1.6 | 1.6 | 1.6 |
| LIVESTOCK, TRAVIS | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 |
| LIVESTOCK, WHARTON* | 1.1 | 1.1 | 1.1 | 1.1 | 1.1 | 1.1 |
| LLANO | 1.0 | 1.1 | 1.1 | 1.1 | 1.1 | 1.1 |
| LOOP 360 WSC | 1.3 | 1.3 | 1.4 | 1.4 | 1.4 | 1.4 |
| MANOR | 3.1 | 2.4 | 1.3 | 1.2 | 1.2 | 1.1 |
| MANUFACTURING, BASTROP | 1.1 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 |
| MANUFACTURING, BURNET | 2.0 | 1.7 | 1.7 | 1.7 | 1.7 | 1.7 |
| MANUFACTURING, COLORADO | 1.2 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 |
| MANUFACTURING, FAYETTE | 1.0 | 1.1 | 1.1 | 1.1 | 1.1 | 1.1 |
| MANUFACTURING, GILLESPIE | 9.6 | 8.0 | 8.0 | 8.0 | 8.0 | 8.0 |
| MANUFACTURING, HAYS* | 3.1 | 2.7 | 2.7 | 2.7 | 2.7 | 2.7 |
| MANUFACTURING, LLANO | 1.3 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 |
| MANUFACTURING, MATAGORDA | 4.4 | 3.8 | 3.8 | 3.8 | 3.8 | 3.8 |
| MANUFACTURING, MILLS | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 |
| MANUFACTURING, SAN SABA | 1.2 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 |
| MANUFACTURING, TRAVIS | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 |
| MANUFACTURING, WHARTON* | 1.1 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 |
| MANUFACTURING, WILLIAMSON* | 1.3 | 1.3 | 1.3 | 1.3 | 1.3 | 1.3 |
| MANVILLE WSC* | 1.8 | 1.6 | 1.4 | 1.2 | 1.1 | 1.0 |
| MARBLE FALLS | 2.3 | 2.9 | 2.2 | 2.0 | 2.0 | 1.9 |
| MARKHAM MUD | 1.2 | 1.3 | 1.3 | 1.3 | 1.2 | 1.2 |
| MATAGORDA COUNTY WCID 6 | 1.1 | 1.1 | 1.1 | 1.1 | 1.1 | 1.1 |
| MATAGORDA WASTE DISPOSAL & WSC | 3.3 | 3.3 | 3.2 | 3.2 | 3.1 | 3.1 |
| MEADOWLAKES | 1.0 | 1.1 | 1.2 | 1.2 | 1.3 | 1.3 |
| MINING, BASTROP | 0.9 | 0.4 | 0.4 | 0.5 | 5.5 | 4.6 |
| MINING, BLANCO | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 |
| MINING, BURNET | 1.2 | 1.4 | 1.3 | 1.2 | 1.1 | 1.0 |
| MINING, COLORADO | 1.1 | 1.1 | 1.0 | 1.0 | 1.0 | 1.0 |
| MINING, FAYETTE | 1.0 | 1.2 | 1.1 | 1.8 | 4.5 | 4.7 |
| MINING, GILLESPIE | 13.8 | 13.8 | 13.8 | 13.8 | 13.8 | 13.8 |
| MINING, HAYS | 1.1 | 1.0 | 1.1 | 1.0 | 1.0 | 1.0 |
| MINING, LLANO | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 |
| MINING, MATAGORDA | 1.0 | 1.0 | 1.3 | 1.8 | 2.9 | 4.5 |
| MINING, MILLS | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 |
| MINING, SAN SABA | 1.4 | 1.4 | 1.6 | 1.7 | 1.8 | 1.8 |
| MINING, TRAVIS | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 |
| MINING, WHARTON* | 1.0 | 1.0 | 1.3 | 1.8 | 2.8 | 4.4 |
| MINING, WILLIAMSON* | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 |
| NORTH AUSTIN MUD 1 | 1.1 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 |
| NORTH SAN SABA WSC | 1.3 | 1.4 | 1.4 | 1.5 | 1.5 | 1.5 |
| NORTHTOWN MUD | 1.0 | 1.0 | 1.0 | 1.1 | 1.2 | 1.1 |
| OAK SHORES WATER SYSTEM | 2.2 | 2.0 | 2.1 | 2.1 | 2.2 | 2.2 |
| PALACIOS | 1.8 | 1.8 | 1.8 | 1.7 | 1.7 | 1.7 |
| PFLUGERVILLE* | 1.4 | 1.3 | 1.1 | 1.0 | 1.0 | 1.0 |
| POLONIA WSC* | 2.8 | 2.3 | 2.0 | 1.8 | 1.6 | 1.4 |
| RICHLAND SUD* | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 |
| ROLLINGWOOD | 3.2 | 3.3 | 1.1 | 1.1 | 1.2 | 1.2 |

*A single asterisk next to a WUG's name denotes that the WUG is split by more than one planning region.

## Region K Water User Group (WUG) Management Supply Factor

| | WUG MANAGEMENT SUPPLY FACTOR | | | | | |
|---|---|---|---|---|---|---|
| **WUG NAME** | **2020** | **2030** | **2040** | **2050** | **2060** | **2070** |
| ROUGH HOLLOW IN TRAVIS COUNTY | 3.3 | 1.8 | 1.9 | 1.9 | 1.9 | 1.9 |
| ROUND ROCK* | 1.9 | 1.8 | 1.5 | 1.2 | 1.2 | 1.2 |
| SAN SABA | 1.3 | 1.4 | 1.4 | 1.5 | 1.5 | 1.6 |
| SCHULENBURG | 1.5 | 1.4 | 1.4 | 1.4 | 1.3 | 1.3 |
| SENNA HILLS MUD | 1.2 | 1.2 | 1.1 | 1.1 | 1.1 | 1.1 |
| SHADY HOLLOW MUD | 1.3 | 1.3 | 1.3 | 1.3 | 1.3 | 1.3 |
| SMITHVILLE | 2.0 | 2.5 | 2.0 | 1.7 | 1.3 | 1.2 |
| STEAM ELECTRIC POWER, BASTROP | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 |
| STEAM ELECTRIC POWER, COLORADO | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| STEAM ELECTRIC POWER, FAYETTE | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 |
| STEAM ELECTRIC POWER, HAYS | 1.4 | 1.4 | 1.4 | 1.4 | 1.4 | 1.4 |
| STEAM ELECTRIC POWER, LLANO | 1.0 | 1.0 | 1.1 | 1.1 | 1.1 | 1.1 |
| STEAM ELECTRIC POWER, MATAGORDA | 1.0 | 1.1 | 1.1 | 1.1 | 1.1 | 1.1 |
| STEAM ELECTRIC POWER, TRAVIS | 1.4 | 1.6 | 1.6 | 1.6 | 1.6 | 1.6 |
| STEAM ELECTRIC POWER, WHARTON* | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 |
| SUNRISE BEACH VILLAGE | 3.5 | 3.7 | 3.8 | 3.8 | 3.8 | 3.8 |
| SUNSET VALLEY | 2.3 | 2.2 | 1.8 | 1.7 | 1.6 | 1.5 |
| SWEETWATER COMMUNITY | 3.9 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 |
| TRAVIS COUNTY MUD 10 | 1.6 | 2.6 | 2.4 | 2.3 | 2.1 | 2.0 |
| TRAVIS COUNTY MUD 14 | 1.4 | 1.2 | 1.1 | 1.1 | 1.1 | 1.0 |
| TRAVIS COUNTY MUD 2 | 1.8 | 1.6 | 1.4 | 1.3 | 1.2 | 1.1 |
| TRAVIS COUNTY MUD 4 | 2.6 | 2.4 | 2.2 | 2.1 | 2.0 | 1.9 |
| TRAVIS COUNTY WCID 10 | 1.3 | 1.3 | 1.0 | 1.0 | 1.0 | 1.0 |
| TRAVIS COUNTY WCID 17 | 1.4 | 1.4 | 1.4 | 1.4 | 1.4 | 1.4 |
| TRAVIS COUNTY WCID 18 | 1.6 | 1.5 | 1.3 | 1.2 | 1.1 | 1.1 |
| TRAVIS COUNTY WCID 19 | 1.3 | 1.3 | 1.4 | 1.5 | 1.5 | 1.6 |
| TRAVIS COUNTY WCID 20 | 2.2 | 2.3 | 2.4 | 2.4 | 2.5 | 2.5 |
| TRAVIS COUNTY WCID POINT VENTURE | 1.4 | 1.2 | 1.2 | 1.1 | 1.0 | 1.0 |
| WEIMAR | 1.4 | 1.5 | 1.5 | 1.5 | 1.5 | 1.4 |
| WELLS BRANCH MUD | 1.1 | 1.1 | 1.1 | 1.1 | 1.1 | 1.1 |
| WEST END WSC* | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.1 |
| WEST TRAVIS COUNTY PUBLIC UTILITY AGENCY | 1.1 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 |
| WHARTON | 1.4 | 3.1 | 3.0 | 2.9 | 2.8 | 2.7 |
| WHARTON COUNTY WCID 2 | 2.9 | 2.9 | 2.9 | 2.8 | 2.7 | 2.6 |
| WILLIAMSON COUNTY WSID 3* | 1.2 | 1.1 | 1.1 | 1.1 | 1.0 | 1.0 |
| WILLIAMSON TRAVIS COUNTIES MUD 1* | 1.4 | 1.4 | 1.4 | 1.4 | 1.4 | 1.4 |
| WINDERMERE UTILITY | 1.5 | 1.7 | 1.0 | 1.0 | 1.0 | 1.0 |
| ZEPHYR WSC* | 1.1 | 1.1 | 1.1 | 1.1 | 1.1 | 1.1 |

*A single asterisk next to a WUG's name denotes that the WUG is split by more than one planning region.

# Region K Recommended Water Management Strategy (WMS) Supply Associated with a New or Amended Inter-Basin Transfer (IBT) Permit

IBT WMS supply is the portion of the total WMS benefitting WUGs that will require a new or amended IBT permit that is not considered exempt under the Texas Water Code § 11.085.

| | | | IBT WMS SUPPLY (ACRE-FEET PER YEAR) | | | | | |
|---|---|---|---|---|---|---|---|---|
| **WMS NAME** | **SOURCE BASIN** | **RECIPIENT WUG BASIN** | **2020** | **2030** | **2040** | **2050** | **2060** | **2070** |
| LCRA - IMPORT RETURN FLOWS FROM WILLIAMSON COUNTY | BRAZOS | COLORADO | 0 | 0 | 2,500 | 7,000 | 15,000 | 25,000 |

# Region K Water User Groups (WUGs)
# Recommended Water Management Strategy (WMS) Supply Associated with a New or Amended Inter-Basin Transfer (IBT) Permit and Total Recommended Conservation WMS Supply

IBT WMS supply is the portion of the total WMS benefitting the WUG basin split listed that will require a new or amended IBT permit that is not considered exempt under the Texas Water Code § 11.085. Total conservation supply represents all conservation WMS volumes recommended within the WUG's region-basin geographic split.

| BENEFITTING WUG NAME \| BASIN | WMS SOURCE ORIGIN BASIN \| WMS NAME | WMS SUPPLY (ACRE-FEET PER YEAR) | | | | | |
|---|---|---|---|---|---|---|---|
| | | 2020 | 2030 | 2040 | 2050 | 2060 | 2070 |
| AQUA WSC \| COLORADO BASIN | BRAZOS BASIN \| LCRA - IMPORT RETURN FLOWS FROM WILLIAMSON COUNTY | 0 | 0 | 2,500 | 6,000 | 12,000 | 18,800 |
| | **TOTAL RECOMMENDED IBT WMS SUPPLY** | **0** | **0** | **2,500** | **6,000** | **12,000** | **18,800** |
| | **TOTAL RECOMMENDED CONSERVATION** | **465** | **283** | **146** | **66** | **45** | **62** |
| BASTROP \| COLORADO BASIN | BRAZOS BASIN \| LCRA - IMPORT RETURN FLOWS FROM WILLIAMSON COUNTY | 0 | 0 | 0 | 1,000 | 2,500 | 4,000 |
| | **TOTAL RECOMMENDED IBT WMS SUPPLY** | **0** | **0** | **0** | **1,000** | **2,500** | **4,000** |
| | **TOTAL RECOMMENDED CONSERVATION** | **184** | **355** | **433** | **558** | **744** | **992** |
| BASTROP COUNTY WCID 2 \| COLORADO BASIN | BRAZOS BASIN \| LCRA - IMPORT RETURN FLOWS FROM WILLIAMSON COUNTY | 0 | 0 | 0 | 0 | 500 | 1,500 |
| | **TOTAL RECOMMENDED IBT WMS SUPPLY** | **0** | **0** | **0** | **0** | **500** | **1,500** |
| | **TOTAL RECOMMENDED CONSERVATION** | **0** | **0** | **0** | **0** | **93** | **125** |
| SMITHVILLE \| COLORADO BASIN | BRAZOS BASIN \| LCRA - IMPORT RETURN FLOWS FROM WILLIAMSON COUNTY | 0 | 0 | 0 | 0 | 0 | 700 |
| | **TOTAL RECOMMENDED IBT WMS SUPPLY** | **0** | **0** | **0** | **0** | **0** | **700** |
| | **TOTAL RECOMMENDED CONSERVATION** | **69** | **59** | **54** | **59** | **75** | **97** |

# Region K Sponsored Recommended Water Management Strategy (WMS) Supplies Unallocated* to Water User Groups (WUG)

| WMS NAME | WMS SPONSOR | SOURCE NAME | UNALLOCATED STRATEGY SUPPLY (ACRE-FEET PER YEAR) | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | | 2020 | 2030 | 2040 | 2050 | 2060 | 2070 |
| AUSTIN RETURN FLOWS | LOWER COLORADO RIVER AUTHORITY | K \| COLORADO INDIRECT REUSE | 7,144 | 15,249 | 14,560 | 14,723 | 12,971 | 12,510 |
| DOWNSTREAM RETURN FLOWS | LOWER COLORADO RIVER AUTHORITY | K \| COLORADO INDIRECT REUSE | 3,985 | 1,969 | 3,072 | 4,164 | 5,267 | 4,067 |
| LCRA - ACQUIRE ADDITIONAL WATER RIGHTS | LOWER COLORADO RIVER AUTHORITY | K \| COLORADO RUN-OF-RIVER | 0 | 250 | 250 | 250 | 250 | 250 |
| LCRA - AQUIFER STORAGE AND RECOVERY | LOWER COLORADO RIVER AUTHORITY | K \| CARRIZO-WILCOX AQUIFER ASR \| BASTROP COUNTY | 0 | 0 | 12,973 | 12,973 | 12,973 | 12,973 |
| LCRA - BAYLOR CREEK RESERVOIR | LOWER COLORADO RIVER AUTHORITY | K \| BAYLOR CREEK LAKE/RESERVOIR | 0 | 0 | 18,000 | 18,000 | 18,000 | 18,000 |
| LCRA - ENHANCED RECHARGE (MAR) | LOWER COLORADO RIVER AUTHORITY | K \| GULF COAST AQUIFER SYSTEM \| WHARTON COUNTY | 0 | 0 | 14,486 | 14,486 | 14,486 | 14,486 |
| LCRA - EXCESS FLOWS RESERVOIR | LOWER COLORADO RIVER AUTHORITY | K \| LCRA NEW OFF-CHANNEL RESERVOIR (2030 DECADE) | 0 | 28,706 | 25,450 | 23,250 | 23,250 | 22,350 |
| LCRA - EXPAND USE OF GROUNDWATER (CARRIZO-WILCOX AQUIFER) | LOWER COLORADO RIVER AUTHORITY | K \| CARRIZO-WILCOX AQUIFER \| BASTROP COUNTY | 0 | 30 | 30 | 30 | 30 | 30 |
| LCRA - IMPORT RETURN FLOWS FROM WILLIAMSON COUNTY | LOWER COLORADO RIVER AUTHORITY | G \| BRAZOS RUN-OF-RIVER | 0 | 5,460 | 8,420 | 9,380 | 6,840 | 0 |
| LCRA - MID BASIN RESERVOIR | LOWER COLORADO RIVER AUTHORITY | K \| LCRA NEW OFF-CHANNEL RESERVOIR (2030 DECADE) | 0 | 18,600 | 11,880 | 7,980 | 4,430 | 2,819 |
| LCRA - PRAIRIE SITE RESERVOIR | LOWER COLORADO RIVER AUTHORITY | K \| LCRA NEW OFF-CHANNEL RESERVOIR (2030 DECADE) | 0 | 19,000 | 9,500 | 0 | 0 | 0 |
| **TOTAL UNALLOCATED STRATEGY SUPPLIES** | | | **11,129** | **89,264** | **118,621** | **105,236** | **98,497** | **87,485** |

* Strategy supplies created through the WMS that have not been assigned to a WUG will be allocated to the entity responsible for the water through an ‘unassigned water volumes’ entity. Only strategy supplies associated with an 'unassigned water volume' entity are shown in this report, and may not represent all strategy supplies associated with the listed WMS.

## Region K Water User Group (WUG) Strategy Supplies by Water Management Strategy (WMS) Type

| WMS TYPE * | STRATEGY SUPPLY (ACRE-FEET PER YEAR) | | | | | |
|---|---|---|---|---|---|---|
| | 2020 | 2030 | 2040 | 2050 | 2060 | 2070 |
| AQUIFER STORAGE & RECOVERY | 150 | 5,324 | 14,524 | 17,124 | 19,824 | 22,427 |
| DIRECT POTABLE REUSE | 0 | 3,416 | 3,416 | 3,416 | 3,416 | 3,416 |
| DROUGHT MANAGEMENT | 67,013 | 69,863 | 72,670 | 75,476 | 78,961 | 82,901 |
| GROUNDWATER DESALINATION | 0 | 0 | 0 | 0 | 0 | 5,000 |
| GROUNDWATER WELLS & OTHER | 17,515 | 25,384 | 29,065 | 29,711 | 31,313 | 33,541 |
| INDIRECT REUSE | 32,002 | 36,141 | 46,856 | 49,571 | 52,284 | 56,200 |
| IRRIGATION CONSERVATION | 50,588 | 65,760 | 81,862 | 95,701 | 107,274 | 118,860 |
| MUNICIPAL CONSERVATION | 12,924 | 30,000 | 46,726 | 59,111 | 71,131 | 81,894 |
| NEW MAJOR RESERVOIR | 0 | 11,941 | 21,917 | 28,017 | 31,567 | 58,464 |
| OTHER CONSERVATION | 1,903 | 2,244 | 2,409 | 2,434 | 2,201 | 2,701 |
| OTHER DIRECT REUSE | 575 | 11,115 | 23,417 | 34,603 | 46,056 | 56,793 |
| OTHER STRATEGIES | 0 | 2,910 | 4,111 | 5,168 | 6,217 | 7,277 |
| OTHER SURFACE WATER | 68,012 | 33,137 | 25,945 | 17,340 | 25,340 | 35,340 |
| CONJUNCTIVE USE | 0 | 0 | 0 | 0 | 0 | 0 |
| SEAWATER DESALINATION | 0 | 0 | 0 | 0 | 0 | 0 |
| **TOTAL STRATEGY SUPPLIES** | **250,682** | **297,235** | **372,918** | **417,672** | **475,584** | **564,814** |

* WMS type descriptions can be found on the interactive state water plan website at http://texasstatewaterplan.org/ using the 'View data for' drop-down menus to navigate to a specific WMS Type page. The data used to create each WMS type value is available in Appendix 3 of the Guidelines for Regional Water Planning Data Deliverable (Exhibit D) document at http://www.twdb.texas.gov/waterplanning/rwp/planningdocu/2021/doc/current_docs/contract_docs/ExhibitD.pdf.

## Region K Water User Group (WUG)
## Recommended Water Management Strategy (WMS) Supplies by Source Type

| SOURCE SUBTYPE* | STRATEGY SUPPLY (ACRE-FEET PER YEAR) | | | | | |
|---|---|---|---|---|---|---|
| | 2020 | 2030 | 2040 | 2050 | 2060 | 2070 |
| AQUIFER STORAGE & RECOVERY | 150 | 5,324 | 14,524 | 17,124 | 19,824 | 22,427 |
| GROUNDWATER | 17,515 | 27,383 | 31,064 | 31,710 | 33,312 | 40,540 |
| **GROUNDWATER TOTAL STRATEGY SUPPLIES** | **17,665** | **32,707** | **45,588** | **48,834** | **53,136** | **62,967** |
| DIRECT NON-POTABLE REUSE | 575 | 11,115 | 23,417 | 34,603 | 46,056 | 56,793 |
| DIRECT POTABLE REUSE | 0 | 3,416 | 3,416 | 3,416 | 3,416 | 3,416 |
| INDIRECT NON-POTABLE REUSE | 32,002 | 36,141 | 35,856 | 35,571 | 35,284 | 35,000 |
| INDIRECT POTABLE REUSE | 0 | 0 | 11,000 | 14,000 | 17,000 | 21,200 |
| **REUSE TOTAL STRATEGY SUPPLIES** | **32,577** | **50,672** | **73,689** | **87,590** | **101,756** | **116,409** |
| ATMOSPHERE | 0 | 0 | 0 | 0 | 0 | 0 |
| GULF OF MEXICO | 3,000 | 3,000 | 3,000 | 3,000 | 3,000 | 3,000 |
| LIVESTOCK LOCAL SUPPLY | 0 | 0 | 0 | 0 | 0 | 0 |
| OTHER LOCAL SUPPLY | 0 | 0 | 0 | 0 | 0 | 0 |
| RAINWATER HARVESTING | 0 | 911 | 2,112 | 3,169 | 4,218 | 5,278 |
| RESERVOIR | 0 | 11,941 | 21,917 | 28,017 | 31,567 | 58,464 |
| RESERVOIR SYSTEM | 63,762 | 25,887 | 13,195 | 90 | 90 | 90 |
| RUN-OF-RIVER | 1,250 | 4,250 | 9,750 | 14,250 | 22,250 | 32,250 |
| **SURFACE WATER TOTAL STRATEGY SUPPLIES** | **68,012** | **45,989** | **49,974** | **48,526** | **61,125** | **99,082** |
| **REGION K TOTAL STRATEGY SUPPLIES** | **118,254** | **129,368** | **169,251** | **184,950** | **216,017** | **278,458** |

* A full list of source subtype definitions can be found in section 3 of the Guidelines for Regional Water Planning Data Deliverable (Exhibit D) document at http://www.twdb.texas.gov/waterplanning/rwp/planningdocu/2021/doc/current_docs/contract_docs/ExhibitD.pdf.

# Region K Major Water Provider (MWP) Existing Sales and Transfers

Major Water Providers are entities of particular significance to a region's water supply as defined by the Regional Water Planning Group (RWPG), and may be a Water User Group (WUG) entity, Wholesale Water Provider (WWP) entity , or both (WUG/WWP).

Retail denotes WUG projected demands and existing water supplies used by the WUG. Wholesale denotes a WWP or WUG/WWP selling water to another entity.

| AUSTIN - WUG/WWP | WATER VOLUMES (ACRE-FEET PER YEAR) | | | | | |
|---|---|---|---|---|---|---|
| DATA DESCRIPTION | 2020 | 2030 | 2040 | 2050 | 2060 | 2070 |
| PROJECTED RETAIL WUG DEMANDS | 181,661 | 213,561 | 248,177 | 273,318 | 294,571 | 322,652 |
| PROJECTED WHOLESALE CONTRACT DEMANDS | 26,337 | 28,023 | 15,243 | 15,690 | 15,689 | 15,689 |
| **TOTAL PROJECTED WHOLESALE CONTRACT AND RETAIL DEMANDS** | **207,998** | **241,584** | **263,420** | **289,008** | **310,260** | **338,341** |
| REUSE SALES TO RETAIL CUSTOMERS | 2,691 | 2,391 | 2,391 | 2,391 | 2,391 | 2,391 |
| SURFACE WATER SALES TO RETAIL CUSTOMERS | 300,563 | 299,157 | 311,937 | 311,490 | 311,491 | 311,491 |
| REUSE SALES TO WHOLESALE CUSTOMERS | 1,880 | 2,180 | 2,180 | 2,180 | 2,180 | 2,180 |
| SURFACE WATER SALES TO WHOLESALE CUSTOMERS | 24,437 | 25,843 | 13,063 | 13,510 | 13,509 | 13,509 |
| **TOTAL WHOLESALE AND RETAIL SALES TO CUSTOMERS** | **329,571** | **329,571** | **329,571** | **329,571** | **329,571** | **329,571** |

| LOWER COLORADO RIVER AUTHORITY - WWP | WATER VOLUMES (ACRE-FEET PER YEAR) | | | | | |
|---|---|---|---|---|---|---|
| DATA DESCRIPTION | 2020 | 2030 | 2040 | 2050 | 2060 | 2070 |
| PROJECTED WHOLESALE CONTRACT DEMANDS | 573,923 | 573,923 | 573,923 | 573,923 | 573,923 | 573,923 |
| **TOTAL PROJECTED WHOLESALE CONTRACT AND RETAIL DEMANDS** | **573,923** | **573,923** | **573,923** | **573,923** | **573,923** | **573,923** |
| GROUNDWATER SALES TO WHOLESALE CUSTOMERS | 2,609 | 3,522 | 4,022 | 5,156 | 4,836 | 4,727 |
| SURFACE WATER SALES TO WHOLESALE CUSTOMERS | 497,716 | 496,803 | 496,303 | 495,169 | 495,489 | 495,598 |
| **TOTAL WHOLESALE AND RETAIL SALES TO CUSTOMERS** | **500,325** | **500,325** | **500,325** | **500,325** | **500,325** | **500,325** |

| WEST TRAVIS COUNTY PUBLIC UTILITY AGENCY - WUG/WWP | WATER VOLUMES (ACRE-FEET PER YEAR) | | | | | |
|---|---|---|---|---|---|---|
| DATA DESCRIPTION | 2020 | 2030 | 2040 | 2050 | 2060 | 2070 |
| PROJECTED RETAIL WUG DEMANDS | 11,197 | 12,947 | 14,198 | 16,535 | 18,549 | 20,507 |
| PROJECTED WHOLESALE CONTRACT DEMANDS | 9,138 | 9,138 | 9,138 | 9,138 | 9,138 | 9,138 |
| **TOTAL PROJECTED WHOLESALE CONTRACT AND RETAIL DEMANDS** | **20,335** | **22,085** | **23,336** | **25,673** | **27,687** | **29,645** |
| REUSE SALES TO RETAIL CUSTOMERS | 692 | 692 | 692 | 692 | 692 | 692 |
| SURFACE WATER SALES TO RETAIL CUSTOMERS | 8,849 | 8,849 | 8,849 | 8,849 | 8,849 | 8,849 |
| SURFACE WATER SALES TO WHOLESALE CUSTOMERS | 9,138 | 9,138 | 9,138 | 9,138 | 9,138 | 9,138 |
| **TOTAL WHOLESALE AND RETAIL SALES TO CUSTOMERS** | **18,679** | **18,679** | **18,679** | **18,679** | **18,679** | **18,679** |

# Region K Major Water Provider (MWP) Water Management Strategy (WMS) Summary

MWPs are entities of significance to a region's water supply as defined by the Regional Water Planning Group (RWPG) and may be a Water User Group (WUG) entity, Wholesale Water Provider (WWP) entity, or both (WUG/WWP).'MWP Retail Customers' denotes recommended WMS supply used by the WUG. 'Transfers Related to Wholesale Customers' denotes a WWP or WUG/WWP selling or transferring recommended WMS supply to another entity. Supply associated with the MWP's wholesale transfers will only display if it is listed as the main seller in the State Water Planning database, even if multiple sellers are involved with the sale o water to WUGs. Unallocated water volumes represent MWP recommended WMS supply not currently allocated to a customer of the MWP.'Total MWP Related WMS Supply' will display if the MWP's WMS is related to more than one WMS supply type (retail, wholesale, and/or unallocated). Associated WMS Projects are listed when the MWP is one of the project's sponsors. Report contains draft data and is subject to change.

**AUSTIN | AUSTIN - AQUIFER STORAGE AND RECOVERY**

| DATA DESCRIPTION | WATER VOLUMES (ACRE-FEET PER YEAR) | | | | | |
|---|---|---|---|---|---|---|
| | 2020 | 2030 | 2040 | 2050 | 2060 | 2070 |
| MWP RETAIL CUSTOMERS | 0 | 0 | 7,900 | 10,500 | 13,200 | 15,800 |
| **WMS RELATED MWP SPONSORED PROJECTS** | **PROJECT DESCRIPTION** | | | | | |
| AUSTIN - AQUIFER STORAGE AND RECOVERY | CONVEYANCE/TRANSMISSION PIPELINE; INJECTION WELL; MULTIPLE WELLS/WELL FIELD; PUMP STATION; WATER TREATMENT PLANT EXPANSION | | | | | |

**AUSTIN | AUSTIN - BLACKWATER AND GREYWATER REUSE**

| DATA DESCRIPTION | WATER VOLUMES (ACRE-FEET PER YEAR) | | | | | |
|---|---|---|---|---|---|---|
| | 2020 | 2030 | 2040 | 2050 | 2060 | 2070 |
| MWP RETAIL CUSTOMERS | 0 | 1,450 | 3,450 | 5,400 | 7,340 | 9,290 |
| **WMS RELATED MWP SPONSORED PROJECTS** | **PROJECT DESCRIPTION** | | | | | |
| AUSTIN BLACKWATER AND GREYWATER REUSE | STORAGE TANK | | | | | |

**AUSTIN | AUSTIN - BRACKISH GROUNDWATER DESALINATION**

| DATA DESCRIPTION | WATER VOLUMES (ACRE-FEET PER YEAR) | | | | | |
|---|---|---|---|---|---|---|
| | 2020 | 2030 | 2040 | 2050 | 2060 | 2070 |
| MWP RETAIL CUSTOMERS | 0 | 0 | 0 | 0 | 0 | 5,000 |
| **WMS RELATED MWP SPONSORED PROJECTS** | **PROJECT DESCRIPTION** | | | | | |
| AUSTIN - BRACKISH GROUNDWATER DESALINATION | CONVEYANCE/TRANSMISSION PIPELINE; INJECTION WELL; MULTIPLE WELLS/WELL FIELD; NEW WATER TREATMENT PLANT; STORAGE TANK; EVAPORATIVE POND; PUMP STATION | | | | | |

**AUSTIN | AUSTIN - CAPTURE LOCAL INFLOWS TO LADY BIRD LAKE**

| DATA DESCRIPTION | WATER VOLUMES (ACRE-FEET PER YEAR) | | | | | |
|---|---|---|---|---|---|---|
| | 2020 | 2030 | 2040 | 2050 | 2060 | 2070 |
| MWP RETAIL CUSTOMERS | 0 | 0 | 3,000 | 3,000 | 3,000 | 3,000 |

**AUSTIN | AUSTIN - CENTRALIZED DIRECT NON-POTABLE REUSE**

| DATA DESCRIPTION | WATER VOLUMES (ACRE-FEET PER YEAR) | | | | | |
|---|---|---|---|---|---|---|
| | 2020 | 2030 | 2040 | 2050 | 2060 | 2070 |
| MWP RETAIL CUSTOMERS | 500 | 2,990 | 10,250 | 14,583 | 18,917 | 23,250 |
| TRANSFERS RELATED TO WHOLESALE CUSTOMERS | 0 | 1,750 | 1,750 | 1,750 | 1,750 | 1,750 |
| TOTAL MWP RELATED WMS SUPPLY | 500 | 4,740 | 12,000 | 16,333 | 20,667 | 25,000 |
| **WMS RELATED MWP SPONSORED PROJECTS** | **PROJECT DESCRIPTION** | | | | | |
| AUSTIN - DIRECT REUSE | CONVEYANCE/TRANSMISSION PIPELINE; PUMP STATION; WATER TREATMENT PLANT EXPANSION; STORAGE TANK; NEW WATER TREATMENT PLANT | | | | | |

**AUSTIN | AUSTIN - COMMUNITY-SCALE STORMWATER HARVESTING**

| DATA DESCRIPTION | WATER VOLUMES (ACRE-FEET PER YEAR) | | | | | |
|---|---|---|---|---|---|---|
| | 2020 | 2030 | 2040 | 2050 | 2060 | 2070 |
| MWP RETAIL CUSTOMERS | 0 | 66 | 158 | 184 | 210 | 236 |
| **WMS RELATED MWP SPONSORED PROJECTS** | **PROJECT DESCRIPTION** | | | | | |
| AUSTIN COMMUNITY-SCALE STORMWATER HARVESTING | RAINWATER HARVESTING SYSTEM | | | | | |

**AUSTIN | AUSTIN - CONSERVATION**

# Region K Major Water Provider (MWP) Water Management Strategy (WMS) Summary

| DATA DESCRIPTION | WATER VOLUMES (ACRE-FEET PER YEAR) | | | | | |
|---|---|---|---|---|---|---|
| | 2020 | 2030 | 2040 | 2050 | 2060 | 2070 |
| MWP RETAIL CUSTOMERS | 4,910 | 14,890 | 24,870 | 30,120 | 35,370 | 40,620 |
| **WMS RELATED MWP SPONSORED PROJECTS** | **PROJECT DESCRIPTION** | | | | | |
| AUSTIN CONSERVATION | DATA GATHERING/MONITORING TECHNOLOGY; CONSERVATION - MUNICIPAL (DOES NOT INCLUDE METER REPLACEMENT OR WATER LOSS); WATER LOSS CONTROL | | | | | |

**AUSTIN | AUSTIN - DECENTRALIZED DIRECT NON-POTABLE REUSE**

| DATA DESCRIPTION | WATER VOLUMES (ACRE-FEET PER YEAR) | | | | | |
|---|---|---|---|---|---|---|
| | 2020 | 2030 | 2040 | 2050 | 2060 | 2070 |
| MWP RETAIL CUSTOMERS | 0 | 1,400 | 4,160 | 8,330 | 12,510 | 16,680 |
| **WMS RELATED MWP SPONSORED PROJECTS** | **PROJECT DESCRIPTION** | | | | | |
| AUSTIN - DECENTRALIZED DIRECT NON-POTABLE REUSE | NEW WATER TREATMENT PLANT; STORAGE TANK; WATER TREATMENT PLANT EXPANSION | | | | | |

**AUSTIN | AUSTIN - INDIRECT POTABLE REUSE THROUGH LADY BIRD LAKE**

| DATA DESCRIPTION | WATER VOLUMES (ACRE-FEET PER YEAR) | | | | | |
|---|---|---|---|---|---|---|
| | 2020 | 2030 | 2040 | 2050 | 2060 | 2070 |
| MWP RETAIL CUSTOMERS | 0 | 0 | 11,000 | 14,000 | 17,000 | 20,000 |
| **WMS RELATED MWP SPONSORED PROJECTS** | **PROJECT DESCRIPTION** | | | | | |
| AUSTIN - INDIRECT POTABLE REUSE THROUGH LADY BIRD LAKE | CONVEYANCE/TRANSMISSION PIPELINE; NEW SURFACE WATER INTAKE; PUMP STATION; WATER TREATMENT PLANT EXPANSION | | | | | |

**AUSTIN | AUSTIN - LAKE AUSTIN OPERATIONS**

| DATA DESCRIPTION | WATER VOLUMES (ACRE-FEET PER YEAR) | | | | | |
|---|---|---|---|---|---|---|
| | 2020 | 2030 | 2040 | 2050 | 2060 | 2070 |
| MWP RETAIL CUSTOMERS | 1,250 | 1,250 | 1,250 | 1,250 | 1,250 | 1,250 |

**AUSTIN | AUSTIN - LONGHORN DAM OPERATION IMPROVEMENTS**

| DATA DESCRIPTION | WATER VOLUMES (ACRE-FEET PER YEAR) | | | | | |
|---|---|---|---|---|---|---|
| | 2020 | 2030 | 2040 | 2050 | 2060 | 2070 |
| MWP RETAIL CUSTOMERS | 0 | 3,000 | 3,000 | 3,000 | 3,000 | 3,000 |
| **WMS RELATED MWP SPONSORED PROJECTS** | **PROJECT DESCRIPTION** | | | | | |
| AUSTIN - LONGHORN DAM OPERATIONS IMPROVEMENTS | WATER LOSS CONTROL; DATA GATHERING/MONITORING TECHNOLOGY; DIVERSION AND CONTROL STRUCTURE | | | | | |

**AUSTIN | AUSTIN - OFF-CHANNEL RESERVOIR AND EVAPORATION SUPPRESSION**

| DATA DESCRIPTION | WATER VOLUMES (ACRE-FEET PER YEAR) | | | | | |
|---|---|---|---|---|---|---|
| | 2020 | 2030 | 2040 | 2050 | 2060 | 2070 |
| MWP RETAIL CUSTOMERS | 0 | 0 | 0 | 0 | 0 | 25,827 |
| **WMS RELATED MWP SPONSORED PROJECTS** | **PROJECT DESCRIPTION** | | | | | |
| AUSTIN - OFF-CHANNEL RESERVOIR AND EVAPORATION SUPPRESSION | CONVEYANCE/TRANSMISSION PIPELINE; NEW SURFACE WATER INTAKE; PUMP STATION; RESERVOIR CONSTRUCTION; WATER LOSS CONTROL | | | | | |

**AUSTIN | AUSTIN - ONSITE RAINWATER AND STORMWATER HARVESTING**

| DATA DESCRIPTION | WATER VOLUMES (ACRE-FEET PER YEAR) | | | | | |
|---|---|---|---|---|---|---|
| | 2020 | 2030 | 2040 | 2050 | 2060 | 2070 |
| MWP RETAIL CUSTOMERS | 0 | 790 | 1,880 | 2,890 | 3,890 | 4,900 |
| **WMS RELATED MWP SPONSORED PROJECTS** | **PROJECT DESCRIPTION** | | | | | |
| AUSTIN ONSITE RAINWATER AND STORMWATER HARVESTING | RAINWATER HARVESTING SYSTEM | | | | | |

**AUSTIN | DROUGHT MANAGEMENT**

| | WATER VOLUMES (ACRE-FEET PER YEAR) |
|---|---|

# Region K Major Water Provider (MWP) Water Management Strategy (WMS) Summary

| DATA DESCRIPTION | 2020 | 2030 | 2040 | 2050 | 2060 | 2070 |
|---|---|---|---|---|---|---|
| MWP RETAIL CUSTOMERS | 8,266 | 9,708 | 11,281 | 12,423 | 13,389 | 14,666 |

| LOWER COLORADO RIVER AUTHORITY \| AUSTIN RETURN FLOWS | | | | | | |
|---|---|---|---|---|---|---|
| | WATER VOLUMES (ACRE-FEET PER YEAR) | | | | | |
| DATA DESCRIPTION | 2020 | 2030 | 2040 | 2050 | 2060 | 2070 |
| TRANSFERS RELATED TO WHOLESALE CUSTOMERS | 12,600 | 14,027 | 14,027 | 14,027 | 14,027 | 14,027 |
| RELATED UNALLOCATED WMS WATER VOLUMES | 7,144 | 15,249 | 14,560 | 14,723 | 12,971 | 12,510 |
| TOTAL MWP RELATED WMS SUPPLY | 19,744 | 29,276 | 28,587 | 28,750 | 26,998 | 26,537 |

| LOWER COLORADO RIVER AUTHORITY \| DOWNSTREAM RETURN FLOWS | | | | | | |
|---|---|---|---|---|---|---|
| | WATER VOLUMES (ACRE-FEET PER YEAR) | | | | | |
| DATA DESCRIPTION | 2020 | 2030 | 2040 | 2050 | 2060 | 2070 |
| TRANSFERS RELATED TO WHOLESALE CUSTOMERS | 0 | 3,000 | 3,000 | 3,000 | 3,000 | 4,200 |
| RELATED UNALLOCATED WMS WATER VOLUMES | 3,985 | 1,969 | 3,072 | 4,164 | 5,267 | 4,067 |
| TOTAL MWP RELATED WMS SUPPLY | 3,985 | 4,969 | 6,072 | 7,164 | 8,267 | 8,267 |

| LOWER COLORADO RIVER AUTHORITY \| LCRA - ACQUIRE ADDITIONAL WATER RIGHTS | | | | | | |
|---|---|---|---|---|---|---|
| | WATER VOLUMES (ACRE-FEET PER YEAR) | | | | | |
| DATA DESCRIPTION | 2020 | 2030 | 2040 | 2050 | 2060 | 2070 |
| RELATED UNALLOCATED WMS WATER VOLUMES | 0 | 250 | 250 | 250 | 250 | 250 |
| WMS RELATED MWP SPONSORED PROJECTS | PROJECT DESCRIPTION | | | | | |
| LCRA - ACQUIRE ADDITIONAL WATER RIGHTS | WATER RIGHT/PERMIT LEASE OR PURCHASE | | | | | |

| LOWER COLORADO RIVER AUTHORITY \| LCRA - AQUIFER STORAGE AND RECOVERY | | | | | | |
|---|---|---|---|---|---|---|
| | WATER VOLUMES (ACRE-FEET PER YEAR) | | | | | |
| DATA DESCRIPTION | 2020 | 2030 | 2040 | 2050 | 2060 | 2070 |
| RELATED UNALLOCATED WMS WATER VOLUMES | 0 | 0 | 12,973 | 12,973 | 12,973 | 12,973 |
| WMS RELATED MWP SPONSORED PROJECTS | PROJECT DESCRIPTION | | | | | |
| LCRA - AQUIFER STORAGE AND RECOVERY | CONVEYANCE/TRANSMISSION PIPELINE; INJECTION WELL; MULTIPLE WELLS/WELL FIELD; NEW WATER TREATMENT PLANT; PUMP STATION; STORAGE TANK; NEW SURFACE WATER INTAKE; DIVERSION AND CONTROL STRUCTURE | | | | | |

| LOWER COLORADO RIVER AUTHORITY \| LCRA - BAYLOR CREEK RESERVOIR | | | | | | |
|---|---|---|---|---|---|---|
| | WATER VOLUMES (ACRE-FEET PER YEAR) | | | | | |
| DATA DESCRIPTION | 2020 | 2030 | 2040 | 2050 | 2060 | 2070 |
| RELATED UNALLOCATED WMS WATER VOLUMES | 0 | 0 | 18,000 | 18,000 | 18,000 | 18,000 |
| WMS RELATED MWP SPONSORED PROJECTS | PROJECT DESCRIPTION | | | | | |
| LCRA - BAYLOR CREEK RESERVOIR | CONVEYANCE/TRANSMISSION PIPELINE; NEW SURFACE WATER INTAKE; PUMP STATION; RESERVOIR CONSTRUCTION; DIVERSION AND CONTROL STRUCTURE; WATER RIGHT/PERMIT AMENDMENT NO IBT | | | | | |

| LOWER COLORADO RIVER AUTHORITY \| LCRA - ENHANCED RECHARGE (MAR) | | | | | | |
|---|---|---|---|---|---|---|
| | WATER VOLUMES (ACRE-FEET PER YEAR) | | | | | |
| DATA DESCRIPTION | 2020 | 2030 | 2040 | 2050 | 2060 | 2070 |
| RELATED UNALLOCATED WMS WATER VOLUMES | 0 | 0 | 14,486 | 14,486 | 14,486 | 14,486 |
| WMS RELATED MWP SPONSORED PROJECTS | PROJECT DESCRIPTION | | | | | |
| LCRA - ENHANCED RECHARGE AND CONJUNCTIVE USE | CONVEYANCE/TRANSMISSION PIPELINE; MULTIPLE WELLS/WELL FIELD; NEW SURFACE WATEF INTAKE; PUMP STATION; RESERVOIR CONSTRUCTION; DIVERSION AND CONTROL STRUCTURE; NEW WATER RIGHT/PERMIT NO IBT; WATER RIGHT/PERMIT AMENDMENT NO IBT | | | | | |

| LOWER COLORADO RIVER AUTHORITY \| LCRA - EXCESS FLOWS RESERVOIR |
|---|

# Region K Major Water Provider (MWP) Water Management Strategy (WMS) Summary

| DATA DESCRIPTION | WATER VOLUMES (ACRE-FEET PER YEAR) | | | | | |
|---|---|---|---|---|---|---|
| | 2020 | 2030 | 2040 | 2050 | 2060 | 2070 |
| TRANSFERS RELATED TO WHOLESALE CUSTOMERS | 0 | 10,541 | 13,797 | 15,997 | 15,997 | 16,897 |
| RELATED UNALLOCATED WMS WATER VOLUMES | 0 | 28,706 | 25,450 | 23,250 | 23,250 | 22,350 |
| TOTAL MWP RELATED WMS SUPPLY | 0 | 39,247 | 39,247 | 39,247 | 39,247 | 39,247 |
| **WMS RELATED MWP SPONSORED PROJECTS** | **PROJECT DESCRIPTION** | | | | | |
| LCRA - EXCESS FLOWS PERMIT OFF-CHANNEL RESERVOIR | CONVEYANCE/TRANSMISSION PIPELINE; NEW SURFACE WATER INTAKE; PUMP STATION; RESERVOIR CONSTRUCTION; DIVERSION AND CONTROL STRUCTURE | | | | | |

**LOWER COLORADO RIVER AUTHORITY | LCRA - EXPAND USE OF GROUNDWATER (CARRIZO-WILCOX AQUIFER)**

| DATA DESCRIPTION | WATER VOLUMES (ACRE-FEET PER YEAR) | | | | | |
|---|---|---|---|---|---|---|
| | 2020 | 2030 | 2040 | 2050 | 2060 | 2070 |
| RELATED UNALLOCATED WMS WATER VOLUMES | 0 | 30 | 30 | 30 | 30 | 30 |
| **WMS RELATED MWP SPONSORED PROJECTS** | **PROJECT DESCRIPTION** | | | | | |
| EXPANSION OF CARRIZO-WILCOX AQUIFER SUPPLIES - LCRA | CONVEYANCE/TRANSMISSION PIPELINE; SINGLE WELL | | | | | |

**LOWER COLORADO RIVER AUTHORITY | LCRA - IMPORT RETURN FLOWS FROM WILLIAMSON COUNTY**

| DATA DESCRIPTION | WATER VOLUMES (ACRE-FEET PER YEAR) | | | | | |
|---|---|---|---|---|---|---|
| | 2020 | 2030 | 2040 | 2050 | 2060 | 2070 |
| TRANSFERS RELATED TO WHOLESALE CUSTOMERS | 0 | 0 | 2,500 | 7,000 | 15,000 | 25,000 |
| RELATED UNALLOCATED WMS WATER VOLUMES | 0 | 5,460 | 8,420 | 9,380 | 6,840 | 0 |
| TOTAL MWP RELATED WMS SUPPLY | 0 | 5,460 | 10,920 | 16,380 | 21,840 | 25,000 |
| **WMS RELATED MWP SPONSORED PROJECTS** | **PROJECT DESCRIPTION** | | | | | |
| LCRA - IMPORT RETURN FLOWS FROM WILLIAMSON COUNTY | CONVEYANCE/TRANSMISSION PIPELINE; PUMP STATION; STORAGE TANK; WATER TREATMEN PLANT EXPANSION; NEW WATER RIGHT/PERMIT EXEMPT IBT; NEW WATER RIGHT/PERMIT NON-EXEMPT IBT | | | | | |

**LOWER COLORADO RIVER AUTHORITY | LCRA - INTERRUPTIBLE WATER FOR AGRICULTURE (LCRA WMP AMENDMENTS)**

| DATA DESCRIPTION | WATER VOLUMES (ACRE-FEET PER YEAR) | | | | | |
|---|---|---|---|---|---|---|
| | 2020 | 2030 | 2040 | 2050 | 2060 | 2070 |
| TRANSFERS RELATED TO WHOLESALE CUSTOMERS | 63,495 | 25,797 | 13,105 | 0 | 0 | 0 |

**LOWER COLORADO RIVER AUTHORITY | LCRA - MID BASIN RESERVOIR**

| DATA DESCRIPTION | WATER VOLUMES (ACRE-FEET PER YEAR) | | | | | |
|---|---|---|---|---|---|---|
| | 2020 | 2030 | 2040 | 2050 | 2060 | 2070 |
| TRANSFERS RELATED TO WHOLESALE CUSTOMERS | 0 | 1,400 | 8,120 | 12,020 | 15,570 | 17,181 |
| RELATED UNALLOCATED WMS WATER VOLUMES | 0 | 18,600 | 11,880 | 7,980 | 4,430 | 2,819 |
| TOTAL MWP RELATED WMS SUPPLY | 0 | 20,000 | 20,000 | 20,000 | 20,000 | 20,000 |
| **WMS RELATED MWP SPONSORED PROJECTS** | **PROJECT DESCRIPTION** | | | | | |
| LCRA - MID-BASIN OFF-CHANNEL RESERVOIR | CONVEYANCE/TRANSMISSION PIPELINE; NEW SURFACE WATER INTAKE; PUMP STATION; RESERVOIR CONSTRUCTION; DIVERSION AND CONTROL STRUCTURE | | | | | |

**LOWER COLORADO RIVER AUTHORITY | LCRA - PRAIRIE SITE RESERVOIR**

| DATA DESCRIPTION | WATER VOLUMES (ACRE-FEET PER YEAR) | | | | | |
|---|---|---|---|---|---|---|
| | 2020 | 2030 | 2040 | 2050 | 2060 | 2070 |
| RELATED UNALLOCATED WMS WATER VOLUMES | 0 | 19,000 | 9,500 | 0 | 0 | 0 |
| **WMS RELATED MWP SPONSORED PROJECTS** | **PROJECT DESCRIPTION** | | | | | |
| LCRA - PRAIRIE SITE OFF-CHANNEL RESERVOIR | CONVEYANCE/TRANSMISSION PIPELINE; NEW SURFACE WATER INTAKE; PUMP STATION; RESERVOIR CONSTRUCTION; CANAL LINING; DIVERSION AND CONTROL STRUCTURE | | | | | |

**WEST TRAVIS COUNTY PUBLIC UTILITY AGENCY | DIRECT POTABLE REUSE**

| | WATER VOLUMES (ACRE-FEET PER YEAR) |
|---|---|

## Region K Major Water Provider (MWP) Water Management Strategy (WMS) Summary

| DATA DESCRIPTION | 2020 | 2030 | 2040 | 2050 | 2060 | 2070 |
|---|---|---|---|---|---|---|
| MWP RETAIL CUSTOMERS | 0 | 336 | 336 | 336 | 336 | 336 |
| **WMS RELATED MWP SPONSORED PROJECTS** | **PROJECT DESCRIPTION** | | | | | |
| DIRECT POTABLE REUSE - WEST TRAVIS COUNTY PUA | CONVEYANCE/TRANSMISSION PIPELINE; NEW WATER TREATMENT PLANT; PUMP STATION | | | | | |

| WEST TRAVIS COUNTY PUBLIC UTILITY AGENCY \| DIRECT REUSE | | | | | | |
|---|---|---|---|---|---|---|
| | **WATER VOLUMES (ACRE-FEET PER YEAR)** | | | | | |
| **DATA DESCRIPTION** | **2020** | **2030** | **2040** | **2050** | **2060** | **2070** |
| MWP RETAIL CUSTOMERS | 0 | 224 | 224 | 224 | 224 | 224 |
| **WMS RELATED MWP SPONSORED PROJECTS** | **PROJECT DESCRIPTION** | | | | | |
| DIRECT REUSE - WEST TRAVIS COUNTY PUA | CONVEYANCE/TRANSMISSION PIPELINE; PUMP STATION; STORAGE TANK | | | | | |

| WEST TRAVIS COUNTY PUBLIC UTILITY AGENCY \| DROUGHT MANAGEMENT | | | | | | |
|---|---|---|---|---|---|---|
| | **WATER VOLUMES (ACRE-FEET PER YEAR)** | | | | | |
| **DATA DESCRIPTION** | **2020** | **2030** | **2040** | **2050** | **2060** | **2070** |
| MWP RETAIL CUSTOMERS | 2,038 | 2,133 | 2,111 | 2,215 | 2,238 | 2,228 |

| WEST TRAVIS COUNTY PUBLIC UTILITY AGENCY \| GBRA - MBWSP | | | | | | |
|---|---|---|---|---|---|---|
| | **WATER VOLUMES (ACRE-FEET PER YEAR)** | | | | | |
| **DATA DESCRIPTION** | **2020** | **2030** | **2040** | **2050** | **2060** | **2070** |
| MWP RETAIL CUSTOMERS | 0 | 3,000 | 3,000 | 3,000 | 3,000 | 3,000 |
| **WMS RELATED MWP SPONSORED PROJECTS** | **PROJECT DESCRIPTION** | | | | | |
| HAYS COUNTY PIPELINE - REGION K PORTION | CONVEYANCE/TRANSMISSION PIPELINE; PUMP STATION; NEW CONTRACT | | | | | |

| WEST TRAVIS COUNTY PUBLIC UTILITY AGENCY \| LCRA - EXCESS FLOWS RESERVOIR | | | | | | |
|---|---|---|---|---|---|---|
| | **WATER VOLUMES (ACRE-FEET PER YEAR)** | | | | | |
| **DATA DESCRIPTION** | **2020** | **2030** | **2040** | **2050** | **2060** | **2070** |
| MWP RETAIL CUSTOMERS | 0 | 2,400 | 2,400 | 4,600 | 4,600 | 5,500 |
| **WMS RELATED MWP SPONSORED PROJECTS** | **PROJECT DESCRIPTION** | | | | | |
| SURFACE WATER INFRASTRUCTURE EXPANSION - WTCPUA | CONVEYANCE/TRANSMISSION PIPELINE; PUMP STATION; STORAGE TANK; SURFACE WATER INTAKE MODIFICATION | | | | | |

| WEST TRAVIS COUNTY PUBLIC UTILITY AGENCY \| MUNICIPAL CONSERVATION | | | | | | |
|---|---|---|---|---|---|---|
| | **WATER VOLUMES (ACRE-FEET PER YEAR)** | | | | | |
| **DATA DESCRIPTION** | **2020** | **2030** | **2040** | **2050** | **2060** | **2070** |
| MWP RETAIL CUSTOMERS | 1,008 | 2,279 | 3,644 | 5,460 | 7,360 | 9,370 |
| **WMS RELATED MWP SPONSORED PROJECTS** | **PROJECT DESCRIPTION** | | | | | |
| MUNICIPAL CONSERVATION - WEST TRAVIS COUNTY PUA | DATA GATHERING/MONITORING TECHNOLOGY; CONSERVATION - MUNICIPAL (DOES NOT INCLUDE METER REPLACEMENT OR WATER LOSS); WATER LOSS CONTROL | | | | | |

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# CHAPTER 1.0: INTRODUCTION AND DESCRIPTION OF THE LOWER COLORADO REGIONAL WATER PLANNING AREA

## 1.1 INTRODUCTION TO THE PLANNING PROCESS

Sections 16.051 and 16.055 of the Texas Water Code direct the Executive Administrator of the Texas Water Development Board (TWDB) to prepare and maintain a comprehensive State Water Plan. The overall goal of the State Water Plan is to address water supply needs at the local level with the consideration of balancing affordable water supply availability and conserving the State's natural resources and serves as a flexible guide for the development and management of all water resources in Texas.

In February 1998, the TWDB adopted rules establishing 16 regional water planning areas. Each planning area is responsible for preparing a consensus-based Regional Water Plan that will provide for the water needs of its region for the next 50 years. The TWDB incorporates the resulting Regional Water Plans into the State Water Plan, which is updated in 5-year cycles. Four previous Region K Water Plans have been completed (in years 2001, 2006, 2011, 2016) and were subsequently incorporated into the 2002, 2007, 2012 and 2017 State Water Plans. It is anticipated that the current cycle of Regional Water Plans will be finalized and adopted by January 2021. Subsequently, by approximately January 2022, the TWDB will prepare a new State Water Plan.

The Lower Colorado Regional Water Planning Area, initially designated by the TWDB as "Region K," encompasses all or part of 14 counties mostly within the Lower Colorado River Basin from the Hill Country to the Gulf of Mexico (*Figure 1.2*). The Lower Colorado Regional Water Planning Group (LCRWPG), representing the 11 TWDB-required interest groups, Groundwater Management Area representatives, and one additional regional interest group, is responsible for the development of the Lower Colorado Regional Water Plan (*Table 1.1*). The TWDB's guidelines require that each regional water plan include the following sections:

- Description of the region (Chapter 1)
- Population and water demand projections (Chapter 2)
- Estimates of currently available water supplies (Chapter 3)
- Identification of Water Needs (Chapter 4)
- Evaluation and selection of water management strategies, including a subsection on water conservation (Chapter 5)
- Impacts of selected water management strategies on key parameters of water quality and impacts of moving water from rural and agricultural areas (Chapter 6)
- Drought response information, activities, and recommendations (Chapter 7)
- Unique stream segments/reservoir sites and Legislative recommendations (Chapter 8)
- Report to Legislature on water infrastructure funding (Chapter 9)
- Public participation and education/input (Chapter 10)
- Report on implementation and comparison of the previous regional water plan (Chapter 11)

**Figure 1.1: TWDB Designated Regional Water Planning Areas**

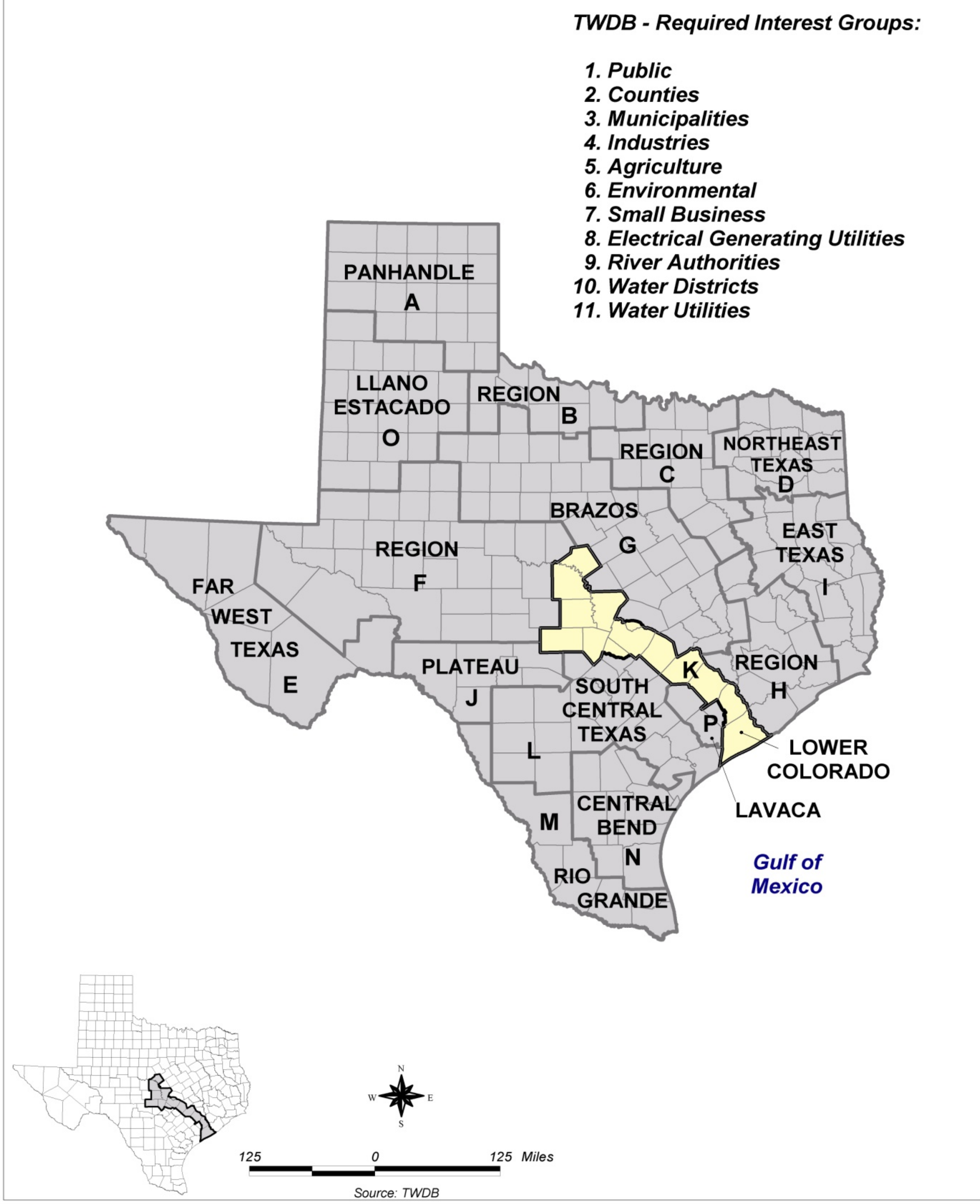


**Figure 1.2 Lower Colorado Regional Water Planning Area (Region K)**

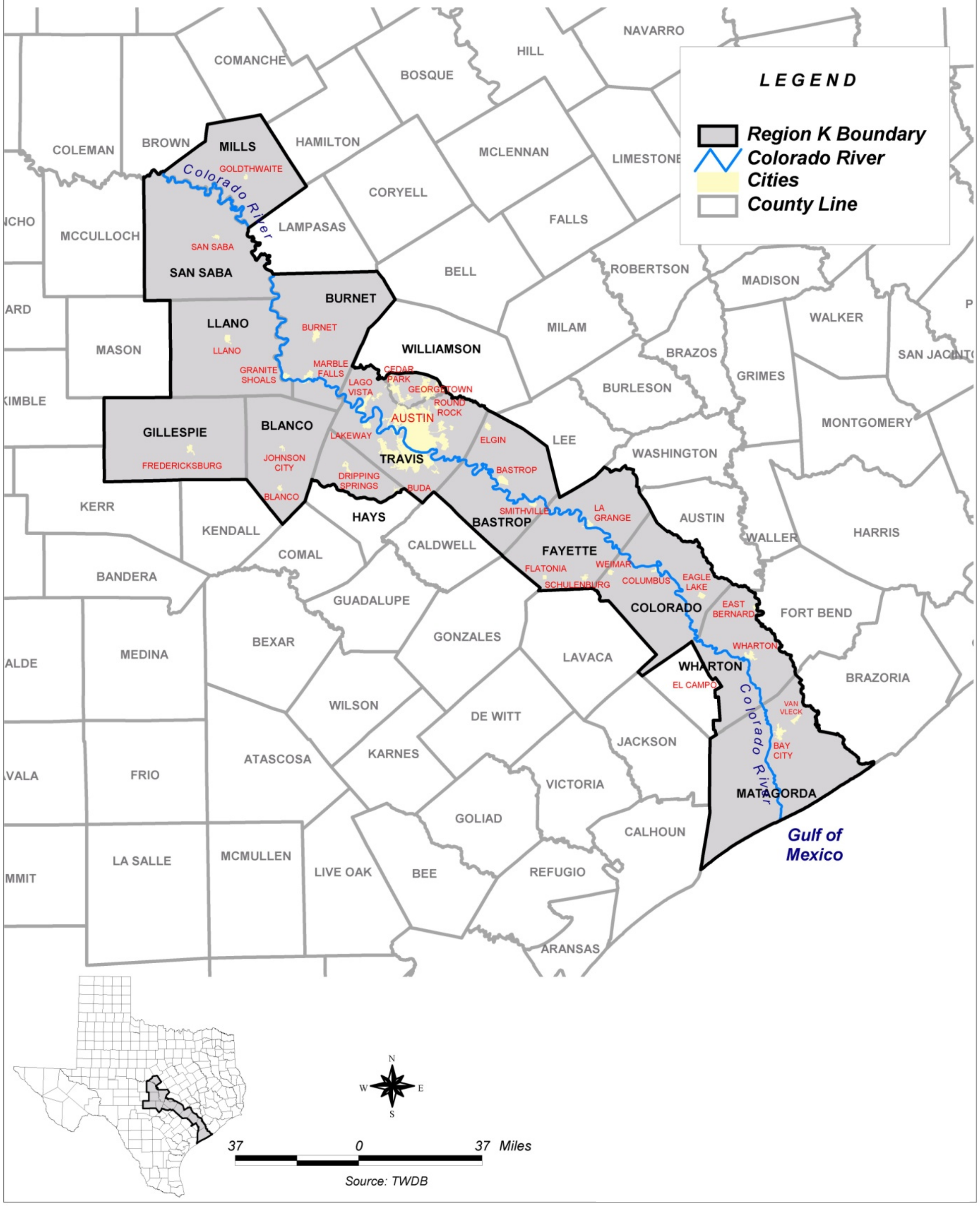


**Table 1.1a: The Lower Colorado Regional Water Planning Group Voting Members and Alternates**

| Interest | Name | Entity | County (Location of Interest) | Alternate Member |
|---|---|---|---|---|
| **Public** | Karen Haschke | League of Women Voters | Travis | Carol Olewin |
| **Counties** | Byron Theodosis | San Saba County Judge | San Saba | N/A |
| | James Sultemeier | Blanco County Commissioners Court | Blanco | Emil Uecker |
| | Jim Luther | Burnet County Commissioners Court | Burnet | Linda Raschke |
| **Municipalities** | Mike Reagor | City of Llano | Llano | Scott Edmonson |
| | Lauri Gillam | N/A | Travis | Earl Foster |
| | Teresa Lutes | City of Austin | Travis/Williamson | Marisa Flores Gonzalez |
| **Industries** | Barbara Johnson | N/A | Travis | Terry Bray |
| **Agricultural** | Charles Olfers | Gillespie County Commissioners Court | Gillespie | Keith Kramer |
| | Paul Sliva | Farmer | Matagorda | N/A |
| **Environmental** | Ann McElroy | Self / Water Advocate | San Saba | N/A |
| | Jennifer Walker | National Wildlife Federation, South Central Region | Travis | Charlie Flatten |
| **Small Businesses** | Daniel Berglund | Self / Farmer / Coastal Bend GCD | Wharton | Ronald Gertson |
| | Robert Ruggiero | Self / Consulting Hydrogeologist | Travis | Marcus Richardson |
| **Electric Generating Utilities** | Jason Ludwig | STP Nuclear Operating Company | Matagorda | Ken Cunningham |
| **River Authorities** | David Wheelock | Lower Colorado River Authority | Travis | Rebecca Batchelder |
| **Water Districts** | David Van Dresar | Fayette County Groundwater Conservation District | Fayette | N/A |
| **Water Utilities** | John Burke | John Burke and Associates | Bastrop | Christianne Castleberry |
| **Recreation** | David Lindsay | Central Texas Water Coalition | Travis | Doug Powell |
| **GMA 7** | Paul Tybor | Hill Country Underground Conservation District | Gillespie | N/A |
| **GMA 8** | Mitchell Sodek | Central Texas GCD | Burnet | Paul Babb |
| **GMA 9** | Ronald Fieseler | Blanco-Pedernales GCD | Blanco | Paul Babb |
| **GMA 10** | David Caldwell | GMA 10 | Hays/Travis | Robin Gary |
| **GMA 12** | Jim Totten | Lost Pines GCD | Bastrop | N/A |
| **GMA 15** | Jim Brasher | Colorado County GCD | Colorado | N/A |

**Table 1.1b: The Lower Colorado Regional Water Planning Group Nonvoting Members**

| Name | Entity |
|---|---|
| David Bradsby | Texas Parks & Wildlife Department |
| Rob Barthen | Texas Department of Agriculture |
| Rusty Ray | Texas State Soil & Conservation Board |
| Lann Bookout | Texas Water Development Board |

Texas is an extremely diverse state, both in climate and economics. This diversity requires the use of a variety of water management strategies, the combination of which will be unique for each of the 16 regions. The types of strategies that may be considered include, but are not limited to:

- expected/advanced water conservation
- drought management
- water reuse
- expanded use of existing supplies
- subordination of water rights
- new supply development
- yield enhancement measures
- inter-basin and emergency transfers

Water availability, economics, environmental concerns, and public acceptance were considered during the process of developing water management strategies within each region. The final Regional Water Plan must comply with all existing state and federal regulations regarding existing water rights, instream flows, bay/estuary freshwater inflows, water quality, threatened/endangered species, critical habitats, and sites of historical importance.

The overall goal of the State Water Plan is to address water supply needs at the local level with the consideration of balancing affordable water supply availability and conserving the State's natural resources.

## 1.2 DESCRIPTION OF THE LOWER COLORADO REGIONAL WATER PLANNING AREA

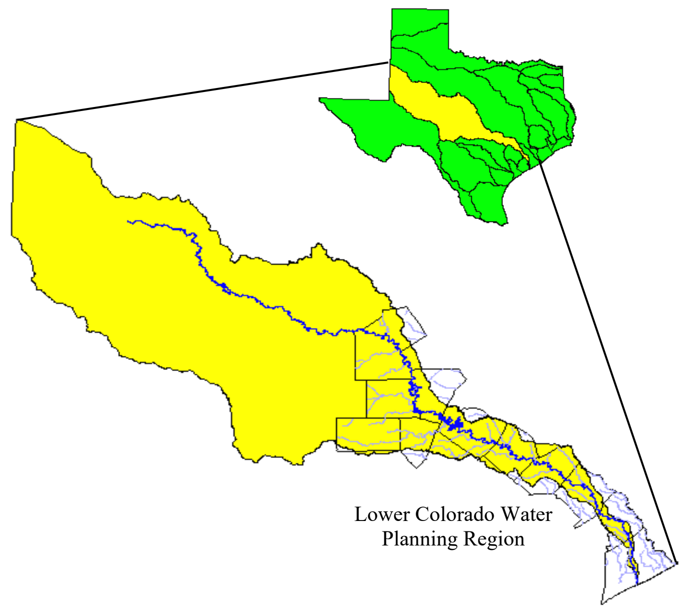
The Lower Colorado Regional Water Planning Area encompasses all or part of the following counties:

- Bastrop
- Blanco
- Burnet
- Colorado
- Fayette
- Gillespie
- Hays (partial)
- Llano
- Matagorda
- Mills
- San Saba
- Travis
- Wharton (partial)
- Williamson (partial)

Most of the Lower Colorado Region lies within the Colorado River Basin and crosses the Great Plains and the Coastal Plains physiographic provinces. The following sections provide a general description of the area's physical and socioeconomic characteristics, as well as water quality and natural resource issues of importance to the region.

## 1.2.1 Physical Characteristics of the Lower Colorado Regional Water Planning Area[1]

**Figure 1.3: The Colorado River Basin**




The headwaters of the Colorado River Basin are located in eastern New Mexico, and the basin extends approximately 900 miles to the Texas Gulf Coast, ending at Matagorda Bay as shown in *Figure 1.3*. The full extent of the basin exceeds the boundaries of the Lower Colorado Regional Planning Area. The Colorado River Basin is bordered by the Brazos River Basin to the north and east, and by the Guadalupe River and Lavaca River Basins to the south and west. The total drainage area of the Colorado River is 42,318 sq. mi, 11,403 sq. mi of which is considered non-contributory to the river's water supply. There are six major tributaries with drainage areas greater than 1,000 sq. mi that contribute to the Colorado River: Beall's Creek and the Concho River, above the Region K boundary; and the San Saba, Llano, and Pedernales Rivers as well as Pecan Bayou. All of these major tributaries and approximately 90 percent of the entire contributing drainage for the river occur upstream of Mansfield Dam near Austin. This dam is the primary regulator of water flow from its location south to the Gulf of Mexico. Downstream of Austin, there are only two tributaries with drainage areas greater than 300 sq. mi: Onion Creek in Travis County and Cummins Creek in Colorado County.

### *1.2.1.1 Geology of the Lower Colorado River Basin*[2, 3]

The northernmost boundary of the Lower Colorado Regional Planning Area lies in the Central Texas section of the Great Plains physiographic province (*Figure 1.4*). It is here that the Colorado River intersects the Llano Uplift; a broad, low relief but highly structured area exposing early Paleozoic and Precambrian igneous and metamorphic formations. In the northwestern portion of the region, the major southern tributaries and the Colorado River drain the Edwards Plateau section of the Great Plains province, which is characterized by Cretaceous- aged limestone formations overlain by Tertiary-aged sediments. The Colorado River meanders through these limestone deposits in relatively steep narrow canyons in this area; however, there are also flat-topped remnants of the once more extensive Edwards Plateau. At the eastern edge of the Edwards Plateau, the Edwards Aquifer outcrops at several locations along the Balcones Fault Zone (shown as the Balcones Escarpment on Figure 1.4), creating aquifer recharge zones and associated natural discharge points or springs, such as Barton Springs in Travis County. Typical soils (*Figure 1.5*) of the Llano Uplift are reddish-brown to brown, neutral to slightly acidic, calcareous, sandy loams. Soils mapped on the Edwards Plateau section typically consist of dark, deep to shallow, stony, calcareous clays.

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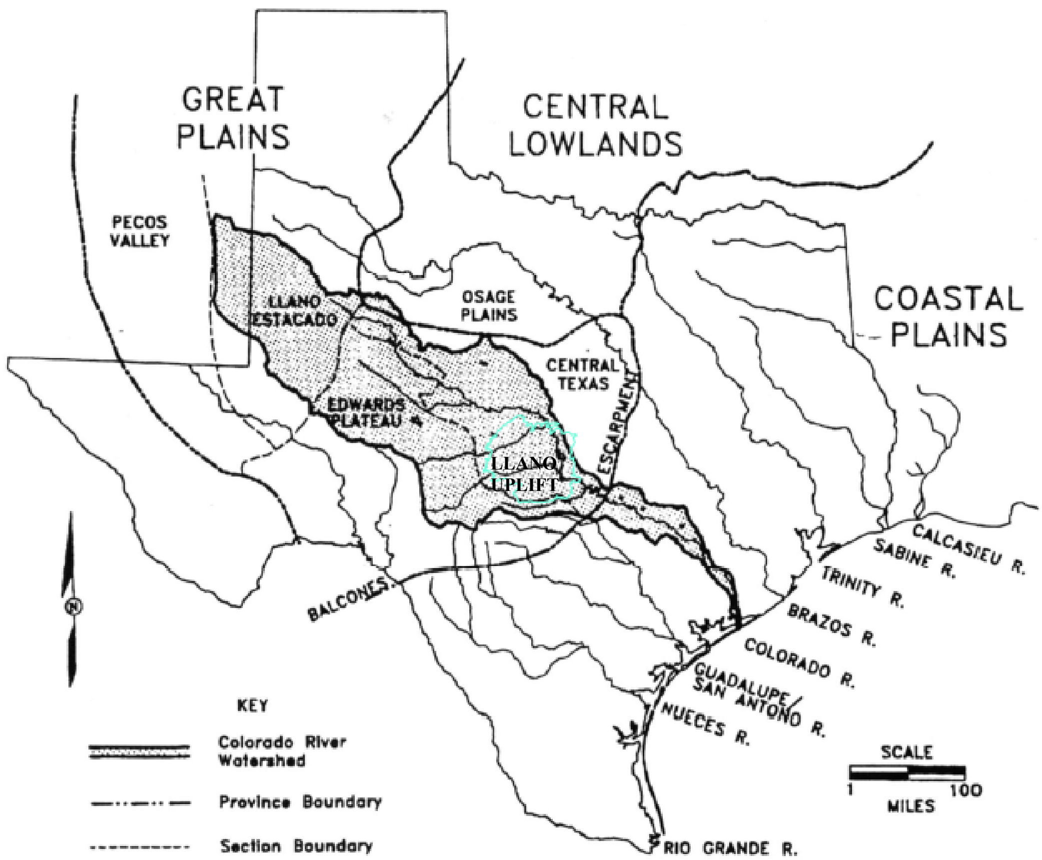
[1] Lower Colorado River Authority (LCRA), June 1992. *Instream Flows for the Lower Colorado River*, Final Report.
[2] LCRA, Op. Cit., June 1992.
[3] Texas Water Development Board (TWDB), May 1977. *Continuing Water Resource Planning and Development for Texas, Volume II.*

**Figure 1.4: Physiographic Provinces and Major Drainage Basins of the Western Gulf Slope**

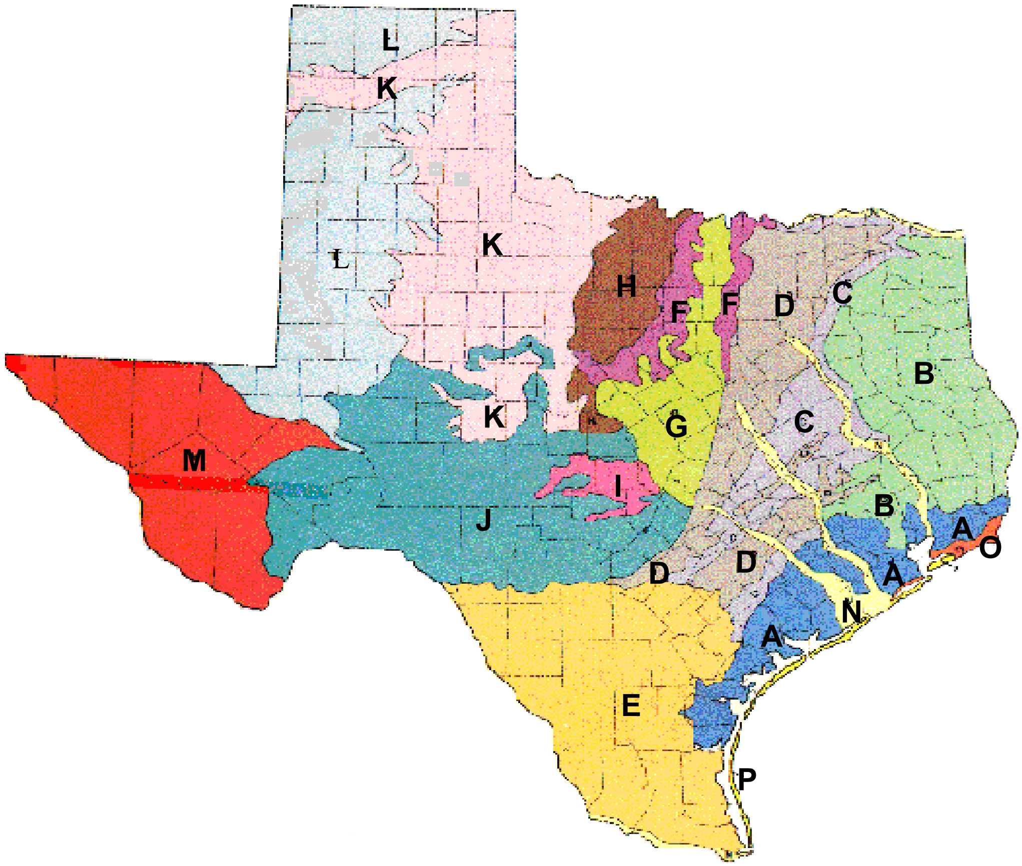
(Modified from Conner and Suttkus, 1977)




The Western Gulf Coast section of the Coastal Plains province contains the remaining 300 miles of the Colorado River south of the Balcones Fault Zone in Travis County to the Gulf of Mexico. The Western Gulf Coast section is characterized as an elevated sea bottom with low topographic relief ranging from low hills in the west to coastal flats. Surface geologic units mapped along this portion of the Colorado River include a relatively narrow band of Upper Cretaceous formations just southeast of the Balcones Fault Zone, followed by a belt of Tertiary deposits that outcrop from Bastrop County southeast to Colorado County. The remaining geologic units, from Colorado County to the Gulf of Mexico, are mapped as Quaternary-aged deposits. Sediments in the Western Gulf Coast section are composed primarily of marine deposits such as limestones, marls, and shales; however, the river valley also contains significant fluvial (river) terrace deposits of granitic assemblage, quartz and quartzite, chert, limestone, sandstone, siltstone, hornblende schist, silicified wood, and rip-up clasts. Colorado Basin soils in the Western Gulf Coast section are typically dark, neutral to slightly acidic, clay loams, and clays. Near the coast, soils become light, acidic sands, and darker, loamy to clayey soils.

**Figure 1.5: Soils of Texas**

(Source: Bureau of Economic Geology, 1977)




**A** Dark-colored, neutral to slightly acid clay loams & clays; some lighter colored sandy loams; acid soils mostly east of Trinity River.

**B** Light-colored, acid sandy loams, clay loams, & sands; some red soils & clays.

**C** Light-brown to dark-gray, acid sandy loams, clay loams, & clays.

**D** Dark-colored calcareous clays; some grayish-brown, acid sandy loams & clay loams along eastern edge of the major prairie & interspersed in minor prairies.

**E** Dark calcareous to neutral clays & clay loams; reddish-brown, neutral to slightly acid sandy loams; grayish-brown, neutral sandy loams & clay loams; some saline soils near coast.

**F** Light-colored, acid loamy sands & sandy loams.

**G** Dark-colored, deep to shallow clay loams, clays, & stony calcareous clays over limestone.

**H** Reddish-brown to grayish-brown, neutral to slightly acid sandy loams & clay loams; some stony soils.

**I** Reddish-brown to brown, neutral to slightly acid, gravelly & stony sandy loams.

**J** Dark, calcareous stony clays & clay loams.

**K** Dark-brown to reddish-brown, neutral to slightly calcareous sandy loams, clay loams, & clays.

**L** Dark-brown to reddish-brown neutral sands, sandy loams, & clay loams; some very shallow calcareous clay loams.

**M** Light reddish-brown to brown sands; clay loams & clays (mostly calcareous, some saline) & rough stony lands.

**N** Light-brown to reddish-brown, acid sandy loams; acid & calcareous clay loams & clays.

**O** Light- & dark-colored, acid sands, sandy loams, & clays.

**P** Tan, loose sand & shell material.

### *1.2.1.2 Climate*[4, 5, 6, 7]

The climate across the State of Texas varies considerably; however, there are no natural boundaries, and changes occur gradually from east to west. In general, average temperatures, rainfall, and the length of the growing season decrease from the east to the north and west. The upper atmospheric winds, or jetstreams, affect the large-scale weather patterns in the state. The polar jetstream affects the movement of cold arctic air masses from December through February. The moist warm air masses are brought to Texas from the Pacific Ocean by the subtropical jetstream, whose influence is most prevalent during the spring and fall.

Region K lies entirely within the warm-temperate/subtropical zone. The constant flow of warm tropical maritime air from the Gulf of Mexico produces a humid subtropical climate with hot summers across the lower third of the region. This maritime air combines with cooler and drier continental air further inland, which results in a subtropical climate with dry winters and humid summers in the remainder of the region. Winters in Region K typically are mild with frequent, short duration surges of colder continental air masses and strong northerly winds. Average annual net evaporation in Region K varies from 20 to 24 inches at the coast to approximately 44 inches in the uppermost portion of the region (*Figure 1.6*).

The amount of rainfall varies across the Lower Colorado Planning Region from an average of 48 inches at the coast to 24 inches in the northwestern portion of the region (*Figure 1.7*). The rainfall distribution pattern in this region has two peaks: spring is typically the wettest season with a peak in May, and a second peak usually occurs in September and October, coinciding with the tropical cyclone season in the late summer/early fall. The spring rains are typified by convective thunderstorms that produce high intensity, short duration precipitation events with rapid runoff. These thunderstorms are generally caused by successive frontal systems that move through the state. These weak cold air masses are overrun by warm Gulf moisture, and the line of instability that develops where the two air masses collide produces thunderstorms. The fall seasonal rains are primarily governed by tropical storms and hurricanes that originate in the Caribbean Sea or the Gulf of Mexico and make landfall on the coast from Louisiana to Mexico. As the storm moves inland, the coverage area for a single tropical cyclone event can be quite large and the storm severe, with wind and flood damage common. Fall cold fronts can also bring widespread, heavy rain events.

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[4] TWDB, Op. Cit., May 1977.
[5] Hatch, S. L., et al. July 1990. *Checklist of the Vascular Plants of Texas*. Texas Agricultural Experiment Station, College Station, Texas.
[6] Jones, B. D., 1990. *Texas Floods and Droughts. In National Water Summary 1988–1989*. U.S. Geological Survey, pp. 513–520.
[7] Nielson et al. January 2016. *The Effect of the Balcones Escarpment on Three Cases of Extreme Precipitation in Central Texas*

**Figure 1.6: Lower Colorado Regional Water Planning Area (Region K) Average Annual Net Evaporation**

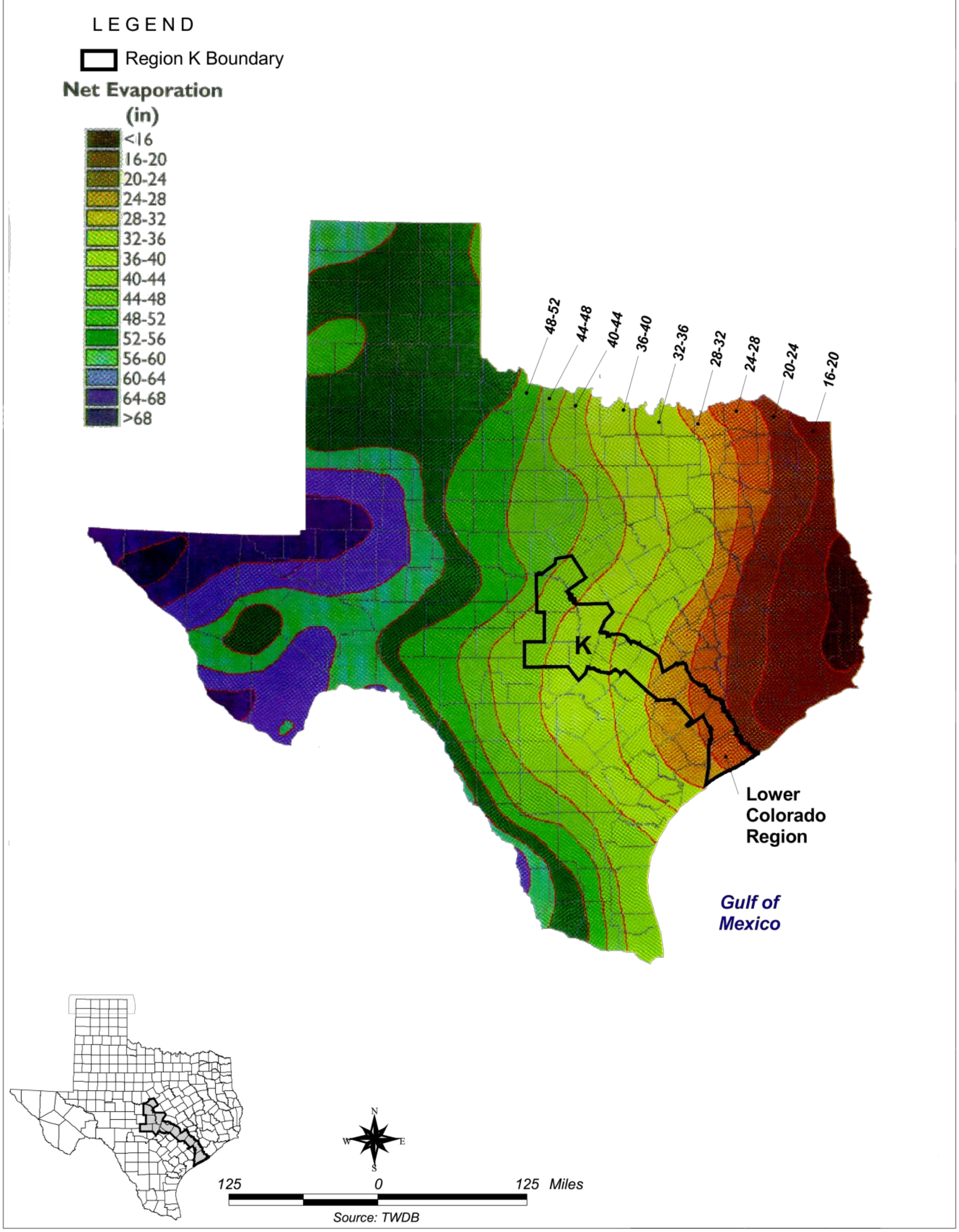
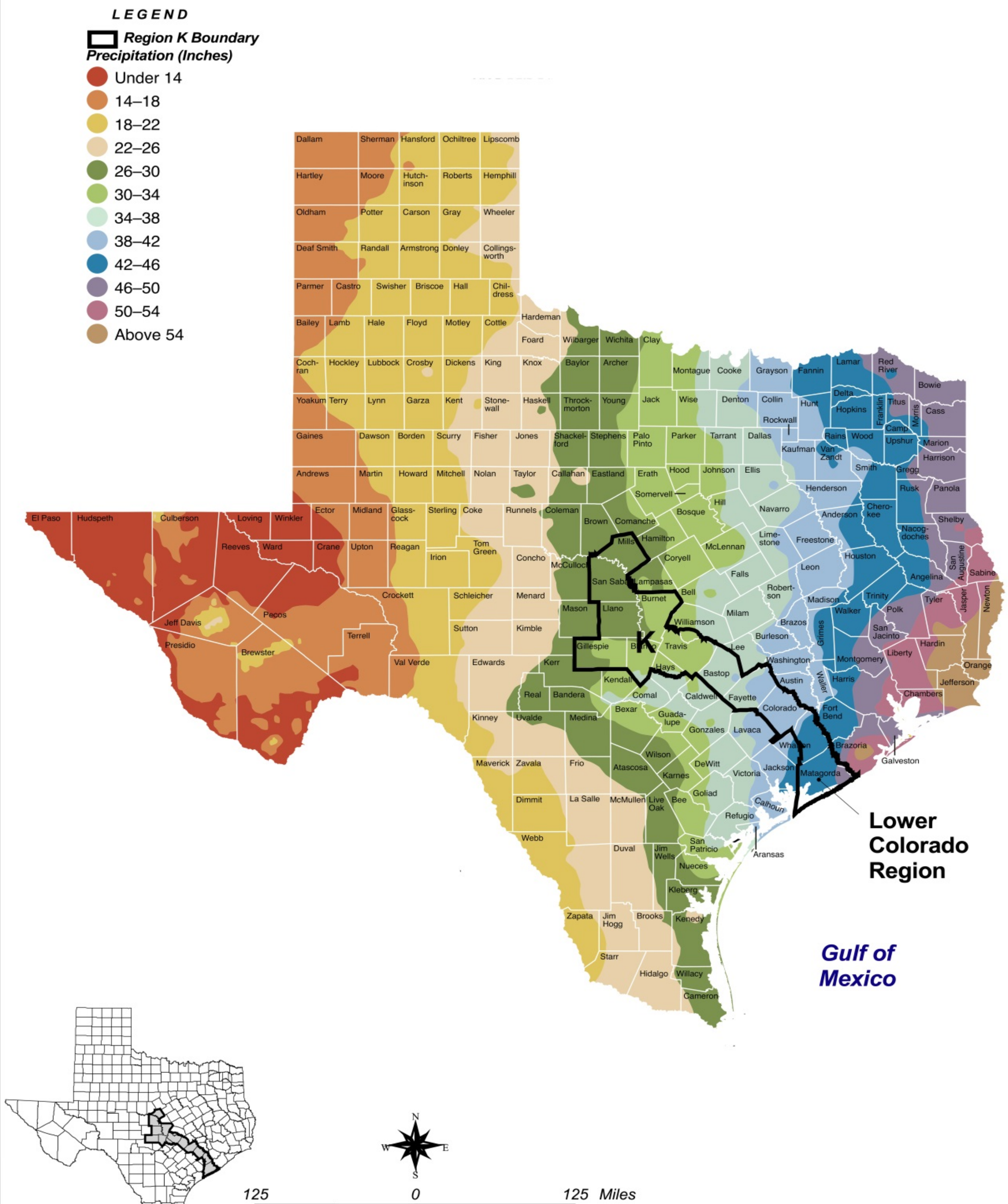


**Figure 1.7: Lower Colorado Regional Water Planning Area (Region K) Average Annual Precipitation**




Source: Texas Almanac 2018-2019

The hydrologic characteristics of the Colorado River are closely linked to the precipitation patterns that occur in the river basin, especially the cycles of floods and droughts, which are common in Texas. Major flood and drought events are those with statistical recurrence intervals greater than 25 years and 10 years, respectively. Streamflow gaging data collection began in the early 1900s, and the data show that there has been a major drought in almost every decade of the last 100 years. Droughts in Texas are primarily the result of the presence of a strong subtropical high-pressure cell, called a Bermuda High, which becomes stationary over the state and prevents low-pressure fronts from passing through the state. Major droughts can cause stock ponds and small reservoirs to go dry and large reservoirs, such as Lake Travis, can drop their storage levels to less than one-third their capacity. The average annual runoff during the period from 1941 to 1970 ranged from 350 ac-ft/sq. mi near the mouth of the Colorado River to less than 50 ac-ft/sq. mi in the westernmost portion of the basin's contributing zone, which translates to an overall basin average of 81 ac-ft/sq. mi. During this 30-year time period there were three major statewide droughts: 1947 to 1948, 1950 to 1957, and 1960 to 1967. These periods of drought saw average annual runoff values decrease 72 to 80 percent, to 16 to 23 ac-ft/sq. mi, which resulted in record low flows in the Colorado River. The most severe of these droughts occurred from 2007 to 2016, in which 95 percent of the counties in the state were declared disaster areas by the U.S Department of Agriculture. The second most severe drought was from 1950 to 1957, in which 94 percent of the counties in the state were declared disaster areas. Considering the 1940 to 2016 time period, the drought of record for Region K is the period 2007 to 2016, and this drought of record period was used in this regional water planning effort for estimating reservoir firm yields. In some, if not all cases, the lowest single year flows in the period of record occurred in 2011 and this critical year period defines the availability of water from run-of-river water rights. This is discussed in more detail in *Chapter 7* of this Plan.

The end of a drought cycle is often marked by one or more flooding events, allowing aquifers and man-made water storage facilities to recharge. The Balcones Escarpment lies in Central Texas with the Edwards Plateau to the West and coastal plains to the east. The escarpment marks the transition between Texas hill country and the rich arable lands of the coastal plains and has been thought to worsen the severe flooding in the Central Texas. The floodplains of the upper Colorado River and its tributaries are typically steep, narrow channels with rocky soils and sparse vegetative cover. During intense rain events this allows for rapid runoff, resulting in sharp-crested floods with high peak discharges and velocities. The orthographic ascent of the Balcones Escarpment may contribute to the concentration of heavy precipitation in the area as well as when warm moist air from the Gulf of Mexico goes up the coastal plains and then meets the higher elevations and steeper slopes of the escarpment. A study completed at Colorado State University in 2015 found through computer modeling of several flood events that the Balcones Escarpment worsens flooding by focusing precipitation in Central Texas. Downstream, the floodplains become wider with denser vegetation, which decreases these streamflow velocities; however, the massive volumes of water moving down the river basin can still cause a great deal of flood damage.

Areas expected to be most prone to flood damage in the Lower Colorado Planning Region are along Lake Travis and Lake Austin, and the Cities of Austin, La Grange, Columbus, Wharton, and Matagorda. The Hill Country in Central Texas has experienced more severe flood events than any other region of the country. From 1843 to 1938, there were 22 major floods along the Colorado River. One of the most intense localized flash floods in the Lower Colorado Planning Region in recent history occurred 24 May 1981 in Austin. This storm produced a flood with a recurrence level greater than 100 years, caused $40 million in damages, and was responsible for 13 deaths. Another intense event occurred on 27 June 2007 in Marble Falls. This storm produced a flood with a recurrence level of greater than 500 years. In 2013, the Onion Creek Watershed in Travis County experience a flood with a recurrence level greater than 100 years on October 31$^{st}$. The flood caused millions of dollars in damage and was responsible for several deaths. In 2015, flash flooding during Memorial Day weekend was responsible for 14 deaths across Central Texas. Hays and Blanco counties were most severely impacted, but additional flooding on Memorial Day affected areas of Williamson, Travis and Bastrop counties. In October 2018, after significant periods of low inflows to the Highland Lakes, rainfall levels caused severe flooding on the Llano River, Sandy Creek, and areas on the Highland Lakes, resulting in more than 1.3 million ac-ft of inflows to the Highland Lakes, the fourth highest of any month on record. As noted on the LCRA website, Lake Travis reached an elevation of 704.39 feet above mean sea level, its fifth highest elevation in history.

Historically, the coastal portion of the river basin is affected by hurricanes two of every five years. Hurricane Harvey, the wettest tropical cycle on record in the United States, hit Texas on 25 August 2017. A disaster declaration was issued for counties in the Lower Colorado Planning Region, including Colorado, Fayette, Matagorda, and Wharton counties; this list was later amended to include Bastrop County. Hurricane Harvey killed 68 people and caused an estimated $125 billion in damages in the state of Texas.

In 2018, the Texas Water Development Board prepared the *State Flood Assessment*, a report that included a history of flooding in Texas; the roles of local, state, and federal agencies relative to preparing for, mitigating, and recovering from floods; a summary of planning and infrastructure needs; and stakeholder input on how flood planning should proceed in the state. The report also discussed potential synergies between water supply and flood control.

As part of the City of Austin *Water Forward Plan*[8], the City of Austin analyzed the potential impacts of climate change on the City's future water needs. Their modeling efforts show while average rainfall can be expected to stay fairly constant over the next several decades, it is also expected that the periods of drought will increase in severity, interrupted by heavy precipitation. Accounting for these periods of drought and flood in planning future water supplies will be important.

### *1.2.1.3 Vegetational Areas*[9]

Natural regions, or vegetation areas, are based on the interaction of geology, soils, physiography, and climate. There are ten vegetational areas that cross the State of Texas and five of these intersect Region K (*Figure 1.8*). These are the Cross Timbers and Prairies, the Edwards Plateau, the Blackland Prairies, the Post Oak Savannah, and the Gulf Prairies and Marshes. Each of these vegetation areas is described below. *Figure 1.9* shows the dominant plant species that occur in Region K.

The **Cross Timbers and Prairies** vegetational area includes all of Mills County, most of Burnet County, the north portions of San Saba and Travis Counties, and the section of Williamson County within the Lower Colorado Planning Region. This region falls within the southern extension of the Central Lowlands and the western edge of the Coastal Plains physiographic provinces. There are sharp contrasts in topography, soils, and vegetation in this region due to the wide variety of geologic formations in the area. Elevations range from 500 feet to 1,500 feet above mean sea level. Cross Timber soils are typically of the orders Mollisol and Alfisol. In the East and West Cross Timbers subregions, soils range from light, slightly acid loamy sands and sandy loams with yellowish-brown to red clayey subsoils in the upland areas to dark, neutral to calcareous clayey bottomland soils, and loamy alluvial soils along minor streambeds. The North Central Prairies subregion is interspersed with sandstone and shaley ridges and hills. Uplands are brown sandy loam

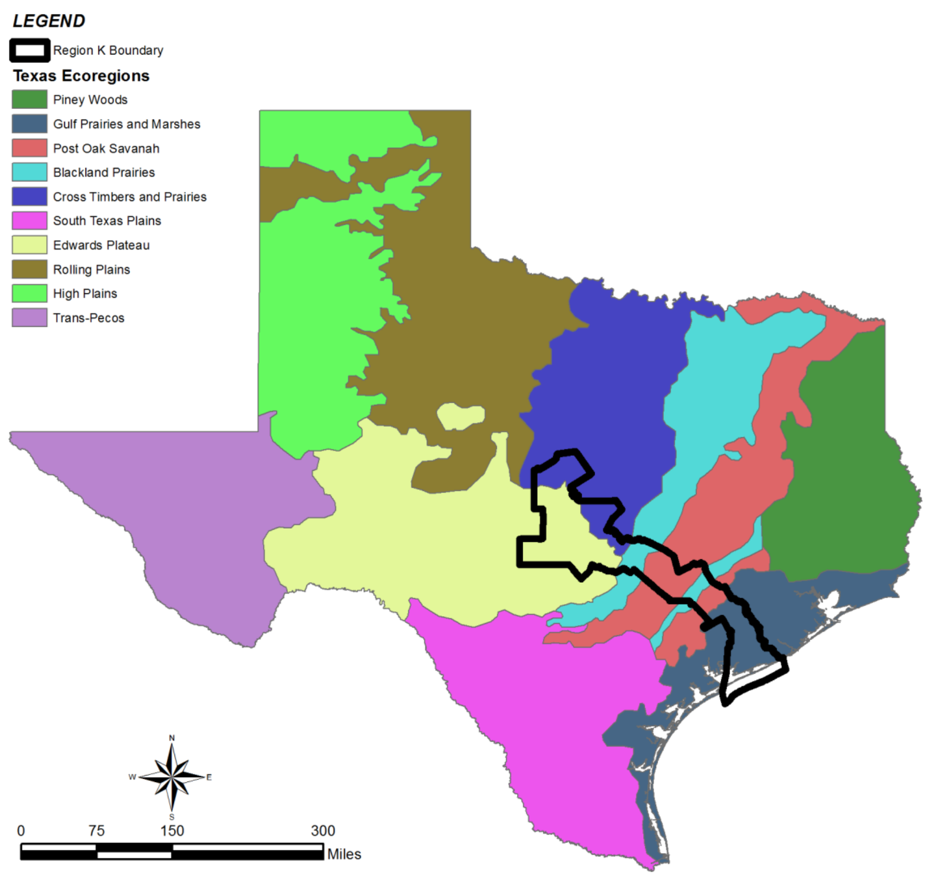
[8] *Water Forward Integrated Water Resource Plan*, Austin Water, November 2018.
[9] Hatch, et al., Op. Cit., July 1990.

to silt loam, slightly acid soils that overlay red to gray, neutral to alkaline clayey subsoils. The bottomlands have brown to dark gray, loamy, and clayey, neutral to calcareous, and alluvial soils.

The Cross Timbers and Prairies support tallgrasses such as big bluestem (*Andropogon gerardii*), little bluestem (*Schizachyrium scoparium*), Indiangrass (*Sorghastrum nutans*), switchgrass (*Panicum virgatum*), and Canada wildrye (*Elymus canadensis*), with minor populations of midgrasses and shortgrasses such as sideoats grama (*Bouteloua curtipendula*), blue grama (*B. gracilis*), hairy grama (*B. hirsuta*), Texas wintergrass (*Stipa leucotricha*), and buffalograss (*Buchloe dactyloides*). Overgrazing has allowed the midgrasses and shortgrasses to increase their range and has allowed the invasion of scrub oak (*Quercus turbinella*), honey mesquite (*Prosopis glandulosa*), and Ashe juniper (*Juniperus ashei*) in upland areas, as well as hairy tridens (*Erioneuron pilosum*), Texas grama (*Bouteloua rigidiseta*), red Bottomland trees

**Figure 1.8: Vegetational Areas of Texas**

Source: Texas Parks and Wildlife



include pecan (*Carya illinoensis*), oak (*Quercus*), and elm (*Ulmus*), with invasion of mesquite. Typical shrubs and vines include skunkbush (*Rhus aromatica*), saw greenbriar (*Smilax bona-nox*), bumelia (*Bumelia lanuginosa*), and poison ivy (*Rhus toxicodendron*). White-tailed deer (*Odocoileus virginianus*), raccoon (*Procyon lotor*), squirrel (*Sciurus spp*.), bob white quail (*Colinus virginianus*), and mourning dove (*Zenaida macroura*) are plentiful.

The **Edwards Plateau** vegetational area consists of an area of West Central Texas commonly known as the "Hill Country" and includes the majority of Hays County within the Lower Colorado Planning Region; all of Llano, Gillespie, and Blanco Counties; most of San Saba County; southern Burnet County; and western Travis County. The geologic formation known as the Balcones Escarpment forms the eastern and southern boundary of this region. Elevations range from 1,200 feet to over 3,000 feet above mean sea level, and the landscape is deeply dissected, hilly, rough, and well drained. Edwards Plateau soils are typically shallow Entisols, Mollisols, or Alfisols that have a variety of surface textures and are underlain by limestone.

Historically, the natural vegetation of the Edwards Plateau was grassland or open savannah-type plains with trees or brush along rocky slopes and streambeds. Tallgrasses such as cane bluestem (*Bothriochloa barbinodis*), big bluestem, little bluestem, Indiangrass, and switchgrass, are still common today along rocky outcrops and protected areas with good soil moisture. In areas with more shallow soils, tallgrasses have been replaced by midgrasses and shortgrasses such as sideoats grama, Texas grama, and buffalograss. Typical wildflowers are Engelmann daisy (*Engelmannia pinnatifida*), orange zexmania (*Wedelia hispida*), western ragweed (*Ambrosia psilostachya*), and sneezeweed (*Helenium quadridentatum*). Areas disturbed by over-grazing have been invaded by pricklypear (*Opuntia*), bitterweed (*Hymenoxys odorata*), broadleaf milkweed (*Asclepias latifolia*), smallhead sneezeweed (*H. microcephalum*), broomweeds (*Amphiachyris* and *Gutierrezia*), prairie coneflower (*Ratibida columnifera*), mealycup sage (*Salvia farinacea*), and tasajillo (*Opuntia leptocaulis*). Common woody species are live oak (*Quercus virginiana*), sand shin oak (*Quercus havardii*), post oak (*Quercus stellata*), mesquite, and juniper.

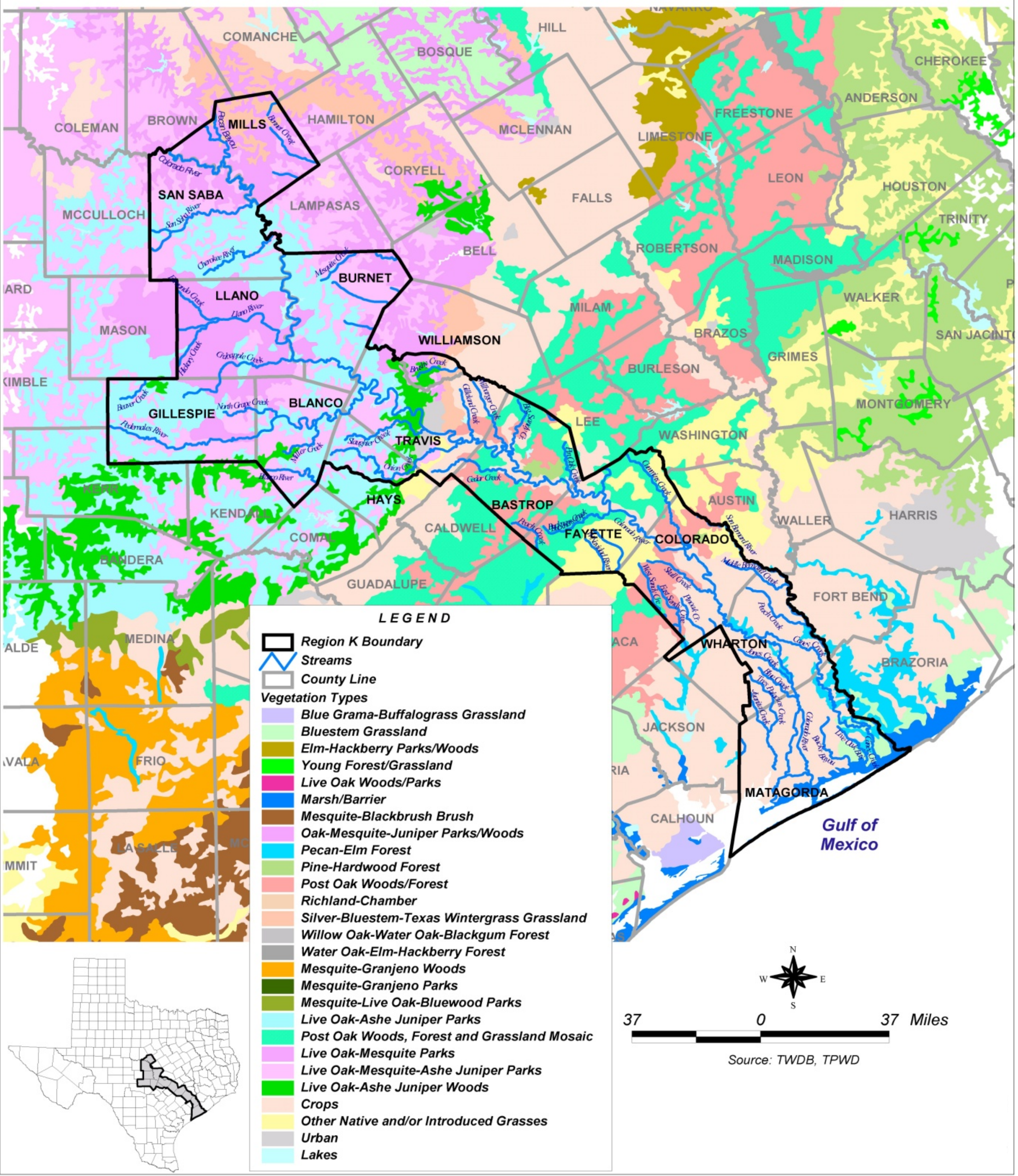
Land suitable for cultivation occurs only along narrow streams and divides within the Edwards Plateau region and in these areas tree orchards are common. The majority of the region is utilized as rangeland for the production of livestock and wildlife. This area was once one of the major wool and mohair producers in the country, providing up to 98 percent of the nation's mohair. Over the last three decades, however, many factors have contributed to the decline of the fiber industry including labor/shearer shortages, prices, changing land use, increase of predators (coyotes), and the loss of federal subsidies which had been paid by tariffs and opened foreign markets. The Edwards Plateau also supports the highest deer densities in North America, and exotic big game ranches have increased across the region.

Within Region K, the **Blackland Prairies** vegetational area occurs in eastern Travis County, several small sections of Bastrop County, portions of Fayette County and Colorado County, and a small area of Hays County. The characteristic topography is gently rolling hills to nearly level with well-defined contours for rapid surface drainage. Elevation varies from 250 to 700 feet above mean sea level. Major soil orders include Vertisols and Alfisols, which are naturally very productive and fertile. Upland soils are dark, calcareous, and clayey. Bottomland soils are typically reddish-brown to dark gray, slightly acid to calcareous, loamy to clayey to alluvial.

The Blackland Prairie once supported a tallgrass prairie dominated by big bluestem, little bluestem, Indiangrass, tall dropseed (*Sporobolus asper*), and Silveus dropseed (*S. silveanus*). Minor species including sideoats grama, hairy grama, Mead's sedge (*Carex meadii*), Texas wintergrass, and buffalograss have increased due to grazing pressure. Erosion and agricultural activities have decreased the productivity of these soils. Common wildflowers include asters (*Aster*), prairie bluet (*Hedyotis nigricans*), prairie-clover (*Petalostemon*), and late coneflower (*Rudbeckia serotina*). Typical legumes are snoutbeans (*Rhynchosia*), and vetch (*Vicia*). Areas disturbed by grazing and agriculture have been invaded by mesquite, huisache (*Acacia smallii*), oak, and elm trees. Oak, elm, cottonwood (*Populus deltoides*), and native pecan can be found in moist drainage areas. Isolated areas of Blackland Prairies are intermingled within the Post Oak Savannah vegetation area.

In the latter 19th and early 20th centuries, most of the Blackland Prairies vegetational area had been converted to cropland. Pastureland and livestock forage cropland began to increase in the 1950s, and by the year 2000 only 50 percent of the area was used for cropland. Significant game species include dove, bobwhite quail, and squirrel.

**Figure 1.9: Lower Colorado Regional Water Planning Area (Region K) Vegetation Distribution**



The **Post Oak Savannah** vegetational area within Region K occurs in most of Bastrop, Colorado, and Fayette Counties. The region is characterized by gently rolling, moderately dissected wooded plains with elevations between 300 feet and 800 feet above mean sea level. There are several areas of Blackland Prairie intermingled in the southern portion of the Post Oak Savannah. Typically shallow upland soils are gray, slightly acid sandy loams that overlay gray, mottled, or red, firm clayey subsoils. Infiltration-resistant claypan layers occur at varying soil depths, which impedes the percolation of moisture. Bottomland soils are reddish-brown to dark gray, slightly acid to calcareous, loamy to clayey alluvial.

Typically, short oak trees, such as post oak and blackjack oak (*Q. marilandica*), are interspersed among the tallgrass species of little bluestem, silver bluestem (*Bothriochloa saccharoides*), Indiangrass, switchgrass, and midgrass and shortgrass species of Texas wintergrass (*Stipa leucotricha*), purpletop (*Tridens flavus*), narrowleaf woodoats (*Chasmanthium sessiliflorum*), and beaked panicum (*Panicum anceps*). Elms, junipers, hickories (*Carya*), and hackberries (*Celtis*) are also common trees here. Shrubs and vines such as yaupon (*Ilex vomitoria*), American beautyberry (*Callicarpa americana*), coralberry (*Symphoricarpos orbiculatus*), greenbriar (*Smilax*), and grapes (*Vitis*) are typical. Historically, periodic wildfires have suppressed the overgrowth of brush and trees, and in their absence thickets tend to form. Wildflowers characteristic of the true prairie species include wild indigo (*Babtisia*), indigobush (*Amorpha fruticosa*), senna (*Cassia*), tickleclover (*Desmodium*), lespedezas (*Lespedeza*), prairie-clovers, western ragweed, crotons (*Croton*), and sneezeweeds.

The Post Oak Savannah was extensively cultivated through the 1940s; however, today many acres have been returned to native habitat or tame pastureland, which have been seeded with nonnative species such as bermudagrass, bahiagrass, weeping lovegrass, and clover. The region supports game species such as deer, squirrel, and quail.

The Bastrop County Complex fire, which ignited on September 4, 2011, struck Bastrop County, destroying over 1,600 residential structures and impacting 32,000 acres of land and habitat. According to Texas Parks and Wildlife officials, only 50-100 acres of the Bastrop State Park's 6,565-acre premises remained undamaged following the wildfire. The endangered Houston toad was believed to have lost the vast majority of its habitat in the fire. The Lost Pines Forest, a disjunct population of loblolly pine trees thought to have originated in or before the Pleistocene era, was heavily affected by the fire.

The **Gulf Prairies and Marshes** vegetational area encompasses all of Matagorda County, the entire portion of Wharton County within Region K, and the eastern tip of Colorado County. This is a 30- to 80-mile-wide strip of lowlands adjacent to the Texas coast from the Louisiana border to the Mexico border. The landscape consists of low, wet coastal marshes, and nearly flat, undissected plains with elevations from sea level to 250 feet. Marsh soils are typically dark, poorly drained, saline and sodic, sandy loams, and clays, and light neutral sands. Prairie soils are characterized by dark, neutral to slightly acid clay loams, and clays, with a narrow belt of light acid sands and darker loamy to clayey soils along the coast. Bottomland and delta soils are typically reddish-brown to dark gray, slightly acid to calcareous, loamy to clayey alluvial.

Original Gulf Prairie vegetation consisted of tallgrasses and post oak savannah. Today, however, trees and shrubs such as honey mesquite, oaks, acacia, and bushy sea-ox-eye (*Borrichia frutescens*) have formed thickets in many areas. Characteristic tallgrasses include gulf cordgrass (*Spartina spartinae*), big bluestem, little bluestem, Indiangrass, eastern gamagrass (*Tripsacum dactyloides*), gulf muhly (*Muhlenbergia capillaris*), tanglehead (*Heteropogon contortus*), as well as *Panicum* and *Paspalum* species. Typical wildflowers include asters, Indian paintbrush (*Castilleja indivisa*), poppy mallows (*Callirhoe*), phloxs (*Phlox*), bluebonnets (*Lupinus*), and evening primroses (*Oenothera*). Common invaders such as yankeeweed (*Eupatorium compositifolium*), broomsedge bluestem (*Andropogon virginicus*), smutgrass (*Sporobolus indicus*), western ragweed, tumblegrass (*Schedonnardus paniculatus*), threeawns (*Aristida*), pricklypear, and many annual wildflowers and grasses have increased their ranges. Saline Gulf Marsh areas support species of sedges (*Carex* and *Cyperus*), rushes (*Juncus*), bulrushes (*Scirpus*), cordgrasses (*Spartina*), seashore saltgrass (*Distichlis spicata*), common reed (*Phragmites australis*), marshmillet (*Zizaniopsis miliacea*), longtom (*Paspalum lividum*), seashore dropseed (*Sporobolus virginicus*), and knotroot bristlegrass (*Setaria geniculata*). Marshmillet and maidencane (*Panicum hemitomon*) are two important freshwater grass species found in the upper coast. Typical aquatic forbs include pepperweeds (*Lepidium*), smartweeds (*Polygonum*), docks (*Rumex*), bushy seedbox (*Ludwigia alternifolia*), green parrotfeather (*Myriophyllum pinnatum*), pennyworts (*Hydrocotyle*), water lilies (*Nymphaea*), narrowleaf cattail (*Typha domingensis*), spiderworts (*Tradescantia*), and duckweeds (*Lemna*). Common halophytic herbs and shrubs found on the salty sands of the coast include spikesedges (*Eleocharis*), fimbries (*Fimbrystalis*), glassworts (*Salicornia*), sea-rockets (*Cakile*), maritime saltwort (*Batis maritima*), morning glories (*Ipomoea*), and bushy sea-ox-eye.

The low coastal marshes of the Gulf Prairies and Marshes vegetational area provide excellent habitat for upland game and waterfowl. Higher elevations of the marshes are used for livestock and wildlife production. These coastal marshes and barrier islands contain most of the State's National Seashore parks. Urban, industrial, and recreational developments have been increasing in this region and cultivation has never been of much importance due to the saline soils and recurrent flooding of the area. However, approximately one-third of the inland prairies region is cultivated. This is also the major area of irrigated crop production, consisting primarily of rice cultivation, for the entire Lower Colorado Region. Bermudagrass and several bluestem species are common in tamed pasturelands.

#### *1.2.1.4 Water Resources* [10, 11]

The primary surface water feature of Region K is the Colorado River. *Figure 1.10* displays the surface water hydrology characteristics of the region. The major sources of surface water supplies in the region are the Highland Lakes system and the run-of-the-river (ROR) water from the Colorado River. ROR water rights allow permit holders to divert water directly from a watercourse up to their permitted amounts if the water is present in the river and after senior priority rights are satisfied. Tributary ROR water rights and off-channel storage are also utilized by several water user groups (WUGs). In addition, a small portion of the planning region's surface water supply comes from local supplies within adjacent river basins. There are 16 water reservoirs within the Region K boundaries: Goldthwaite, Blanco, Llano (2), South Texas Project Nuclear Operating Company (STPNOC), and Cedar Creek reservoirs, Lake Bastrop, Lady Bird Lake, Lake Walter E. Long, the Highland Lakes system (Lakes Buchanan, Inks, LBJ, Marble Falls, Travis, and Austin), and the new Arbuckle Reservoir. The major Colorado River ROR water rights holders (based on firm yield) in Region K are the Lower Colorado River Authority (LCRA), City of Austin (COA), and STP Nuclear Operating Company. The City of Corpus Christi, located in Region N, and the Colorado River Municipal Water District, located in Region F immediately upstream of Region K, are also major water right holders on the Colorado River. Region K also has many springs, which are the transition from groundwater to surface water. Overall, there are approximately 43 major and significant springs in Region K, with 19 of those in San Saba County. Other counties with significant springs include Bastrop, Blanco, Burnet, Fayette, Gillespie, Hays, Llano, and Travis. For more information on the springs within Region K,

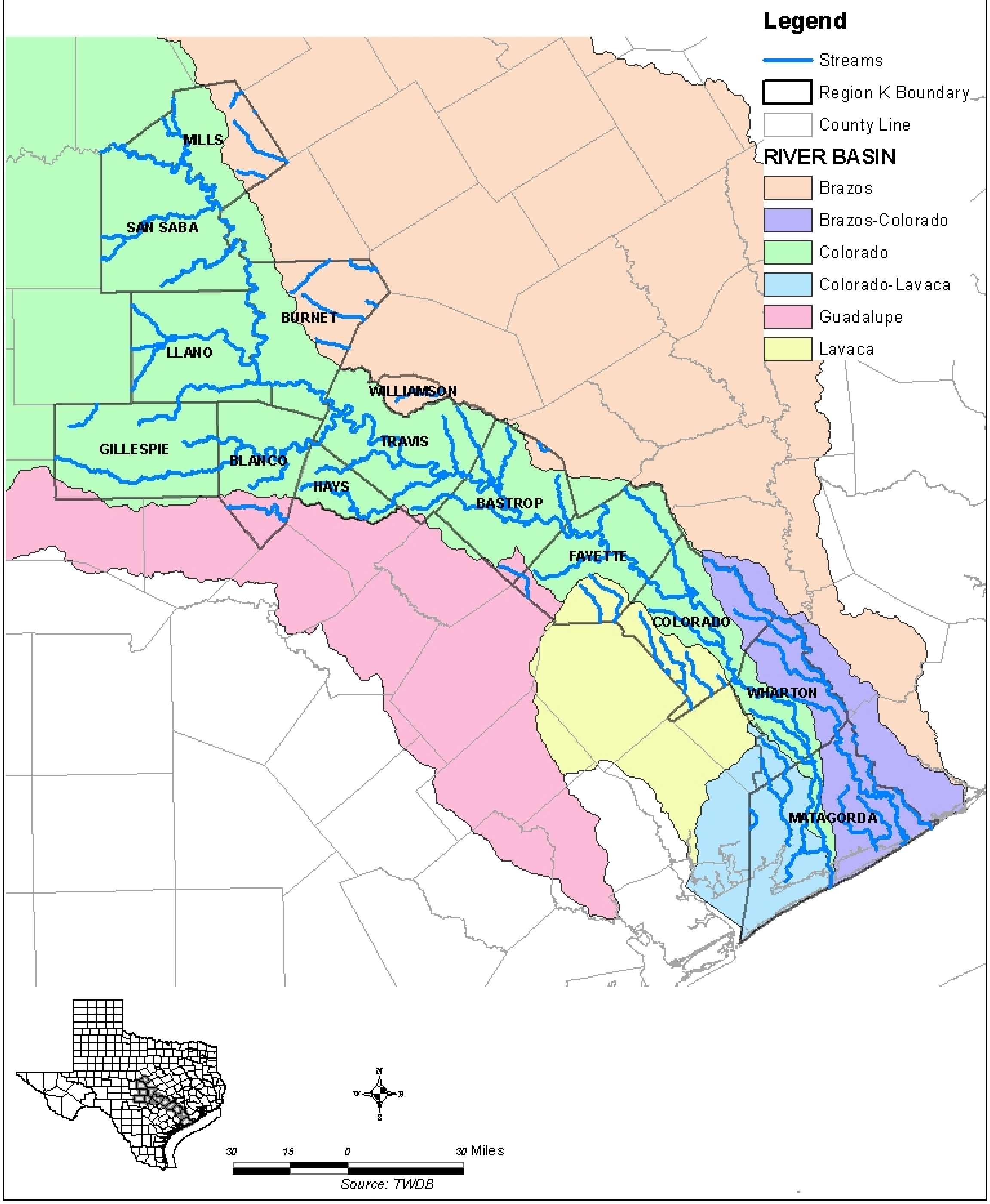
[10] Dallas Morning News, 1999. *Texas Almanac 2000-2001, 60th Edition*, Texas A&M Press.
[11] Texas Water Development Board (TWDB), November 1995. *Aquifers of Texas, Report 345*.

please refer to <u>*Texas Water Development Board Report 189: Major and Historical Springs of Texas*</u>, *by Gunnar Brune, March 1975*.

Large quantities of fresh to slightly saline groundwater underlie more than 81 percent of the land in Texas. There are nine "major" aquifers that can produce large quantities of fresh water over a large area, and 21 "minor" aquifers that yield smaller amounts of fresh water over smaller geographic areas. At present, approximately 60 percent of the annual water consumption in the state is derived from the major and minor aquifers in Texas, 75 percent of which is used for irrigation. Of these 30 aquifers, five major and six minor aquifers occur within Region K. The five major aquifers are the Carrizo-Wilcox, Edwards (Balcones Fault Zone [BFZ]), Edwards-Trinity (Plateau), Gulf Coast, and Trinity (*Figure 1.11*). These aquifers tend to run in curved belts northeast to southwest across the state. In Gillespie County, the Edwards-Trinity (Plateau) and Trinity aquifers have been determined to be undifferentiated for planning purposes and have been combined into one aquifer in this plan, referred to as the Edwards-Trinity (Plateau), Pecos Valley, and Trinity Aquifer. More information on this aquifer is provided in Chapter 3.

The northern most major aquifer in Region K is the Trinity, which has both unconfined water-table and pressurized artesian zones, and covers portions of Mills, Burnet, Gillespie, Blanco, Travis, Hays, and Bastrop Counties. Within the region, the Trinity aquifer contains two major early Cretaceous age formations: the Antlers formation, which consists of a maximum of 900 feet of sand and gravel, with clay beds in the middle section; and the Travis Peak formation, which contains calcareous sands and silts, conglomerates, and limestones. West of the Trinity aquifer in Gillespie County is a small eastern water-table portion of the Edwards-Trinity (Plateau) aquifer. Within the planning region, the Edwards-Trinity (Plateau) aquifer contains saturated sediments of lower Cretaceous age formations and overlying limestones and dolomites. Maximum saturated thickness of the aquifer is 800 feet; however, the eastern portion of the aquifer in Gillespie County is thinner. Overlying a portion of the Trinity artesian zone is the Edwards (BFZ) aquifer, which covers portions of Hays, Travis, and Williamson Counties within Region K. In this area, the aquifer contains both unconfined and artesian zones and feeds the well-known recreational Barton Springs, which contributes an estimated average of 50 cubic feet per second (cfs) of flow to the Colorado River. The Edwards BFZ is primarily composed of early Cretaceous age limestone deposits that have a thickness ranging between 200 feet and 600 feet. This aquifer has a high permeability and transmissivity, making it heavily dependent on consistent recharge and extremely sensitive to environmental stresses. Southeast of the Trinity is the Carrizo-Wilcox aquifer in portions of Bastrop and Fayette Counties. This aquifer contains both water-table and artesian zones and consists of two hydrologically connected formations, the Wilcox Group and the overlying Carrizo formation, which are predominantly composed of Tertiary age sand that is imbedded with gravel, silt, clay, and lignite. The thickness of the artesian zone ranges from 200 feet to 3,000 feet. The southernmost and largest major aquifer within Region K is the Gulf Coast aquifer, which stretches continuously from southeastern Fayette County through Matagorda County. This portion of the aquifer is described as a leaky artesian system, which is composed of Cenozoic age complex interbedded clays, silts, sands, and gravel. In some areas near the Gulf Coast, heavy pumping has caused the intrusion of saltwater into aquifer layers that previously had good water quality. The physical characteristics of this aquifer make it susceptible to dewatering, or a permanent compaction of the clay layer and loss of water storage capacity, as a result of overuse of the aquifer. This compaction can also cause subsidence of surface land overlying the aquifer, which can contribute to flood and structural damage in the area.

**Figure 1.10: Lower Colorado Regional Water Planning Area (Region K) Surface Water Hydrology**



The minor aquifers occurring within Region K are the Ellenburger-San Saba, Hickory, Marble Falls, Queen City, Sparta, and Yegua-Jackson (*Figure 1.12*). All six of these aquifers contain unconfined zones and pressurized artesian zones. The Ellenburger-San Saba, Hickory, and Marble Falls aquifers occur in the northwestern portion of the planning region, have discontinuous circular coverage areas, and overlap one another. The Hickory aquifer is composed of the Hickory Sandstone Member of the Cambrian Riley formation, which contains some of the oldest sedimentary rocks found in Texas. This aquifer has a maximum thickness of 480 feet. The Ellenburger-San Saba aquifer has the same general shape as the Hickory and is composed of late Cambrian age limestone and dolomite. San Saba Springs is thought to be supplied primarily by the Ellenburger-San Saba and Marble Falls aquifers, which may be hydrologically connected in some areas. The Marble Falls aquifer occurs in several disconnected outcrops of Pennsylvanian age limestone that form fractures, solution cavities, and channels. The maximum thickness of this aquifer is 600 feet. Numerous large springs are fed by the Marble Falls aquifer, which provide a substantial portion of baseflow to the San Saba and Colorado Rivers in San Saba County. The Queen City, Sparta, and Yegua-Jackson aquifers overlap one another across southeastern Bastrop and northwestern Fayette Counties. The Queen City aquifer is composed of Tertiary age sand, loosely cemented sandstone, and interbedded clay. The maximum thickness of this aquifer is less than 500 feet. The Sparta aquifer overlies the downdip portion of the Queen City aquifer and consists of Tertiary age sand and interbedded clay. The Yegua-Jackson aquifer consists of interbedded sands, silts, and clays.

Surface water and groundwater supply availabilities for Region K are discussed in *Chapter 3* of this report.

**Figure 1.11: Lower Colorado Regional Water Planning Area (Region K) Major Aquifers**

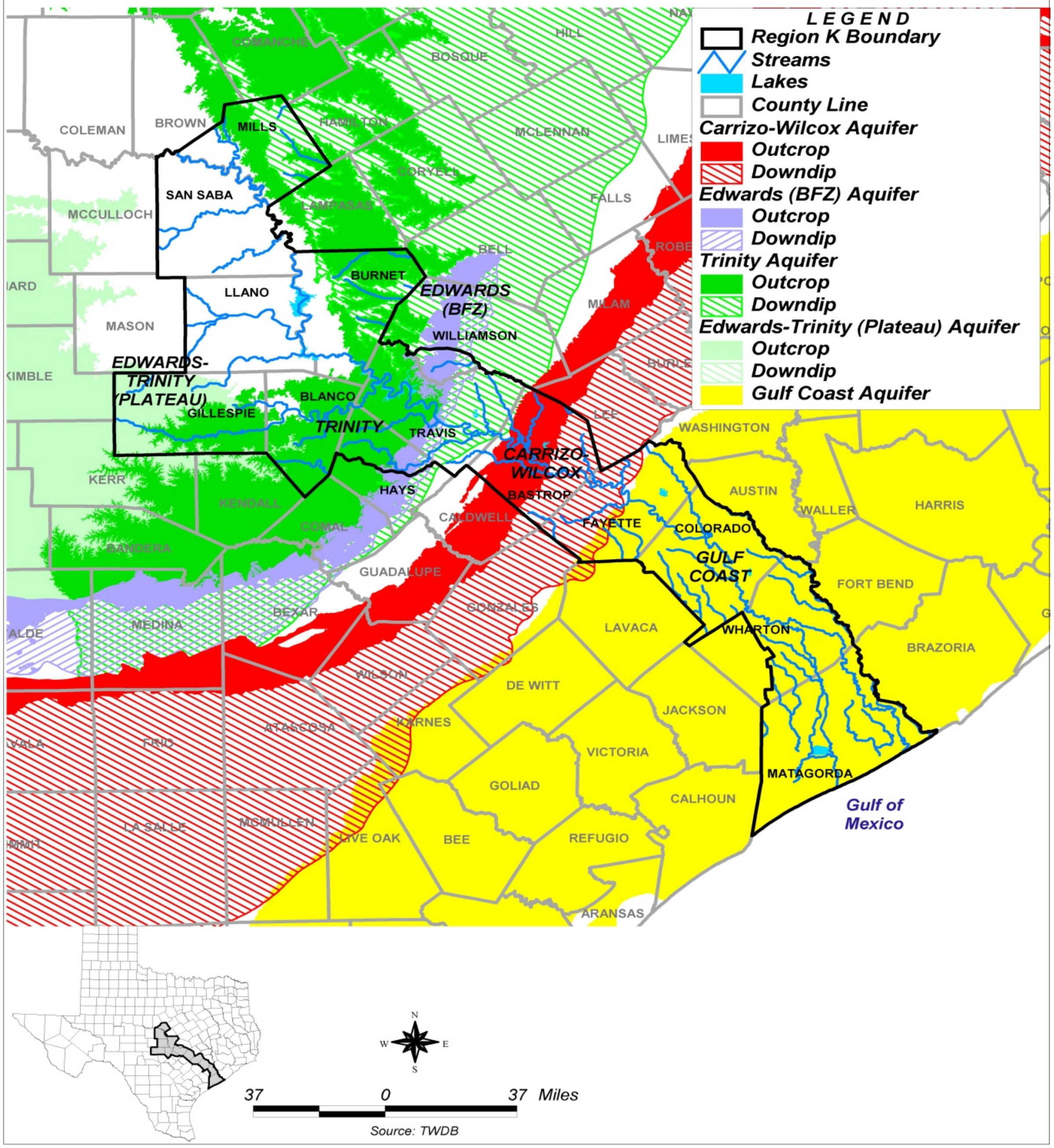
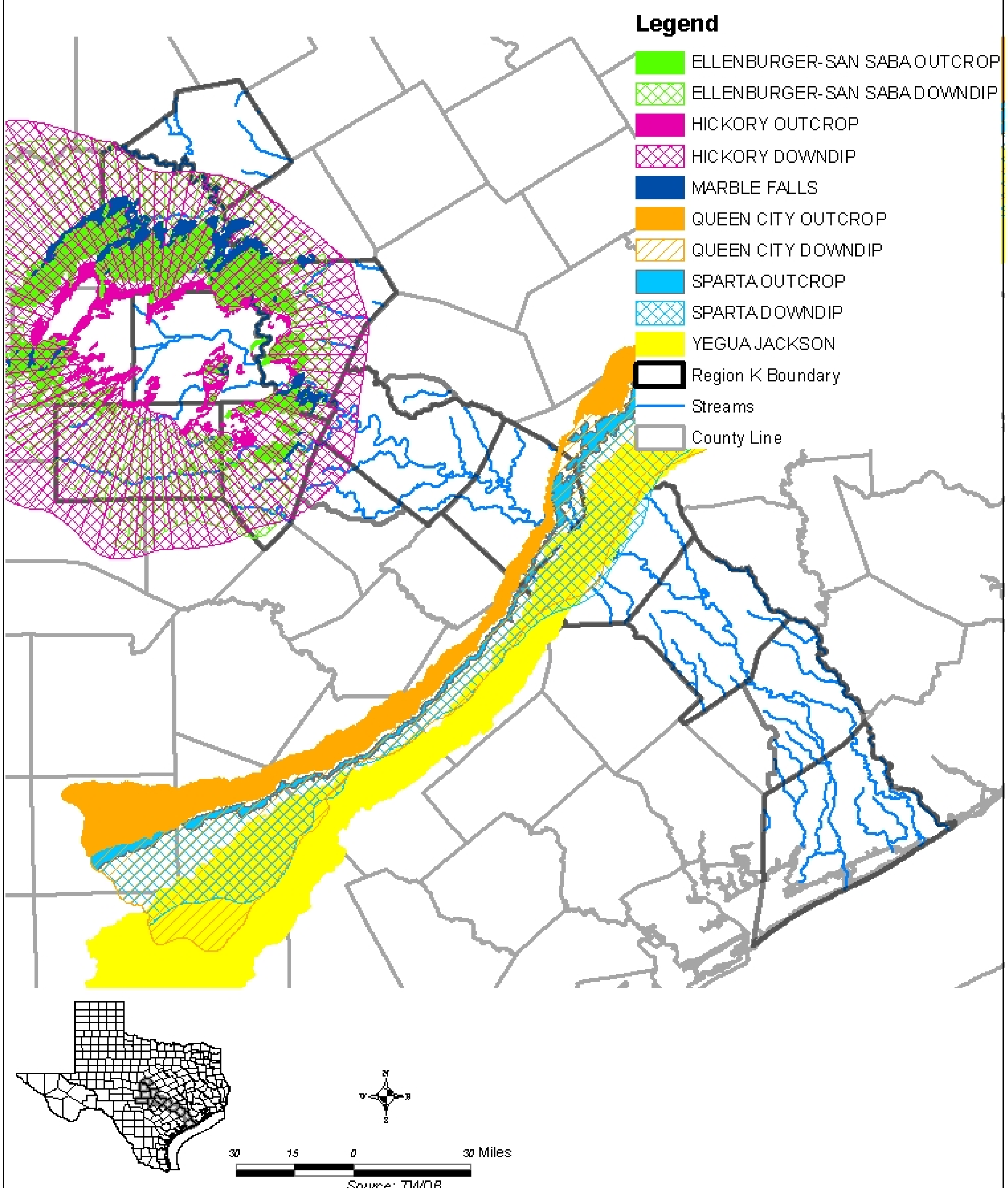


**Figure 1.12: Lower Colorado Regional Water Planning Area (Region K) Minor Aquifers**



### *1.2.1.5 Land Resources* [12]

The majority of Region K falls within the Colorado River Basin and 91 percent of the region's population resides in this portion of the basin. Land use (*Figure 1.13*) in Region K consists primarily of agricultural land in Matagorda, Wharton, Colorado, Fayette, and eastern Travis Counties. Forestland runs through the middle of Colorado and Fayette Counties; western Travis and Burnet Counties; southeastern Llano County; and a significant portion of Gillespie and Hays Counties. Shrub/scrub and grassland predominates in Mills, San Saba, northwestern Llano, and eastern Burnet Counties. Blanco County is primarily a mixture of forestland and rangeland. Bastrop County is a mixture of forestland, agricultural land, and rangeland. A significant concentration of urban land only occurs in the Austin metropolitan area.

The State of Texas has 119 state parks, state historic sites, and state natural areas. Eleven (11) of these, with a total of 23,225 acres, occur within the counties of Region K (*Table 1.2*). The Texas State Park System offers a variety of recreational and educational opportunities, including camping, hiking, fishing, boating, water skiing, swimming, wildlife viewing, picnicking, and tours of nature exhibits and historical sites.

### *1.2.1.6 Wildlife Resources* [13]

There are 19 national wildlife refuges in Texas, and four of these occur within Region K. Refuges function to preserve and protect critical wildlife habitat for unique, rare, threatened, and/or endangered species. Many refuges allow bird and wildlife viewing, hunting, and fishing during specific times of the year. In addition, the Texas Parks & Wildlife Department (TPWD) currently manages 52 Wildlife Management Areas (WMAs) in the state with a total of 756,464 acres. Two WMAs lie within Region K and encompass approximately 7,500 acres. These areas preserve and manage quality wildlife habitat and can allow compatible activities such as research, hunting, fishing, hiking, camping, bicycling, and horseback riding. *Table 1.3* lists the wildlife refuges and management areas within Region K.

Region K hosts a diversity of plant and animal wildlife species. In addition to the more commonly found species, each county within Region K provides habitat for several threatened or endangered animal and plant species. Endangered species are those at risk of extinction. Threatened species are those likely to become endangered in the future. These designations are made at the state and federal level by the TPWD and the U.S. Fish and Wildlife Service (USFWS). State and federal threatened and endangered species listings for each county in Region K are presented in *Appendix 1A*. Rare species that are not listed as threatened or endangered are also included.

[12] Texas Parks & Wildlife, May 2018.
[13] U.S. Fish & Wildlife Service, May 2018.

**Table 1.2: State Parks Located Within the Lower Colorado Region**

| Name | County | Acreage | Description |
|---|---|---|---|
| Bastrop State Park | Bastrop | 6,600 | Established between 1933 and 1935 and contains the "Lost Pines" isolated region of loblolly pine and hardwoods. The Bastrop County Complex fire in September 2011 affected 96 percent of the park, including significant impact to the Lost Pines ecosystem and the loblolly pines. |
| Blanco State Park | Blanco | 105 | Established in 1933 along the Blanco River and has fishing for winter rainbow trout, perch, catfish, and bass. |
| Buescher State Park | Bastrop | 1,017 | Established between 1933 and 1936 and was part of Stephen F. Austin's colonial grant; an estimated 250 species of birds can be found in the park. |
| Colorado Bend State Park | San Saba | 5,328 | Established in 1984 and part is in Lampasas Co.; contains scenic Gorman Falls and is home to rare and endangered species including the bald eagle, golden-cheeked warbler, and black-capped vireo. |
| Enchanted Rock State Natural Area | Gillespie and Llano | 1,644 | Established in 1978 along Big Sandy Creek and contains a large granite outcrop that is the second largest batholith in the U.S. Enchanted Rock is also a national natural landmark and a national historic site. |
| Inks Lake State Park | Burnet | 1,200 | Established in 1940 along Inks Lake. |
| Longhorn Cavern State Park | Burnet | 646 | Established between 1932 and 1937 and was dedicated as a natural landmark in 1971. The cave has been used as a shelter since prehistoric times. |
| LBJ State Park & Historic Site | Gillespie | 718 | Established in 1965 along the banks of the Pedernales River; contains LBJ's home and a portion of the official Texas Longhorn herd, as well as bison, deer, and wild turkey; living-history demonstrations at the restored Sauer-Beckmann house. |
| McKinney Falls State Park | Travis | 715 | Established in 1976. |
| Monument Hill & Kreische Brewery State Historic Sites | Fayette | 40 | Established in 1907/1977. Memorial to the Salado Creek Battle in 1842 and the "black bean lottery" of the Mier Expedition; and one of the first breweries in the state. |
| Pedernales Falls State Park | Blanco | 5,212 | Established in 1970 and has typical Edwards Plateau terrain with live oaks, deer, turkey, and stone hills. |

**Figure 1.13: Lower Colorado Regional Water Planning Area (Region K) Land Use Distribution**

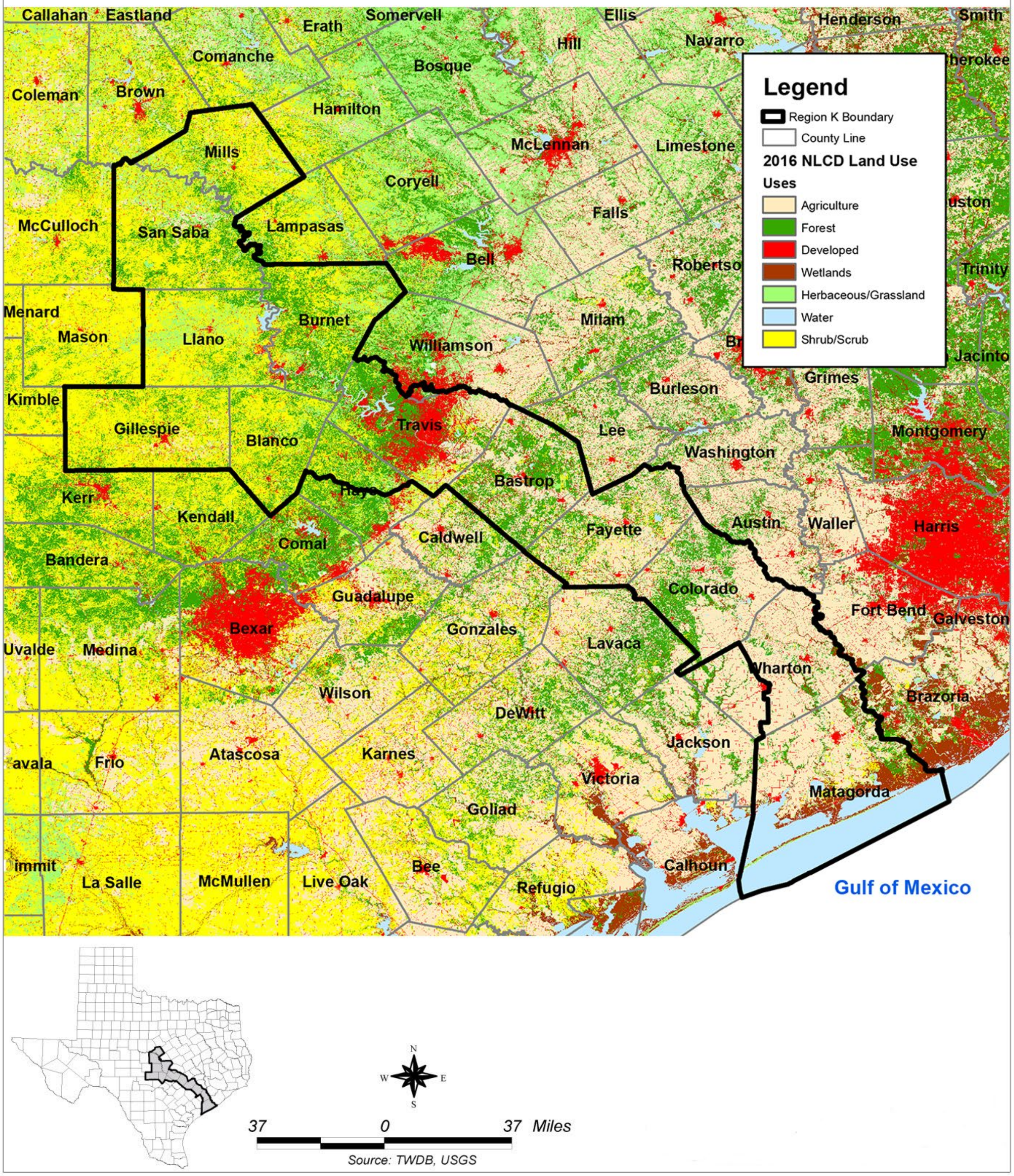


**Table 1.3: Wildlife Refuges/Management Areas Located Within the Lower Colorado Region**

| Name | County | Acreage | Description |
|---|---|---|---|
| *National Wildlife Refuges* | | | |
| Attwater Prairie Chicken[1] | Colorado | 10,541 | Established in 1972 to preserve habitat for the endangered Attwater Prairie Chicken, which includes native tallgrass prairie, potholes, sandy knolls, marshes, and some wooded areas. |
| Balcones Canyonlands[2] | Travis | 27,500 | Established in 1992 northwest of Austin to protect the nesting habitat of two endangered bird species: golden-cheeked warbler and the black-capped vireo. |
| Big Boggy[3] | Matagorda | 4,526 | Established in 1983 along the coast of Texas in southeastern Matagorda County to conserve key coastal wetlands for Neotropical migratory birds and shorebirds in spring and fall, as well as for wintering fowl and year-round wildlife. |
| San Bernard[4] | Matagorda | 54,000 | Established in 1968 near Freeport which attracts white-fronted and Canada geese and several species of duck. |
| *Wildlife Management Areas* | | | |
| Mad Island[5] | Matagorda | 7,200 | This area allows scheduled hunting and wildlife viewing. |
| D. R. Wintermann WMA[6] | Wharton | 246 | This area has limited access. |

[1] U.S. Fish & Wildlife Service (URL: http://www.fws.gov/refuge/attwater_prairie_chicken/faqs.html)
[2] Balcones Canyonlands National Wildlife Refuge (URL: https://www.fws.gov/nwrs/threecolumn.aspx?id=46233)
[3] Big Boggy National Wildlife Refuge (URL: https://www.fws.gov/refuge/Big_Boggy/about.html)
[4] U.S. Fish & Wildlife Service (URL: http://www.fws.gov/refuge/San_Bernard/faqs.html)
[5] Texas Parks & Wildlife (URL: https://tpwd.texas.gov/huntwild/hunt/wma/find_a_wma/list/?id=39)
[6] Texas Parks & Wildlife (URL: http://www.tpwd.state.tx.us/huntwild/hunt/wma/find_a_wma/list/?id=44)

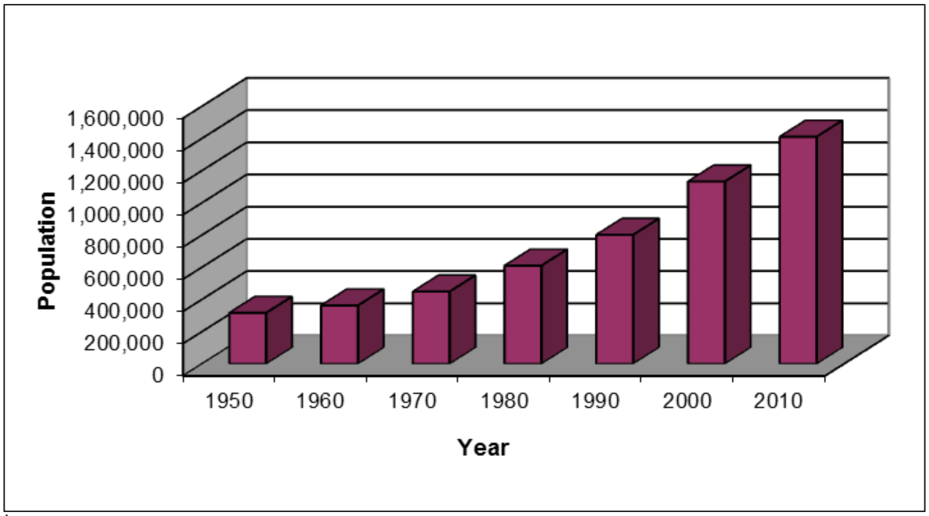
## 1.2.2 Socioeconomic Characteristics of the Lower Colorado Regional Water Planning Area

### *1.2.2.1 Historic and Current Population Trends*[14]

Region K has had a steady increase in population from 1950 to the present. As *Figure 1.14* shows, in 1950 there were approximately 316,573 people, which has increased to an estimated 1,410,328 people in 2010. This corresponds to an overall 345 percent increase in the number of people living in the region during that time period. The period from 1990 to 2000 had the largest percent increase of almost 41 percent, or an addition of 331,199 people. The time period of smallest population growth occurred between 1950 and 1960, with an increase of 45,830 persons (14.5 percent). As discussed in *Chapter 2*, this growth trend is expected to continue for the entire State of Texas, as well as Region K. For the period 2020 to 2070, a compound annual growth rate of 1.26 percent is projected, resulting in a total regional population of 3,290,477 in 2070.

[14] Bureau of the Census, Decadal Censuses of 1950, 1960, 1970, 1980, 1990 and 2000; and Region K historic population data supplied by the Texas Water Development Board for 1980–2010. The Region K 2020 Population projections were developed utilizing year 2010 census data as a starting point with adjustments made by the LCRWPG as necessary. Populations for the partial Region K counties of Hays, Williamson, and Wharton were estimated by determining the percent decreases observed in projections from the U.S. Census and the TWDB for 1980 and 1990; these percent decreases were then averaged and applied to the 1950, 1960, and 1970 U.S. Census partial-county populations.

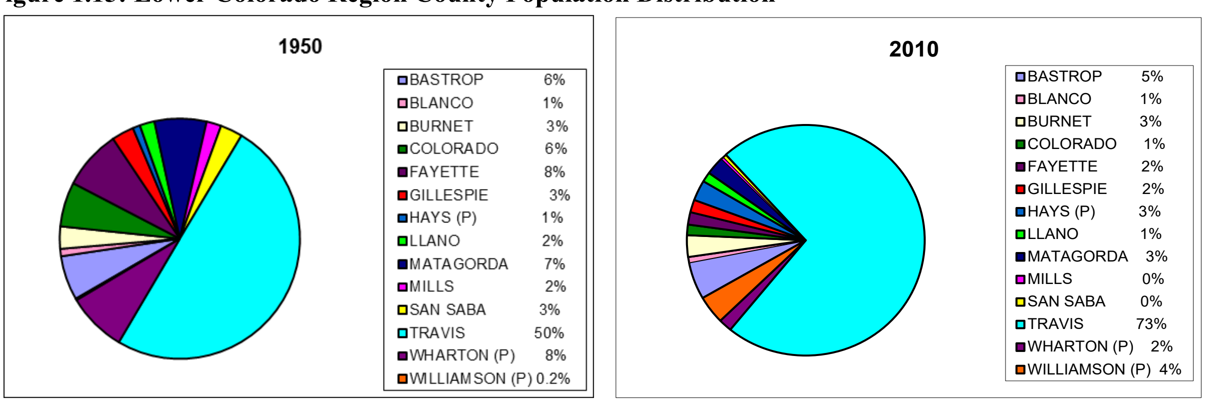
**Figure 1.14: Historic Lower Colorado Regional Water Planning Area Population[1]**




[1] Texas Water Development Board (URL: http://www.twdb.texas.gov/waterplanning/waterusesurvey/estimates/index.asp)
(Water Planning. County Summary, 2000 and Later)

Comparison of the region's county population distribution between 1950 and 2010 (*Figure 1.15*) shows that Travis County contains the majority of the region's population. Travis County's proportion of population compared to the region has increased from 50 percent in 1950 to 73 percent in 2010 due to the rapid growth of the Austin area. Travis County's population has increased more than 500 percent between 1950 and 2010, with the addition of over 800,000 people. Hays County has also seen a large population increase with over twelve times as many people living in the county in 2010 as in 1950. The Region K portion of Williamson County has shown an even larger percent increase in population as well, with a 2010 population 85 times the size of the 1950 population. Other counties in the region have experienced much smaller growth rates, historically.

**Figure 1.15: Lower Colorado Region County Population Distribution[1]**




[1] Texas Water Development Board (URL: http://www.twdb.texas.gov/waterplanning/waterusesurvey/estimates/index.asp)
(Water Planning. County Summary, 2000 and Later)

Recent population growth, since the year 2000, of the Austin metropolitan area has expanded from Travis County into Bastrop County, Hays County, and Williamson County. With the construction of the SH 130 and SH 45 corridors in Travis County, travel between counties has become easier and thus is facilitating increased population growth within a larger radius of the City of Austin. Increased development surrounding the corridors is projected to continue for the next several decades. Areas surrounding the Highland Lakes are also seeing larger increases in population growth, specifically Burnet County and Llano County.

### *1.2.2.2 Primary Economic Activities*[15, 16]

Economic activities in Region K include agriculture, government/services, manufacturing, mining, tourism, and trades. *Table 1.4* lists the primary economic base of each county as well as the breakdown of mining and agricultural activities.

**Table 1.4: Lower Colorado Region Primary Economic Activities by County**

| County | Primary Economic Base | Mineral Deposits | Agriculture |
|---|---|---|---|
| Bastrop | government/services, tourism, agribusiness, bio-technology research, computer-related industries, commuters to Austin | clay, lignite | hay, beef cattle, nursery/turf grass, pecans, vegetables, pine, oak |
| Blanco | tourism, agribusiness/nursery, ranch supplies, hunting/fishing | insignificant | cattle, sheep, goats, hay, vegetables, peaches, grapes, pecans, greenhouse nurseries |
| Burnet | tourism, stone processing, hunting | granite, limestone | cattle, goats, grapes, hay, hunting |
| Colorado | agribusiness, oil and gas services, gravel mining | gas, oil, gravel | rice, cattle, corn, cotton, soybeans, sesame, hay, pecans, nurseries |
| Fayette | agribusiness, electrical power generation, mineral production, small manufacturing, government/services, tourism | oil, gas, sand, gravel, bentonite, clay | beef cattle, corn, sorghum, peanuts, hay, pecans, dairies |
| Gillespie | tourism, government/services, agriculture, wine and specialty foods, hunting | sand, gravel | beef cattle, wine, hay, peaches, hunting |
| Hays (p) | education, tourism, retirement, some manufacturing | sand, gravel, cement | beef cattle, goats, exotic wildlife, greenhouse nurseries, hay, corn, sorghum, wheat, cotton |
| Llano | tourism, retirement, ranch trading center, vineyards | granite, vermiculite, llanite | beef cattle, sheep, goats |
| Matagorda | nuclear power plant, petrochemicals, agribusiness | gas, oil | cattle, rice, cotton, sorghum, soybeans, aquaculture |
| Mills | agribusiness, hunting | insignificant | beef cattle, dairies, sheep, goats, hay |
| San Saba | pecan processing plants, tourism, hunting | limestone, sand stone | cattle, sheep, goats, pecans, wheat, hay, hunting |
| Travis | government/services, education, technology, research and industry | lime, stone, sand, gravel, oil, gas | cattle, nursery crops, hogs, sorghum, corn, cotton, small grains, pecans |
| Wharton (p) | oil, agribusiness, hunting, varied manufacturing, government/services | oil, gas | leading rice producing county, cotton, milo, corn, sorghum, soybeans, turf grass, eggs, cattle, aquaculture |
| Williamson (p) | agribusiness, varied manufacturing, government/services, education center | building stone, sand, gravel | beef cattle, sorghum, cotton, corn, wheat, hay, nursery crops |

(p) - a portion of the county lies within the Region K boundaries

Agriculture plays a major role in most of the counties in Region K. Livestock accounts for a significant portion of the planning region's agricultural cash receipts and important crops include rice, hay, wheat, and cotton. The counties located in the northwestern portion of the planning region depend heavily on livestock

[15] Texas State Historical Association (Texas Almanac 2018-2019).
[16] Texas Comptroller of Public Accounts, Texas Economy.

production. Rice is the major crop produced in the southernmost counties of Colorado, Wharton, and Matagorda.

The manufacturing sector consists primarily of the technology and semiconductor industries, in the mid-region counties of Bastrop, Travis, and Williamson. The largest single manufacturing industry in the coastal counties is petroleum refining and petrochemicals. Electrical generation is a notable industry in Matagorda County. The South Texas Project Electric Generating Station provides generation capacity to serve more than 2 million homes as well as being the largest employer and source of revenue for the county. At the same time, there has been significant economic growth in food processing, lumber, wood products, and construction supplies for the coastal counties. The tourism industry represents an important economic sector that is heavily dependent on water resources in Llano, Burnet, and Travis Counties. *Appendix 1B* includes background information on the history and social and economic importance of the Highland Lakes, as provided by a stakeholder interest group within Region K.

Population and economic estimates are presented in *Table 1.5* for the Lower Colorado Region by county.

**Table 1.5: Lower Colorado Region County Population and Economic Estimates**

| County Name | 2016 Resident Population [1] | Per Capita (2016 dollars) Personal Income [1] | | CY 2012-2016 | CY 2012-2016 Poverty [2] | 2018 Average Labor Force Employment and Unemployment [3] | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | Per Capita ($) | Total (millions $) | Median Household Income ($)[2] | Poverty Rate (%) | Labor Force | Persons Employed | Persons Un-employed | Unemploy-ment Rate (%) |
| Bastrop | 78,286 | $25,379 | $1,987 | $55,808 | 13.6 | 41,612 | 40,064 | 1,548 | 3.7 |
| Blanco | 10,918 | $30,982 | $338 | $56,573 | 9.7 | 6,513 | 6,338 | 175 | 2.7 |
| Burnet | 44,584 | $27,434 | $1,223 | $54,259 | 14.4 | 22,619 | 21,902 | 717 | 3.2 |
| Colorado | 20,792 | $26,161 | $544 | $45,398 | 14.0 | 10,407 | 10,047 | 360 | 3.5 |
| Fayette | 24,909 | $28,665 | $714 | $51,290 | 10.8 | 12,875 | 12,480 | 395 | 3.1 |
| Gillespie | 25,732 | $30,939 | $796 | $55,850 | 10.8 | 13,769 | 13,401 | 368 | 2.7 |
| Hays | 185,686 | $28,396 | $5,273 | $60,495 | 16.2 | 111,548 | 108,107 | 3,441 | 3.1 |
| Llano | 19,624 | $34,633 | $680 | $48,562 | 13.8 | 8,520 | 8,187 | 333 | 3.9 |
| Matagorda | 36,719 | $22,939 | $842 | $41,253 | 21.7 | 17,566 | 16,444 | 1,122 | 6.4 |
| Mills | 4,871 | $24,099 | $117 | $44,375 | 14.5 | 1,968 | 1,895 | 73 | 3.7 |
| San Saba | 5,881 | $19,583 | $115 | $40,718 | 18.0 | 2,466 | 2,381 | 85 | 3.4 |
| Travis | 1,148,176 | $36,649 | $42,080 | $64,422 | 15.2 | 722,202 | 700,641 | 21,561 | 3.0 |
| Wharton | 41,377 | $23,245 | $962 | $46,445 | 17.7 | 21,485 | 20,637 | 848 | 3.9 |
| Williamson | 490,619 | $32,705 | $16,046 | $75,935 | 7.2 | 296,417 | 286,940 | 9,477 | 3.2 |
| Region K [4] | 2,138,174 | $33,541 | $71,717 | - | - | 1,289,967 | 1,249,464 | 40,503 | 3.5 |
| Texas | 26,956,435 | $27,828 | $750,144 | $54,727 | 16.7 | 13,834,783 | 13,265,346 | 569,437 | 4.1 |

[1] U.S. Bureau of the Census (URL: http://factfinder2.census.gov) (2012-2016 American Community Survey 5-Year Estimates)
[2] U.S. Bureau of the Census (URL: http://quickfacts.census.gov) (State & County QuickFacts profiles.)
[3] Texas Workforce Commission (URL: http://www.tracer2.com/)
[4] Includes all of Hays, Wharton, and Williamson Counties.

*Table 1.6* summarizes 2012 payroll data for Region K by county and economic sector.

**Table 1.6: 2012 County Payroll by Category ($1,000)[1]**

| Category | Bastrop | Blanco | Burnet | Colorado | Fayette | Gillespie | Hays |
|---|---|---|---|---|---|---|---|
| Accommodation & Food Services | $39,815 | $3,567 | $25,630 | $7,427 | $11,819 | $22,854 | $99,301 |
| Admin, Support, Waste Mgmt, Remediation Services | $4,527 | $1,328 | $17,292 | $3,402 | $833 | $6,224 | $45,288 |
| Arts, Entertainment & Recreation | (D) | $55 | $7,530 | $2,163 | $1,271 | $2,424 | $6,508 |
| Educational Services | $719 | (D) | $355 | (D) | (D) | (D) | $3,696 |
| Finance and Insurance | $13,807 | (D) | $17,417 | $6,834 | $11,767 | $14,727 | $46,065 |
| Health Care & Social Assistance | $62,702 | $3,627 | $51,470 | $37,665 | $23,270 | $66,449 | $220,842 |
| Information | $2,017 | $592 | $6,727 | $1,587 | $4,008 | $2,782 | $34,450 |
| Manufacturing | $41,966 | $4,570 | $33,205 | $78,712 | $38,571 | $20,690 | $203,863 |
| Other Services | $8,582 | $1,437 | $6,904 | $2,835 | $6,847 | $6,373 | $35,250 |
| Professional, Scientific and Technical Services | $14,617 | (D) | $14,628 | $3,459 | $7,030 | (D) | $77,709 |
| Real Estate, Rental, and Leasing | $3,734 | $238 | $5,184 | $7,856 | $3,323 | $6,479 | $21,604 |
| Retail Trade | $59,649 | $4,713 | $52,108 | $21,292 | $28,547 | $33,747 | $208,397 |
| Transportation and Warehousing | $6,749 | $4,146 | $3,136 | (D) | $8,754 | (D) | $59,862 |
| Utilities | $13,552 | (D) | (D) | (D) | (D) | (D) | $12,732 |
| Wholesale Trade | (D) | (D) | $14,750 | $9,692 | (D) | (D) | (D) |
| **Total Payroll** | **$272,436** | **$24,273** | **$256,336** | **$182,924** | **$146,040** | **$182,749** | **$1,075,567** |
| **Total Employees** | **9,714** | **966** | **8,471** | **5,312** | **5,036** | **6,136** | **36,742** |

[1] U.S. Bureau of the Census (URL: http://factfinder2.census.gov)
D = Data withheld to avoid disclosing data for individual companies

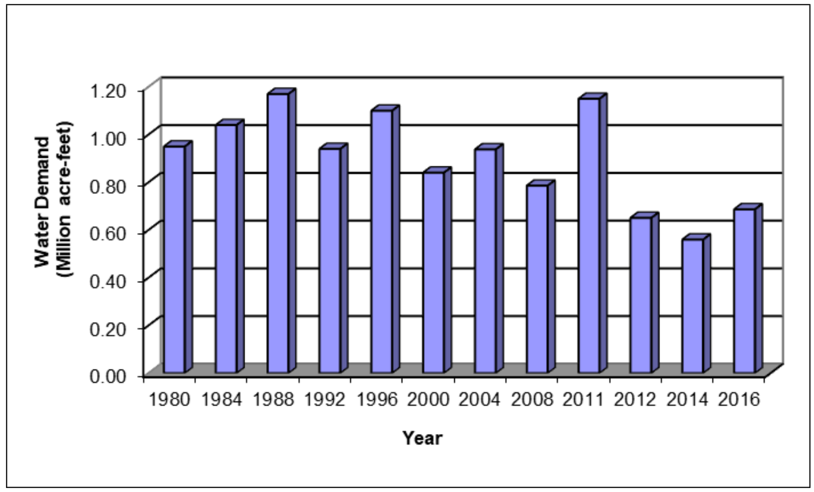
**Table 1.6 (Continued): 2012 County Payroll by Category ($1,000)** [1]

| Category | Llano | Matagorda | Mills | San Saba | Travis | Wharton | Williamson |
|---|---|---|---|---|---|---|---|
| Accommodation & Food Services | $21,146 | $13,958 | $1,125 | (D) | $1,032,987 | $12,778 | $224,230 |
| Admin, Support, Waste Mgmt, Remediation Services | $2,156 | $15,259 | $235 | (D) | $2,076,862 | $5,837 | $284,262 |
| Arts, Entertainment & Recreation | (D) | $1,088 | (D) | (N) | $202,882 | $1,339 | $48,220 |
| Educational Services | (D) | (D) | (D) | (N) | $184,408 | (D) | $9,946 |
| Finance and Insurance | $6,208 | $7,920 | $1,904 | (D) | $2,063,099 | $17,990 | $442,452 |
| Health Care & Social Assistance | $19,347 | $48,073 | $3,723 | $4,618 | $2,731,107 | $51,283 | $721,784 |
| Information | $410 | $1,935 | (D) | (D) | $2,018,316 | $2,896 | $247,822 |
| Manufacturing | $2,307 | $41,414 | $1,628 | $1,424 | $1,501,102 | $54,990 | $386,137 |
| Other Services | $1,671 | $9,327 | (D) | (D) | $703,658 | $4,988 | $121,987 |
| Professional, Scientific and Technical Services | $3,865 | $4,230 | (D) | $1,161 | $4,870,874 | $9,615 | $451,632 |
| Real Estate, Rental, and Leasing | $1,447 | $7,459 | (D) | $62 | $539,031 | $7,529 | $65,506 |
| Retail Trade | $10,975 | $25,703 | $5,307 | $3,727 | $1,443,334 | $49,104 | $593,255 |
| Transportation and Warehousing | $269 | $11,017 | $319 | $755 | $378,478 | $17,506 | $45,554 |
| Utilities | (D) | (D) | (D) | (D) | $67,059 | $5,341 | $75,912 |
| Wholesale Trade | $10,074 | $4,514 | (D) | $1,061 | $1,470,861 | $37,224 | (D) |
| **Total Payroll** | **$79,875** | **$191,897** | **$14,241** | **$12,808** | **$21,284,058** | **$278,420** | **$3,718,699** |
| **Total Employees** | **2,901** | **5,844** | **604** | **545** | **433,674** | **9,682** | **98,062** |

[1] U.S. Bureau of the Census (URL: http://factfinder2.census.gov)
D = Data withheld to avoid disclosing data for individual companies
N = Not Available or not comparable

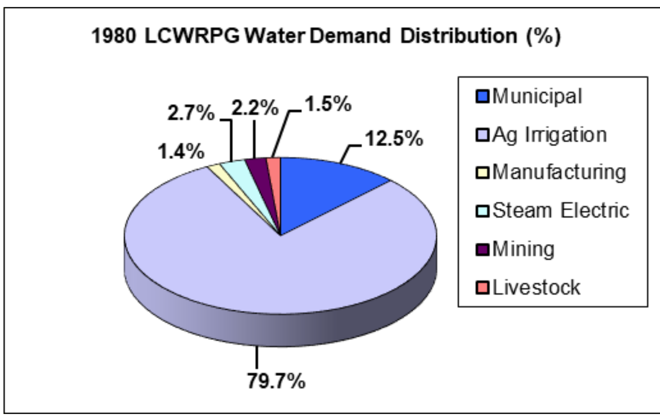
### *1.2.2.3 Historical Water Uses*[17, 18]

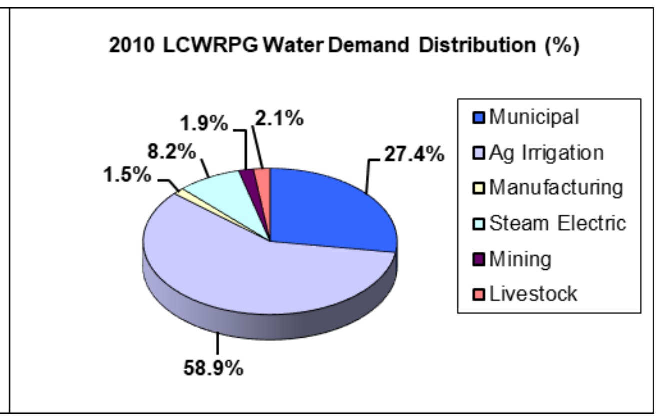
**Figure 1.16: Lower Colorado Regional Water Planning Area Historical Water Demand**[17]




Total annual water use in the Lower Colorado Regional Planning Area has decreased approximately 18 percent from 1980 to 2016 (*Figure 1.16*). A peak water use of 1.17 million ac-ft occurred in 1988. Water demand in each year is impacted by many factors, including rainfall and can show fluctuation from year to year. For example, 2011 water use of 1.15 million ac-ft neared the 1988 peak use due to drought conditions with corresponding high municipal and agricultural irrigation use. In 2014, water use saw a low of 0.56 million ac-ft due mostly to emergency curtailment of agricultural irrigation and implementation of municipal drought contingency plans. Relative water use distribution, by water use category, has remained relatively similar between 1980 and 2010 (*Figure 1.17*). Agricultural irrigation is the largest water use in Region K, which accounted for almost 80 percent of water use in 1980 and 59 percent in 2010. Municipal has consistently been the second largest water use category since 1980, followed by steam-electric power, mining, manufacturing, and livestock water uses.

**Figure 1.17: Lower Colorado Region User Group Water Demand Distribution**[17, 18]



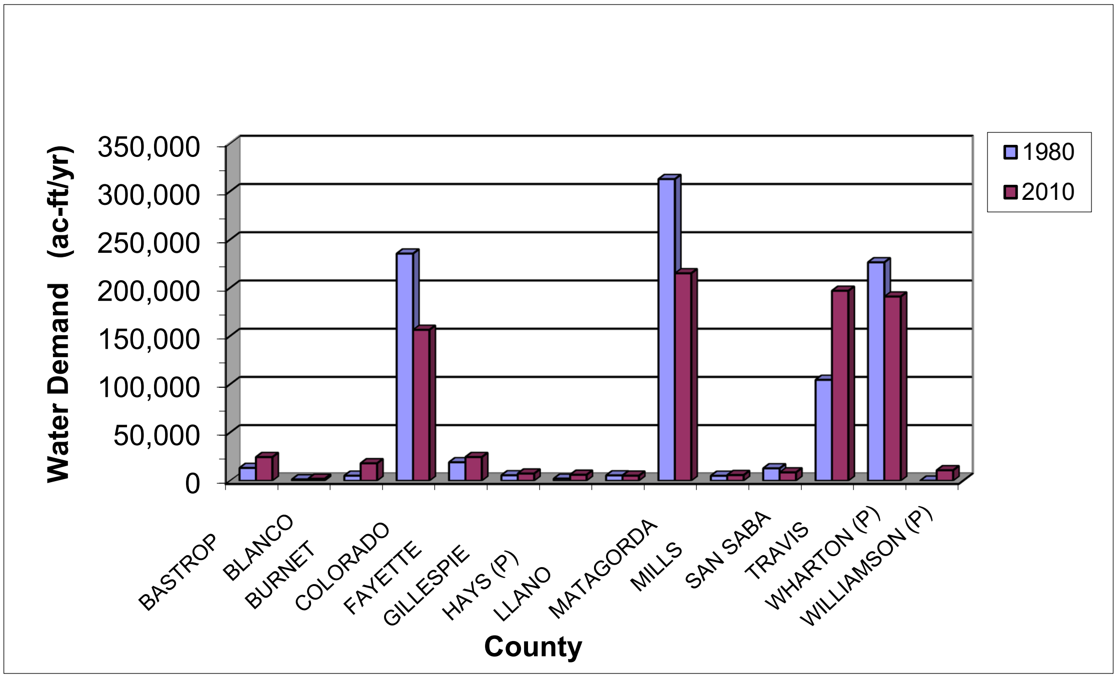

When comparing 1980 demands to 2010 demands, agricultural irrigation water demands show a 34 percent decrease, municipal demands show a 97 percent increase, livestock demands show 27 percent increase, mining demands show a 23 percent decrease, and manufacturing demands show a 6 percent decrease. Steam-electric power generation shows the largest water demand increase of 171 percent.

The water demand distribution between the 14 counties in Region K shows that when comparing water demands for 1980 and 2010, demand was consistently the greatest in Matagorda County, which accounted

[17] Texas Water Development Board (URL: http://www.twdb.texas.gov/waterplanning/waterusesurvey/estimates/index.asp) (Water Planning. State/Planning Region (map))
[18] Texas Water Development Board (URL: http://www.twdb.texas.gov/waterplanning/waterusesurvey/estimates/index.asp) (Water Planning. County Summary, 2000 and Later)

for approximately 33 percent of the region's total water demand in 1980 and 25 percent in 2010 (*Figure 1.18*). The major water use in Matagorda County is rice irrigation. Colorado and Wharton Counties are among the largest water users in the region, which is also attributed to the extensive rice irrigation in these counties. Travis County contains the region's only major municipal demand center, and its water use ranked fourth overall in 1980 and second overall in 2010. Overall, these four counties account for approximately 93 and 87 percent of the region's total water demand, respectively, for 1980 and 2010. Details of Region K's projected future water demands are presented in *Chapter 2*.

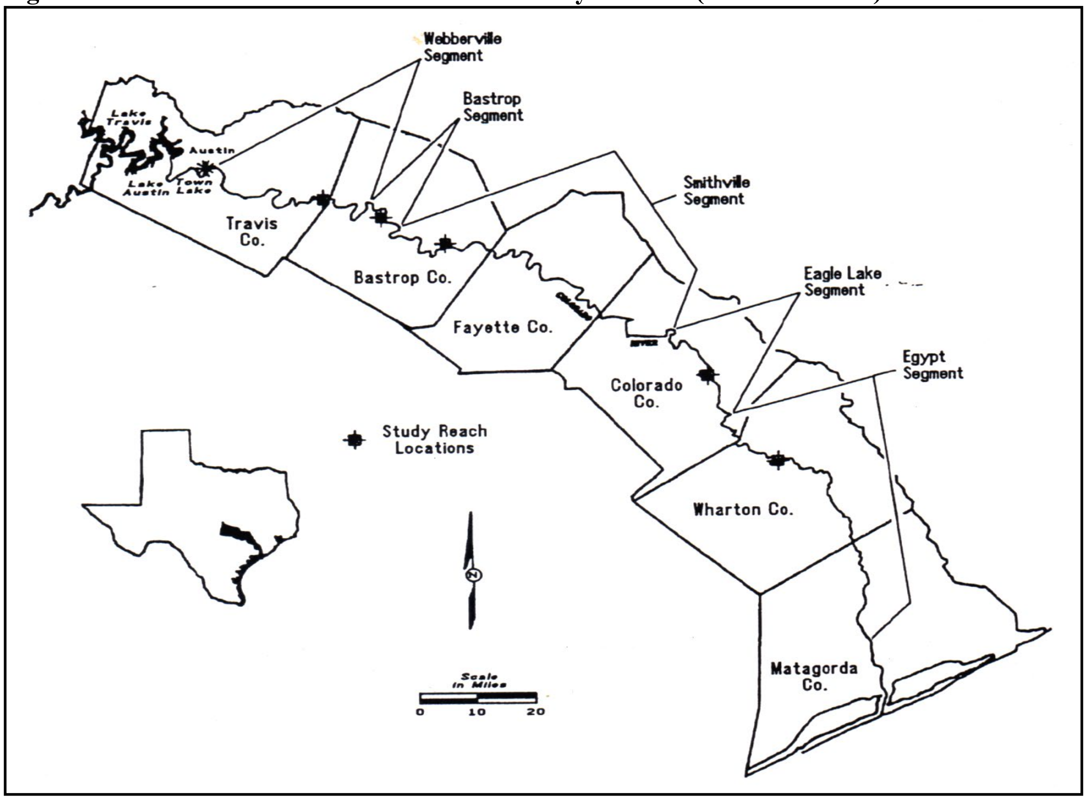
**Figure 1.18: Lower Colorado Regional Water Planning Area County Water Demand Distribution**[16, 17]




Water for the maintenance of important environmental instream flows and bay inflows is also a significant water use within the reaches of streams in Region K. Reaches above the Highland Lakes in San Saba and Mills Counties are dependent on rainfall, springflow and water releases from Stacy Dam at O.H. Ivie Reservoir, which is outside Region K and is under the control of the Colorado River Municipal Water District within Region F. Minimum continuous instream flow releases from Stacy Dam were required by the USFWS as a mitigation component to obtain a Section 404 permit from the U.S. Army Corps of Engineers (USACE) in order to build Stacy Dam.

A comprehensive instream flow study ("BIO-WEST, Inc. *Colorado River Flow Relationships to Aquatic Habitat and State Threatened Species: Blue Sucker, Final Report Prepared for LCRA and SAWS* (2008)") was completed in 2008 that recommended both subsistence flow conditions and base flow conditions, including base-dry and base-average conditions being met approximately 80% and 60% of the time, respectively. The TCEQ environmental flow standards for the Colorado River Basin are found in 30 TAC, 398 Subchapter D, and are largely based on the results of this study. The LCRA Water Management Plan is updated on an as-needed basis to reflect changing conditions in the basin. For reasons related to planning timelines, the version of the LCRA WMP that is used for the 2021 Region K Water Plan is the 2015 LCRA WMP. The latest update to the LCRA WMP was approved by the LCRA Board and submitted for approval to the TCEQ in 2019 and was approved by TCEQ in early 2020. More details on the LCRA WMP are provided in *Chapter 2*.

**Figure 1.19: Lower Colorado River Instream Study Reaches (Source: LCRA)**




In accordance with its WMP, LCRA manages the lower Colorado river system to maintain instream flows at or above the minimum critical flow levels. Through its WMP, LCRA dedicates a portion of its firm supplies to support maintenance of subsistence or critical instream flows. Target instream flows are designed to provide an optimal range of habitat complexity to support a well-balanced, native aquatic community within a stream reach. *Chapter 2* provides extensive details on critical and target instream flow recommendations for the Lower Colorado River in *Section 2.4*.

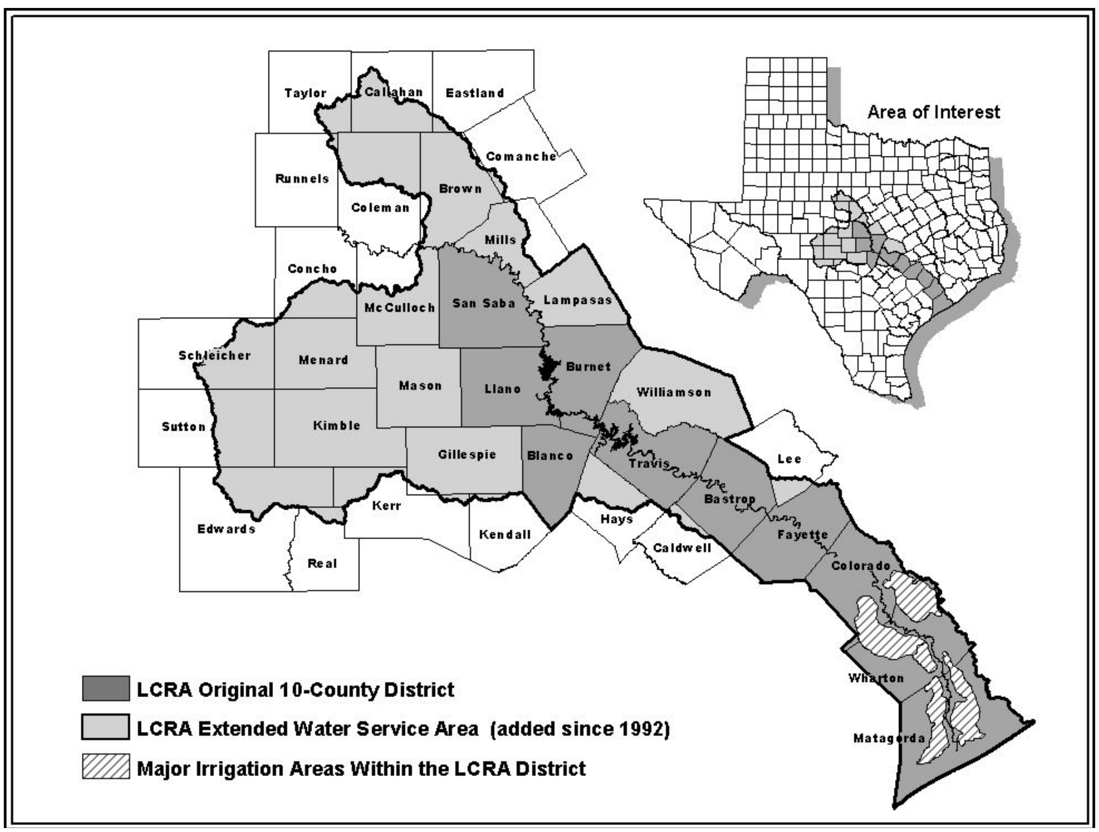
Freshwater inflow is also essential for healthy coastal estuarine ecosystems along the Texas Coast. Ninety-seven percent of the fishery species (shellfish and finfish) in the Gulf of Mexico spend all or a portion of their life cycle in estuaries. The life cycles of estuarine-dependent species vary seasonally and have different migratory patterns between the estuary and the Gulf. The Matagorda Bay system is the second largest estuary in the state, and this system receives freshwater inflow from the Colorado River, the Lavaca River, and surface runoff from the contributing drainage basin areas. On average, the Matagorda Bay system annually receives more than 2.0 million ac-ft of fresh water from the Colorado River and basin. *Chapter 2* provides details on Bay and Estuary freshwater inflows for Matagorda Bay in *Section 2.4*.

#### *1.2.2.4 Major Water Providers*

The TWDB guidelines allow each RWPG to identify and designate "major water provider(s)" for each region. A major water provider is defined as a Water User Group or a Wholesale Water Provider of particular significance to the region's water supply as determined by the Regional Water Planning Group. A wholesale water provider is an entity "... which delivers and sells any amount of raw or treated water for municipal and/or manufacturing use on a wholesale basis." The intent of these TWDB guidelines is to ensure that there is an adequate future supply of water for each entity that receives all or a significant portion of its current water supply from another entity.

The LCRWPG has designated the LCRA, Austin, and West Travis County Public Utility Agency (WTCPUA) as major water providers. The LCRA provides water for municipal, agricultural (irrigation), manufacturing, steam-electric, mining and other uses within all or part of a 36-county service area. LCRA's current service area allows it to provide water to entities in each of the 14 counties within the Lower Colorado Regional Planning Area (*Figure 1.20*). Austin supplies water for municipal, manufacturing, and steam-electric uses. Austin's water planning area encompasses portions of Travis, Williamson, and Hays Counties (*Figure 1.21*). WTCPUA provides water to municipal Water User Groups in Hays County and Travis County.

**Figure 1.20: Lower Colorado River Authority Water Supply Service Area**




Source: The Lower Colorado River Authority (March 2000)

**Figure 1.21: Austin Water Supply Service Area**

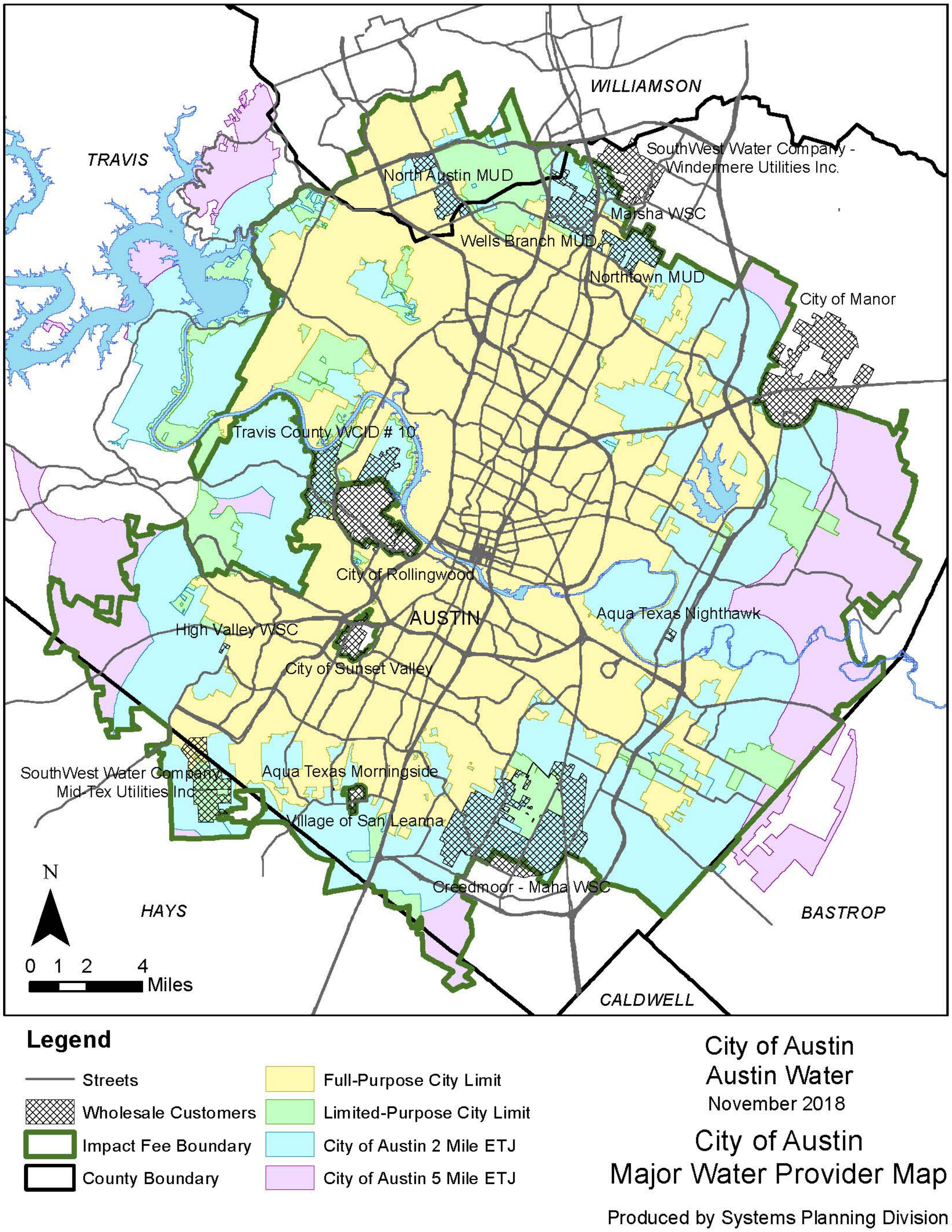
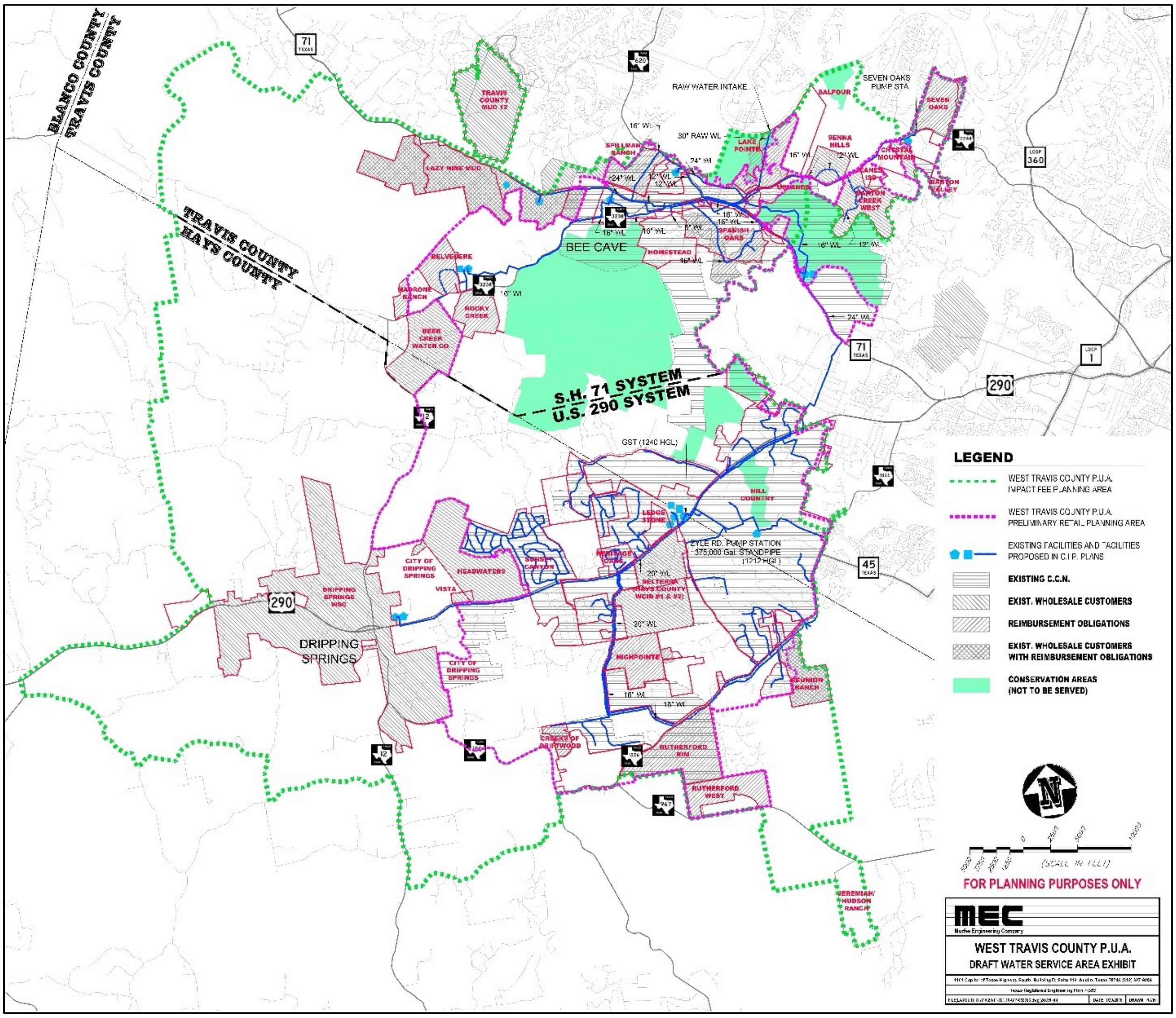


**Figure 1.22: West Travis County Public Utility Agency Service Area**



### 1.2.3 Water Quality in the Colorado River Basin[19]

The chemical characteristics of and the State Water Quality Criteria assigned to the Colorado River vary along its length (900 river miles) from the upper basin that is mainly within the West Texas Regional Water Planning Area (Region F) to the mouth of the river at Matagorda Bay in the Lower Colorado Regional Planning Area (Region K) (*Table 1.7*). The water quality differences of the various stream segments of the Colorado River are due to variations in both natural and man-made influences affecting each segment's drainage area. In addition, water flowing from upstream segments of the Colorado River and its tributaries also contribute to each downstream segment's water quality characteristics.

The Colorado River is divided into 34 classified stream segments, the standards of which are defined by the Texas Commission on Environmental Quality (TCEQ) in TAC 307.3 as (65) Standards--Desirable uses (i.e., existing, attainable, designated, or presumed uses as defined in this section) and the narrative and numerical criteria deemed necessary to protect those uses in surface waters.

Approximately 19 of the Colorado River classified stream segments are located within Region K. A portion of these are tributaries of the Colorado River.

The Texas Natural Resource Conservation Commission (TNRCC), now known as TCEQ, initiated the Texas Clean Rivers Program (CRP) in 1991 to address the Texas Clean Rivers Act. The State Legislature passed this act in response to concerns within the state that water quality issues were being addressed in an uncoordinated fashion. The CRP established a watershed management approach to identify and evaluate water quality issues, as well as to set priorities for the improvement of water quality throughout the state. The CRP set up a partnership in each river basin that consisted of the TNRCC, other state agencies, river authorities, local governments, and private citizens. Each river basin was to provide the TNRCC with updated regional water quality data, and the TNRCC was required to summarize these basin-wide assessments into a statewide report every 2 years.

Currently, the Texas Integrated Report is prepared every two years and describes the status of Texas' natural waters based on historical data and the extent to which they attain the Texas Surface Water Quality Standards. The Texas Integrated Report satisfies the requirements of the federal Clean Water Act Sections 305(b) and 303(d). The 303(d) List must be approved by the EPA before it is final. An advisory group works with the TCEQ on biennial reviews of the *Guidance for Assessing Texas Surface Water Quality.* This guidance is included with each Integrated Report. The "Upper Basin" of the Colorado River has been defined as the classified mainstream segments 1411–1413 and 1426 and classified tributary segments 1421–1425. These segments fall within the SB 1 Regions F and G. The "Middle Basin" contains mainstream segments 1403–1410, 1429, and 1433 and tributary segments 1414–1417, 1427, 1431, and 1432. These segments fall within SB 1 Region F and Region K. The Colorado River's "Lower Basin" lies wholly within Region K and includes the mainstream segments 1401, 1402, 1428, and 1434 as well as several unclassified tributary segments and all of the Lake segments. *Table 1.7* lists these various segments and identifies the water quality criteria associated with them.

[19] TWDB, Op. Cit., May 1977.

**Table 1.7: Classified Stream Segment Uses and Water Quality Criteria in the Colorado River Basin 2018**

| COLORADO RIVER BASIN | | | USES * | | | STATE STREAM STANDARDS CRITERIA ** | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Stream Segment | Stream Segment Name | SB 1 Planning Region | Recreation | Aquatic Life | Water Supply | Chloride Annual Avg. (mg/L) | Sulfate Annual Avg (mg/L) | TDS Annual Avg (mg/L) | D.O. (mg/L) | pH Range | Fecal Coliform[1] (30-day geometric mean, CFU/100ml) | Temp (*F) |
| 1401 | Colorado River Tidal | K | PCR1 | H | | | | | 4.0 | 6.5–9.0 | 35 | 95 |
| 1402 | Colorado River Below La Grange | K | PCR1 | H | PS | 100 | 100 | 500 | 5.0 | 6.5–9.0 | 126 | 95 |
| 1403 | Lake Austin | K | PCR1 | H | PS | 100 | 75 | 400 | 5.0 | 6.5–9.0 | 126 | 90 |
| 1404 | Lake Travis | K | PCR1 | E | PS | 100 | 75 | 400 | 6.0 | 6.5–9.0 | 126 | 90 |
| 1405 | Marble Falls Lake | K | PCR1 | H | PS | 125 | 75 | 500 | 5.0 | 6.5–9.0 | 126 | 94 |
| 1406 | Lake Lyndon B. Johnson | K | PCR1 | H | PS | 125 | 75 | 500 | 5.0 | 6.5–9.0 | 126 | 94 |
| 1407 | Inks Lake | K | PCR1 | H | PS | 150 | 100 | 600 | 5.0 | 6.5–9.0 | 126 | 90 |
| 1408 | Lake Buchanan | K | PCR1 | H | PS | 150 | 100 | 600 | 5.0 | 6.5–9.0 | 126 | 90 |
| 1409 | Colorado River Above Lake Buchanan | K | PCR1 | H | PS | 200 | 200 | 900 | 5.0 | 6.5–9.0 | 126 | 91 |
| 1410 | Colorado River Below O.H. Ivie Reservoir | K | PCR1 | H | PS | 500 | 455 | 1,475 | 5.0 | 6.5–9.0 | 126 | 91 |
| 1411 | E. V. Spence Reservoir | F | PCR1 | H | PS | 440 | 360 | 1,630 | 5.0 | 6.5–9.0 | 126 | 93 |
| 1412 | Colorado River Below Lake J. B. Thomas | F | PCR1 | H | | 4,740 | 1,570 | 9,210 | 5.0 | 6.5–9.0 | 33 | 93 |
| 1413 | Lake J. B. Thomas | F | PCR1 | H | PS | 140 | 250 | 520 | 5.0 | 6.5–9.0 | 126 | 90 |
| 1414 | Pedernales River | K | PCR1 | H | PS | 125 | 75 | 525 | 5.0 | 6.5–9.0 | 126 | 91 |
| 1415 | Llano River[2] | K | PCR1 | H | PS | 50 | 50 | 350 | 5.0 | 6.5–9.0 | 126 | 91 |
| 1416 | San Saba River | K/G | PCR1 | H | PS | 50 | 50 | 425 | 5.0 | 6.5–9.0 | 126 | 90 |
| 1417 | Lower Pecan Bayou | K | PCR1 | H | | 310 | 120 | 1,025 | 5.0 | 6.5–9.0 | 126 | 90 |
| 1418 | Lake Brownwood | F | PCR1 | H | PS | 150 | 100 | 500 | 5.0 | 6.5–9.0 | 126 | 90 |
| 1419 | Lake Coleman | F | PCR1 | H | PS | 150 | 100 | 500 | 5.0 | 6.5–9.0 | 126 | 93 |
| 1420 | Pecan Bayou Above Lake Brownwood | F | PCR1 | H | PS | 500 | 500 | 1,500 | 5.0 | 6.5–9.0 | 126 | 90 |
| 1421 | Concho River | F | PCR1 | H | PS | 610 | 420 | 1,730 | 5.0 | 6.5–9.0 | 126 | 90 |
| 1422 | Lake Nasworthy | F | PCR1 | H | PS | 450 | 400 | 1,500 | 5.0 | 6.5–9.0 | 126 | 93 |
| 1423 | Twin Buttes Reservoir | F | PCR1 | H | PS | 200 | 100 | 700 | 5.0 | 6.5–9.0 | 126 | 90 |

Source: TCEQ (formerly TNRCC), 2018. URL: https://www.tceq.texas.gov/assets/public/waterquality/standards/tswqs2018/2018swqs_allsections_nopreamble.pdf (pg 81-82)

* Uses: PCR1 =Primary Contact Recreation 1; H = High Aquatic Life; E = Exceptional Aquatic Life; PS = Public Water Supply; AP = Aquifer Protection

** Criteria: Standards set by the TCEQ (formerly TNRCC) do not guarantee the water to be usable for municipal, domestic, irrigation, livestock, &/or industrial uses, such as segment #1412 & others; this causes the above screening process to be misleading for certain segments, especially for salinity.

[1] The indicator bacteria for freshwater is *E. coli* and for saltwater is Enterococci. The indicator bacteria for Segment 1412 is Enterococci.

[2] The critical low-flow for the South Llano River portion of Segment 1415 is calculated according to §307.8(a)(2)(B) of the Texas Administrative Code, Title 30.

[3] The critical low-flow for the South Concho River portion of Segment 1424 is calculated according to §307.8(a)(2)(B) of the Texas Administrative Code, Title 30.

**Table 1.7 (Continued): Classified Stream Segment Uses and Water Quality Criteria in the Colorado River Basin 2018**

| COLORADO RIVER BASIN | | | USES * | | | STATE STREAM STANDARDS CRITERIA ** | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Stream Segment** | **Stream Segment Name** | **SB 1 Planning Region** | **Recreation** | **Aquatic Life** | **Water Supply** | **Chloride Annual Avg. (mg/L)** | **Sulfate Annual Avg (mg/L)** | **TDS Annual Avg (mg/L)** | **D.O. (mg/L)** | **pH Range** | **Fecal Coliform[1] (30-day geometric mean, CFU/100ml)** | **Temp (*F)** |
| 1424 | Middle Concho/South Concho River[3] | F | PCR1 | H | PS | 150 | 150 | 700 | 5.0 | 6.5–9.0 | 126 | 90 |
| 1425 | O. C. Fisher Lake | F | PCR1 | H | PS | 150 | 150 | 700 | 5.0 | 6.5–9.0 | 126 | 90 |
| 1426 | Colorado River Below E. V. Spence Reservoir | F | PCR1 | H | PS | 1000 | 1,100 | 1,770 | 5.0 | 6.5–9.0 | 126 | 91 |
| 1427 | Onion Creek | K | PCR1 | H | PS/AP[4] | 100[5] | 100[5] | 500[5] | 5.0 | 6.5–9.0 | 126 | 90 |
| 1428 | Colorado River Below Lady Bird Lake/Town Lake[7] | K | PCR1 | E | PS | 100 | 100 | 500 | 6.0[6] | 6.5–9.0 | 126 | 95 |
| 1429 | Lady Bird Lake/Town Lake[7] | K | PCR1 | H | PS | 75 | 75 | 400 | 5.0 | 6.5–9.0 | 126 | 90 |
| 1430 | Barton Creek[8] | K | PCR1 | H | AP[4] | 50 | 50 | 500 | 5.0 | 6.5–9.0 | 126 | 90 |
| 1431 | Mid Pecan Bayou | F | PCR1 | | | 410 | 120 | 1,100 | 2.0 | 6.5–9.0 | 126 | 90 |
| 1432 | Upper Pecan Bayou | F | PCR1 | H | PS | 200 | 150 | 800 | 5.0 | 6.5–9.0 | 126 | 90 |
| 1433 | O. H. Ivie Reservoir | F | PCR1 | H | PS | 430 | 330 | 1,520 | 5.0 | 6.5–9.0 | 126 | 93 |
| 1434 | Colorado River above La Grange | K | PCR1 | E | PS | 100 | 100 | 500 | 6.0 | 6.5–9.0 | 126 | 95 |

Source: TCEQ (formerly TNRCC), 2018. URL: URL: https://www.tceq.texas.gov/assets/public/waterquality/standards/tswqs2018/2018swqs_allsections_nopreamble.pdf (pg 81-82)

* Uses: PCR1 =Primary Contact Recreation 1; H = High Aquatic Life; E = Exceptional Aquatic Life; PS = Public Water Supply; AP = Aquifer Protection

** Criteria: Standards set by the TCEQ (formerly TNRCC) do not guarantee the water to be usable for municipal, domestic, irrigation, livestock, &/or industrial uses, such as segment #1412 & others; this causes the above screening process to be misleading for certain segments, especially for salinity.

4 The aquifer protection use applies to the contributing, recharge, and transition zones of the Edwards Aquifer.

5 The aquifer protection reach of Segment 1427 is assigned the following criteria: 50 mg/L for $Cl^{-1}$, 50 mg/L for $SO4^{-2}$, and 400 mg/L for TDS.

6 Dissolved oxygen criterion of 6.0 mg/L only applies at stream flows greater than or equal to 150 cfs as measured at USGS Gauging Station 08158000 located in Travis County upstream from U.S. Highway 183. A dissolved oxygen criteria of 5.0 mg/L will applies to stream flows less than 150 cfs and greater than or equal to the 7Q2 for the segment.

7 While Segment 1429 exhibits quality characteristics that would make it suitable for primary recreation, the use is prohibited by local regulation for reasons unrelated to water quality.

8 The critical low-flow for Segment 1430 is calculated according to §307.8(a)(2)(A) of the Texas Administrative Code, Title 30.

Upstream of Region K, high salinity concentrations are the primary concern in the "Upper Basin" stream segments. This is caused both by the natural characteristics of the geologic formations in the watershed as well as pollution from oil and gas activities. As *Table 1.7* shows, some of these stream segments have very high water quality criteria for salinity, or total dissolved solids (TDS), which is an aggregate measurement of various mineral concentrations including chlorides, carbonates, and sulfates. The designated uses of a stream segment, such as recreation, aquatic life, and water supply, are based on the Texas Surface Water Quality Standards, which are criteria with the force of law. Potential uses for water in segments with very high salinity criteria, such as segment 1412 below Lake J. B. Thomas, are limited by the high TDS concentrations that exist, despite the fact that the criteria are rarely exceeded. For example, the secondary drinking water standard for TDS is 1,000 milligrams per liter (mg/l).

The water quality of the "Middle Basin" and "Lower Basin" improves significantly due largely to the dilution of the upstream base flow by inflow of higher quality tributary waters. Major tributaries from the headwaters of O. H. Ivie Reservoir down through the Highland Lakes System, namely the Llano River and the San Saba River, have TDS concentrations that are generally less than 500 mg/l at their confluence with the Colorado River. Water quality of the "Lower Basin" is subject to poor quality at low flow conditions due to salt water intrusion (i.e., tidal influence).

### 1.2.4 Agricultural and Natural Resources Issues Within the Lower Colorado Region [20, 21, 22, 23, 24]

The primary agricultural issue in the Lower Colorado Regional Water Planning Area is the availability of sufficient quantities of irrigation water for agricultural irrigation under dry year conditions. Natural resources, on the other hand, have impacts from both water quantity and water quality issues. Classified stream segments in the Colorado River Basin are shown in *Figure 1.23* and those with water quality concerns are listed below. The stream segments that have water quality concerns within the region are discussed below in *Section 1.2.4.1*. *Section 1.2.4.2* discusses threats due to water quantity issues.

#### *1.2.4.1 Threats Within the Lower Colorado Region Due to Water Quality Issues*

The primary water quality issue for all of the surface water stream segments and the major groundwater aquifers in the Lower Colorado Region is the increasing potential for water contamination due to nonpoint source pollution. Nonpoint source pollution is precipitation runoff that, as it flows over the land, picks up various pollutants that adhere to plants, soils, and man-made objects and which eventually infiltrates into the groundwater table or flows into a surface water stream. As additional land in the Colorado River watershed and aquifer recharge zones is developed, the runoff from precipitation events will pick up increasing amounts of pollution. Another nonpoint source of pollution is the accidental spill of toxic chemicals near streams or over recharge zones that will send a concentrated pulse of contaminated water through stream segments and/or aquifers. Public water supply groundwater wells that currently use only chlorination for water treatment, and domestic groundwater wells that may not treat the water before consumption, may be especially vulnerable to nonpoint source pollution, depending on how directly influenced they are by surface or near surface contamination. Habitats of threatened and endangered species that live in and near springs and certain stream segments may be vulnerable as well. Nonpoint sources of

[20] TCEQ (formerly TNRCC), Op. Cit., December 1996.
[21] TCEQ (formerly TNRCC), Op. Cit., October 1996.
[22] LCRA, March 1999, *Water Management Plan*.
[23] Texas Water Development Board (TWDB), February 2000. *A Numerical Groundwater Flow Model of the Upper and Middle Trinity aquifer, Hill Country Area*, Open-file report 00–02.
[24] TWDB, et al., April 1999. *Assessment of Groundwater Availability in the Carrizo-Wilcox aquifer in Central Texas – Results of Numerical Simulations of Six Groundwater-Withdrawal Projections (2000–2050)*, Draft Final Contract Report.

pollution are difficult to control and there has been increased awareness and research of this issue as well as interest in the initiation of abatement programs. The water management strategies recommended in this plan won't necessarily impact the water quality levels in the region, but as population growth and development occurs, more opportunities for nonpoint source pollution may exist.

The TCEQ categorizes the physical use of a stream into various defined uses such as "general use," "aquatic life use," "recreational contact use," and "public water supply use." Assessments of the basin conducted by TCEQ determine whether or not a stream segment will support its use. Segments which do not support its designated or assumed use are classified as impaired. Additionally, these assessments will identify segments which are of concern for not meeting the use but are not at the time of the assessment considered impaired. There are 20 stream segments in Region K considered impaired as published in the Draft 2016 303(d) List. Additionally, 35 stream segments are listed as "of concern" for exceeding the State Water Quality Criteria in Region K (*Table 1.8 and Table 1.9*).

**Figure 1.23: Colorado River Basin Stream Segments**

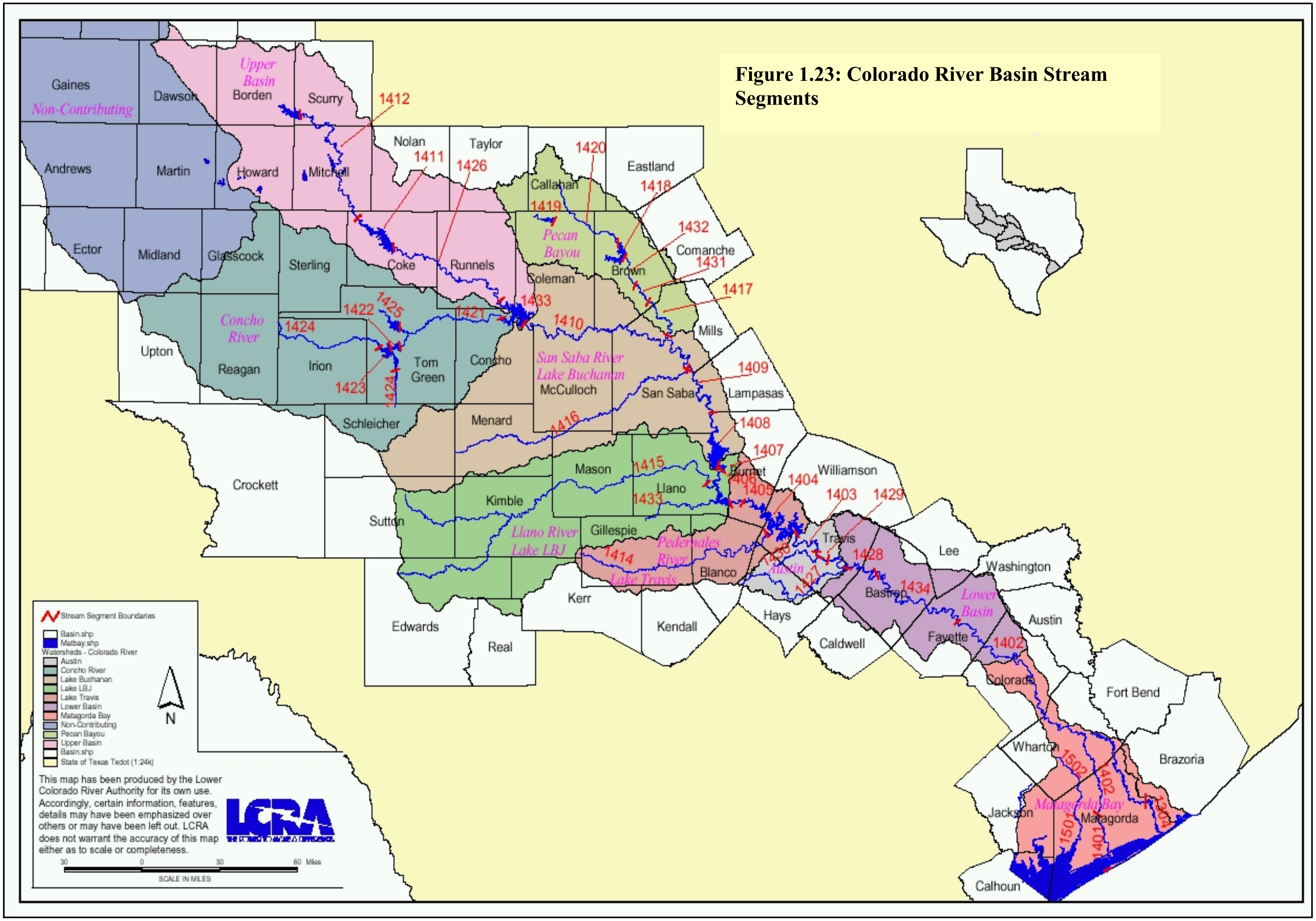


**Table 1.8: Stream Segment Water Quality Impairments in the Lower Colorado Region[1,2]**

| Segment ID # | Segment Name | Stream Use | Impairment |
|---|---|---|---|
| 1217D | North Fork Rocky Creek (unclassified water body) | Aquatic Life | Depressed dissolved oxygen |
| 1301 | San Bernard River Tidal | Recreation Use | Bacteria |
| 1302 | San Bernard River Above Tidal | Recreation Use | Bacteria |
| 1302A | Gum Tree Branch (unclassified water body) | Recreation Use | Bacteria |
| 1302B | West Bernard Creek (unclassified water body) | Aquatic Life and Recreation Use | Depressed dissolved oxygen and Bacteria |
| 1302D | Peach Creek | Recreation Use | Bacteria |
| 1304 | Caney Creek Tidal | Recreation Use | Bacteria |
| 1304A | Linnville Bayou (unclassified water body) | Recreation Use | Bacteria |
| 1305 | Caney Creek Above Tidal | Aquatic Life | Depressed dissolved oxygen |
| 1402 | Colorado River below La Grange | Recreation Use | Bacteria |
| 1402C | Buckners Creek | Aquatic Life | Depressed dissolved oxygen |
| 1402H | Skull Creek (unclassified water body) | Aquatic Life Use | Depressed dissolved oxygen |
| 1403A | Bull Creek (unclassified water body) | Aquatic Life Use | Depressed dissolved oxygen |
| 1407A | Clear Creek (unclassified water body) | General Use | Aluminum, nickel, and zinc in water; pH; Sulfate; and Total Dissolved Solids |
| 1416 | San Saba River | Recreation Use | Bacteria |
| 1416A | Brady Creek (unclassified water body) | Aquatic Life Use | Depressed dissolved oxygen |
| 1427A | Slaughter Creek (unclassified water body) | General Use | Impaired Macrobenthic Community |
| 1429C | Waller Creek (unclassified water body) | Recreation Use and General Use | Bacteria and Impaired Macrobenthic Community |
| 1501 | Tres Palacios Creek Tidal | Aquatic Life | Depressed dissolved oxygen |
| 2441OW | East Matagorda Bay (Oyster Waters) | Recreation Use | Bacteria (oyster waters) |

[1] Texas Commission on Environmental Quality (URL: https://www.tceq.texas.gov/assets/public/waterquality/swqm/assess/16txir/2016_303d.pdf) (Draft 2016 Texas 303 (d) List).
[2] Texas Commission on Environmental Quality (URL: http://www.tceq.texas.gov/gis/segments-viewer)

**Table 1.9: Stream Segment Water Quality Concerns in the Lower Colorado Region[1]**

| Segment ID # | Segment Name | Stream Use | Concern |
|---|---|---|---|
| 1401 | Colorado River Tidal | General Use | Nitrate |
| 1402 | Colorado River below La Grange | General Use | Nitrate and chlorophyll-a |
| 1402A | Cummins Creek (unclassified water body) | Aquatic Life Use | Depressed dissolved oxygen, impaired habitat, and impaired fish community |
| 1402C | Buckners Creek (unclassified water body) | General Use | chlorophyll-a |
| 1402H | Skull Creek (unclassified water body) | General Use | chlorophyll-a |
| 1403 | Lake Austin | General Use | Manganese in sediment |
| 1403A | Bull Creek (unclassified water body) | Recreation Use | Bacteria |
| 1403B | West Bull Creek (unclassified water body) | Recreation Use | Bacteria |
| 1403D | Barrow Preserve Tributary (unclassified water body) | General Use | Nitrate |
| 1403E | Stillhouse Hollow (unclassified water body) | General Use | Nitrate |
| 1403J | Spicewood Tributary to Shoal Creek (unclassified water body) | General Use | Nitrate |
| 1404 | Lake Travis | Aquatic Life Use | Depressed dissolved oxygen |
| 1404A | Hamilton Creek (unclassified water body) | General Use | chlorophyll-a |
| 1407 | Inks Lake | General Use | Manganese in sediment |
| 1407A | Clear Creek (unclassified water body) | General Use | Cadmium in water |
| 1409 | Colorado River Above Lake Buchanan | General Use | chlorophyll-a |
| 1410 | Colorado River Below O. H. Ivie Reservoir | General Use | chlorophyll-a |
| 1416A | Brady Creek (unclassified water body) | General Use | Nitrate, total phosphorus, and chlorophyll-a |
| 1416C | Brady Creek above Brady Creek Reservoir (unclassified water body) | General Use | Nitrate |
| 1417 | Lower Pecan Bayou | General Use | Chlorophyll-a |
| 1427A | Slaughter Creek (unclassified water body) | Aquatic Life Use | Depressed dissolved oxygen |
| 1427G | Granada Hills Tributary to Slaughter Creek (unclassified water body) | General Use | Nitrate |
| 1428 | Colorado River Below Lady Bird Lake (formerly Town Lake) | Aquatic Life and General Use | Impaired fish and microbenthic community, nitrate, and total phosphorus |
| 1428B | Walnut Creek (unclassified water body) | Recreation and Aquatic Life Use | Bacteria, impaired macrobenthic community, and impaired habitat |
| 1428C | Gilleland Creek (unclassified water body) | General Use | Nitrate |
| 1429 | Lady Bird Lake (formerly Town Lake) | General Use | dibenz(a,h)anthracene in sediment |

| Segment ID # | Segment Name | Stream Use | Concern |
|---|---|---|---|
| 1429C | Waller Creek (unclassified water body) | General Use | Benz(a)antracene in sediment, benzo(a)pyrene in sediment, chrysene in sediment, dibenz(a,h)anthracene in sediment, fluoranthene in sediment, lead in sediment, phenanthrene in sediment, and pyrene in sediment |
| 1429D | East Bouldin Creek (unclassified water body) | General Use | benz(a)antracene in sediment, cadmium in sediment, chrysene in sediment, dibenz(a,h)anthracene in sediment, fluoranthene in sediment, lead in sediment, phenanthrene in sediment, and pyrene in sediment |
| 1430 | Barton Creek | Aquatic Life Use | Depressed dissolved oxygen and toxicity in sediment |
| 1430A | Barton Springs (unclassified water body) | Aquatic Life Use | Depressed dissolved oxygen and toxicity in sediment |
| 1434 | Colorado River above La Grange | General Use | Total phosphorous and nitrate |
| 1434B | Cedar Creek (unclassified water body) | Aquatic Life Use | Depressed dissolved oxygen |
| 1434D | Wilbarger Creek (unclassified water body) | General Use | Chlorophyll-a and nitrate |
| 1434E | Big Sandy Creek (unclassified water body) | General and Aquatic Life Use | Chlorophyll-a and depressed dissolved oxygen |
| 1434G | Alum Creek (unclassified water body) | Aquatic Life, General, and Recreation Use | Depressed dissolved oxygen, ammonia, and bacteria |

[1] Texas Commission on Environmental Quality
(URL: https://www.tceq.texas.gov/assets/public/waterquality/swqm/assess/16txir/2016_concerns.pdf)

A major surface water quality indicator for protection of aquatic life is dissolved oxygen (DO) and the associated biochemical oxygen demand (BOD). DO is a measure of the amount of oxygen that is available in the water for metabolism by microbes, fish, and other aquatic organisms. BOD is a measure of the amount of organic material, containing carbon and/or nitrogen, in a body of water that is available as a food source to microbial and other aquatic organisms, which require the consumption of dissolved oxygen from the water to metabolize the organic material. The basin-wide concentrations of DO that have existed in the past were indicative of relatively unpolluted waters; however, these have been changing and have become a concern in some segments of the Colorado River and its tributaries, as populations and urban development continue to increase. The primary manmade sources of BOD in bodies of water are the discharge of municipal and industrial waste, as well as nonpoint source pollution from urban and agricultural runoff. Thus, the presence of excess amounts of BOD allows increased rates of microbial and algal metabolism, which in turn depletes the dissolved oxygen concentrations in the water. Without sufficient levels of DO in the water, other aquatic organisms such as fish cannot survive. Data from 2016 indicates that there are eight classified stream segments with a DO impairment (*Table 1.8*) and eight with a concern for DO (*Table 1.9*), based on the State Water Quality Criteria in the Lower Colorado Regional Water Planning Area.

Another set of surface water quality indicators that can deplete DO levels in surface water bodies are termed "nutrients" and includes nitrogen (Kjeldahl nitrogen, nitrite+nitrate, and ammonia nitrogen), phosphorus (phosphates, orthophosphates, and total phosphorus), sulfur, potassium, calcium, magnesium, iron, and sodium. Nutrients are monitored by the TCEQ as a part of the Texas Clean Rivers Program; however, there are no state or federal standards for screening nutrients. However, the TCEQ is conducting studies to develop potential numerical nutrient criteria for select bodies of water in Texas. Currently, naturally occurring background levels reported by the U.S. Geological Survey (USGS) or historical data collected by the TCEQ are used to determine the level of concern for nutrients. Nutrients have the same primary man-made sources as the BOD sources described above. Based on 2016 data, there are 13 classified stream segments with a concern *(Table 1.9)* in the Lower Colorado Regional Water Planning Area.

Fecal indicator organisms E. coli and Enterococcus are generally harmless bacteria that are present in human and/or animal waste, although some E. coli can be pathogenic. However, the presence of these organisms is an indicator for the presence of disease-causing bacteria, protozoa and viruses that are also found in human/animal wastes. Municipal waste is treated to remove most of the bacterial, protozoan and viral contaminants so that safe levels will exist in the surface water body upon discharge from the point source. Therefore, when fecal indicators are detected, the most likely source of contamination should be nonpoint source pollution, which can include agricultural runoff as well as runoff from failed septic systems. A wastewater treatment plant point source could also be the source of contamination if the system is not functioning properly. Data reported for 2016 indicate that there are a number of classified stream segments with impairments for E. coli and the tidal portion is impaired for the presence of Enterococcus, based on the State Water Quality Criteria in Region K (*Table 1.8*).

The presence of toxic dissolved metals, such as aluminum, barium, arsenic, chromium, cadmium, copper, lead, nickel, manganese, mercury, selenium, silver, and zinc, in surface water are a concern in five classified stream segments in the Lower Colorado Regional Water Planning Area (*Table 1.9*).

#### *1.2.4.2 Threats Due to Water Quantity Issues*

Threats are present in Region K from both too much water and from too little water. Too much water can be an issue during high river flows and during flooding episodes. The Highland Lakes provide the primary surface water storage and flood control capabilities for Region K.

In addition to managing the Highland Lakes for water supply, LCRA also operates the lakes for flood control purposes. When flooding on the lakes or their tributaries is imminent, LCRA works to manage the floodwaters by holding or moving water as needed through a series of dams along the Highland Lakes. Flood Operations take precedence over scheduled water supply and environmental release operations. Of the six Highland Lakes, only Lake Travis – formed by Mansfield Dam – is designed to hold back floodwaters that otherwise would flood Austin and downstream communities. Lake Travis has a large flood pool that can temporarily store some floodwaters flowing into the lakes upstream of Mansfield Dam.

As mentioned previously, the primary threat to agriculture in Region K is water shortages for irrigation that are anticipated to occur in Matagorda, Wharton, and Colorado counties during drought. The water supply available for irrigation is from three sources: ROR supplies, stored water from the Highland Lakes and the anticipated Arbuckle Reservoir, and groundwater. When the Colorado River's natural flows are insufficient to meet irrigation demands, allocations of stored water from the Highland Lakes under the LCRA Water Management Plan can be made by to supplement the available downstream ROR supplies. The water supplied from the Highland Lakes storage is an interruptible supply and is subject to curtailment in accordance with policies and procedures specified in LCRA's Water Management Plan. Under drought conditions, there are substantial shortages of water for irrigation in Matagorda, Wharton, and Colorado Counties. The shortages will be addressed through water management strategies such as conservation, discussed in *Chapter 5* of this Plan. Details related to drought responses associated with the LCRA Water Management Plan are discussed in *Chapter 7* of this Plan.

Water quantity is also a concern during drought conditions in terms of instream flows and freshwater inflows to Matagorda Bay. As discussed in *Section 1.2.2.3*, the reaches below the Highland Lakes downstream to the mouth of the Colorado River have been studied by the LCRA, and "Subsistence" instream flows have been determined as firm demands on water resources. Instream flows have been maintained by LCRA at or above the minimum "Subsistence" flow in accordance with the 2015 WMP. "Base" (Base-Dry and Base-Average) instream flows, also determined by the LCRA study, provide flows to support an optimal range of habitat complexity for a well-balanced, native aquatic community within a stream reach. LCRA has maintained these flow regimes whenever water resources are adequate, but "Base" flows are classified as interruptible demands that have been reduced during drought conditions. For further details, please refer to LCRA's WMP at https://www.lcra.org/water/water-supply-planning/water-management-plan-for-lower-colorado-river-basin/Documents/FINAL-WMP-AsApprovedbyTCEQ-Nov-2015.pdf.

The Highland Lakes provide the primary surface water storage and flood control capabilities for Region K. The issue of providing maintenance of these reservoirs to retain the maximum water storage capacity may become important as natural sedimentation processes decrease the volume of water each reservoir can hold.

As mentioned above, Lake Travis is the only reservoir in the Highland Lakes with flood control storage. LCRA conducts flood operations at Mansfield Dam according to the U.S. Army Corps of Engineers (USACE) Water Control Manual for Mansfield Dam and Lake Travis. The Water Control Manual limits flood releases from Mansfield Dam based on key Lake Travis elevations and expected conditions along the Colorado River downstream of Mansfield Dam. Under the USACE requirements, Flood Operations at Mansfield Dam are determined by: specified ranges of observed or forecasted lake levels; the pool condition (i.e. rising or falling); the month of the year; and stage and flow criteria at three designated downstream locations. When the pool is rising, forecasted lake levels (based on actual water on the ground) are used in determining flood release requirements. When the pool is falling, observed lake levels are used in determining release requirements. The amount of release from Mansfield Dam increases with higher ranges of lake level and as long as downstream stage and flow limitations are not exceeded.

One of the major groundwater quantity concerns involves the Barton Springs segments of the Edwards aquifer (BFZ), which is a karst formation that responds quickly to changes in the environment due to its highly permeable and transmissive characteristics. South of the artesian zone of the Edwards aquifer there exists an interface, or "bad water line," that separates the good quality groundwater from a layer of water that is not usable for human consumption, without further treatment, due to the high TDS content. This line, which is also referred to as the saline-water line or freshwater/saline-water interface, marks the interface where the groundwater reaches a TDS concentration of 1,000 mg/l. Research is currently being conducted to determine the effects that pumping large quantities of aquifer water will have on its location. Water management strategies recommended in *Chapter 5* discuss Aquifer Storage and Recovery (ASR) opportunities in this aquifer, as well as desalination of water produced from the saline zone.

A second major issue in the Barton Springs segments of the Edwards aquifer (BFZ) is the amount of discharge from the artesian zone through Barton Springs. Increased groundwater pumping from the aquifer during drought conditions decreases all spring discharges, which can potentially impact the state- and federally-listed threatened and endangered species that depend on the springs for habitat, such as the Barton Springs salamander, and can potentially affect water supply availability downstream. Because the Barton Springs Edwards Aquifer Conservation District has considered maintenance of certain minimum springflows in setting its Desired Future Condition, so long as recommended water management strategies stay within the Modeled Available Groundwater (MAG) volume, impacts to the minimum springflows are expected to be negligible.

The primary water quantity issue in the Gulf Coast aquifer is subsidence, which is the dewatering of the interlayers of clay within the aquifer as a result of continued or long-term over-pumping. The resultant compaction of the clay causes a loss of water storage capacity in the aquifer, which in turn causes the land surface to sink, or subside. Once the ability of the clay to store water is gone, it can never be restored. The implementation of water conservation practices and conversion to other sources are currently the only remedies for this situation. Saltwater intrusion from the Gulf of Mexico into the Gulf Coast aquifer is also a potential concern due to groundwater pumping rates that are greater than the recharge rates of the aquifer. Recommended water management strategies in this Plan stay within the Modeled Available Groundwater (MAG) volume, and overpumping is not encouraged.

The primary water quantity concern with the Trinity aquifer is the anticipated water-level decline during drought conditions due to increased demand that will be placed on the aquifer's resources. Studies indicate that water levels in the portion of the aquifer that lies within Region K in the Dripping Springs area of Hays County could decline more than 100 feet by the year 2040. Other portions of Hays County as well as Blanco and Travis Counties, may experience moderate water-level declines between 50 to 100 feet by the year 2020. Most of the streams gain water as they pass over the Trinity aquifer and in consequence may be affected by the declining water levels in the underlying aquifer. In addition, drought conditions may further decrease the base flow of the streams. Recommended water management strategies in this Plan stay within the Modeled Available Groundwater (MAG) volume for the Trinity Aquifer in Region K.

The primary water quantity concern with the Carrizo-Wilcox aquifer is the water-level decline that could occur by the year 2070 due to increased pumping. The Carrizo-Wilcox Aquifer is in Bastrop and Fayette counties, within Region K. The area in and around the Carrizo-Wilcox aquifer is expected to see continued population growth and increases in water demand. Current usage could cause water level decline of up to 240 feet in Bastrop County, depending on the formation, and up to 110 feet of decline in Fayette County. Projected demands show that additional groundwater will be needed and some water users in Bastrop County may need to look at surface water as an option in the future. The relationships that currently exist between surface and groundwater may also change. Some model simulations indicate that the Colorado River, which currently gains water from the Carrizo-Wilcox aquifer within certain portions of Bastrop County, may begin to lose water to the aquifer by the year 2050. Recommended water management strategies in this Plan stay within the Modeled Available Groundwater (MAG) volume.

The LCRWPG passed a resolution regarding the "mining of groundwater" on February 9, 2000, which strongly opposes the over-utilization of groundwater, including the mining of groundwater, within its region at rates that could lead to eventual harm to the groundwater resources, except during limited periods of extreme drought. The LCRWPG defines groundwater mining as "the withdrawal of groundwater from an aquifer at an annualized rate, which exceeds the average annualized recharge rate to an aquifer where the recharge rate can be scientifically derived with reasonable accuracy." This resolution addresses the concerns listed above for the Barton Springs segments of the Edwards (BFZ), Gulf Coast, Trinity, and Carrizo-Wilcox aquifers that are located within Region K.

### 1.2.5 Existing Water Planning in the Lower Colorado Regional Water Planning Area

As charged by Senate Bill 1 (SB 1), enacted in 1997, the LCRWPG prepared, adopted, and submitted the *2000 Region "K" Water Supply Plan* to the TWDB, which described how local entities may address future water supply needs for the next 50 years. Subsequently, a State Water Plan, Water for Texas-2002, was delivered by the TWDB to the Texas Legislature in January 2002, and incorporated the approved 2001 Regional Water Plan and contained legislative recommendations for future water policies. This cycle of planning is repeated every five years and thus far has resulted in the 2006, 2011, and 2016 *Region K Water Plans* being submitted to the TWDB by the Lower Colorado Regional Water Planning Group. These regional plan updates assisted in the creation of the 2007, 2012, and 2017 State Water Plans by the TWDB. The current cycle of regional water planning will culminate in the 2021 Lower Colorado Regional Water Plan, which the TWDB will utilize in developing the 2022 State Water Plan.

Because regional water planning is intended to be a bottom-up process, the Region K planning group used knowledge from its own members as well as publicly available local plans to develop the details of the 2021 Region K Water Plan. Documents from local planning efforts, including the City of Austin *Water Forward Plan*[25], *Regional Water Supply Study for the City of Wharton and East Bernard*[26], *Water and Wastewater Facilities Plan for the portion of Hays County, Texas West of the I-35 Corridor*[27], the *Bastrop Regional Water Supply Facilities Planning Study*[28], and the *Burnet-Llano County Regional Water Facility Study*[29], helped shape the water management strategies that were recommended by the Region K planning group. These local plans also provided a few potential regionalization concepts for water and wastewater services that the Region K planning group considered during the planning process. The LCRA 2015 Water Management Plan is also referenced for several chapters in the 2021 Region K Plan, although an updated version (LCRA 2020 WMP) was approved by TCEQ in February 2020. Additional publicly available local plans that were referenced for the planning process are discussed below in the next few sections.

SB 1 legislation also amended Chapter 36 of the Texas Water Code to require certain water supply entities to develop water management plans (WMPs), water conservation plans (WCPs), and/or drought contingency plans (DCPs). WCPs and DCPs must be submitted to TCEQ for review and certification. TCEQ received the plans, reviewed them for minimum criteria according to TCEQ's Chapter 288 Rules that reflect SB 1 requirements. Finally, TCEQ sent the water supply entity a letter of certification that its plan contains the necessary minimum criteria components. It should be noted that TCEQ has not subjectively critiqued the quality of the water management, water conservation, or drought contingency plans; it only determined whether or not minimum criteria have been met. Each water supply entity is required to update their respective plan every five years, so that the plan will improve as the water supply entity gains experience in managing its water resources. TWDB also receives copies of each certified WCP

[25] *Water Forward Integrated Water Resource Plan*, Austin Water, November 2018.
[26] *Regional Water Supply Study for the City of Wharton and East Bernard,* TWDB Contracted Report, Halff, April 2017.
[27] *Water and Wastewater Facilities Plan for the portion of Hays County, Texas West of the I-35 Corridor*, TWDB Contracted Report, HDR Engineering, January 2011.
[28] *Bastrop Regional Water Supply Facilities Planning Study,* TWDB Contracted Report, K Friese & Associates, Inc., October 2011.
[29] *Burnet-Llano County Regional Water Facility Study,* TWDB Contracted Report, Susan Roth, CDM, December 2011.

and DCP for review with respect to TWDB's water planning efforts. However, there are no rules requiring action by TWDB.

### *1.2.5.1 Groundwater Conservation District Management Plans (MP)*

One category of the SB 1 required plan is the Management Plan (MP), which must be developed by each Groundwater Conservation District (GCD) and surface water conservation district in the state. The intent of a MP is to conserve, preserve, prevent waste, protect, and recharge water supplies within the water conservation district. These MPs are required to be submitted to TWDB for review and administrative certification. Surface water conservation districts, primarily river authorities, are also required to submit MPs as a provision of the final adjudication of the river authority's water rights and receive administrative certification from TCEQ.

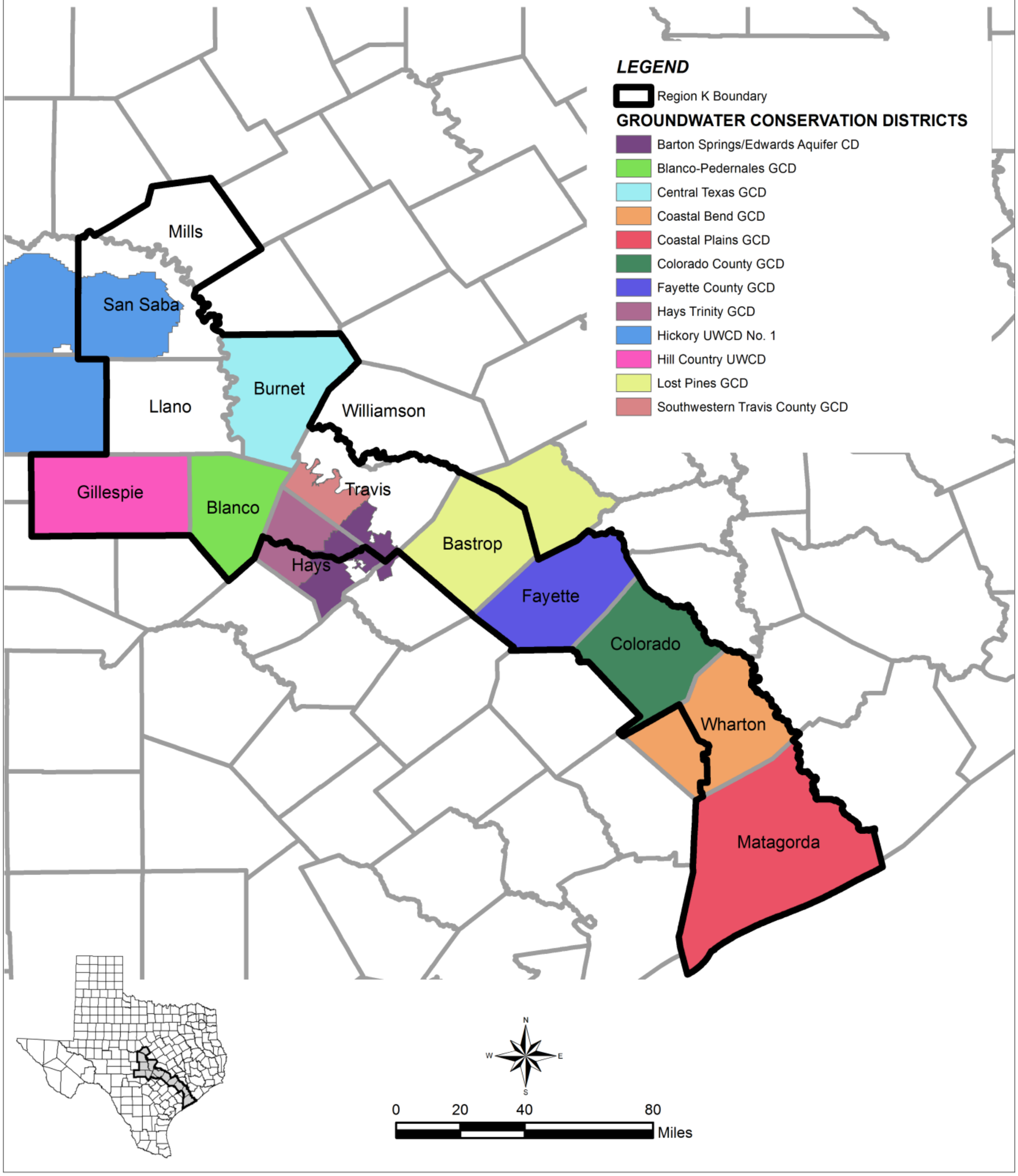
There are 12 confirmed GCDs in Region K. *Table 1.10* shows each district and the aquifers they manage. Through House Bill 4345, the 85th Legislature of Texas created Southwestern Travis County GCD. MPs are also submitted to RWPGs for inclusion in the Regional Water Plan and to allow the regional planning groups to focus on strategies for current and future shortages that do not conflict with the management plans. *Figure 1.24* shows the groundwater conservation districts located in Region K.

**Table 1.10: Groundwater Conservation Districts in Lower Colorado Region**

| Groundwater Conservation District [1] | Lower Colorado Region County | Aquifers Managed [2] |
|---|---|---|
| Barton Springs/Edwards Aquifer Conservation District (BSEACD) | Hays, Travis | Edwards (BFZ) & Trinity Aquifers, & Alluvial Deposits |
| Blanco-Pedernales GCD | Blanco | Trinity, Edwards-Trinity, Ellenburger, Hickory and Marble Falls Aquifers |
| Central Texas GCD | Burnet | Trinity, Marble Falls, Ellenburger-San Saba, Hickory |
| Coastal Bend GCD | Wharton | Gulf Coast Aquifer |
| Coastal Plains GCD | Matagorda | Gulf Coast Aquifer |
| Colorado County GCD | Colorado | Gulf Coast Aquifer |
| Fayette County GCD | Fayette | Gulf Coast, Carrizo-Wilcox, Queen City, Sparta Aquifer, Yegua- Jackson and Colorado River Alluvium |
| Hays-Trinity GCD | Hays | Trinity Aquifer |
| Hickory UWCD #1 | San Saba | Hickory Aquifer, Ellenberger-San Saba, & Marble Falls Aquifers |
| Hill Country UWCD | Gillespie | Edwards-Trinity, Ellenberger-San Saba, & Hickory Aquifers |
| Lost Pines GCD | Bastrop | Carrizo-Wilcox Aquifer |
| Southwestern Travis County GCD [3] | Travis | Trinity Aquifer |

Source: TWDB
[1] UWCD = Underground Water Conservation District; GCD = Groundwater Conservation District.
[2] Water systems managed: Only portions of the indicated aquifer systems are located within a GCD's jurisdiction.
[3] Groundwater Conservation District confirmed in November 2019.

**Figure 1.24: Lower Colorado Regional Water Planning Area (Region K) Groundwater Conservation Districts**



### 1.2.5.2 Groundwater Management Areas (GMA)

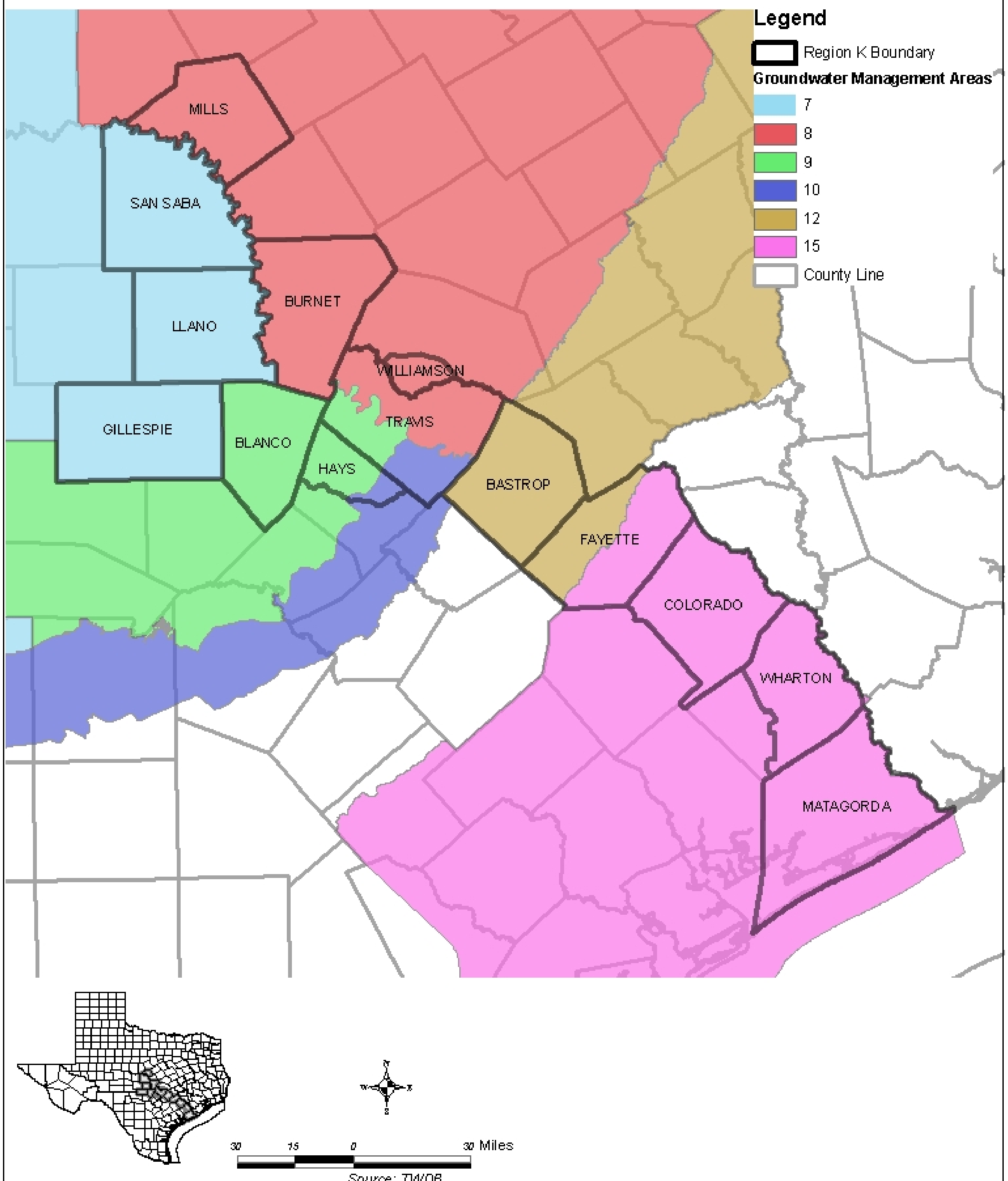
In response to legislation passed in 2001, in December 2002 the TWDB designated 16 GMAs covering the entire state. In 2005, the legislature required all GCDs located within a GMA to conduct joint planning. The new requirements indicated that,

"Not later than September 1, 2010, and every five years thereafter, the districts shall consider groundwater availability models and other data or information for the management area and shall establish desired future conditions for the relevant aquifers within the management area."

Groundwater districts are required to meet at least annually to decide on "desired future conditions" for the aquifers within their GMA. A desired future condition is a quantifiable future groundwater condition. These conditions, called metrics, can be a particular groundwater level, level of water quality, volume of spring flow, etc. Based on the adopted desired future condition, the TWDB is responsible for providing each groundwater conservation district and regional water planning group, located wholly or partly in the management area, with a modeled available groundwater volume (MAG) that will be used for planning and groundwater management purposes. Groundwater availability models and other data or information help in establishing modeled available groundwater for the relevant aquifers within the management area.

In Region K, there are six groundwater management areas (GMAs). They include GMA-7, GMA-8, GMA-9, GMA-10, GMA-12, and GMA-15. *Figure 1.24* shows the delineation of these groundwater management areas.

**Figure 1.25: Lower Colorado Regional Water Planning Area (Region K) Groundwater Management Areas**



### 1.2.5.3 Water Conservation Plans (WCP) and Drought Contingency Plans (DCP)

SB 1 also required each entity that possesses major surface water and/or groundwater rights to develop a Water Conservation Plan (WCP). While Region K supports the need for conservation by all water users, these particular plans are required by irrigation water rights of at least 10,000 ac-ft/yr, non-irrigation (municipal, industrial, mining, recreational) water rights of at least 1,000 ac-ft/yr, and retail public water suppliers which serve 3,300 connections or more. In addition, LCRA requires all of its water contract holders to have a WCP and LCRA staff reviews and approves individualized WCPs for all municipal customers with standard water contracts and for all irrigation customers with standard water contracts over 20 acre-feet. The intent of the WCP is to develop and implement programs that will reduce water use within each of the major WUGs, primarily through utilizing advances in technology, reducing distribution system water losses, increasing irrigation efficiency (sometimes required, sometimes voluntary), and educating customers and encouraging voluntary participation in water use efficiency efforts. Approximately 80 percent of Region K's water use occurs in the agricultural irrigation and municipal sectors, and the majority of the WCPs have targeted these two water use groups. The remainder of entities holding water rights in Region K are not required to develop or submit a WCP unless they petition TCEQ for an amendment to their water right or apply for a capital improvement loan with TWDB. In addition, Chapter 288 of the TCEQ Rules requires wholesale water supply purchasers to submit water conservation plans to their wholesale supplier. More details on Water Conservation Plans are provided in *Chapter 5* of this Plan.

The third category of water resource planning effort required by SB 1 is the Drought Contingency Plan (DCP). The intent of the DCP is to specify how a water supply entity will contract and supply dependable stored water supplies to its customers during a repeat of the drought of record, which is the period 2007–2016 for Region K. Triggering conditions for water shortages during a drought must be defined, and the actions that will be taken by the water supplier to mitigate the adverse effects of these water shortages must be specified. The DCP's major goals are extending the supplies of dependable water, preserving essential water uses, protecting public health and safety, and establishing equitable distributions of water among the water supplier's customers.

The most recently amended Title 30, Texas Administrative Code, Chapter 288 became effective on August 16, 2018. The next revision of the drought contingency plans for retail public water suppliers serving 3,300 or more connections, wholesale public water suppliers, and irrigation districts were to be submitted no later than May 1, 2019, and every five years thereafter to coincide with the regional water planning group process. Any new or revised plans must be submitted to the TCEQ within 90 days of adoption by the governing body of the entity. Drought contingency plans are to be provided to the local regional water planning group as well; however, the RWPGs do not review or certify drought contingency plans. LCRA has a detailed template DCP that many of its customers adopt entirely or with minor modifications. More details on Drought Contingency Plans are provided in *Chapter 7* of this Plan.

For all retail public water suppliers serving less than 3,300 connections, the drought contingency plans were to be prepared and available for inspection upon request, but they were not required to be submitted to TCEQ. LCRA requires all water contract holders to adopt a drought contingency plan.

The definition of a WUG for municipal purposes has been expanded to include entities that provide retail water service in excess of 100 ac-ft/yr, or approximately 89,000 gallons per day (gpd). Systems which serve 3,300 connections, assuming 3.2 persons per connection and 130 gallons per person per day, would be serving approximately 1.4 million gallons per day (mgd). As a result, the WUGs covered in the category of less than 3,300 connections will have water usage ranging from 89,000 gpd to 1.3 mgd, or 100 to 1,540 ac-ft/yr. Entities with less than 100 ac-ft/yr of usage are included in the County-Other Municipal WUG.

#### 1.2.5.4 Water Audits

House Bill 3338, passed by the 78th Texas Legislature (2003), requires retail public utilities providing potable water to file water audits with the TWDB once every five years giving the most recent year's water loss. TWDB subsequently commissioned a study of available loss data. The results of this statewide data gathering was compiled into the "Analysis of Water Loss as Reported by Public Water Suppliers in Texas," TWDB, 24 January 2007. Water loss audit information compiled by the TWDB is required to be included in the regional water plans and should be considered when evaluating conservation water management strategies. For this planning cycle, 2015-2017 water loss audit information was provided to the LCRWPG by TWDB. Water loss audit summary reports with data for individual reporting entities are available on TWDB's website approximately two years after the reporting year.

One hundred and twenty-seven (127) public utilities in Region K submitted water loss audit data as part of the required 2015 submittal to TWDB. Limited data was available for 2016 and 2017, so the 2015 data is used for this report. Total loss rates for the utilities within Region K were found to vary widely, with an average total water loss percentage rate of 16.0%. Losses may vary annually and could currently be higher or lower.

Total losses are not limited to loss from known leaks, although for some utilities leakage is responsible for a majority of lost water. Total loss also includes meter inaccuracy, unmetered or unauthorized water use, unidentified line leaks, and storage overflows. Real loss accounts for reported breaks and leaks, and unreported loss. Real loss rates for the utilities within Region K were also found to vary widely, with an average real loss percentage rate of 14.1%.

*Figure 1.26* on the following page summarizes the water loss audit data provided by TWDB to Region K.

**Figure 1.26: Water Loss Audit Summary for Region K for 2015**

<table>
<tr><td rowspan="8">Region K<br>127 Audits Submitted</td><td rowspan="8">System Input Volume<br>60,139,440,957</td><td rowspan="4">Authorized Consumption<br>50,528,887,536<br>84.0%</td><td rowspan="2">Billed Consumption<br>49,783,342,164<br>82.8%</td><td>Billed Metered<br>49,774,131,680<br>82.8%</td><td rowspan="2">Revenue Water<br>49,783,342,164<br>82.8%</td></tr>
<tr><td>Billed Unmetered<br>9,210,484<br>0.0%</td></tr>
<tr><td rowspan="2">Unbilled Consumption<br>745545372<br>1.2%</td><td>Unbilled Metered<br>379,157,482<br>0.6%</td><td rowspan="6">Non-revenue Water<br>10,356,098,793<br>17.2%</td></tr>
<tr><td>Unbilled Unmetered<br>366,387,890<br>0.6%</td></tr>
<tr><td rowspan="4">Water Loss<br>9,613,031,136<br>16.0%</td><td rowspan="3">Apparent Loss<br>1,142,527,910<br>1.9%</td><td>Unauthorized Consumption<br>145,360,586<br>0.2%</td></tr>
<tr><td>Customer Meter Accuracy Loss<br>995,496,677<br>1.7%</td></tr>
<tr><td>Systematic Data Handling Discrepency<br>1,796,777<br>0.0%</td></tr>
<tr><td>Real Loss<br>8,470,543,773<br>14.1%</td><td>Reported Breaks and Leaks<br>347,086,603<br>0.6%<br>Unreported Loss<br>8,123,457,170<br>13.5%</td></tr>
</table>

Source: 2015 Summary of Water Loss Audit Data by Gallons and Percentage by Region with Statewide Totals

# *APPENDIX 1A*

## *THREATENED AND ENDANGERED SPECIES IN THE LOWER COLORADO REGIONAL WATER PLANNING AREA (Texas Parks & Wildlife Department Special Species Lists and Annotated County Lists of Rare Species)*

## KEY: COUNTY THREATENED OR ENDANGERED SPECIES

| | |
|---|---|
| LE, LT | Federally Listed Endangered/Threatened |
| PE, PT | Federally Proposed Endangered/Threatened |
| SAE, SAT | Federally Endangered/Threatened by Similarity of Appearance |
| C1 | Federal Candidate for Listing, formerly Category 1 Candidate |

| | |
|---|---|
| DL, PDL | Federally Delisted/Proposed for Delisting |
| NL | Not Federally Listed |
| E, T | State Listed Endangered/Threatened |
| NT | Not tracked or no longer tracked by the State |
| “blank” | Rare, but with no regulatory listing status |

***Species appearing on these lists do not all share the same probability of occurrence. Some species are migrants or wintering residents only, or may be historic or considered extirpated.***

*Source: Texas Parks and Wildlife Department Special Species Lists and Annotated County Lists of Rare Species (current as of September 2018)*

**TABLE 1A-1: THREATENED OR ENDANGERED SPECIES OF BASTROP COUNTY**

| Common Name | Scientific Name | Description | Federal Status | State Status |
|---|---|---|---|---|
| ******AMPHIBIANS****** | | | | |
| Houston Toad | *Anaxyrus houstonensis* | endemic; sandy substrate, water in pools, ephemeral pools, stock tanks; breeds in spring especially after rains; burrows in soil of adjacent uplands when inactive; breeds February-June; associated with soils of the Sparta, Carrizo, Goliad, Queen City, Recklaw, Weches, and Willis geologic formations | LE | E |
| ******BIRDS****** | | | | |
| American Peregrine Falcon | *Falco peregrinus anatum* | year-round resident and local breeder in west Texas, nests in tall cliff eyries; also, migrant across state from more northern breeding areas in US and Canada, winters along coast and farther south; occupies wide range of habitats during migration, including urban, concentrations along coast and barrier islands; low-altitude migrant, stopovers at leading landscape edges such as lake shores, coastlines, and barrier islands. | DL | T |
| Arctic Peregrine Falcon | *Falco peregrinus tundrius* | migrant throughout state from subspecies' far northern breeding range, winters along coast and farther south; occupies wide range of habitats during migration, including urban, concentrations along coast and barrier islands; low-altitude migrant, stopovers at leading landscape edges such as lake shores, coastlines, and barrier islands. | DL | |
| Bald Eagle | *Haliaeetus leucocephalus* | found primarily near rivers and large lakes; nests in tall trees or on cliffs near water; communally roosts, especially in winter; hunts live prey, scavenges, and pirates food from other birds | DL | T |
| Henslow's Sparrow | *Ammodramus henslowii* | wintering individuals (not flocks) found in weedy fields or cut-over areas where lots of bunch grasses occur along with vines and brambles; a key component is bare ground for running/walking | | |
| Interior Least Tern | *Sterna antillarum athalassos* | subspecies is listed only when inland (more than 50 miles from a coastline); nests along sand and gravel bars within braided streams, rivers; also know to nest on man-made structures (inland beaches, wastewater treatment plants, gravel mines, etc); eats small fish and crustaceans, when breeding forages within a few hundred feet of colony | LE | E |
| Mountain Plover | *Charadrius montanus* | breeding: nests on high plains or shortgrass prairie, on ground in shallow depression; nonbreeding: shortgrass plains and bare, dirt (plowed) fields; primarily insectivorous | | |
| Peregrine Falcon | *Falco peregrinus* | both subspecies migrate across the state from more northern breeding areas in US and Canada to winter along coast and farther south; subspecies (F. p. anatum) is also a resident breeder in west Texas; the two subspecies' listing statuses differ, F.p. tundrius is no longer listed in Texas; but because the subspecies are not easily distinguishable at a distance, reference is generally made only to the species level; see subspecies for habitat. | DL | T |
| Red Knot | *Calidris canutus rufa* | Red knots migrate long distances in flocks northward through the contiguous United States mainly April-June, southward July-October. A small plump-bodied, short-necked shorebird that in breeding plumage, typically held from May through August, is a distinctive and unique pottery orange color. Its bill is dark, straight and, relative to other shorebirds, short-to-medium in length. After molting in late summer, this species is in a drab gray-and-white non-breeding plumage, typically held from September through April. In the non-breeding plumage, the knot might be confused with the omnipresent Sanderling. During this plumage, look for the knot's prominent pale eyebrow and whitish flanks with dark barring. The Red Knot prefers the shoreline of coast and bays and also uses mudflats during rare inland encounters. Primary prey items include coquina clam (Donax spp.) on beaches and dwarf surf clam (Mulinia lateralis) in bays, at least in the Laguna Madre. Wintering Range includes- Aransas, Brazoria, Calhoun, Cameron, Chambers, Galveston, Jefferson, Kennedy, Kleberg, Matagorda, Nueces, San | LT | |

| Common Name | Scientific Name | Description | Federal Status | State Status |
|---|---|---|---|---|
| | | Patricio, and Willacy. Habitat: Primarily seacoasts on tidal flats and beaches, herbaceous wetland, and Tidal flat/shore. | | |
| Sprague's Pipit | *Anthus spragueii* | only in Texas during migration and winter, mid September to early April; short to medium distance, diurnal migrant; strongly tied to native upland prairie, can be locally common in coastal grasslands, uncommon to rare further west; sensitive to patch size and avoids edges. | | |
| Western Burrowing Owl | *Athene cunicularia hypugaea* | open grasslands, especially prairie, plains, and savanna, sometimes in open areas such as vacant lots near human habitation or airports; nests and roosts in abandoned burrows | | |
| Whooping Crane | *Grus americana* | potential migrant via plains throughout most of state to coast; winters in coastal marshes of Aransas, Calhoun, and Refugio counties | LE | E |
| Wood Stork | *Mycteria americana* | forages in prairie ponds, flooded pastures or fields, ditches, and other shallow standing water, including salt-water; usually roosts communally in tall snags, sometimes in association with other wading birds (i.e. active heronries); breeds in Mexico and birds move into Gulf States in search of mud flats and other wetlands, even those associated with forested areas; formerly nested in Texas, but no breeding records since 1960 | | T |
| ******CRUSTACEANS****** | | | | |
| A crayfish | *Procambarus texanus* | ponds | | |
| ******FISHES****** | | | | |
| Blue sucker | *Cycleptus elongatus* | larger portions of major rivers in Texas; usually in channels and flowing pools with a moderate current; bottom type usually of exposed bedrock, perhaps in combination with hard clay, sand, and gravel; adults winter in deep pools and move upstream in spring to spawn on riffles | | T |
| Guadalupe bass | *Micropterus treculii* | endemic to perennial streams of the Edward's Plateau region; introduced in Nueces River system | | |
| ******MAMMALS****** | | | | |
| Cave myotis bat | *Myotis velifer* | colonial and cave-dwelling; also roosts in rock crevices, old buildings, carports, under bridges, and even in abandoned Cliff Swallow (Hirundo pyrrhonota) nests; roosts in clusters of up to thousands of individuals; hibernates in limestone caves of Edwards Plateau and gypsum cave of Panhandle during winter; opportunistic insectivore | | |
| Elliot's short-tailed shrew | *Blarina hylophaga hylophaga* | sandy areas in live oak mottes, grassy areas with a Loblolly pine (Pinus taeda) overstory, and grassy areas near Post oak (Quercus stellata) stands; burrows extensively under leaf litter, logs, and into soil, but ground cover is not required; needs soft damp soils for ease of burrowing | | |
| Plains spotted skunk | *Spilogale putorius interrupta* | catholic; open fields, prairies, croplands, fence rows, farmyards, forest edges, and woodlands; prefers wooded, brushy areas and tallgrass prairie | | |
| Red wolf | *Canis rufus* | extirpated; formerly known throughout eastern half of Texas in brushy and forested areas, as well as coastal prairies | LE | E |
| ******MOLLUSKS****** | | | | |
| False spike mussel | *Quadrula mitchelli* | possibly extirpated in Texas; probably medium to large rivers; substrates varying from mud through mixtures of sand, gravel and cobble; one study indicated water lilies were present at the site; Rio Grande, Brazos, Colorado, and Guadalupe (historic) river basins | | T |
| Smooth pimpleback | *Quadrula houstonensis* | small to moderate streams and rivers as well as moderate size reservoirs; mixed mud, sand, and fine gravel, tolerates very slow to moderate flow rates, appears not to tolerate dramatic water level fluctuations, scoured bedrock substrates, or shifting sand bottoms, lower Trinity (questionable), Brazos, and Colorado River basins | C | T |
| Texas pimpleback | *Quadrula petrina* | mud, gravel and sand substrates, generally in areas with slow flow rates; Colorado and Guadalupe river basins | C | T |
| ******REPTILES****** | | | | |

| Common Name | Scientific Name | Description | Federal Status | State Status |
|---|---|---|---|---|
| Texas garter snake | *Thamnophis sirtalis annectens* | wet or moist microhabitats are conducive to the species occurrence, but is not necessarily restricted to them; hibernates underground or in or under surface cover; breeds March-August | | |
| Texas horned lizard | *Phrynosoma cornutum* | open, arid and semi-arid regions with sparse vegetation, including grass, cactus, scattered brush or scrubby trees; soil may vary in texture from sandy to rocky; burrows into soil, enters rodent burrows, or hides under rock when inactive; breeds March-September | | T |
| Timber rattlesnake | *Crotalus horridus* | swamps, floodplains, upland pine and deciduous woodlands, riparian zones, abandoned farmland; limestone bluffs, sandy soil or black clay; prefers dense ground cover, i.e. grapevines or palmetto | | T |
| ******PLANTS****** | | | | |
| Green beebalm | *Monarda viridissima* | Endemic perennial herb of the Carrizo Sands; deep, well-drained sandy soils in openings of post oak woodlands; flowers white. | | |
| Navasota ladies'-tresses | *Spiranthes parksii* | Texas endemic; openings in post oak woodlands in sandy loams along upland drainages or intermittent streams, often in areas with suitable hydrologic factors, such as a perched water table associated with the underlying claypan; flowering populations fluctuate widely from year to year, an individual plant does not flower every year; flowering late October-early November (-early December) | LE | E |
| Sandhill woollywhite | *Hymenopappus carrizoanus* | Texas endemic; disturbed or open areas in grasslands and post oak woodlands on deep sands derived from the Carrizo Sand and similar Eocene formations; flowering April-June | | |
| Shinner's sunflower | *Helianthus occidentalis ssp plantagineus* | mostly in prairies on the Coastal Plain, with several slightly disjunct populations in the Pineywoods and South Texas Brush Country | | |

## TABLE 1A-2: THREATENED OR ENDANGERED SPECIES OF BLANCO COUNTY

| Common Name | Scientific Name | Description | Federal Status | State Status |
|---|---|---|---|---|
| ******AMPHIBIANS****** | | | | |
| Blanco River Springs Salamander | *Eurycea pterophila* | subaquatic; springs and caves in the Blanco River drainage | | |
| ******BIRDS****** | | | | |
| American Peregrine Falcon | *Falco peregrinus anatum* | year-round resident and local breeder in west Texas, nests in tall cliff eyries; also, migrant across state from more northern breeding areas in US and Canada, winters along coast and farther south; occupies wide range of habitats during migration, including urban, concentrations along coast and barrier islands; low-altitude migrant, stopovers at leading landscape edges such as lake shores, coastlines, and barrier islands. | DL | T |
| Arctic Peregrine Falcon | *Falco peregrinus tundrius* | migrant throughout state from subspecies' far northern breeding range, winters along coast and farther south; occupies wide range of habitats during migration, including urban, concentrations along coast and barrier islands; low-altitude migrant, stopovers at leading landscape edges such as lake shores, coastlines, and barrier islands. | DL | |
| Bald Eagle | *Haliaeetus leucocephalus* | found primarily near rivers and large lakes; nests in tall trees or on cliffs near water; communally roosts, especially in winter; hunts live prey, scavenges, and pirates food from other birds | DL | T |
| Black-capped Vireo | *Vireo atricapilla* | oak-juniper woodlands with distinctive patchy, two-layered aspect; shrub and tree layer with open, grassy spaces; requires foliage reaching to ground level for nesting cover; return to same territory, or one nearby, year after year; deciduous & broad-leaved shrubs & trees provide insects for feeding; species composition less important than presence of adequate broad-leaved shrubs, foliage to ground level, and required structure; nesting season March-late summer | DL | E |
| Golden-cheeked Warbler | *Setophaga chrysoparia* | juniper-oak woodlands; dependent on Ashe juniper (also known as cedar) for long fine bark strips, only available from mature trees, used in nest construction; nests are placed in various trees other than Ashe juniper; only a few mature junipers or nearby cedar brakes can provide the necessary nest material; forage for insects in broad-leaved trees and shrubs; nesting late March-early summer | LE | E |
| Mountain Plover | *Charadrius montanus* | breeding: nests on high plains or shortgrass prairie, on ground in shallow depression; nonbreeding: shortgrass plains and bare, dirt (plowed) fields; primarily insectivorous | | |
| Peregrine Falcon | *Falco peregrinus* | both subspecies migrate across the state from more northern breeding areas in US and Canada to winter along coast and farther south; subspecies (F. p. anatum) is also a resident breeder in west Texas; the two subspecies' listing statuses differ, F.p. tundrius is no longer listed in Texas; but because the subspecies are not easily distinguishable at a distance, reference is generally made only to the species level; see subspecies for habitat. | DL | T |
| Sprague's Pipit | *Anthus spragueii* | only in Texas during migration and winter, mid September to early April; short to medium distance, diurnal migrant; strongly tied to native upland prairie, can be locally common in coastal grasslands, uncommon to rare further west; sensitive to patch size and avoids edges. | | |
| Western Burrowing Owl | *Athene cunicularia hypugaea* | open grasslands, especially prairie, plains, and savanna, sometimes in open areas such as vacant lots near human habitation or airports; nests and roosts in abandoned burrows | | |
| Whooping Crane | *Grus americana* | potential migrant via plains throughout most of state to coast; winters in coastal marshes of Aransas, Calhoun, and Refugio counties | LE | E |
| Zone-tailed Hawk | *Buteo albonotatus* | arid open country, including open deciduous or pine-oak woodland, mesa or mountain county, often near watercourses, and wooded canyons and tree-lined rivers along middle-slopes of desert mountains; nests in various habitats and sites, ranging from small trees in lower desert, giant cottonwoods in riparian areas, to mature conifers in high mountain regions | | T |
| ******FISHES****** | | | | |
| Guadalupe Bass | *Micropterus treculii* | endemic to perennial streams of the Edward's Plateau region; introduced in Nueces River system | | |

| Common Name | Scientific Name | Description | Federal Status | State Status |
|---|---|---|---|---|
| Headwater catfish | *Ictalurus lupus* | originally throughout streams of the Edwards Plateau and the Rio Grande basin, currently limited to Rio Grande drainage, including Pecos River basin; springs, and sandy and rocky riffles, runs, and pools of clear creeks and small rivers | | |
| *******INSECTS****** | | | | |
| A mayfly | *Allenhyphes michaeli* | TX Hill Country; mayflies distinguished by aquatic larval stage; adult stage generally found in shoreline vegetation | | |
| Disjunct crawling water beetle | *Haliplus nitens* | unknown, maybe shallow water | | |
| ******MAMMALS****** | | | | |
| Black Bear | *Ursus americanus* | bottomland hardwoods and large tracts of inaccessible forested areas; due to field characteristics similar to Louisiana Black Bear (LT, T), treat all east Texas black bears as federal and state listed Threatened | | T |
| Cave Myotis Bat | *Myotis velifer* | colonial and cave-dwelling; also roosts in rock crevices, old buildings, carports, under bridges, and even in abandoned Cliff Swallow (Hirundo pyrrhonota) nests; roosts in clusters of up to thousands of individuals; hibernates in limestone caves of Edwards Plateau and gypsum cave of Panhandle during winter; opportunistic insectivore | | |
| Gray wolf | *Canis lupus* | extirpated; formerly known throughout the western two-thirds of the state in forests, brushlands, or grasslands | LE | E |
| Llano pocket gopher | *Geomys texensis texensis* | found in deep, brown loamy sands or gravelly sandy loams and is isolated from other species of pocket gophers by intervening shallow stony to gravelly clayey soils | | |
| Plains spotted skunk | *Spilogale putorius interrupta* | catholic; open fields, prairies, croplands, fence rows, farmyards, forest edges, and woodlands; prefers wooded, brushy areas and tallgrass prairie | | |
| Red wolf | *Canis rufus* | extirpated; formerly known throughout eastern half of Texas in brushy and forested areas, as well as coastal prairies | LE | E |
| ******MOLLUSKS****** | | | | |
| False spike mussel | *Quadrula mitchelli* | possibly extirpated in Texas; probably medium to large rivers; substrates varying from mud through mixtures of sand, gravel and cobble; one study indicated water lilies were present at the site; Rio Grande, Brazos, Colorado, and Guadalupe (historic) river basins | | T |
| Golden orb | *Quadrula aurea* | sand and gravel in some locations and mud at others; found in lentic and lotic; Guadalupe, San Antonio, Lower San Marcos, and Nueces River basins | C | T |
| Smooth pimpleback | *Quadrula houstonensis* | small to moderate streams and rivers as well as moderate size reservoirs; mixed mud, sand, and fine gravel, tolerates very slow to moderate flow rates, appears not to tolerate dramatic water level fluctuations, scoured bedrock substrates, or shifting sand bottoms, lower Trinity (questionable), Brazos, and Colorado River basins | C | T |
| Texas fatmucket | *Lampsilis bracteata* | streams and rivers on sand, mud, and gravel substrates; intolerant of impoundment; broken bedrock and course gravel or sand in moderately flowing water; Colorado and Guadalupe River basins | C | T |
| Texas pimpleback | *Quadrula petrina* | mud, gravel and sand substrates, generally in areas with slow flow rates; Colorado and Guadalupe river basins | C | T |
| ******REPTILES****** | | | | |
| Spot-tailed earless lizard | *Holbrookia lacerata* | central and southern Texas and adjacent Mexico; moderately open prairie-brushland; fairly flat areas free of vegetation or other obstructions, including disturbed areas; eats small invertebrates; eggs laid underground | | |
| Texas garter snake | *Thamnophis sirtalis annectens* | wet or moist microhabitats are conducive to the species occurrence, but is not necessarily restricted to them; hibernates underground or in or under surface cover; breeds March-August | | |
| Texas horned lizard | *Phrynosoma cornutum* | open, arid and semi-arid regions with sparse vegetation, including grass, cactus, scattered brush or scrubby trees; soil may vary in texture from sandy to rocky; burrows into soil, enters rodent burrows, or hides under rock when inactive; breeds March-September | | T |
| ******PLANTS****** | | | | |
| Granite spiderwort | *Tradescantia pedicellata* | Texas endemic; mostly in fractures on outcrops of granite, gneiss, and similar igneous and metamorphic rocks, or in early successional grasslands or forb-dominated assemblages on well-drained, sandy to gravelly soils derived from same; flowering at least April-May | | |

| Common Name | Scientific Name | Description | Federal Status | State Status |
|---|---|---|---|---|
| Hill Country wild-mercury | *Argythamnia aphoroides* | Texas endemic; mostly in bluestem-grama grasslands associated with plateau live oak woodlands on shallow to moderately deep clays and clay loams over limestone on rolling uplands, also in partial shade of oak-juniper woodlands in gravelly soils on rocky limestone slopes; flowering April-May with fruit persisting until midsummer | | |
| Llano butterweed | *Packera texensis* | Endemic to Llano Uplift of Edwards Plateau; granite sands; arises quickly from evergreen winter rosettes during January rains; flowers Feb-Mar. | | |

## TABLE 1A-3: THREATENED OR ENDANGERED SPECIES OF BURNET COUNTY

| Common Name | Scientific Name | Description | Federal Status | State Status |
|---|---|---|---|---|
| ******ARACHNIDS****** | | | | |
| Bee Creek Cave harvestman | *Texella reddelli* | small, blind, cave-adapted harvestman endemic to a few caves in Travis and Williamson counties | LE | |
| ******BIRDS****** | | | | |
| American Peregrine Falcon | *Falco peregrinus anatum* | year-round resident and local breeder in west Texas, nests in tall cliff eyries; also, migrant across state from more northern breeding areas in US and Canada, winters along coast and farther south; occupies wide range of habitats during migration, including urban, concentrations along coast and barrier islands; low-altitude migrant, stopovers at leading landscape edges such as lake shores, coastlines, and barrier islands. | DL | T |
| Arctic Peregrine Falcon | *Falco peregrinus tundrius* | migrant throughout state from subspecies' far northern breeding range, winters along coast and farther south; occupies wide range of habitats during migration, including urban, concentrations along coast and barrier islands; low-altitude migrant, stopovers at leading landscape edges such as lake shores, coastlines, and barrier islands. | DL | |
| Bald Eagle | *Haliaeetus leucocephalus* | found primarily near rivers, and large lakes; nests in tall trees or on cliffs near water; communally roosts, especially in winter, hunts live prey, scavenges, and pirates food from other birds | DL | T |
| Black-capped Vireo | *Vireo atricapilla* | oak-juniper woodlands with distinctive patchy, two-layered aspect; shrub and tree layer with open, grassy spaces; requires foliage reaching to ground level for nesting cover; return to same territory, or one nearby, year after year; deciduous and broad-leaved shrubs and trees provide insects for feeding; species composition less important than presence of adequate broad-leaved shrubs, foliage to ground level, and required structure; nesting season March-late summer | DL | E |
| Golden-cheeked Warbler | *Setophaga chrysoparia* | juniper-oak woodlands; dependent on Ashe juniper (also known as cedar) for long fine bark strips, only available from mature trees, used in nest construction; nests are placed in various trees other than Ashe juniper; only a few mature junipers or nearby cedar brakes can provide the necessary nest material; forage for insects in broad-leaved trees and shrubs; nesting late March-early summer | LE | E |
| Interior Least Tern | *Sterna antillarum athalassos* | subspecies is listed only when inland (more than 50 miles from a coastline); nests along sand and gravel bars within braided streams, rivers; also know to nest on man-made structures (inland beaches, wastewater treatment plants, gravel mines, etc); eats small fish and crustaceans, when breeding forages within a few hundred feet of colony | LE | E |
| Mountain Plover | *Charadrius montanus* | breeding: nests on high plains or shortgrass prairie, on ground in shallow depression; nonbreeding: shortgrass plains and bare, dirt (plowed) fields; primarily insectivorous | | |
| Peregrine Falcon | *Falco peregrinus* | both subspecies migrate across the state from more northern breeding areas in US and Canada to winter along coast and farther south; subspecies (F. p. anatum) is also a resident breeder in west Texas; the two subspecies' listing statuses differ, F.p. tundrius is no longer listed in Texas; but because the subspecies are not easily distinguishable at a distance, reference is generally made only to the species level; see subspecies for habitat. | DL | T |
| Sprague's Pipit | *Anthus spragueii* | only in Texas during migration and winter, mid September to early April; short to medium distance, diurnal migrant; strongly tied to native upland prairie, can be locally common in coastal grasslands, uncommon to rare further west; sensitive to patch size and avoids edges. | | |
| Western Burrowing Owl | *Athene cunicularia hypugaea* | open grasslands, especially prairie, plains, and savanna, sometimes in open areas such as vacant lots near human habitation or airports; nests and roosts in abandoned burrows | | |
| Whooping Crane | *Grus americana* | potential migrant via plains throughout most of state to coast; winters in coastal marshes of Aransas, Calhoun, and Refugio | LE | E |

| Common Name | Scientific Name | Description | Federal Status | State Status |
|---|---|---|---|---|
| | | counties | | |
| ***CRUSTACEANS*** | | | | |
| An amphipod | *Stygobromus russelli* | subterranean waters, usually in caves and limestone aquifers; resident of numerous caves in ca. 10 counties of the Edwards Plateau | | |
| Bifurcated cave amphipod | *Stygobromus bifurcatus* | found in cave pools | | |
| ***FISHES*** | | | | |
| Guadalupe Bass | *Micropterus treculii* | endemic to perennial streams of the Edward's Plateau region; introduced in Nueces River system | | |
| Headwater catfish | *Ictalurus lupus* | originally throughout streams of the Edwards Plateau and the Rio Grande basin, currently limited to Rio Grande drainage, including Pecos River basin; springs, and sandy and rocky riffles, runs, and pools of clear creeks and small rivers | | |
| ***INSECTS*** | | | | |
| Disjunct crawling water beetle | *Haliplus nitens* | unknown, maybe shallow water | | |
| ***MAMMALS*** | | | | |
| Cave myotis bat | *Myotis velifer* | colonial and cave-dwelling; also roosts in rock crevices, old buildings, carports, under bridges, and even in abandoned Cliff Swallow (Hirundo pyrrhonota) nests; roosts in clusters of up to thousands of individuals; hibernates in limestone caves of Edwards Plateau and gypsum cave of Panhandle during winter; opportunistic insectivore | | |
| Gray wolf | *Canis lupus* | extirpated; formerly known throughout the western two-thirds of the state in forests, brushlands, or grasslands | LE | E |
| Llano pocket gopher | *Geomys texensis texensis* | found in deep, brown loamy sands or gravelly sandy loams and is isolated from other species of pocket gophers by intervening shallow stony to gravelly clayey soils | | |
| Plains spotted skunk | *Spilogale putorius interrupta* | catholic; open fields, prairies, croplands, fence rows, farmyards, forest edges, and woodlands; prefers wooded, brushy areas and tallgrass prairie | | |
| Red wolf | *Canis rufus* | extirpated; formerly known throughout eastern half of Texas in brushy and forested areas, as well as coastal prairies | LE | E |
| ***MOLLUSKS*** | | | | |
| False spike mussel | *Quadrula mitchelli* | possibly extirpated in Texas; probably medium to large rivers; substrates varying from mud through mixtures of sand, gravel and cobble; one study indicated water lilies were present at the site; Rio Grande, Brazos, Colorado, and Guadalupe (historic) river basins | | T |
| Smooth pimpleback | *Quadrula houstonensis* | small to moderate streams and rivers as well as moderate size reservoirs; mixed mud, sand, and fine gravel, tolerates very slow to moderate flow rates, appears not to tolerate dramatic water level fluctuations, scoured bedrock substrates, or shifting sand bottoms, lower Trinity (questionable), Brazos, and Colorado River basins | C | T |
| Texas fatmucket | *Lampsilis bracteata* | streams and rivers on sand, mud, and gravel substrates; intolerant of impoundment; broken bedrock and course gravel or sand in moderately flowing water; Colorado and Guadalupe River basins | C | T |
| Texas fawnsfoot | *Truncilla macrodon* | little known; possibly rivers and larger streams, and intolerant of impoundment; flowing rice irrigation canals, possibly sand, gravel, and perhaps sandy-mud bottoms in moderate flows; Brazos and Colorado River basins | C | T |
| Texas pimpleback | *Quadrula petrina* | mud, gravel and sand substrates, generally in areas with slow flow rates; Colorado and Guadalupe river basins | C | T |
| ***REPTILES*** | | | | |
| Concho water snake | *Nerodia paucimaculata* | Texas endemic; Concho and Colorado river systems; shallow fast-flowing water with a rocky or gravelly substrate preferred; adults can be found in deep water with mud bottoms; breeding March-October | DL | |
| Spot-tailed earless lizard | *Holbrookia lacerata* | central and southern Texas and adjacent Mexico; moderately open prairie-brushland; fairly flat areas free of vegetation or other obstructions, including disturbed areas; eats small invertebrates; | | |

| Common Name | Scientific Name | Description | Federal Status | State Status |
|---|---|---|---|---|
| | | eggs laid underground | | |
| Texas garter snake | *Thamnophis sirtalis annectens* | wet or moist microhabitats are conducive to the species occurrence, but is not necessarily restricted to them; hibernates underground or in or under surface cover; breeds March-August | | |
| Texas horned lizard | *Phrynosoma cornutum* | open, arid and semi-arid regions with sparse vegetation, including grass, cactus, scattered brush or scrubby trees; soil may vary in texture from sandy to rocky; burrows into soil, enters rodent burrows, or hides under rock when inactive; breeds March-September | | T |
| ******PLANTS****** | | | | |
| Basin bellflower | *Campanula reverchonii* | Texas endemic; among scattered vegetation on loose gravel, gravelly sand, and rock outcrops on open slopes with exposures of igneous and metamorphic rocks; may also occur on sandbars and other alluvial deposits along major rivers; flowering May-July | | |
| Edwards Plateau cornsalad | *Valerianella texana* | very shallow, well-drained, but seasonally moist gravelly-sandy soils derived from igneous or metamorphic rocks, often along the downslope margin of rock outcrops, in full sun or in partial shade of oak-juniper woodlands; more likely encountered in early successional areas; population numbers fluctuate considerably from year to year, with higher numbers following winters with higher rains and/or moderate temperatures; peak flowering/fruiting mid-March–late April, stems wither and disappear by the beginning of May | | |
| Enquist's sandmint | *Brazoria enquistii* | Texas endemic; primarily on sand banks in and along beds of streams that drain granitic or gneissic landscapes; flowering/fruiting April-June | | |
| Granite spiderwort | *Tradescantia pedicellata* | Texas endemic; mostly in fractures on outcrops of granite, gneiss, and similar igneous and metamorphic rocks, or in early successional grasslands or forb-dominated assemblages on well-drained, sandy to gravelly soils derived from same; flowering at least April-May | | |
| Rock quillwort | *Isoetes lithophila* | Texas endemic; rooted in sand and gravel under shallow water of seasonal pools (vernal pools) that develop during rainy seasons in small, shallow, unshaded basins on barren outcrops of granite and gneiss; sporulating in late winter and spring, and opportunistically in other seasons following heavy rainfall | | |

## TABLE 1A-4: THREATENED OR ENDANGERED SPECIES OF COLORADO COUNTY

| Common Name | Scientific Name | Description | Federal Status | State Status |
|---|---|---|---|---|
| ******AMPHIBIANS****** | | | | |
| Houston Toad | *Anaxyrus houstonensis* | endemic; sandy substrate, water in pools, ephemeral pools, stock tanks; breeds in spring especially after rains; burrows in soil of adjacent uplands when inactive; breeds February-June; associated with soils of the Sparta, Carrizo, Goliad, Queen City, Recklaw, Weches, and Willis geologic formations | LE | E |
| Southern Crawfish Frog | *Lithobates areolatus areolatus* | The Southern Crawfish Frog can be found in abandoned crawfish holes and small mammal burrows. This species inhabits moist meadows, pasturelands, pine scrub, and river flood plains. This species spends nearly all of its time in burrows and only leaves the burrow area to breed. Although this species can be difficult to detect due to its reclusive nature, the call of breeding males can be heard over great distances. Eggs are laid and larvae develop in temporary water such as flooded fields, ditches, farm ponds and small lakes. Habitat: Shallow water, Herbaceous Wetland, Riparian, Temporary Pool, Cropland/hedgerow, Grassland/herbaceous, Suburban/orchard, Woodland – Conifer. | | |
| ******BIRDS****** | | | | |
| American Peregrine Falcon | *Falco peregrinus anatum* | year-round resident and local breeder in west Texas, nests in tall cliff eyries; also, migrant across state from more northern breeding areas in US and Canada, winters along coast and farther south; occupies wide range of habitats during migration, including urban, concentrations along coast and barrier islands; low-altitude migrant, stopovers at leading landscape edges such as lake shores, coastlines, and barrier islands. | DL | T |
| Arctic Peregrine Falcon | *Falco peregrinus tundrius* | migrant throughout state from subspecies' far northern breeding range, winters along coast and farther south; occupies wide range of habitats during migration, including urban, concentrations along coast and barrier islands; low-altitude migrant, stopovers at leading landscape edges such as lake shores, coastlines, and barrier islands. | DL | |
| Attwater's Greater Prairie-chicken | *Tympanuchus cupido attwateri* | this county within historic range; endemic; open prairies of mostly thick grass one to three feet tall; from near sea level to 200 feet along coastal plain on upper two-thirds of Texas coast; males form communal display flocks during late winter-early spring; booming grounds important; breeding February-July | LE | E |
| Bald Eagle | *Haliaeetus leucocephalus* | found primarily near rivers and large lakes; nests in tall trees or on cliffs near water; communally roosts, especially in winter; hunts live prey, scavenges, and pirates food from other birds | DL | T |
| Henslow's Sparrow | *Ammodramus henslowii* | wintering individuals (not flocks) found in weedy fields or cut-over areas where lots of bunch grasses occur along with vines and brambles; a key component is bare ground for running/walking | | |
| Interior Least Tern | *Sterna antillarum athalassos* | subspecies is listed only when inland (more than 50 miles from a coastline); nests along sand and gravel bars within braided streams, rivers; also know to nest on man-made structures (inland beaches, wastewater treatment plants, gravel mines, etc); eats small fish and crustaceans, when breeding forages within a few hundred feet of colony | LE | E |
| Mountain Plover | *Charadrius montanus* | breeding: nests on high plains or shortgrass prairie, on ground in shallow depression; nonbreeding: shortgrass plains and bare, dirt (plowed) fields; primarily insectivorous | | |
| Peregrine Falcon | *Falco peregrinus* | both subspecies migrate across the state from more northern breeding areas in US and Canada to winter along coast and farther south; subspecies (F. p. anatum) is also a resident breeder in west Texas; the two subspecies' listing statuses differ, F.p. tundrius is no longer listed in Texas; but because the subspecies are not easily distinguishable at a distance, reference is generally made only to the species level; see subspecies for habitat. | DL | T |
| Red Knot | *Calidris canutus rufa* | Red knots migrate long distances in flocks northward through the contiguous United States mainly April-June, southward July-October. A small plump-bodied, short-necked shorebird that in breeding plumage, typically held from May through August, is a distinctive and unique pottery orange color. Its bill is dark, straight and, relative to other shorebirds, short-to-medium in length. After molting in late summer, this species is in a drab gray-and-white non-breeding plumage, typically held from September through April. In the non-breeding plumage, the knot might be confused with the omnipresent Sanderling. During this plumage, look for the knot's prominent pale eyebrow and whitish flanks with dark barring. The Red Knot prefers the shoreline of coast and bays and | LT | |

| Common Name | Scientific Name | Description | Federal Status | State Status |
|---|---|---|---|---|
| | | also uses mudflats during rare inland encounters. Primary prey items include coquina clam (Donax spp.) on beaches and dwarf surf clam (Mulinia lateralis) in bays, at least in the Laguna Madre. Wintering Range includes- Aransas, Brazoria, Calhoun, Cameron, Chambers, Galveston, Jefferson, Kennedy, Kleberg, Matagorda, Nueces, San Patricio, and Willacy. Habitat: Primarily seacoasts on tidal flats and beaches, herbaceous wetland, and Tidal flat/shore. | | |
| Sprague's Pipit | *Anthus spragueii* | only in Texas during migration and winter, mid September to early April; short to medium distance, diurnal migrant; strongly tied to native upland prairie, can be locally common in coastal grasslands, uncommon to rare further west; sensitive to patch size and avoids edges. | | |
| Western Burrowing Owl | *Athene cunicularia hypugaea* | open grasslands, especially prairie, plains, and savanna, sometimes in open areas such as vacant lots near human habitation or airports; nests and roosts in abandoned burrows | | |
| White-faced Ibis | *Plegadis chihi* | prefers freshwater marshes, sloughs, and irrigated rice fields, but will attend brackish and saltwater habitats; nests in marshes, in low trees, on the ground in bulrushes or reeds, or on floating mats | | T |
| White-tailed Hawk | *Buteo albicaudatus* | near coast on prairies, cordgrass flats, and scrub-live oak; further inland on prairies, mesquite and oak savannas, and mixed savanna-chaparral; breeding March-May | | T |
| Whooping Crane | *Grus americana* | potential migrant via plains throughout most of state to coast; winters in coastal marshes of Aransas, Calhoun, and Refugio counties | LE | E |
| Wood Stork | *Mycteria americana* | forages in prairie ponds, flooded pastures or fields, ditches, and other shallow standing water, including salt-water; usually roosts communally in tall snags, sometimes in association with other wading birds (i.e. active heronries); breeds in Mexico and birds move into Gulf States in search of mud flats and other wetlands, even those associated with forested areas; formerly nested in Texas, but no breeding records since 1960 | | T |
| *******FISHES****** | | | | |
| Blue sucker | *Cycleptus elongatus* | larger portions of major rivers in Texas; usually in channels and flowing pools with a moderate current; bottom type usually of exposed bedrock, perhaps in combination with hard clay, sand, and gravel; adults winter in deep pools and move upstream in spring to spawn on riffles | | T |
| Guadalupe bass | *Micropterus treculii* | endemic to perennial streams of the Edward's Plateau region; introduced in Nueces River system | | |
| ******INSECTS****** | | | | |
| Texas asaphomyian tabanid fly | *Asaphomyia texensis* | globally historic; adults of tabanid spp. found near slow-moving water; eggs laid in masses on leaves or other objects near or over water; larvae are aquatic and predaceous; females of tabanid spp. bite, while males chiefly feed on pollen and nectar; using sight, carbon dioxide, and odor for selection, tabanid spp. lie in wait in shady areas under bushes and trees for a host to happen by | | |
| ******MAMMALS****** | | | | |
| Louisiana Black Bear | *Ursus americanus luteolus* | possible as transient; bottomland hardwoods and large tracts of inaccessible forested areas | DL | T |
| Plains spotted skunk | *Spilogale putorius interrupta* | catholic; open fields, prairies, croplands, fence rows, farmyards, forest edges, and woodlands; prefers wooded, brushy areas and tallgrass prairie | | |
| Red wolf | *Canis rufus* | extirpated; formerly known throughout eastern half of Texas in brushy and forested areas, as well as coastal prairies | LE | E |
| ******MOLLUSKS****** | | | | |
| Smooth pimpleback | *Quadrula houstonensis* | small to moderate streams and rivers as well as moderate size reservoirs; mixed mud, sand, and fine gravel, tolerates very slow to moderate flow rates, appears not to tolerate dramatic water level fluctuations, scoured bedrock substrates, or shifting sand bottoms, lower Trinity (questionable), Brazos, and Colorado River basins | C | T |
| Texas fawnsfoot | *Truncilla macrodon* | little known; possibly rivers and larger streams, and intolerant of impoundment; flowing rice irrigation canals, possibly sand, gravel, and perhaps sandy-mud bottoms in moderate flows; Brazos and Colorado River basins | C | T |
| Texas pimpleback | *Quadrula petrina* | mud, gravel and sand substrates, generally in areas with slow flow rates; Colorado and Guadalupe river basins | C | T |

| Common Name | Scientific Name | Description | Federal Status | State Status |
|---|---|---|---|---|
| | | | | |
| *******REPTILES****** | | | | |
| Texas horned lizard | *Phrynosoma cornutum* | open, arid and semi-arid regions with sparse vegetation, including grass, cactus, scattered brush or scrubby trees; soil may vary in texture from sandy to rocky; burrows into soil, enters rodent burrows, or hides under rock when inactive; breeds March-September | | T |
| Timber rattlesnake | *Crotalus horridus* | swamps, floodplains, upland pine and deciduous woodlands, riparian zones, abandoned farmland; limestone bluffs, sandy soil or black clay; prefers dense ground cover, i.e. grapevines or palmetto | | T |
| *******PLANTS****** | | | | |
| Coastal gay-feather | *Liatris bracteata* | Texas endemic; coastal prairie grasslands of various types, from salty prairie on low- lying somewhat saline clay loams to upland prairie on nonsaline clayey to sandy loams; flowering in fall | | |
| Shinner's sunflower | *Helianthus occidentalis ssp plantagineus* | mostly in prairies on the Coastal Plain, with several slightly disjunct populations in the Pineywoods and South Texas Brush Country | | |

## TABLE 1A-5: THREATENED OR ENDANGERED SPECIES OF FAYETTE COUNTY

| Common Name | Scientific Name | Description | Federal Status | State Status |
|---|---|---|---|---|
| ******BIRDS****** | | | | |
| American Peregrine Falcon | *Falco peregrinus anatum* | year-round resident and local breeder in west Texas, nests in tall cliff eyries; also, migrant across state from more northern breeding areas in US and Canada, winters along coast and farther south; occupies wide range of habitats during migration, including urban, concentrations along coast and barrier islands; low-altitude migrant, stopovers at leading landscape edges such as lake shores, coastlines, and barrier islands. | DL | T |
| Arctic Peregrine Falcon | *Falco peregrinus tundrius* | migrant throughout state from subspecies' far northern breeding range, winters along coast and farther south; occupies wide range of habitats during migration, including urban, concentrations along coast and barrier islands; low-altitude migrant, stopovers at leading landscape edges such as lake shores, coastlines, and barrier islands. | DL | |
| Bald Eagle | *Haliaeetus leucocephalus* | found primarily near rivers and large lakes; nests in tall trees or on cliffs near water; communally roosts, especially in winter; hunts live prey, scavenges, and pirates food from other birds | DL | T |
| Henslow's Sparrow | *Ammodramus henslowii* | wintering individuals (not flocks) found in weedy fields or cut-over areas where lots of bunch grasses occur along with vines and brambles; a key component is bare ground for running/walking | | |
| Interior Least Tern | *Sterna antillarum athalassos* | subspecies is listed only when inland (more than 50 miles from a coastline); nests along sand and gravel bars within braided streams, rivers; also know to nest on man-made structures (inland beaches, wastewater treatment plants, gravel mines, etc); eats small fish and crustaceans, when breeding forages within a few hundred feet of colony | LE | E |
| Mountain Plover | *Charadrius montanus* | breeding: nests on high plains or shortgrass prairie, on ground in shallow depression; nonbreeding: shortgrass plains and bare, dirt (plowed) fields; primarily insectivorous | | |
| Peregrine Falcon | *Falco peregrinus* | both subspecies migrate across the state from more northern breeding areas in US and Canada to winter along coast and farther south; subspecies (F. p. anatum) is also a resident breeder in west Texas; the two subspecies' listing statuses differ, F.p. tundrius is no longer listed in Texas; but because the subspecies are not easily distinguishable at a distance, reference is generally made only to the species level; see subspecies for habitat. | DL | T |
| Red Knot | *Calidris canutus rufa* | Red knots migrate long distances in flocks northward through the contiguous United States mainly April-June, southward July-October. A small plump-bodied, short-necked shorebird that in breeding plumage, typically held from May through August, is a distinctive and unique pottery orange color. Its bill is dark, straight and, relative to other shorebirds, short-to-medium in length. After molting in late summer, this species is in a drab gray-and-white non-breeding plumage, typically held from September through April. In the non-breeding plumage, the knot might be confused with the omnipresent Sanderling. During this plumage, look for the knot's prominent pale eyebrow and whitish flanks with dark barring. The Red Knot prefers the shoreline of coast and bays and also uses mudflats during rare inland encounters. Primary prey items include coquina clam (Donax spp.) on beaches and dwarf surf clam (Mulinia lateralis) in bays, at least in the Laguna Madre. Wintering Range includes- Aransas, Brazoria, Calhoun, Cameron, Chambers, Galveston, Jefferson, Kennedy, Kleberg, Matagorda, Nueces, San Patricio, and Willacy. Habitat: Primarily seacoasts on tidal flats and beaches, herbaceous wetland, and Tidal flat/shore. | LT | |
| Sprague's Pipit | *Anthus spragueii* | only in Texas during migration and winter, mid September to early April; short to medium distance, diurnal migrant; strongly tied to native upland prairie, can be locally common in coastal grasslands, uncommon to rare further west; sensitive to patch size and avoids edges. | | |
| Western Burrowing Owl | *Athene cunicularia hypugaea* | open grasslands, especially prairie, plains, and savanna, sometimes in open areas such as vacant lots near human habitation or airports; nests and roosts in abandoned burrows | | |
| Whooping Crane | *Grus americana* | potential migrant via plains throughout most of state to coast; winters in coastal marshes of Aransas, Calhoun, and Refugio counties | LE | E |

| | | | | |
|---|---|---|---|---|
| Wood Stork | *Mycteria americana* | forages in prairie ponds, flooded pastures or fields, ditches, and other shallow standing water, including salt-water; usually roosts communally in tall snags, sometimes in association with other wading birds (i.e. active heronries); breeds in Mexico and birds move into Gulf States in search of mud flats and other wetlands, even those associated with forested areas; formerly nested in Texas, but no breeding records since 1960 | | T |
| ******FISHES****** | | | | |
| Blue sucker | *Cycleptus elongatus* | larger portions of major rivers in Texas; usually in channels and flowing pools with a moderate current; bottom type usually of exposed bedrock, perhaps in combination with hard clay, sand, and gravel; adults winter in deep pools and move upstream in spring to spawn on riffles | | T |
| Guadalupe bass | *Micropterus treculii* | endemic to perennial streams of the Edward's Plateau region; introduced in Nueces River system | | |
| ******MAMMALS****** | | | | |
| Cave Myotis Bat | *Myotis velifer* | colonial and cave-dwelling; also roosts in rock crevices, old buildings, carports, under bridges, and even in abandoned Cliff Swallow (Hirundo pyrrhonota) nests; roosts in clusters of up to thousands of individuals; hibernates in limestone caves of Edwards Plateau and gypsum cave of Panhandle during winter; opportunistic insectivore | | |
| Plains Spotted Skunk | *Spilogale putorius interrupta* | catholic; open fields, prairies, croplands, fence rows, farmyards, forest edges, and woodlands; prefers wooded, brushy areas and tallgrass prairie | | |
| Red Wolf | *Canis rufus* | extirpated; formerly known throughout eastern half of Texas in brushy and forested areas, as well as coastal prairies | LE | E |
| ******MOLLUSKS****** | | | | |
| False spike mussel | *Quadrula mitchelli* | possibly extirpated in Texas; probably medium to large rivers; substrates varying from mud through mixtures of sand, gravel and cobble; one study indicated water lilies were present at the site; Rio Grande, Brazos, Colorado, and Guadalupe (historic) river basins | | T |
| Smooth pimpleback | *Quadrula houstonensis* | small to moderate streams and rivers as well as moderate size reservoirs; mixed mud, sand, and fine gravel, tolerates very slow to moderate flow rates, appears not to tolerate dramatic water level fluctuations, scoured bedrock substrates, or shifting sand bottoms, lower Trinity (questionable), Brazos, and Colorado River basins | C | T |
| Texas fawnsfoot | *Truncilla macrodon* | little known; possibly rivers and larger streams, and intolerant of impoundment; flowing rice irrigation canals, possibly sand, gravel, and perhaps sandy-mud bottoms in moderate flows; Brazos and Colorado River basins | C | T |
| Texas pimpleback | *Quadrula petrina* | mud, gravel and sand substrates, generally in areas with slow flow rates; Colorado and Guadalupe river basins | C | T |
| ******REPTILES****** | | | | |
| Texas horned lizard | *Phrynosoma cornutum* | open, arid and semi-arid regions with sparse vegetation, including grass, cactus, scattered brush or scrubby trees; soil may vary in texture from sandy to rocky; burrows into soil, enters rodent burrows, or hides under rock when inactive; breeds March-September | | T |
| Timber rattlesnake | *Crotalus horridus* | swamps, floodplains, upland pine and deciduous woodlands, riparian zones, abandoned farmland; limestone bluffs, sandy soil or black clay; prefers dense ground cover, i.e. grapevines or palmetto | | T |
| ******PLANTS****** | | | | |
| Bristle nailwort | *Paronychia setacea* | Flowering vascular plant endemic to eastern southcentral Texas, occurring in sandy soils | | |
| Navasota ladies'-tresses | *Spiranthes parksii* | Texas endemic; openings in post oak woodlands in sandy loams along upland drainages or intermittent streams, often in areas with suitable hydrologic factors, such as a perched water table associated with the underlying claypan; flowering populations fluctuate widely from year to year, an individual plant does not flower every year; flowering late October-early November (-early December) | LE | E |
| Shinner's sunflower | *Helianthus occidentalis ssp plantagineus* | mostly in prairies on the Coastal Plain, with several slightly disjunct populations in the Pineywoods and South Texas Brush Country | | |

| | | |
|---|---|---|
| Texas meadow-rue | *Thalictrum texanum* | Texas endemic; mostly found in woodlands and woodland margins on soils with a surface layer of sandy loam, but it also occurs on prairie pimple mounds; both on uplands and creek terraces, but perhaps most common on claypan savannas; soils are very moist during its active growing season; flowering/fruiting (January-) February-May, withering by midsummer, foliage reappears in late fall(November) and may persist through the winter |

## TABLE 1A-6: THREATENED OR ENDANGERED SPECIES OF GILLESPIE COUNTY

| Common Name | Scientific Name | Description | Federal Status | State Status |
|---|---|---|---|---|
| ***BIRDS*** | | | | |
| American Peregrine Falcon | *Falco peregrinus anatum* | year-round resident and local breeder in west Texas, nests in tall cliff eyries; also, migrant across state from more northern breeding areas in US and Canada, winters along coast and farther south; occupies wide range of habitats during migration, including urban, concentrations along coast and barrier islands; low-altitude migrant, stopovers at leading landscape edges such as lake shores, coastlines, and barrier islands. | DL | T |
| Arctic Peregrine Falcon | *Falco peregrinus tundrius* | migrant throughout state from subspecies' far northern breeding range, winters along coast and farther south; occupies wide range of habitats during migration, including urban, concentrations along coast and barrier islands; low-altitude migrant, stopovers at leading landscape edges such as lake shores, coastlines, and barrier islands. | DL | |
| Baird's Sparrow | *Ammodramus bairdii* | shortgrass prairie with scattered low bushes and matted vegetation; mostly migratory in western half of State, though winters in Mexico and just across Rio Grande into Texas from Brewster through Hudspeth counties | | |
| Bald Eagle | *Haliaeetus leucocephalus* | found primarily near rivers and large lakes; nests in tall trees or on cliffs near water; communally roosts, especially in winter; hunts live prey, scavenges, and pirates food from other birds | DL | T |
| Black-capped Vireo | *Vireo atricapilla* | oak-juniper woodlands with distinctive patchy, two-layered aspect; shrub and tree layer with open, grassy spaces; requires foliage reaching to ground level for nesting cover; return to same territory, or one nearby, year after year; deciduous and broad-leaved shrubs and trees provide insects for feeding; species composition less important than presence of adequate broad-leaved shrubs, foliage to ground level, and required structure; nesting season March-late summer | DL | E |
| Golden-cheeked Warbler | *Setophaga chrysoparia* | juniper-oak woodlands; dependent on Ashe juniper (also known as cedar) for long fine bark strips, only available from mature trees, used in nest construction; nests are placed in various trees other than Ashe juniper; only a few mature junipers or nearby cedar brakes can provide the necessary nest material; forage for insects in broad-leaved trees and shrubs; nesting late March-early summer | LE | E |
| Mountain Plover | *Charadrius montanus* | breeding: nests on high plains or shortgrass prairie, on ground in shallow depression; nonbreeding: shortgrass plains and bare, dirt (plowed) fields; primarily insectivorous | | |
| Peregrine Falcon | *Falco peregrinus* | both subspecies migrate across the state from more northern breeding areas in US and Canada to winter along coast and farther south; subspecies (F. p. anatum) is also a resident breeder in west Texas; the two subspecies' listing statuses differ, F.p. tundrius is no longer listed in Texas; but because the subspecies are not easily distinguishable at a distance, reference is generally made only to the species level; see subspecies for habitat. | DL | T |
| Sprague's Pipit | *Anthus spragueii* | only in Texas during migration and winter, mid September to early April; short to medium distance, diurnal migrant; strongly tied to native upland prairie, can be locally common in coastal grasslands, uncommon to rare further west; sensitive to patch size and avoids edges. | C | |
| Western Burrowing Owl | *Athene cunicularia hypugaea* | open grasslands, especially prairie, plains, and savanna, sometimes in open areas such as vacant lots near human habitation or airports; nests and roosts in abandoned burrows | | |
| Whooping Crane | *Grus americana* | potential migrant via plains throughout most of state to coast; winters in coastal marshes of Aransas, Calhoun, and Refugio counties | LE | E |
| Zone-tailed Hawk | *Buteo albonotatus* | arid open country, including open deciduous or pine-oak woodland, mesa or mountain county, often near watercourses, and wooded canyons and tree-lined rivers along middle-slopes of desert mountains; nests in various habitats and sites, ranging from small trees in lower desert, giant cottonwoods in riparian areas, to mature conifers in high mountain regions | | T |
| ***FISHES*** | | | | |
| Guadalupe Bass | *Micropterus treculii* | endemic to perennial streams of the Edward's Plateau region; introduced in Nueces River system | | |

| Common Name | Scientific Name | Description | Federal Status | State Status |
|---|---|---|---|---|
| Headwater catfish | *Ictalurus lupus* | originally throughout streams of the Edwards Plateau and the Rio Grande basin, currently limited to Rio Grande drainage, including Pecos River basin; springs, and sandy and rocky riffles, runs, and pools of clear creeks and small rivers | | |
| ****MAMMALS**** | | | | |
| Black Bear | *Ursus americanus* | bottomland hardwoods and large tracts of inaccessible forested areas; due to field characteristics similar to Louisiana Black Bear (LT, T), treat all east Texas black bears as federal and state listed Threatened | | T |
| Cave Myotis Bat | *Myotis velifer* | colonial and cave-dwelling; also roosts in rock crevices, old buildings, carports, under bridges, and even in abandoned Cliff Swallow (*Hirundo pyrrhonota*) nests; roosts in clusters of up to thousands of individuals; hibernates in limestone caves of Edwards Plateau and gypsum cave of Panhandle during winter; opportunistic insectivore | | |
| Gray Wolf | *Canis lupus* | extirpated; formerly known throughout the western two-thirds of the state in forests, brushlands, or grasslands | LE | E |
| Llano Pocket Gopher | *Geomys texensis texensis* | found in deep, brown loamy sands or gravelly sandy loams and is isolated from other species of pocket gophers by intervening shallow stony to gravelly clayey soils | | |
| Plains spotted skunk | *Spilogale putorius interrupta* | catholic; open fields, prairies, croplands, fence rows, farmyards, forest edges, and woodlands; prefers wooded, brushy areas and tallgrass prairie | | |
| Red wolf | *Canis rufus* | extirpated; formerly known throughout eastern half of Texas in brushy and forested areas, as well as coastal prairies | LE | E |
| ****MOLLUSKS**** | | | | |
| False spike mussel | *Quadrula mitchelli* | possibly extirpated in Texas; probably medium to large rivers; substrates varying from mud through mixtures of sand, gravel and cobble; one study indicated water lilies were present at the site; Rio Grande, Brazos, Colorado, and Guadalupe (historic) river basins | | T |
| Smooth pimpleback | *Quadrula houstonensis* | small to moderate streams and rivers as well as moderate size reservoirs; mixed mud, sand, and fine gravel, tolerates very slow to moderate flow rates, appears not to tolerate dramatic water level fluctuations, scoured bedrock substrates, or shifting sand bottoms, lower Trinity (questionable), Brazos, and Colorado River basins | C | T |
| Texas fatmucket | *Lampsilis bracteata* | streams and rivers on sand, mud, and gravel substrates; intolerant of impoundment; broken bedrock and course gravel or sand in moderately flowing water; Colorado and Guadalupe River basins | C | T |
| Texas pimpleback | *Quadrula petrina* | mud, gravel and sand substrates, generally in areas with slow flow rates; Colorado and Guadalupe river basins | C | T |
| ****REPTILES**** | | | | |
| Spot-tailed earless lizard | *Holbrookia lacerata* | central and southern Texas and adjacent Mexico; moderately open prairie-brushland; fairly flat areas free of vegetation or other obstructions, including disturbed areas; eats small invertebrates; eggs laid underground | | |
| Texas horned lizard | *Phrynosoma cornutum* | open, arid and semi-arid regions with sparse vegetation, including grass, cactus, scattered brush or scrubby trees; soil may vary in texture from sandy to rocky; burrows into soil, enters rodent burrows, or hides under rock when inactive; breeds March-September | | T |
| ****PLANTS**** | | | | |
| Basin bellflower | *Campanula reverchonii* | Texas endemic; among scattered vegetation on loose gravel, gravelly sand, and rock outcrops on open slopes with exposures of igneous and metamorphic rocks; may also occur on sandbars and other alluvial deposits along major rivers; flowering May-July | | |
| Big red sage | *Salvia pentstemonoides* | Texas endemic; moist to seasonally wet, steep limestone outcrops on seeps within canyons or along creek banks; occasionally on clayey to silty soils of creek banks and terraces, in partial shade to full sun; basal leaves conspicuous for much of the year; flowering June-October | | |
| Canyon rattlesnake-root | *Prenanthes carrii* | Texas endemic; rich humus soils over limestone in upper woodland canyon drainages, upper small spring fed drainages, typically near springs in deep soils around the springs and on limestone shelves, honeycomb rock (porous rock); flowering and fruiting late August-November | | |

| Common Name | Scientific Name | Description | Federal Status | State Status |
|---|---|---|---|---|
| Correll's false dragon-head | *Physostegia correllii* | wet, silty clay loams on streamsides, in creek beds, irrigation channels and roadside drainage ditches; or seepy, mucky, sometimes gravelly soils along riverbanks or small islands in the Rio Grande; or underlain by Austin Chalk limestone along gently flowing spring-fed creek in central Texas; flowering May-September | | |
| Edwards Plateau cornsalad | *Valerianella texana* | very shallow, well-drained, but seasonally moist gravelly-sandy soils derived from igneous or metamorphic rocks, often along the downslope margin of rock outcrops, in full sun or in partial shade of oak-juniper woodlands; more likely encountered in early successional areas; population numbers fluctuate considerably from year to year, with higher numbers following winters with higher rains and/or moderate temperatures; peak flowering/fruiting mid-March–late April, stems wither and disappear by the beginning of May | | |
| Hill Country wild-mercury | *Argythamnia aphoroides* | Texas endemic; mostly in bluestem-grama grasslands associated with plateau live oak woodlands on shallow to moderately deep clays and clay loams over limestone on rolling uplands, also in partial shade of oak-juniper woodlands in gravelly soils on rocky limestone slopes; flowering April-May with fruit persisting until midsummer | | |
| Llano butterweed | *Packera texensis* | Endemic to Llano Uplift of Edwards Plateau; granite sands; arises quickly from evergreen winter rosettes during January rains; flowers Feb-Mar. | | |
| Rock quillwort | *Isoetes lithophila* | Texas endemic; rooted in sand and gravel under shallow water of seasonal pools (vernal pools) that develop during rainy seasons in small, shallow, unshaded basins on barren outcrops of granite and gneiss; sporulating in late winter and spring, and opportunistically in other seasons following heavy rainfall | | |
| Small-headed pipewort | *Eriocaulon koernickianum* | in East Texas, post-oak woodlands and xeric sandhill openings on permanently wet acid sands of upland seeps and hillside seepage bogs, usually in patches of bare sand rather than among dense vegetation or on muck; in Gillespie County, on permanently wet or moist hillside seep on decomposing granite gravel and sand among granite outcrops; flowering/fruiting late May-late June | | |
| Warnock's coral-root | *Hexalectris warnockii* | in leaf litter and humus in oak-juniper woodlands on shaded slopes and intermittent, rocky creekbeds in canyons; in the Trans Pecos in oak-pinyon-juniper woodlands in higher mesic canyons (to 2000 m [6550 ft]), primarily on igneous substrates; in Terrell County under Quercus fusiformis mottes on terraces of spring-fed perennial streams, draining an otherwise rather xeric limestone landscape; on the Callahan Divide (Taylor County), the White Rock Escarpment (Dallas County), and the Edwards Plateau in oak-juniper woodlands on limestone slopes; in Gillespie County on igneous substrates of the Llano Uplift; flowering June-September; individual plants do not usually bloom in successive years | | |

## TABLE 1A-7: THREATENED OR ENDANGERED SPECIES OF HAYS COUNTY

| Common Name | Scientific Name | Description | Federal Status | State Status |
|---|---|---|---|---|
| ******AMPHIBIANS****** | | | | |
| Barton Springs salamander | *Eurycea sosorum* | dependent upon water flow/quality from the Barton Springs pool of the Edwards Aquifer; known from the outlets of Barton Springs and subterranean water-filled caverns; found under rocks, in gravel, or among aquatic vascular plants and algae, as available; feeds primarily on amphipods | LE | E |
| Blanco Blind Salamander | *Eurycea robusta* | troglobitic; water-filled subterranean caverns; may inhabit deep levels of the Balcones aquifer to the north and east of the Blanco River | | T |
| Blanco River Springs Salamander | *Eurycea pterophila* | subaquatic; springs and caves in the Blanco River drainage | | |
| San Marcos Salamander | *Eurycea nana* | headwaters of the San Marcos River downstream to ca. ½ mile past IH-35; water over gravelly substrate characterized by dense mats of algae (*Lyng bya*) and aquatic moss (*Leptodictym riparium*), and water temperatures of 21-22 $^{O}$ C; diet includes amphipods, midge larve, and aquatic snails | LT | T |
| Texas Blind Salamander | *Eurycea rathbuni* | troglobitic; water-filled subterranean caverns along a six mile stretch of the San Marcos Spring Fault, in the vicinity of San Marcos; eats small invertebrates, including snails, copepods, amphipods, and shrimp | LE | E |
| ******ARACHNIDS****** | | | | |
| Bandit Cave spider | *Cicurina bandida* | very small, subterrestrial, subterranean obligate | | |
| ******BIRDS****** | | | | |
| American Peregrine Falcon | *Falco peregrinus anatum* | year-round resident and local breeder in west Texas, nests in tall cliff eyries; also, migrant across state from more northern breeding areas in US and Canada, winters along coast and farther south; occupies wide range of habitats during migration, including urban, concentrations along coast and barrier islands; low-altitude migrant, stopovers at leading landscape edges such as lake shores, coastlines, and barrier islands. | DL | T |
| Arctic Peregrine Falcon | *Falco peregrinus tundrius* | migrant throughout state from subspecies' far northern breeding range, winters along coast and farther south; occupies wide range of habitats during migration, including urban, concentrations along coast and barrier islands; low-altitude migrant, stopovers at leading landscape edges such as lake shores, coastlines, and barrier islands. | DL | |
| Bald Eagle | *Haliaeetus leucocephalus* | found primarily near rivers and large lakes; nests in tall trees or on cliffs near water; communally roosts, especially in winter; hunts live prey, scavenges, and pirates food from other birds | DL | T |
| Black-capped Vireo | *Vireo atricapilla* | oak-juniper woodlands with distinctive patchy, two-layered aspect; shrub and tree layer with open, grassy spaces; requires foliage reaching to ground level for nesting cover; return to same territory, or one nearby, year after year; deciduous and broad-leaved shrubs and trees provide insects for feeding; species composition less important than presence of adequate broad-leaved shrubs, foliage to ground level, and required structure; nesting season March-late summer | DL | E |
| Golden-cheeked Warbler | *Setophaga chrysoparia* | juniper-oak woodlands; dependent on Ashe juniper (also known as cedar) for long fine bark strips, only available from mature trees, used in nest construction; nests are placed in various trees other than Ashe juniper; only a few mature junipers or nearby cedar brakes can provide the necessary nest material; forage for insects in broad-leaved trees and shrubs; nesting late March-early summer | LE | E |
| Mountain Plover | *Charadrius montanus* | breeding: nests on high plains or shortgrass prairie, on ground in shallow depression; nonbreeding: shortgrass plains and bare, dirt (plowed) fields; primarily insectivorous | | |
| Peregrine Falcon | *Falco peregrinus* | both subspecies migrate across the state from more northern breeding areas in US and Canada to winter along coast and farther south; subspecies (F. p. anatum) is also a resident breeder in west Texas; the two subspecies' listing statuses differ, F.p. tundrius is no longer listed in Texas; but because the subspecies are not easily distinguishable at a distance, reference is generally made only to the species level; see subspecies for habitat. | DL | T |

| Common Name | Scientific Name | Description | Federal Status | State Status |
|---|---|---|---|---|
| Sprague's Pipit | *Anthus spragueii* | only in Texas during migration and winter, mid September to early April; short to medium distance, diurnal migrant; strongly tied to native upland prairie, can be locally common in coastal grasslands, uncommon to rare further west; sensitive to patch size and avoids edges. | | |
| Western Burrowing Owl | *Athene cunicularia hypugaea* | open grasslands, especially prairie, plains, and savanna, sometimes in open areas such as vacant lots near human habitation or airports; nests and roosts in abandoned burrows | | |
| Whooping Crane | *Grus americana* | potential migrant via plains throughout most of state to coast; winters in coastal marshes of Aransas, Calhoun, and Refugio counties | LE | E |
| Zone-tailed Hawk | *Buteo albonotatus* | arid open country, including open deciduous or pine-oak woodland, mesa or mountain county, often near watercourses, and wooded canyons and tree-lined rivers along middle-slopes of desert mountains; nests in various habitats and sites, ranging from small trees in lower desert, giant cottonwoods in riparian areas, to mature conifers in high mountain regions | | T |
| ******CRUSTACEANS****** | | | | |
| A cave obligate crustaean | *Monodella texana* | subaquatic, subterranean obligate; underground freshwater aquifers | | |
| Balcones Cave amphipod | *Stygobromus balconis* | subaquatic, subterranean obligate amphipod | | |
| Ezell's Cave Amphipod | *Stygobromus flagellatus* | known only from artesian wells | | |
| Texas Cave Shrimp | *Palaemonetes antrorum* | subterranean sluggish streams and pools | | |
| Texas troglobitic water slater | *Lirceolus smithii* | subaquatic, subterranean obligate, aquifer | | |
| ******FISHES****** | | | | |
| Fountain Darter | *Etheostoma fonticola* | known only from the San Marcos and Comal rivers; springs and spring-fed streams in dense beds of aquatic plants growing close to bottom, which is normally mucky; feeding mostly diurnal; spawns year-round with August and late winter to early spring peaks | LE | E |
| Guadalupe Bass | *Micropterus treculii* | endemic to perennial streams of the Edward's Plateau region; introduced in Nueces River system | | |
| Ironcolor shiner | *Notropis chalybaeus* | Big Cypress Bayou and Sabine River basins; spawns April-September, eggs sink to bottom of pool; pools and slow runs of low gradient small acidic streams with sandy substrate and clear well vegetated water; feeds mainly on small insects, ingested plant material not digested | | |
| San Marcos Gambusia | *Gambusia georgei* | extinct; endemic; formerly known from upper San Marcos River; restricted to shallow, quiet, mud-bottomed shoreline areas without dense vegetation in thermally constant main channel | LE | E |
| ******INSECTS****** | | | | |
| Comal Springs dryopid beetle | *Stygoparnus comalensis* | dryopids usually cling to objects in a stream; dryopids are sometimes found crawling on stream bottoms or along shores; adults may leave the stream and fly about, especially at night; most dryopid larvae are vermiform and live in soil or decaying wood | LE | E |
| Comal Springs Riffle Beetle | *Heterelmis comalensis* | Comal and San Marcos Springs | LE | E |
| Edwards Aquifer Diving Beetle | *Haideoporus texanus* | habitat poorly known; known from an artesian well in Hays County | | |
| Flint's net-spinning caddisfly | *Cheumatopsyche flinti* | very poorly known species with habitat description limited to 'a spring' | | |
| San Marcos Saddle-case Caddisfly | *Protoptila arca* | known from an artesian well in Hays County; locally very abundant; swift, well-oxygenated warm water about 1-2 m deep; larvae and pupal cases abundant on rocks | | |
| Texas austrotinodes caddisfly | *Austrotinodes texensis* | appears endemic to the karst springs and spring runs of the Edwards Plateau region; flow in type locality swift but may drop significantly during periods of little drought; substrate coarse and ranges from cobble and gravel to limestone bedrock; many limestone outcroppings also found along the streams | | |
| ******MAMMALS****** | | | | |

| Common Name | Scientific Name | Description | Federal Status | State Status |
|---|---|---|---|---|
| Cave Myotis Bat | *Myotis velifer* | colonial and cave-dwelling; also roosts in rock crevices, old buildings, carports, under bridges, and even in abandoned Cliff Swallow (*Hirundo pyrrhonota*) nests; roosts in clusters of up to thousands of individuals; hibernates in limestone caves of Edwards Plateau and gypsum cave of Panhandle during winter; opportunistic insectivore | | |
| Plains Spotted Skunk | *Spilogale putorius interrupta* | catholic; open fields, prairies, croplands, fence rows, farmyards, forest edges, and woodlands; prefers wooded, brushy areas and tallgrass prairie | | |
| Red wolf | *Canis rufus* | extirpated; formerly known throughout eastern half of Texas in brushy and forested areas, as well as coastal prairies | LE | E |
| ******MOLLUSKS****** | | | | |
| False spike mussel | *Quadrula mitchelli* | possibly extirpated in Texas; probably medium to large rivers; substrates varying from mud through mixtures of sand, gravel and cobble; one study indicated water lilies were present at the site; Rio Grande, Brazos, Colorado, and Guadalupe (historic) river basins | | T |
| Golden orb | *Quadrula aurea* | sand and gravel in some locations and mud at others; found in lentic and lotic; Guadalupe, San Antonio, Lower San Marcos, and Nueces River basins | C | T |
| Smooth pimpleback | *Quadrula houstonensis* | small to moderate streams and rivers as well as moderate size reservoirs; mixed mud, sand, and fine gravel, tolerates very slow to moderate flow rates, appears not to tolerate dramatic water level fluctuations, scoured bedrock substrates, or shifting sand bottoms, lower Trinity (questionable), Brazos, and Colorado River basins | C | T |
| Texas fatmucket | *Lampsilis bracteata* | streams and rivers on sand, mud, and gravel substrates; intolerant of impoundment; broken bedrock and course gravel or sand in moderately flowing water; Colorado and Guadalupe River basins | C | T |
| Texas pimpleback | *Quadrula petrina* | mud, gravel and sand substrates, generally in areas with slow flow rates; Colorado and Guadalupe river basins | C | T |
| ******REPTILES****** | | | | |
| Cagle's Map Turtle | *Graptemys caglei* | endemic; Guadalupe River System; shallow water with swift to moderate flow and gravel or cobble bottom, connected by deeper pools with a slower flow rate and a silt or mud bottom; gravel bar riffles and transition areas between riffles and pools especially important in providing insect prey items; nests on gently sloping sand banks within ca. 30 feet of water's edge | | T |
| Spot-tailed Earless Lizard | *Holbrookia lacerata* | central and southern Texas and adjacent Mexico; moderately open prairie-brushland; fairly flat areas free of vegetation or other obstructions, including disturbed areas; eats small invertebrates; eggs laid underground | | |
| Texas Garter Snake | *Thamnophis sirtalis annectens* | wet or moist microhabitats are conducive to the species occurrence, but is not necessarily restricted to them; hibernates underground or in or under surface cover; breeds March-August | | |
| Texas Horned Lizard | *Phrynosoma cornutum* | open, arid and semi-arid regions with sparse vegetation, including grass, cactus, scattered brush or scrubby trees; soil may vary in texture from sandy to rocky; burrows into soil, enters rodent burrows, or hides under rock when inactive; breeds March-September | | T |
| ******PLANTS****** | | | | |
| Bracted twistflower | *Streptanthus bracteatus* | Texas endemic; shallow, well-drained gravelly clays and clay loams over limestone in oak juniper woodlands and associated openings, on steep to moderate slopes and in canyon bottoms; several known soils include Tarrant, Brackett, or Speck over Edwards, Glen Rose, and Walnut geologic formations; populations fluctuate widely from year to year, depending on winter rainfall; flowering mid April-late May, fruit matures and foliage withers by early summer | C | |
| Hill country wild-mercury | *Argythamnia aphoroides* | Texas endemic; mostly in bluestem-grama grasslands associated with plateau live oak woodlands on shallow to moderately deep clays and clay loams over limestone on rolling uplands, also in partial shade of oak-juniper woodlands in gravelly soils on rocky limestone slopes; flowering April-May with fruit persisting until midsummer | | |
| Texas wild-rice | *Zizania texana* | Texas endemic; spring-fed river, in clear, cool, swift water mostly less than 1 m deep, with coarse sandy soils rather than finer clays; flowering | LE | E |

| Common Name | Scientific Name | Description | Federal Status | State Status |
|---|---|---|---|---|
| | | year-round, peaking March-June | | |
| Warnock's coral root | *Hexalectris warnockii* | in leaf litter and humus in oak-juniper woodlands on shaded slopes and intermittent, rocky creekbeds in canyons; in the Trans Pecos in oak-pinyon-juniper woodlands in higher mesic canyons (to 2000 m [6550 ft]), primarily on igneous substrates; in Terrell County under Quercus fusiformis mottes on terrraces of spring-fed perennial streams, draining an otherwise rather xeric limestone landscape; on the Callahan Divide (Taylor County), the White Rock Escarpment (Dallas County), and the Edwards Plateau in oak-juniper woodlands on limestone slopes; in Gillespie County on igneous substrates of the Llano Uplift; flowering June-September; individual plants do not usually bloom in successive years | | |

## TABLE 1A-8: THREATENED OR ENDANGERED SPECIES OF LLANO COUNTY

| Common Name | Scientific Name | Description | Federal Status | State Status |
|---|---|---|---|---|
| ******BIRDS****** | | | | |
| American Peregrine Falcon | *Falco peregrinus anatum* | year-round resident and local breeder in west Texas, nests in tall cliff eyries; also, migrant across state from more northern breeding areas in US and Canada, winters along coast and farther south; occupies wide range of habitats during migration, including urban, concentrations along coast and barrier islands; low-altitude migrant, stopovers at leading landscape edges such as lake shores, coastlines, and barrier islands. | DL | T |
| Arctic Peregrine Falcon | *Falco peregrinus tundrius* | migrant throughout state from subspecies' far northern breeding range, winters along coast and farther south; occupies wide range of habitats during migration, including urban, concentrations along coast and barrier islands; low-altitude migrant, stopovers at leading landscape edges such as lake shores, coastlines, and barrier islands. | DL | |
| Bald Eagle | *Haliaeetus leucocephalus* | found primarily near rivers and large lakes; nests in tall trees or on cliffs near water; communally roosts, especially in winter; hunts live prey, scavenges, and pirates food from other birds | DL | T |
| Black-capped Vireo | *Vireo atricapillus* | oak-juniper woodlands with distinctive patchy, two-layered aspect; shrub and tree layer with open, grassy spaces; requires foliage reaching to ground level for nesting cover; return to same territory, or one nearby, year after year; deciduous & broad-leaved shrubs & trees provide insects for feeding; species composition less important than presence of adequate broad-leaved shrubs, foliage to ground level, and required structure; nesting season March-late summer | DL | E |
| Golden-cheeked Warbler | *Setophaga chrysoparia* | juniper-oak woodlands; dependent on Ashe juniper (also known as cedar) for long fine bark strips, only available from mature trees, used in nest construction; nests are placed in various trees other than Ashe juniper; only a few mature junipers or nearby cedar brakes can provide the necessary nest material; forage for insects in broad-leaved trees and shrubs; nesting late March-early summer | LE | E |
| Interior Least Tern | *Sterna antillarum athalassos* | subspecies is listed only when inland (more than 50 miles from a coastline); nests along sand and gravel bars within braided streams, rivers; also know to nest on man-made structures (inland beaches, wastewater treatment plants, gravel mines, etc); eats small fish and crustaceans, when breeding forages within a few hundred feet of colony | LE | E |
| Mountain Plover | *Charadrius montanus* | breeding: nests on high plains or shortgrass prairie, on ground in shallow depression; nonbreeding: shortgrass plains and bare, dirt (plowed) fields; primarily insectivorous | | |
| Peregrine Falcon | *Falco peregrinus* | both subspecies migrate across the state from more northern breeding areas in US and Canada to winter along coast and farther south; subspecies (F. p. anatum) is also a resident breeder in west Texas; the two subspecies' listing statuses differ, F.p. tundrius is no longer listed in Texas; but because the subspecies are not easily distinguishable at a distance, reference is generally made only to the species level; see subspecies for habitat. | DL | T |
| Sprague's Pipit | *Anthus spragueii* | only in Texas during migration and winter, mid September to early April; short to medium distance, diurnal migrant; strongly tied to native upland prairie, can be locally common in coastal grasslands, uncommon to rare further west; sensitive to patch size and avoids edges. | | |
| Western Burrowing Owl | *Athene cunicularia hypugaea* | open grasslands, especially prairie, plains, and savanna, sometimes in open areas such as vacant lots near human habitation or airports; nests and roosts in abandoned burrows | | |
| Whooping Crane | *Grus americana* | potential migrant via plains throughout most of state to coast; winters in coastal marshes of Aransas, Calhoun, and Refugio counties | LE | E |

| Common Name | Scientific Name | Description | Federal Status | State Status |
|---|---|---|---|---|
| Zone-tailed Hawk | *Buteo albonotatus* | arid open country, including open deciduous or pine-oak woodland, mesa or mountain county, often near watercourses, and wooded canyons and tree-lined rivers along middle-slopes of desert mountains; nests in various habitats and sites, ranging from small trees in lower desert, giant cottonwoods in riparian areas, to mature conifers in high mountain regions | | T |
| ******FISHES****** | | | | |
| Guadalupe Bass | *Micropterus treculii* | endemic to perennial streams of the Edward's Plateau region; introduced in Nueces River system | | |
| Headwater catfish | *Ictalurus lupus* | originally throughout streams of the Edwards Plateau and the Rio Grande basin, currently limited to Rio Grande drainage, including Pecos River basin; springs, and sandy and rocky riffles, runs, and pools of clear creeks and small rivers | | |
| ******MAMMALS****** | | | | |
| Black Bear | *Ursus americanus* | bottomland hardwoods and large tracts of inaccessible forested areas; due to field characteristics similar to Louisiana Black Bear (LT, T), treat all east Texas black bears as federal and state listed Threatened | | T |
| Cave Myotis Bat | *Myotis velifer* | colonial and cave-dwelling; also roosts in rock crevices, old buildings, carports, under bridges, and even in abandoned Cliff Swallow (*Hirundo pyrrhonota*) nests; roosts in clusters of up to thousands of individuals; hibernates in limestone caves of Edwards Plateau and gypsum cave of Panhandle during winter; opportunistic insectivore | | |
| Gray Wolf | *Canis lupus* | extirpated; formerly known throughout the western two-thirds of the state in forests, brushlands, or grasslands | LE | E |
| Llano Pocket Gopher | *Geomys texensis texensis* | found in deep, brown loamy sands or gravelly sandy loams and is isolated from other species of pocket gophers by intervening shallow stony to gravelly clayey soils | | |
| Plains Spotted Skunk | *Spilogale putorius interrupta* | catholic; open fields, prairies, croplands, fence rows, farmyards, forest edges, and woodlands; prefers wooded, brushy areas and tallgrass prairie | | |
| Red Wolf | *Canis Rufus* | extirpated; formerly known throughout eastern half of Texas in brushy and forested areas, as well as coastal prairies | LE | E |
| ******MOLLUSKS****** | | | | |
| False spike mussel | *Quadrula mitchelli* | possibly extirpated in Texas; probably medium to large rivers; substrates varying from mud through mixtures of sand, gravel and cobble; one study indicated water lilies were present at the site; Rio Grande, Brazos, Colorado, and Guadalupe (historic) river basins | | T |
| Smooth pimpleback | *Quadrula houstonensis* | small to moderate streams and rivers as well as moderate size reservoirs; mixed mud, sand, and fine gravel, tolerates very slow to moderate flow rates, appears not to tolerate dramatic water level fluctuations, scoured bedrock substrates, or shifting sand bottoms, lower Trinity (questionable), Brazos, and Colorado River basins | C | T |
| Texas fatmucket | *Lampsilis bracteata* | streams and rivers on sand, mud, and gravel substrates; intolerant of impoundment; broken bedrock and course gravel or sand in moderately flowing water; Colorado and Guadalupe River basins | C | T |
| Texas fawnsfoot | *Truncilla macrodon* | little known; possibly rivers and larger streams, and intolerant of impoundment; flowing rice irrigation canals, possibly sand, gravel, and perhaps sandy-mud bottoms in moderate flows; Brazos and Colorado River basins | C | T |
| Texas pimpleback | *Quadrula petrina* | mud, gravel and sand substrates, generally in areas with slow flow rates; Colorado and Guadalupe river basins | C | T |
| ******REPTILES****** | | | | |
| Spot-tailed Earless Lizard | *Holbrookia lacerata* | central & southern Texas & adjacent Mexico; moderately open prairie-brushland; fairly flat areas free of vegetation or other | | |

| Common Name | Scientific Name | Description | Federal Status | State Status |
|---|---|---|---|---|
| | | obstructions, including disturbed areas; eats small invertebrates; eggs laid underground | | |
| Texas Garter Snake | *Thamnophis sirtalis annectens* | wet or moist microhabitats are conducive to the species occurrence, but is not necessarily restricted to them; hibernates underground or in or under surface cover; breeds March-August | | |
| Texas Horned Lizard | *Phrynosoma cornutum* | open, arid and semi-arid regions with sparse vegetation, including grass, cactus, scattered brush or scrubby trees; soil may vary in texture from sandy to rocky; burrows into soil, enters rodent burrows, or hides under rock when inactive; breeds March-September | | T |
| ******PLANTS****** | | | | |
| Basin bellflower | *Campanula reverchonii* | Texas endemic; among scattered vegetation on loose gravel, gravelly sand, and rock outcrops on open slopes with exposures of igneous and metamorphic rocks; may also occur on sandbars and other alluvial deposits along major rivers; flowering May-July | | |
| Edwards Plateau Cornsalad | *Valerianellla texana* | very shallow, well-drained, but seasonally moist gravelly-sandy soils derived from igneous or metamorphic rocks, often along the downslope margin of rock outcrops, in full sun or in partial shade of oak-juniper woodlands; more likely encountered in early successional areas; population numbers fluctuate considerably from year to year, with higher numbers following winters with higher rains and/or moderate temperatures; peak flowering/fruiting mid-March–late April, stems wither and disappear by the beginning of May | | |
| Elmendorf's Onion | *Allium elmendorfii* | Texas endemic; grassland openings in oak woodlands on deep, loose, well-drained sands; in Coastal Bend, on Pleistocene barrier island ridges and Holocene Sand Sheet that support live oak woodlands; to the north it occurs in post oak-black hickory-live oak woodlands over Queen City and similar Eocene formations; one anomalous specimen found on Llano Uplift in wet pockets of granitic loam; flowering March-April, May | | |
| Enquist's sandmint | *Brazoria enquistii* | Texas endemic ; primarily on sand banks in and along beds of streams that drain granitic or gneissic landscapes; flowering/fruiting April-June | | |
| Granite spiderwort | *Tradescantia pedicellata* | Texas endemic; mostly in fractures on outcrops of granite, gneiss, and similar igneous and metamorphic rocks, or in early successional grasslands or forb-dominated assemblages on well-drained, sandy to gravelly soils derived from same; flowering at least April-May | | |
| Llano butterweed | *Packera texensis* | Endemic to Llano Uplift of Edwards Plateau; granite sands; arises quickly from evergreen winter rosettes during January rains; flowers Feb-March. | | |
| Rock quillwort | *Isoetes lithophila* | Texas endemic; rooted in sand and gravel under shallow water of seasonal pools (vernal pools) that develop during rainy seasons in small, shallow, unshaded basins on barren outcrops of granite and gneiss; sporulating in late winter and spring, and opportunistically in other seasons following heavy rainfall. | | |

## TABLE 1A-9: THREATENED OR ENDANGERED SPECIES OF MATAGORDA COUNTY

| Common Name | Scientific Name | Description | Federal Status | State Status |
|---|---|---|---|---|
| ******BIRDS****** | | | | |
| American Peregrine Falcon | *Falco peregrinus anatum* | year-round resident and local breeder in west Texas, nests in tall cliff eyries; also, migrant across state from more northern breeding areas in US and Canada, winters along coast and farther south; occupies wide range of habitats during migration, including urban, concentrations along coast and barrier islands; low-altitude migrant, stopovers at leading landscape edges such as lake shores, coastlines, and barrier islands. | DL | T |
| Arctic Peregrine Falcon | *Falco peregrinus tundrius* | migrant throughout state from subspecies' far northern breeding range, winters along coast and farther south; occupies wide range of habitats during migration, including urban, concentrations along coast and barrier islands; low-altitude migrant, stopovers at leading landscape edges such as lake shores, coastlines, and barrier islands. | DL | |
| Bald Eagle | *Haliaeetus leucocephalus* | found primarily near seacoasts, rivers, and large lakes; nests in tall trees or on cliffs near water; communally roosts, especially in winter; hunts live prey, scavenges, and pirates food from other birds | DL | T |
| Black Rail | *Laterallus jamaicensis* | salt, brackish, and freshwater marshes, pond borders, wet meadows, and grassy swamps; nests in or along edge of marsh, sometimes on damp ground, but usually on mat of previous year's dead grasses; nest usually hidden in marsh grass or at base of Salicornia | NL | |
| Brown Pelican | *Pelecanus occidentalis* | largely coastal and near shore areas, where it roosts and nests on islands and spoil banks | DL | |
| Eskimo Curlew | *Numenius borealis* | historic; nonbreeding: grasslands, pastures, plowed fields, and less frequently, marshes and mudflats | LE | E |
| Henslow's Sparrow | *Ammodramus henslowii* | wintering individuals (not flocks) found in weedy fields or cut-over areas where lots of bunch grasses occur along with vines and brambles; a key component is bare ground for running/walking | | |
| Northern Aplomado Falcon | *Falco femoralis septentrionalis* | open country, especially savanna and open woodland, and sometimes in very barren areas; grassy plains and valleys with scattered mesquite, yucca, and cactus; nests in old stick nests of other bird species | LE | E |
| Peregrine Falcon | *Falco peregrinus* | both subspecies migrate across the state from more northern breeding areas in US and Canada to winter along coast and farther south; subspecies (F. p. anatum) is also a resident breeder in west Texas; the two subspecies' listing statuses differ, F.p. tundrius is no longer listed in Texas; but because the subspecies are not easily distinguishable at a distance, reference is generally made only to the species level; see subspecies for habitat. | DL | T |
| Piping Plover | *Charadrius melodus* | wintering migrant along the Texas Gulf Coast; beaches and bayside mud or salt flats | LT | T |
| Red Knot | *Calidris canutus rufa* | Red knots migrate long distances in flocks northward through the contiguous United States mainly April-June, southward July-October. A small plump-bodied, short-necked shorebird that in breeding plumage, typically held from May through August, is a distinctive and unique pottery orange color. Its bill is dark, straight and, relative to other shorebirds, short-to-medium in length. After molting in late summer, this species is in a drab gray-and-white non-breeding plumage, typically held from September through April. In the non-breeding plumage, the knot might be confused with the omnipresent Sanderling. During this plumage, look for the knot's prominent pale eyebrow and whitish flanks with dark barring. The Red Knot prefers the shoreline of coast and bays and also uses mudflats during rare inland encounters. Primary prey items include coquina clam (Donax spp.) on beaches and dwarf surf clam (Mulinia lateralis) in bays, at least in the Laguna Madre. Wintering Range includes- Aransas, Brazoria, Calhoun, Cameron, Chambers, Galveston, Jefferson, Kennedy, Kleberg, Matagorda, Nueces, San Patricio, and Willacy. Habitat: Primarily seacoasts on tidal flats and beaches, herbaceous wetland, and Tidal flat/shore. | LT | |
| Reddish Egret | *Egretta rufescens* | resident of the Texas Gulf Coast; brackish marshes and shallow salt ponds and tidal flats; nests on ground or in trees or bushes, on dry coastal islands in brushy thickets of yucca and prickly pear | | T |
| Snowy Plover | *Charadrius alexandrinus* | formerly an uncommon breeder in the Panhandle; potential migrant; winter along coast | | |

| Common Name | Scientific Name | Description | Federal Status | State Status |
|---|---|---|---|---|
| Sooty Tern | *Sterna fuscata* | predominately 'on the wing'; does not dive, but snatches small fish and squid with bill as it flies or hovers over water; breeding April-July | | T |
| Sprague's Pipit | *Anthus spragueii* | only in Texas during migration and winter, mid September to early April; short to medium distance, diurnal migrant; strongly tied to native upland prairie, can be locally common in coastal grasslands, uncommon to rare further west; sensitive to patch size and avoids edges. | | |
| Western Burrowing Owl | *Athene cunicularia hypugaea* | open grasslands, especially prairie, plains, and savanna, sometimes in open areas such as vacant lots near human habitation or airports; nests and roosts in abandoned burrows | | |
| Western Snowy Plover | *Charadrius alexandrinus nivosus* | uncommon breeder in the Panhandle; potential migrant; winter along coast | | |
| White-faced Ibis | *Plegadis chihi* | prefers freshwater marshes, sloughs, and irrigated rice fields, but will attend brackish and saltwater habitats; nests in marshes, in low trees, on the ground in bulrushes or reeds, or on floating mats | | T |
| White-tailed Hawk | *Buteo albicaudatus* | near coast on prairies, cordgrass flats, and scrub-live oak; further inland on prairies, mesquite and oak savannas, and mixed savanna-chaparral; breeding March-May | | T |
| Whooping Crane | *Grus americana* | potential migrant via plains throughout most of state to coast; winters in coastal marshes of Aransas, Calhoun, and Refugio counties | LE | E |
| Wood Stork | *Mycteria americana* | forages in prairie ponds, flooded pastures or fields, ditches, and other shallow standing water, including salt-water; usually roosts communally in tall snags, sometimes in association with other wading birds (i.e. active heronries); breeds in Mexico and birds move into Gulf States in search of mud flats and other wetlands, even those associated with forested areas; formerly nested in Texas, but no breeding records since 1960 | | T |
| *******CRUSTACEANS****** | | | | |
| A crayfish | *Cambarellus texanus* | shallow water; benthic, burrowing in or using soil; apparently tolerant of warmer waters; prefers standing water of ditches in which there is emergent vegetation; will burrow in dry periods; detritivore | | |
| ******FISHES****** | | | | |
| American Eel | *Anguilla rostrata* | coastal waterways below reservoirs to gulf; spawns January to February in ocean, larva move to coastal waters, metamorphose, then females move into freshwater; most aquatic habitats with access to ocean, muddy bottoms, still waters, large streams, lakes; can travel overland in wet areas; males in brackish estuaries; diet varies widely, geographically, and seasonally | | |
| Blue sucker | *Cycleptus elongatus* | larger portions of major rivers in Texas; usually in channels and flowing pools with a moderate current; bottom type usually of exposed bedrock, perhaps in combination with hard clay, sand, and gravel; adults winter in deep pools and move upstream in spring to spawn on riffles | | T |
| Smalltooth sawfish | *Pristis pectinata* | different life history stages have different patterns of habitat use; young found very close to shore in muddy and sandy bottoms, seldom descending to depths greater than 32 ft (10 m); in sheltered bays, on shallow banks, and in estuaries or river mouths; adult sawfish are encountered in various habitat types (mangrove, reef, seagrass, and coral), in varying salinity regimes and temperatures, and at various water depths, feed on a variety of fish species and crustaceans | LE | E |
| ******INSECTS****** | | | | |
| Gulf Coast clubtail | *Gomphus modestus* | medium river, moderate gradient,and streams with silty sand or rocky bottoms; adults forage in trees, males perch near riffles to wait for females, larvae overwinter; flight season late Apr - late Jun | | |
| ******MAMMALS****** | | | | |
| Louisiana Black Bear | *Ursus americanus luteolus* | possible as transient; bottomland hardwoods and large tracts of inaccessible forested areas | DL | T |
| Ocelot | *Leopardus pardalis* | dense chaparral thickets; mesquite-thorn scrub and live oak mottes; avoids open areas; breeds and raises young June-November | LE | E |
| Plains Spotted Skunk | *Spilogale putorius interrupta* | catholic; open fields, prairies, croplands, fence rows, farmyards, forest edges, and woodlands; prefers wooded, brushy areas and tallgrass prairie | | |
| Red Wolf | *Canis rufus* | extirpated; formerly known throughout eastern half of Texas in brushy and forested areas, as well as coastal prairies | LE | E |

| Common Name | Scientific Name | Description | Federal Status | State Status |
|---|---|---|---|---|
| West Indian Manatee | *Trichechus manatus* | Gulf and bay system; opportunistic, aquatic herbivore | LT | E |
| ******MOLLUSKS****** | | | | |
| Smooth pimpleback | *Quadrula houstonensis* | small to moderate streams and rivers as well as moderate size reservoirs; mixed mud, sand, and fine gravel, tolerates very slow to moderate flow rates, appears not to tolerate dramatic water level fluctuations, scoured bedrock substrates, or shifting sand bottoms, lower Trinity (questionable), Brazos, and Colorado River basins | C | T |
| Texas fawnsfoot | *Truncilla macrodon* | little known; possibly rivers and larger streams, and intolerant of impoundment; flowing rice irrigation canals, possibly sand, gravel, and perhaps sandy-mud bottoms in moderate flows; Brazos and Colorado River basins | C | T |
| Texas pimpleback | *Quadrula petrina* | mud, gravel and sand substrates, generally in areas with slow flow rates; Colorado and Guadalupe river basins | C | T |
| ******REPTILES****** | | | | |
| Atlantic Hawksbill Sea Turtle | *Eretmochelys imbricata* | Gulf and bay system, warm shallow waters especially in rocky marine environments, such as coral reefs and jetties, juveniles found in floating mats of sea plants; feed on sponges, jellyfish, sea urchins, molluscs, and crustaceans, nests April through November | LE | E |
| Green sea turtle | *Chelonia mydas* | Gulf and bay system; shallow water seagrass beds, open water between feeding and nesting areas, barrier island beaches; adults are herbivorous feeding on sea grass and seaweed; juveniles are omnivorous feeding initially on marine invertebrates, then increasingly on sea grasses and seaweeds; nesting behavior extends from March to October, with peak activity in May and June | LT | T |
| Kemp's Ridley Sea Turtle | *Lepidochelys kempii* | Gulf and bay system, adults stay within the shallow waters of the Gulf of Mexico; feed primarily on crabs, but also snails, clams, other crustaceans and plants, juveniles feed on sargassum and its associated fauna; nests April through August | LE | E |
| Leatherback Sea Turtle | *Dermochelys coriacea* | Gulf and bay systems, and widest ranging open water reptile; omnivorous, shows a preference for jellyfish; in the US portion of their western Atlantic nesting territories, nesting season ranges from March to August | LE | E |
| Loggerhead Sea Turtle | *Caretta caretta* | Gulf and bay system primarily for juveniles, adults are most pelagic of the sea turtles; omnivorous, shows a preference for mollusks, crustaceans, and coral; nests from April through November | LT | T |
| Texas Diamondback Terrapin | *Malaclemys terrapin littoralis* | coastal marshes, tidal flats, coves, estuaries, and lagoons behind barrier beaches; brackish and salt water; burrows into mud when inactive; may venture into lowlands at high tide | | |
| Texas Horned Lizard | *Phrynosoma cornutum* | open, arid and semi-arid regions with sparse vegetation, including grass, cactus, scattered brush or scrubby trees; soil may vary in texture from sandy to rocky; burrows into soil, enters rodent burrows, or hides under rock when inactive; breeds March-September | | T |
| Texas scarlet snake | *Cemophora coccinea lineri* | mixed hardwood scrub on sandy soils; feeds on reptile eggs; semi-fossorial; active April-September | | T |
| Texas Tortoise | *Gopherus berlandieri* | open brush with a grass understory is preferred; open grass and bare ground are avoided; when inactive occupies shallow depressions at base of bush or cactus, sometimes in underground burrows or under objects; longevity greater than 50 years; active March-November; breeds April-November | | T |
| Timber Rattlesnake | *Crotalus horridus* | swamps, floodplains, upland pine and deciduous woodlands, riparian zones, abandoned farmland; limestone bluffs, sandy soil or black clay; prefers dense ground cover, i.e. grapevines or palmetto | | T |
| ****** PLANTS****** | | | | |
| Coastal Gay-Feather | *Liatris bracteata* | Texas endemic; coastal prairie grasslands of various types, from salty prairie on low- lying somewhat saline clay loams to upland prairie on nonsaline clayey to sandy loams; flowering in fall | | |
| Panicled indigobush | *Amorpha paniculata* | A stout shrub, 3 m (9 ft) tall that grows in acid seep forests, peat bogs, wet floodplain forests, and seasonal wetlands on the edge of Saline Prairies in East Texas. It is distinguished from other Amorpha species by its fuzzy | | |

| Common Name | Scientific Name | Description | Federal Status | State Status |
|---|---|---|---|---|
| | | leaflets with prominent raised veins underneath, and the flower panicles, which are 8 to 16 inches long and slender, held above the foliage. Perennial; Flowering summer | | |
| Shinner's sunflower | *Helianthus occidentalis ssp plantagineus* | mostly in prairies on the Coastal Plain, with several slightly disjunct populations in the Pineywoods and South Texas Brush Country | | |
| Threeflower broomweed | *Thurovia triflora* | Texas endemic; near coast in sparse, low vegetation on a veneer of light colored silt or fine sand over saline clay along drier upper margins of ecotone between between salty prairies and tidal flats; further inland associated with vegetated slick spots on prairie mima mounds; flowering September-November | | |

## TABLE 1A-10: THREATENED OR ENDANGERED SPECIES OF MILLS COUNTY

| Common Name | Scientific Name | Description | Federal Status | State Status |
|---|---|---|---|---|
| ******BIRDS****** | | | | |
| American Peregrine Falcon | *Falco peregrinus anatum* | year-round resident and local breeder in west Texas, nests in tall cliff eyries; also, migrant across state from more northern breeding areas in US and Canada, winters along coast and farther south; occupies wide range of habitats during migration, including urban, concentrations along coast and barrier islands; low-altitude migrant, stopovers at leading landscape edges such as lake shores, coastlines, and barrier islands. | DL | T |
| Arctic Peregrine Falcon | *Falco peregrinus tundrius* | migrant throughout state from subspecies' far northern breeding range, winters along coast and farther south; occupies wide range of habitats during migration, including urban, concentrations along coast and barrier islands; low-altitude migrant, stopovers at leading landscape edges such as lake shores, coastlines, and barrier islands. | DL | |
| Bald Eagle | *Haliaeetus leucocephalus* | found primarily near rivers and large lakes; nests in tall trees or on cliffs near water; communally roosts, especially in winter; hunts live prey, scavenges, and pirates food from other birds | DL | T |
| Black-capped Vireo | *Vireo atricapilla* | oak-juniper woodlands with distinctive patchy, two-layered aspect; shrub and tree layer with open, grassy spaces; requires foliage reaching to ground level for nesting cover; return to same territory, or one nearby, year after year; deciduous and broad-leaved shrubs and trees provide insects for feeding; species composition less important than presence of adequate broad-leaved shrubs, foliage to ground level, and required structure; nesting season March-late summer | DL | E |
| Golden-cheeked Warbler | *Setophaga chrysoparia* | juniper-oak woodlands; dependent on Ashe juniper (also known as cedar) for long fine bark strips, only available from mature trees, used in nest construction; nests are placed in various trees other than Ashe juniper; only a few mature junipers or nearby cedar brakes can provide the necessary nest material; forage for insects in broad-leaved trees and shrubs; nesting late March-early summer | LE | E |
| Interior Least Tern | *Sterna antillarum athalassos* | subspecies is listed only when inland (more than 50 miles from a coastline); nests along sand and gravel bars within braided streams, rivers; also know to nest on man-made structures (inland beaches, wastewater treatment plants, gravel mines, etc); eats small fish and crustaceans, when breeding forages within a few hundred feet of colony | LE | E |
| Mountain Plover | *Charadrius montanus* | breeding: nests on high plains or shortgrass prairie, on ground in shallow depression; nonbreeding: shortgrass plains and bare, dirt (plowed) fields; primarily insectivorous | | |
| Peregrine Falcon | *Falco peregrinus* | both subspecies migrate across the state from more northern breeding areas in US and Canada to winter along coast and farther south; subspecies (F. p. anatum) is also a resident breeder in west Texas; the two subspecies' listing statuses differ, F.p. tundrius is no longer listed in Texas; but because the subspecies are not easily distinguishable at a distance, reference is generally made only to the species level; see subspecies for habitat. | DL | T |
| Sprague's Pipit | *Anthus spragueii* | only in Texas during migration and winter, mid September to early April; short to medium distance, diurnal migrant; strongly tied to native upland prairie, can be locally common in coastal grasslands, uncommon to rare further west; sensitive to patch size and avoids edges. | | |
| Western Burrowing Owl | *Athene cunicularia hypugaea* | open grasslands, especially prairie, plains, and savanna, sometimes in open areas such as vacant lots near human habitation or airports; nests and roosts in abandoned burrows | | |
| Whooping Crane | *Grus americana* | potential migrant via plains throughout most of state to coast; winters in coastal marshes of Aransas, Calhoun, and Refugio counties | LE | E |
| ******FISHES****** | | | | |
| Guadalupe Bass | *Micropterus treculii* | endemic to perennial streams of the Edward's Plateau region; introduced in Nueces River system | | |
| ******MAMMALS****** | | | | |
| Cave Myotis Bat | *Myotis velifer* | colonial and cave-dwelling; also roosts in rock crevices, old buildings, carports, under bridges, and even in abandoned Cliff Swallow (*Hirundo pyrrhonota*) nests; roosts in clusters of up to thousands of individuals; hibernates in limestone caves of Edwards Plateau and gypsum cave of | | |

| | | | | |
|---|---|---|---|---|
| | | Panhandle during winter; opportunistic insectivore | | |
| Gray Wolf | *Canis lupus* | extirpated; formerly known throughout the western two-thirds of the state in forests, brushlands, or grasslands | LE | E |
| Llano pocket gopher | *Geomys texensis texensis* | found in deep, brown loamy sands or gravelly sandy loams and is isolated from other species of pocket gophers by intervening shallow stony to gravelly clayey soils | | |
| Red Wolf | *Canis rufus* | extirpated; formerly known throughout eastern half of Texas in brushy and forested areas, as well as coastal prairies | LE | E |
| ******MOLLUSKS****** | | | | |
| Smooth pimpleback | *Quadrula houstonensis* | small to moderate streams and rivers as well as moderate size reservoirs; mixed mud, sand, and fine gravel, tolerates very slow to moderate flow rates, appears not to tolerate dramatic water level fluctuations, scoured bedrock substrates, or shifting sand bottoms, lower Trinity (questionable), Brazos, and Colorado River basins | C | T |
| Texas fawnsfoot | *Truncilla macrodon* | little known; possibly rivers and larger streams, and intolerant of impoundment; flowing rice irrigation canals, possibly sand, gravel, and perhaps sandy-mud bottoms in moderate flows; Brazos and Colorado River basins | C | T |
| Texas pimpleback | *Quadrula petrina* | mud, gravel and sand substrates, generally in areas with slow flow rates; Colorado and Guadalupe river basins | C | T |
| ******REPTILES****** | | | | |
| Concho Water Snake | *Nerodia Paucimaculata* | Texas endemic; Concho and Colorado river systems; shallow fast-flowing water with a rocky or gravelly substrate preferred; adults can be found in deep water with mud bottoms; breeding March-October | DL | |
| Texas Horned Lizard | *Phrynosoma cornutum* | open, arid and semi-arid regions with sparse vegetation, including grass, cactus, scattered brush or scrubby trees; soil may vary in texture from sandy to rocky; burrows into soil, enters rodent burrows, or hides under rock when inactive; breeds March-September | | T |
| ******PLANTS****** | | | | |
| Hill Country Wild-Mercury | *Argythamnia Aphoroides* | Texas endemic; mostly in bluestem-grama grasslands associated with plateau live oak woodlands on shallow to moderately deep clays and clay loams over limestone on rolling uplands, also in partial shade of oak-juniper woodlands in gravelly soils on rocky limestone slopes; flowering April-May with fruit persisting until midsummer | | |

## TABLE 1A-11: THREATENED OR ENDANGERED SPECIES OF SAN SABA COUNTY

| Common Name | Scientific Name | Description | Federal Status | State Status |
|---|---|---|---|---|
| ***BIRDS*** | | | | |
| American Peregrine Falcon | *Falco peregrinus anatum* | year-round resident and local breeder in west Texas, nests in tall cliff eyries; also, migrant across state from more northern breeding areas in US and Canada, winters along coast and farther south; occupies wide range of habitats during migration, including urban, concentrations along coast and barrier islands; low-altitude migrant, stopovers at leading landscape edges such as lake shores, coastlines, and barrier islands. | DL | T |
| Arctic Peregrine Falcon | *Falco peregrinus tundrius* | migrant throughout state from subspecies' far northern breeding range, winters along coast and farther south; occupies wide range of habitats during migration, including urban, concentrations along coast and barrier islands; low-altitude migrant, stopovers at leading landscape edges such as lake shores, coastlines, and barrier islands. | DL | |
| Baird's Sparrow | *Ammodramus bairdii* | shortgrass prairie with scattered low bushes and matted vegetation; mostly migratory in western half of State, though winters in Mexico and just across Rio Grande into Texas from Brewster through Hudspeth counties | | |
| Bald Eagle | *Haliaeetus leucocephalus* | found primarily near rivers and large lakes; nests in tall trees or on cliffs near water; communally roosts, especially in winter; hunts live prey, scavenges, and pirates food from other birds | DL | T |
| Black-capped Vireo | *Vireo atricapilla* | oak-juniper woodlands with distinctive patchy, two-layered aspect; shrub and tree layer with open, grassy spaces; requires foliage reaching to ground level for nesting cover; return to same territory, or one nearby, year after year; deciduous and broad-leaved shrubs and trees provide insects for feeding; species composition less important than presence of adequate broad-leaved shrubs, foliage to ground level, and required structure; nesting season March-late summer | DL | E |
| Golden-cheeked Warbler | *Setophaga chrysoparia* | juniper-oak woodlands; dependent on Ashe juniper (also known as cedar) for long fine bark strips, only available from mature trees, used in nest construction; nests are placed in various trees other than Ashe juniper; only a few mature junipers or nearby cedar brakes can provide the necessary nest material; forage for insects in broad-leaved trees and shrubs; nesting late March-early summer | LE | E |
| Interior Least Tern | *Sterna Antillarum Athalassos* | subspecies is listed only when inland (more than 50 miles from a coastline); nests along sand and gravel bars within braided streams, rivers; also know to nest on man-made structures (inland beaches, wastewater treatment plants, gravel mines, etc); eats small fish and crustaceans, when breeding forages within a few hundred feet of colony | LE | E |
| Mountain Plover | *Charadrius montanus* | breeding: nests on high plains or shortgrass prairie, on ground in shallow depression; nonbreeding: shortgrass plains and bare, dirt (plowed) fields; primarily insectivorous | | |
| Peregrine Falcon | *Falco peregrinus* | both subspecies migrate across the state from more northern breeding areas in US and Canada to winter along coast and farther south; subspecies (F. p. anatum) is also a resident breeder in west Texas; the two subspecies' listing statuses differ, F.p. tundrius is no longer listed in Texas; but because the subspecies are not easily distinguishable at a distance, reference is generally made only to the species level; see subspecies for habitat. | DL | T |
| Sprague's Pipit | *Anthus spragueii* | only in Texas during migration and winter, mid September to early April; short to medium distance, diurnal migrant; strongly tied to native upland prairie, can be locally common in coastal grasslands, uncommon to rare further west; sensitive to patch size and avoids edges. | | |
| Western Burrowing Owl | *Athene cunicularia hypugaea* | open grasslands, especially prairie, plains, and savanna, sometimes in open areas such as vacant lots near human habitation or airports; nests and roosts in abandoned burrows | | |
| Whooping Crane | *Grus americana* | potential migrant via plains throughout most of state to coast; winters in coastal marshes of Aransas, Calhoun, and Refugio counties | LE | E |
| Zone-tailed Hawk | *Buteo albonotatus* | arid open country, including open deciduous or pine-oak woodland, mesa or mountain county, often near watercourses, and wooded canyons and tree-lined rivers along middle-slopes of desert mountains; nests in various habitats and sites, ranging from small trees in lower desert, giant cottonwoods in riparian areas, to mature conifers in high mountain regions | | T |

| Common Name | Scientific Name | Description | Federal Status | State Status |
|---|---|---|---|---|
| ******CRUSTACEANS****** | | | | |
| Reddell's cave amphipod | *Stygobromus reddelli* | subterranean obligate; small cave streams | | |
| ******FISHES****** | | | | |
| Guadalupe Bass | *Micropterus treculii* | endemic to perennial streams of the Edward's Plateau region; introduced in Nueces River system | | |
| Headwater catfish | *Ictalurus lupus* | originally throughout streams of the Edwards Plateau and the Rio Grande basin, currently limited to Rio Grande drainage, including Pecos River basin; springs, and sandy and rocky riffles, runs, and pools of clear creeks and small rivers | | |
| Sharpnose shiner | *Notropis oxyrhynchus* | endemic to Brazos River drainage; also, apparently introduced into adjacent Colorado River drainage; large turbid river, with bottom a combination of sand, gravel, and clay-mud | LE | |
| ******MAMMALS****** | | | | |
| Cave Myotis Bat | *Myotis velifer* | colonial and cave-dwelling; also roosts in rock crevices, old buildings, carports, under bridges, and even in abandoned Cliff Swallow (*Hirundo pyrrhonota*) nests; roosts in clusters of up to thousands of individuals; hibernates in limestone caves of Edwards Plateau and gypsum cave of Panhandle during winter; opportunistic insectivore | | |
| Gray Wolf | *Canis lupus* | extirpated; formerly known throughout the western two-thirds of the state in forests, brushlands, or grasslands | LE | E |
| Llano Pocket Gopher | *Geomys texensis texensis* | found in deep, brown loamy sands or gravelly sandy loams and is isolated from other species of pocket gophers by intervening shallow stony to gravelly clayey soils | | |
| Red Wolf | *Canis rufus* | extirpated; formerly known throughout eastern half of Texas in brushy and forested areas, as well as coastal prairies | LE | E |
| ******MOLLUSKS****** | | | | |
| False spike mussel | *Quincuncina mitchelli* | possibly extirpated in Texas; probably medium to large rivers; substrates varying from mud through mixtures of sand, gravel and cobble; one study indicated water lilies were present at the site; Rio Grande, Brazos, Colorado, and Guadalupe (historic) river basins | | T |
| Smooth pimpleback | *Quadrula houstonensis* | small to moderate streams and rivers as well as moderate size reservoirs; mixed mud, sand, and fine gravel, tolerates very slow to moderate flow rates, appears not to tolerate dramatic water level fluctuations, scoured bedrock substrates, or shifting sand bottoms, lower Trinity (questionable), Brazos, and Colorado River basins | C | T |
| Texas fatmucket | *Lampsilis bracteata* | streams and rivers on sand, mud, and gravel substrates; intolerant of impoundment; broken bedrock and course gravel or sand in moderately flowing water; Colorado and Guadalupe River basins | C | T |
| Texas fawnsfoot | *Truncilla macrodon* | little known; possibly rivers and larger streams, and intolerant of impoundment; flowing rice irrigation canals, possibly sand, gravel, and perhaps sandy-mud bottoms in moderate flows; Brazos and Colorado River basins | C | T |
| Texas pimpleback | *Quadrula petrina* | mud, gravel and sand substrates, generally in areas with slow flow rates; Colorado and Guadalupe river basins | C | T |
| ******REPTILES****** | | | | |
| Concho water snake | *Nerodia paucimaculata* | Texas endemic; Concho and Colorado river systems; shallow fast-flowing water with a rocky or gravelly substrate preferred; adults can be found in deep water with mud bottoms; breeding March-October | DL | |
| Spot-tailed earless lizard | *Holbrookia lacerata* | central and southern Texas and adjacent Mexico; moderately open prairie-brushland; fairly flat areas free of vegetation or other obstructions, including disturbed areas; eats small invertebrates; eggs laid underground | | |
| Texas horned lizard | *Phrynosoma cornutum* | open, arid and semi-arid regions with sparse vegetation, including grass, cactus, scattered brush or scrubby trees; soil may vary in texture from sandy to rocky; burrows into soil, enters rodent burrows, or hides under rock when inactive; breeds March-September | | T |
| ******PLANTS****** | | | | |

| Common Name | Scientific Name | Description | Federal Status | State Status |
|---|---|---|---|---|
| Basin bellflower | *Campanula reverchonii* | Texas endemic; among scattered vegetation on loose gravel, gravelly sand, and rock outcrops on open slopes with exposures of igneous and metamorphic rocks; may also occur on sandbars and other alluvial deposits along major rivers; flowering May-July | | |

## TABLE 1A-12: THREATENED OR ENDANGERED SPECIES OF TRAVIS COUNTY

| Common Name | Scientific Name | Description | Federal Status | State Status |
|---|---|---|---|---|
| *****AMPHIBIANS***** | | | | |
| Austin Blind Salamander | *Eurycea waterlooensis* | mostly restricted to subterranean cavities of the Edwards Aquifer; dependent upon water flow/quality from the Barton Springs segment of the Edwards Aquifer; only known from the outlets of Barton Springs (Sunken Gardens (Old Mill) Spring, Eliza Spring, and Parthenia (Main) Spring which forms Barton Springs Pool); feeds on amphipods, ostracods, copepods, plant material, and (in captivity) a wide variety of small aquatic invertebrates | LE | E |
| Barton Springs Salamander | *Eurycea sosorum* | dependent upon water flow/quality from the Barton Springs pool of the Edwards Aquifer; known from the outlets of Barton Springs and subterranean water-filled caverns; found under rocks, in gravel, or among aquatic vascular plants and algae, as available; feeds primarily on amphipods | LE | E |
| Jollyville Plateau Salamander | *Eurycea tonkawae* | known from springs and waters of some caves north of the Colorado River | LT | |
| Pedernales River Springs Salamander | *Eurycea sp. 6* | endemic; known only from springs | | |
| *****ARACHNIDS***** | | | | |
| Bandit Cave Spider | *Cicurina bandida* | very small, subterrestrial, subterranean obligate | | |
| Bee Creek Cave harvestman | *Texella reddelli* | small, blind, cave-adapted harvestman endemic to a few caves in Travis and Williamson counties | LE | |
| Bone Cave Harvestman | *Texella reyesi* | small, blind, cave-adapted harvestman endemic to a few caves in Travis and Williamson counties; weakly differentiated from Texella reddelli | LE | |
| Tooth Cave Pseudoscorpion | *Tartarocreagris texana* | small, cave-adapted pseudoscorpion known from small limestone caves of the Edwards Plateau | LE | |
| Tooth Cave Spider | *Neoleptoneta myopica* | very small, cave-adapted, sedentary spider | LE | |
| Warton's cave meshweaver | *Cicurina wartoni* | very small, cave-adapted spider | | |
| *****BIRDS***** | | | | |
| American Peregrine Falcon | *Falco peregrinus anatum* | year-round resident and local breeder in west Texas, nests in tall cliff eyries; also, migrant across state from more northern breeding areas in US and Canada, winters along coast and farther south; occupies wide range of habitats during migration, including urban, concentrations along coast and barrier islands; low-altitude migrant, stopovers at leading landscape edges such as lake shores, coastlines, and barrier islands. | DL | T |
| Arctic Peregrine Falcon | *Falco peregrinus tundrius* | migrant throughout state from subspecies' far northern breeding range, winters along coast and farther south; occupies wide range of habitats during migration, including urban, concentrations along coast and barrier islands; low-altitude migrant, stopovers at leading landscape edges such as lake shores, coastlines, and barrier islands. | DL | |
| Bald Eagle | *Haliaeetus leucocephalus* | found primarily near rivers and large lakes; nests in tall trees or on cliffs near water; communally roosts, especially in winter; hunts live prey, scavenges, and pirates food from other birds | DL | T |
| Black-capped Vireo | *Vireo atricapillus* | oak-juniper woodlands with distinctive patchy, two-layered aspect; shrub and tree layer with open, grassy spaces; requires foliage reaching to ground level for nesting cover; return to same territory, or one nearby, year after year; deciduous and broad-leaved shrubs and trees provide insects for feeding; species composition less important than presence of adequate broad-leaved shrubs, foliage to ground level, and required structure; nesting season March-late summer | DL | E |
| Golden-cheeked Warbler | *Setophaga chrysoparia* | juniper-oak woodlands; dependent on Ashe juniper (also known as cedar) for long fine bark strips, only available from mature trees, used in nest construction; nests are placed in various trees other than Ashe juniper; only a few mature junipers or nearby cedar brakes can provide the necessary nest material; forage for insects in broad- | LE | E |

| Common Name | Scientific Name | Description | Federal Status | State Status |
|---|---|---|---|---|
| | | leaved trees and shrubs; nesting late March-early summer | | |
| Interior Least Tern | *Sterna antillarum athalassos* | subspecies is listed only when inland (more than 50 miles from a coastline); nests along sand and gravel bars within braided streams, rivers; also know to nest on man-made structures (inland beaches, wastewater treatment plants, gravel mines, etc); eats small fish and crustaceans, when breeding forages within a few hundred feet of colony | LE | E |
| Mountain Plover | *Charadrius montanus* | breeding: nests on high plains or shortgrass prairie, on ground in shallow depression; nonbreeding: shortgrass plains and bare, dirt (plowed) fields; primarily insectivorous | | |
| Peregrine Falcon | *Falco peregrinus* | both subspecies migrate across the state from more northern breeding areas in US and Canada to winter along coast and farther south; subspecies (F. p. anatum) is also a resident breeder in west Texas; the two subspecies' listing statuses differ, F.p. tundrius is no longer listed in Texas; but because the subspecies are not easily distinguishable at a distance, reference is generally made only to the species level; see subspecies for habitat. | DL | T |
| Red Knot | *Calidris canutus rufa* | Red knots migrate long distances in flocks northward through the contiguous United States mainly April-June, southward July-October. A small plump-bodied, short-necked shorebird that in breeding plumage, typically held from May through August, is a distinctive and unique pottery orange color. Its bill is dark, straight and, relative to other shorebirds, short-to-medium in length. After molting in late summer, this species is in a drab gray-and-white non-breeding plumage, typically held from September through April. In the non-breeding plumage, the knot might be confused with the omnipresent Sanderling. During this plumage, look for the knot's prominent pale eyebrow and whitish flanks with dark barring. The Red Knot prefers the shoreline of coast and bays and also uses mudflats during rare inland encounters. Primary prey items include coquina clam (Donax spp.) on beaches and dwarf surf clam (Mulinia lateralis) in bays, at least in the Laguna Madre. Wintering Range includes- Aransas, Brazoria, Calhoun, Cameron, Chambers, Galveston, Jefferson, Kennedy, Kleberg, Matagorda, Nueces, San Patricio, and Willacy. Habitat: Primarily seacoasts on tidal flats and beaches, herbaceous wetland, and Tidal flat/shore. | LT | |
| Sprague's Pipit | *Anthus spragueii* | only in Texas during migration and winter, mid September to early April; short to medium distance, diurnal migrant; strongly tied to native upland prairie, can be locally common in coastal grasslands, uncommon to rare further west; sensitive to patch size and avoids edges. | | |
| Western Burrowing Owl | *Athene cunicularia hypugaea* | open grasslands, especially prairie, plains, and savanna, sometimes in open areas such as vacant lots near human habitation or airports; nests and roosts in abandoned burrows | | |
| Whooping Crane | *Grus americana* | potential migrant via plains throughout most of state to coast; winters in coastal marshes of Aransas, Calhoun, and Refugio counties | LE | E |
| ******CRUSTACEANS****** | | | | |
| An Amphipod | *Stygobromus russelli* | subterranean waters, usually in caves & limestone aquifers; resident of numerous caves in ca. 10 counties of the Edwards Plateau | | |
| Balcones Cave amphipod | *Stygobromus balconis* | subaquatic, subterranean obligate amphipod | | |
| Bifurcated Cave Amphipod | *Stygobromus bifurcatus* | found in cave pools | | |
| ******FISHES****** | | | | |
| Guadalupe Bass | *Micropterus treculii* | endemic to perennial streams of the Edward's Plateau region; introduced in Nueces River system | | |
| Smalleye shiner | *Notropis buccula* | endemic to upper Brazos River system and its tributaries (Clear Fork and Bosque); apparently introduced into adjacent Colorado River drainage; medium to large prairie streams with sandy substrate and turbid to clear warm water; presumably eats small | LE | |

| Common Name | Scientific Name | Description | Federal Status | State Status |
|---|---|---|---|---|
| | | aquatic invertebrates | | |
| ******INSECTS****** | | | | |
| Kretschmarr Cave Mold Beetle | *Texamaurops reddelli* | small, cave-adapted beetle found under rocks buried in silt; small, Edwards Limestone caves in of the Jollyville Plateau, a division of the Edwards Plateau | LE | |
| Tooth Cave Blind Rove Beetle | *Cylindropsis sp. 1* | one specimen collected from Tooth Cave; only known North American collection of this genus | | |
| Tooth Cave Ground Beetle | *Rhadine persephone* | resident, small, cave-adapted beetle found in small Edwards Limestone caves in Travis and Williamson counties | LE | |
| ******MAMMALS****** | | | | |
| Cave Myotis Bat | *Myotis velifer* | colonial and cave-dwelling; also roosts in rock crevices, old buildings, carports, under bridges, and even in abandoned Cliff Swallow (Hirundo pyrrhonota) nests; roosts in clusters of up to thousands of individuals; hibernates in limestone caves of Edwards Plateau and gypsum cave of Panhandle during winter; opportunistic insectivore | | |
| Plains Spotted Skunk | *Spilogale putorius interrupta* | catholic; open fields, prairies, croplands, fence rows, farmyards, forest edges, and woodlands; prefers wooded, brushy areas and tallgrass prairie | | |
| Red Wolf | *Canis rufus* | extirpated; formerly known throughout eastern half of Texas in brushy and forested areas, as well as coastal prairies | LE | E |
| ******MOLLUSKS****** | | | | |
| False spike mussel | *Quadrula mitchelli* | possibly extirpated in Texas; probably medium to large rivers; substrates varying from mud through mixtures of sand, gravel and cobble; one study indicated water lilies were present at the site; Rio Grande, Brazos, Colorado, and Guadalupe (historic) river basins | | T |
| Smooth pimpleback | *Quadrula houstonensis* | small to moderate streams and rivers as well as moderate size reservoirs; mixed mud, sand, and fine gravel, tolerates very slow to moderate flow rates, appears not to tolerate dramatic water level fluctuations, scoured bedrock substrates, or shifting sand bottoms, lower Trinity (questionable), Brazos, and Colorado River basins | C | T |
| Texas fatmucket | *Lampsilis bracteata* | streams and rivers on sand, mud, and gravel substrates; intolerant of impoundment; broken bedrock and course gravel or sand in moderately flowing water; Colorado and Guadalupe River basins | C | T |
| Texas pimpleback | *Quadrula petrina* | mud, gravel and sand substrates, generally in areas with slow flow rates; Colorado and Guadalupe river basins | C | T |
| ******REPTILES****** | | | | |
| Spot-tailed Earless Lizard | *Holbrookia lacerata* | central and southern Texas and adjacent Mexico; moderately open prairie-brushland; fairly flat areas free of vegetation or other obstructions, including disturbed areas; eats small invertebrates; eggs laid underground | | |
| Texas Garter Snake | *Thamnophis sirtalis annectens* | wet or moist microhabitats are conducive to the species occurrence, but is not necessarily restricted to them; hibernates underground or in or under surface cover; breeds March-August | | |
| Texas Horned Lizard | *Phrynosoma cornutum* | open, arid and semi-arid regions with sparse vegetation, including grass, cactus, scattered brush or scrubby trees; soil may vary in texture from sandy to rocky; burrows into soil, enters rodent burrows, or hides under rock when inactive; breeds March-September | | T |
| ****** PLANTS****** | | | | |
| Basin bellflower | *Campanula reverchonii* | Texas endemic; among scattered vegetation on loose gravel, gravelly sand, and rock outcrops on open slopes with exposures of igneous and metamorphic rocks; may also occur on sandbars and other alluvial deposits along major rivers; flowering May-July | | |
| Boerne bean | *Phaseolus texensis* | Narrowly endemic to rocky canyons in eastern and southern Edwards Plateau occurring on limestone soils in mixed woodlands, on limestone cliffs and outcrops, frequently along creeks. | | |
| Bracted twistflower | *Streptanthus bracteatus* | Texas endemic; shallow, well-drained gravelly clays and clay loams | C | |

| Common Name | Scientific Name | Description | Federal Status | State Status |
|---|---|---|---|---|
| | | over limestone in oak juniper woodlands and associated openings, on steep to moderate slopes and in canyon bottoms; several known soils include Tarrant, Brackett, or Speck over Edwards, Glen Rose, and Walnut geologic formations; populations fluctuate widely from year to year, depending on winter rainfall; flowering mid April-late May, fruit matures and foliage withers by early summer | | |
| Correll's false dragon-head | *Physostegia correllii* | wet, silty clay loams on streamsides, in creek beds, irrigation channels and roadside drainage ditches; or seepy, mucky, sometimes gravelly soils along riverbanks or small islands in the Rio Grande; or underlain by Austin Chalk limestone along gently flowing spring-fed creek in central Texas; flowering May-September | | |
| Texabama croton | *Croton alabamensis var. texensis* | Texas endemic; in duff-covered loamy clay soils on rocky slopes in forested, mesic limestone canyons; locally abundant on deeper soils on small terraces in canyon bottoms, often forming large colonies and dominating the shrub layer; scattered individuals are occasionally on sunny margins of such forests; also found in contrasting habitat of deep, friable soils of limestone uplands, mostly in the shade of evergreen woodland mottes; flowering late February-March; fruit maturing and dehiscing by early June | | |
| Warnock's coral-root | *Hexalectris warnockii* | in leaf litter and humus in oak-juniper woodlands on shaded slopes and intermittent, rocky creekbeds in canyons; in the Trans Pecos in oak-pinyon-juniper woodlands in higher mesic canyons (to 2000 m [6550 ft]), primarily on igneous substrates; in Terrell County under Quercus fusiformis mottes on terrraces of spring-fed perennial streams, draining an otherwise rather xeric limestone landscape; on the Callahan Divide (Taylor County), the White Rock Escarpment (Dallas County), and the Edwards Plateau in oak-juniper woodlands on limestone slopes; in Gillespie County on igneous substrates of the Llano Uplift; flowering June-September; individual plants do not usually bloom in successive years | | |

## TABLE 1A-13: THREATENED OR ENDANGERED SPECIES OF WHARTON COUNTY

| Common Name | Scientific Name | Description | Federal Status | State Status |
|---|---|---|---|---|
| ******AMPHIBIANS****** | | | | |
| Southern Crawfish Frog | *Lithobates areolatus areolatus* | The Southern Crawfish Frog can be found in abandoned crawfish holes and small mammal burrows. This species inhabits moist meadows, pasturelands, pine scrub, and river flood plains. This species spends nearly all of its time in burrows and only leaves the burrow area to breed. Although this species can be difficult to detect due to its reclusive nature, the call of breeding males can be heard over great distances. Eggs are laid and larvae develop in temporary water such as flooded fields, ditches, farm ponds and small lakes. Habitat: Shallow water, Herbaceous Wetland, Riparian, Temporary Pool, Cropland/hedgerow, Grassland/herbaceous, Suburban/orchard, Woodland – Conifer. | | |
| ******BIRDS****** | | | | |
| American Peregrine Falcon | *Falco peregrinus anatum* | year-round resident and local breeder in west Texas, nests in tall cliff eyries; also, migrant across state from more northern breeding areas in US and Canada, winters along coast and farther south; occupies wide range of habitats during migration, including urban, concentrations along coast and barrier islands; low-altitude migrant, stopovers at leading landscape edges such as lake shores, coastlines, and barrier islands. | DL | T |
| Arctic Peregrine Falcon | *Falco peregrinus tundrius* | migrant throughout state from subspecies' far northern breeding range, winters along coast and farther south; occupies wide range of habitats during migration, including urban, concentrations along coast and barrier islands; low-altitude migrant, stopovers at leading landscape edges such as lake shores, coastlines, and barrier islands. | DL | |
| Attwater's Greater Prairie-chicken | *Tympanuchus cupido attwateri* | this county within historic range; endemic; open prairies of mostly thick grass one to three feet tall; from near sea level to 200 feet along coastal plain on upper two-thirds of Texas coast; males form communal display flocks during late winter-early spring; booming grounds important; breeding February-July | LE | E |
| Bald Eagle | *Haliaeetus leucocephalus* | found primarily near rivers and large lakes; nests in tall trees or on cliffs near water; communally roosts, especially in winter; hunts live prey, scavenges, and pirates food from other birds | DL | T |
| Henslow's Sparrow | *Ammodramus henslowii* | wintering individuals (not flocks) found in weedy fields or cut-over areas where lots of bunch grasses occur along with vines and brambles; a key component is bare ground for running/walking | | |
| Interior Least Tern | *Sterna antillarum athalassos* | subspecies is listed only when inland (more than 50 miles from a coastline); nests along sand and gravel bars within braided streams, rivers; also know to nest on man-made structures (inland beaches, wastewater treatment plants, gravel mines, etc); eats small fish and crustaceans, when breeding forages within a few hundred feet of colony | LE | E |
| Peregrine Falcon | *Falco peregrinus* | both subspecies migrate across the state from more northern breeding areas in US and Canada to winter along coast and farther south; subspecies (F. p. anatum) is also a resident breeder in west Texas; the two subspecies' listing statuses differ, F.p. tundrius is no longer listed in Texas; but because the subspecies are not easily distinguishable at a distance, reference is generally made only to the species level; see subspecies for habitat. | DL | T |
| Red Knot | *Calidris canutus rufa* | Red knots migrate long distances in flocks northward through the contiguous United States mainly April-June, southward July-October. A small plump-bodied, short-necked shorebird that in breeding plumage, typically held from May through August, is a distinctive and unique pottery orange color. Its bill is dark, straight and, relative to other shorebirds, short-to-medium in length. After molting in late summer, this species is in a drab gray-and-white non-breeding plumage, typically held from September through April. In the non-breeding plumage, the knot might be confused with the omnipresent Sanderling. During this plumage, look for the knot's prominent pale eyebrow and whitish flanks with dark barring. The Red Knot prefers the shoreline of coast and bays and also uses mudflats during rare inland encounters. Primary prey items include coquina clam (Donax spp.) on beaches and dwarf surf clam (Mulinia lateralis) in bays, at least in the Laguna Madre. Wintering Range includes- Aransas, Brazoria, Calhoun, Cameron, Chambers, Galveston, Jefferson, Kennedy, Kleberg, Matagorda, Nueces, San Patricio, and Willacy. Habitat: Primarily seacoasts on tidal flats and beaches, | LT | |

| Common Name | Scientific Name | Description | Federal Status | State Status |
|---|---|---|---|---|
| | | herbaceous wetland, and Tidal flat/shore. | | |
| Sprague's Pipit | *Anthus spragueii* | only in Texas during migration and winter, mid September to early April; short to medium distance, diurnal migrant; strongly tied to native upland prairie, can be locally common in coastal grasslands, uncommon to rare further west; sensitive to patch size and avoids edges. | | |
| Western Burrowing Owl | *Athene cunicularia hypugaea* | open grasslands, especially prairie, plains, and savanna, sometimes in open areas such as vacant lots near human habitation or airports; nests and roosts in abandoned burrows | | |
| White-faced Ibis | *Plegadis chihi* | prefers freshwater marshes, sloughs, and irrigated rice fields, but will attend brackish and saltwater habitats; nests in marshes, in low trees, on the ground in bulrushes or reeds, or on floating mats | | T |
| White-tailed Hawk | *Buteo albicaudatus* | near coast on prairies, cordgrass flats, and scrub-live oak; further inland on prairies, mesquite and oak savannas, and mixed savanna-chaparral; breeding March-May | | T |
| Whooping Crane | *Grus americana* | potential migrant via plains throughout most of state to coast; winters in coastal marshes of Aransas, Calhoun, and Refugio counties | LE | E |
| Wood Stork | *Mycteria americana* | forages in prairie ponds, flooded pastures or fields, ditches, and other shallow standing water, including salt-water; usually roosts communally in tall snags, sometimes in association with other wading birds (i.e. active heronries); breeds in Mexico and birds move into Gulf States in search of mud flats and other wetlands, even those associated with forested areas; formerly nested in Texas, but no breeding records since 1960 | | T |
| ******CRUSTACEANS****** | | | | |
| A crayfish | *Cambarellus texanus* | shallow water; benthic, burrowing in or using soil; apparently tolerant of warmer waters; prefers standing water of ditches in which there is emergent vegetation; wll burrow in dry periods; detritivore | | |
| ******FISHES****** | | | | |
| American Eel | *Anguilla rostrata* | coastal waterways below reservoirs to gulf; spawns January to February in ocean, larva move to coastal waters, metamorphose, then females move into freshwater; most aquatic habitats with access to ocean, muddy bottoms, still waters, large streams, lakes; can travel overland in wet areas; males in brackish estuaries; diet varies widely, geographically, and seasonally | | |
| Blue sucker | *Cycleptus elongatus* | larger portions of major rivers in Texas; usually in channels and flowing pools with a moderate current; bottom type usually of exposed bedrock, perhaps in combination with hard clay, sand, and gravel; adults winter in deep pools and move upstream in spring to spawn on riffles | | T |
| Sharpnose shiner | *Notropis oxyrhynchus* | endemic to Brazos River drainage; also, apparently introduced into adjacent Colorado River drainage; large turbid river, with bottom a combination of sand, gravel, and clay-mud | LE | |
| ******MAMMALS****** | | | | |
| Louisiana Black Bear | *Ursus americanus luteolus* | possible as transient; bottomland hardwoods and large tracts of inaccessible forested areas | DL | T |
| Plains Spotted Skunk | *Spilogale putorius interrupta* | catholic; open fields, prairies, croplands, fence rows, farmyards, forest edges, and woodlands; prefers wooded, brushy areas and tallgrass prairie | | |
| Red wolf | *Canis rufus* | extirpated; formerly known throughout eastern half of Texas in brushy and forested areas, as well as coastal prairies | LE | E |
| ******MOLLUSKS****** | | | | |
| Smooth pimpleback | *Quadrula houstonensis* | small to moderate streams and rivers as well as moderate size reservoirs; mixed mud, sand, and fine gravel, tolerates very slow to moderate flow rates, appears not to tolerate dramatic water level fluctuations, scoured bedrock substrates, or shifting sand bottoms, lower Trinity (questionable), Brazos, and Colorado River basins | C | T |
| Texas fawnsfoot | *Truncilla macrodon* | little known; possibly rivers and larger streams, and intolerant of impoundment; flowing rice irrigation canals, possibly sand, gravel, and perhaps sandy-mud bottoms in moderate flows; Brazos and Colorado River | C | T |

| Common Name | Scientific Name | Description | Federal Status | State Status |
|---|---|---|---|---|
| | | basins | | |
| Texas pimpleback | *Quadrula petrina* | mud, gravel and sand substrates, generally in areas with slow flow rates; Colorado and Guadalupe river basins | C | T |
| ******REPTILES****** | | | | |
| Texas Horned Lizard | *Phrynosoma cornutum* | open, arid and semi-arid regions with sparse vegetation, including grass, cactus, scattered brush or scrubby trees; soil may vary in texture from sandy to rocky; burrows into soil, enters rodent burrows, or hides under rock when inactive; breeds March-September | | T |
| Timber Rattlesnake | *Crotalus horridus* | swamps, floodplains, upland pine and deciduous woodlands, riparian zones, abandoned farmland; limestone bluffs, sandy soil or black clay; prefers dense ground cover, i.e. grapevines or palmetto | | T |

# TABLE 1A-14: THREATENED OR ENDANGERED SPECIES OF WILLIAMSON COUNTY

| Common Name | Scientific Name | Description | Federal Status | State Status |
|---|---|---|---|---|
| ******AMPHIBIANS****** | | | | |
| Georgetown Salamander | *Eurycea naufragia* | endemic; known from springs and waters in and around town of Georgetown in Williamson County | LT | |
| Jollyville Plateau Salamander | *Eurycea tonkawae* | known from springs and waters of some caves north of the Colorado River | LT | |
| Salado Springs salamander | *Eurycea chisholmensis* | endemic; surface springs and subterranean waters of the Salado Springs system along Salado Creek | LT | |
| Southern Crawfish Frog | *Lithobates areolatus areolatus* | The Southern Crawfish Frog can be found in abandoned crawfish holes and small mammal burrows. This species inhabits moist meadows, pasturelands, pine scrub, and river flood plains. This species spends nearly all of its time in burrows and only leaves the burrow area to breed. Although this species can be difficult to detect due to its reclusive nature, the call of breeding males can be heard over great distances. Eggs are laid and larvae develop in temporary water such as flooded fields, ditches, farm ponds and small lakes. Habitat: Shallow water, Herbaceous Wetland, Riparian, Temporary Pool, Cropland/hedgerow, Grassland/herbaceous, Suburban/orchard, Woodland – Conifer. | | |
| ******ARACHNIDS****** | | | | |
| Bandit Cave spider | *Cicurina bandida* | very small, subterrestrial, subterranean obligate | | |
| Bone Cave Harvestman | *Texella reyesi* | small, blind, cave-adapted harvestman endemic to a few caves in Travis and Williamson counties; weakly differentiated from Texella reddelli | LE | |
| ******BIRDS****** | | | | |
| American Peregrine Falcon | *Falco peregrinus anatum* | year-round resident and local breeder in west Texas, nests in tall cliff eyries; also, migrant across state from more northern breeding areas in US and Canada, winters along coast and farther south; occupies wide range of habitats during migration, including urban, concentrations along coast and barrier islands; low-altitude migrant, stopovers at leading landscape edges such as lake shores, coastlines, and barrier islands. | DL | T |
| Arctic Peregrine Falcon | *Falco peregrinus tundrius* | migrant throughout state from subspecies' far northern breeding range, winters along coast and farther south; occupies wide range of habitats during migration, including urban, concentrations along coast and barrier islands; low-altitude migrant, stopovers at leading landscape edges such as lake shores, coastlines, and barrier islands. | DL | |
| Bald Eagle | *Haliaeetus leucocephalus* | found primarily near rivers and large lakes; nests in tall trees or on cliffs near water; communally roosts, especially in winter; hunts live prey, scavenges, and pirates food from other birds | DL | T |
| Black-capped Vireo | *Vireo atricapilla* | oak-juniper woodlands with distinctive patchy, two-layered aspect; shrub and tree layer with open, grassy spaces; requires foliage reaching to ground level for nesting cover; return to same territory, or one nearby, year after year; deciduous and broad-leaved shrubs and trees provide insects for feeding; species composition less important than presence of adequate broad-leaved shrubs, foliage to ground level, and required structure; nesting season March-late summer | DL | E |
| Golden-cheeked Warbler | *Setophaga chrysoparia* | juniper-oak woodlands; dependent on Ashe juniper (also known as cedar) for long fine bark strips, only available from mature trees, used in nest construction; nests are placed in various trees other than Ashe juniper; only a few mature junipers or nearby cedar brakes can provide the necessary nest material; forage for insects in broad-leaved trees and shrubs; nesting late March-early summer | LE | E |
| Mountain Plover | *Charadrius montanus* | breeding: nests on high plains or shortgrass prairie, on ground in shallow depression; nonbreeding: shortgrass plains and bare, dirt (plowed) fields; primarily insectivorous | | |
| Peregrine Falcon | *Falco peregrinus* | both subspecies migrate across the state from more northern breeding areas in US and Canada to winter along coast and farther south; subspecies (F. p. anatum) is also a resident breeder in west Texas; the two subspecies' listing statuses differ, F.p. tundrius is no longer listed | DL | T |

| Common Name | Scientific Name | Description | Federal Status | State Status |
|---|---|---|---|---|
| | | in Texas; but because the subspecies are not easily distinguishable at a distance, reference is generally made only to the species level; see subspecies for habitat. | | |
| Red Knot | *Calidris canutus rufa* | Red knots migrate long distances in flocks northward through the contiguous United States mainly April-June, southward July-October. A small plump-bodied, short-necked shorebird that in breeding plumage, typically held from May through August, is a distinctive and unique pottery orange color. Its bill is dark, straight and, relative to other shorebirds, short-to-medium in length. After molting in late summer, this species is in a drab gray-and-white non-breeding plumage, typically held from September through April. In the non-breeding plumage, the knot might be confused with the omnipresent Sanderling. During this plumage, look for the knot's prominent pale eyebrow and whitish flanks with dark barring. The Red Knot prefers the shoreline of coast and bays and also uses mudflats during rare inland encounters. Primary prey items include coquina clam (Donax spp.) on beaches and dwarf surf clam (Mulinia lateralis) in bays, at least in the Laguna Madre. Wintering Range includes- Aransas, Brazoria, Calhoun, Cameron, Chambers, Galveston, Jefferson, Kennedy, Kleberg, Matagorda, Nueces, San Patricio, and Willacy. Habitat: Primarily seacoasts on tidal flats and beaches, herbaceous wetland, and Tidal flat/shore. | LT | |
| Sprague's Pipit | *Anthus spragueii* | only in Texas during migration and winter, mid September to early April; short to medium distance, diurnal migrant; strongly tied to native upland prairie, can be locally common in coastal grasslands, uncommon to rare further west; sensitive to patch size and avoids edges. | | |
| Western Burrowing Owl | *Athene cunicularia hypugaea* | open grasslands, especially prairie, plains, and savanna, sometimes in open areas such as vacant lots near human habitation or airports; nests and roosts in abandoned burrows | | |
| Whooping Crane | *Grus americana* | potential migrant via plains throughout most of state to coast; winters in coastal marshes of Aransas, Calhoun, and Refugio counties | LE | E |
| ******CRUSTACEANS****** | | | | |
| An amphipod | *Stygobromus russelli* | subterranean waters, usually in caves and limestone aquifers; resident of numerous caves in ca. 10 counties of the Edwards Plateau | | |
| Bifurcated cave amphipod | *Stygobromus bifurcatus* | found in cave pools | | |
| Ezell's cave amphipod | *Stygobromus flagellatus* | known only from artesian wells | | |
| ******FISHES****** | | | | |
| Guadalupe Bass | *Micropterus treculii* | endemic to perennial streams of the Edward's Plateau region; introduced in Nueces River system | | |
| Sharpnose Shiner | *Notropis oxyrhynchus* | endemic to Brazos River drainage; also, apparently introduced into adjacent Colorado River drainage; large turbid river, with bottom a combination of sand, gravel, and clay-mud | LE | |
| Smalleye Shiner | *Notropis buccula* | endemic to upper Brazos River system and its tributaries (Clear Fork and Bosque); apparently introduced into adjacent Colorado River drainage; medium to large prairie streams with sandy substrate and turbid to clear warm water; presumably eats small aquatic invertebrates | LE | |
| ******INSECTS****** | | | | |
| A mayfly | *Pseudocentroptiloides morihari* | mayflies distinguished by aquatic larval stage; adult stage generally found in shoreline vegetation | | |
| Coffin Cave Mold Beetle | *Batrisodes texanus* | resident, small, cave-adapted beetle found in small Edwards Limestone caves in Travis and Williamson counties | LE | |
| Tooth Cave Ground Beetle | *Rhadine persephone* | resident, small, cave-adapted beetle found in small Edwards Limestone caves in Travis and Williamson counties | LE | |
| ******MAMMALS****** | | | | |

| Common Name | Scientific Name | Description | Federal Status | State Status |
|---|---|---|---|---|
| Cave Myotis Bat | *Myotis velifer* | colonial and cave-dwelling; also roosts in rock crevices, old buildings, carports, under bridges, and even in abandoned Cliff Swallow (*Hirundo pyrrhonota*) nests; roosts in clusters of up to thousands of individuals; hibernates in limestone caves of Edwards Plateau and gypsum cave of Panhandle during winter; opportunistic insectivore | | |
| Plains Spotted Skunk | *Spilogale putorius interrupta* | catholic; open fields, prairies, croplands, fence rows, farmyards, forest edges, and woodlands; prefers wooded, brushy areas and tallgrass prairie | | |
| Red wolf | *Canis rufus* | extirpated; formerly known throughout eastern half of Texas in brushy and forested areas, as well as coastal prairies | LE | E |
| ******MOLLUSKS****** | | | | |
| False spike mussel | *Quadrula mitchelli* | possibly extirpated in Texas; probably medium to large rivers; substrates varying from mud through mixtures of sand, gravel and cobble; one study indicated water lilies were present at the site; Rio Grande, Brazos, Colorado, and Guadalupe (historic) river basins | | T |
| Smooth pimpleback | *Quadrula houstonensis* | small to moderate streams and rivers as well as moderate size reservoirs; mixed mud, sand, and fine gravel, tolerates very slow to moderate flow rates, appears not to tolerate dramatic water level fluctuations, scoured bedrock substrates, or shifting sand bottoms, lower Trinity (questionable), Brazos, and Colorado River basins | C | T |
| Texas fawnsfoot | *Truncilla macrodon* | little known; possibly rivers and larger streams, and intolerant of impoundment; flowing rice irrigation canals, possibly sand, gravel, and perhaps sandy-mud bottoms in moderate flows; Brazos and Colorado River basins | C | T |
| ******REPTILES****** | | | | |
| Spot-tailed Earless Lizard | *Holbrookia lacerata* | central and southern Texas and adjacent Mexico; moderately open prairie-brushland; fairly flat areas free of vegetation or other obstructions, including disturbed areas; eats small invertebrates; eggs laid underground | | |
| Texas Garter Snake | *Thamnophis sirtalis annectens* | wet or moist microhabitats are conducive to the species occurrence, but is not necessarily restricted to them; hibernates underground or in or under surface cover; breeds March-August | | |
| Texas Horned Lizard | *Phrynosoma cornutum* | open, arid and semi-arid regions with sparse vegetation, including grass, cactus, scattered brush or scrubby trees; soil may vary in texture from sandy to rocky; burrows into soil, enters rodent burrows, or hides under rock when inactive; breeds March-September | | T |
| Timber Rattlesnake | *Crotalus horridus* | swamps, floodplains, upland pine and deciduous woodlands, riparian zones, abandoned farmland; limestone bluffs, sandy soil or black clay; prefers dense ground cover, i.e. grapevines or palmetto | | T |
| ******PLANTS****** | | | | |
| Elmendorf's onion | *Allium elmendorfii* | Texas endemic; grassland openings in oak woodlands on deep, loose, well-drained sands; in Coastal Bend, on Pleistocene barrier island ridges and Holocene Sand Sheet that support live oak woodlands; to the north it occurs in post oak-black hickory-live oak woodlands over Queen City and similar Eocene formations; one anomalous specimen found on Llano Uplift in wet pockets of granitic loam; flowering March-April, May | | |

# *APPENDIX 1B*

## *THE HIGHLAND LAKES: HISTORY AND SOCIAL AND ECONOMIC IMPORTANCE*

This Appendix was developed by the Central Texas Water Coalition, Inc. as an update of the Appendix 1B included in the 2016 Region K Plan. A list of reference documents, source materials, and entities who provided assistance and data for this Appendix is provided at its conclusion.

**Brief History of the Highland Lakes System**

The Highland Lakes system is comprised of two water storage reservoirs, Lakes Buchanan and Travis, and four pass-through reservoirs, Lakes Inks, LBJ, Marble Falls and Austin. During the construction of the dams and development of the Highland Lakes system, the Lower Colorado River Authority (LCRA) acquired large tracts of land that surround the reservoir system. LCRA is authorized to develop, manage, and promote the use of these lands for parks, recreational facilities and natural science laboratories and to promote the preservation of fish and wildlife. LCRA must also provide public access to, and use of, its lakes and lands for recreation.

In the early years of LCRA's existence, the predominant priorities in water resources management were to moderate and control the floods and droughts in the Lower Colorado River Basin. This was accomplished through the construction of dams in the Texas Hill Country west of Austin, which created the Highland Lakes. Due to the Highland Lakes, the ravages of floodwaters on the lower Colorado River have largely been controlled. The Highland Lakes have historically also provided a dependable source of water supply for municipal, industrial, agricultural, and mining uses. Additionally, the Highland Lakes provided the source of inexpensive, renewable electrical energy, and recreational opportunities for the citizens and communities of Central Texas. In sum, the work of LCRA in its early years provided the foundation on which much of the present day population and economy of Central Texas now depend. The rapidly increasing population of Austin and surrounding Central Texas communities requires additional water resources for drinking water and to sustain business and industry. Tourism and recreation became significant industries, both on the Highland Lakes and lower Colorado River.

The Highland Lakes Region has benefitted from the growth in the Austin Metropolitan area. The Region has maintained much of its Hill Country character and cultural identity but has also exhibited a more independent nature with the development of the extensive Bee Cave and Marble Falls Retail Trade businesses. It has also benefited from the recovery of the lake levels on Lake Travis and Lake Buchanan in 2015, and the draw of highly regarded school districts such as Lake Travis ISD. The combination of strong school systems, attractive retail shopping options and higher lake levels has stimulated strong growth. The Community Impact 2019 Real Estate Edition (Volume 10, Issue 7 on July 10, 2019) reported that "from the southern hills of Travis County up through the inlets and peninsulas of Lake Travis, residential neighborhoods are quickly being developed." A June 2019 report from www.LakeHomes.com, documented the Lake Travis area as the biggest lake market in Texas. They reported that their analysis was based on the combined list prices of its 877 properties for sale. They also reported that the combined list prices total \$623,574,159, which not only ranks it the largest lake market in Texas, but the 4$^{th}$ in the country. The Texas school finance system has benefitted significantly from the very large property tax base of the Region. The four largest school districts in the upper Highland Lakes Region—Llano, Marble Falls, Lago Vista, and Lake Travis—have contributed \$938.8 million to help balance the State's school finance system. This represents 3.48% of all recapture payments ever received by the State since 1994 to 2019.

**Tourism and Recreational Demands**

The use of water for recreation and tourism is closely linked to the population of an area, location of the recreational opportunity and ease of access, and the value of the resource to recreational users. Recreational users are interested in qualities such as accessible lakes, flowing rivers, clean water, and aesthetics. In many areas, recreational uses of the waterways are increasing steadily. The entire Highland Lakes area, from Lake Austin to Lake Buchanan, receives a great deal of recreational use from boaters, park visitors, swimmers and anglers from all over Texas and the Southwestern United States.

Recreation and tourism in the Highland Lakes area are important contributors to local economies. The recreation industry associated with the Highland Lakes experienced phenomenal growth from 2000-2010 and became the major economic stability factor in many of the counties surrounding the Highland Lakes. However, the viability of this recreational industry is strongly tied to the level of water in the reservoirs, and LCRA's 1989 Water Management Plan recommended maintaining the water elevation of Lake Travis at 660 feet or more above mean sea level (msl) and of Lake Buchanan at 1,012 feet or more above msl. In the pass through lakes—Inks, LBJ, Marble Falls, and Austin—little direct impact is felt from variations in the levels of Lakes Buchanan and Travis. However, very low lake levels in Lakes Buchanan and Travis appear to divert those recreational users toward the pass-through lakes, which may then experience the over-crowding that was observed in the 2011-2015 period.

Typically, the annual hydrologic cycle includes filling the water supply reservoirs in the winter and spring and drawing down the water levels as water is used during the hot summer months. The recreational users of these reservoirs are accustomed to a certain amount of variation in the lake levels. However, extremely low, sustained lake levels, such as those that occurred from 2011-2015, have had a significant adverse impact on recreational and tourism interests.

To update Appendix 1B, economic data from 2010 to 2018 was collected to assess the most recent growth and development of the Region. In addition, work was done to capture specific impacts of the new drought of record (2008 – 2015) and associated sustained low lake levels on Lake Travis from 2011-2015, as well as the higher lake levels observed from 2015-2018. The data has been collected from many sources, as shown in the list of references and sources. Tourism data on visitation to the Hill Country was provided by Travel Texas from the Economic Development and Tourism Department in the Office of the Governor. Leisure travel to the Hill Country Region, excluding Austin, was growing at a rate of 10% from 2010-2011 (slightly above Austin's rate of 9%). In contrast, leisure travel to the Hill Country grew at an annual average rate of only 2% from 2011-2017 (when Austin travel was increasing at a 7% rate). In 2018, with lakes at high levels, leisure travel visitation to the Hill Country increased to an 8% growth rate.

**Lake Travis in Travis County**

Lake Travis is a 19,000-acre lake with over 270 miles of shoreline located within Travis and Burnet Counties. Formed in 1937 with the creation of the Marshall Ford Dam, Lake Travis has been and continues to be an important force in the economic growth and sustainability of the region. Lake Travis is the source of water and electricity for its surrounding communities, including, but not limited to, the municipalities of Briarcliff, Lakeway, Lago Vista, Jonestown, Point Venture, The Hills of Lakeway, Volente, and Austin (currently 23 municipalities rely on Lake Travis for water). The lake is a recreational destination for boaters and other water enthusiasts throughout the state, and it is an important component of the region's tourism economy. Businesses of all sizes depend upon Lake Travis for their operations, including restaurants; hotels; boat sales, rentals and services; marinas; golf courses; scuba operators; and real estate brokers and developers. As customers of retail water suppliers, companies, including Samsung, NXP Semiconductors, AMD, and 3M, rely upon Lake Travis for their manufacturing operations. Finally, the lake is an amenity to the surrounding households. From 1990 to 2010, the size of the population living within 30 miles of Lake Travis more than doubled to over 1.5 million people according to the U.S. Census. According to a new estimate from the Texas Demographic Center, this 30-mile range number grew to 1.9 million in 2017.

Incorporated communities, such as Lakeway, Lago Vista, Jonestown, Point Venture, Briarcliff, and Village of the Hills, were founded around Lake Travis in the 1960s, and Bee Cave has also dramatically developed, with both major retail and residential areas, since 2000. According to the Texas Demographic Center, these incorporated communities have grown by 32% since 2010 to a total population of almost 37,000 as of July 2018, with the largest gains coming in Lakeway and Bee Cave. And, it also should be noted that these population estimates do not include the unincorporated areas, such as Spicewood, which is also rapidly developing, some of which is enabled by technology and business policies that allow employees to work from home and avoid long commute times into the Austin area.

Lake Travis is a controlled-flow lake, with water coming in through rainfall and inflows from area creeks, rivers, and streams, and water going out to serve the demand of surrounding cities, water utilities, irrigation needs for the downstream industrial and agricultural users, and flows sufficient to maintain downstream instream flow needs and bay and estuary health. The lake is considered full at an elevation of 681.1 feet ("full pool") above mean sea level (msl), and lake levels have fluctuated from a low of 614 feet in 1951 to a high of 710 feet in 1991. In addition to its use for flood control, hydroelectric power, water supply, and water quality, Lake Travis supports broad recreational tourism and diverse fish and wildlife habitats. Drought, increased water use, releases to meet downstream demands, and reduced inflows all cause water levels in Lake Travis to fall. Conversely, during flood events, businesses surrounding the lake may be forced to close for extended periods of time, and/or incur significant maintenance costs.

An economic impact study by consulting firm Robert Charles Lesser & Co (RCLCO) in 2011 used historical data and econometric models to assess the financial impact that low lake levels or poor water quality have on the region. This study established a baseline to measure the fiscal and economic impacts associated with Lake Travis in 2010 and found that a sufficiently operational Lake Travis generates revenues from property, sales, hotel and mixed beverage taxes that buys ambulances, maintains schools and provides state government with needed funding. The sources cited in the 2011 study and some new sources, such as the State Comptroller's Office, Texas Parks and Wildlife Department, Travis County Parks, LCRA, Travis County Tax Appraisal District

(TCAD), Travis County, the Texas Demographic Center, and specific lake-related businesses, have been used to expand and update the economic data through 2018.

Key findings describing the status of the Lake Travis economic engine in 2010, with comparisons to the drought period between 2011–2014 and to its status in 2018, are presented below:

- In 2010, $158.4 million in revenue was generated for state and local governments from property taxes. In 2018, the contribution from property taxes grew to over $350 million, based on information received from TCAD on 2018 assessed values in the study area.
- In 2010, 3900 commercial businesses in the Lake Travis area generated $45.2 million in state revenue from sales taxes. In 2018, sales taxes revenue grew to $77.9 million., as shown below:

**Sales Tax Information from Incorporated Communities in Travis County Around Lake Travis from the Texas Comptroller's Office:**

| | | Annual Average | | |
|---|---|---|---|---|
| | 2010 | 2011-2014 | 2015-2017 | 2018 |
| State & Local Sales Taxes, $ million | $45.2 | $54.8 | $69.1 | $77.9 |

- In 2010, $3.4 million in state revenue was generated from hotel and mixed beverage taxes. In 2018, the contributions from Hotel and mixed beverage taxes grew to $7.2 million, as shown below:

**Hotel and Mixed Beverage Taxable Receipts from Incorporated Communities in Travis County Around Lake Travis provided by Texas Comptroller's Office**

| | | Annual Average | | |
|---|---|---|---|---|
| Hotel & Mixed Beverages, $ million | 2010 | 2011-2014 | 2015-2017 | 2018 |
| Taxable Receipts | $24.3 | 28.4 | $43.0 | $51.3 |
| Taxes Collected | $3.4 | $4.0 | $6.0 | $7.2 |

- In 2010, $8.4 billion in residential market property value ($2.428 billion in waterfront and total of $4.353 billion in lake-related homes and land property value in 2010 from Travis County Appraisal District (TCAD)); In 2018, $12.771 billion in residential and $1.635 billion in commercial market value was provided by TCAD. In 2019, $3.275 billion in waterfront and total of $5.992 billion in lake-related homes and land property value from TCAD

- Lake related activity in 2010 base case:
  - Total visitor-related spending creates 1,607 jobs, $34.6 million in direct wages, and $90.5 million in value added to the local economy. The data gathered in 2019 for this updated Appendix 1B is consistent with the predictions made in the 2010 study – visitor-related spending creates jobs and provides significant economic benefits to the local economy.

The 2011 Lake Travis Economic Impact Report by RCLCO identified four categories of visitor spending: park visitors, vacation renters, second home owners and boaters. In 2019, comparable data was obtained for park visitors and boating. Regarding park visitors, the 2011 RCLCO Study estimated that park visitors accounted for $38 million in total spending in 2010, based on about 475,000 visitor-days. To update that data, Travis County and LCRA provided park visitation and associated revenue data for 2010-2018 for the lake-related parks that they manage. Combined visitation results in 2014 were about 51% lower than park visits in 2010. With the recovery of Lake Travis water levels in 2015, park visitations have increased every year from the 2014 lows at both the Travis County-managed and LCRA-managed parks, and both Travis County and LCRA reported that visitations slightly exceeded 2010 levels by 2017. Using the daily spending estimates for 2018 found in the 2018 Hill Country Region report provides an estimate of $44.3 million in park visitor spending for 2018 and supports 294 jobs and provides $15.9 million in non-inflation adjusted total value add, the majority of which is labor income.

Regarding boating, the 2011 RCLCO Study estimated that boater spending supports an additional 574 jobs, and boat sales support 309 jobs, many of which are related to the commercial and community marinas and private docks on Lake Travis. According to LCRA data, there are now about 120 commercial and community marinas on the Highland Lakes that provide roughly 7,000 boat slips. According to the RCLCO Study, there are also over 2000 dry slips and 30 boat ramps at marinas. According to the LCRA website, there are also 12 public boat ramps on Lake Travis, but only 6 are operational below 660 feet msl, 3 below 650 feet and 1 below 640 feet at Mansfield Dam (closes at 633 feet). As such, there was very limited access from public boat ramps in the 2011-2015 period of very low lake levels. Regarding private boat dock slips, RCLCO determined using aerial images that there were 2,165 private docks on Lake Travis in 2010, many of which were grounded during the low lake level period from 2011-2015, and the boats were moved to storage.

Boat sales supported an additional 309 jobs and an additional $22.1 million in total value add to the economy in 2010$. In 2010, $40.6 million in sales revenue was generated from new and used boat sales in Travis County, according to data from the Texas Parks and Wildlife Department. In 2018, the sales revenue from new and used boat sales has grown to $71.8 million, and has now returned to its previous peak in 2007, as shown below:

**Boat Sales in Travis County from Texas Parks and Wildlife Department (TPWD):**

| | | | Annual Average | | |
|---|---|---|---|---|---|
| | 2007 | 2010 | 2011-2014 | 2015-2017 | 2018 |
| Aggregate Sales Value, $M | | | | | |
| New and Used Boats | $71.0 | $40.6 | $41.0 | $63.5 | $71.8 |

Given the recovery and gains of the boating business, the 2010 RCLCO jobs estimate should at least support their 309 jobs estimate when lake levels are at reasonable operating levels above 660 feet.

Lake levels finally recovered in 2015 and have remained at higher levels, with the exception of a six-month period in 2017, where a "flash drought" and associated very low inflows, which fell to only 2% of average in July 2018, and caused the Lake Travis lake level to fall below 660 feet to about 654 feet. However, heavy rains in October brought Lake Travis levels back up to above- full, and levels have remained at good operating levels above 660 through 2019.

The 2011 RCLCO Study also found that vacation renters support 309 jobs; and second homeowners support 431 jobs. The proportion of second homes on Lake Travis remains very high at approximately 50% in 2018, based on the percentage of homes that are not designated as homesteads. As such, the 2011 RCLCO Study estimate that total visitor spending supports 1609 jobs that provides $90.5 million in value add to the economy (2010$) is viewed to be a valid estimate, and it is likely much higher.

The 2010 RCLCO Study found that adverse economic impacts begin when lake levels remain below 660 feet, and significant economic impacts occur when lake levels fall below 650 feet. Some specific effects that the 2011 Study predicted, with actual results on park visits from the 2019 update, include:

- Fewer park visits - Park visits fell from 475,800 in 2010 to 232,400 in 2014, or about 51% lower.
- 29 lost jobs for each 10% drop in park visits. The 51% reduction in park visits between 2010 and 2014 translates into 145 lost jobs, with a loss of $7.9 million (2010$) in total employment value, per the 2011 RCLCO Study
- $23.6 million to $38.8 million reductions in visitor spending; and
- Up to 241 lost jobs and $6.1 million in lost wages.

The study also found significant annual fiscal impacts could occur, including:

- $21.9 million in total fiscal revenues lost versus the 2010 base case; and
- $1.7 million lost sales tax revenues.

As a result of the extended severe drought that began in 2008 and large interruptible water releases under the governing LCRA Water Management Plan during the severe drought in 2011, Lake Travis lake levels fell to the 620-630 foot elevation and remained there from 2011 until May of 2015. Public access to Lake Travis was severely impaired below 630 feet, and the lake also became much more dangerous to navigate as the lake levels fell. As a result, many of the predicted impacts became reality.

In order to get a better picture of the scope of the adverse economic impacts, information from several directly affected business groups was obtained and compiled in 2019. Boat sales provide a strong indicator for desired utilization of the lakes. Boat sales data for 2006-2018 was obtained from TPWD. It was found that actual numbers of new boat sales in Travis County declined about 15%, and used boats sales numbers fell about 22%, from 2010 to 2014 during the low-lake level period.

Another large key boating-related business group is the commercial marina business. A questionnaire/survey was conducted in 2019 of the Marina Association of Lake Travis (MALT). Responses were received from many of the major commercial marinas on Lake Travis, and those responses represented about 51% of the total boat slips in the large commercial marinas. The response rate was utilized to scale up the business and employment data provided by the Questionnaire to yield the following current total Lake Travis Commercial Marina business estimates for 2018:

- Annual 2018 revenues of large major marinas alone are estimated to be about $36.4 million/year, with much more revenues provided by rest of the active marinas;
- Annual employee payroll estimated to be about $7 million/year for about 375 full-time, part-time and seasonal employees. It should be noted that there are also many other employees associated with related boat services, restaurant and rental activities at the marinas or other supporting businesses and locations that are not included in these estimates.

Feedback was also requested in the Commercial Marina Questionnaire on the adverse economic impacts that actually resulted from the very low lake levels during 2011-2015, and the recovery once levels returned to higher operating levels in 2015. Specific results from that Survey include:

- Almost all commercial marinas experienced significant reductions in occupancy rates, and associated revenues, during the low lake level years, with several falling to 78% and a few reporting rates as in the 40-60% range. On average, the reduced occupancy rates translated to an annual revenue reduction of about 30% (down about $11 million) versus current performance, with some reporting a revenue reduction approaching 40%.
- Almost all report significant negative financial impacts, such as high dock relocation costs, when the Lake Travis lake level falls below the 640-650 foot msl range, and the impacts worsen if the lake continues to drop
- Numerous marinas reported that the large boats are important for their financial health, and they have been harder to get since the low lake-level period. 2019 appears to be the 1st year that has experienced a significant return of the “big boats” from other cities, such as Houston.

With the return of higher water levels on Lake Travis from June 2015 to the present, results from the Survey show that the average occupancy rates improved back up to 94% in 2018, which is 4% above the 90% occupancy rates reported by the RCLCO Study. In addition, almost all of the responding large commercial marinas report that they are finally realizing higher slip rates than in 2011.

Regarding adverse impacts on other significant lake-related businesses during the 2011-2015 period, with loss of access, tourism greatly declined, and many lake-related businesses and restaurants closed. This included iconic, high-profile ones, such as Carlos’ N Charlie’s that had been in business for many years. In the specific case of Carlos’ N Charlie’s alone, at least 120 employees lost their jobs between 2011- 2014, which represented over $1 million in lost payroll, and. total associated State taxes of over $400k per year were also lost. Another 100 employees lost their jobs in 2015 when it closed in 2015. Just for Fun, a boat rental business, lost an average number of 29 employees from 2010 to 2014, representing over $500,000 in annual payroll. Other support-related businesses, such as boat service businesses also closed, such as Full-Throttle Marine in Spicewood. Other restaurants such as Café Blue in Volente also closed, and many others changed hands. As such, job losses were likely much higher than estimated by the RCLCO Study. However, the largest reduction in boating spending was likely in the daily boat usage category, where a 50% reduction in visitors would likely have a proportional impact. As such, annual spending for daily boat usage could have dropped in the $20 million range by 2014, versus the $40.1 spending level, as estimated by the RCLCO Study in 2010.

**Real Estate Impacts from Austin Board of Realty (ABOR) and TCAD**

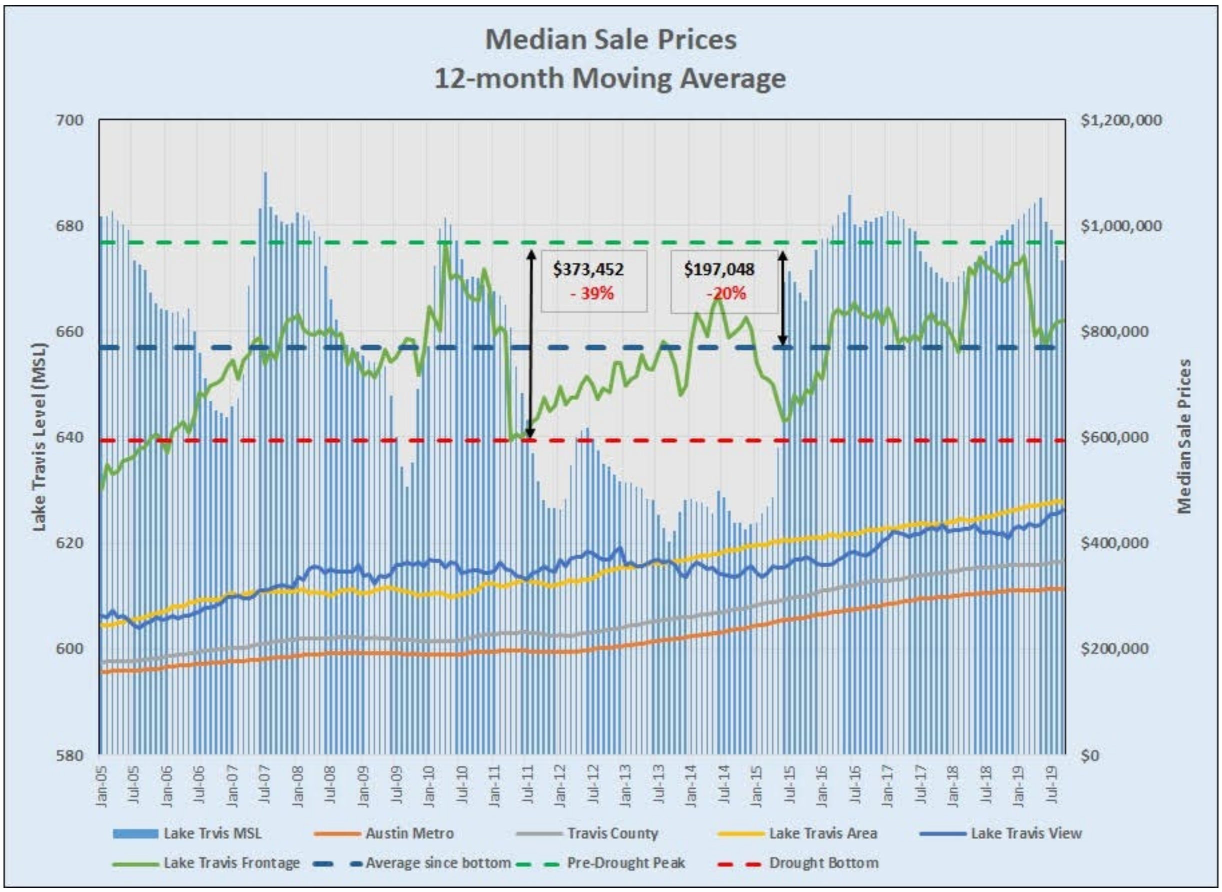
Low lake levels also impacted the real estate sector of the economy during 2011-2015. While the Austin metropolitan area continued to enjoy significant growth and increased property values, lake-related property values greatly suffered, both with homes and unimproved land values. The following results were compiled by the real estate industry for the 2009-2014 timeframe:

- Median sales price decline of waterfront/view homes down 29.5% since 2011
- $/sq. ft. average price decline 33.9% since 2009
- Median undeveloped waterfront/view land price down 36.8% since 2009
- Real estate inventory levels are a very strong indicator of the health of a real estate market. While the residential market across the 5-county Austin metropolitan area had less than three months' supply as of December 2014, active listing inventory for homes with Lake Travis frontage will last more than two years at the Dec. 2014 pace of sales. There was more than three years of listing inventory for unimproved lots on Lake Travis.

These declines in water-related home and land values have a significant aggregate effect, both on the homeowners and on the taxing districts that rely on property taxes. This rapid decline in waterfront market values represented a major reversal from a very strong appreciation history in median sales prices. According to the Austin Board of Realtors (ABOR) real estate data, the median moving average waterfront home rose about 65% from $585k in January 2005 to $966k in April 2010. In an ideal case where Lake Travis levels were stable above 660 feet, waterfront properties should have appreciated at least as well as the 5-county metro area, in general. Median sales prices in the 5-county Metro have appreciated by 65 % from 2010 to 2019. **As such, median prices of waterfront properties should have increased to about $1.598 million per property, if they had enjoyed the same 5-county Metro rate of increase, in a "stable lake" environment.**

It should be noted that the recession that followed severe disruptions in the mortgage and residential real estate industries began (in Central Texas) in mid-2007, reached it's low-point in early 2009, and hovered near that level until early 2011. Residential listing inventories began to decline in mid-2011 and continued to fall as sales increased from then until early 2013, when the now seven-year old boom was fully in place. Residential sale prices in most of Central Texas were much more modestly affected than other parts of the U.S., and aggregate prices in the 5-county Austin metropolitan area were largely unaffected. Median prices of lakefront homes on Lake Travis, however, plummeted 39% between April 2010 and May 2011, almost exactly in parallel with falling water levels (from

681 feet to 653 feet) during the same thirteen months. (See exhibit below.) Prices recovered somewhat between then and mid-2014, but sagged twice more as water levels dipped again in 2013 and 2015, while the rest of the metro area proceeded with unprecedented price increases. In June 2018 and February 2019, lakefront prices almost rose again to April 2010 levels, but fell again and were again 20% lower than that peak by September 2019. This market behavior was clearly not unrelated to the broader recession, but and was highly correlated with changes in Lake Travis water levels and subsequent lack of confidence in sustained water levels and property values.




**More specifically, the waterfront property market median prices began a rapid decline in September 2010, and closely tracked the rate of decline in Lake Travis levels, $370k in median pricing down to about $600k, while the 5-county metro area continued its steady growth.** During the 2011-2015 period, waterfront median sales prices recovered somewhat until mid-2014, but then fell back to about $630k in mid-2015. With the recovery to higher lake levels in 2015, median home prices climbed to above $900k in early 2018 but have since dropped back to the $820k range in September 2019 due to uncertainty in lake levels.

As such, ov**er the entire 2010-2019 period, average median waterfront home pricing of $780k is down about 19% from the 2010 peak of $966k. However, if we compare the current average**

**median price of $820k to the predicted stable lake value estimate of $1.598 million, the predicted waterfront price of $1.598 million is 95% higher per property.**

According to data provided by the Travis County Appraisal District, total waterfront market values on Lake Travis were about $2.428 billion in 2010. Their appraised market values were reduced by about $50 million by 2012 and were at $2.574 billion in 2015. With the recovery to higher lake levels, TCAD has increased its total appraised waterfront market values (homes and lots) by 27% from 2015 to $3.275 billion in 2019, which is now up 35% from 2010. An analysis of waterfront data provided by TCAD shows that the average market value for a waterfront home is up to $808k in 2018, which is ow roughly in line with the current real estate market average median pricing.

Applying the current TCAD market value of $808k per home across only the roughly 3000 waterfront homes yields a total of $2.4 billion in market value. **If the values of these waterfront home were actually in line with the predicted "stable lake" median sales value of $1.6 million in 2018, the total waterfront market value would be $4.8 billion, or about double the current market value. Assuming an average 2% property tax rate, this would translate into $48 million of additional tax revenue in 2018, which supports schools and county services. It should be noted that this analysis does not consider the additional value that would also come from waterfront lots ($513 million in 2018) or the waterfront-related home and property values ($2.642 billion in 2018 from TCAD data)**

Looking backwards and assuming that TCAD assessed market values were aligned with the average real estate market, it is possible to estimate the loss of potential property tax revenue that has already occurred from 2010 to 2018. An analysis of real estate average median prices over the 2010 to 2018 period shows a reduction in median market value of waterfront homes of $186k since 2010. **On roughly 3,000 waterfront homes (not including almost 1,500 waterfront lots and 8,800 water-related homes and properties), this represents $558 million in lost market value or about $11.1 million per year in lost property taxes on residential waterfront homes alone. Over the 8-year period between 2010 and 2019, this represent a total impact of about $89 million in lost property tax revenues.** Given the very strong and on-going population growth in the area, and the magnitude of the lost tax revenues from lake-related properties, the shortfalls will likely have to be borne by the rest of the taxpayers to meet required service needs.

## Lake Buchanan in Burnet and Llano Counties

Located along the Colorado River, both Burnet and Llano counties have strong agricultural and ranching sectors combined with tourists seeking water-related recreational opportunities on Lakes Buchanan, Inks, LBJ and Marble Falls. Historically, the tourism sector has been the largest employer in the region with visitors spending millions of dollars each year at hotels and resorts, restaurants, and shops. The area has also become popular for retirement and 2nd homes, and the properties around the lakes are among the most valuable in the area. More recently, substantial retail and medical facilities have been built in the area, particularly in the Marble Falls area.

When the drought began in 2008, the reservoir Lake Buchanan fell and remained primarily at levels below the conservation level of 1,012 feet msl. The situation worsened significantly in the summer of 2011, when lake levels fell below 995 feet and continued to fall. At these low levels, lake access was very restricted and public boat ramps were closed, and tourism around the lake was adversely impacted.

In 2011, in a joint effort to measure the contribution of the upper Highland Lakes to the regional and state economies, Burnet and Llano Counties retained a project team to perform an economic impact analysis. The project team of TXP, Inc., Concept Development and Planning, LLC, and Diverse Planning and Development conducted the baseline assessment for Burnet and Llano Counties that was completed in the fall of 2012. The study area for the project included Burnet and Llano Counties as well as the properties at nearby Lake Buchanan, Inks Lake, Lake LBJ, Lake Marble Falls, and Lake Travis (only the portion in Burnet County). The sources cited in the 2011 study, and other new sources, such as the State Comptroller's Office, Texas Parks and Recreation Department, and the Burnet and Llano County Tax Appraisal Offices have been utilized to expand and update the economic data through the 2018/2019 period.

**Economic Activity & Tax Revenue Attributable to the Upper Highland Lakes from the 2012 Study**

Some of the key findings from the 2012 baseline study that show the scope and importance of tourism and recreation is provided below. Data has been compiled in 2019 to show the growth and development of the Region and identify impacts of the most recent drought of record and associated sustained low lake levels on Lake Buchanan and the Upper Highland Lakes Region. This updated information is also presented below, including information sources.

In 2011, direct spending by all visitors to Burnet and Llano Counties resulted in the following:

- $161.3 million in direct economic activity;
- $58.9 million in earnings for employees and business owners;
- 3,125 jobs (or 25.9 percent of total regional employment);
- $3.46 million in local tax revenue excluding property taxes; and
- $9.2 million in state tax revenue.

Direct spending data from visitors during the 2012-2018 period was not available for the 2019 update. Total Sales Tax information is shown below:

**Total Sales Tax Information from Incorporated Communities in Upper Highland Lakes from the Texas Comptroller's Office** (from the 2019 update)**:**

| | | Annual Average | | |
|---|---|---|---|---|
| | 2010 | 2011-2014 | 2015-2017 | 2018 |
| State & Local Sales Taxes, $M | $25.7 | $29.4 | $36.3 | $41.7 |

A review of the detailed city/municipality data reveals that the sales taxes generated in the major cities, such as Marble Falls and Horseshoe Bay, remained relatively flat in 2011 and 2012. A large share of the State and Local Sales Taxes were found to be from Marble Falls, which has developed a large retail trade presence and added several new hotels near Lake Marble Falls. Significant contributions from 2015 to 2018 were also made by Horseshoe Bay via its major resort, golf, and recreational boating facilities.

**Hotel Occupancy and Mixed Beverage Taxes:**

Hotel occupancy tax revenue generated by properties in the Upper Highland Lakes Region more than doubled from 2000 to 2010. In 2012, over 81.1 percent of Burnet and Llano Counties' accommodation and lodging businesses were found to be within two miles of the lakes. As such, the proportion of taxable hotel room revenue attributable to lake-related hotel properties was approximately 75 percent of total Upper Highland Lakes Region hotel sector activity. Lake-related hotel activity generated about $1 million in tax revenues for the State of Texas each year.

In 2011, direct purchases (based on room capacity and hotel occupancy tax receipts) by lake-related visitors to Burnet and Llano Counties from the 2012 Study reported the following baseline information:

- $122.5 million in direct economic activity;
- $45.3 million in earnings for employees and businesses owners;
- 2,454 jobs;
- $2.6 million in local tax revenue excluding property taxes; and
- $7.0 million in state tax revenue.

**Hotel and Mixed Beverage Taxable Receipts from Just Communities Around the Upper Highland Lakes provided by Texas Comptroller's Office**

- In 2010, $2.3 million in state revenue was generated from hotel and mixed beverage taxes. In 2018, the contributions from Hotel and mixed beverage taxes grew to $4.0 million,

| | | Annual Average | | |
|---|---|---|---|---|
| Hotel & Mixed Beverages, $ million | 2010 | 2011-2014 | 2015-2017 | 2018 |
| Taxable Receipts | $27.8 | 33.1 | $43.0 | $49.9 |
| Taxes Collected | $2.3 | $2.7 | $3.5 | $4.0 |

Hotel and Beverage Taxable Receipts provide a good indicator of tourism and recreation. As the Lake Buchanan water levels returned to and remained above the conservation level of 1,012 feet msl in 2015, an average of $43 million in total hotel and mixed beverage taxable receipts were generated annually in the 2015-2017 period, an increase of 30% compared to the 2011-2014 average annual receipts of $33.1 million. After nearly 3 1/2 years of higher lake levels on Lake Buchanan, taxable receipts from hotels and mixed beverages increased at an annual rate of 8% from $46.3 million in 2017 to $49.9 million in 2018.

**Indirect Spending from 2012 Study**

The total economic impact in 2011 of lake-related visitor spending in the Upper Highland Lakes, including indirect positive effects on support services and businesses, were described as follows:

- $185.5 million in total economic activity;
- $81.7 million in earnings for employees and businesses owners;
- 3,648 jobs.

**Population Trends from the Texas Demographic Center at UTSA:**

Communities in the Upper Highland Lakes Region include Burnet, Horseshoe Bay, Llano, Marble Falls, Sunrise Beach Village, and Kingsland. These population trends indicate an impact on growth by low lake reservoir lake levels.

| | 2010 | 2015 | 2018 |
|---|---|---|---|
| Population Trend | 25,457 | 26.498 | 28.839 |
| Rate of Growth vs 2010 | | 4% | 13% (9% growth increase from 2015 to 2018) |

The rural areas also saw significant population growth from 2010 to 2018, based on analysis of new electric service hook-ups provided by PEC and CTEC.

**Specific Low Lake Level Impacts Around Lake Buchanan**

Numerous tourism-related businesses suffered or closed as a result of the sustained low-lake level period between 2011-2015, such as restaurants, grocery stores and resorts, and associated job losses and business viability issues have been significant. For example, Thunderbird Lodge on Lake Buchanan reports that they historically brought in 6,000 guests annually. It saw its business drop off by 60-65% during the sustained low lake period, with its boat ramp, dock and marina becoming unusable. To avoid bankruptcy, they cut every cost they could and made payroll cuts, but they still were forced to transition to a new partnership structure for funding, and have now almost recovered, with higher lake levels returning in 2015. Hi-Line Lake Resort was not as fortunate and went bankrupt in 2013.

The charter-fishing business on Lake Buchanan has also been significantly affected by the sustained low lake levels. One of the major long-time bass fishing businesses, Ken Milam Guide Service, has seen its scheduled trip count fall by about 60% on average from around 500 in the pre-drought peak years to lows ranging from 177-254 during the 2011-2015 period. They reported that it also took flexibility and creativity to find ways to access the lake to maintain the business and experience for the customers. Unfortunately, many customers have not returned, and the recovery since then has been slow, with annual trip counts ranging from 170-220 since 2015 to the present. The reduction in business has also taken a toll on the number of other full-time professional guides. Over 30 guides were working during the peak years, with full time professional guides of about 15. That number has dropped by about 67% to a current group of only 5, which makes it more challenging to host large charter outings. Typical trips average 4 people per trip, so a drop from 500 trips to about 200 per year results in a drop of around 1,200 fisherman per year plus any friends or family that may have come for the trips. This loss of high-revenue visitors has translated in losses of cabin rentals, and for other support businesses such as the convenience stores and restaurants. It has also reduced the number of customers who liked the area and chose to have 2nd homes or relocate into the area. Many businesses have changed ownership, and others are looking at alternative types of business models to help recover and remain viable, as tourism slowly improves.

**Boat Sales in Burnet and Llano Counties from Texas Parks and Wildlife Department**

| | Annual Boat Sales | | | | |
|---|---|---|---|---|---|
| | 2006 | 2010 | 2012 | 2015 | 2018 |
| Aggregate Sales, | | | | | |
| New and Used Boats, $M | $9.7 | $5.6 | $5.5 | $7.9 | $14.5 |
| Number of New & Used | 1,091 | 767 | 734 | 858 | 1,044 |

Actual numbers of new boat sales in Burnet and Llano counties declined about 3% and used boats sales numbers fell about 5% from 2010 to 2012 during the early low-lake level period on Lake Buchanan. During this period, total sales revenues from new and used boats remained around $5.5 million, lifted by increasing sales prices of new boats, and the benefit of the option to utilize the pass-through lakes (LBJ, Marble Falls and Inks. With the recovery to higher lake levels in Lake Buchanan in 2015, total boat sales value in Burnet and Llano counties have significantly increased every year since 2015 and are up to $14.5 million in 2018. The number of new and used boat sales in 2018 of 1,044 is also nearing the peak of 1,091 from 2006. As such, overall contributions of boat sales to jobs, wages and overall value add to the economy, and at least support the 2011 baseline spending levels from the 2012 Study.

**Property & Real Estate Impacts from BCAD and LCAD and Highland Lakes MLS System & Agents**

According to the Burnet County Appraisal District (BCAD), Burnet County experienced a 114% increase in appraised market value from 2002 to 2010 to $6.5 billion. During this period, waterfront properties increased about 175% in appraised market values, and represented about 35% of the taxable market value. According to the Llano County Appraisal District (LCAD), their appraised market values was a $5.4 billion in 2010, and assessed values of waterfront-related communities represented 54% of net taxable values.

The 2012 Study reported that “over the past two decades, communities adjacent to the lakes have been the fastest growing in the two-county area. Since 2000, the majority of new homes built in the Upper Highland Lakes Region have been lake-adjacent. Nearly three-quarters of all homes built in the two counties in the past decade were within two miles of the lakes.” That Study also found that "the average taxable value of a home on the lakes is substantially greater than the countywide averages – ranging from approximately 70 percent higher around Lake Buchanan to more than 3.5 times the average home price in Burnet and Llano Counties around Lake LBJ and Lake Marble Falls." As such, waterfront properties generate significant local property tax revenue to support schools and local government services.

During the 2011-2015 period of sustained very low reservoir-lake levels, total assessed market values continued to increase in Burnet and Llano counties, but at much lower rates. According to BCAD, appraised market values increased by 16% to $7.6 billion. During this period, county-wide waterfront properties, including the pass-through lakes (Inks, LBJ and Marble Falls), increased only 13% to $1.7 billion, and still represented 34% of taxable market value. During this same period, LCAD records show that their assessed total market values increased 13% to $6.1 billion, but county-wide waterfront community-related properties increased by only 7% to $1.9 billion and represented about 49% of net taxable values.

| Appraised Property Data from BCAD & LCAD | 2002 | 2010 | 2015 | 2018 |
|---|---|---|---|---|
| Burnet County | | | | |
| Total Market Value, $B | $3.508 | $6.529 | $7.594 | $9.960 |
| Net Taxable Value, $B | $2.1 | $4.296 | $4.96 | $6.411 |
| Waterfront, $B | $0.545 | $1.510 | $1.700 | $2.046 |
| % Taxable Market Value | 26% | 35% | 34% | 32% |

| Llano County | 2010 | 2015 | 2019 |
|---|---|---|---|
| Total Market Value, $B | $5.358 | $6.063 | $7.430 |
| Net Taxable Value, $B | $3.318 | $3.880 | $4.965 |
| Waterfront-related, $B | $1.783 | $1.917 | $2.378 |
| % Taxable Market Value | 54% | 49% | 48% |

Looking at the county numbers after the lakes recovered in 2015, according to BCAD, total assessed market values increased by 31% to $9.96 billion from 2015 to 2018 versus 16% from 2010-2015. County-wide waterfront property market assessments went up 20% from 2015 to 2018 versus the 13% increase from 2010-2015. The percentage of waterfront versus taxable value was 32% in 2018. In Llano County, total assessed market values increased by 23% to $7.43 billion from 2015 to 2019 versus 13 % from 2010-2015. County-wide water-related property market assessments went up 24% from 2015 to 2019 versus only the 7% increase from 2010-2015. The percentage of waterfront-related vs Net Taxable value remained very high at 48% in 2018.

However, when focusing on the assessed values of waterfront-related properties on the reservoir lakes during the period of very low lake levels from 2011-2015, a much different picture emerges, particularly on Lake Buchanan. **Analysis of BCAD waterfront property data on Lake Buchanan shows that total existing assessed property values were reduced from 2010 to 2015 by $41.6 million (19%) from $220 million to $178 million,** after new construction was considered. And <u>**analysis by LCAD on waterfront community property data on Lake Buchanan shows that**</u>

**total existing assessed property values were reduced by $28.1 million (16%) from $171 million to $143 million, without new construction adjustment**. As such, **the combined loss in assessed market value for waterfront related properties in both Burnet and Llano counties due to sustained low lake levels on Lake Buchanan was $69.7 million in 2015.**

The Peninsula on Lake Buchanan provides an excellent example of a premier development that has significantly suffered from the sustained low lake levels. It was developed in 2007 as a gated community with underground utilities, surface water treatment plant and a private community marina. It has 83 lots, 67 of which are waterfront, and the initial sales prices of the lots were $275-475k, with 37 lots sold in the 2007-2008 period. However, lot sales fell off dramatically with the sustained low lake level periods of 2009 and 2011-2015. In 2012, the original developer went bankrupt, and the new investor had a “fire sale” with 9 original lots offered and sold at 1/3 the original price. This situation continued in 2013 and 2014 with 2 lots selling at $114k vs $300k and $165 vs $385k. Actual home construction in the development has also been severely affected, as only 3 homes were built from 2007-2009 and zero homes were built from 2009-2016 versus an expected 30-40 homes at a normal 5% per year rate. **This represents a significant loss of potential taxable value, in the $30-50 million range in this community alone, as these are $750k-1 million plus homes.**

Looking at Lake Travis in Burnet County, assessed market values of existing waterfront properties remained essentially flat from 2010 at $108 million to $112 million in 2015. New waterfront-related construction between 2010-2015 accounted $11 million.

Beginning in 2015, with the sustained recovery of the reservoir lakes, appraised market values of waterfront-related properties have significantly increased. BCAD data shows that waterfront properties on Lake Buchanan have increased by over $70 million (38%) in assessed market values to $254 million from their 2015 lows and are now $34 million above their 2010 values. However, according to local real estate agents, this partial recovery in actual sales of the high value waterfront lots at the Peninsula in 2017 has not continued in 2018 and 2019 YTD sales. According to the MLS system, average annual residential sales prices on Lake Buchanan have increased by 36% to about $359k from their 2015 levels. BCAD data on Lake Travis reflects about a $27 million (30%) increase vs the 2015 lows and is now $46 million above 2010. Looking at LCAD data on Lake Buchanan, the assessed market values of waterfront properties in 2019 have recovered by $24.6 million (17%) to $168 million, but they have yet to fully recover to their 2010 market values.

Considering long-term implications of the sustained low lake level around Lake Buchanan, two of the key findings from the 2012 Study were evaluated with local real estate agents, and found to appear to still be valid, as follows:

- **“The Highland Lakes community’s overwhelming concern is that overall economic activity in the region will not return to its pre-drought growth rate because of the prolonged low lake levels.”** The information and data collected for this update continues to validate this concern.
- **Low lake levels could adversely impact development of 5,799 undeveloped, lake-related acres, with an additional 1,180 underdeveloped acres that have a potential taxable**

**property value of $1.4 billion around the lakes**. Consultation with local real estate brokers reveals that this continues to be a valid concern, particularly around Lake Buchanan.

**Community Summaries:**
Community summaries, authored by each community, highlight the nature, strengths and growth of the Highland Lakes Region:

**Marble Falls** - With a city population of just under 7,000, most people would call Marble Falls a small town—but very few would call it "sleepy." The town feels much bigger due to a primary retail trade area population of more than 70,000 and daily traffic counts in the center of town exceeding 35,000 vehicles per day. In 2018, Marble Falls surpassed $1 billion in gross sales for the first time. In the last 5 years, Marble Falls' primary retail trade area population has grown 6.5%, average household income has increased by 21.3%, and median home value has increased by 21.5%. During the same period, taxable sales activity has increased by 31.5% to more than $466 million. Recent developments include Baylor Scott & White's $100 million regional medical center, a new 110,000-square-foot H-E-B grocery store, and a $20 million operations center for Pedernales Electric Cooperative. The development pipeline includes some exciting retail development, multi-family properties, and a Downtown hotel and conference center, in addition to two new subdivisions with more than 1,200 homes planned. People are beginning to see Marble Falls as more than just a touristy, scenic lake town on the outskirts of the Austin metro area.

**Lakeway -** Since its inception, the city of Lakeway has been closely tied to the quality water resources found in central Texas. Its name alone demonstrates its tie to Lake Travis as what first attracted visitors to the area and the growth of the city. Within the city limits are several miles of shoreline with a number of businesses directly related to activities on or near Lake Travis. With a population of over 15k people, Lakeway is now the third largest city in Travis County with a growth rate of 5% annually over the last 18 years. The city generates $12 million revenue annually with $1 million coming from the Hotel Occupancy Tax. Property values have tripled between 2006 and 2018; however, there is a clear recognition how the water level and quality of Lake Travis can impact that trend. Much of the city falls in the Lake Travis watershed and there is close coordination with the LCRA to review projects for compliance with the Highlands Lakes Watershed Ordinance. In a recent citizen survey, availability of quality water, proper disposal of wastewater, and protection of the Lake Travis water resource were three of the top ten highest priorities out of over 60 categories covered. Lakeway's bond with quality water resources is a key to its future.

**Bee Cave** - Just like most other Cities in the region, Bee Cave has experienced a significant amount of growth. The current projected population (8300) is more than double the 2010 (4000) population and 8x higher than the year 2000. Although valuations and property tax revenues have tripled in that time, the City of Bee Cave maintains a $.02/$100 property tax rate and is reliant on sales tax revenues for the general operation of the city. Annual sales tax revenue doubled in the last 10 years, topping $10.5M in FY '18-19 and continues to rise with new investments in the community such as an $850M mixed-use planned development, event venue, multiple hotels, and residential development. Bee Cave's sales tax numbers are driven by the number of people who travel to the city as a destination and through the city to enjoy the other things the local area has to offer. Since 2000, Bee

Cave has become home to over 2.1M sq. ft. in retail shopping space, which acts as a magnet to members of neighboring communities and from adjoining counties. The majority of Bee Cave's retail growth has occurred in an area of the city where 3 major state highways, TX-71, RM-620, and RM-2244 intersect. Texas Highway 71 averages 50,000 trips per week day and Ranch to Market 620 between Bee Cave and Lakeway averages over 47,000 daily trips. Finally, RM 2244 generates over 34,000 vehicular trips per day to and from the greater Austin area. The economic health of the City of Bee Cave is reliant on factors within the city's jurisdiction, but the impact of neighboring jurisdictions, such as our immediate neighbor Lakeway, may be equally important to our community. While not a lake town, Bee Cave is very tied to the other communities in the Lake Travis watershed.

**Lago Vista** – Nestled in the Hill Country between Cedar Park and Marble Falls, Lago Vista is a Lake Travis community with small town charm. Originally founded as a golf resort community, Lago Vista has experienced substantial population growth in the past several years with a 2019 population estimate of 8,046. Within a 15-minute drive is 12,075 households with a population of 31,843 and a growth rate of 28.80%. Young families are choosing to move to Lago Vista for the excellent schools, low crime rates, and variety of recreation opportunities. Lago Vista also has amenities that include POA-owned lakefront parks, tennis courts, baseball fields and frisbee golf courses. Swimming, camping, boating, kayaking, golf, and hiking trails are also favored activities. The Travis County Arkansas Bend Park in Lago Vista is available to the public. The City of Lago Vista is in the process of completing Phase One of a new municipal sports and recreation complex. Expected completion is May 2020. A variety of sports and entertainment events are held in Lago Vista each year. Lago Fest is a large live music, art, and food festival on the shore of Lake Travis in Bar-K Park. Festival goers enjoy coming by boat as well as land. Lago Fest is held at the same time as the Austin Yacht Club's Annual Turnback Regatta. Sailors race to the shore of Bar-K Park camp overnight and race back in the morning. The highly touted La Primavera bike race is held in Lago Vista offering serious cyclists a challenging course throughout the city's winding hilly roadways overlooking the lake. The Lago Vista business community includes medical facilities, corporate manufacturing, financial advisors, retail shopping, restaurants and service providers. Starbucks just opened and is a new addition to the Lago Vista community.

**Lake Buchanan Community** - The communities on the banks of Lake Buchanan, including surrounding areas in both Llano and Burnet Counties, continue to grow at a noticeable rate. The area has traditionally been a mecca for retirees looking for a slower pace of life at reduced living costs. That is changing, as the cities of Llano, Kingsland and Burnet have become shopping, supply and dining attractions. Numerous wineries and tasting rooms have opened, as a way to attract visitors seeking smaller crowds than found along the Winery Highway between Johnson City and Fredericksburg. To further capture these tourist dollars, numerous RV, resort and owner short term rentals have successfully opened. In addition to the peak summer traffic from parents transporting children to a variety of camps, the area has become an arts destination, with the oldest art guild in Texas located at Buchanan Dam, and other festivals such as LEAF, twice yearly Llano Studio Tours, Western Art on the Llano, and Paint the Town and Burnet Plein Air Festival, growing in participation and attendance. Fishing continues to fuel the economy on the lake, with Buchanan providing some of the best Striper bass fishing in the world.

**Emerging Issues in the Highland Lakes Region:**

**Water Access Issues for Firefighting in Travis County ESD 8 Service Area at Lake Levels below 650 ft msl** - In a 2018 Assessment provided by the ESD 8 Fire Chief – He reports that Travis County Emergency Services District 8 needs Lake Travis for firefighting operations. When Lake Travis reaches 650 feet, available water for firefighting is reduced. Low lake levels also increase the danger to the public by exposing them to underwater hazards as they become more prevalent. ESD 8 provides coverage to 15,000 full-time residents in its approximately 54 square mile service area. At levels above 650 feet, water access for firefighting is provided by 8 Hydrant Areas and 17 Drafting Locations. At 650 feet lake elevation, 5 of the Drafting Locations become questionable. If Lake Travis continues to drop and reaches 640, the Fire Department could be in a critical need for water. The district could be faced with transporting water from only 1 reliable water source location at Briarcliff Marina, and turnaround times could be 30-40 minutes. As an example of the risks when the Lake Travis water level is low, the Labor Day 2011 Pedernales Bend Wildfire burned 6,500 acres, destroyed 70 structures, and left 545 homes without power.

**Zebra Mussels** – In a 2019 Survey of Lake Travis Marina Owners, almost all marinas reported that Zebra mussels are causing negative impacts. They noted factors such as need for cleaning of dock ladders and hoists; more problems with cable work, motors and inlets on boats, particularly on boats that remain in the water; and safety issues related to minor injuries from sharp surfaces caused by the Zebra mussels.

**Sedimentation and Flooding in Upper Highland Lakes –** There is a question as to who is responsible for helping communities with flooding and sedimentation issues.

REFERENCE DOCUMENTS, SOURCE MATERIALS, AND INFORMATION CONTRIBUTORS:

- "Lake Travis Economic Impact Report" prepared by Robert Charles Lesser & Co. (RCLCO) for Travis County and the Lake Travis Economic Stakeholders Committee (Sept. 2011);
- "The Economic Impact of the Upper Highland Lakes of the Colorado River" prepared by TXP, Inc., Concept Development & Planning, LLC, and Diverse Planning and Development for Burnet and Llano Counties (Fall 2012);
- County Appraisal Districts - data on property appraised valuations.
    - Travis County Appraisal District
    - Burnet County Appraisal District
    - Llano County Appraisal District
- Multiple Listing Service reports on property sales
- Texas Demographic Center at the University of Texas at San Antonio (UTSA)
- Texas Parks and Wildlife Department (TPWD)
- Marina Association of Lake Travis (MALT)
- Economic Development and Tourism Department; Office of the Governor
- Travis County Parks
- Lower Colorado River Authority (LCRA)
- Upper Highland Lakes Retail Trade Area Demographic Profile prepared by the Retail Coach for the Marble Falls Economic Development Corporation, July 2019
- Marble Falls Economic Development Corporation
- City of Bee Cave
- City of Lakeway
- City of Lago Vista
- Travis County Emergency Services District 8
- Pedernales Electric Cooperative, Inc (PEC)
- Central Texas Electric Cooperative, Inc. (CTEC)
- Various owners of lake-oriented businesses and local community leaders

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# CHAPTER 2.0: POPULATION PROJECTIONS AND WATER DEMAND PROJECTIONS

One primary goal of the regional water planning process is to identify water supply development strategies that will be reliable during times of drought for all users in the State. Quantifying existing and future water demands is the initial step in the planning effort. Each regional planning group works with the Texas Water Development Board (TWDB) to develop population and water demand projections for the 50-year planning horizon, and this chapter documents the methodology and results of this effort by the Lower Colorado Regional Water Planning Group.

Throughout this chapter, total regional projections are presented and further delineated for each municipal and non-municipal water user group within the region. Projections are also shown for each county as well as the four river basins and two coastal basins partially located in the Lower Colorado Region. In subsequent chapters of the plan, these projections are compared with estimates of currently available water supplies to identify water needs and water management strategies to meet these needs.

The Lower Colorado Region has experienced rapid population expansion in recent decades and this trend is expected to continue over the planning horizon. Total regional population projections estimate a near-doubling of population to more than 3.2 million people by 2070, as shown in *Table 2.1* below. As population increases, the planning area will likely see an associated increase in water demands for municipal use. Thus, population is the principal driver of the projected total water demand increase in the planning area, from approximately 1.12 million acre-feet in the year 2020 to 1.31 million acre-feet in the year 2070.

**Table 2.1: Population and Water Demand Projections for the Lower Colorado Region**

| Regional Projections | 2020 | 2030 | 2040 | 2050 | 2060 | 2070 |
|---|---|---|---|---|---|---|
| **POPULATION** | **1,762,591** | **2,094,664** | **2,416,725** | **2,697,306** | **2,971,155** | **3,290,477** |
| | | | | | | |
| Municipal Water Demand (ac-ft/yr) | 315,777 | 368,598 | 422,628 | 470,073 | 516,278 | 569,788 |
| Manufacturing Water Demand (ac-ft/yr) | 19,708 | 22,493 | 22,493 | 22,493 | 22,493 | 22,493 |
| Irrigation Water Demand (ac-ft/yr) | 582,407 | 567,509 | 553,013 | 538,906 | 525,179 | 511,822 |
| Steam-Electric Water Demand (ac-ft/yr) | 166,095 | 166,095 | 166,095 | 166,095 | 166,095 | 166,095 |
| Mining Water Demand (ac-ft/yr) | 20,848 | 26,104 | 27,991 | 27,492 | 23,207 | 25,441 |
| Livestock Water Demand (ac-ft/yr) | 12,004 | 12,004 | 12,004 | 12,004 | 12,004 | 12,004 |
| **TOTAL WATER DEMAND** | **1,116,839** | **1,162,803** | **1,204,224** | **1,237,063** | **1,265,256** | **1,307,643** |

## 2.1 TEXAS WATER DEVELOPMENT BOARD GUIDELINES FOR REVISIONS TO POPULATION AND WATER DEMAND PROJECTIONS

The Texas Water Development Board (TWDB) distributed draft population, municipal water demand, and mining water demand projections via a December 2016 communication for review by the Lower Colorado Regional Water Planning Group (LCRWPG). A second TWDB communication in June 2017 accompanied the TWDB's draft irrigation, steam-electric power, manufacturing, and livestock water demand. These communications also included a summary of the projection methodologies and specific steps a regional planning group must follow in requesting revisions to the projections, if necessary. Once submitted to TWDB by the regional planning groups, the projection revision requests were also reviewed by the Texas Commission on Environmental Quality, Texas Parks and Wildlife Department, and the Texas Department of Agriculture prior to being approved by TWDB in spring 2018.

TWDB rules require that projection analyses be performed for each identified municipal and non-municipal water user group (WUG). Municipal Water User Groups are defined as:

a. Privately-owned utilities that provide an average of more than 100 acre-feet per year for municipal use for all owned water systems;
b. Water systems serving institutions or facilities owned by the state or federal government that provide more than 100 acre-feet per year for municipal use;
c. All other Retail Public Utilities not covered in (a) and (b) that provide more than 100 acre-feet per year for municipal use;
d. Collective Reporting Units, or groups of Retail Public Utilities that have a common association and are requested for inclusion by the RWPG; and
e. Municipal and domestic water use, referred to as County-Other, not included in (a)-(d)

Non-municipal water user groups include manufacturing, irrigation, steam-electric power generation, mining, and livestock water use, and are also referred to within each county (i.e., Burnet County Mining, Travis County Manufacturing, etc.) The planning process also designates Wholesale Water Providers (WWP), which are persons or entities having contracts to sell any volume of water wholesale. In addition to Wholesale Water Providers, a new requirement is for the regions to determine the Major Water Providers (MWP) in the region. Major Water Providers are defined as a Water User Group or Wholesale Water Provider of particular significance to the region's water supply, as determined by the regional planning group. The LCRWPG has designated three Major Water Providers within the region: the Lower Colorado River Authority (LCRA), the City of Austin (COA), and the West Travis County Public Utility Agency (WTCPUA.) Associated water demands for these water providers are identified within the plan and discussed in detail in Section 2.5 of this chapter.

The LCRWPG Population and Water Demand Committee analyzed all TWDB-provided draft population and water demand projections and recommended appropriate changes for the planning group's approval. Upon review of TWDB draft projections, the committee recommended revisions to the population and water demand projections for all water use categories except Livestock. The detailed methodologies and resulting projections of this process are discussed in the following sections of this chapter.

## 2.2 POPULATION PROJECTIONS

Population increases typically directly drive municipal water demand increases. Establishing accurate population estimates and projections is a fundamental step in the regional water planning process. Estimated population growth is of particular importance in the Lower Colorado Region, where strong population growth is occurring and anticipated to continue, most notably in the City of Austin and surrounding metropolitan areas. The population projections in this plan were developed in accordance with TWDB guidelines, utilizing the 2010 U.S. Census data and growth projections established by the Office of the State Demographer, and supported with supplemental local data where available. This section details the methodology applied by the LCRWPG and TWDB to develop the final TWDB-approved population projections for the Lower Colorado Region.

### 2.2.1 Methodology

Previous regional and state water plans have been aligned with political boundaries, such as city limits, rather than water utility service areas for municipal demands. As part of the current planning process, TWDB rule changes now defines municipal water user group (WUG) planning as being utility-based, and the emphasis of the development of draft projections for the 2021 Regional Water Plans (RWPs) was on the transition of the 2017 State Water Plan (SWP) population projections and the associated water demand projections from political boundaries to utility service area boundaries. As with other projections during this planning effort, TWDB staff distributed draft population data and projections for planning group review. County-Other population is a sum of populations not designated within a specific municipal water user group for each county.

The Population and Water Demand Committee for the LCRWPG relied on regional knowledge and solicited input from county and water user group representatives to determine the need for revisions to the TWDB draft population projections. TWDB required that revision requests be supported by specific data criteria, such as evidence of a Census undercount or expansion of a service area due to annexation activities. Additionally, TWDB took into consideration how a region's estimated 2015 population based on 2017 State Water Plan projections compared to the Census 2015 estimated population to determine whether they would consider a net increase of population projections within a county or region.

The LCRWPG requested revisions to certain population projections, based on the information received. All of the LCRWPG-requested revisions were approved. In addition, the LCRWPG supported the City of Austin submitting a separate request regarding their population. The TWDB reviewed the request but was did not approve the additional request for increased population. Further details are provided in *Appendix 2C* which contains the Lower Colorado Region population and demand revision requests as submitted to TWDB. The final TWDB-approved population projections are summarized in the following section.

### 2.2.2 Regional Population Projections

Projections of population growth in the Lower Colorado Region indicate a nearly 87% increase in total population from approximately 1.7 million in 2020 to 3.3 million in the year 2070 as shown in *Figure 2.1*. Projections by county are delineated in *Table 2.2* for each decade from 2020 through 2070. Each of the 14 counties in the region are projected to grow over the planning period, with Travis County accounting for a majority of the total regional population throughout the planning horizon. As the greater Austin metropolitan area grows, counties such as Bastrop, Hays, and Williamson also account for substantial population increases in the planning region. Notably slower population growth is likely in more rural areas of the region, such as Llano and San Saba Counties.

**Figure 2.1: Lower Colorado Region Population Projections**

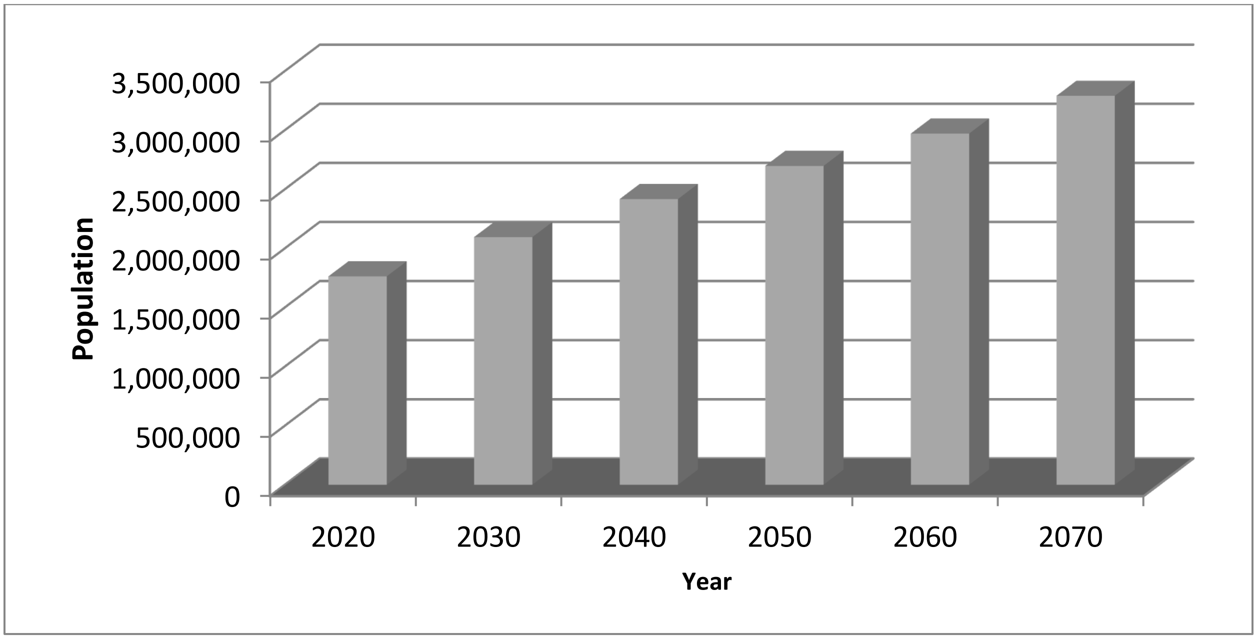



**Table 2.2: Population Projections by County***

| County | 2020 | 2030 | 2040 | 2050 | 2060 | 2070 |
|---|---|---|---|---|---|---|
| Bastrop | 95,487 | 125,559 | 164,648 | 217,608 | 289,140 | 384,244 |
| Blanco | 13,015 | 15,475 | 16,917 | 17,672 | 18,175 | 18,472 |
| Burnet | 53,114 | 64,268 | 73,673 | 82,668 | 90,571 | 97,426 |
| Colorado | 21,884 | 22,836 | 23,544 | 24,582 | 25,449 | 26,293 |
| Fayette | 28,373 | 32,384 | 35,108 | 37,351 | 39,119 | 40,476 |
| Gillespie | 26,795 | 28,852 | 30,548 | 32,536 | 34,365 | 36,142 |
| Hays (p) | 55,584 | 73,243 | 94,747 | 121,629 | 152,007 | 186,579 |
| Llano | 21,291 | 22,453 | 22,422 | 22,035 | 22,779 | 23,549 |
| Matagorda | 39,166 | 41,226 | 42,548 | 43,570 | 44,296 | 44,815 |
| Mills | 4,912 | 5,076 | 5,213 | 5,417 | 5,625 | 5,859 |
| San Saba | 6,484 | 6,793 | 6,833 | 6,722 | 6,879 | 7,039 |
| Travis | 1,298,624 | 1,538,784 | 1,767,636 | 1,936,583 | 2,075,875 | 2,233,259 |
| Wharton (p) | 27,184 | 28,928 | 30,322 | 31,529 | 32,643 | 33,629 |
| Williamson (p) | 70,678 | 88,787 | 102,566 | 117,404 | 134,232 | 152,695 |
| **TOTAL** | **1,762,591** | **2,094,664** | **2,416,725** | **2,697,306** | **2,971,155** | **3,290,477** |

(p) Denotes that the county is shared between multiple regions. The population shown is only the portion within the Lower Colorado Region.

* Population projections by city, county, and portion of a river basin within a county for each of the 14 counties in the Lower Colorado Region are provided in *Appendix 2A*.

The regional planning area covers a portion of four major river basins and two coastal basins and population projections for each basin are shown in *Table 2.3*. Of these, approximately 92 percent of the total population in the year 2070 is projected to reside within the Colorado River Basin, constituting a substantial impact on the water resources within that basin.

**Table 2.3: Population Projections by River Basin**

| River Basin | 2020 | 2030 | 2040 | 2050 | 2060 | 2070 |
|---|---|---|---|---|---|---|
| Brazos | 83,791 | 103,909 | 118,722 | 135,599 | 154,526 | 175,172 |
| Brazos-Colorado | 46,351 | 48,964 | 50,820 | 52,392 | 53,679 | 54,743 |
| Colorado | 1,599,137 | 1,904,807 | 2,207,649 | 2,467,647 | 2,719,446 | 3,015,415 |
| Colorado-Lavaca | 12,176 | 12,831 | 13,268 | 13,612 | 13,871 | 14,063 |
| Guadalupe | 8,938 | 10,628 | 11,848 | 12,832 | 13,772 | 14,716 |
| Lavaca | 12,198 | 13,525 | 14,418 | 15,224 | 15,861 | 16,368 |
| **TOTAL** | **1,762,591** | **2,094,664** | **2,416,725** | **2,697,306** | **2,971,155** | **3,290,477** |

*All population projections for the Lower Colorado Region by water user group are provided in Appendix 2A. Chapter 11 provides a comparison of the 2016 and 2021 Lower Colorado Regional Water Plan population projections. Appendix 2B provides the per capita daily use for each municipal water user group.*

## 2.3 WATER DEMAND PROJECTIONS

Total water demand for the Lower Colorado Region is projected to increase 17 percent to approximately 1.31 million acre-feet per year by 2070 as shown in *Figure 2.2*. While demands such as municipal, manufacturing, and mining are anticipated to increase due to population growth and economic activity, other water demand categories are projected to decline or remain constant. For instance, irrigation water demand constitutes 52 percent of the region's total water demand in 2020 but decreases over the planning horizon will have an impact in the reduction of the relative share of this use to 39 percent of the region's total demand by 2070. The distribution of water demands in the region for all decades is shown in *Figure 2.3*, as projected for the years 2020 through 2070.

**Figure 2.2: Lower Colorado Region Total Water Demand Projections**

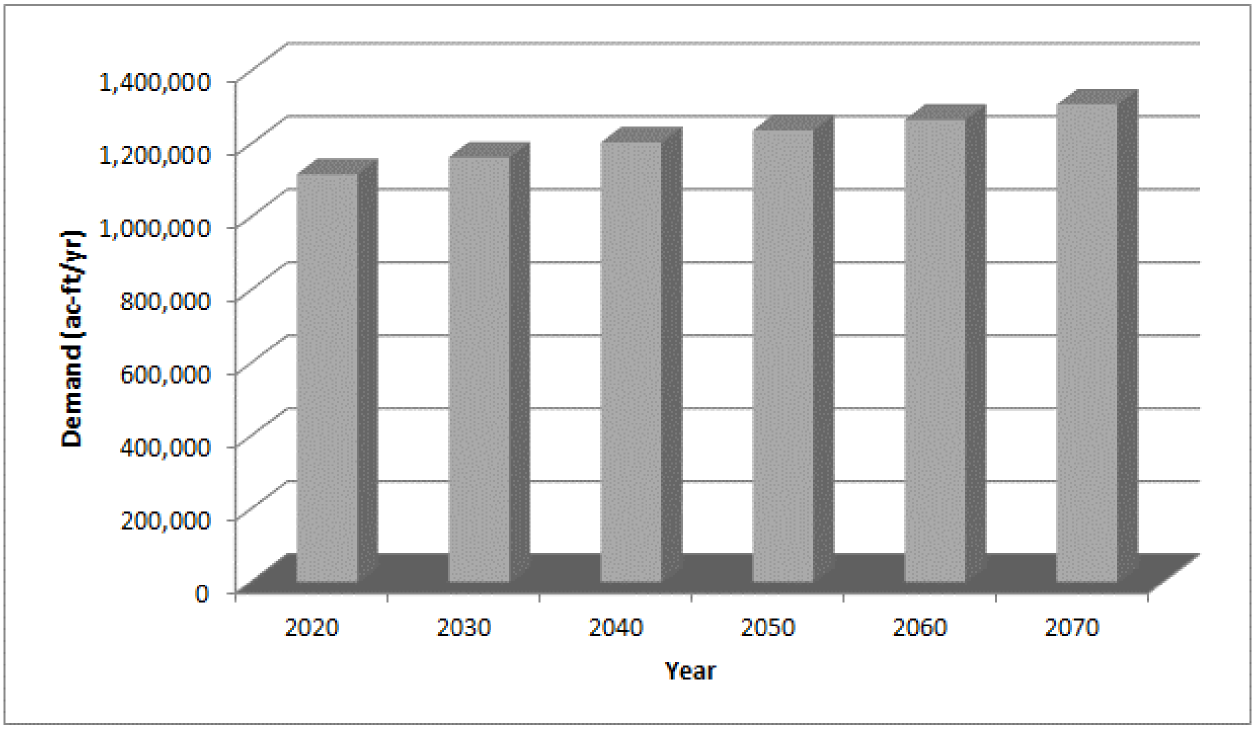
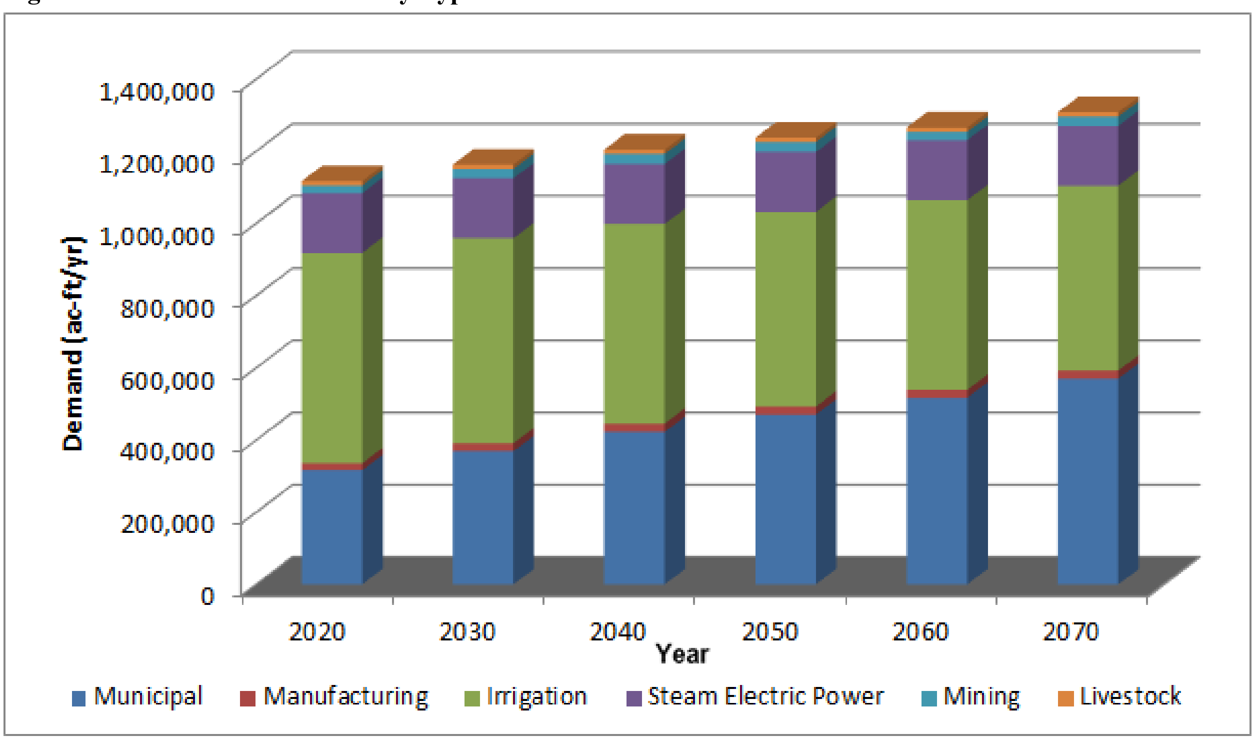



**Figure 2.3: Total Water Demand by Type of Use**



### 2.3.1 Municipal Water Demand Projections

#### *2.3.1.1 Methodology*

After population projections are established for each water user group, the second key variable in the TWDB's municipal water demand projections methodology is per capita daily use, which represents the average number of gallons of water used per person per day (also noted commonly as gallons per capita daily and abbreviated as GPCD.) Municipal water demand projections are the product of population projections and per capita daily use projections for each water user group.

The per capita daily use estimate is unique for each municipal reporting entity and generally determined using responses to the TWDB's 2011 Water Use Survey. The year 2011 is generally considered a "dry year" for much of the State of Texas and this dataset is assumed to be representative of water use during times of drought. In projecting per capita daily use for future decades of the planning horizon, the TWDB reduced per capita use assuming future water efficiency savings due to federal standards of plumbing fixtures and appliances.

For this planning cycle, the draft municipal water demand projections incorporated GPCD values that were carried over from the 2017 State Water Plan. These values were based on city boundaries. The TWDB also provided, for information purposes, historical GPCD estimates that reflected the new utility boundaries. The LCRWPG agreed that the utility boundary GPCD values likely better represent the new utility-based planning. As such, the LCRWPG identified WUGs where the difference between the city boundary GPCD and the utility boundary GPCD was 10 GPCD or greater. WUGs that have portions of their planning areas within Region G and Region L were not included in the group identified for potential changes to their GPCD at the request of those regions. For the applicable WUGs, a communication was sent to the WUG representatives letting them know about the potential change and asking for their feedback. Their response dictated whether or not the LCRWPG requested that the TWDB revise the GPCD for their WUG.

In addition to the GPCD revisions, there were a few requests from WUGs to make revisions to the water demand projections that were not related to population or GPCD changes. Further details are provided in *Appendix 2C* which contains the Lower Colorado Region population and demand revision requests as submitted to TWDB.

These municipal water demand projections were adopted by the TWDB for use in the 2021 Lower Colorado Regional Water Plan and are presented for each municipal water user group by county, river basin, and decade in *Appendix 2A.* The GPCD values and the calculated municipal water demand savings due to plumbing codes and water-efficient appliances for Region K can be found in *Appendix 2B*.

#### *2.3.1.2 Regional Municipal Water Demand Projections*

Municipal water demand for the Lower Colorado Region is projected to increase by approximately 254,011 acre-feet per year from 2020 through 2070 as shown in *Figure 2.4*. Due to the TWDB's water efficiency savings assumptions which project reductions in per capita water use, municipal demand is projected to increase approximately 80 percent over the planning horizon while the population projections increase 87 percent. The most substantive municipal demand increases are projected to occur in the City of Austin and surrounding metropolitan areas, including Travis, Bastrop, Hays, and Williamson counties. The distribution of municipal water demand projections for all 14 counties in the Lower Colorado Region is presented in *Table 2.4*.

**Figure 2.4: Lower Colorado Region Municipal Water Demand Projections**

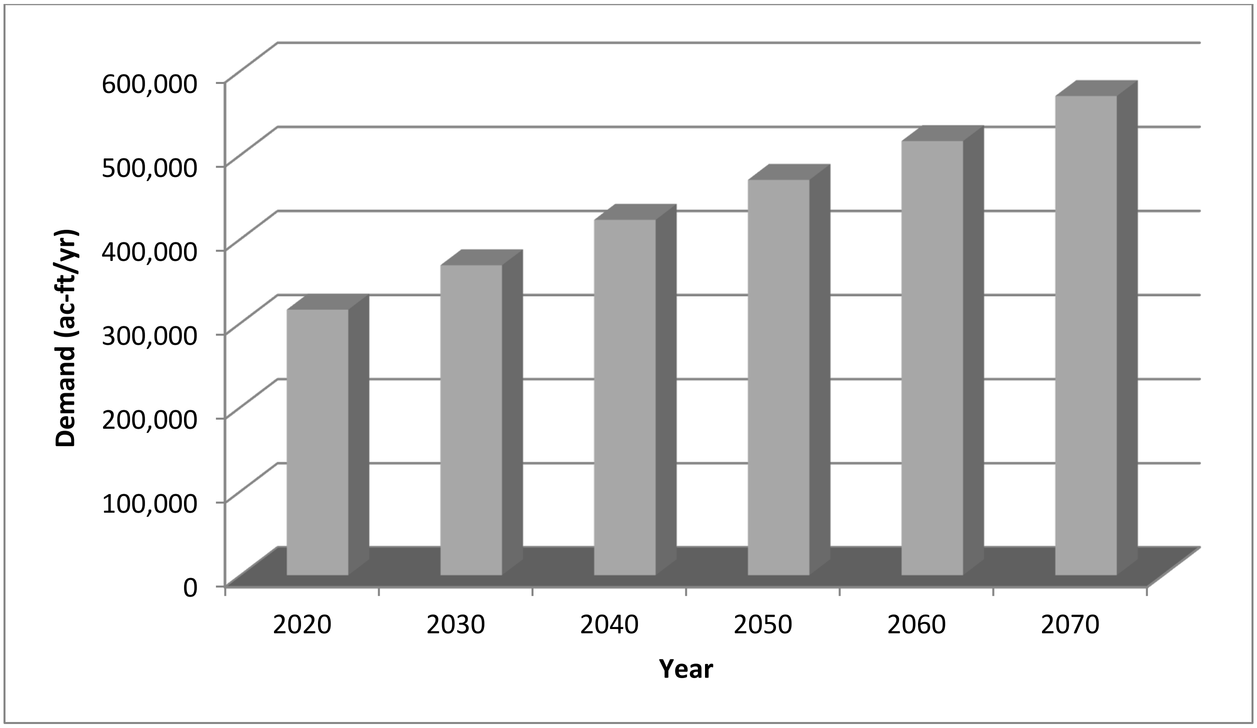



**Table 2.4: Municipal Water Demand Projections by County* (ac-ft/yr)**

| County | 2020 | 2030 | 2040 | 2050 | 2060 | 2070 |
|---|---|---|---|---|---|---|
| Bastrop | 15,465 | 19,771 | 25,517 | 33,456 | 44,307 | 58,760 |
| Blanco | 1,760 | 2,034 | 2,188 | 2,269 | 2,331 | 2,369 |
| Burnet | 10,470 | 12,682 | 14,824 | 16,635 | 18,162 | 19,385 |
| Colorado | 3,647 | 3,703 | 3,737 | 3,856 | 3,984 | 4,114 |
| Fayette | 4,464 | 4,945 | 5,261 | 5,543 | 5,791 | 5,989 |
| Gillespie | 5,086 | 5,351 | 5,572 | 5,878 | 6,193 | 6,506 |
| Hays (p) | 11,448 | 15,026 | 18,723 | 23,819 | 29,575 | 35,806 |
| Llano | 4,569 | 4,713 | 4,623 | 4,575 | 4,636 | 4,691 |
| Matagorda | 5,163 | 5,233 | 5,244 | 5,305 | 5,380 | 5,442 |
| Mills | 765 | 766 | 766 | 788 | 816 | 851 |
| San Saba | 1,817 | 1,873 | 1,863 | 1,825 | 1,865 | 1,908 |
| Travis | 235,239 | 273,547 | 312,905 | 342,025 | 366,091 | 393,494 |
| Wharton (p) | 4,176 | 4,295 | 4,392 | 4,540 | 4,689 | 4,829 |
| Williamson (p) | 11,708 | 14,659 | 17,013 | 19,559 | 22,458 | 25,644 |
| **TOTAL** | **315,777** | **368,598** | **422,628** | **470,073** | **516,278** | **569,788** |

(p) Denotes that the county is shared between multiple regions. The municipal demand shown is only the portion within the Lower Colorado Region.

* Municipal water demand projections by city, county, and portion of a river basin within a county for each of the 14 counties in the Lower Colorado Region are provided in *Appendix 2A*.

The majority of current and projected municipal water demand is located in the Colorado River Basin, approximately 93 percent by 2070. These municipal water demand projections geographically correlate with the population centers of the region and are shown by river basin in *Table 2.5*.

**Table 2.5: Municipal Water Demand Projections by River Basin (ac-ft/yr)**

| River Basin | 2020 | 2030 | 2040 | 2050 | 2060 | 2070 |
|---|---|---|---|---|---|---|
| Brazos | 13,894 | 17,135 | 19,639 | 22,497 | 25,722 | 29,244 |
| Brazos-Colorado | 6,715 | 6,852 | 6,926 | 7,080 | 7,238 | 7,384 |
| Colorado | 290,451 | 339,521 | 390,723 | 434,911 | 477,479 | 527,086 |
| Colorado-Lavaca | 1,393 | 1,405 | 1,408 | 1,421 | 1,446 | 1,466 |
| Guadalupe | 1,210 | 1,397 | 1,534 | 1,653 | 1,780 | 1,913 |
| Lavaca | 2,114 | 2,288 | 2,398 | 2,511 | 2,613 | 2,695 |
| **TOTAL** | **315,777** | **368,598** | **422,628** | **470,073** | **516,278** | **569,788** |

## 2.3.2 Manufacturing Water Demand Projections

### *2.3.2.1 Methodology*

For regional water planning purposes, manufacturing water use is considered to be the cumulative water demand by county and river basin for all industries within specified industrial classifications (SIC) as calculated by the TWDB. In previous water plans, volumes of reuse water were not included. However, because the regions are increasingly including reuse water as an available supply, the draft manufacturing demand projections were developed to include the reuse volumes reported by the manufacturing facilities.

For this planning cycle, the methodology the TWDB used to develop the draft manufacturing water demand projections for the 2020 projections assume the highest water use volume from 2010-2014, using data from the annual water use survey. The most recent 10-year projections for employment growth from the Texas Workforce Commission were used as a proxy for increasing demand by manufacturing sectors between 2020 and 2030. The manufacturing water demands were then held constant from 2030-2070. It should be noted that the new methodology used for this planning cycle reduced the projected 2020 manufacturing water demand for the region by 65% and the 2070 demand by 81%, as compared to the 2016 RWP. In their draft projection methodology summary document, the TWDB identified resources showing that the long-term trend of manufacturing water use in Texas and the U.S. has been decreasing even while output has been increasing.

In addition, TWDB staff provided additional data on potentially unaccounted-for 2015 manufacturing water use and allowed the RWPGs to consider the information when making their revision request. In several counties, by adding the 2015 unaccounted for manufacturing water use volume to the TWDB-provided 2015 historical water use volume, the year 2015 water use became greater than the peak 2010-2014 water use. The LCRWPG requested to use the updated 2015 water use for the 2020 demands. The LCRWPG then requested to apply the same percent increase from 2020 to 2030 as TWDB used to develop the draft projections. Further details are provided in *Appendix 2C* which contains the Lower Colorado Region population and demand revision requests as submitted to TWDB.

These manufacturing water demand projections were adopted by the TWDB for use in the 2021 Lower Colorado Regional Water Plan and are presented by county, river basin, and decade in *Appendix 2A.*

Additionally, for Travis County, the City of Austin provided documentation to support an increased manufacturing demand beyond the draft projections for the 2040-2070 decades, based on their expected industrial employment projections. This specific revision request was denied by the TWDB, though, preferring to keep their constant 2030-2070 methodology.

### *2.3.2.2 Regional Manufacturing Water Demand Projections*

Annual manufacturing water demand in the Lower Colorado Region is projected to increase from 19,708 acre-feet per year in 2020 to 22,493 acre-feet per year in 2070. These demands are predominantly associated with existing and future anticipated industries in Travis County, where in 2070 manufacturing water demand is projected to account for over 66 percent of the total manufacturing demand in the region. The expected usage of water for manufacturing purposes in Matagorda County comprises the second largest share of manufacturing demand in the region. Projected total regional manufacturing demand is shown in *Figure 2.5*, while *Table 2.6* presents the projected manufacturing water demand distributed by county in the region.

**Figure 2.5: Lower Colorado Region Manufacturing Water Demand Projections**

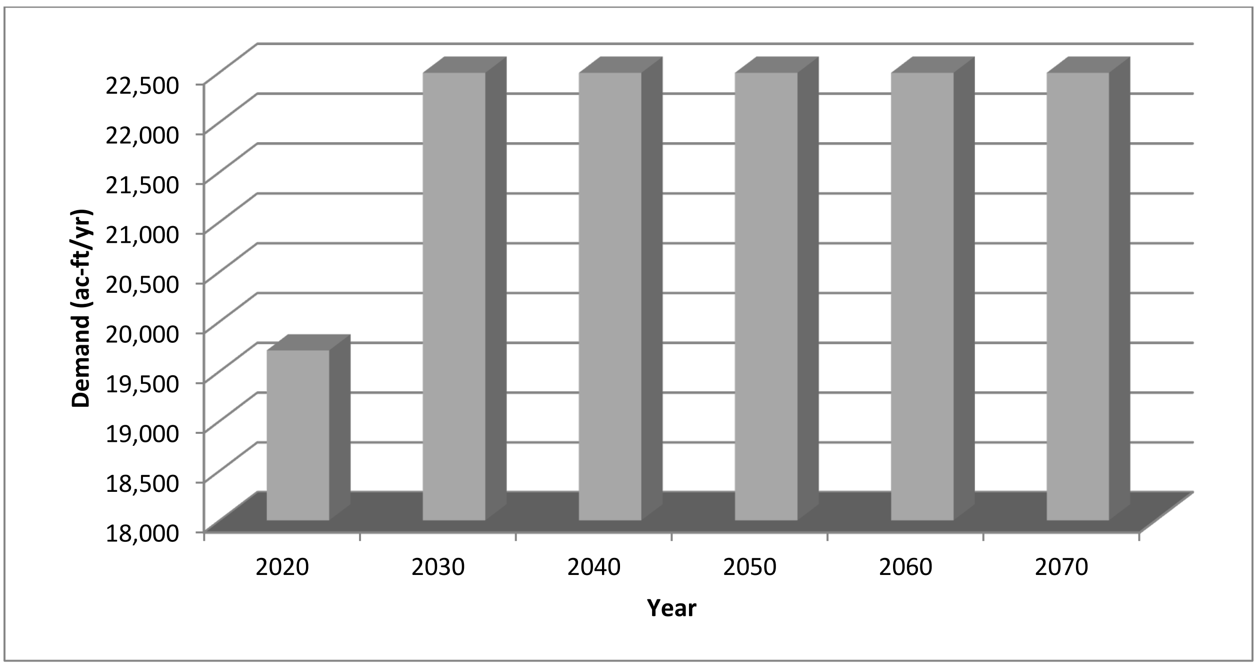


**Table 2.6: Manufacturing Water Demand Projections by River Basin (ac-ft/yr)**

| County | 2020 | 2030 | 2040 | 2050 | 2060 | 2070 |
|---|---|---|---|---|---|---|
| Bastrop | 188 | 215 | 215 | 215 | 215 | 215 |
| Blanco | 0 | 0 | 0 | 0 | 0 | 0 |
| Burnet | 251 | 299 | 299 | 299 | 299 | 299 |
| Colorado | 960 | 1,132 | 1,132 | 1,132 | 1,132 | 1,132 |
| Fayette | 396 | 442 | 442 | 442 | 442 | 442 |
| Gillespie | 77 | 93 | 93 | 93 | 93 | 93 |
| Hays (p) | 277 | 324 | 324 | 324 | 324 | 324 |
| Llano | 3 | 4 | 4 | 4 | 4 | 4 |
| Matagorda | 4,199 | 4,916 | 4,916 | 4,916 | 4,916 | 4,916 |
| Mills | 2 | 2 | 2 | 2 | 2 | 2 |
| San Saba | 10 | 12 | 12 | 12 | 12 | 12 |
| Travis | 13,164 | 14,853 | 14,853 | 14,853 | 14,853 | 14,853 |
| Wharton (p) | 156 | 171 | 171 | 171 | 171 | 171 |
| Williamson (p) | 25 | 30 | 30 | 30 | 30 | 30 |
| **TOTAL** | **19,708** | **22,493** | **22,493** | **22,493** | **22,493** | **22,493** |

(p) Denotes that the county is shared between multiple regions. The manufacturing demand shown is only the portion within the Lower Colorado Region.

* Manufacturing water demand projections by city, county, and portion of a river basin within a county for each of the 14 counties in the Lower Colorado Region are provided in *Appendix 2A.*

Manufacturing water demand in the region occurs predominantly in the Colorado and Lavaca River Basins as shown in *Table 2.7*.

**Table 2.7: Manufacturing Water Demand Projections by River Basin (ac-ft/yr)**

| River Basin | 2020 | 2030 | 2040 | 2050 | 2060 | 2070 |
|---|---|---|---|---|---|---|
| Brazos | 25 | 30 | 30 | 30 | 30 | 30 |
| Brazos-Colorado | 76 | 84 | 84 | 84 | 84 | 84 |
| Colorado | 18,316 | 20,882 | 20,882 | 20,882 | 20,882 | 20,882 |
| Colorado-Lavaca | 0 | 0 | 0 | 0 | 0 | 0 |
| Guadalupe | 0 | 0 | 0 | 0 | 0 | 0 |
| Lavaca | 1,291 | 1,497 | 1,497 | 1,497 | 1,497 | 1,497 |
| **TOTAL** | **19,708** | **22,493** | **22,493** | **22,493** | **22,493** | **22,493** |

### 2.3.3 Irrigation Water Demand Projections

#### *2.3.3.1 Methodology*

For this planning cycle, the methodology proposed by the TWDB to develop the draft irrigation water demand projections was to take the average irrigation water use estimate by county for the years 2010-2014 and hold it constant for the 2020-2070 planning decades.

The LCRWPG Population and Water Demand Committee met several times to review and discuss the draft irrigation water demand projections, specifically with respect to the demands for Colorado County, Matagorda County, and Wharton County, and determined that the draft irrigation demand projections were not representative of a dry/drought year demand because water use data for 2010-2014 was not indicative of future water use conditions due to the emergency curtailment of surface water from the Colorado River that occurred in that timeframe. The Committee directed two members to develop an alternative water-use metrics based methodology for calculating the base demand for surface water demands for the Garwood, Lakeside, Pierce Ranch, and Gulf Coast Irrigation Districts. This methodology involves a rigorous build-up of the demand based on projected irrigated planted acreage, water usage for 1$^{st}$ and second crops and canal losses for each of the irrigation districts, along with supplemental usage. The on-farm demands reflected recent efficiency improvements and provide a good baseline for evaluating the effectiveness of new water management strategies and improvement goals. Canal distribution losses also represent a significant portion of the water usage and vary quite a bit between the irrigation districts. This methodology is also more analogous to the per-capita metrics approach used for developing municipal water demands. An October 5, 2017 memo describing the methodology is included in *Appendix 2C*. This methodology was recommended by the Committee to the RWPG at the January 10, 2018 Region K meeting.

To project revised total irrigation demands for these three counties, the Committee recommended to the RWPG to additionally include 2,400 acre-feet/year of non-rice irrigation demand in the Lakeside Irrigation District, the average 2010-2014 surface water use for other irrigation water rights in these counties (as provided by the TCEQ Water Use Reports data), and the average 2010-2014 groundwater use for irrigation in these counties. Meeting minutes describing these recommendations as well as a table summarizing the breakdown of water use components is included in *Appendix 2C* as well. The Committee also recommended a decadal decrease of 2.69% be applied to projected irrigation water demands, instead of keeping the projections flat. This percent decrease is consistent with the 2017 State Water Plan projections for these counties. However, given the large size of the irrigation demand, the Committee agreed that this was an area that deserved significant focus during the development of water management conservation strategies in identifying additional efficiencies and savings. The LCRWPG approved to request these revisions to the draft irrigation demands in Colorado, Matagorda, and Wharton counties at the January 10, 2018 Region K meeting.

During the review period, TWDB staff found a data error with the historical water use for irrigation in Travis County, which was used to develop the draft projections. By correcting this error, the average 2010-2014 water use for Travis County was reduced from 6,010 acre-feet/year to 4,816 acre-feet/year. The LCRWPG requested to revise the draft projection for Travis County to reflect the correct average 2010-2014 water use of 4,816 acre-feet/year for all decades.

These irrigation water demand projections were adopted by the TWDB for use in the 2021 Lower Colorado Regional Water Plan and are presented by county, river basin, and decade in *Appendix 2A.*

### *2.3.3.2 Regional Irrigation Water Demand Projections*

Irrigation water demand for the Lower Colorado Region is projected to decrease from 582,407 acre-feet per year in 2020 to 511,822 acre-feet per year in 2070. Irrigation water demand is concentrated in Colorado, Matagorda, and Wharton Counties and is largely used to meet irrigation needs for rice farming. Over the next 50 years, a decrease in irrigation water demand is projected due to improvements in irrigation efficiency and reductions in irrigated acres due to urbanization, although economics and world agricultural conditions play a role that could either increase or decrease irrigation demands. *Figure 2.6* presents the projected regional irrigation demands, and *Table 2.8* presents the projected irrigation water demands by county.

**Figure 2.6: Lower Colorado Region Irrigation Water Demand Projections**

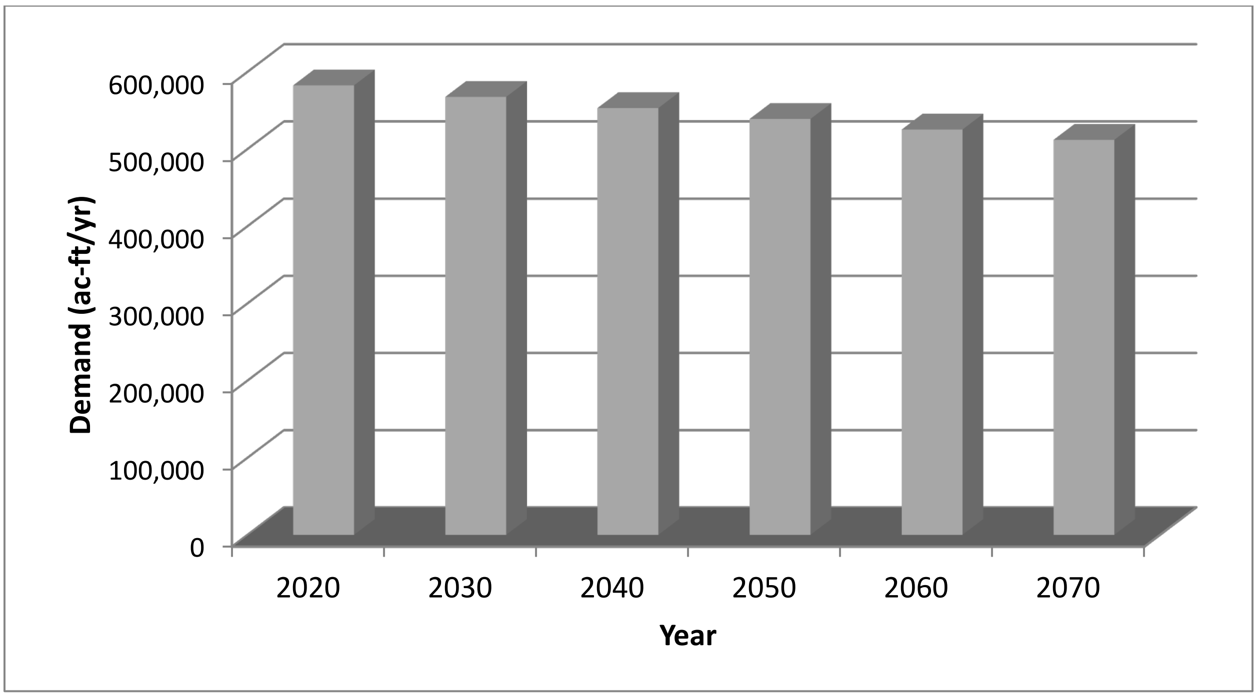


**Table 2.8: Irrigation Water Demand Projections by County* (ac-ft/yr)**

| County | 2020 | 2030 | 2040 | 2050 | 2060 | 2070 |
|---|---|---|---|---|---|---|
| Bastrop | 4,280 | 4,280 | 4,280 | 4,280 | 4,280 | 4,280 |
| Blanco | 1,327 | 1,327 | 1,327 | 1,327 | 1,327 | 1,327 |
| Burnet | 1,498 | 1,498 | 1,498 | 1,498 | 1,498 | 1,498 |
| Colorado | 173,112 | 168,455 | 163,924 | 159,514 | 155,223 | 151,048 |
| Fayette | 828 | 828 | 828 | 828 | 828 | 828 |
| Gillespie | 2,383 | 2,383 | 2,383 | 2,383 | 2,383 | 2,383 |
| Hays (p) | 525 | 525 | 525 | 525 | 525 | 525 |
| Llano | 998 | 998 | 998 | 998 | 998 | 998 |
| Matagorda | 191,588 | 186,434 | 181,419 | 176,539 | 171,790 | 167,169 |
| Mills | 4,743 | 4,743 | 4,743 | 4,743 | 4,743 | 4,743 |
| San Saba | 7,199 | 7,199 | 7,199 | 7,199 | 7,199 | 7,199 |
| Travis | 4,816 | 4,816 | 4,816 | 4,816 | 4,816 | 4,816 |
| Wharton (p) | 189,110 | 184,023 | 179,073 | 174,256 | 169,569 | 165,008 |
| Williamson (p) | 0 | 0 | 0 | 0 | 0 | 0 |
| **TOTAL** | **582,407** | **567,509** | **553,013** | **538,906** | **525,179** | **511,822** |

(p) Denotes that the county is shared between multiple regions. The irrigation demand shown is only the portion within the Lower Colorado Region.

* Irrigation water demand projections by city, county, and portion of a river basin within a county for each of the 14 counties in Lower Colorado Region are provided in *Appendix 2A.*

The Lower Colorado Region's irrigation water demand projections are concentrated in the Brazos-Colorado and Colorado-Lavaca Coastal Basins and the Colorado and Lavaca River Basins and are presented by basin in *Table 2.9*.

**Table 2.9: Irrigation Water Demand Projections by River Basin (ac-ft/yr)**

| River Basin | 2020 | 2030 | 2040 | 2050 | 2060 | 2070 |
|---|---|---|---|---|---|---|
| Brazos | 3,405 | 3,405 | 3,405 | 3,405 | 3,405 | 3,405 |
| Brazos-Colorado | 249,618 | 242,904 | 236,370 | 230,011 | 223,824 | 217,804 |
| Colorado | 126,195 | 123,452 | 120,784 | 118,189 | 115,663 | 113,206 |
| Colorado-Lavaca | 114,217 | 111,145 | 108,155 | 105,246 | 102,415 | 99,659 |
| Guadalupe | 691 | 691 | 691 | 691 | 691 | 691 |
| Lavaca | 88,281 | 85,912 | 83,608 | 81,364 | 79,181 | 77,057 |
| **TOTAL** | **582,407** | **567,509** | **553,013** | **538,906** | **525,179** | **511,822** |

## 2.3.4 Steam-Electric Water Demand Projections

### *2.3.4.1 Methodology*

For this planning cycle, the methodology the TWDB used to develop the draft steam-electric water demand projections is the 2020 projections assume the highest water use volume from 2010-2014, plus new planned facility demands and minus scheduled retiring facility demands. The draft projections were kept constant from 2020-2070.

The LCRWPG Population and Water Demand Committee reviewed the draft projections and determined that revisions should be requested for Llano County and Wharton County. For Llano County, the draft projections were based on the Ferguson Power Plant water use during a period when the facility was under reconstruction. Thus, the committee felt the demands were under-projected. The committee recommended to the RWPG that the projections be revised to use 2015-2016 water use data for the facility. For Wharton County, the county is shared between two regions, Region K and Region P. During the review, it was determined that one of the power facilities shown to be located within Region P is actually located within Region K. The committee recommended to the RWPG that the projections be revised to include the demands of this additional facility. Region P requested a corresponding revision to their steam-electric demands in Wharton County. Further details are provided in *Appendix 2C*.

The LCRWPG approved to request these revisions to the draft steam-electric demands in Llano and Wharton counties at the January 10, 2018 Region K meeting.

These steam-electric water demand projections were adopted by the TWDB for use in the 2021 Lower Colorado Regional Water Plan and are presented by county, river basin, and decade in *Appendix 2A.*

#### *2.3.4.2 Regional Steam-Electric Water Demand Projections*

Steam-electric water demand is projected to remain at 166,095 acre-feet per year from 2020 to 2070. The projected total regional steam-electric demands are shown in *Figure 2.7,* and *Table 2.10* presents the distributed steam-electric water demand for each county in the region.

**Figure 2.7: Lower Colorado Region Steam Electric Water Demand Projections**

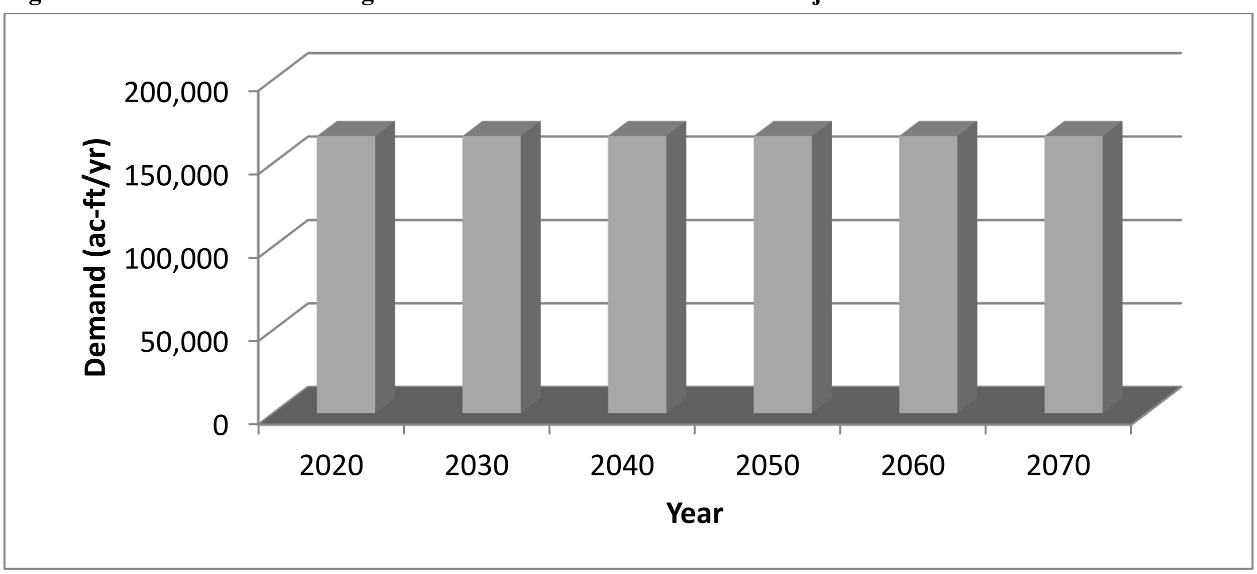


**Table 2.10: Steam-Electric Water Demand Projections by County* (ac-ft/yr)**

| County | 2020 | 2030 | 2040 | 2050 | 2060 | 2070 |
|---|---|---|---|---|---|---|
| Bastrop | 10,288 | 10,288 | 10,288 | 10,288 | 10,288 | 10,288 |
| Blanco | 0 | 0 | 0 | 0 | 0 | 0 |
| Burnet | 0 | 0 | 0 | 0 | 0 | 0 |
| Colorado | 4,971 | 4,971 | 4,971 | 4,971 | 4,971 | 4,971 |
| Fayette | 49,211 | 49,211 | 49,211 | 49,211 | 49,211 | 49,211 |
| Gillespie | 0 | 0 | 0 | 0 | 0 | 0 |
| Hays (p) | 1,187 | 1,187 | 1,187 | 1,187 | 1,187 | 1,187 |
| Llano | 1,748 | 1,748 | 1,748 | 1,748 | 1,748 | 1,748 |
| Matagorda | 80,536 | 80,536 | 80,536 | 80,536 | 80,536 | 80,536 |
| Mills | 0 | 0 | 0 | 0 | 0 | 0 |
| San Saba | 0 | 0 | 0 | 0 | 0 | 0 |
| Travis | 10,253 | 10,253 | 10,253 | 10,253 | 10,253 | 10,253 |
| Wharton (p) | 7,901 | 7,901 | 7,901 | 7,901 | 7,901 | 7,901 |
| Williamson (p) | 0 | 0 | 0 | 0 | 0 | 0 |
| **TOTAL** | **166,095** | **166,095** | **166,095** | **166,095** | **166,095** | **166,095** |

(p) Denotes that the county is shared between multiple regions. The steam-electric demand shown is only the portion within the Lower Colorado Region.

* Steam-electric water demand projections by city, county, and portion of a river basin within a county for each of the 14 counties in the Lower Colorado Region are provided in *Appendix 2A*.

The majority of the Lower Colorado Region's steam-electric power generation facilities are located along the Colorado River, and nearly all steam-electric demands are within the Colorado River Basin. The projected steam-electric water demand by basin is shown in *Table 2.11*.

**Table 2.11: Steam-Electric Water Demand Projections by River Basin (ac-ft/yr)**

| River Basin | 2020 | 2030 | 2040 | 2050 | 2060 | 2070 |
|---|---|---|---|---|---|---|
| Brazos | 0 | 0 | 0 | 0 | 0 | 0 |
| Brazos-Colorado | 1 | 1 | 1 | 1 | 1 | 1 |
| Colorado | 161,351 | 161,351 | 161,351 | 161,351 | 161,351 | 161,351 |
| Colorado-Lavaca | 0 | 0 | 0 | 0 | 0 | 0 |
| Guadalupe | 0 | 0 | 0 | 0 | 0 | 0 |
| Lavaca | 4,743 | 4,743 | 4,743 | 4,743 | 4,743 | 4,743 |
| **TOTAL** | **166,095** | **166,095** | **166,095** | **166,095** | **166,095** | **166,095** |

### 2.3.5 Mining Water Demand Projections

#### *2.3.5.1 Methodology*

The mining water demand projections from the 2017 State Water Plan were carried over as the draft mining water demand projections for this planning cycle. During the last planning cycle, the TWDB mining water demand projections were developed through a TWDB-contracted study with the Bureau of Economic Geology. The study estimated current mining water use and projected that use across the planning horizon utilizing data collected from trade organizations, government agencies, and other industry representatives. Individual projections were made for sectors including oil and gas, aggregates, coal and lignite, and other mining activities. These projections were then summed for each county. The LCRWPG requested small revisions to the TWDB draft mining projections during the previous planning cycle, and those revisions were approved by TWDB.

This planning cycle, the LCRWPG Population and Water Demand Committee reviewed the draft projections and determined that revisions should be requested for Bastrop County, based on knowledge gained towards the end of the previous planning cycle. The majority of the demand projections in Bastrop County are for the Three Oaks Mine involving lignite coal mining. The Population and Water Demand Committee discussed that it is unlikely that increased mining will occur for the next 50 years. The mining will more likely continue for another 20-25 more years of use before the reclamation process. Gravel mining in the county is expected to continue indefinitely. The committee recommended that the RWPG request to begin decreasing the mining demands beginning in the 2050 decade, eliminating the lignite coal mining by 2060, and leaving only the gravel mining demands in 2060 and 2070. Further details on the revision request are provided in *Appendix 2C*.

The LCRWPG approved to request these revisions to the draft mining demands in Bastrop County at the January 10, 2018 Region K meeting.

These mining water demand projections were adopted by the TWDB for use in the 2021 Lower Colorado Regional Water Plan and are presented by county, river basin, and decade in *Appendix 2A.*

#### *2.3.5.2 Regional Mining Water Demand Projections*

Mining water demands for the Lower Colorado Region are projected to increase 34 percent, to 27,991 acre-feet per year in 2040, and then begin decreasing to 25,441 acre-feet per year by 2070. The total projected regional mining water demands are shown in *Figure 2.8*, and *Table 2.12* presents the projected mining water demand distributed for each county. As in other areas of Texas, hydraulic fracturing activities are expected to influence mining water demands in the future, although this activity is difficult to anticipate and quantify in many instances.

**Figure 2.8: Lower Colorado Region Mining Water Demand Projections**

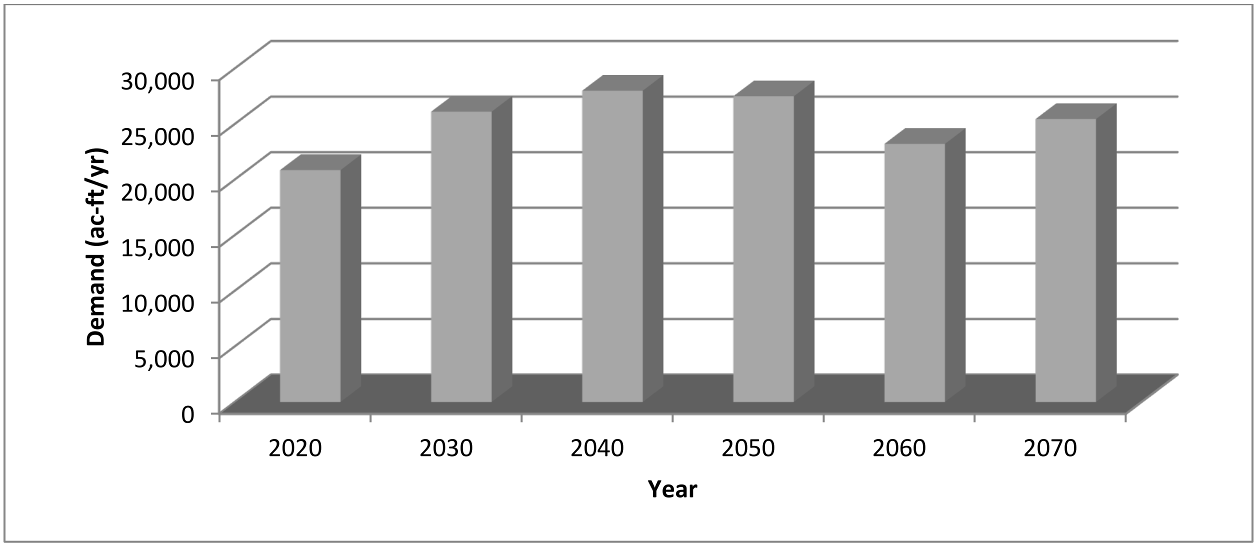


**Table 2.12: Mining Water Demand Projections by County* (ac-ft/yr)**

| County | 2020 | 2030 | 2040 | 2050 | 2060 | 2070 |
|---|---|---|---|---|---|---|
| Bastrop | 2884 | 6813 | 7498 | 5998 | 399 | 476 |
| Blanco | 5 | 5 | 5 | 5 | 5 | 5 |
| Burnet | 4490 | 5412 | 6379 | 7255 | 8263 | 9412 |
| Colorado | 5325 | 5378 | 5433 | 5487 | 5542 | 5597 |
| Fayette | 2526 | 2032 | 1465 | 918 | 359 | 350 |
| Gillespie | 4 | 4 | 4 | 4 | 4 | 4 |
| Hays (p) | 845 | 1075 | 1361 | 1445 | 1654 | 1893 |
| Llano | 3 | 3 | 3 | 3 | 3 | 3 |
| Matagorda | 96 | 100 | 75 | 55 | 35 | 22 |
| Mills | 4 | 4 | 4 | 4 | 4 | 4 |
| San Saba | 1088 | 1093 | 944 | 900 | 864 | 838 |
| Travis | 3502 | 4108 | 4762 | 5374 | 6046 | 6817 |
| Wharton (p) | 71 | 74 | 55 | 41 | 26 | 17 |
| Williamson (p) | 5 | 3 | 3 | 3 | 3 | 3 |
| **TOTAL** | **20,848** | **26,104** | **27,991** | **27,492** | **23,207** | **25,441** |

(p) Denotes that the county is shared between multiple regions. The mining demand shown is only the portion within the Lower Colorado Region.

* Mining water demand projections by city, county, and portion of a river basin within a county for each of the 14 counties in the Lower Colorado Region are provided in *Appendix 2A.*

Mining water demand in the Lower Colorado Region is predominantly located in the Colorado River Basin, and the demands by river basin are shown in *Table 2.13*.

**Table 2.13: Mining Water Demand Projections by River Basin (ac-ft/yr)**

| River Basin | 2020 | 2030 | 2040 | 2050 | 2060 | 2070 |
|---|---|---|---|---|---|---|
| Brazos | 1303 | 1768 | 2050 | 2180 | 2096 | 2388 |
| Brazos-Colorado | 252 | 259 | 235 | 218 | 200 | 190 |
| Colorado | 18,327 | 22,999 | 24,703 | 24,269 | 20,471 | 22,416 |
| Colorado-Lavaca | 41 | 42 | 32 | 23 | 15 | 9 |
| Guadalupe | 305 | 482 | 495 | 399 | 98 | 109 |
| Lavaca | 620 | 554 | 476 | 403 | 327 | 329 |
| **TOTAL** | **20,848** | **26,104** | **27,991** | **27,492** | **23,207** | **25,441** |

## 2.3.6 Livestock Water Demand Projections

### *2.3.6.1 Methodology*

The TWDB draft livestock water demand projections utilized an average of TWDB's 2010-2014 livestock water use estimates for the 2020 projections. Water use estimates apply a water use coefficient for each livestock category to county level inventory estimates from the Texas Agricultural Statistics Service. The rate of change for projections from the 2016 Regional Water Plans was then applied to the new base. In the case of the Lower Colorado Region, the livestock water demand was constant from 2020-2070.

The LWRWPG did not request any revisions to the TWDB draft livestock water demand projections. These livestock water demand projections were adopted by the TWDB for use in the 2021 Lower Colorado Regional Water Plan and are presented for by county, river basin, and decade in *Appendix 2A.*

### *2.3.6.2 Regional Livestock Water Demand Projections*

Livestock water demand for the Lower Colorado Region represents a small portion of total regional water demand and is projected to remain constant over the 50-year planning period. This constant projected demand of 12,004 acre-feet per year is reflected in *Figure 2.9*. Livestock water demand by county is presented in *Table 2.14,* and the rural counties indicate more livestock farming activities.

**Figure 2.9: Lower Colorado Region Livestock Water Demand Projections**

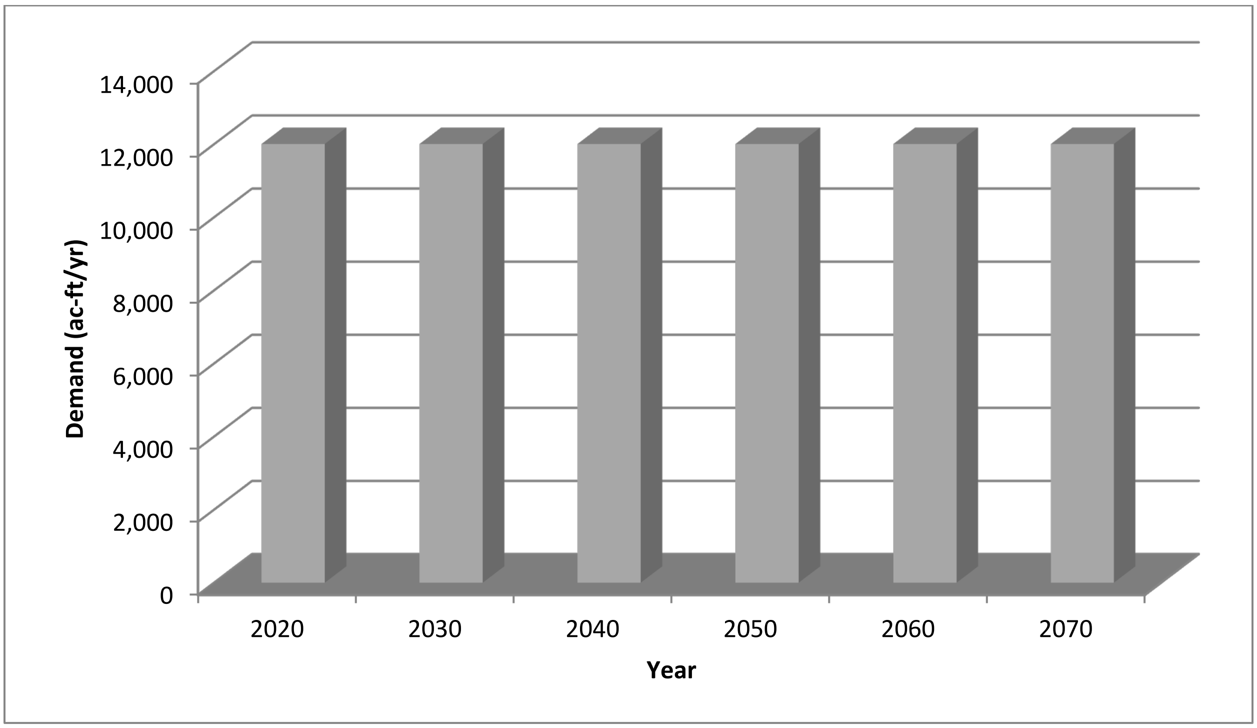


**Table 2.14: Livestock Water Demand Projections by County* (ac-ft/yr)**

| County | 2020 | 2030 | 2040 | 2050 | 2060 | 2070 |
|---|---|---|---|---|---|---|
| Bastrop | 1,135 | 1,135 | 1,135 | 1,135 | 1,135 | 1,135 |
| Blanco | 331 | 331 | 331 | 331 | 331 | 331 |
| Burnet | 1,691 | 1,691 | 1,691 | 1,691 | 1,691 | 1,691 |
| Colorado | 1,276 | 1,276 | 1,276 | 1,276 | 1,276 | 1,276 |
| Fayette | 1,726 | 1,726 | 1,726 | 1,726 | 1,726 | 1,726 |
| Gillespie | 1,212 | 1,212 | 1,212 | 1,212 | 1,212 | 1,212 |
| Hays (p) | 17 | 17 | 17 | 17 | 17 | 17 |
| Llano | 580 | 580 | 580 | 580 | 580 | 580 |
| Matagorda | 1,075 | 1,075 | 1,075 | 1,075 | 1,075 | 1,075 |
| Mills | 863 | 863 | 863 | 863 | 863 | 863 |
| San Saba | 779 | 779 | 779 | 779 | 779 | 779 |
| Travis | 527 | 527 | 527 | 527 | 527 | 527 |
| Wharton (p) | 792 | 792 | 792 | 792 | 792 | 792 |
| Williamson (p) | 0 | 0 | 0 | 0 | 0 | 0 |
| **TOTAL** | **12,004** | **12,004** | **12,004** | **12,004** | **12,004** | **12,004** |

(p) Denotes that the county is shared between multiple regions. The livestock demand shown is only the portion within the Lower Colorado Region.
* Livestock water demand projections by city, county, and portion of a river basin within a county for each of the 14 counties in the Lower Colorado Region are provided in *Appendix 2A*.

Livestock water demand in the Lower Colorado Region is located predominantly in the Colorado River Basin as noted in *Table 2.15*.

**Table 2.15: Livestock Water Demand Projections by River Basin (ac-ft/yr)**

| River Basin | 2020 | 2030 | 2040 | 2050 | 2060 | 2070 |
|---|---|---|---|---|---|---|
| Brazos | 993 | 993 | 993 | 993 | 993 | 993 |
| Brazos-Colorado | 1,042 | 1,042 | 1,042 | 1,042 | 1,042 | 1,042 |
| Colorado | 8,462 | 8,462 | 8,462 | 8,462 | 8,462 | 8,462 |
| Colorado-Lavaca | 593 | 593 | 593 | 593 | 593 | 593 |
| Guadalupe | 263 | 263 | 263 | 263 | 263 | 263 |
| Lavaca | 651 | 651 | 651 | 651 | 651 | 651 |
| **TOTAL** | **12,004** | **12,004** | **12,004** | **12,004** | **12,004** | **12,004** |

## 2.4 ENVIRONMENTAL WATER DEMANDS

Although not a water demand use category in TWDB rules, environmental water demands are recognized as a significant consideration in regional water planning by the Lower Colorado Region. Environmental water demands are considered important to preserve a healthy aquatic ecosystem within the region.

### 2.4.1 The Story/History of Matagorda Bay [1, 2, 3, 4, 5]

Matagorda Bay has an interesting and varied history. The earliest map that contained the Texas Gulf Coast was by Alonzo Alvarez de Pineda in 1513. The next explorer was probably Cabeza de Vaca in 1528 followed by Don Luis de Moscoso de Alverado in 1542. The ill-fated LaSalle expedition in 1685 resulted in an active renewal of interest by the Spanish government. In a subsequent expedition by Alonzo de Leon in 1689, the first recorded description of the "Raft" in the Colorado River appeared; refer to *Figure 2.10* for a map of Matagorda Bay in 1705.

The raft was a vast accumulation of drift logs, snags, whole trees, and brush in sections miles in length and 40 to 50 feet thick growing at a rate of about 500 feet per year. In the years after the establishment of Matagorda by Stephen F. Austin's initial colony (Austin 300) the raft continued to grow, refer to *Figure 2.11* for a map of Austin's Colony and Matagorda Bay. The U.S. Army Corps of Engineers (USACE) was enrolled to clear the raft to enable river navigation from Matagorda, the number two port in Texas, inland to central Texas. In 1853 the decision was made to bypass the raft by digging a canal parallel to the river. This allowed riverboat traffic for about six years, but by 1860 the growing raft again prevented navigation. The intervention of the civil war prevented any additional work on the raft. While the periodic floods had always been a problem, the restoration of the raft, which grew to an estimated 40 miles in length and extended into Wharton County, greatly exacerbated flooding damage.

In 1923 Governor Pat Neff approved legislation that resulted in the retaining of General George W. Goethus, who built the Panama Canal. His plan was to clear a path along the East Bank, removing key logs and allowing the force of the river to clear the raft. Not much was accomplished until a major flood came in 1929. In one massive flushing action the huge mass was washed into Matagorda Bay.

The delta formed by this enormous conglomeration of sediment and debris that had been washed into Matagorda Bay and continued to grow outward into the Bay until it connected the mainland to Matagorda Peninsula, forming a five mile long land bridge, land locking the Seaport of Matagorda and dividing Matagorda Bay into East Matagorda Bay and West Matagorda Bay.

In 1935 the Drainage District cut a channel through the peninsula connecting the Colorado River to the Gulf of Mexico. This caused most of the natural flow of the river to go directly into the Gulf of Mexico, refer to *Figure 2.12* for a map of the development of the Colorado River Delta.

In 1990 the USACE agreed to the next major alteration affecting Matagorda Bay. In order to construct a jetty system at the mouth of the Colorado River in the Gulf of Mexico, a diversion channel was added to the overall design as recommended by the resource agencies. This would divert essentially 100 percent of the river flow into the east end of West Matagorda Bay. This project was completed in 1991. The USACE also closed Parker's Cut (Tiger Island Cut), the channel connecting the Colorado River to West Matagorda Bay, refer to *Figures 2.13* and *2.14*.

Historically, efforts were made to reopen Parker's Cut to accommodate recreational fishing by shortening travel time to the fishing areas. The resource agencies opposed the reopening believing it would be

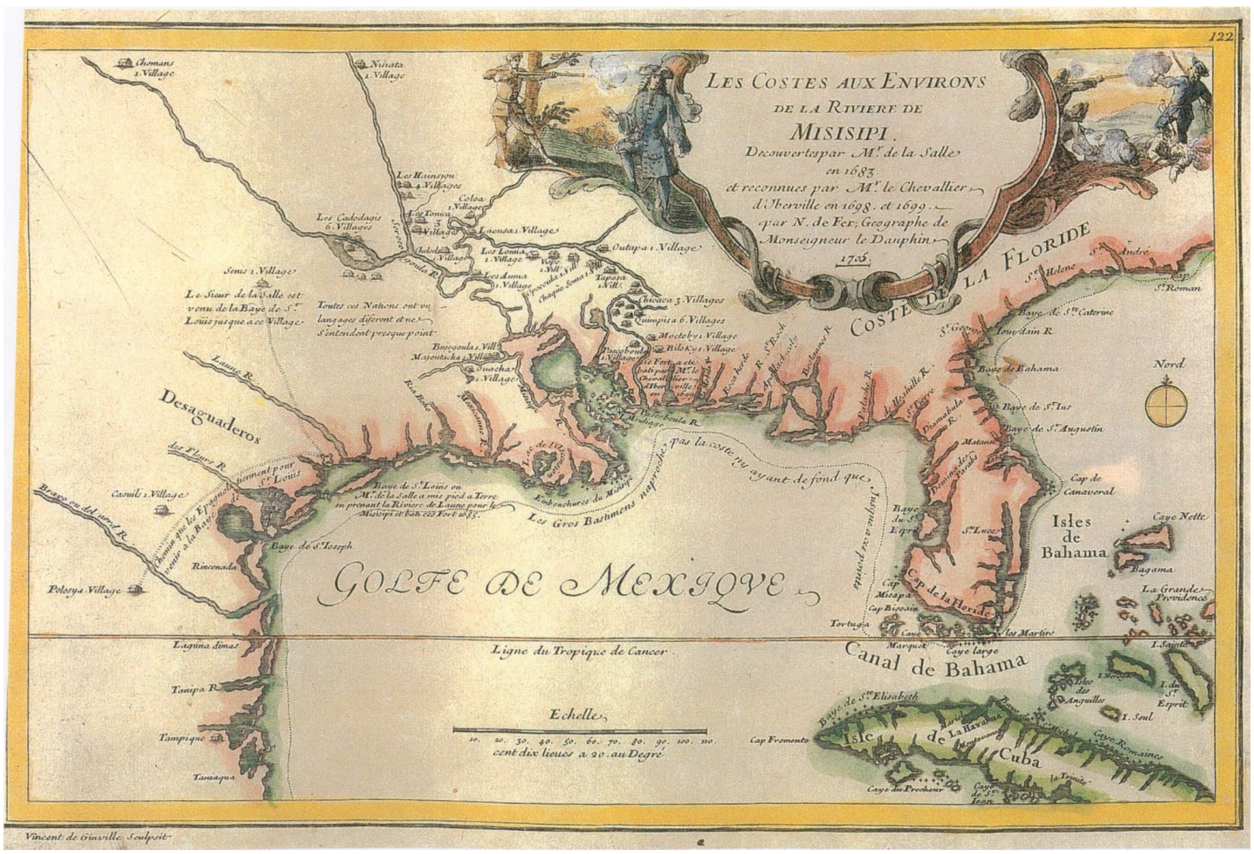
[1] *Bay City and Matagorda County – A History*, Pages 4, 8, 16, 165, 166
[2] *Corralling the Colorado*, Page 7
[3] *Historic Matagorda County*, Pages 135, 139
[4] Originally authored by Haskell Simon, Vice Chairman Region K, modified for this report
[5] Additional information from *Flood to Faucet* and interviews with Earl Eidelbach, LCRA from *The Daily Tribune*

detrimental to fisheries production. A compromise was reached that opened a channel into the Bay just North of the diversion dam (Bragg's Cut). This allowed access to the Bay without going through the locks, but with minimal diversion of fresh water.

In less than 75 years, major alterations have been made that dramatically and dynamically changed the characteristics of the Bay. The river flow into Matagorda Bay was reduced significantly, and then it was back to almost 100 percent discharge into West Matagorda Bay by the early 1990s. There are other sources that contribute to the freshwater inflows of Matagorda Bay in addition to the contributions by the Colorado River, but these flows have not been measured and are occasionally overlooked.

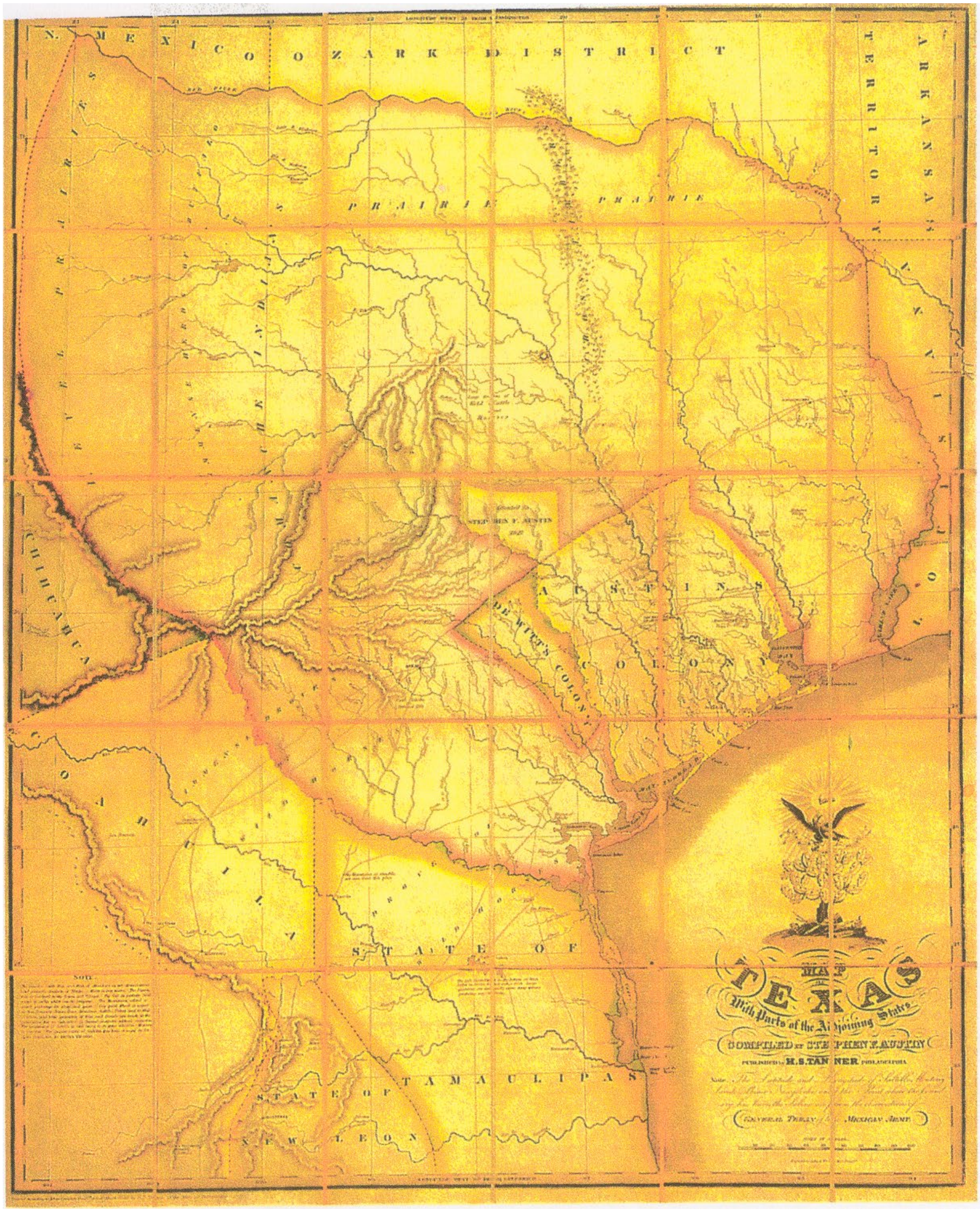
It is difficult to determine the effect of these changes on the Bay's performance. Most entities seem to agree that short-term analysis or comparisons will not yield significant "cause and effects." Certainly, with the major changes in the geography and hydrology of the Bay, it is questionable how useful older data may be. One thing is certain; Matagorda Bay, unlike other Texas Bays, has seen major changes in the last 75 years.

**Figure 2.10: Matagorda Bay in 1705**



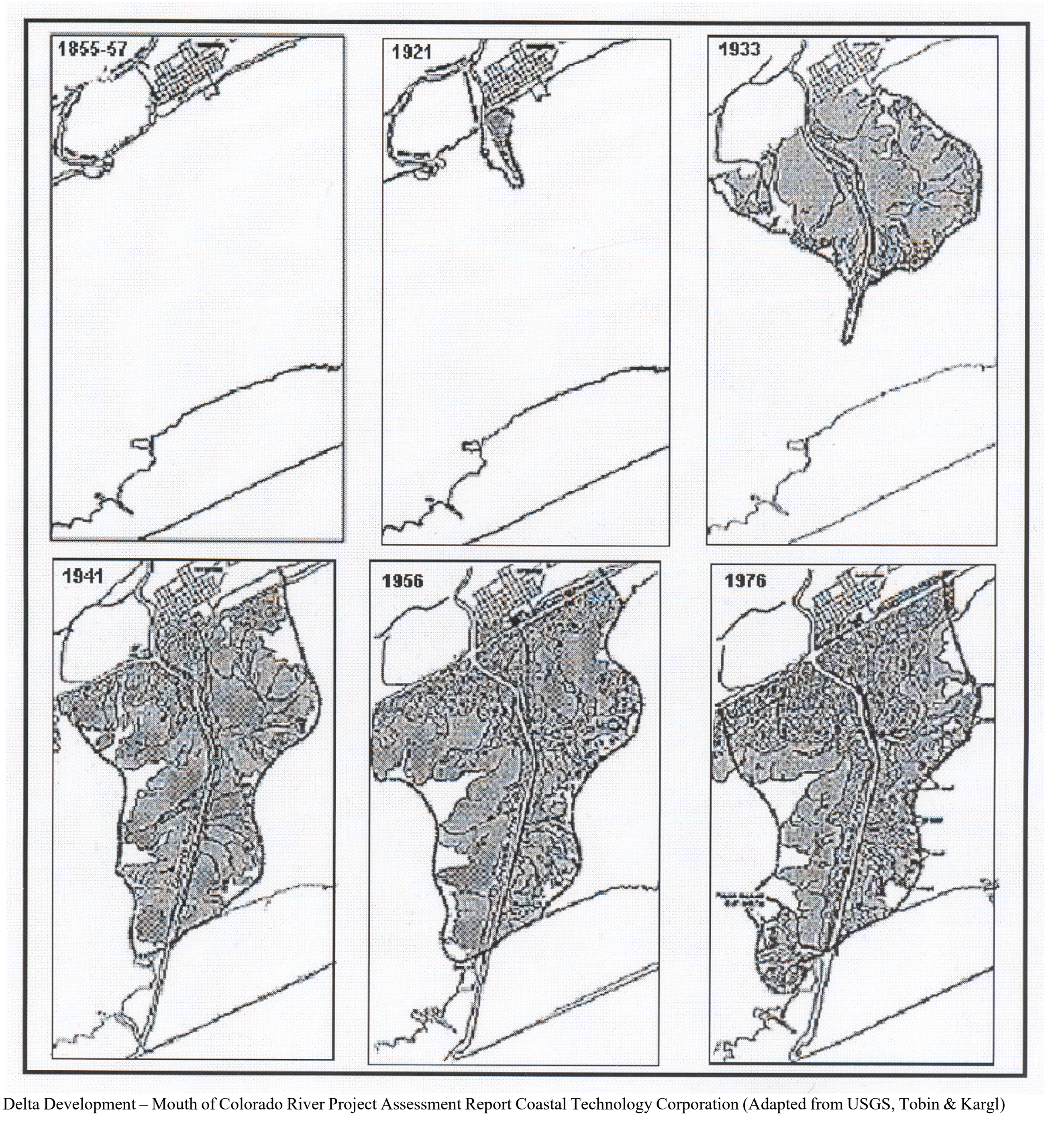

Nicolas de Fer 1705 – Collection of F. Carrington Weems Houston, Texas as shown in *Maps of Texas and the Southwest 1513-1900* by James C. Martin and Robert Sidney Martin, Page 49.

**Figure 2.11: Austin's Colony and Matagorda Bay**




Stephen F. Austin, 1830 – The San Jacinto Museum of History as shown in *Maps of Texas and the Southwest 1513-1900* by James C. Martin and Robert Sidney Martin, Page 52.

**Figure 2.12: Development of Colorado River Delta**

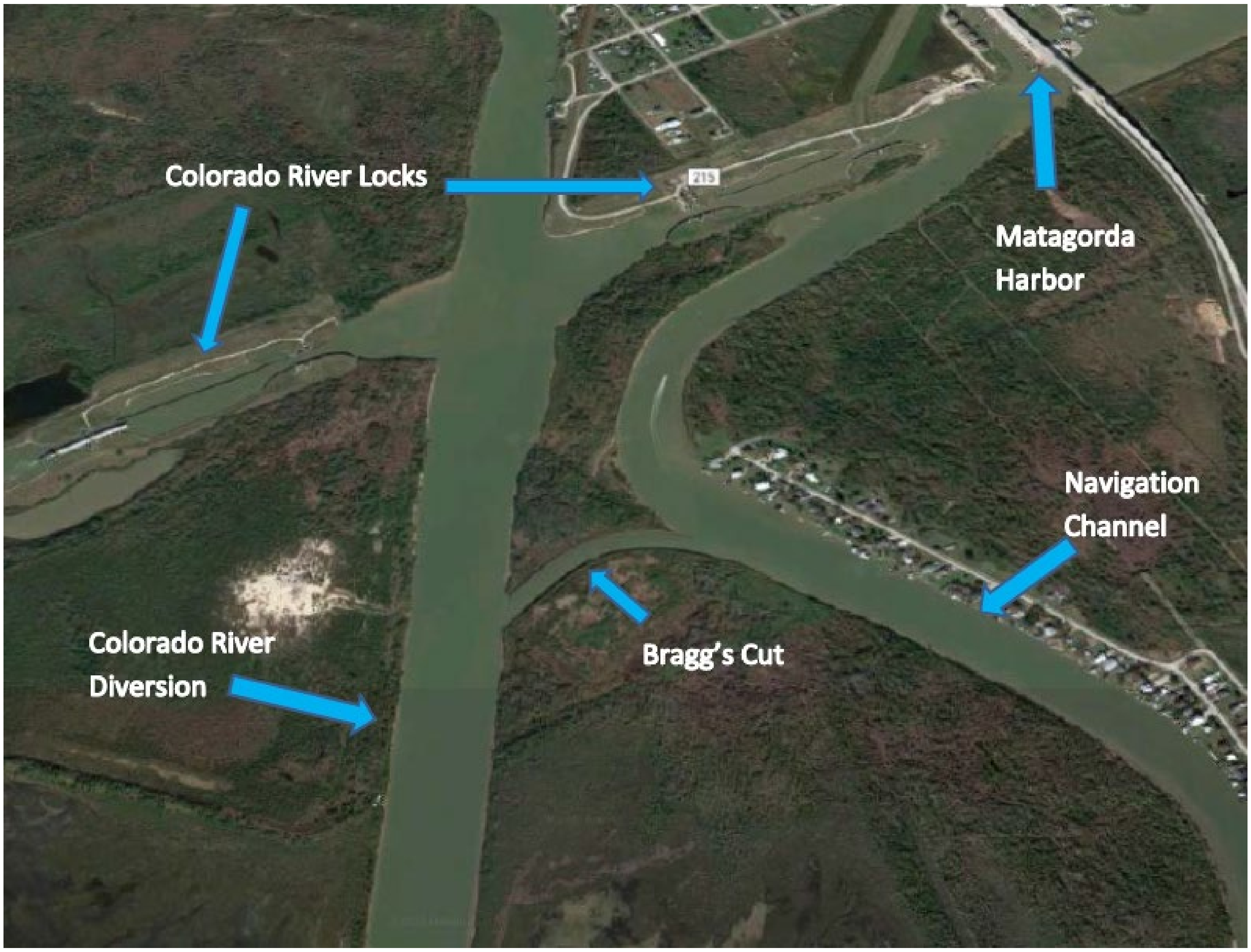



Delta Development – Mouth of Colorado River Project Assessment Report Coastal Technology Corporation (Adapted from USGS, Tobin & Kargl)

**Figure 2.13: Mouth of the Colorado River, Matagorda Texas**


Google Maps (February 2020)

**Figure 2.14: Colorado River Diversion Channel and Navigation Channel**




Google Maps (February 2020)

### 2.4.2 Lower Colorado River Authority Water Management Plan

LCRA operates lakes Travis and Buchanan under a Water Management Plan (WMP) that defines how water is allocated from the lakes, and is an operational plan designed to ensure LCRA can meet firm customer demands without shortage through a repeat of the Drought of Record. The WMP sets forth conditions under which LCRA can provide interruptible stored water for irrigated agriculture and helps address the environmental flow needs of the lower Colorado River and Matagorda Bay. The WMP is developed by LCRA with input from interested participants, reviewed and approved by the Texas Commission on Environmental Quality (TCEQ), and has been amended a number of times over the years in response to changing conditions and new information.

The current WMP was approved by TCEQ in 2020. However, due to timing with the regional water planning process, the LCRA WMP referenced throughout this plan was approved by TCEQ in 2015 and operates under the following framework:

- Maintains combined storage of lakes Travis and Buchanan above 600,000 acre-feet through a repeat of historic hydrology;
- Includes hydrology through 2013;
- Includes a 35,000 acre-foot per year demand associated with Corpus Christi's Garwood water rights (this demand is associated with Corpus Christi and included in the Region N plan); and
- Includes a three-tier regime for interruptible agricultural customers that considers lake storage and inflow conditions. The structure includes three curtailment conditions: extraordinary drought, less severe drought and normal conditions, for decisions on whether and how much stored water from the Highland lakes would be available for interruptible agricultural customers.
- Allocates water to most interruptible agricultural customers separately for first season (March 1 conditions) and second season (July 1 conditions).
- Includes a look-ahead test that prevents release of interruptible stored water if the LCRA Board of Directors determines that lake storage will drop below set levels in the upcoming crop season or the next 12 months.
- Environmental flow criteria are determined on two dates during the year based on several conditions in the basin.

### 2.4.3 Current Instream Flow Criteria for the Colorado River[6]

A comprehensive instream flow study ("BIO-WEST, Inc. *Colorado River Flow Relationships to Aquatic Habitat and State Threatened Species: Blue Sucker, Final Report Prepared for LCRA and SAWS* (2008)") was completed in 2008 that recommended both subsistence flow conditions and base flow conditions, including base-dry and base-average conditions being met approximately 80% and 60% of the time, respectively. The TCEQ environmental flow standards for the Colorado River Basin are found in 30 TAC, 298 Subchapter D, and are largely based on the results of this study. The flow criteria at the Austin, Bastrop, Columbus, and Wharton gauge locations, as included in the 2015 LCRA Water Management Plan, are provided in the table below.

[6]Taken from information provided by the LCRA.

**Table 2.16: Instream Flow Criteria from the 2015 LCRA WMP (cfs)**

| | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Austin | | | | | | | | | | | |
| Subsistence | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 |
| | Bastrop | | | | | | | | | | | |
| Subsistence | 208 | 274 | 274 | 184 | 275 | 202 | 137 | 123 | 123 | 127 | 180 | 186 |
| Base-Dry | 313 | 317 | 274 | 287 | 579 | 418 | 347 | 194 | 236 | 245 | 283 | 311 |
| Base-Average | 433 | 497 | 497 | 635 | 824 | 733 | 610 | 381 | 423 | 433 | 424 | 450 |
| | Columbus | | | | | | | | | | | |
| Subsistence | 340 | 375 | 375 | 299 | 425 | 534 | 342 | 190 | 279 | 190 | 202 | 301 |
| Base-Dry | 487 | 590 | 525 | 554 | 966 | 967 | 570 | 310 | 405 | 356 | 480 | 464 |
| Base-Average | 828 | 895 | 1,020 | 977 | 1,316 | 1,440 | 895 | 516 | 610 | 741 | 755 | 737 |
| | Wharton | | | | | | | | | | | |
| Subsistence | 315 | 303 | 204 | 270 | 304 | 371 | 212 | 107 | 188 | 147 | 173 | 202 |
| Base-Dry | 492 | 597 | 531 | 561 | 985 | 984 | 577 | 314 | 410 | 360 | 486 | 470 |
| Base-Average | 838 | 906 | 1,036 | 1,011 | 1,397 | 1,512 | 906 | 522 | 617 | 749 | 764 | 746 |

## 2.4.4 Current Bay and Estuary Inflow Criteria

The Colorado-Lavaca estuary is the second largest estuary on the Texas Gulf Coast. This estuary, also known as the Matagorda Bay system, covers 352 square miles. While Matagorda Bay is the largest body of water, other major bays in the estuary system are Lavaca, East Matagorda, Keller, Carancahua, and Tres Palacios Bay. Freshwater inflows are an important component to the health of the bays.

TCEQ environmental flow standards for Matagorda Bay are found in 30 TAC, 298 Subchapter D. The standard for the lower Colorado was largely based on LCRA-SAWS Water Project study *Final Report: Matagorda Bay Inflow Criteria (Colorado River), Matagorda Bay Health Evaluation*, prepared for LCRA and SAWS (Dec. 2008). *Tables 2.17* and *2.18* describe the freshwater inflow standards and the various Matagorda Bay Health Evaluation (MBHE) inflow levels, respectively.

**Table 2.17: Bay and Estuary Freshwater Inflow Standards to Matagorda Bay from the Colorado River Basin (acre-feet)**

| Inflow Regime | Monthly | Spring (3 month total) | Fall (3 month total) | Intervening (6 month total) | Long-Term Annual Strategy Quantity | Annual Strategy Frequency |
|---|---|---|---|---|---|---|
| **Threshold** | 15,000 | - | - | - | - | 100% |
| **MBHE-1** | - | 114,000 | 81,000 | 105,000 | - | 90% |
| **MBHE-2** | - | 168,700 | 119,900 | 155,400 | - | 75% |
| **MBHE-3** | - | 246,200 | 175,000 | 226,800 | - | 60% |
| **MBHE-4** | - | 433,200 | 307,800 | 399,000 | - | 35% |
| **Annual Average** | - | - | - | - | 1,400,000 | - |

**Table 2.18: Summary of Matagorda Bay Health Evaluation (MBHE) Inflow Levels**

| Inflow Level | Descriptions |
|---|---|
| **Threshold** | Refuge conditions for all species and habitat |
| **MBHE-1** | Maintain tolerable oyster reef health, benthic character, and habitat conditions |
| **MBHE-2** | Provide inflow variability and sustain oyster reef health, benthic condition, low estuarine marsh, and shellfish and forage fish habitat |
| **MBHE-3** | Provide inflow variability and support quality oyster reef health, benthic condition, low estuarine marsh, and shellfish and forage fish habitat |
| **MBHE-4** | Provide inflow variability and support high levels of primary productivity, and high quality oyster reef health, benthic condition, low estuarine marsh, and shellfish and forage fish habitat |

Additional details related to the incorporation of the MBHE freshwater inflows into the LCRA WMP can be found on the LCRA website at www.lcra.org.

## 2.5 MAJOR WATER PROVIDERS

Each regional water planning group designates Major Water Providers, which are Water User Groups or Wholesale Water Providers of particular significance to the region's water supply as determined by the planning group. Major Water Providers are responsible for developing and/or delivering significant quantities of water in the region. The Lower Colorado Region has designated three Major Water Providers for the 2021 Plan: Austin (Austin Water), the Lower Colorado River Authority (LCRA), and West Travis County Public Utility Agency (WTCPUA). Associated water demands for these Major Water Providers are identified within the plan. Austin and West Travis County Public Utility Agency are also water customers of the LCRA, and together these entities supply a large portion of the Lower Colorado Region's water needs.

The intent of TWDB water planning requirements is to ensure that there is an adequate future supply of water for each entity that receives all or a significant portion of its current water supply from another entity. This requires an analysis of projected water demands and currently available water supplies for the primary supplier, each of its wholesale customers, and all of the suppliers in the aggregate as a "system." For example, a utility that serves both retail customers within its service area as well as other nearby public water systems would need to have a supply source(s) that is adequate for the combined total of future retail water sales and future wholesale water sales. If there is a "system" deficit currently or in the future, then recommendations are to be included in the regional water plan with regard to strategies for meeting the "system" deficit.

### 2.5.1 Austin

Austin (Austin Water) provides water on both a retail and wholesale basis for municipal, manufacturing, and steam-electric water uses. The utility's existing service area covers portions of Travis, Williamson, and Hays Counties. *Table 2.19* presents the municipal and manufacturing water demands for the Austin utility. These water demands consist of Austin's retail and wholesale service area water demands and commitments. The wholesale commitments represent contract amounts as reported by Austin. For a complete list of the City's wholesale water commitments refer to *Chapter 3*.

**Table 2.19: Projected Municipal and Manufacturing Water Demands for Austin Service Area (ac-ft/yr)**

| County/WUG | 2020 | 2030 | 2040 | 2050 | 2060 | 2070 |
|---|---|---|---|---|---|---|
| **Hays County** | | | | | | |
| Austin | 188 | 827 | 1,304 | 2,063 | 3,025 | 4,357 |
| **Travis County** | | | | | | |
| Austin | 170,686 | 198,992 | 230,751 | 252,570 | 269,954 | 293,513 |
| Wholesale Commitments [1] | 12,954 | 13,001 | 759 | 750 | 749 | 749 |
| Manufacturing | 12,422 | 14,111 | 14,397 | 14,853 | 14,853 | 14,853 |
| **Williamson County** | | | | | | |
| Austin | 10,787 | 13,742 | 16,122 | 18,685 | 21,592 | 24,782 |
| Wholesale Commitments [2] | 854 | 824 | 0 | 0 | 0 | 0 |
| County-Other [3] | 87 | 87 | 87 | 87 | 87 | 87 |
| **Total** | **207,978** | **241,584** | **263,420** | **289,008** | **310,260** | **338,341** |

[1] The wholesale commitments in Travis County include the following WUGs: a portion of Creedmoor-Maha WSC, North Austin MUD 1, Northtown MUD, Rollingwood, Shady Hollow MUD (became a retail customer after WUGs were determined), Sunset Valley, Travis County WCID #10, Wells Branch MUD, and a portion of Windemere Utility.

[2] The wholesale commitments in Williamson County include the following WUGs: a portion of North Austin MUD #1, and a portion of Wells Branch MUD.

[3] County-Other in Williamson County consists of several small communities, which are too small to be considered WUGs.

*Table 2.20* presents Austin's projected steam-electric water demands in Fayette and Travis Counties. Austin's portion of the South Texas Project (STP) demand is included in the STP total steam-electric demand in Matagorda County.

**Table 2.20: Projected Steam-Electric Water Demands for the Austin Service Area (ac-ft/yr)**

| County/WUG | 2020 | 2030 | 2040 | 2050 | 2060 | 2070 |
|---|---|---|---|---|---|---|
| **Fayette County** | | | | | | |
| Steam Electric [1] | 10,300 | 10,300 | 10,300 | 10,300 | 10,300 | 10,300 |
| **Travis County** | | | | | | |
| Steam Electric | 10,253 | 10,253 | 10,253 | 10,253 | 10,253 | 10,253 |
| **Total** | **20,553** | **20,553** | **20,553** | **20,553** | **20,553** | **20,553** |

[1] City of Austin portion - based on estimated current supply levels and approved projections.

### 2.5.2 Lower Colorado River Authority

LCRA supplies water for municipal, agricultural (irrigation), manufacturing, steam-electric, mining, and other water uses. The LCRA currently supplies water to entities in Bastrop, Burnet, Colorado, Fayette, Hays, Lampasas (Region G), Llano, Matagorda, San Saba, Travis, Wharton, and Williamson (the portion of Williamson in Region G) counties. *Table 2.21* presents a summary of LCRA firm commitments to water user groups in the Lower Colorado Region (Region K) and Region G. *Table 2.22* lists the projected irrigation demands in the Lower Basin using water supplies from LCRA.

Most of Williamson County is outside the lower Colorado River watershed, but House Bill 1437 authorizes LCRA to provide water to entities in the county in some circumstances.

The Texas Legislature passed HB 1437 in 1999. The bill authorizes LCRA to transfer up to 25,000 ac-ft/yr of water to Williamson County, if the transfer results in "no net loss" of water to the lower Colorado River basin. "No net loss" means an amount of water equal to that transferred is conserved, replaced or offset. LCRA has a contract with the Brazos River Authority for 25,000 acre-feet of water, as shown below in *Table 2.21*. The water demands associated with this water supply are not included in Region K but are accounted for in the Region G *Brazos Regional Water Plan*. Accounting related to this provision is included in an annual report produced by LCRA (*2018 Annual Report: House Bill 1437 Agricultural Water Conservation Program*).

HB 1437 also establishes a conservation surcharge on water contracted under this bill. The surcharge funds conservation projects that result in "no net loss" of water to the basin. Water conserved using this mechanism will be reflected in the regional water plan either within the projected water demands or as water management strategies used to meet water needs.

The municipal County-Other water commitments actually consist of water that is supplied to several smaller retail water customers.

**Table 2.21: LCRA Firm Water Commitment Summary (ac-ft/yr)**

| County/WUG | 2020 | 2030 | 2040 | 2050 | 2060 | 2070 |
|---|---|---|---|---|---|---|
| Environmental Commitments* | 33,440 | 33,440 | 33,440 | 33,440 | 33,440 | 33,440 |
| **Bastrop County** | | | | | | |
| County-Other | 744 | 744 | 744 | 744 | 744 | 744 |
| Irrigation | 850 | 850 | 850 | 850 | 850 | 850 |
| Steam Electric | 9,720 | 9,720 | 9,720 | 9,720 | 9,720 | 9,720 |
| **Burnet County** | | | | | | |
| Burnet | 4,100 | 4,100 | 4,100 | 4,100 | 4,100 | 4,100 |
| Cottonwood Shores | 495 | 495 | 495 | 495 | 495 | 495 |
| Corix Utilities Texas Inc. (also in Llano, Mills, and San Saba Counties) | 475 | 475 | 475 | 475 | 475 | 475 |
| Granite Shoals | 830 | 830 | 830 | 830 | 830 | 830 |
| Horseshoe Bay (also in Llano Co.) | 2,225 | 2,225 | 2,225 | 2,225 | 2,225 | 2,225 |
| Marble Falls | 3,000 | 3,000 | 3,000 | 3,000 | 3,000 | 3,000 |
| County-Other | 2,249 | 2,249 | 2,249 | 2,249 | 2,249 | 2,249 |
| Irrigation | 333 | 333 | 333 | 333 | 333 | 333 |
| Manufacturing | 500 | 500 | 500 | 500 | 500 | 500 |
| **Fayette County** | | | | | | |
| County-Other | 27 | 27 | 27 | 27 | 27 | 27 |
| Steam Electric (LCRA) | 37,500 | 37,500 | 37,500 | 37,500 | 37,500 | 37,500 |
| Steam Electric (COA) | 7,500 | 7,500 | 7,500 | 7,500 | 7,500 | 7,500 |
| **Gillespie County** | | | | | | |
| County-Other | 56 | 56 | 56 | 56 | 56 | 56 |

**Table 2.21: LCRA Firm Water Commitment Summary (ac-ft/yr) (Continued)**

| County/WUG | 2020 | 2030 | 2040 | 2050 | 2060 | 2070 |
|---|---|---|---|---|---|---|
| **Hays County** | | | | | | |
| Dripping Springs WSC | 1,632 | 1,632 | 1,632 | 1,632 | 1,632 | 1,632 |
| Hays County WCID 1 | 717 | 717 | 717 | 717 | 717 | 717 |
| Hays County WCID 2 | 684 | 684 | 684 | 684 | 684 | 684 |
| **Lampasas County (Region G)** | | | | | | |
| Corix Utilities Texas Inc. (Lometa) | 665 | 665 | 665 | 665 | 665 | 665 |
| **Llano County** | | | | | | |
| Kingsland WSC (also in Burnet Co.) | 1,150 | 1,150 | 1,150 | 1,150 | 1,150 | 1,150 |
| Sunrise Beach Village | 200 | 200 | 200 | 200 | 200 | 200 |
| County-Other | 2,272 | 2,272 | 2,272 | 2,272 | 2,272 | 2,272 |
| Irrigation | 1,514 | 1,514 | 1,514 | 1,514 | 1,514 | 1,514 |
| Steam Electric | 2,500 | 2,500 | 2,500 | 2,500 | 2,500 | 2,500 |
| **Matagorda County** | | | | | | |
| Manufacturing | 16,955 | 16,955 | 16,955 | 16,955 | 16,955 | 16,955 |
| Steam Electric [1] | 19,567 | 19,562 | 19,557 | 19,552 | 19,547 | 19,543 |
| **San Saba County** | | | | | | |
| County-Other | 20 | 20 | 20 | 20 | 20 | 20 |
| **Travis County** | | | | | | |
| Austin - Municipal [2] | 123,607 | 123,607 | 123,607 | 123,607 | 123,607 | 123,607 |
| Austin - Steam Electric [3] | 11,056 | 11,056 | 11,056 | 11,056 | 11,056 | 11,057 |
| Briarcliff | 400 | 400 | 400 | 400 | 400 | 400 |
| Cypress Ranch WCID 1 | 436 | 436 | 436 | 436 | 436 | 436 |
| Deer Creek Ranch Water | 250 | 250 | 250 | 250 | 250 | 250 |
| Hurst Creek MUD | 1,600 | 1,600 | 1,600 | 1,600 | 1,600 | 1,600 |
| Jonestown WSC | 526 | 526 | 526 | 526 | 526 | 526 |
| Lago Vista | 6,500 | 6,500 | 6,500 | 6,500 | 6,500 | 6,500 |
| Lakeway MUD | 3,069 | 3,069 | 3,069 | 3,069 | 3,069 | 3,069 |
| Loop 360 WSC | 1,250 | 1,250 | 1,250 | 1,250 | 1,250 | 1,250 |
| Oak Shores Water System | 203 | 203 | 203 | 203 | 203 | 203 |
| Pflugerville | 12,000 | 12,000 | 12,000 | 12,000 | 12,000 | 12,000 |
| Rough Hollow in Travis County | 1,795 | 1,795 | 1,795 | 1,795 | 1,795 | 1,795 |
| Senna Hills MUD | 404 | 404 | 404 | 404 | 404 | 404 |
| Sweetwater Community | 1,514 | 1,514 | 1,514 | 1,514 | 1,514 | 1,514 |
| Travis County MUD 10 | 96 | 96 | 96 | 96 | 96 | 96 |
| Travis County MUD 4 | 4,316 | 4,316 | 4,316 | 4,316 | 4,316 | 4,316 |
| Travis County WCID 17 | 9,299 | 9,299 | 9,299 | 9,299 | 9,299 | 9,299 |

**Table 2.21: LCRA Firm Water Commitment Summary (ac-ft/yr) (Continued)**

| County/WUG | 2020 | 2030 | 2040 | 2050 | 2060 | 2070 |
|---|---|---|---|---|---|---|
| Travis County WCID 18 | 1,400 | 1,400 | 1,400 | 1,400 | 1,400 | 1,400 |
| Travis County WCID 20 | 1,135 | 1,135 | 1,135 | 1,135 | 1,135 | 1,135 |
| Travis County WCID Point Venture | 285 | 285 | 285 | 285 | 285 | 285 |
| West Travis County PUA [4] (also in Hays County) | 9,450 | 9,450 | 9,450 | 9,450 | 9,450 | 9,450 |
| County-Other | 8,626 | 8,626 | 8,626 | 8,626 | 8,626 | 8,626 |
| County-Other (Aqua Texas - Rivercrest) | 467 | 467 | 467 | 467 | 467 | 467 |
| Irrigation | 4,018 | 4,018 | 4,018 | 4,018 | 4,018 | 4,018 |
| Manufacturing | 76 | 76 | 76 | 76 | 76 | 76 |
| **Williamson County (Region G)** | | | | | | |
| Cedar Park [5] (also in Travis County, Region K) | 20,500 | 20,500 | 20,500 | 20,500 | 20,500 | 20,500 |
| Leander [6] (also in Travis County, Region K) | 24,000 | 24,000 | 24,000 | 24,000 | 24,000 | 24,000 |
| Brazos River Authority | 25,000 | 25,000 | 25,000 | 25,000 | 25,000 | 25,000 |
| **TOTAL*** | 391,758 | 391,753 | 391,748 | 391,743 | 391,738 | 391,735 |

*Environmental demands are not one of the six water uses planned for in regional water planning.

[1] The Matagorda Steam Electric value is based on the Region K Cutoff Model results for the average annual amount of LCRA backup supplies needed to supplement the STPNOC/LCRA water right.

[2] The Austin-Municipal value is based on the Region K Cutoff Model results for the amount of LCRA backup supplies needed to supplement Austin's municipal water rights.

[3] The Austin-Steam Electric value is based on the Region K Cutoff Model results for the amount of LCRA backup supplies needed to supplement Austin's steam-electric water rights.

[4] Cedar Park is located in both Region G and Region K, and it serves Williamson-Travis Counties MUD #1 (WUG).

[5] West Travis County PUA serves multiple Water User Groups in Hays and Travis Counties including Dripping Springs WSC, Hays County WCID 1 and 2, Barton Creek West WSC, Deer Creek Ranch Water, Rough Hollow in Travis County, Senna Hills MUD, Sweetwater Community, Irrigation, and County-Other. Those listed in this table have water contracts with LCRA, and contracts for treatment and transport/delivery of water with West Travis County PUA.

[6] Leander is located in both Region G and Region K.

**Table 2.22: LCRA Projected Irrigation Division Demand Summary (ac-ft/yr)**

| County/WUG | 2020 | 2030 | 2040 | 2050 | 2060 | 2070 |
|---|---|---|---|---|---|---|
| **Colorado County** | | | | | | |
| Irrigation [1, 4] | 155,478 | 151,295 | 147,226 | 143,265 | 139,411 | 135,662 |
| **Matagorda County** | | | | | | |
| Irrigation [2, 4] | 148,855 | 144,851 | 140,954 | 137,163 | 133,473 | 129,883 |
| **Wharton County** | | | | | | |
| Irrigation [3, 4] | 117,668 | 114,503 | 111,423 | 108,426 | 105,509 | 102,671 |
| **TOTAL** | 422,001 | 410,649 | 399,603 | 388,853 | 378,393 | 368,215 |

[1] The LCRA Colorado County Irrigation Demand represents the portion of the total Colorado County Irrigation demand that includes supplies from LCRA ROR water rights and supplemental interruptible stored water from the Highland Lakes on an annual contract basis. The methodology for determining these demands is discussed in Chapter 2. The decrease over time is proportional to the total demand's decrease.

[2] The LCRA Matagorda County Irrigation Demand represents the portion of the total Matagorda County Irrigation demand that includes supplies from LCRA ROR water rights and supplemental interruptible stored water from the Highland Lakes on an annual contract basis. The methodology for determining these demands is discussed in Chapter 2. The decrease over time is proportional to the total demand's decrease.

[3] The LCRA Wharton County Irrigation Demand represents the portion of the total Wharton County Irrigation demand (K and P) that includes supplies from LCRA ROR water rights and supplemental interruptible stored water from the Highland Lakes on an annual contract basis. The methodology for determining these demands is discussed in Chapter 2. The decrease over time is proportional to the total demand's decrease.

[4] These are not firm commitments.

### 2.5.3 West Travis County Public Utility Agency

West Travis County Public Utility Agency (WTCPUA) is a publicly owned utility providing water and wastewater services to both retail and wholesale customers in western Travis and northern Hays counties. Nearly all of the wholesale water customers being delivered water from WTCPUA have a contract for water from LCRA, and a contract for treatment and transport from WTCPUA. Because WTCPUA is responsible for developing the infrastructure to deliver the water to its wholesale customers, Region K determined it most appropriate to associate the wholesale customer demands and water sales with WTCPUA. Wholesale customers listed below in *Table 2.23* that have a water contract with LCRA are identified as so and are also listed in *Table 2.21* in *Section 2.5.2* under LCRA.

**Table 2.23: Projected Water Demand Commitments for WTCPUA Service Area (ac-ft/yr)**

| County/WUG | 2020 | 2030 | 2040 | 2050 | 2060 | 2070 |
|---|---|---|---|---|---|---|
| **Hays County** | | | | | | |
| West Travis County PUA | 4,499 | 5,590 | 6,273 | 7,711 | 9,151 | 10,593 |
| Dripping Springs WSC* | 1,632 | 1,632 | 1,632 | 1,632 | 1,632 | 1,632 |
| Hays County WCID 1* | 717 | 717 | 717 | 717 | 717 | 717 |
| Hays County WCID 2* | 684 | 684 | 684 | 684 | 684 | 684 |
| **Travis County** | | | | | | |
| West Travis County PUA | 6,698 | 7,357 | 7,925 | 8,824 | 9,398 | 9,914 |
| Barton Creek West WSC | 440 | 440 | 440 | 440 | 440 | 440 |
| County-Other** | 1,640 | 1,640 | 1,640 | 1,640 | 1,640 | 1,640 |
| Deer Creek Ranch Water* (also in Hays Co.) | 250 | 250 | 250 | 250 | 250 | 250 |
| Irrigation* | 62 | 62 | 62 | 62 | 62 | 62 |
| Rough Hollow in Travis County* | 1,795 | 1,795 | 1,795 | 1,795 | 1,795 | 1,795 |
| Senna Hills MUD* | 404 | 404 | 404 | 404 | 404 | 404 |
| Sweetwater Community* | 1,514 | 1,514 | 1,514 | 1,514 | 1,514 | 1,514 |
| **Total** | **20,335** | **22,085** | **23,336** | **25,673** | **27,687** | **29,645** |

* These wholesale customers have water contracts for these volumes with LCRA, but West Travis County PUA provides the treatment and transport of the water to their community.

** For County-Other in Travis County, several smaller communities make up the wholesale customers that are delivered water by West Travis County PUA. One of these smaller communities, Crystal Mountain HOA, does not have a water contract with LCRA. The rest of the wholesale customers falling under County-Other have a water contract with LCRA, while West Travis County PUA provides the treatment and transport of the water to their community.

# *APPENDIX 2A*

# *TWDB DB22 REPORTS*
# *LCRWPG POPULATION AND WATER DEMAND PROJECTIONS*

# Region K Water User Group (WUG) Population

| | WUG POPULATION | | | | | |
|---|---|---|---|---|---|---|
| | 2020 | 2030 | 2040 | 2050 | 2060 | 2070 |
| AQUA WSC* | 551 | 725 | 950 | 1,256 | 1,668 | 2,217 |
| LEE COUNTY WSC* | 423 | 556 | 729 | 963 | 1,280 | 1,702 |
| COUNTY-OTHER | 47 | 54 | 64 | 77 | 94 | 117 |
| **BRAZOS BASIN TOTAL** | **1,021** | **1,335** | **1,743** | **2,296** | **3,042** | **4,036** |
| AQUA WSC* | 55,243 | 72,640 | 95,256 | 125,894 | 167,279 | 222,301 |
| BASTROP | 11,069 | 15,008 | 20,129 | 27,068 | 36,439 | 48,898 |
| BASTROP COUNTY WCID 2 | 5,007 | 7,450 | 10,626 | 14,930 | 20,741 | 28,469 |
| CREEDMOOR-MAHA WSC* | 22 | 25 | 29 | 33 | 37 | 40 |
| ELGIN | 9,380 | 12,273 | 16,034 | 21,128 | 28,009 | 37,158 |
| LEE COUNTY WSC* | 575 | 755 | 990 | 1,310 | 1,741 | 2,313 |
| POLONIA WSC* | 236 | 300 | 385 | 498 | 653 | 858 |
| SMITHVILLE | 4,797 | 6,308 | 8,273 | 10,933 | 14,527 | 19,306 |
| COUNTY-OTHER | 7,559 | 8,735 | 10,256 | 12,323 | 15,115 | 18,828 |
| **COLORADO BASIN TOTAL** | **93,888** | **123,494** | **161,978** | **214,117** | **284,541** | **378,171** |
| AQUA WSC* | 390 | 513 | 672 | 889 | 1,181 | 1,569 |
| COUNTY-OTHER | 188 | 217 | 255 | 306 | 376 | 468 |
| **GUADALUPE BASIN TOTAL** | **578** | **730** | **927** | **1,195** | **1,557** | **2,037** |
| **BASTROP COUNTY TOTAL** | **95,487** | **125,559** | **164,648** | **217,608** | **289,140** | **384,244** |
| JOHNSON CITY | 2,053 | 2,441 | 2,668 | 2,787 | 2,867 | 2,914 |
| COUNTY-OTHER | 4,650 | 5,448 | 5,851 | 5,986 | 6,025 | 5,989 |
| **COLORADO BASIN TOTAL** | **6,703** | **7,889** | **8,519** | **8,773** | **8,892** | **8,903** |
| BLANCO | 2,156 | 2,563 | 2,802 | 2,927 | 3,010 | 3,061 |
| CANYON LAKE WATER SERVICE* | 665 | 933 | 1,204 | 1,478 | 1,749 | 2,011 |
| COUNTY-OTHER | 3,491 | 4,090 | 4,392 | 4,494 | 4,524 | 4,497 |
| **GUADALUPE BASIN TOTAL** | **6,312** | **7,586** | **8,398** | **8,899** | **9,283** | **9,569** |
| **BLANCO COUNTY TOTAL** | **13,015** | **15,475** | **16,917** | **17,672** | **18,175** | **18,472** |
| BERTRAM | 1,764 | 2,134 | 2,445 | 2,745 | 3,007 | 3,235 |
| BURNET | 30 | 36 | 42 | 47 | 51 | 55 |
| GEORGETOWN* | 379 | 460 | 527 | 591 | 647 | 696 |
| KEMPNER WSC* | 759 | 852 | 937 | 1,019 | 1,097 | 1,171 |
| COUNTY-OTHER | 7,998 | 9,104 | 9,230 | 10,215 | 11,119 | 11,898 |
| **BRAZOS BASIN TOTAL** | **10,930** | **12,586** | **13,181** | **14,617** | **15,921** | **17,055** |
| BURNET | 7,394 | 8,947 | 10,256 | 11,508 | 12,609 | 13,564 |
| CORIX UTILITIES TEXAS INC* | 809 | 979 | 1,122 | 1,259 | 1,379 | 1,484 |
| COTTONWOOD SHORES | 1,395 | 1,688 | 1,935 | 2,171 | 2,379 | 2,559 |
| GRANITE SHOALS | 5,401 | 6,211 | 6,832 | 7,515 | 8,643 | 10,371 |
| HORSESHOE BAY | 1,192 | 1,683 | 2,097 | 2,493 | 2,841 | 3,142 |
| KINGSLAND WSC | 425 | 515 | 590 | 662 | 726 | 781 |
| MARBLE FALLS | 8,784 | 12,906 | 18,684 | 21,713 | 23,732 | 24,741 |
| MEADOWLAKES | 2,540 | 2,540 | 2,540 | 2,540 | 2,540 | 2,540 |
| COUNTY-OTHER | 14,244 | 16,213 | 16,436 | 18,190 | 19,801 | 21,189 |
| **COLORADO BASIN TOTAL** | **42,184** | **51,682** | **60,492** | **68,051** | **74,650** | **80,371** |
| **BURNET COUNTY TOTAL** | **53,114** | **64,268** | **73,673** | **82,668** | **90,571** | **97,426** |
| EAGLE LAKE | 1,160 | 1,210 | 1,248 | 1,302 | 1,349 | 1,393 |
| COUNTY-OTHER | 1,253 | 1,308 | 1,348 | 1,408 | 1,457 | 1,505 |
| **BRAZOS-COLORADO BASIN TOTAL** | **2,413** | **2,518** | **2,596** | **2,710** | **2,806** | **2,898** |
| COLUMBUS | 3,832 | 3,999 | 4,123 | 4,305 | 4,457 | 4,605 |
| CORIX UTILITIES TEXAS INC* | 275 | 287 | 296 | 309 | 320 | 331 |

*A single asterisk next to a WUG's name denotes that the WUG is split by two or more planning regions.

## Region K Water User Group (WUG) Population

| | WUG POPULATION | | | | | |
|---|---|---|---|---|---|---|
| | 2020 | 2030 | 2040 | 2050 | 2060 | 2070 |
| EAGLE LAKE | 2,643 | 2,758 | 2,843 | 2,968 | 3,072 | 3,175 |
| WEIMAR | 710 | 741 | 764 | 798 | 825 | 853 |
| COUNTY-OTHER | 7,871 | 8,214 | 8,467 | 8,842 | 9,154 | 9,457 |
| **COLORADO BASIN TOTAL** | **15,331** | **15,999** | **16,493** | **17,222** | **17,828** | **18,421** |
| WEIMAR | 1,454 | 1,516 | 1,565 | 1,633 | 1,691 | 1,747 |
| COUNTY-OTHER | 2,686 | 2,803 | 2,890 | 3,017 | 3,124 | 3,227 |
| **LAVACA BASIN TOTAL** | **4,140** | **4,319** | **4,455** | **4,650** | **4,815** | **4,974** |
| **COLORADO COUNTY TOTAL** | **21,884** | **22,836** | **23,544** | **24,582** | **25,449** | **26,293** |
| AQUA WSC* | 24 | 27 | 30 | 31 | 33 | 34 |
| FAYETTE COUNTY WCID MONUMENT HILL | 760 | 803 | 870 | 926 | 970 | 1,003 |
| FAYETTE WSC | 4,350 | 4,965 | 5,383 | 5,728 | 5,997 | 6,206 |
| LA GRANGE | 5,478 | 6,253 | 6,778 | 7,212 | 7,552 | 7,816 |
| LEE COUNTY WSC* | 1,435 | 1,638 | 1,775 | 1,889 | 1,979 | 2,047 |
| WEST END WSC* | 1,197 | 1,366 | 1,521 | 1,686 | 1,855 | 2,032 |
| COUNTY-OTHER | 6,241 | 7,166 | 7,743 | 8,192 | 8,522 | 8,744 |
| **COLORADO BASIN TOTAL** | **19,485** | **22,218** | **24,100** | **25,664** | **26,908** | **27,882** |
| FAYETTE WSC | 282 | 322 | 349 | 371 | 389 | 402 |
| FLATONIA | 313 | 357 | 387 | 412 | 432 | 446 |
| COUNTY-OTHER | 375 | 430 | 465 | 492 | 512 | 525 |
| **GUADALUPE BASIN TOTAL** | **970** | **1,109** | **1,201** | **1,275** | **1,333** | **1,373** |
| FAYETTE WSC | 510 | 582 | 631 | 671 | 703 | 728 |
| FLATONIA | 1,345 | 1,536 | 1,665 | 1,771 | 1,855 | 1,919 |
| SCHULENBURG | 3,147 | 3,592 | 3,894 | 4,143 | 4,339 | 4,490 |
| COUNTY-OTHER | 2,916 | 3,347 | 3,617 | 3,827 | 3,981 | 4,084 |
| **LAVACA BASIN TOTAL** | **7,918** | **9,057** | **9,807** | **10,412** | **10,878** | **11,221** |
| **FAYETTE COUNTY TOTAL** | **28,373** | **32,384** | **35,108** | **37,351** | **39,119** | **40,476** |
| FREDERICKSBURG | 12,056 | 12,938 | 13,666 | 14,519 | 15,304 | 16,067 |
| COUNTY-OTHER | 14,172 | 15,302 | 16,233 | 17,324 | 18,328 | 19,303 |
| **COLORADO BASIN TOTAL** | **26,228** | **28,240** | **29,899** | **31,843** | **33,632** | **35,370** |
| COUNTY-OTHER | 567 | 612 | 649 | 693 | 733 | 772 |
| **GUADALUPE BASIN TOTAL** | **567** | **612** | **649** | **693** | **733** | **772** |
| **GILLESPIE COUNTY TOTAL** | **26,795** | **28,852** | **30,548** | **32,536** | **34,365** | **36,142** |
| AUSTIN | 1,074 | 4,796 | 7,560 | 11,957 | 17,535 | 25,255 |
| BUDA* | 9,831 | 14,132 | 19,369 | 25,916 | 33,315 | 41,735 |
| CIMARRON PARK WATER | 2,115 | 2,115 | 2,115 | 2,115 | 2,115 | 2,115 |
| DEER CREEK RANCH WATER | 331 | 392 | 451 | 494 | 529 | 569 |
| DRIPPING SPRINGS WSC | 11,000 | 18,500 | 24,000 | 31,000 | 39,500 | 44,000 |
| GOFORTH SUD* | 1,366 | 1,801 | 2,329 | 2,985 | 3,724 | 4,564 |
| HAYS | 1,222 | 1,606 | 2,038 | 2,429 | 3,036 | 3,727 |
| HAYS COUNTY WCID 1 | 3,647 | 3,647 | 3,647 | 3,647 | 3,647 | 3,647 |
| HAYS COUNTY WCID 2 | 1,224 | 1,608 | 2,041 | 2,433 | 3,041 | 3,732 |
| WEST TRAVIS COUNTY PUBLIC UTILITY AGENCY | 12,788 | 15,985 | 17,981 | 22,131 | 26,281 | 30,431 |
| COUNTY-OTHER* | 10,986 | 8,661 | 13,216 | 16,522 | 19,284 | 26,804 |
| **COLORADO BASIN TOTAL** | **55,584** | **73,243** | **94,747** | **121,629** | **152,007** | **186,579** |
| **HAYS COUNTY TOTAL** | **55,584** | **73,243** | **94,747** | **121,629** | **152,007** | **186,579** |
| CORIX UTILITIES TEXAS INC* | 1,199 | 1,211 | 1,223 | 1,235 | 1,248 | 1,260 |
| HORSESHOE BAY | 4,933 | 5,117 | 4,989 | 5,058 | 4,984 | 4,872 |
| KINGSLAND WSC | 8,419 | 9,716 | 9,680 | 9,247 | 10,078 | 10,938 |

*A single asterisk next to a WUG's name denotes that the WUG is split by two or more planning regions.

# Region K Water User Group (WUG) Population

| | WUG POPULATION | | | | | |
|---|---|---|---|---|---|---|
| | 2020 | 2030 | 2040 | 2050 | 2060 | 2070 |
| LLANO | 3,565 | 3,759 | 3,754 | 3,689 | 3,814 | 3,943 |
| SUNRISE BEACH VILLAGE | 720 | 724 | 723 | 721 | 723 | 726 |
| COUNTY-OTHER | 2,455 | 1,926 | 2,053 | 2,085 | 1,932 | 1,810 |
| **COLORADO BASIN TOTAL** | **21,291** | **22,453** | **22,422** | **22,035** | **22,779** | **23,549** |
| **LLANO COUNTY TOTAL** | **21,291** | **22,453** | **22,422** | **22,035** | **22,779** | **23,549** |
| BAY CITY | 19,246 | 20,259 | 20,908 | 21,410 | 21,766 | 22,021 |
| CANEY CREEK MUD OF MATAGORDA COUNTY | 2,088 | 2,198 | 2,270 | 2,324 | 2,362 | 2,390 |
| CORIX UTILITIES TEXAS INC* | 36 | 39 | 39 | 40 | 41 | 42 |
| MATAGORDA COUNTY WCID 6 | 1,099 | 1,158 | 1,194 | 1,223 | 1,244 | 1,258 |
| MATAGORDA WASTE DISPOSAL & WSC | 276 | 291 | 300 | 308 | 312 | 317 |
| COUNTY-OTHER | 4,304 | 4,529 | 4,674 | 4,787 | 4,867 | 4,924 |
| **BRAZOS-COLORADO BASIN TOTAL** | **27,049** | **28,474** | **29,385** | **30,092** | **30,592** | **30,952** |
| BAY CITY | 39 | 41 | 42 | 43 | 44 | 45 |
| CORIX UTILITIES TEXAS INC* | 7 | 7 | 8 | 8 | 8 | 8 |
| MATAGORDA WASTE DISPOSAL & WSC | 415 | 437 | 451 | 461 | 469 | 475 |
| COUNTY-OTHER | 914 | 962 | 993 | 1,017 | 1,034 | 1,046 |
| **COLORADO BASIN TOTAL** | **1,375** | **1,447** | **1,494** | **1,529** | **1,555** | **1,574** |
| MARKHAM MUD | 1,013 | 1,066 | 1,101 | 1,127 | 1,146 | 1,159 |
| PALACIOS | 5,019 | 5,283 | 5,453 | 5,584 | 5,677 | 5,743 |
| COUNTY-OTHER | 4,710 | 4,956 | 5,115 | 5,238 | 5,326 | 5,387 |
| **COLORADO-LAVACA BASIN TOTAL** | **10,742** | **11,305** | **11,669** | **11,949** | **12,149** | **12,289** |
| **MATAGORDA COUNTY TOTAL** | **39,166** | **41,226** | **42,548** | **43,570** | **44,296** | **44,815** |
| GOLDTHWAITE | 54 | 56 | 57 | 60 | 62 | 64 |
| COUNTY-OTHER | 1,108 | 1,145 | 1,175 | 1,222 | 1,269 | 1,322 |
| **BRAZOS BASIN TOTAL** | **1,162** | **1,201** | **1,232** | **1,282** | **1,331** | **1,386** |
| BROOKESMITH SUD* | 48 | 50 | 51 | 53 | 55 | 57 |
| CORIX UTILITIES TEXAS INC* | 74 | 76 | 78 | 81 | 84 | 87 |
| GOLDTHWAITE | 2,021 | 2,088 | 2,146 | 2,229 | 2,315 | 2,411 |
| ZEPHYR WSC* | 39 | 40 | 42 | 43 | 45 | 47 |
| COUNTY-OTHER | 1,568 | 1,621 | 1,664 | 1,729 | 1,795 | 1,871 |
| **COLORADO BASIN TOTAL** | **3,750** | **3,875** | **3,981** | **4,135** | **4,294** | **4,473** |
| **MILLS COUNTY TOTAL** | **4,912** | **5,076** | **5,213** | **5,417** | **5,625** | **5,859** |
| CORIX UTILITIES TEXAS INC* | 94 | 99 | 100 | 98 | 100 | 103 |
| NORTH SAN SABA WSC | 647 | 678 | 681 | 671 | 686 | 702 |
| RICHLAND SUD* | 956 | 1,002 | 1,007 | 991 | 1,015 | 1,038 |
| SAN SABA | 3,384 | 3,546 | 3,565 | 3,507 | 3,591 | 3,673 |
| COUNTY-OTHER | 1,403 | 1,468 | 1,480 | 1,455 | 1,487 | 1,523 |
| **COLORADO BASIN TOTAL** | **6,484** | **6,793** | **6,833** | **6,722** | **6,879** | **7,039** |
| **SAN SABA COUNTY TOTAL** | **6,484** | **6,793** | **6,833** | **6,722** | **6,879** | **7,039** |
| AQUA WSC* | 6,627 | 7,652 | 8,618 | 9,700 | 10,656 | 11,544 |
| AUSTIN | 976,785 | 1,153,560 | 1,337,673 | 1,464,157 | 1,564,930 | 1,701,504 |
| BARTON CREEK WEST WSC | 1,337 | 1,337 | 1,337 | 1,337 | 1,337 | 1,337 |
| BARTON CREEK WSC | 702 | 832 | 956 | 1,047 | 1,121 | 1,206 |
| BRIARCLIFF | 2,009 | 2,320 | 2,613 | 2,942 | 3,231 | 3,500 |
| CEDAR PARK* | 10,913 | 11,641 | 12,521 | 12,521 | 12,521 | 12,521 |
| COTTONWOOD CREEK MUD 1 | 1,447 | 1,715 | 1,970 | 2,158 | 2,312 | 2,485 |
| CREEDMOOR-MAHA WSC* | 5,429 | 6,241 | 7,007 | 7,864 | 8,625 | 9,336 |

*A single asterisk next to a WUG's name denotes that the WUG is split by two or more planning regions.

## Region K Water User Group (WUG) Population

| | WUG POPULATION | | | | | |
|---|---|---|---|---|---|---|
| | 2020 | 2030 | 2040 | 2050 | 2060 | 2070 |
| CYPRESS RANCH WCID 1 | 1,233 | 1,416 | 1,551 | 1,661 | 1,786 | 1,786 |
| DEER CREEK RANCH WATER | 556 | 659 | 757 | 829 | 888 | 954 |
| ELGIN | 1,814 | 2,615 | 3,371 | 4,217 | 4,963 | 5,658 |
| GARFIELD WSC | 1,772 | 2,100 | 2,412 | 2,641 | 2,830 | 3,042 |
| HORNSBY BEND UTILITY | 7,066 | 8,372 | 9,616 | 10,531 | 11,282 | 12,130 |
| HURST CREEK MUD | 3,095 | 3,095 | 3,095 | 3,095 | 3,095 | 3,095 |
| JONESTOWN WSC | 3,948 | 4,222 | 4,481 | 4,768 | 5,022 | 5,259 |
| KELLY LANE WCID 1 | 1,693 | 1,693 | 1,693 | 1,693 | 1,693 | 1,693 |
| LAGO VISTA | 7,580 | 8,964 | 10,269 | 11,730 | 13,020 | 14,220 |
| LAKEWAY MUD | 10,906 | 11,546 | 12,186 | 12,826 | 13,025 | 13,025 |
| LEANDER* | 11,246 | 26,735 | 28,349 | 29,963 | 30,689 | 32,033 |
| LOOP 360 WSC | 2,086 | 2,169 | 2,262 | 2,344 | 2,420 | 2,556 |
| MANOR | 8,650 | 12,017 | 15,193 | 18,750 | 21,889 | 24,808 |
| MANVILLE WSC* | 15,661 | 19,292 | 22,716 | 26,550 | 29,934 | 33,081 |
| NORTH AUSTIN MUD 1 | 780 | 780 | 780 | 780 | 780 | 780 |
| NORTHTOWN MUD | 10,834 | 12,509 | 14,091 | 15,859 | 17,421 | 18,874 |
| OAK SHORES WATER SYSTEM | 546 | 632 | 632 | 632 | 632 | 632 |
| PFLUGERVILLE* | 62,745 | 78,245 | 95,599 | 112,807 | 130,167 | 130,167 |
| ROLLINGWOOD | 1,421 | 1,429 | 1,436 | 1,444 | 1,451 | 1,458 |
| ROUGH HOLLOW IN TRAVIS COUNTY | 2,767 | 5,698 | 5,698 | 5,698 | 5,698 | 5,698 |
| ROUND ROCK* | 1,732 | 2,003 | 2,258 | 2,544 | 2,796 | 3,030 |
| SENNA HILLS MUD | 1,219 | 1,445 | 1,660 | 1,818 | 1,947 | 2,093 |
| SHADY HOLLOW MUD | 4,366 | 4,366 | 4,366 | 4,366 | 4,366 | 4,366 |
| SUNSET VALLEY | 930 | 1,063 | 1,234 | 1,432 | 1,662 | 1,929 |
| SWEETWATER COMMUNITY | 2,760 | 5,832 | 5,832 | 5,832 | 5,832 | 5,832 |
| TRAVIS COUNTY MUD 10 | 348 | 412 | 474 | 519 | 556 | 597 |
| TRAVIS COUNTY MUD 14 | 2,015 | 2,388 | 2,742 | 3,003 | 3,218 | 3,459 |
| TRAVIS COUNTY MUD 2 | 2,527 | 2,994 | 3,439 | 3,767 | 4,036 | 4,338 |
| TRAVIS COUNTY MUD 4 | 2,446 | 2,825 | 3,182 | 3,581 | 3,934 | 4,263 |
| TRAVIS COUNTY WCID 10 | 7,628 | 8,364 | 9,058 | 9,835 | 10,521 | 11,160 |
| TRAVIS COUNTY WCID 17 | 36,720 | 39,741 | 43,715 | 44,473 | 45,671 | 47,125 |
| TRAVIS COUNTY WCID 18 | 6,344 | 7,324 | 8,250 | 9,287 | 10,201 | 11,051 |
| TRAVIS COUNTY WCID 19 | 682 | 682 | 682 | 682 | 682 | 682 |
| TRAVIS COUNTY WCID 20 | 1,130 | 1,130 | 1,130 | 1,130 | 1,130 | 1,130 |
| TRAVIS COUNTY WCID POINT VENTURE | 1,036 | 1,325 | 1,568 | 1,900 | 2,273 | 2,601 |
| WELLS BRANCH MUD | 18,750 | 18,750 | 18,750 | 18,750 | 18,750 | 18,750 |
| WEST TRAVIS COUNTY PUBLIC UTILITY AGENCY | 19,039 | 21,037 | 22,715 | 25,324 | 26,990 | 28,480 |
| WILLIAMSON COUNTY WSID 3* | 910 | 1,143 | 1,143 | 1,143 | 1,143 | 1,143 |
| WILLIAMSON TRAVIS COUNTIES MUD 1* | 1,113 | 1,113 | 1,113 | 1,113 | 1,113 | 1,113 |
| WINDERMERE UTILITY | 17,866 | 17,866 | 17,866 | 17,866 | 17,866 | 17,866 |
| COUNTY-OTHER \| AQUA TEXAS - RIVERCREST | 774 | 774 | 774 | 774 | 774 | 774 |
| COUNTY-OTHER | 6,130 | 6,130 | 6,130 | 6,130 | 6,130 | 6,130 |
| **COLORADO BASIN TOTAL** | **1,298,113** | **1,538,193** | **1,766,963** | **1,935,813** | **2,075,009** | **2,232,294** |
| CREEDMOOR-MAHA WSC* | 348 | 400 | 449 | 504 | 553 | 598 |
| GOFORTH SUD* | 87 | 115 | 148 | 190 | 237 | 291 |
| COUNTY-OTHER | 76 | 76 | 76 | 76 | 76 | 76 |
| **GUADALUPE BASIN TOTAL** | **511** | **591** | **673** | **770** | **866** | **965** |
| **TRAVIS COUNTY TOTAL** | **1,298,624** | **1,538,784** | **1,767,636** | **1,936,583** | **2,075,875** | **2,233,259** |

*A single asterisk next to a WUG's name denotes that the WUG is split by two or more planning regions.

# Region K Water User Group (WUG) Population

| | WUG POPULATION | | | | | |
|---|---|---|---|---|---|---|
| | 2020 | 2030 | 2040 | 2050 | 2060 | 2070 |
| BOLING MWD | 855 | 910 | 954 | 992 | 1,027 | 1,058 |
| WHARTON | 5,185 | 5,518 | 5,784 | 6,014 | 6,226 | 6,414 |
| WHARTON COUNTY WCID 2 | 2,235 | 2,379 | 2,493 | 2,593 | 2,684 | 2,765 |
| COUNTY-OTHER* | 8,614 | 9,165 | 9,608 | 9,991 | 10,344 | 10,656 |
| **BRAZOS-COLORADO BASIN TOTAL** | **16,889** | **17,972** | **18,839** | **19,590** | **20,281** | **20,893** |
| EL CAMPO* | 27 | 29 | 30 | 31 | 32 | 33 |
| WHARTON | 4,242 | 4,515 | 4,732 | 4,920 | 5,094 | 5,248 |
| COUNTY-OTHER* | 4,452 | 4,737 | 4,966 | 5,163 | 5,346 | 5,508 |
| **COLORADO BASIN TOTAL** | **8,721** | **9,281** | **9,728** | **10,114** | **10,472** | **10,789** |
| COUNTY-OTHER* | 1,434 | 1,526 | 1,599 | 1,663 | 1,722 | 1,774 |
| **COLORADO-LAVACA BASIN TOTAL** | **1,434** | **1,526** | **1,599** | **1,663** | **1,722** | **1,774** |
| COUNTY-OTHER* | 140 | 149 | 156 | 162 | 168 | 173 |
| **LAVACA BASIN TOTAL** | **140** | **149** | **156** | **162** | **168** | **173** |
| **WHARTON COUNTY TOTAL** | **27,184** | **28,928** | **30,322** | **31,529** | **32,643** | **33,629** |
| AUSTIN | 61,729 | 79,661 | 93,459 | 108,319 | 125,171 | 143,660 |
| NORTH AUSTIN MUD 1 | 7,442 | 7,442 | 7,442 | 7,442 | 7,442 | 7,442 |
| WELLS BRANCH MUD | 1,073 | 1,073 | 1,073 | 1,073 | 1,073 | 1,073 |
| COUNTY-OTHER* | 434 | 611 | 592 | 570 | 546 | 520 |
| **BRAZOS BASIN TOTAL** | **70,678** | **88,787** | **102,566** | **117,404** | **134,232** | **152,695** |
| **WILLIAMSON COUNTY TOTAL** | **70,678** | **88,787** | **102,566** | **117,404** | **134,232** | **152,695** |
| **REGION K POPULATION TOTAL** | **1,762,591** | **2,094,664** | **2,416,725** | **2,697,306** | **2,971,155** | **3,290,477** |

*A single asterisk next to a WUG's name denotes that the WUG is split by two or more planning regions.

# Region K Water User Group (WUG) Demand

| | WUG DEMAND (ACRE-FEET PER YEAR) | | | | | |
|---|---|---|---|---|---|---|
| | **2020** | **2030** | **2040** | **2050** | **2060** | **2070** |
| AQUA WSC* | 90 | 116 | 150 | 197 | 262 | 347 |
| LEE COUNTY WSC* | 54 | 68 | 88 | 115 | 153 | 203 |
| COUNTY-OTHER | 9 | 10 | 11 | 14 | 17 | 21 |
| MINING | 173 | 409 | 450 | 360 | 24 | 29 |
| LIVESTOCK | 70 | 70 | 70 | 70 | 70 | 70 |
| IRRIGATION | 257 | 257 | 257 | 257 | 257 | 257 |
| **BRAZOS BASIN TOTAL** | **653** | **930** | **1,026** | **1,013** | **783** | **927** |
| AQUA WSC* | 9,072 | 11,636 | 15,054 | 19,775 | 26,231 | 34,832 |
| BASTROP | 2,046 | 2,709 | 3,590 | 4,803 | 6,458 | 8,660 |
| BASTROP COUNTY WCID 2 | 479 | 690 | 971 | 1,357 | 1,882 | 2,580 |
| CREEDMOOR-MAHA WSC* | 2 | 3 | 3 | 3 | 4 | 4 |
| ELGIN | 1,317 | 1,674 | 2,155 | 2,822 | 3,734 | 4,950 |
| LEE COUNTY WSC* | 73 | 93 | 120 | 157 | 208 | 276 |
| POLONIA WSC* | 29 | 36 | 45 | 58 | 76 | 100 |
| SMITHVILLE | 821 | 1,048 | 1,351 | 1,774 | 2,353 | 3,125 |
| COUNTY-OTHER | 1,375 | 1,567 | 1,828 | 2,187 | 2,677 | 3,333 |
| MANUFACTURING | 188 | 215 | 215 | 215 | 215 | 215 |
| MINING | 2,567 | 6,064 | 6,674 | 5,339 | 355 | 423 |
| STEAM ELECTRIC POWER | 10,288 | 10,288 | 10,288 | 10,288 | 10,288 | 10,288 |
| LIVESTOCK | 1,011 | 1,011 | 1,011 | 1,011 | 1,011 | 1,011 |
| IRRIGATION | 3,808 | 3,808 | 3,808 | 3,808 | 3,808 | 3,808 |
| **COLORADO BASIN TOTAL** | **33,076** | **40,842** | **47,113** | **53,597** | **59,300** | **73,605** |
| AQUA WSC* | 64 | 82 | 106 | 140 | 185 | 246 |
| COUNTY-OTHER | 34 | 39 | 45 | 54 | 67 | 83 |
| MINING | 144 | 340 | 374 | 299 | 20 | 24 |
| LIVESTOCK | 54 | 54 | 54 | 54 | 54 | 54 |
| IRRIGATION | 215 | 215 | 215 | 215 | 215 | 215 |
| **GUADALUPE BASIN TOTAL** | **511** | **730** | **794** | **762** | **541** | **622** |
| **BASTROP COUNTY TOTAL** | **34,240** | **42,502** | **48,933** | **55,372** | **60,624** | **75,154** |
| JOHNSON CITY | 353 | 411 | 443 | 460 | 473 | 480 |
| COUNTY-OTHER | 576 | 653 | 688 | 698 | 701 | 696 |
| MINING | 5 | 5 | 5 | 5 | 5 | 5 |
| LIVESTOCK | 255 | 255 | 255 | 255 | 255 | 255 |
| IRRIGATION | 934 | 934 | 934 | 934 | 934 | 934 |
| **COLORADO BASIN TOTAL** | **2,123** | **2,258** | **2,325** | **2,352** | **2,368** | **2,370** |
| BLANCO | 316 | 365 | 393 | 407 | 418 | 425 |
| CANYON LAKE WATER SERVICE* | 83 | 115 | 147 | 180 | 213 | 245 |
| COUNTY-OTHER | 432 | 490 | 517 | 524 | 526 | 523 |
| LIVESTOCK | 76 | 76 | 76 | 76 | 76 | 76 |
| IRRIGATION | 393 | 393 | 393 | 393 | 393 | 393 |
| **GUADALUPE BASIN TOTAL** | **1,300** | **1,439** | **1,526** | **1,580** | **1,626** | **1,662** |
| **BLANCO COUNTY TOTAL** | **3,423** | **3,697** | **3,851** | **3,932** | **3,994** | **4,032** |
| BERTRAM | 430 | 511 | 581 | 649 | 710 | 764 |
| BURNET | 7 | 8 | 9 | 10 | 11 | 12 |
| GEORGETOWN* | 84 | 100 | 114 | 128 | 140 | 150 |
| KEMPNER WSC* | 132 | 146 | 158 | 171 | 184 | 196 |
| COUNTY-OTHER | 1,228 | 1,366 | 1,364 | 1,499 | 1,627 | 1,740 |
| MINING | 1,123 | 1,354 | 1,595 | 1,815 | 2,067 | 2,354 |

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# Region K Water User Group (WUG) Demand

| | WUG DEMAND (ACRE-FEET PER YEAR) | | | | | |
|---|---|---|---|---|---|---|
| | **2020** | **2030** | **2040** | **2050** | **2060** | **2070** |
| LIVESTOCK | 630 | 630 | 630 | 630 | 630 | 630 |
| IRRIGATION | 160 | 160 | 160 | 160 | 160 | 160 |
| **BRAZOS BASIN TOTAL** | **3,794** | **4,275** | **4,611** | **5,062** | **5,529** | **6,006** |
| BURNET | 1,654 | 1,968 | 2,235 | 2,496 | 2,731 | 2,937 |
| CORIX UTILITIES TEXAS INC* | 126 | 149 | 168 | 187 | 204 | 220 |
| COTTONWOOD SHORES | 245 | 291 | 330 | 368 | 402 | 433 |
| GRANITE SHOALS | 578 | 646 | 701 | 765 | 877 | 1,052 |
| HORSESHOE BAY | 548 | 767 | 952 | 1,128 | 1,285 | 1,421 |
| KINGSLAND WSC | 46 | 55 | 62 | 69 | 75 | 81 |
| MARBLE FALLS | 2,354 | 3,400 | 4,884 | 5,661 | 6,184 | 6,446 |
| MEADOWLAKES | 852 | 843 | 838 | 836 | 835 | 835 |
| COUNTY-OTHER | 2,186 | 2,432 | 2,428 | 2,668 | 2,897 | 3,098 |
| MANUFACTURING | 251 | 299 | 299 | 299 | 299 | 299 |
| MINING | 3,367 | 4,058 | 4,784 | 5,440 | 6,196 | 7,058 |
| LIVESTOCK | 1,061 | 1,061 | 1,061 | 1,061 | 1,061 | 1,061 |
| IRRIGATION | 1,338 | 1,338 | 1,338 | 1,338 | 1,338 | 1,338 |
| **COLORADO BASIN TOTAL** | **14,606** | **17,307** | **20,080** | **22,316** | **24,384** | **26,279** |
| **BURNET COUNTY TOTAL** | **18,400** | **21,582** | **24,691** | **27,378** | **29,913** | **32,285** |
| EAGLE LAKE | 159 | 160 | 160 | 165 | 170 | 176 |
| COUNTY-OTHER | 154 | 155 | 156 | 160 | 165 | 170 |
| MANUFACTURING | 13 | 15 | 15 | 15 | 15 | 15 |
| MINING | 160 | 162 | 163 | 165 | 167 | 168 |
| LIVESTOCK | 163 | 163 | 163 | 163 | 163 | 163 |
| IRRIGATION | 50,709 | 49,345 | 48,017 | 46,726 | 45,469 | 44,246 |
| **BRAZOS-COLORADO BASIN TOTAL** | **51,358** | **50,000** | **48,674** | **47,394** | **46,149** | **44,938** |
| COLUMBUS | 1,134 | 1,164 | 1,185 | 1,229 | 1,271 | 1,313 |
| CORIX UTILITIES TEXAS INC* | 43 | 44 | 44 | 46 | 47 | 49 |
| EAGLE LAKE | 362 | 365 | 366 | 375 | 388 | 400 |
| WEIMAR | 163 | 166 | 169 | 175 | 181 | 187 |
| COUNTY-OTHER | 969 | 975 | 977 | 1,005 | 1,038 | 1,072 |
| MANUFACTURING | 50 | 59 | 59 | 59 | 59 | 59 |
| MINING | 4,899 | 4,947 | 4,999 | 5,048 | 5,098 | 5,149 |
| STEAM ELECTRIC POWER | 228 | 228 | 228 | 228 | 228 | 228 |
| LIVESTOCK | 740 | 740 | 740 | 740 | 740 | 740 |
| IRRIGATION | 34,346 | 33,422 | 32,523 | 31,648 | 30,797 | 29,969 |
| **COLORADO BASIN TOTAL** | **42,934** | **42,110** | **41,290** | **40,553** | **39,847** | **39,166** |
| WEIMAR | 333 | 341 | 346 | 358 | 370 | 382 |
| COUNTY-OTHER | 330 | 333 | 334 | 343 | 354 | 365 |
| MANUFACTURING | 897 | 1,058 | 1,058 | 1,058 | 1,058 | 1,058 |
| MINING | 266 | 269 | 271 | 274 | 277 | 280 |
| STEAM ELECTRIC POWER | 4,743 | 4,743 | 4,743 | 4,743 | 4,743 | 4,743 |
| LIVESTOCK | 373 | 373 | 373 | 373 | 373 | 373 |
| IRRIGATION | 88,057 | 85,688 | 83,384 | 81,140 | 78,957 | 76,833 |
| **LAVACA BASIN TOTAL** | **94,999** | **92,805** | **90,509** | **88,289** | **86,132** | **84,034** |
| **COLORADO COUNTY TOTAL** | **189,291** | **184,915** | **180,473** | **176,236** | **172,128** | **168,138** |
| AQUA WSC* | 4 | 4 | 5 | 5 | 5 | 5 |
| FAYETTE COUNTY WCID MONUMENT HILL | 184 | 192 | 205 | 217 | 227 | 235 |
| FAYETTE WSC | 610 | 679 | 725 | 765 | 799 | 827 |

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# Region K Water User Group (WUG) Demand

| | WUG DEMAND (ACRE-FEET PER YEAR) | | | | | |
|---|---|---|---|---|---|---|
| | 2020 | 2030 | 2040 | 2050 | 2060 | 2070 |
| LA GRANGE | 957 | 1,063 | 1,132 | 1,194 | 1,248 | 1,292 |
| LEE COUNTY WSC* | 182 | 202 | 215 | 226 | 236 | 244 |
| WEST END WSC* | 130 | 142 | 153 | 167 | 183 | 201 |
| COUNTY-OTHER | 810 | 897 | 945 | 988 | 1,025 | 1,052 |
| MANUFACTURING | 2 | 3 | 3 | 3 | 3 | 3 |
| MINING | 2,046 | 1,646 | 1,187 | 743 | 291 | 284 |
| STEAM ELECTRIC POWER | 49,211 | 49,211 | 49,211 | 49,211 | 49,211 | 49,211 |
| LIVESTOCK | 1,370 | 1,370 | 1,370 | 1,370 | 1,370 | 1,370 |
| IRRIGATION | 521 | 521 | 521 | 521 | 521 | 521 |
| **COLORADO BASIN TOTAL** | **56,027** | **55,930** | **55,672** | **55,410** | **55,119** | **55,245** |
| FAYETTE WSC | 40 | 44 | 47 | 50 | 52 | 54 |
| FLATONIA | 65 | 73 | 78 | 82 | 86 | 89 |
| COUNTY-OTHER | 49 | 54 | 57 | 59 | 62 | 63 |
| MINING | 126 | 101 | 73 | 46 | 18 | 17 |
| LIVESTOCK | 78 | 78 | 78 | 78 | 78 | 78 |
| IRRIGATION | 83 | 83 | 83 | 83 | 83 | 83 |
| **GUADALUPE BASIN TOTAL** | **441** | **433** | **416** | **398** | **379** | **384** |
| FAYETTE WSC | 72 | 80 | 85 | 90 | 94 | 97 |
| FLATONIA | 281 | 313 | 334 | 353 | 369 | 381 |
| SCHULENBURG | 701 | 783 | 838 | 885 | 926 | 958 |
| COUNTY-OTHER | 379 | 419 | 442 | 462 | 479 | 491 |
| MANUFACTURING | 394 | 439 | 439 | 439 | 439 | 439 |
| MINING | 354 | 285 | 205 | 129 | 50 | 49 |
| LIVESTOCK | 278 | 278 | 278 | 278 | 278 | 278 |
| IRRIGATION | 224 | 224 | 224 | 224 | 224 | 224 |
| **LAVACA BASIN TOTAL** | **2,683** | **2,821** | **2,845** | **2,860** | **2,859** | **2,917** |
| **FAYETTE COUNTY TOTAL** | **59,151** | **59,184** | **58,933** | **58,668** | **58,357** | **58,546** |
| FREDERICKSBURG | 3,351 | 3,543 | 3,703 | 3,911 | 4,118 | 4,322 |
| COUNTY-OTHER | 1,668 | 1,738 | 1,797 | 1,891 | 1,995 | 2,100 |
| MANUFACTURING | 77 | 93 | 93 | 93 | 93 | 93 |
| MINING | 4 | 4 | 4 | 4 | 4 | 4 |
| LIVESTOCK | 1,175 | 1,175 | 1,175 | 1,175 | 1,175 | 1,175 |
| IRRIGATION | 2,383 | 2,383 | 2,383 | 2,383 | 2,383 | 2,383 |
| **COLORADO BASIN TOTAL** | **8,658** | **8,936** | **9,155** | **9,457** | **9,768** | **10,077** |
| COUNTY-OTHER | 67 | 70 | 72 | 76 | 80 | 84 |
| LIVESTOCK | 37 | 37 | 37 | 37 | 37 | 37 |
| **GUADALUPE BASIN TOTAL** | **104** | **107** | **109** | **113** | **117** | **121** |
| **GILLESPIE COUNTY TOTAL** | **8,762** | **9,043** | **9,264** | **9,570** | **9,885** | **10,198** |
| AUSTIN | 188 | 827 | 1,304 | 2,063 | 3,025 | 4,357 |
| BUDA* | 1,768 | 2,508 | 3,419 | 4,563 | 5,860 | 7,338 |
| CIMARRON PARK WATER | 244 | 236 | 230 | 226 | 225 | 225 |
| DEER CREEK RANCH WATER | 26 | 29 | 33 | 35 | 38 | 41 |
| DRIPPING SPRINGS WSC | 1,930 | 3,190 | 4,103 | 5,278 | 6,716 | 7,476 |
| GOFORTH SUD* | 153 | 196 | 249 | 317 | 395 | 484 |
| HAYS | 183 | 235 | 294 | 348 | 435 | 533 |
| HAYS COUNTY WCID 1 | 821 | 808 | 801 | 798 | 797 | 797 |
| HAYS COUNTY WCID 2 | 285 | 369 | 464 | 551 | 688 | 844 |
| WEST TRAVIS COUNTY PUBLIC UTILITY AGENCY | 4,499 | 5,590 | 6,273 | 7,711 | 9,151 | 10,593 |

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# Region K Water User Group (WUG) Demand

| | WUG DEMAND (ACRE-FEET PER YEAR) | | | | | |
|---|---|---|---|---|---|---|
| | 2020 | 2030 | 2040 | 2050 | 2060 | 2070 |
| COUNTY-OTHER* | 1,351 | 1,038 | 1,553 | 1,929 | 2,245 | 3,118 |
| MANUFACTURING* | 277 | 324 | 324 | 324 | 324 | 324 |
| MINING | 845 | 1,075 | 1,361 | 1,445 | 1,654 | 1,893 |
| STEAM ELECTRIC POWER | 1,187 | 1,187 | 1,187 | 1,187 | 1,187 | 1,187 |
| LIVESTOCK* | 17 | 17 | 17 | 17 | 17 | 17 |
| IRRIGATION* | 525 | 525 | 525 | 525 | 525 | 525 |
| **COLORADO BASIN TOTAL** | **14,299** | **18,154** | **22,137** | **27,317** | **33,282** | **39,752** |
| **HAYS COUNTY TOTAL** | **14,299** | **18,154** | **22,137** | **27,317** | **33,282** | **39,752** |
| CORIX UTILITIES TEXAS INC* | 187 | 184 | 183 | 184 | 185 | 187 |
| HORSESHOE BAY | 2,268 | 2,333 | 2,264 | 2,289 | 2,255 | 2,203 |
| KINGSLAND WSC | 918 | 1,032 | 1,015 | 962 | 1,045 | 1,133 |
| LLANO | 862 | 891 | 877 | 855 | 883 | 913 |
| SUNRISE BEACH VILLAGE | 74 | 71 | 69 | 68 | 68 | 68 |
| COUNTY-OTHER | 260 | 202 | 215 | 217 | 200 | 187 |
| MANUFACTURING | 3 | 4 | 4 | 4 | 4 | 4 |
| MINING | 3 | 3 | 3 | 3 | 3 | 3 |
| STEAM ELECTRIC POWER | 1,748 | 1,748 | 1,748 | 1,748 | 1,748 | 1,748 |
| LIVESTOCK | 580 | 580 | 580 | 580 | 580 | 580 |
| IRRIGATION | 998 | 998 | 998 | 998 | 998 | 998 |
| **COLORADO BASIN TOTAL** | **7,901** | **8,046** | **7,956** | **7,908** | **7,969** | **8,024** |
| **LLANO COUNTY TOTAL** | **7,901** | **8,046** | **7,956** | **7,908** | **7,969** | **8,024** |
| BAY CITY | 2,910 | 2,963 | 2,979 | 3,025 | 3,068 | 3,104 |
| CANEY CREEK MUD OF MATAGORDA COUNTY | 252 | 255 | 255 | 258 | 261 | 264 |
| CORIX UTILITIES TEXAS INC* | 6 | 6 | 6 | 6 | 6 | 6 |
| MATAGORDA COUNTY WCID 6 | 113 | 113 | 112 | 113 | 115 | 116 |
| MATAGORDA WASTE DISPOSAL & WSC | 51 | 52 | 52 | 53 | 54 | 55 |
| COUNTY-OTHER | 449 | 451 | 448 | 450 | 456 | 461 |
| MINING | 53 | 56 | 42 | 30 | 19 | 12 |
| LIVESTOCK | 475 | 475 | 475 | 475 | 475 | 475 |
| IRRIGATION | 92,589 | 90,098 | 87,675 | 85,316 | 83,021 | 80,788 |
| **BRAZOS-COLORADO BASIN TOTAL** | **96,898** | **94,469** | **92,044** | **89,726** | **87,475** | **85,281** |
| BAY CITY | 6 | 6 | 6 | 6 | 6 | 6 |
| CORIX UTILITIES TEXAS INC* | 1 | 1 | 1 | 1 | 1 | 1 |
| MATAGORDA WASTE DISPOSAL & WSC | 76 | 78 | 79 | 80 | 81 | 82 |
| COUNTY-OTHER | 95 | 96 | 95 | 96 | 97 | 98 |
| MANUFACTURING | 4,199 | 4,916 | 4,916 | 4,916 | 4,916 | 4,916 |
| MINING | 8 | 8 | 6 | 5 | 3 | 2 |
| STEAM ELECTRIC POWER | 80,536 | 80,536 | 80,536 | 80,536 | 80,536 | 80,536 |
| LIVESTOCK | 94 | 94 | 94 | 94 | 94 | 94 |
| IRRIGATION | 1,719 | 1,672 | 1,627 | 1,584 | 1,541 | 1,500 |
| **COLORADO BASIN TOTAL** | **86,734** | **87,407** | **87,360** | **87,318** | **87,275** | **87,235** |
| MARKHAM MUD | 97 | 96 | 96 | 96 | 98 | 99 |
| PALACIOS | 615 | 623 | 624 | 629 | 638 | 645 |
| COUNTY-OTHER | 492 | 493 | 491 | 492 | 499 | 505 |
| MINING | 35 | 36 | 27 | 20 | 13 | 8 |
| LIVESTOCK | 506 | 506 | 506 | 506 | 506 | 506 |

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# Region K Water User Group (WUG) Demand

| | WUG DEMAND (ACRE-FEET PER YEAR) | | | | | |
|---|---|---|---|---|---|---|
| | 2020 | 2030 | 2040 | 2050 | 2060 | 2070 |
| IRRIGATION | 97,280 | 94,664 | 92,117 | 89,639 | 87,228 | 84,881 |
| **COLORADO-LAVACA BASIN TOTAL** | **99,025** | **96,418** | **93,861** | **91,382** | **88,982** | **86,644** |
| **MATAGORDA COUNTY TOTAL** | **282,657** | **278,294** | **273,265** | **268,426** | **263,732** | **259,160** |
| GOLDTHWAITE | 10 | 10 | 11 | 11 | 11 | 12 |
| COUNTY-OTHER | 142 | 141 | 140 | 144 | 149 | 155 |
| MINING | 2 | 2 | 2 | 2 | 2 | 2 |
| LIVESTOCK | 293 | 293 | 293 | 293 | 293 | 293 |
| IRRIGATION | 2,988 | 2,988 | 2,988 | 2,988 | 2,988 | 2,988 |
| **BRAZOS BASIN TOTAL** | **3,435** | **3,434** | **3,434** | **3,438** | **3,443** | **3,450** |
| BROOKESMITH SUD* | 7 | 7 | 7 | 7 | 8 | 8 |
| CORIX UTILITIES TEXAS INC* | 12 | 12 | 12 | 12 | 12 | 13 |
| GOLDTHWAITE | 390 | 393 | 395 | 407 | 422 | 439 |
| ZEPHYR WSC* | 3 | 3 | 3 | 3 | 3 | 4 |
| COUNTY-OTHER | 201 | 200 | 198 | 204 | 211 | 220 |
| MANUFACTURING | 2 | 2 | 2 | 2 | 2 | 2 |
| MINING | 2 | 2 | 2 | 2 | 2 | 2 |
| LIVESTOCK | 570 | 570 | 570 | 570 | 570 | 570 |
| IRRIGATION | 1,755 | 1,755 | 1,755 | 1,755 | 1,755 | 1,755 |
| **COLORADO BASIN TOTAL** | **2,942** | **2,944** | **2,944** | **2,962** | **2,985** | **3,013** |
| **MILLS COUNTY TOTAL** | **6,377** | **6,378** | **6,378** | **6,400** | **6,428** | **6,463** |
| CORIX UTILITIES TEXAS INC* | 15 | 15 | 15 | 15 | 15 | 15 |
| NORTH SAN SABA WSC | 185 | 191 | 190 | 187 | 191 | 195 |
| RICHLAND SUD* | 224 | 231 | 229 | 224 | 229 | 235 |
| SAN SABA | 1,175 | 1,216 | 1,212 | 1,186 | 1,213 | 1,241 |
| COUNTY-OTHER | 218 | 220 | 217 | 213 | 217 | 222 |
| MANUFACTURING | 10 | 12 | 12 | 12 | 12 | 12 |
| MINING | 1,088 | 1,093 | 944 | 900 | 864 | 838 |
| LIVESTOCK | 779 | 779 | 779 | 779 | 779 | 779 |
| IRRIGATION | 7,199 | 7,199 | 7,199 | 7,199 | 7,199 | 7,199 |
| **COLORADO BASIN TOTAL** | **10,893** | **10,956** | **10,797** | **10,715** | **10,719** | **10,736** |
| **SAN SABA COUNTY TOTAL** | **10,893** | **10,956** | **10,797** | **10,715** | **10,719** | **10,736** |
| AQUA WSC* | 1,088 | 1,226 | 1,362 | 1,524 | 1,671 | 1,809 |
| AUSTIN | 170,686 | 198,992 | 230,751 | 252,570 | 269,954 | 293,513 |
| BARTON CREEK WEST WSC | 436 | 433 | 430 | 428 | 427 | 427 |
| BARTON CREEK WSC | 524 | 619 | 709 | 776 | 830 | 893 |
| BRIARCLIFF | 300 | 340 | 380 | 425 | 466 | 504 |
| CEDAR PARK* | 2,251 | 2,387 | 2,554 | 2,550 | 2,547 | 2,546 |
| COTTONWOOD CREEK MUD 1 | 95 | 107 | 120 | 129 | 138 | 148 |
| CREEDMOOR-MAHA WSC* | 602 | 662 | 721 | 797 | 872 | 944 |
| CYPRESS RANCH WCID 1 | 121 | 134 | 144 | 153 | 164 | 163 |
| DEER CREEK RANCH WATER | 43 | 49 | 55 | 59 | 63 | 68 |
| ELGIN | 255 | 357 | 453 | 563 | 662 | 754 |
| GARFIELD WSC | 199 | 230 | 259 | 281 | 301 | 323 |
| HORNSBY BEND UTILITY | 594 | 678 | 761 | 823 | 879 | 944 |
| HURST CREEK MUD | 1,718 | 1,709 | 1,703 | 1,700 | 1,699 | 1,699 |
| JONESTOWN WSC | 675 | 709 | 744 | 787 | 828 | 866 |
| KELLY LANE WCID 1 | 322 | 317 | 313 | 312 | 311 | 311 |

*A single asterisk next to a WUG's name denotes that the WUG is split by more than one planning region.

# Region K Water User Group (WUG) Demand

| | WUG DEMAND (ACRE-FEET PER YEAR) | | | | | |
|---|---|---|---|---|---|---|
| | 2020 | 2030 | 2040 | 2050 | 2060 | 2070 |
| LAGO VISTA | 1,868 | 2,184 | 2,487 | 2,832 | 3,140 | 3,428 |
| LAKEWAY MUD | 2,757 | 2,882 | 3,019 | 3,166 | 3,212 | 3,211 |
| LEANDER* | 1,519 | 3,550 | 3,747 | 3,953 | 4,046 | 4,222 |
| LOOP 360 WSC | 1,225 | 1,268 | 1,318 | 1,363 | 1,407 | 1,486 |
| MANOR | 1,110 | 1,517 | 1,907 | 2,346 | 2,736 | 3,099 |
| MANVILLE WSC* | 2,439 | 2,946 | 3,435 | 3,994 | 4,496 | 4,966 |
| NORTH AUSTIN MUD 1 | 81 | 78 | 76 | 75 | 75 | 75 |
| NORTHTOWN MUD | 728 | 841 | 947 | 1,066 | 1,171 | 1,268 |
| OAK SHORES WATER SYSTEM | 150 | 171 | 170 | 169 | 169 | 169 |
| PFLUGERVILLE* | 10,403 | 12,819 | 15,598 | 18,364 | 21,167 | 21,156 |
| ROLLINGWOOD | 383 | 379 | 375 | 374 | 375 | 377 |
| ROUGH HOLLOW IN TRAVIS COUNTY | 589 | 1,213 | 1,213 | 1,213 | 1,213 | 1,213 |
| ROUND ROCK* | 278 | 315 | 352 | 395 | 434 | 470 |
| SENNA HILLS MUD | 420 | 493 | 564 | 616 | 659 | 708 |
| SHADY HOLLOW MUD | 793 | 775 | 759 | 750 | 749 | 749 |
| SUNSET VALLEY | 368 | 417 | 483 | 559 | 649 | 753 |
| SWEETWATER COMMUNITY | 408 | 862 | 862 | 862 | 862 | 862 |
| TRAVIS COUNTY MUD 10 | 74 | 87 | 99 | 108 | 115 | 124 |
| TRAVIS COUNTY MUD 14 | 172 | 196 | 220 | 238 | 254 | 273 |
| TRAVIS COUNTY MUD 2 | 322 | 372 | 421 | 457 | 489 | 525 |
| TRAVIS COUNTY MUD 4 | 1,500 | 1,728 | 1,945 | 2,188 | 2,402 | 2,603 |
| TRAVIS COUNTY WCID 10 | 3,499 | 3,802 | 4,094 | 4,433 | 4,739 | 5,026 |
| TRAVIS COUNTY WCID 17 | 9,370 | 10,053 | 11,016 | 11,186 | 11,479 | 11,841 |
| TRAVIS COUNTY WCID 18 | 1,070 | 1,207 | 1,341 | 1,499 | 1,643 | 1,779 |
| TRAVIS COUNTY WCID 19 | 449 | 447 | 445 | 444 | 444 | 444 |
| TRAVIS COUNTY WCID 20 | 584 | 581 | 579 | 577 | 577 | 577 |
| TRAVIS COUNTY WCID POINT VENTURE | 255 | 322 | 378 | 456 | 545 | 624 |
| WELLS BRANCH MUD | 1,397 | 1,352 | 1,321 | 1,303 | 1,298 | 1,297 |
| WEST TRAVIS COUNTY PUBLIC UTILITY AGENCY | 6,698 | 7,357 | 7,925 | 8,824 | 9,398 | 9,914 |
| WILLIAMSON COUNTY WSID 3* | 120 | 147 | 145 | 144 | 144 | 144 |
| WILLIAMSON TRAVIS COUNTIES MUD 1* | 145 | 141 | 139 | 139 | 138 | 138 |
| WINDERMERE UTILITY | 2,920 | 2,864 | 2,831 | 2,815 | 2,810 | 2,809 |
| COUNTY-OTHER \| AQUA TEXAS - RIVERCREST | 317 | 315 | 313 | 312 | 312 | 312 |
| COUNTY-OTHER | 859 | 852 | 850 | 847 | 841 | 839 |
| MANUFACTURING | 13,164 | 14,853 | 14,853 | 14,853 | 14,853 | 14,853 |
| MINING | 3,467 | 4,067 | 4,714 | 5,320 | 5,986 | 6,749 |
| STEAM ELECTRIC POWER | 10,253 | 10,253 | 10,253 | 10,253 | 10,253 | 10,253 |
| LIVESTOCK | 509 | 509 | 509 | 509 | 509 | 509 |
| IRRIGATION | 4,816 | 4,816 | 4,816 | 4,816 | 4,816 | 4,816 |
| **COLORADO BASIN TOTAL** | **267,388** | **307,980** | **347,978** | **377,695** | **402,417** | **430,573** |
| CREEDMOOR-MAHA WSC* | 39 | 42 | 46 | 51 | 56 | 60 |
| GOFORTH SUD* | 10 | 12 | 16 | 20 | 25 | 31 |
| COUNTY-OTHER | 11 | 11 | 10 | 10 | 10 | 10 |
| MINING | 35 | 41 | 48 | 54 | 60 | 68 |
| LIVESTOCK | 18 | 18 | 18 | 18 | 18 | 18 |
| **GUADALUPE BASIN TOTAL** | **113** | **124** | **138** | **153** | **169** | **187** |
| **TRAVIS COUNTY TOTAL** | **267,501** | **308,104** | **348,116** | **377,848** | **402,586** | **430,760** |
| BOLING MWD | 105 | 107 | 109 | 112 | 115 | 119 |

*A single asterisk next to a WUG's name denotes that the WUG is split by more than one planning region.

# Region K Water User Group (WUG) Demand

| | WUG DEMAND (ACRE-FEET PER YEAR) | | | | | |
|---|---|---|---|---|---|---|
| | **2020** | **2030** | **2040** | **2050** | **2060** | **2070** |
| WHARTON | 924 | 956 | 980 | 1,010 | 1,044 | 1,075 |
| WHARTON COUNTY WCID 2 | 456 | 474 | 488 | 503 | 520 | 535 |
| COUNTY-OTHER* | 1,136 | 1,160 | 1,181 | 1,225 | 1,264 | 1,303 |
| MANUFACTURING* | 63 | 69 | 69 | 69 | 69 | 69 |
| MINING* | 39 | 41 | 30 | 23 | 14 | 10 |
| STEAM ELECTRIC POWER* | 1 | 1 | 1 | 1 | 1 | 1 |
| LIVESTOCK* | 404 | 404 | 404 | 404 | 404 | 404 |
| IRRIGATION* | 106,320 | 103,461 | 100,678 | 97,969 | 95,334 | 92,770 |
| **BRAZOS-COLORADO BASIN TOTAL** | **109,448** | **106,673** | **103,940** | **101,316** | **98,765** | **96,286** |
| EL CAMPO* | 5 | 5 | 5 | 6 | 6 | 6 |
| WHARTON | 756 | 782 | 802 | 827 | 854 | 880 |
| COUNTY-OTHER* | 587 | 599 | 611 | 633 | 654 | 673 |
| MANUFACTURING* | 93 | 102 | 102 | 102 | 102 | 102 |
| MINING* | 26 | 27 | 20 | 15 | 10 | 6 |
| STEAM ELECTRIC POWER* | 7,900 | 7,900 | 7,900 | 7,900 | 7,900 | 7,900 |
| LIVESTOCK* | 301 | 301 | 301 | 301 | 301 | 301 |
| IRRIGATION* | 65,853 | 64,081 | 62,357 | 60,680 | 59,048 | 57,460 |
| **COLORADO BASIN TOTAL** | **75,521** | **73,797** | **72,098** | **70,464** | **68,875** | **67,328** |
| COUNTY-OTHER* | 189 | 193 | 197 | 204 | 211 | 217 |
| MINING* | 6 | 6 | 5 | 3 | 2 | 1 |
| LIVESTOCK* | 87 | 87 | 87 | 87 | 87 | 87 |
| IRRIGATION* | 16,937 | 16,481 | 16,038 | 15,607 | 15,187 | 14,778 |
| **COLORADO-LAVACA BASIN TOTAL** | **17,219** | **16,767** | **16,327** | **15,901** | **15,487** | **15,083** |
| COUNTY-OTHER* | 18 | 19 | 19 | 20 | 21 | 21 |
| **LAVACA BASIN TOTAL** | **18** | **19** | **19** | **20** | **21** | **21** |
| **WHARTON COUNTY TOTAL** | **202,206** | **197,256** | **192,384** | **187,701** | **183,148** | **178,718** |
| AUSTIN | 10,787 | 13,742 | 16,122 | 18,685 | 21,592 | 24,782 |
| NORTH AUSTIN MUD 1 | 774 | 747 | 726 | 714 | 711 | 711 |
| WELLS BRANCH MUD | 80 | 77 | 76 | 75 | 74 | 74 |
| COUNTY-OTHER* | 67 | 93 | 89 | 85 | 81 | 77 |
| MANUFACTURING* | 25 | 30 | 30 | 30 | 30 | 30 |
| MINING* | 5 | 3 | 3 | 3 | 3 | 3 |
| **BRAZOS BASIN TOTAL** | **11,738** | **14,692** | **17,046** | **19,592** | **22,491** | **25,677** |
| **WILLIAMSON COUNTY TOTAL** | **11,738** | **14,692** | **17,046** | **19,592** | **22,491** | **25,677** |
| **REGION K DEMAND TOTAL** | **1,116,839** | **1,162,803** | **1,204,224** | **1,237,063** | **1,265,256** | **1,307,643** |

*A single asterisk next to a WUG's name denotes that the WUG is split by more than one planning region.

# *APPENDIX 2B*

## *LOWER COLORADO REGIONAL WATER PLANNING AREA GALLONS PER CAPITA DAILY (GPCD)*

## *REGION K MUNICIPAL WATER DEMAND SAVINGS DUE TO PLUMBING CODES AND WATER-EFFICIENT APPLIANCES*

| | | | Region K Gallons per Capita per Day (GPCD) Projections | | | | | |
|---|---|---|---|---|---|---|---|---|
| Region | County | WUG Name | 2020 | 2030 | 2040 | 2050 | 2060 | 2070 |
| K | BASTROP | AQUA WSC | 147 | 143 | 141 | 140 | 140 | 140 |
| K | BASTROP | BASTROP | 165 | 161 | 159 | 158 | 158 | 158 |
| K | BASTROP | BASTROP COUNTY WCID 2 | 85 | 83 | 82 | 81 | 81 | 81 |
| K | BASTROP | COUNTY-OTHER, BASTROP | 162 | 160 | 159 | 158 | 158 | 158 |
| K | BASTROP | CREEDMOOR-MAHA WSC | 81 | 107 | 92 | 81 | 97 | 89 |
| K | BASTROP | ELGIN | 125 | 122 | 120 | 119 | 119 | 119 |
| K | BASTROP | LEE COUNTY WSC | 113 | 110 | 108 | 107 | 106 | 106 |
| K | BASTROP | POLONIA WSC | 110 | 107 | 104 | 104 | 104 | 104 |
| K | BASTROP | SMITHVILLE | 153 | 148 | 146 | 145 | 145 | 145 |
| K | BLANCO | BLANCO | 131 | 127 | 125 | 124 | 124 | 124 |
| K | BLANCO | CANYON LAKE WATER SERVICE | 111 | 110 | 109 | 109 | 109 | 109 |
| K | BLANCO | COUNTY-OTHER, BLANCO | 111 | 107 | 105 | 104 | 104 | 104 |
| K | BLANCO | JOHNSON CITY | 154 | 150 | 148 | 147 | 147 | 147 |
| K | BURNET | BERTRAM | 218 | 214 | 212 | 211 | 211 | 211 |
| K | BURNET | BURNET | 200 | 196 | 195 | 194 | 193 | 193 |
| K | BURNET | CORIX UTILITIES TEXAS INC | 139 | 136 | 134 | 133 | 132 | 132 |
| K | BURNET | COTTONWOOD SHORES | 157 | 154 | 152 | 151 | 151 | 151 |
| K | BURNET | COUNTY-OTHER, BURNET | 137 | 134 | 132 | 131 | 131 | 131 |
| K | BURNET | GEORGETOWN | 198 | 194 | 193 | 193 | 193 | 192 |
| K | BURNET | GRANITE SHOALS | 96 | 93 | 92 | 91 | 91 | 91 |
| K | BURNET | HORSESHOE BAY | 410 | 407 | 405 | 404 | 404 | 404 |
| K | BURNET | KEMPNER WSC | 155 | 153 | 151 | 150 | 150 | 149 |
| K | BURNET | KINGSLAND WSC | 97 | 95 | 94 | 93 | 92 | 93 |
| K | BURNET | MARBLE FALLS | 239 | 235 | 233 | 233 | 233 | 233 |
| K | BURNET | MEADOWLAKES | 299 | 296 | 295 | 294 | 293 | 293 |
| K | COLORADO | COLUMBUS | 264 | 260 | 257 | 255 | 255 | 255 |
| K | COLORADO | CORIX UTILITIES TEXAS INC | 140 | 137 | 133 | 133 | 131 | 132 |
| K | COLORADO | COUNTY-OTHER, COLORADO | 110 | 106 | 103 | 101 | 101 | 101 |
| K | COLORADO | EAGLE LAKE | 122 | 118 | 115 | 113 | 113 | 112 |
| K | COLORADO | WEIMAR | 204 | 201 | 197 | 196 | 195 | 195 |
| K | FAYETTE | AQUA WSC | 147 | 143 | 141 | 140 | 140 | 140 |
| K | FAYETTE | COUNTY-OTHER, FAYETTE | 116 | 112 | 109 | 108 | 107 | 107 |
| K | FAYETTE | FAYETTE COUNTY WCID MONUMENT HILL | 216 | 213 | 210 | 209 | 209 | 209 |
| K | FAYETTE | FAYETTE WSC | 125 | 122 | 120 | 119 | 119 | 119 |
| K | FAYETTE | FLATONIA | 187 | 182 | 179 | 178 | 178 | 177 |
| K | FAYETTE | LA GRANGE | 156 | 152 | 149 | 148 | 148 | 148 |
| K | FAYETTE | LEE COUNTY WSC | 113 | 110 | 108 | 107 | 106 | 106 |
| K | FAYETTE | SCHULENBURG | 199 | 195 | 192 | 191 | 191 | 190 |
| K | FAYETTE | WEST END WSC | 97 | 93 | 90 | 88 | 88 | 88 |
| K | GILLESPIE | COUNTY-OTHER, GILLESPIE | 105 | 101 | 99 | 97 | 97 | 97 |
| K | GILLESPIE | FREDERICKSBURG | 248 | 244 | 242 | 240 | 240 | 240 |
| K | HAYS | AUSTIN | 156 | 154 | 154 | 154 | 154 | 154 |
| K | HAYS | BUDA | 161 | 158 | 158 | 157 | 157 | 157 |
| K | HAYS | CIMARRON PARK WATER | 103 | 100 | 97 | 95 | 95 | 95 |
| K | HAYS | COUNTY-OTHER, HAYS | 110 | 107 | 105 | 104 | 104 | 104 |
| K | HAYS | DEER CREEK RANCH WATER | 70 | 66 | 65 | 63 | 64 | 64 |
| K | HAYS | DRIPPING SPRINGS WSC | 157 | 154 | 153 | 152 | 152 | 152 |
| K | HAYS | GOFORTH SUD | 100 | 97 | 95 | 95 | 95 | 95 |
| K | HAYS | HAYS | 134 | 131 | 129 | 128 | 128 | 128 |
| K | HAYS | HAYS COUNTY WCID 1 | 201 | 198 | 196 | 195 | 195 | 195 |
| K | HAYS | HAYS COUNTY WCID 2 | 208 | 205 | 203 | 202 | 202 | 202 |
| K | HAYS | WEST TRAVIS COUNTY PUBLIC UTILITY | 314 | 312 | 311 | 311 | 311 | 311 |
| K | LLANO | CORIX UTILITIES TEXAS INC | 139 | 136 | 134 | 133 | 132 | 132 |
| K | LLANO | COUNTY-OTHER, LLANO | 95 | 94 | 93 | 93 | 92 | 92 |
| K | LLANO | HORSESHOE BAY | 410 | 407 | 405 | 404 | 404 | 404 |
| K | LLANO | KINGSLAND WSC | 97 | 95 | 94 | 93 | 93 | 92 |
| K | LLANO | LLANO | 216 | 212 | 209 | 207 | 207 | 207 |
| K | LLANO | SUNRISE BEACH VILLAGE | 92 | 88 | 85 | 84 | 84 | 84 |

| | | | Region K Gallons per Capita per Day (GPCD) Projections | | | | | |
|---|---|---|---|---|---|---|---|---|
| Region | County | WUG Name | 2020 | 2030 | 2040 | 2050 | 2060 | 2070 |
| K | MATAGORDA | BAY CITY | 135 | 131 | 127 | 126 | 126 | 126 |
| K | MATAGORDA | CANEY CREEK MUD OF MATAGORDA COUNTY | 108 | 104 | 100 | 99 | 99 | 99 |
| K | MATAGORDA | CORIX UTILITIES TEXAS INC | 149 | 137 | 137 | 134 | 131 | 128 |
| K | MATAGORDA | COUNTY-OTHER, MATAGORDA | 93 | 89 | 86 | 84 | 84 | 84 |
| K | MATAGORDA | MARKHAM MUD | 85 | 80 | 78 | 76 | 76 | 76 |
| K | MATAGORDA | MATAGORDA COUNTY WCID 6 | 92 | 87 | 84 | 82 | 83 | 82 |
| K | MATAGORDA | MATAGORDA WASTE DISPOSAL & WSC | 163 | 159 | 156 | 155 | 154 | 154 |
| K | MATAGORDA | PALACIOS | 109 | 105 | 102 | 101 | 100 | 100 |
| K | MILLS | BROOKESMITH SUD | 130 | 125 | 123 | 118 | 130 | 125 |
| K | MILLS | CORIX UTILITIES TEXAS INC | 145 | 141 | 137 | 132 | 128 | 133 |
| K | MILLS | COUNTY-OTHER, MILLS | 114 | 110 | 106 | 105 | 105 | 105 |
| K | MILLS | GOLDTHWAITE | 172 | 168 | 164 | 163 | 163 | 163 |
| K | MILLS | ZEPHYR WSC | 69 | 67 | 64 | 62 | 60 | 76 |
| K | SAN SABA | CORIX UTILITIES TEXAS INC | 142 | 135 | 134 | 137 | 134 | 130 |
| K | SAN SABA | COUNTY-OTHER, SAN SABA | 139 | 134 | 131 | 131 | 130 | 130 |
| K | SAN SABA | NORTH SAN SABA WSC | 255 | 251 | 249 | 249 | 249 | 248 |
| K | SAN SABA | RICHLAND SUD | 209 | 206 | 203 | 202 | 201 | 202 |
| K | SAN SABA | SAN SABA | 310 | 306 | 304 | 302 | 302 | 302 |
| K | TRAVIS | AQUA WSC | 147 | 143 | 141 | 140 | 140 | 140 |
| K | TRAVIS | AUSTIN | 156 | 154 | 154 | 154 | 154 | 154 |
| K | TRAVIS | BARTON CREEK WEST WSC | 291 | 289 | 287 | 286 | 285 | 285 |
| K | TRAVIS | BARTON CREEK WSC | 666 | 664 | 662 | 662 | 661 | 661 |
| K | TRAVIS | BRIARCLIFF | 133 | 131 | 130 | 129 | 129 | 129 |
| K | TRAVIS | CEDAR PARK | 184 | 183 | 182 | 182 | 182 | 182 |
| K | TRAVIS | COTTONWOOD CREEK MUD 1 | 59 | 56 | 54 | 53 | 53 | 53 |
| K | TRAVIS | COUNTY-OTHER, TRAVIS | 125 | 124 | 124 | 123 | 122 | 122 |
| K | TRAVIS | COUNTY-OTHER, TRAVIS (AQUA TEXAS - RIVERCREST) | 366 | 363 | 361 | 360 | 360 | 360 |
| K | TRAVIS | CREEDMOOR-MAHA WSC | 99 | 95 | 92 | 90 | 90 | 90 |
| K | TRAVIS | CYPRESS RANCH WCID 1 | 88 | 84 | 83 | 82 | 82 | 81 |
| K | TRAVIS | DEER CREEK RANCH WATER | 69 | 66 | 65 | 64 | 63 | 64 |
| K | TRAVIS | ELGIN | 125 | 122 | 120 | 119 | 119 | 119 |
| K | TRAVIS | GARFIELD WSC | 100 | 98 | 96 | 95 | 95 | 95 |
| K | TRAVIS | GOFORTH SUD | 103 | 93 | 97 | 94 | 94 | 95 |
| K | TRAVIS | HORNSBY BEND UTILITY | 75 | 72 | 71 | 70 | 70 | 69 |
| K | TRAVIS | HURST CREEK MUD | 496 | 493 | 491 | 490 | 490 | 490 |
| K | TRAVIS | JONESTOWN WSC | 153 | 150 | 148 | 147 | 147 | 147 |
| K | TRAVIS | KELLY LANE WCID 1 | 170 | 167 | 165 | 165 | 164 | 164 |
| K | TRAVIS | LAGO VISTA | 220 | 218 | 216 | 216 | 215 | 215 |
| K | TRAVIS | LAKEWAY MUD | 226 | 223 | 221 | 220 | 220 | 220 |
| K | TRAVIS | LEANDER | 121 | 119 | 118 | 118 | 118 | 118 |
| K | TRAVIS | LOOP 360 WSC | 524 | 522 | 520 | 519 | 519 | 519 |
| K | TRAVIS | MANOR | 115 | 113 | 112 | 112 | 112 | 112 |
| K | TRAVIS | MANVILLE WSC | 139 | 136 | 135 | 134 | 134 | 134 |
| K | TRAVIS | NORTH AUSTIN MUD 1 | 93 | 89 | 87 | 86 | 86 | 86 |
| K | TRAVIS | NORTHTOWN MUD | 60 | 60 | 60 | 60 | 60 | 60 |
| K | TRAVIS | OAK SHORES WATER SYSTEM | 245 | 242 | 240 | 239 | 239 | 239 |
| K | TRAVIS | PFLUGERVILLE | 148 | 146 | 146 | 145 | 145 | 145 |
| K | TRAVIS | ROLLINGWOOD | 241 | 237 | 233 | 231 | 231 | 231 |
| K | TRAVIS | ROUGH HOLLOW IN TRAVIS COUNTY | 190 | 190 | 190 | 190 | 190 | 190 |
| K | TRAVIS | ROUND ROCK | 143 | 140 | 139 | 139 | 139 | 138 |
| K | TRAVIS | SENNA HILLS MUD | 308 | 305 | 303 | 302 | 302 | 302 |
| K | TRAVIS | SHADY HOLLOW MUD | 162 | 158 | 155 | 153 | 153 | 153 |
| K | TRAVIS | SUNSET VALLEY | 353 | 350 | 349 | 348 | 349 | 348 |
| K | TRAVIS | SWEETWATER COMMUNITY | 132 | 132 | 132 | 132 | 132 | 132 |
| K | TRAVIS | TRAVIS COUNTY MUD 10 | 190 | 189 | 186 | 186 | 185 | 185 |
| K | TRAVIS | TRAVIS COUNTY MUD 14 | 76 | 73 | 72 | 71 | 70 | 70 |

| | | | Region K Gallons per Capita per Day (GPCD) Projections | | | | | |
|---|---|---|---|---|---|---|---|---|
| Region | County | WUG Name | 2020 | 2030 | 2040 | 2050 | 2060 | 2070 |
| K | TRAVIS | TRAVIS COUNTY MUD 2 | 114 | 111 | 109 | 108 | 108 | 108 |
| K | TRAVIS | TRAVIS COUNTY MUD 4 | 547 | 546 | 546 | 545 | 545 | 545 |
| K | TRAVIS | TRAVIS COUNTY WCID 10 | 410 | 406 | 403 | 402 | 402 | 402 |
| K | TRAVIS | TRAVIS COUNTY WCID 17 | 228 | 226 | 225 | 225 | 224 | 224 |
| K | TRAVIS | TRAVIS COUNTY WCID 18 | 151 | 147 | 145 | 144 | 144 | 144 |
| K | TRAVIS | TRAVIS COUNTY WCID 19 | 588 | 585 | 583 | 581 | 581 | 581 |
| K | TRAVIS | TRAVIS COUNTY WCID 20 | 461 | 459 | 457 | 456 | 456 | 456 |
| K | TRAVIS | TRAVIS COUNTY WCID POINT VENTURE | 220 | 217 | 215 | 214 | 214 | 214 |
| K | TRAVIS | WELLS BRANCH MUD | 67 | 64 | 63 | 62 | 62 | 62 |
| K | TRAVIS | WEST TRAVIS COUNTY PUBLIC UTILITY AGENCY | 314 | 312 | 311 | 311 | 311 | 311 |
| K | TRAVIS | WILLIAMSON COUNTY WSID 3 | 118 | 115 | 113 | 112 | 112 | 112 |
| K | TRAVIS | WILLIAMSON TRAVIS COUNTIES MUD 1 | 116 | 113 | 111 | 111 | 111 | 111 |
| K | TRAVIS | WINDERMERE UTILITY | 146 | 143 | 141 | 141 | 140 | 140 |
| K | WHARTON | BOLING MWD | 110 | 105 | 102 | 101 | 100 | 100 |
| K | WHARTON | COUNTY-OTHER, WHARTON | 118 | 113 | 110 | 109 | 109 | 109 |
| K | WHARTON | EL CAMPO | 165 | 154 | 149 | 173 | 167 | 162 |
| K | WHARTON | WHARTON | 159 | 155 | 151 | 150 | 150 | 150 |
| K | WHARTON | WHARTON COUNTY WCID 2 | 182 | 178 | 175 | 173 | 173 | 173 |
| K | WILLIAMSON | AUSTIN | 156 | 154 | 154 | 154 | 154 | 154 |
| K | WILLIAMSON | COUNTY-OTHER, WILLIAMSON | 138 | 136 | 134 | 133 | 132 | 132 |
| K | WILLIAMSON | NORTH AUSTIN MUD 1 | 93 | 90 | 87 | 86 | 85 | 85 |
| K | WILLIAMSON | WELLS BRANCH MUD | 67 | 64 | 63 | 62 | 62 | 62 |

| Region | County | WUG Name | Region K Municipal Water Savings Projections (Ac-Ft/Yr) | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | | 2020 | 2030 | 2040 | 2050 | 2060 | 2070 |
| K | BASTROP | AQUA WSC | 591.20 | 1,075.31 | 1,618.36 | 2,261.92 | 3,050.83 | 4,081.77 |
| K | BASTROP | BASTROP | 123.80 | 232.95 | 355.79 | 503.01 | 684.96 | 925.24 |
| K | BASTROP | BASTROP COUNTY WCID 2 | 48.20 | 94.44 | 147.85 | 215.03 | 301.89 | 417.60 |
| K | BASTROP | COUNTY-OTHER, BASTROP | 66.42 | 99.35 | 128.88 | 164.56 | 207.52 | 260.15 |
| K | BASTROP | CREEDMOOR-MAHA WSC | 0.71 | 0.08 | 0.57 | 1.07 | 0.56 | 0.93 |
| K | BASTROP | ELGIN | 101.44 | 181.92 | 269.65 | 372.96 | 501.50 | 669.01 |
| K | BASTROP | LEE COUNTY WSC | 9.81 | 17.48 | 26.70 | 38.68 | 52.58 | 70.10 |
| K | BASTROP | POLONIA WSC | 2.72 | 4.33 | 6.75 | 8.94 | 11.77 | 15.33 |
| K | BASTROP | SMITHVILLE | 60.23 | 110.80 | 168.78 | 234.43 | 315.66 | 421.58 |
| K | BLANCO | BLANCO | 24.52 | 39.80 | 49.55 | 55.29 | 57.40 | 58.46 |
| K | BLANCO | CANYON LAKE WATER SERVICE | 5.64 | 9.37 | 13.49 | 17.01 | 20.14 | 23.06 |
| K | BLANCO | COUNTY-OTHER, BLANCO | 86.29 | 139.07 | 171.84 | 186.69 | 190.97 | 190.50 |
| K | BLANCO | JOHNSON CITY | 21.84 | 34.69 | 44.13 | 48.86 | 50.47 | 52.05 |
| K | BURNET | BERTRAM | 18.54 | 31.62 | 40.70 | 48.98 | 54.60 | 58.57 |
| K | BURNET | BURNET | 77.32 | 127.09 | 166.71 | 198.95 | 221.79 | 239.44 |
| K | BURNET | CORIX UTILITIES TEXAS INC | 9.02 | 14.40 | 19.26 | 23.13 | 26.16 | 27.68 |
| K | BURNET | COTTONWOOD SHORES | 14.39 | 22.87 | 29.80 | 35.68 | 40.36 | 42.83 |
| K | BURNET | COUNTY-OTHER, BURNET | 223.48 | 342.37 | 405.44 | 478.38 | 532.69 | 573.08 |
| K | BURNET | GEORGETOWN | 3.03 | 5.63 | 7.01 | 7.71 | 8.57 | 9.82 |
| K | BURNET | GRANITE SHOALS | 45.14 | 70.59 | 87.24 | 102.04 | 120.18 | 144.55 |
| K | BURNET | HORSESHOE BAY | 12.79 | 24.78 | 34.56 | 44.86 | 51.58 | 57.19 |
| K | BURNET | KEMPNER WSC | 7.43 | 10.52 | 14.13 | 16.19 | 17.52 | 19.12 |
| K | BURNET | KINGSLAND WSC | 4.46 | 6.15 | 8.05 | 9.60 | 11.20 | 11.73 |
| K | BURNET | MARBLE FALLS | 105.84 | 214.14 | 348.19 | 419.42 | 461.81 | 482.37 |
| K | BURNET | MEADOWLAKES | 24.31 | 33.31 | 38.31 | 40.31 | 41.31 | 41.31 |
| K | COLORADO | COLUMBUS | 42.12 | 63.37 | 80.43 | 92.29 | 96.94 | 100.36 |
| K | COLORADO | CORIX UTILITIES TEXAS INC | 2.90 | 3.90 | 5.40 | 5.57 | 6.41 | 6.24 |
| K | COLORADO | COUNTY-OTHER, COLORADO | 121.24 | 179.89 | 226.54 | 260.45 | 273.84 | 284.35 |
| K | COLORADO | EAGLE LAKE | 41.31 | 61.70 | 78.89 | 91.36 | 95.68 | 99.42 |
| K | COLORADO | WEIMAR | 23.13 | 33.35 | 43.38 | 49.79 | 52.60 | 54.73 |
| K | FAYETTE | AQUA WSC | 0.25 | 0.39 | 0.50 | 0.55 | 0.59 | 0.61 |
| K | FAYETTE | COUNTY-OTHER, FAYETTE | 107.33 | 174.47 | 224.96 | 256.78 | 270.91 | 278.62 |
| K | FAYETTE | FAYETTE COUNTY WCID MONUMENT HILL | 8.40 | 11.28 | 15.24 | 17.42 | 18.56 | 18.91 |
| K | FAYETTE | FAYETTE WSC | 49.81 | 77.93 | 98.08 | 111.17 | 119.05 | 123.13 |
| K | FAYETTE | FLATONIA | 19.87 | 31.73 | 40.81 | 46.72 | 49.67 | 51.88 |
| K | FAYETTE | LA GRANGE | 61.60 | 99.71 | 128.33 | 147.03 | 156.25 | 161.34 |
| K | FAYETTE | LEE COUNTY WSC | 14.10 | 21.85 | 27.57 | 32.15 | 34.45 | 35.74 |
| K | FAYETTE | SCHULENBURG | 35.74 | 57.92 | 73.62 | 84.92 | 89.80 | 93.15 |
| K | FAYETTE | WEST END WSC | 13.47 | 21.72 | 29.30 | 35.08 | 39.33 | 42.55 |
| K | GILLESPIE | COUNTY-OTHER, GILLESPIE | 147.12 | 224.16 | 286.77 | 333.71 | 359.02 | 379.51 |
| K | GILLESPIE | FREDERICKSBURG | 119.64 | 181.55 | 231.13 | 268.69 | 287.67 | 303.32 |
| K | HAYS | AUSTIN | 6.89 | 43.30 | 67.86 | 106.76 | 156.96 | 225.86 |
| K | HAYS | BUDA | 82.04 | 151.42 | 225.94 | 313.98 | 409.36 | 515.87 |
| K | HAYS | CIMARRON PARK WATER | 21.34 | 29.34 | 35.34 | 39.34 | 40.34 | 40.34 |
| K | HAYS | COUNTY-OTHER, HAYS | 101.10 | 106.78 | 193.85 | 254.83 | 303.90 | 424.87 |
| K | HAYS | DEER CREEK RANCH WATER | 2.92 | 5.25 | 6.40 | 8.16 | 8.22 | 8.71 |
| K | HAYS | DRIPPING SPRINGS WSC | 103.06 | 229.24 | 332.77 | 451.54 | 584.54 | 656.24 |
| K | HAYS | GOFORTH SUD | 13.78 | 23.89 | 35.36 | 47.46 | 59.68 | 73.24 |
| K | HAYS | HAYS | 12.74 | 22.25 | 32.45 | 41.08 | 51.31 | 63.99 |
| K | HAYS | HAYS COUNTY WCID 1 | 36.88 | 49.88 | 56.88 | 59.88 | 60.88 | 60.88 |
| K | HAYS | HAYS COUNTY WCID 2 | 12.52 | 21.86 | 32.11 | 40.39 | 51.18 | 63.14 |
| K | HAYS | WEST TRAVIS COUNTY PUBLIC UTILITY | 99.13 | 157.67 | 192.36 | 246.56 | 298.76 | 348.96 |
| K | LLANO | CORIX UTILITIES TEXAS INC | 13.11 | 18.12 | 21.12 | 22.12 | 23.29 | 23.30 |
| K | LLANO | COUNTY-OTHER, LLANO | 23.25 | 20.21 | 21.86 | 23.56 | 22.90 | 21.83 |
| K | LLANO | HORSESHOE BAY | 52.78 | 74.35 | 83.13 | 90.59 | 89.77 | 89.08 |
| K | LLANO | KINGSLAND WSC | 81.63 | 121.63 | 134.36 | 135.94 | 151.61 | 165.73 |
| K | LLANO | LLANO | 40.49 | 60.60 | 73.33 | 78.88 | 82.52 | 85.18 |
| K | LLANO | SUNRISE BEACH VILLAGE | 6.65 | 10.10 | 11.99 | 12.76 | 12.99 | 13.32 |
| K | MATAGORDA | BAY CITY | 216.29 | 328.14 | 417.72 | 453.41 | 468.40 | 473.98 |
| K | MATAGORDA | CANEY CREEK MUD OF MATAGORDA COUNTY | 23.99 | 35.52 | 45.04 | 49.18 | 51.20 | 51.90 |
| K | MATAGORDA | CORIX UTILITIES TEXAS INC | 0.18 | 0.68 | 0.84 | 1.01 | 1.18 | 1.35 |
| K | MATAGORDA | COUNTY-OTHER, MATAGORDA | 109.44 | 165.32 | 209.97 | 235.97 | 243.31 | 246.31 |
| K | MATAGORDA | MARKHAM MUD | 10.80 | 17.44 | 21.16 | 23.93 | 23.95 | 24.33 |
| K | MATAGORDA | MATAGORDA COUNTY WCID 6 | 11.33 | 18.01 | 23.08 | 25.36 | 25.74 | 26.32 |
| K | MATAGORDA | MATAGORDA WASTE DISPOSAL & WSC | 7.36 | 11.13 | 13.98 | 15.57 | 16.46 | 16.75 |

| Region | County | WUG Name | Region K Municipal Water Savings Projections (Ac-Ft/Yr) | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | | 2020 | 2030 | 2040 | 2050 | 2060 | 2070 |
| K | MATAGORDA | PALACIOS | 54.02 | 81.21 | 102.87 | 115.33 | 118.73 | 120.53 |
| K | MILLS | BROOKESMITH SUD | 0.63 | 0.95 | 1.11 | 1.43 | 0.75 | 1.07 |
| K | MILLS | CORIX UTILITIES TEXAS INC | 0.35 | 0.68 | 1.02 | 1.52 | 2.02 | 1.52 |
| K | MILLS | COUNTY-OTHER, MILLS | 28.69 | 43.19 | 56.33 | 61.89 | 65.58 | 68.50 |
| K | MILLS | GOLDTHWAITE | 20.70 | 31.69 | 40.65 | 46.09 | 48.93 | 50.80 |
| K | MILLS | ZEPHYR WSC | 0.58 | 0.67 | 0.86 | 0.95 | 1.13 | 0.32 |
| K | SAN SABA | CORIX UTILITIES TEXAS INC | 0.69 | 1.52 | 1.69 | 1.36 | 1.69 | 2.19 |
| K | SAN SABA | COUNTY-OTHER, SAN SABA | 16.16 | 25.01 | 30.01 | 29.84 | 31.18 | 32.19 |
| K | SAN SABA | NORTH SAN SABA WSC | 6.33 | 9.50 | 11.38 | 11.43 | 11.86 | 12.59 |
| K | SAN SABA | RICHLAND SUD | 8.38 | 12.56 | 15.77 | 16.88 | 17.72 | 17.31 |
| K | SAN SABA | SAN SABA | 34.19 | 51.08 | 61.87 | 67.14 | 70.16 | 71.46 |
| K | TRAVIS | AQUA WSC | 69.73 | 111.38 | 143.97 | 171.36 | 191.09 | 208.42 |
| K | TRAVIS | AUSTIN | 6,564.64 | 10,336.81 | 11,987.57 | 13,120.77 | 14,023.37 | 15,247.54 |
| K | TRAVIS | BARTON CREEK WEST WSC | 11.79 | 14.79 | 17.79 | 19.79 | 20.79 | 20.79 |
| K | TRAVIS | BARTON CREEK WSC | 6.78 | 10.07 | 13.83 | 15.63 | 17.58 | 18.85 |
| K | TRAVIS | BRIARCLIFF | 17.30 | 26.42 | 32.70 | 39.66 | 44.31 | 48.79 |
| K | TRAVIS | CEDAR PARK | 108.26 | 129.64 | 152.89 | 156.89 | 159.89 | 160.89 |
| K | TRAVIS | COTTONWOOD CREEK MUD 1 | 13.60 | 21.71 | 27.85 | 32.96 | 35.51 | 38.50 |
| K | TRAVIS | COUNTY-OTHER, TRAVIS | 75.42 | 82.42 | 85.42 | 88.42 | 94.42 | 96.42 |
| K | TRAVIS | COUNTY-OTHER, TRAVIS (AQUA TEXAS - RIVERCREST) | 7.25 | 9.25 | 11.25 | 12.25 | 12.25 | 12.25 |
| K | TRAVIS | CREEDMOOR-MAHA WSC | 70.82 | 114.28 | 151.70 | 183.07 | 202.87 | 220.03 |
| K | TRAVIS | CYPRESS RANCH WCID 1 | 11.59 | 18.27 | 22.78 | 25.61 | 28.06 | 29.06 |
| K | TRAVIS | DEER CREEK RANCH WATER | 5.58 | 8.58 | 11.14 | 13.43 | 14.59 | 15.35 |
| K | TRAVIS | ELGIN | 19.31 | 38.44 | 56.76 | 74.69 | 88.50 | 101.60 |
| K | TRAVIS | GARFIELD WSC | 17.35 | 26.40 | 35.49 | 41.45 | 44.53 | 48.42 |
| K | TRAVIS | GOFORTH SUD | 0.62 | 2.04 | 2.07 | 3.20 | 3.94 | 4.53 |
| K | TRAVIS | HORNSBY BEND UTILITY | 62.94 | 100.36 | 133.02 | 156.09 | 169.91 | 183.75 |
| K | TRAVIS | HURST CREEK MUD | 29.29 | 38.29 | 44.29 | 47.29 | 48.29 | 48.29 |
| K | TRAVIS | JONESTOWN WSC | 36.99 | 52.41 | 64.12 | 72.88 | 77.68 | 82.42 |
| K | TRAVIS | KELLY LANE WCID 1 | 15.56 | 20.56 | 24.56 | 25.56 | 26.56 | 26.56 |
| K | TRAVIS | LAGO VISTA | 67.88 | 105.34 | 135.63 | 163.76 | 185.21 | 203.69 |
| K | TRAVIS | LAKEWAY MUD | 101.61 | 144.36 | 175.12 | 195.87 | 202.03 | 203.03 |
| K | TRAVIS | LEANDER | 93.43 | 283.22 | 317.63 | 343.05 | 354.14 | 370.84 |
| K | TRAVIS | LOOP 360 WSC | 18.08 | 24.54 | 29.96 | 33.83 | 35.12 | 37.16 |
| K | TRAVIS | MANOR | 72.09 | 125.21 | 169.24 | 216.33 | 255.30 | 291.20 |
| K | TRAVIS | MANVILLE WSC | 157.30 | 252.25 | 330.89 | 407.49 | 466.50 | 518.21 |
| K | TRAVIS | NORTH AUSTIN MUD 1 | 7.24 | 10.24 | 12.24 | 13.24 | 13.24 | 13.24 |
| K | TRAVIS | NORTHTOWN MUD | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| K | TRAVIS | OAK SHORES WATER SYSTEM | 4.73 | 8.11 | 9.11 | 10.11 | 10.11 | 10.11 |
| K | TRAVIS | PFLUGERVILLE | 490.93 | 766.08 | 1,000.12 | 1,221.81 | 1,432.89 | 1,443.89 |
| K | TRAVIS | ROLLINGWOOD | 14.93 | 21.17 | 27.13 | 30.37 | 31.33 | 31.29 |
| K | TRAVIS | ROUGH HOLLOW IN TRAVIS COUNTY | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| K | TRAVIS | ROUND ROCK | 16.89 | 26.03 | 32.45 | 38.15 | 42.05 | 45.89 |
| K | TRAVIS | SENNA HILLS MUD | 11.48 | 18.48 | 23.58 | 27.51 | 30.17 | 32.85 |
| K | TRAVIS | SHADY HOLLOW MUD | 43.28 | 61.28 | 77.28 | 86.28 | 87.28 | 87.28 |
| K | TRAVIS | SUNSET VALLEY | 9.11 | 14.04 | 17.38 | 21.66 | 24.93 | 29.19 |
| K | TRAVIS | SWEETWATER COMMUNITY | 0.09 | 0.31 | 0.31 | 0.31 | 0.31 | 0.31 |
| K | TRAVIS | TRAVIS COUNTY MUD 10 | 3.57 | 4.84 | 6.66 | 7.69 | 8.94 | 9.08 |
| K | TRAVIS | TRAVIS COUNTY MUD 14 | 17.60 | 28.69 | 38.00 | 44.56 | 48.79 | 52.46 |
| K | TRAVIS | TRAVIS COUNTY MUD 2 | 23.33 | 37.15 | 48.97 | 57.79 | 62.55 | 67.82 |
| K | TRAVIS | TRAVIS COUNTY MUD 4 | 17.89 | 25.08 | 29.62 | 34.22 | 39.28 | 42.45 |
| K | TRAVIS | TRAVIS COUNTY WCID 10 | 81.13 | 123.56 | 157.28 | 182.96 | 198.93 | 211.84 |
| K | TRAVIS | TRAVIS COUNTY WCID 17 | 337.08 | 452.69 | 540.23 | 570.61 | 594.31 | 616.68 |
| K | TRAVIS | TRAVIS COUNTY WCID 18 | 66.99 | 105.63 | 137.59 | 165.44 | 185.25 | 201.59 |
| K | TRAVIS | TRAVIS COUNTY WCID 19 | 5.54 | 7.54 | 9.54 | 10.54 | 10.54 | 10.54 |
| K | TRAVIS | TRAVIS COUNTY WCID 20 | 9.64 | 12.64 | 14.64 | 16.64 | 16.64 | 16.64 |
| K | TRAVIS | TRAVIS COUNTY WCID POINT VENTURE | 9.59 | 16.40 | 22.46 | 29.25 | 35.51 | 40.28 |
| K | TRAVIS | WELLS BRANCH MUD | 199.21 | 244.21 | 275.21 | 293.21 | 298.21 | 299.21 |
| K | TRAVIS | WEST TRAVIS COUNTY PUBLIC UTILITY AGENCY | 147.78 | 207.19 | 242.55 | 281.65 | 306.69 | 326.44 |
| K | TRAVIS | WILLIAMSON COUNTY WSID 3 | 8.44 | 14.32 | 16.32 | 17.32 | 17.32 | 17.32 |
| K | TRAVIS | WILLIAMSON TRAVIS COUNTIES MUD 1 | 12.09 | 16.09 | 18.09 | 18.09 | 19.09 | 19.09 |
| K | TRAVIS | WINDERMERE UTILITY | 161.92 | 217.92 | 250.92 | 266.92 | 271.92 | 272.92 |
| K | WHARTON | BOLING MWD | 8.97 | 14.30 | 18.17 | 20.23 | 21.90 | 22.03 |
| K | WHARTON | COUNTY-OTHER, WHARTON | 169.06 | 262.41 | 333.23 | 352.42 | 370.59 | 382.73 |

| Region | County | WUG Name | Region K Municipal Water Savings Projections (Ac-Ft/Yr) | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | | 2020 | 2030 | 2040 | 2050 | 2060 | 2070 |
| K | WHARTON | EL CAMPO | 0.38 | 0.78 | 0.98 | 0.18 | 0.38 | 0.58 |
| K | WHARTON | WHARTON | 104.57 | 161.29 | 208.72 | 232.85 | 244.92 | 252.67 |
| K | WHARTON | WHARTON COUNTY WCID 2 | 24.68 | 37.65 | 48.16 | 54.67 | 57.24 | 59.66 |
| K | WILLIAMSON | AUSTIN | 414.55 | 713.55 | 837.38 | 970.92 | 1,121.94 | 1,287.02 |
| K | WILLIAMSON | COUNTY-OTHER, WILLIAMSON | 4.95 | 8.29 | 9.14 | 9.50 | 9.52 | 9.21 |
| K | WILLIAMSON | NORTH AUSTIN MUD 1 | 67.95 | 94.95 | 115.95 | 127.95 | 130.95 | 130.95 |
| K | WILLIAMSON | WELLS BRANCH MUD | 11.35 | 14.35 | 15.35 | 16.35 | 17.35 | 17.35 |

## *APPENDIX 2C*

## *REVISION REQUEST SUBMITTALS TO THE TWDB BY THE LCRWPG REGARDING POPULATION, MUNICIPAL, AND NON-MUNICIPAL WATER DEMAND PROJECTIONS FOR THE 2021 REGIONAL WATER PLANNING CYCLE*

***Region K Population and Municipal Demand Projection Revision Memo***
***Region K Non-Municipal Demand Projection Revision Memo***
***Irrigation Projections Memo Dated October 5, 2017***

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# Region K Population and Municipal Demand Projection Revision Memo

| | | | |
|---|---|---|---|
| To | Texas Water Development Board Staff | Page | 1 |
| CC | John Burke, Lauri Gillam, File | | |
| Subject | **Requested Population and Municipal Demand Projection Revisions** | | |
| From | Jaime Burke | | |
| Date | January 10, 2018 | | |

The Region K Regional Water Planning Group and the Region K Population and Water Demand Committee have spent the last year reviewing the draft municipal projections from the TWDB and coordinating with the municipal WUGs in the region to determine appropriate revisions for the TWDB staff to consider. At the January 10, 2018 Region K meeting, the Region K RWPG approved to request the following revisions to the draft municipal projections, for consideration by the TWDB staff.

**Municipal Population and Demand Projection Requested Revisions:**

Many of the following requested revisions involve changing the base GPCD for a WUG from the city-boundary GPCD to the utility-boundary GPCD. The documentation to support these revisions includes the following:

On June 30th, TWDB staff sent an email containing historical population and GPCD estimates for Utility WUGs. The email explained that “The base GPCDs used to calculate draft water demand projections were carried over from the 2017 State Water Plan, which were based on city boundaries. The historical GPCDs provided in the attached table were developed using utility population and water use data from the WUS and estimated based on utility service area boundaries. Therefore, you will see some differences between the base GPCDs in the draft projections and historical GPCD estimates in many WUGs.” The email went on to state that “This information can be potentially used as supporting documentation/data to justify changes to the draft population or the base GPCDs in the draft projections.”

1. **Bastrop County** – No population revisions; requesting revision to base GPCD for City of Bastrop.

    a. **Bastrop** – Request that demand projections use 2011 utility-boundary GPCD as base GPCD. Demands have been recalculated incorporating TWDB-provided water efficiency savings by decade.

| DRAFT | BASE | DRAFT | 2020 | 2030 | 2040 | 2050 | 2060 | 2070 |
|---|---|---|---|---|---|---|---|---|
| GPCD | 191 | Demand (AF) | 2,244 | 2,978 | 3,951 | 5,288 | 7,111 | 9,536 |
| **REVISED** | **BASE** | **REVISED** | **2020** | **2030** | **2040** | **2050** | **2060** | **2070** |
| **GPCD** | **175** | **Demand (AF)** | **2,046** | **2,709** | **3,590** | **4,803** | **6,458** | **8,660** |
| DIFFERENCE | BASE | DIFFERENCE | 2020 | 2030 | 2040 | 2050 | 2060 | 2070 |
| GPCD | -16 | Demand (AF) | -198 | -269 | -361 | -485 | -653 | -876 |

2. **Blanco County** – No population revisions; requesting revision to base GPCD for City of Blanco.

    a. **Blanco** - Request that demand projections use 2011 utility-boundary GPCD as base GPCD. Demands have been recalculated incorporating TWDB-provided water efficiency savings by decade.

| DRAFT | BASE | DRAFT | 2020 | 2030 | 2040 | 2050 | 2060 | 2070 |
|---|---|---|---|---|---|---|---|---|
| GPCD | 161 | Demand (AF) | 365 | 423 | 456 | 472 | 485 | 493 |
| **REVISED** | **BASE** | **REVISED** | **2020** | **2030** | **2040** | **2050** | **2060** | **2070** |
| **GPCD** | **141** | **Demand (AF)** | **316** | **365** | **393** | **407** | **418** | **425** |
| DIFFERENCE | BASE | DIFFERENCE | 2020 | 2030 | 2040 | 2050 | 2060 | 2070 |
| GPCD | -20 | Demand (AF) | -49 | -58 | -63 | -65 | -67 | -68 |

3. **Burnet County –** Requesting revision to population for County-Other, Granite Shoals, and Meadowlakes MUD; requesting revision to base GPCD for Burnet, Cottonwood Shores, and Horseshoe Bay; requesting WUG name change for Chisholm Trail SUD.

    a. **Burnet** - Request that demand projections use 2011 utility-boundary GPCD as base GPCD. Demands have been recalculated incorporating TWDB-provided water efficiency savings by decade.

| DRAFT | BASE | DRAFT | 2020 | 2030 | 2040 | 2050 | 2060 | 2070 |
|---|---|---|---|---|---|---|---|---|
| GPCD | 231 | Demand (AF) | 1,844 | 2,197 | 2,497 | 2,790 | 3,054 | 3,284 |
| **REVISED** | **BASE** | **REVISED** | **2020** | **2030** | **2040** | **2050** | **2060** | **2070** |
| **GPCD** | **209** | **Demand (AF)** | **1,661** | **1,976** | **2,244** | **2,506** | **2,742** | **2,949** |
| DIFFERENCE | BASE | DIFFERENCE | 2020 | 2030 | 2040 | 2050 | 2060 | 2070 |
| GPCD | -22 | Demand (AF) | -183 | -221 | -253 | -284 | -312 | -335 |

    b. **Chisholm Trail SUD** – Chisholm Trail SUD requested WUG name be changed to Georgetown. Request should be consistent with Region G.

    c. **Cottonwood Shores** - Request that demand projections use 2011 utility-boundary GPCD as base GPCD. Demands have been recalculated incorporating TWDB-provided water efficiency savings by decade.

| DRAFT | BASE | DRAFT | 2020 | 2030 | 2040 | 2050 | 2060 | 2070 |
|---|---|---|---|---|---|---|---|---|
| GPCD | 154 | Demand (AF) | 227 | 268 | 304 | 339 | 371 | 398 |
| **REVISED** | **BASE** | **REVISED** | **2020** | **2030** | **2040** | **2050** | **2060** | **2070** |
| **GPCD** | **166** | **Demand (AF)** | **245** | **291** | **330** | **368** | **402** | **433** |
| DIFFERENCE | BASE | DIFFERENCE | 2020 | 2030 | 2040 | 2050 | 2060 | 2070 |
| GPCD | 12 | Demand (AF) | 18 | 23 | 26 | 29 | 31 | 35 |

d. **County-Other, Burnet** – Increase County-Other population to balance out other population changes so no change to Burnet County total population. Revised demands reflected – no change to base GPCD.

| DRAFT | 2020 | 2030 | 2040 | 2050 | 2060 | 2070 |
|---|---|---|---|---|---|---|
| Population | 20,892 | 22,826 | 22,151 | 24,000 | 26,259 | 28,955 |
| **REVISED** | **2020** | **2030** | **2040** | **2050** | **2060** | **2070** |
| **Population** | **22,242** | **25,317** | **25,666** | **28,405** | **30,920** | **33,087** |
| DIFFERENCE | 2020 | 2030 | 2040 | 2050 | 2060 | 2070 |
| Population | 1,350 | 2,491 | 3,515 | 4,405 | 4,661 | 4,132 |

| DRAFT | BASE | DRAFT | 2020 | 2030 | 2040 | 2050 | 2060 | 2070 |
|---|---|---|---|---|---|---|---|---|
| GPCD | 146 | Demand (AF) | 3,207 | 3,424 | 3,272 | 3,520 | 3,842 | 4,234 |
| REVISED | BASE | **REVISED** | **2020** | **2030** | **2040** | **2050** | **2060** | **2070** |
| GPCD | 146 | **Demand (AF)** | **3,414** | **3,798** | **3,792** | **4,167** | **4,524** | **4,838** |
| DIFFERENCE | BASE | DIFFERENCE | 2020 | 2030 | 2040 | 2050 | 2060 | 2070 |
| GPCD | 0 | Demand (AF) | 207 | 374 | 520 | 647 | 682 | 604 |

e. **Granite Shoals** - Request to decrease population due to lower anticipated growth than the numbers show. Homes are on individual septic, and do not expect fast growth. Moved population balance to County-Other. Revised demands reflected – no change to base GPCD.

| DRAFT | 2020 | 2030 | 2040 | 2050 | 2060 | 2070 |
|---|---|---|---|---|---|---|
| Population | 6,751 | 8,168 | 9,363 | 10,506 | 11,512 | 12,383 |
| **REVISED** | **2020** | **2030** | **2040** | **2050** | **2060** | **2070** |
| **Population** | **5,401** | **6,211** | **6,832** | **7,515** | **8,643** | **10,371** |
| DIFFERENCE | 2020 | 2030 | 2040 | 2050 | 2060 | 2070 |
| Population | -1,350 | -1,957 | -2,531 | -2,991 | -2,869 | -2,012 |

| DRAFT | BASE | DRAFT | 2020 | 2030 | 2040 | 2050 | 2060 | 2070 |
|---|---|---|---|---|---|---|---|---|
| GPCD | 103 | Demand (AF) | 722 | 850 | 960 | 1,069 | 1,169 | 1,256 |
| REVISED | BASE | **REVISED** | **2020** | **2030** | **2040** | **2050** | **2060** | **2070** |
| GPCD | 103 | **Demand (AF)** | **578** | **646** | **701** | **765** | **877** | **1,052** |
| DIFFERENCE | BASE | DIFFERENCE | 2020 | 2030 | 2040 | 2050 | 2060 | 2070 |
| GPCD | 0 | Demand (AF) | -144 | -204 | -259 | -304 | -292 | -204 |

f. **Horseshoe Bay** - Request that demand projections use 2011 utility-boundary GPCD as base GPCD. Demands have been recalculated incorporating TWDB-provided water efficiency savings by decade. (Similar request for Horseshoe Bay under Llano County)

| DRAFT | BASE | DRAFT | 2020 | 2030 | 2040 | 2050 | 2060 | 2070 |
|---|---|---|---|---|---|---|---|---|
| GPCD | 569 | Demand (AF) | 747 | 1,048 | 1,302 | 1,545 | 1,759 | 1,945 |
| **REVISED** | **BASE** | **REVISED** | **2020** | **2030** | **2040** | **2050** | **2060** | **2070** |
| **GPCD** | **420** | **Demand (AF)** | **548** | **767** | **952** | **1,128** | **1,285** | **1,421** |
| DIFFERENCE | BASE | DIFFERENCE | 2020 | 2030 | 2040 | 2050 | 2060 | 2070 |
| GPCD | -149 | Demand (AF) | -199 | -281 | -350 | -417 | -474 | -524 |

g. **Meadowlakes MUD** - Request decrease to population in 2030-2070, based on expected build-out conditions. Mike Williams, Public Works Director, said they are currently at 90% buildout, and will reach 100% buildout early in the 2020 decade. Moved balance to County-Other. Revised demands reflected – no change to base GPCD.

| DRAFT | 2020 | 2030 | 2040 | 2050 | 2060 | 2070 |
|---|---|---|---|---|---|---|
| Population | 2,540 | 3,074 | 3,524 | 3,954 | 4,332 | 4,660 |
| **REVISED** | 2020 | **2030** | **2040** | **2050** | **2060** | **2070** |
| **Population** | 2,540 | **2,540** | **2,540** | **2,540** | **2,540** | **2,540** |
| DIFFERENCE | 2020 | 2030 | 2040 | 2050 | 2060 | 2070 |
| Population | 0 | -534 | -984 | -1,414 | -1,792 | -2,120 |

| DRAFT | BASE | DRAFT | 2020 | 2030 | 2040 | 2050 | 2060 | 2070 |
|---|---|---|---|---|---|---|---|---|
| GPCD | 308 | Demand (AF) | 852 | 1,020 | 1,163 | 1,301 | 1,425 | 1,532 |
| REVISED | BASE | **REVISED** | 2020 | **2030** | **2040** | **2050** | **2060** | **2070** |
| GPCD | 308 | **Demand (AF)** | 852 | **842** | **839** | **836** | **836** | **834** |
| DIFFERENCE | BASE | DIFFERENCE | 2020 | 2030 | 2040 | 2050 | 2060 | 2070 |
| GPCD | 0 | Demand (AF) | 0 | -178 | -324 | -465 | -589 | -698 |

4. **Colorado County** – No population revisions; requesting revision to base GPCD for City of Weimar.

a. **Weimar** - Request that demand projections use 2011 utility-boundary GPCD as base GPCD. Demands have been recalculated incorporating TWDB-provided water efficiency savings by decade.

| DRAFT | BASE | DRAFT | 2020 | 2030 | 2040 | 2050 | 2060 | 2070 |
|---|---|---|---|---|---|---|---|---|
| GPCD | 229 | Demand (AF) | 532 | 545 | 554 | 574 | 593 | 613 |
| **REVISED** | **BASE** | **REVISED** | **2020** | **2030** | **2040** | **2050** | **2060** | **2070** |
| **GPCD** | **214** | **Demand (AF)** | **496** | **507** | **515** | **533** | **551** | **569** |
| DIFFERENCE | BASE | DIFFERENCE | 2020 | 2030 | 2040 | 2050 | 2060 | 2070 |
| GPCD | -15 | Demand (AF) | -36 | -38 | -39 | -41 | -42 | -44 |

5. **Fayette County –** Requesting small revision to 2020 population for County-Other and Fayette County WCID Monument Hill; requesting revision to base GPCD for County-Other, Fayette County WCID Monument Hill, Fayette WSC, and La Grange.

   a. **County-Other, Fayette** – Requesting decrease to County-Other 2020 population to balance out population increase to Fayette County WCID Monument Hill so no change to Fayette County total population. Request that demand projections use 2011 utility-boundary GPCD as base GPCD. Demands have been recalculated incorporating TWDB-provided water efficiency savings by decade.

| DRAFT | 2020 | 2030 | 2040 | 2050 | 2060 | 2070 |
|---|---|---|---|---|---|---|
| Population | 9,589 | 10,943 | 11,825 | 12,511 | 13,015 | 13,353 |
| **REVISED** | **2020** | 2030 | 2040 | 2050 | 2060 | 2070 |
| **Population** | **9,532** | 10,943 | 11,825 | 12,511 | 13,015 | 13,353 |
| DIFFERENCE | 2020 | 2030 | 2040 | 2050 | 2060 | 2070 |
| Population | -57 | 0 | 0 | 0 | 0 | 0 |

| DRAFT | BASE | DRAFT | 2020 | 2030 | 2040 | 2050 | 2060 | 2070 |
|---|---|---|---|---|---|---|---|---|
| GPCD | 112 | Demand (AF) | 1,095 | 1,198 | 1,259 | 1,313 | 1,362 | 1,397 |
| **REVISED** | **BASE** | **REVISED** | **2020** | **2030** | **2040** | **2050** | **2060** | **2070** |
| **GPCD** | **126** | **Demand (AF)** | **1,238** | **1,370** | **1,444** | **1,509** | **1,566** | **1,606** |
| DIFFERENCE | BASE | DIFFERENCE | 2020 | 2030 | 2040 | 2050 | 2060 | 2070 |
| GPCD | 14 | Demand (AF) | 143 | 172 | 185 | 196 | 204 | 209 |

   b. **Fayette County WCID Monument Hill** – Request slight increase to 2020 population based on TCEQ WDD listed current population of 744. Draft projections/historical data does not match submitted water use reports. Request increasing GPCD and demand to better represent 2011 water use. Water use reports have been included as supporting documentation.

| DRAFT | 2020 | 2030 | 2040 | 2050 | 2060 | 2070 |
|---|---|---|---|---|---|---|
| Population | 703 | 803 | 870 | 926 | 970 | 1,003 |
| **REVISED** | **2020** | 2030 | 2040 | 2050 | 2060 | 2070 |
| **Population** | **760** | 803 | 870 | 926 | 970 | 1,003 |
| DIFFERENCE | 2020 | 2030 | 2040 | 2050 | 2060 | 2070 |
| Population | 57 | 0 | 0 | 0 | 0 | 0 |

| DRAFT | BASE | DRAFT | 2020 | 2030 | 2040 | 2050 | 2060 | 2070 |
|---|---|---|---|---|---|---|---|---|
| GPCD | 144 | Demand (AF) | 106 | 118 | 126 | 133 | 139 | 143 |
| **REVISED** | **BASE** | **REVISED** | **2020** | **2030** | **2040** | **2050** | **2060** | **2070** |
| **GPCD** | **226** | **Demand (AF)** | **180** | **185** | **199** | **210** | **219** | **225** |
| DIFFERENCE | BASE | DIFFERENCE | 2020 | 2030 | 2040 | 2050 | 2060 | 2070 |
| GPCD | 82 | Demand (AF) | 74 | 67 | 73 | 77 | 80 | 82 |

c. **Fayette WSC** - Request that demand projections use 2011 utility-boundary GPCD as base GPCD. Demands have been recalculated incorporating TWDB-provided water efficiency savings by decade.

| DRAFT | BASE | DRAFT | 2020 | 2030 | 2040 | 2050 | 2060 | 2070 |
|---|---|---|---|---|---|---|---|---|
| GPCD | 119 | Demand (AF) | 636 | 705 | 750 | 791 | 826 | 854 |
| **REVISED** | **BASE** | **REVISED** | **2020** | **2030** | **2040** | **2050** | **2060** | **2070** |
| **GPCD** | **134** | **Demand (AF)** | **722** | **803** | **857** | **905** | **945** | **978** |
| DIFFERENCE | BASE | DIFFERENCE | 2020 | 2030 | 2040 | 2050 | 2060 | 2070 |
| GPCD | 15 | Demand (AF) | 86 | 98 | 107 | 114 | 119 | 124 |

d. **La Grange** - Request that demand projections use 2011 utility-boundary GPCD as base GPCD. Demands have been recalculated incorporating TWDB-provided water efficiency savings by decade.

| DRAFT | BASE | DRAFT | 2020 | 2030 | 2040 | 2050 | 2060 | 2070 |
|---|---|---|---|---|---|---|---|---|
| GPCD | 154 | Demand (AF) | 883 | 979 | 1,041 | 1,097 | 1,147 | 1,187 |
| **REVISED** | **BASE** | **REVISED** | **2020** | **2030** | **2040** | **2050** | **2060** | **2070** |
| **GPCD** | **166** | **Demand (AF)** | **957** | **1,063** | **1,132** | **1,194** | **1,248** | **1,292** |
| DIFFERENCE | BASE | DIFFERENCE | 2020 | 2030 | 2040 | 2050 | 2060 | 2070 |
| GPCD | 12 | Demand (AF) | 74 | 84 | 91 | 97 | 101 | 105 |

6. **Gillespie County** – no revisions requested

7. **Hays County –** Requesting revision to population for Austin, County-Other, Dripping Springs WSC, and West Travis County Public Utility Agency; requesting revision to base GPCD for Austin and West Travis County Public Utility Agency

   a. **Austin** – Request increases to Austin population projections based on their submitted City Demographer's projections. A portion of those increases is requested for inclusion in the Hays County portion of Austin.

   Request that demand projections use 2011 utility-boundary GPCD as base GPCD. Demands have been recalculated based on the increased population and the revised base GPCD incorporating TWDB-provided water efficiency savings by decade.

   Austin has submitted a formal revision request to the RWPG. It has been included in this request as supporting documentation. See Austin under Travis County and Williamson County for similar requests.

| DRAFT | 2020 | 2030 | 2040 | 2050 | 2060 | 2070 |
|---|---|---|---|---|---|---|
| Population | 74 | 796 | 1,560 | 3,957 | 9,535 | 17,255 |
| **REVISED** | **2020** | **2030** | **2040** | **2050** | **2060** | **2070** |
| **Population** | **1,074** | **4,796** | **7,560** | **11,957** | **17,535** | **25,255** |
| DIFFERENCE | 2020 | 2030 | 2040 | 2050 | 2060 | 2070 |
| Population | 1,000 | 4,000 | 6,000 | 8,000 | 8,000 | 8,000 |

| DRAFT | BASE | DRAFT | 2020 | 2030 | 2040 | 2050 | 2060 | 2070 |
|---|---|---|---|---|---|---|---|---|
| GPCD | 157 | Demand (AF) | 13 | 133 | 260 | 660 | 1,591 | 2,880 |
| **REVISED** | **BASE** | **REVISED** | **2020** | **2030** | **2040** | **2050** | **2060** | **2070** |
| **GPCD** | **162** | **Demand (AF)** | **188** | **827** | **1,304** | **2,063** | **3,025** | **4,357** |
| DIFFERENCE | BASE | DIFFERENCE | 2020 | 2030 | 2040 | 2050 | 2060 | 2070 |
| GPCD | 5 | Demand (AF) | 175 | 694 | 1,044 | 1,403 | 1,434 | 1,477 |

b. **County-Other, Hays** – Request decrease to population in County-Other to balance out population revisions elsewhere in the county, so there is no change to Hays County total population. Demand decreases reflective of decreased population – no base GPCD change.

| DRAFT | 2020 | 2030 | 2040 | 2050 | 2060 | 2070 |
|---|---|---|---|---|---|---|
| Population | 17,821 | 22,702 | 28,847 | 35,419 | 39,663 | 43,122 |
| **REVISED** | **2020** | **2030** | **2040** | **2050** | **2060** | **2070** |
| **Population** | **10,986** | **8,661** | **13,216** | **16,522** | **19,284** | **26,804** |
| DIFFERENCE | 2020 | 2030 | 2040 | 2050 | 2060 | 2070 |
| Population | -6,835 | -14,041 | -15,631 | -18,897 | -20,379 | -16,318 |

| DRAFT | BASE | DRAFT | 2020 | 2030 | 2040 | 2050 | 2060 | 2070 |
|---|---|---|---|---|---|---|---|---|
| GPCD | 118 | Demand (AF) | 2,192 | 2,720 | 3,390 | 4,134 | 4,617 | 5,016 |
| REVISED | BASE | **REVISED** | **2020** | **2030** | **2040** | **2050** | **2060** | **2070** |
| GPCD | 118 | **Demand (AF)** | **1,351** | **1,038** | **1,553** | **1,929** | **2,245** | **3,118** |
| DIFFERENCE | BASE | DIFFERENCE | 2020 | 2030 | 2040 | 2050 | 2060 | 2070 |
| GPCD | 0 | Demand (AF) | -841 | -1,682 | -1,837 | -2,205 | -2,372 | -1,898 |

c. **Dripping Springs WSC** – Request increase to population based on the following input from the WSC: Currently in our CCN (as of 30 Apr 2017), DSWSC has 1810 meters totaling 2400 LUE's, which we consider a population equal to 7,200. At this rate plus taking in the pending projects and contracted projects, population to increase from 11,000 in 2020 to 44,000 in 2070. Dripping Springs WSC obtains a portion of their water supply from WTCPUA, so their numbers are coordinated with WTCPUA. Additional information is provided as supporting documentation. Demand increases reflective of increased population – no base GPCD change.

| DRAFT | 2020 | 2030 | 2040 | 2050 | 2060 | 2070 |
|---|---|---|---|---|---|---|
| Population | 5,165 | 6,368 | 7,833 | 9,666 | 11,736 | 14,092 |
| **REVISED** | **2020** | **2030** | **2040** | **2050** | **2060** | **2070** |
| **Population** | **11,000** | **18,500** | **24,000** | **31,000** | **39,500** | **44,000** |
| DIFFERENCE | 2020 | 2030 | 2040 | 2050 | 2060 | 2070 |
| Population | 5,835 | 12,132 | 16,167 | 21,334 | 27,764 | 29,908 |

| DRAFT | BASE | DRAFT | 2020 | 2030 | 2040 | 2050 | 2060 | 2070 |
|---|---|---|---|---|---|---|---|---|
| GPCD | 165 | Demand (AF) | 906 | 1,098 | 1,339 | 1,646 | 1,995 | 2,394 |
| REVISED | BASE | **REVISED** | **2020** | **2030** | **2040** | **2050** | **2060** | **2070** |
| GPCD | 165 | **Demand (AF)** | **1,930** | **3,190** | **4,103** | **5,278** | **6,716** | **7,476** |
| DIFFERENCE | BASE | DIFFERENCE | 2020 | 2030 | 2040 | 2050 | 2060 | 2070 |
| GPCD | 0 | Demand (AF) | 1,024 | 2,092 | 2,764 | 3,632 | 4,721 | 5,082 |

d. **West Travis County PUA** - Request decrease to population for 2030-2070. WUG provided overall numbers, including retail and wholesale, by county (Hays and Travis). Dripping Springs WSC requested increases, and is served by WTCPUA as a wholesale customer. Region K coordinated with WTCPUA regarding splits and retail/wholesale. Draft projections for Hays County were too high, so requesting to decrease. Additional information is provided as supporting documentation.

Request that demand projections use 2011 utility-boundary GPCD as base GPCD. Demands have been recalculated based on the decreased population and the revised base GPCD incorporating TWDB-provided water efficiency savings by decade.

See West Travis County PUA under Travis County for similar request.

| DRAFT | 2020 | 2030 | 2040 | 2050 | 2060 | 2070 |
|---|---|---|---|---|---|---|
| Population | 12,788 | 18,076 | 24,517 | 32,568 | 41,666 | 52,021 |
| **REVISED** | 2020 | **2030** | **2040** | **2050** | **2060** | **2070** |
| **Population** | 12,788 | **15,985** | **17,981** | **22,131** | **26,281** | **30,431** |
| DIFFERENCE | 2020 | 2030 | 2040 | 2050 | 2060 | 2070 |
| Population | 0 | -2,091 | -6,536 | -10,437 | -15,385 | -21,590 |

| DRAFT | BASE | DRAFT | 2020 | 2030 | 2040 | 2050 | 2060 | 2070 |
|---|---|---|---|---|---|---|---|---|
| GPCD | 391 | Demand (AF) | 5,501 | 7,739 | 10,476 | 13,901 | 17,775 | 22,188 |
| **REVISED** | **BASE** | **REVISED** | **2020** | **2030** | **2040** | **2050** | **2060** | **2070** |
| **GPCD** | **321** | **Demand (AF)** | **4,499** | **5,590** | **6,273** | **7,711** | **9,151** | **10,593** |
| DIFFERENCE | BASE | DIFFERENCE | 2020 | 2030 | 2040 | 2050 | 2060 | 2070 |
| GPCD | -70 | Demand (AF) | -1,002 | -2,149 | -4,203 | -6,190 | -8,624 | -11,595 |

8. **Llano County** – No population revisions; requesting revision to base GPCD for Horseshoe Bay

a. **Horseshoe Bay** - Request that demand projections use 2011 utility-boundary GPCD as base GPCD. Demands have been recalculated incorporating TWDB-provided water efficiency savings by decade. (Similar request for Horseshoe Bay under Burnet County)

| DRAFT | BASE | DRAFT | 2020 | 2030 | 2040 | 2050 | 2060 | 2070 |
|---|---|---|---|---|---|---|---|---|
| GPCD | 569 | Demand (AF) | 3,091 | 3,187 | 3,097 | 3,134 | 3,086 | 3,017 |
| **REVISED** | **BASE** | **REVISED** | **2020** | **2030** | **2040** | **2050** | **2060** | **2070** |
| **GPCD** | **420** | **Demand (AF)** | **2,268** | **2,333** | **2,264** | **2,289** | **2,255** | **2,203** |
| DIFFERENCE | BASE | DIFFERENCE | 2020 | 2030 | 2040 | 2050 | 2060 | 2070 |
| GPCD | -149 | Demand (AF) | -823 | -854 | -833 | -845 | -831 | -814 |

9. **Matagorda County** – No population revisions; requesting revision to base GPCD for Markham MUD and Palacios.

   a. **Markham MUD** - Request that demand projections use 2011 utility-boundary GPCD as base GPCD. Demands have been recalculated incorporating TWDB-provided water efficiency savings by decade.

| DRAFT | BASE | DRAFT | 2020 | 2030 | 2040 | 2050 | 2060 | 2070 |
|---|---|---|---|---|---|---|---|---|
| GPCD | 112 | Demand (AF) | 116 | 117 | 116 | 118 | 119 | 120 |
| **REVISED** | **BASE** | **REVISED** | **2020** | **2030** | **2040** | **2050** | **2060** | **2070** |
| **GPCD** | **95** | **Demand (AF)** | **97** | **96** | **96** | **96** | **98** | **99** |
| DIFFERENCE | BASE | DIFFERENCE | 2020 | 2030 | 2040 | 2050 | 2060 | 2070 |
| GPCD | -17 | Demand (AF) | -19 | -21 | -20 | -22 | -21 | -21 |

   b. **Palacios** - Request that demand projections use 2011 utility-boundary GPCD as base GPCD. Demands have been recalculated incorporating TWDB-provided water efficiency savings by decade.

| DRAFT | BASE | DRAFT | 2020 | 2030 | 2040 | 2050 | 2060 | 2070 |
|---|---|---|---|---|---|---|---|---|
| GPCD | 130 | Demand (AF) | 677 | 688 | 691 | 698 | 708 | 716 |
| **REVISED** | **BASE** | **REVISED** | **2020** | **2030** | **2040** | **2050** | **2060** | **2070** |
| **GPCD** | **119** | **Demand (AF)** | **615** | **623** | **624** | **629** | **638** | **645** |
| DIFFERENCE | BASE | DIFFERENCE | 2020 | 2030 | 2040 | 2050 | 2060 | 2070 |
| GPCD | -11 | Demand (AF) | -62 | -65 | -67 | -69 | -70 | -71 |

10. **Mills County** – No revisions

11. **San Saba County** - no population revisions; requesting revision to base GPCD for Richland SUD

   a. **Richland SUD** - Request that demand projections use 2011 utility-boundary GPCD as base GPCD. Demands have been recalculated incorporating TWDB-provided water efficiency savings by decade. Region K has coordinated with Region F to ensure consistency between regions.

| DRAFT | BASE | DRAFT | 2020 | 2030 | 2040 | 2050 | 2060 | 2070 |
|---|---|---|---|---|---|---|---|---|
| GPCD | 135 | Demand (AF) | 136 | 139 | 137 | 133 | 136 | 139 |
| **REVISED** | **BASE** | **REVISED** | **2020** | **2030** | **2040** | **2050** | **2060** | **2070** |
| **GPCD** | **217** | **Demand (AF)** | **224** | **231** | **229** | **224** | **229** | **235** |
| DIFFERENCE | BASE | DIFFERENCE | 2020 | 2030 | 2040 | 2050 | 2060 | 2070 |
| GPCD | 82 | Demand (AF) | 88 | 92 | 92 | 91 | 93 | 96 |

12. **Travis County** – Overall, projections show that Region K is approximately 1.5% underprojected as compared to Census data. Region K requests that the Travis County population be increased to include the additional 1.5% of the region's total.

| DRAFT | 2020 | 2030 | 2040 | 2050 | 2060 | 2070 |
|---|---|---|---|---|---|---|
| Population | 1,273,260 | 1,508,642 | 1,732,860 | 1,897,769 | 2,033,120 | 2,185,909 |
| **REVISED** | **2020** | **2030** | **2040** | **2050** | **2060** | **2070** |
| **Population** | **1,298,624** | **1,538,784** | **1,767,636** | **1,936,583** | **2,075,875** | **2,233,259** |
| DIFFERENCE | 2020 | 2030 | 2040 | 2050 | 2060 | 2070 |
| Population | 25,364 | 30,142 | 34,776 | 38,814 | 42,755 | 47,350 |

Requesting sub-WUG to County-Other (Aqua Texas – Rivercrest). Region K has included population and demand projections broken out from County-Other. Also acknowledging that TWDB staff have developed population and demand projections for Rough Hollow in Travis County CRU and Sweetwater CRU, and Region K is not requesting any revisions to those numbers.

Requesting revisions to population for Austin, County-Other, Lakeway MUD, Leander, Manville WSC, Oak Shores Water System, Pflugerville, Sunset Valley, Travis County WCID 17, Travis County WCID Point Venture, Wells Branch MUD, and West Travis County Public Utility Agency.

Requesting revisions to the base GPCD for Austin, Barton Creek West WSC, Barton Creek WSC, Cottonwood Creek MUD 1, Hurst Creek MUD, Jonestown WSC, Lakeway MUD, Leander, Shady Hollow MUD, Sunset Valley, Travis County MUD 10, Travis County MUD 2, Travis County MUD 4, Travis County WCID 10, Travis County WCID 19, Travis County WCID Point Venture, Wells Branch MUD, and West Travis County Public Utility Agency.

a. **Aqua Texas- Rivercrest** (sub-WUG to County-Other) – Sub-WUG has been broken out of County-Other and we have used historical data to estimate population and demands, assuming buildout conditions. Used water efficiency savings similar to Oak Shores Water System.

| DRAFT | 2020 | 2030 | 2040 | 2050 | 2060 | 2070 |
|---|---|---|---|---|---|---|
| Population | n/a | n/a | n/a | n/a | n/a | n/a |
| **REVISED** | **2020** | **2030** | **2040** | **2050** | **2060** | **2070** |
| **Population** | **774** | **774** | **774** | **774** | **774** | **774** |
| DIFFERENCE | 2020 | 2030 | 2040 | 2050 | 2060 | 2070 |
| Population | 774 | 774 | 774 | 774 | 774 | 774 |

| DRAFT | BASE | DRAFT | 2020 | 2030 | 2040 | 2050 | 2060 | 2070 |
|---|---|---|---|---|---|---|---|---|
| GPCD | n/a | Demand (AF) | n/a | n/a | n/a | n/a | n/a | n/a |
| **REVISED** | **BASE** | **REVISED** | **2020** | **2030** | **2040** | **2050** | **2060** | **2070** |
| **GPCD** | **374** | **Demand (AF)** | **317** | **315** | **313** | **312** | **312** | **312** |
| DIFFERENCE | BASE | DIFFERENCE | 2020 | 2030 | 2040 | 2050 | 2060 | 2070 |
| GPCD | 374 | Demand (AF) | 317 | 315 | 313 | 312 | 312 | 312 |

b. **Austin** – Request increases to Austin population projections based on their submitted City Demographer's projections. A majority of those increases is requested for inclusion in the Travis County portion of Austin. A portion of County-Other has been moved under Austin as part of the requested revision, based on those that are retail customers of Austin.

Request that demand projections use 2011 utility-boundary GPCD as base GPCD. Demands have been recalculated based on the increased population and the revised base GPCD incorporating TWDB-provided water efficiency savings by decade.

Austin has submitted a formal revision request to the RWPG. It has been included in this request as supporting documentation. See Austin under Hays County and Williamson County for similar requests.

| DRAFT | 2020 | 2030 | 2040 | 2050 | 2060 | 2070 |
|---|---|---|---|---|---|---|
| Population | 960,709 | 1,125,478 | 1,285,243 | 1,402,811 | 1,496,994 | 1,607,291 |
| **REVISED** | **2020** | **2030** | **2040** | **2050** | **2060** | **2070** |
| **Population** | **976,785** | **1,153,560** | **1,337,673** | **1,464,157** | **1,564,930** | **1,701,504** |
| DIFFERENCE | 2020 | 2030 | 2040 | 2050 | 2060 | 2070 |
| Population | 16,076 | 28,082 | 52,430 | 61,346 | 67,936 | 94,213 |

| DRAFT | BASE | DRAFT | 2020 | 2030 | 2040 | 2050 | 2060 | 2070 |
|---|---|---|---|---|---|---|---|---|
| GPCD | 157 | Demand (AF) | 162,496 | 187,844 | 214,509 | 234,131 | 249,850 | 268,259 |
| **REVISED** | **BASE** | **REVISED** | **2020** | **2030** | **2040** | **2050** | **2060** | **2070** |
| **GPCD** | **162** | **Demand (AF)** | **170,686** | **198,992** | **230,751** | **252,570** | **269,954** | **293,513** |
| DIFFERENCE | BASE | DIFFERENCE | 2020 | 2030 | 2040 | 2050 | 2060 | 2070 |
| GPCD | 5 | Demand (AF) | 8,190 | 11,148 | 16,242 | 18,439 | 20,104 | 25,254 |

c. **Barton Creek West WSC** - Request that demand projections use 2011 utility-boundary GPCD as base GPCD. Demands have been recalculated incorporating TWDB-provided water efficiency savings by decade.

| DRAFT | BASE | DRAFT | 2020 | 2030 | 2040 | 2050 | 2060 | 2070 |
|---|---|---|---|---|---|---|---|---|
| GPCD | 272 | Demand (AF) | 396 | 392 | 389 | 388 | 387 | 387 |
| **REVISED** | **BASE** | **REVISED** | **2020** | **2030** | **2040** | **2050** | **2060** | **2070** |
| **GPCD** | **299** | **Demand (AF)** | **436** | **433** | **430** | **428** | **427** | **427** |
| DIFFERENCE | BASE | DIFFERENCE | 2020 | 2030 | 2040 | 2050 | 2060 | 2070 |
| GPCD | 27 | Demand (AF) | 40 | 41 | 41 | 40 | 40 | 40 |

d. **Barton Creek WSC** - Request that demand projections use 2011 utility-boundary GPCD as base GPCD. Demands have been recalculated incorporating TWDB-provided water efficiency savings by decade.

| DRAFT | BASE | DRAFT | 2020 | 2030 | 2040 | 2050 | 2060 | 2070 |
|---|---|---|---|---|---|---|---|---|
| GPCD | 649 | Demand (AF) | 504 | 594 | 681 | 745 | 798 | 858 |
| **REVISED** | **BASE** | **REVISED** | **2020** | **2030** | **2040** | **2050** | **2060** | **2070** |
| **GPCD** | **675** | **Demand (AF)** | **524** | **619** | **709** | **776** | **830** | **893** |
| DIFFERENCE | BASE | DIFFERENCE | 2020 | 2030 | 2040 | 2050 | 2060 | 2070 |
| GPCD | 26 | Demand (AF) | 20 | 25 | 28 | 31 | 32 | 35 |

e. **Cottonwood Creek MUD 1** - Request that demand projections use 2011 utility-boundary GPCD as base GPCD. Demands have been recalculated incorporating TWDB-provided water efficiency savings by decade.

| DRAFT | BASE | DRAFT | 2020 | 2030 | 2040 | 2050 | 2060 | 2070 |
|---|---|---|---|---|---|---|---|---|
| GPCD | 80 | Demand (AF) | 116 | 133 | 149 | 161 | 172 | 184 |
| **REVISED** | **BASE** | **REVISED** | **2020** | **2030** | **2040** | **2050** | **2060** | **2070** |
| **GPCD** | **67** | **Demand (AF)** | **95** | **107** | **120** | **129** | **138** | **148** |
| DIFFERENCE | BASE | DIFFERENCE | 2020 | 2030 | 2040 | 2050 | 2060 | 2070 |
| GPCD | -13 | Demand (AF) | -21 | -26 | -29 | -32 | -34 | -36 |

f. **County-Other, Travis** – Decrease County-Other population to balance out other population changes so no change to Travis County total population, other than 1.5% overall increase. Revised demands reflected – no change to base GPCD.

| DRAFT | 2020 | 2030 | 2040 | 2050 | 2060 | 2070 |
|---|---|---|---|---|---|---|
| Population | 14,744 | 13,073 | 11,999 | 8,903 | 6,411 | 7,067 |
| **REVISED** | **2020** | **2030** | **2040** | **2050** | **2060** | **2070** |
| **Population** | **6,206** | **6,206** | **6,206** | **6,206** | **6,206** | **6,206** |
| DIFFERENCE | 2020 | 2030 | 2040 | 2050 | 2060 | 2070 |
| Population | -8,538 | -6,867 | -5,793 | -2,697 | -205 | -861 |

| DRAFT | BASE | DRAFT | 2020 | 2030 | 2040 | 2050 | 2060 | 2070 |
|---|---|---|---|---|---|---|---|---|
| GPCD | 136 | Demand (AF) | 2,067 | 1,818 | 1,663 | 1,229 | 879 | 967 |
| REVISED | BASE | **REVISED** | **2020** | **2030** | **2040** | **2050** | **2060** | **2070** |
| GPCD | 136 | **Demand (AF)** | **870** | **863** | **860** | **857** | **851** | **849** |
| DIFFERENCE | BASE | DIFFERENCE | 2020 | 2030 | 2040 | 2050 | 2060 | 2070 |
| GPCD | 0 | Demand (AF) | -1,197 | -955 | -803 | -372 | -28 | -118 |

g. **Hurst Creek MUD** - Request that demand projections use 2011 utility-boundary GPCD as base GPCD. Demands have been recalculated incorporating TWDB-provided water efficiency savings by decade.

| DRAFT | BASE | DRAFT | 2020 | 2030 | 2040 | 2050 | 2060 | 2070 |
|---|---|---|---|---|---|---|---|---|
| GPCD | 447 | Demand (AF) | 1,520 | 1,511 | 1,505 | 1,502 | 1,501 | 1,501 |
| **REVISED** | **BASE** | **REVISED** | **2020** | **2030** | **2040** | **2050** | **2060** | **2070** |
| **GPCD** | **504** | **Demand (AF)** | **1,718** | **1,709** | **1,703** | **1,700** | **1,699** | **1,699** |
| DIFFERENCE | BASE | DIFFERENCE | 2020 | 2030 | 2040 | 2050 | 2060 | 2070 |
| GPCD | 57 | Demand (AF) | 198 | 198 | 198 | 198 | 198 | 198 |

h. **Jonestown WSC** - Request that demand projections use 2011 utility-boundary GPCD as base GPCD. Demands have been recalculated incorporating TWDB-provided water efficiency savings by decade.

| DRAFT | BASE | DRAFT | 2020 | 2030 | 2040 | 2050 | 2060 | 2070 |
|---|---|---|---|---|---|---|---|---|
| GPCD | 138 | Demand (AF) | 574 | 601 | 629 | 665 | 699 | 732 |
| **REVISED** | **BASE** | **REVISED** | **2020** | **2030** | **2040** | **2050** | **2060** | **2070** |
| **GPCD** | **161** | **Demand (AF)** | **675** | **709** | **744** | **787** | **828** | **866** |
| DIFFERENCE | BASE | DIFFERENCE | 2020 | 2030 | 2040 | 2050 | 2060 | 2070 |
| GPCD | 23 | Demand (AF) | 101 | 108 | 115 | 122 | 129 | 134 |

i. **Lakeway MUD** - Request decreased population based on following data from WUG: Assumption of 2.56 persons per household per 2016 Census. Buildout reached at 5,088 LUEs in 2054. 2016 LUE connections = 4,160, plus 25 new per year. Provided potable water operations for 2011, calculating GPCD to be 234. Request for revised demands reflect population and GPCD reductions, incorporating TWDB-provided water efficiency savings by decade. Supporting documentation provided.

| DRAFT | 2020 | 2030 | 2040 | 2050 | 2060 | 2070 |
|---|---|---|---|---|---|---|
| Population | 13,904 | 18,295 | 18,295 | 18,295 | 18,295 | 18,295 |
| **REVISED** | **2020** | **2030** | **2040** | **2050** | **2060** | **2070** |
| **Population** | **10,906** | **11,546** | **12,186** | **12,826** | **13,025** | **13,025** |
| DIFFERENCE | 2020 | 2030 | 2040 | 2050 | 2060 | 2070 |
| Population | -2,998 | -6,749 | -6,109 | -5,469 | -5,270 | -5,270 |

| DRAFT | BASE | DRAFT | 2020 | 2030 | 2040 | 2050 | 2060 | 2070 |
|---|---|---|---|---|---|---|---|---|
| GPCD | 301 | Demand (AF) | 4,561 | 5,943 | 5,909 | 5,893 | 5,888 | 5,886 |
| **REVISED** | **BASE** | **REVISED** | **2020** | **2030** | **2040** | **2050** | **2060** | **2070** |
| **GPCD** | **234** | **Demand (AF)** | **2,757** | **2,882** | **3,019** | **3,166** | **3,212** | **3,211** |
| DIFFERENCE | BASE | DIFFERENCE | 2020 | 2030 | 2040 | 2050 | 2060 | 2070 |
| GPCD | -67 | Demand (AF) | -1,804 | -3,061 | -2,890 | -2,727 | -2,676 | -2,675 |

j. **Leander** - Request revised population based on past and current growth rates, as well as anticipated growth rates. Request increased population in 2020 and 2030, and decreased population in 2040 through 2070. Requested revisions have been coordinated with Region G. Request to increase base GPCD to 128, based on 2015 water use data provided by

TWDB staff. Revisions to demands reflect population and GPCD changes, incorporating TWDB-provided water efficiency savings by decade. Supporting documentation provided.

| DRAFT | 2020 | 2030 | 2040 | 2050 | 2060 | 2070 |
|---|---|---|---|---|---|---|
| Population | 9,491 | 24,827 | 43,093 | 46,640 | 48,403 | 50,610 |
| **REVISED** | **2020** | **2030** | **2040** | **2050** | **2060** | **2070** |
| **Population** | **11,246** | **26,735** | **28,349** | **29,963** | **30,689** | **32,033** |
| DIFFERENCE | 2020 | 2030 | 2040 | 2050 | 2060 | 2070 |
| Population | 1,755 | 1,908 | -14,744 | -16,677 | -17,714 | -18,577 |

| DRAFT | BASE | DRAFT | 2020 | 2030 | 2040 | 2050 | 2060 | 2070 |
|---|---|---|---|---|---|---|---|---|
| GPCD | 114 | Demand (AF) | 1,133 | 2,907 | 5,020 | 5,422 | 5,623 | 5,877 |
| **REVISED** | **BASE** | **REVISED** | **2020** | **2030** | **2040** | **2050** | **2060** | **2070** |
| **GPCD** | **128** | **Demand (AF)** | **1,519** | **3,550** | **3,747** | **3,953** | **4,046** | **4,222** |
| DIFFERENCE | BASE | DIFFERENCE | 2020 | 2030 | 2040 | 2050 | 2060 | 2070 |
| GPCD | 14 | Demand (AF) | 386 | 643 | -1,273 | -1,469 | -1,577 | -1,655 |

k. **Manville WSC** – Request to decrease Manville WSC's population, based on current population and anticipated growth rates, provided by WUG. Revisions to demands reflect population changes – no base GPCD change.

| DRAFT | 2020 | 2030 | 2040 | 2050 | 2060 | 2070 |
|---|---|---|---|---|---|---|
| Population | 22,045 | 27,156 | 31,976 | 37,373 | 42,136 | 46,566 |
| **REVISED** | **2020** | **2030** | **2040** | **2050** | **2060** | **2070** |
| **Population** | **15,661** | **19,292** | **22,716** | **26,550** | **29,934** | **33,081** |
| DIFFERENCE | 2020 | 2030 | 2040 | 2050 | 2060 | 2070 |
| Population | -6,384 | -7,864 | -9,260 | -10,823 | -12,202 | -13,485 |

| DRAFT | BASE | DRAFT | 2020 | 2030 | 2040 | 2050 | 2060 | 2070 |
|---|---|---|---|---|---|---|---|---|
| GPCD | 148 | Demand (AF) | 3,434 | 4,148 | 4,835 | 5,623 | 6,329 | 6,991 |
| REVISED | BASE | **REVISED** | **2020** | **2030** | **2040** | **2050** | **2060** | **2070** |
| GPCD | 148 | **Demand (AF)** | **2,439** | **2,946** | **3,435** | **3,994** | **4,496** | **4,966** |
| DIFFERENCE | BASE | DIFFERENCE | 2020 | 2030 | 2040 | 2050 | 2060 | 2070 |
| GPCD | 0 | Demand (AF) | -995 | -1,202 | -1,400 | -1,629 | -1,833 | -2,025 |

l. **Oak Shores Water System** - Request revision to population, based on information provided by WUG and TCEQ Drinking Water Watch database. Buildout should occur in 2030 decade after 55 more homes are built. WUG thought demands are a little low, and should be 150 AF in 2020 and 170 AF in 2030 and beyond. Population and demands revised to reflect request, starting with current population, incorporating TWDB-provided water efficiency savings by decade.

| DRAFT | 2020 | 2030 | 2040 | 2050 | 2060 | 2070 |
|---|---|---|---|---|---|---|
| Population | 467 | 553 | 636 | 696 | 746 | 802 |
| **REVISED** | **2020** | **2030** | **2040** | **2050** | **2060** | **2070** |
| **Population** | **546** | **632** | **632** | **632** | **632** | **632** |
| DIFFERENCE | 2020 | 2030 | 2040 | 2050 | 2060 | 2070 |
| Population | 79 | 79 | -4 | -64 | -114 | -170 |

| DRAFT | BASE | DRAFT | 2020 | 2030 | 2040 | 2050 | 2060 | 2070 |
|---|---|---|---|---|---|---|---|---|
| GPCD | 253 | Demand (AF) | 128 | 149 | 171 | 186 | 199 | 214 |
| REVISED | BASE | **REVISED** | **2020** | **2030** | **2040** | **2050** | **2060** | **2070** |
| GPCD | 253 | **Demand (AF)** | **150** | **171** | **170** | **169** | **169** | **169** |
| DIFFERENCE | BASE | DIFFERENCE | 2020 | 2030 | 2040 | 2050 | 2060 | 2070 |
| GPCD | 0 | Demand (AF) | 22 | 22 | -1 | -17 | -30 | -45 |

m. **Pflugerville** - Request decrease to population, beginning in 2030. WUG submitted that build-out is expected in 2060 at a population of 130,167. Rescaled population for 2030-2050. Demands reflect population changes – no change to base GPCD.

| DRAFT | 2020 | 2030 | 2040 | 2050 | 2060 | 2070 |
|---|---|---|---|---|---|---|
| Population | 62,745 | 85,016 | 106,017 | 129,532 | 150,287 | 169,592 |
| **REVISED** | 2020 | **2030** | **2040** | **2050** | **2060** | **2070** |
| **Population** | 62,745 | **78,245** | **95,599** | **112,807** | **130,167** | **130,167** |
| DIFFERENCE | 2020 | 2030 | 2040 | 2050 | 2060 | 2070 |
| Population | 0 | -6,771 | -10,418 | -16,725 | -20,120 | -39,425 |

| DRAFT | BASE | DRAFT | 2020 | 2030 | 2040 | 2050 | 2060 | 2070 |
|---|---|---|---|---|---|---|---|---|
| GPCD | 155 | Demand (AF) | 10,403 | 13,928 | 17,298 | 21,087 | 24,438 | 27,564 |
| REVISED | BASE | **REVISED** | 2020 | **2030** | **2040** | **2050** | **2060** | **2070** |
| GPCD | 155 | **Demand (AF)** | 10,403 | **12,819** | **15,598** | **18,364** | **21,167** | **21,156** |
| DIFFERENCE | BASE | DIFFERENCE | 2020 | 2030 | 2040 | 2050 | 2060 | 2070 |
| GPCD | 0 | Demand (AF) | 0 | -1,109 | -1,700 | -2,723 | -3,271 | -6,408 |

n. **Rough Hollow in Travis County CRU (new WUG)** – TWDB calculated projections, pulled out of County-Other. RWPG comfortable with TWDB projections – no changes.

o. **Shady Hollow MUD** - Request that demand projections use 2011 utility-boundary GPCD as base GPCD. Demands have been recalculated incorporating TWDB-provided water efficiency savings by decade.

| DRAFT | BASE | DRAFT | 2020 | 2030 | 2040 | 2050 | 2060 | 2070 |
|---|---|---|---|---|---|---|---|---|
| GPCD | 151 | Demand (AF) | 695 | 677 | 661 | 653 | 651 | 651 |
| **REVISED** | **BASE** | **REVISED** | **2020** | **2030** | **2040** | **2050** | **2060** | **2070** |
| **GPCD** | **171** | **Demand (AF)** | **793** | **775** | **759** | **750** | **749** | **749** |
| DIFFERENCE | BASE | DIFFERENCE | 2020 | 2030 | 2040 | 2050 | 2060 | 2070 |
| GPCD | 20 | Demand (AF) | 98 | 98 | 98 | 97 | 98 | 98 |

p. **Sunset Valley** - Request decrease to population. WUG provided calculation details to show why population should be lower. Information is provided as supporting documentation. Request that demand projections use 2011 utility-boundary GPCD as base GPCD. Demands have been recalculated incorporating decreased population and TWDB-provided water efficiency savings by decade.

| DRAFT | 2020 | 2030 | 2040 | 2050 | 2060 | 2070 |
|---|---|---|---|---|---|---|
| Population | 1,179 | 1,414 | 1,725 | 2,074 | 2,383 | 2,669 |
| **REVISED** | **2020** | **2030** | **2040** | **2050** | **2060** | **2070** |
| **Population** | **930** | **1,063** | **1,234** | **1,432** | **1,662** | **1,929** |
| DIFFERENCE | 2020 | 2030 | 2040 | 2050 | 2060 | 2070 |
| Population | -249 | -351 | -491 | -642 | -721 | -740 |

| DRAFT | BASE | DRAFT | 2020 | 2030 | 2040 | 2050 | 2060 | 2070 |
|---|---|---|---|---|---|---|---|---|
| GPCD | 312 | Demand (AF) | 400 | 476 | 578 | 694 | 797 | 892 |
| **REVISED** | **BASE** | **REVISED** | **2020** | **2030** | **2040** | **2050** | **2060** | **2070** |
| **GPCD** | **362** | **Demand (AF)** | **368** | **417** | **483** | **559** | **649** | **753** |
| DIFFERENCE | BASE | DIFFERENCE | 2020 | 2030 | 2040 | 2050 | 2060 | 2070 |
| GPCD | 50 | Demand (AF) | -32 | -59 | -95 | -135 | -148 | -139 |

q. **Sweetwater CRU** – TWDB calculated projections, pulled out of County-Other. RWPG comfortable with TWDB projections – no changes.

r. **Travis County MUD 10** - Request that demand projections use 2011 utility-boundary GPCD as base GPCD. Demands have been recalculated incorporating TWDB-provided water efficiency savings by decade.

| DRAFT | BASE | DRAFT | 2020 | 2030 | 2040 | 2050 | 2060 | 2070 |
|---|---|---|---|---|---|---|---|---|
| GPCD | 260 | Demand (AF) | 98 | 115 | 131 | 143 | 153 | 164 |
| **REVISED** | **BASE** | **REVISED** | **2020** | **2030** | **2040** | **2050** | **2060** | **2070** |
| **GPCD** | **199** | **Demand (AF)** | **74** | **87** | **99** | **108** | **115** | **124** |
| DIFFERENCE | BASE | DIFFERENCE | 2020 | 2030 | 2040 | 2050 | 2060 | 2070 |
| GPCD | -61 | Demand (AF) | -24 | -28 | -32 | -35 | -38 | -40 |

s. **Travis County MUD 2** - Request that demand projections use 2011 utility-boundary GPCD as base GPCD. Demands have been recalculated incorporating TWDB-provided water efficiency savings by decade.

| DRAFT | BASE | DRAFT | 2020 | 2030 | 2040 | 2050 | 2060 | 2070 |
|---|---|---|---|---|---|---|---|---|
| GPCD | 142 | Demand (AF) | 379 | 439 | 498 | 542 | 580 | 623 |
| **REVISED** | **BASE** | **REVISED** | **2020** | **2030** | **2040** | **2050** | **2060** | **2070** |
| **GPCD** | **122** | **Demand (AF)** | **322** | **372** | **421** | **457** | **489** | **525** |
| DIFFERENCE | BASE | DIFFERENCE | 2020 | 2030 | 2040 | 2050 | 2060 | 2070 |
| GPCD | -20 | Demand (AF) | -57 | -67 | -77 | -85 | -91 | -98 |

t. **Travis County MUD 4** - Request that demand projections use 2011 utility-boundary GPCD as base GPCD. Demands have been recalculated incorporating TWDB-provided water efficiency savings by decade.

| DRAFT | BASE | DRAFT | 2020 | 2030 | 2040 | 2050 | 2060 | 2070 |
|---|---|---|---|---|---|---|---|---|
| GPCD | 755 | Demand (AF) | 2,051 | 2,365 | 2,662 | 2,994 | 3,288 | 3,563 |
| **REVISED** | **BASE** | **REVISED** | **2020** | **2030** | **2040** | **2050** | **2060** | **2070** |
| **GPCD** | **554** | **Demand (AF)** | **1,500** | **1,728** | **1,945** | **2,188** | **2,402** | **2,603** |
| DIFFERENCE | BASE | DIFFERENCE | 2020 | 2030 | 2040 | 2050 | 2060 | 2070 |
| GPCD | -201 | Demand (AF) | -551 | -637 | -717 | -806 | -886 | -960 |

u. **Travis County WCID 10** - Request that demand projections use 2011 utility-boundary GPCD as base GPCD. Demands have been recalculated incorporating TWDB-provided water efficiency savings by decade.

| DRAFT | BASE | DRAFT | 2020 | 2030 | 2040 | 2050 | 2060 | 2070 |
|---|---|---|---|---|---|---|---|---|
| GPCD | 319 | Demand (AF) | 2,644 | 2,865 | 3,080 | 3,332 | 3,561 | 3,776 |
| **REVISED** | **BASE** | **REVISED** | **2020** | **2030** | **2040** | **2050** | **2060** | **2070** |
| **GPCD** | **419** | **Demand (AF)** | **3,499** | **3,802** | **4,094** | **4,433** | **4,739** | **5,026** |
| DIFFERENCE | BASE | DIFFERENCE | 2020 | 2030 | 2040 | 2050 | 2060 | 2070 |
| GPCD | 100 | Demand (AF) | 855 | 937 | 1,014 | 1,101 | 1,178 | 1,250 |

v. **Travis County WCID 17** – Request increase to 2020 population, based on WUG-reported population of 34,290 to TWDB for 2016, which is higher than draft projected 2020 population of 33,117. Growth is faster than projected. Demands have been recalculated incorporating TWDB-provided water efficiency savings by decade.

| DRAFT | 2020 | 2030 | 2040 | 2050 | 2060 | 2070 |
|---|---|---|---|---|---|---|
| Population | 33,117 | 39,741 | 43,715 | 44,473 | 45,671 | 47,125 |
| **REVISED** | **2020** | 2030 | 2040 | 2050 | 2060 | 2070 |
| **Population** | **36,720** | 39,741 | 43,715 | 44,473 | 45,671 | 47,125 |
| DIFFERENCE | 2020 | 2030 | 2040 | 2050 | 2060 | 2070 |
| Population | 3,603 | 0 | 0 | 0 | 0 | 0 |

| DRAFT | BASE | DRAFT | 2020 | 2030 | 2040 | 2050 | 2060 | 2070 |
|---|---|---|---|---|---|---|---|---|
| GPCD | 236 | Demand (AF) | 8,450 | 10,053 | 11,016 | 11,186 | 11,479 | 11,841 |
| REVISED | BASE | **REVISED** | **2020** | 2030 | 2040 | 2050 | 2060 | 2070 |
| GPCD | 236 | **Demand (AF)** | **9,370** | 10,053 | 11,016 | 11,186 | 11,479 | 11,841 |
| DIFFERENCE | BASE | DIFFERENCE | 2020 | 2030 | 2040 | 2050 | 2060 | 2070 |
| GPCD | 0 | Demand (AF) | 920 | 0 | 0 | 0 | 0 | 0 |

w. **Travis County WCID 19** - Request that demand projections use 2011 utility-boundary GPCD as base GPCD. Demands have been recalculated incorporating TWDB-provided water efficiency savings by decade.

| DRAFT | BASE | DRAFT | 2020 | 2030 | 2040 | 2050 | 2060 | 2070 |
|---|---|---|---|---|---|---|---|---|
| GPCD | 628 | Demand (AF) | 474 | 472 | 470 | 469 | 469 | 469 |
| **REVISED** | **BASE** | **REVISED** | **2020** | **2030** | **2040** | **2050** | **2060** | **2070** |
| **GPCD** | **595** | **Demand (AF)** | **449** | **447** | **445** | **444** | **444** | **444** |
| DIFFERENCE | BASE | DIFFERENCE | 2020 | 2030 | 2040 | 2050 | 2060 | 2070 |
| GPCD | -33 | Demand (AF) | -25 | -25 | -25 | -25 | -25 | -25 |

x. **Travis County WCID Point Venture** – Request to increase population numbers in 2020 and 2030. 2015 TWDB population estimate was 786. Adding close to 50 residents per year = 1,036 population in 2020. Adjusted 2030 population slightly upwards, then no change to draft 2040 – 2070 numbers. Request decrease base GPCD to 228, based on 2015 historical GPCD number, as WUG was comfortable with 2015 population number reported. Demands have been recalculated incorporating revised population and TWDB-provided water efficiency savings by decade.

| DRAFT | 2020 | 2030 | 2040 | 2050 | 2060 | 2070 |
|---|---|---|---|---|---|---|
| Population | 723 | 1,215 | 1,568 | 1,900 | 2,273 | 2,601 |
| **REVISED** | **2020** | **2030** | 2040 | 2050 | 2060 | 2070 |
| **Population** | **1,036** | **1,325** | 1,568 | 1,900 | 2,273 | 2,601 |
| DIFFERENCE | 2020 | 2030 | 2040 | 2050 | 2060 | 2070 |
| Population | 313 | 110 | 0 | 0 | 0 | 0 |

| DRAFT | BASE | DRAFT | 2020 | 2030 | 2040 | 2050 | 2060 | 2070 |
|---|---|---|---|---|---|---|---|---|
| GPCD | 283 | Demand (AF) | 222 | 370 | 474 | 573 | 685 | 783 |
| **REVISED** | **BASE** | **REVISED** | **2020** | **2030** | **2040** | **2050** | **2060** | **2070** |
| **GPCD** | **228** | **Demand (AF)** | **255** | **322** | **378** | **456** | **545** | **624** |
| DIFFERENCE | BASE | DIFFERENCE | 2020 | 2030 | 2040 | 2050 | 2060 | 2070 |
| GPCD | -55 | Demand (AF) | 33 | -48 | -96 | -117 | -140 | -159 |

y. **Wells Branch MUD** – Request increase to population, based on information submitted by WUG. Current Data: No. of SF residential connections = 2,912, Population = 8,736; No. of apartment units = 4,435, Population = 11,087. Total population = 19,823 between Travis and Williamson Counties. Total Water Consumption for Oct. 2015-Sept. 2016 (gallons) = 450,764,000. Average/Mo. = 37.5 mil gallons. The District is almost completely built-out.

Limited remaining commercial and institutional construction, but very little land available for growth after that. Request to reduce GPCD to reflect revised population based on 2011 historical water use. Population and GPCD modified to reflect request. Also see Williamson County.

| DRAFT | 2020 | 2030 | 2040 | 2050 | 2060 | 2070 |
|---|---|---|---|---|---|---|
| Population | 14,989 | 14,989 | 14,989 | 14,989 | 14,989 | 14,989 |
| **REVISED** | **2020** | **2030** | **2040** | **2050** | **2060** | **2070** |
| **Population** | **18,750** | **18,750** | **18,750** | **18,750** | **18,750** | **18,750** |
| DIFFERENCE | 2020 | 2030 | 2040 | 2050 | 2060 | 2070 |
| Population | 3,761 | 3,761 | 3,761 | 3,761 | 3,761 | 3,761 |

| DRAFT | BASE | DRAFT | 2020 | 2030 | 2040 | 2050 | 2060 | 2070 |
|---|---|---|---|---|---|---|---|---|
| GPCD | 107 | Demand (AF) | 1,638 | 1,601 | 1,576 | 1,562 | 1,558 | 1,558 |
| **REVISED** | **BASE** | **REVISED** | **2020** | **2030** | **2040** | **2050** | **2060** | **2070** |
| **GPCD** | **75** | **Demand (AF)** | **1,376** | **1,331** | **1,300** | **1,282** | **1,277** | **1,276** |
| DIFFERENCE | BASE | DIFFERENCE | 2020 | 2030 | 2040 | 2050 | 2060 | 2070 |
| GPCD | -32 | Demand (AF) | -262 | -270 | -276 | -280 | -281 | -282 |

z. **West Travis County PUA** - Request increase to population. WUG provided overall numbers, including retail and wholesale, by county (Hays and Travis). Region K coordinated with WTCPUA regarding splits and retail/wholesale. Draft projections for Travis County were too low, so requesting to increase. Additional information is provided as supporting documentation.

Request that demand projections use 2011 utility-boundary GPCD as base GPCD. Demands have been recalculated based on the increased population and the revised base GPCD incorporating TWDB-provided water efficiency savings by decade.

See West Travis County PUA under Hays County for similar request.

| DRAFT | 2020 | 2030 | 2040 | 2050 | 2060 | 2070 |
|---|---|---|---|---|---|---|
| Population | 7,394 | 8,537 | 9,615 | 10,824 | 11,890 | 12,880 |
| **REVISED** | **2020** | **2030** | **2040** | **2050** | **2060** | **2070** |
| **Population** | **19,039** | **21,037** | **22,715** | **25,324** | **26,990** | **28,480** |
| DIFFERENCE | 2020 | 2030 | 2040 | 2050 | 2060 | 2070 |
| Population | 11,645 | 12,500 | 13,100 | 14,500 | 15,100 | 15,600 |

| DRAFT | BASE | DRAFT | 2020 | 2030 | 2040 | 2050 | 2060 | 2070 |
|---|---|---|---|---|---|---|---|---|
| GPCD | 391 | Demand (AF) | 3,181 | 3,655 | 4,109 | 4,620 | 5,072 | 5,494 |
| **REVISED** | **BASE** | **REVISED** | **2020** | **2030** | **2040** | **2050** | **2060** | **2070** |
| **GPCD** | **321** | **Demand (AF)** | **6,698** | **7,357** | **7,925** | **8,824** | **9,398** | **9,914** |
| DIFFERENCE | BASE | DIFFERENCE | 2020 | 2030 | 2040 | 2050 | 2060 | 2070 |
| GPCD | -70 | Demand (AF) | 3,517 | 3,702 | 3,816 | 4,204 | 4,326 | 4,420 |

13. **Wharton County** – No population revisions; requesting revision to base GPCD for County-Other

a. **County-Other, Wharton** – Request that demand projections use 2011 utility-boundary GPCD as base GPCD, to be consistent with Region P request. Demands have been recalculated based on the increased population and the revised base GPCD incorporating TWDB-provided water efficiency savings by decade.

| DRAFT | BASE | DRAFT | 2020 | 2030 | 2040 | 2050 | 2060 | 2070 |
|---|---|---|---|---|---|---|---|---|
| GPCD | 126 | Demand (AF) | 1,898 | 1,936 | 1,972 | 2,044 | 2,111 | 2,173 |
| **REVISED** | **BASE** | **REVISED** | **2020** | **2030** | **2040** | **2050** | **2060** | **2070** |
| **GPCD** | **128** | **Demand (AF)** | **1,930** | **1,971** | **2,008** | **2,082** | **2,150** | **2,214** |
| DIFFERENCE | BASE | DIFFERENCE | 2020 | 2030 | 2040 | 2050 | 2060 | 2070 |
| GPCD | 2 | Demand (AF) | 32 | 35 | 36 | 38 | 39 | 41 |

14. **Williamson County** – Requesting population revisions to Austin and County-Other; requesting revisions to base GPCD for Austin and Wells Branch MUD.

a. **Austin** - Request to increase population. Region K County-Other population in Williamson County is nearly all retail customers of City of Austin. Request to move 97% of County-Other population under Austin. Demands have been recalculated based on the increased population and the revised base GPCD incorporating TWDB-provided water efficiency savings by decade. Also see Travis, Hays counties.

| DRAFT | 2020 | 2030 | 2040 | 2050 | 2060 | 2070 |
|---|---|---|---|---|---|---|
| Population | 47,680 | 59,897 | 74,334 | 89,882 | 107,514 | 126,860 |
| **REVISED** | **2020** | **2030** | **2040** | **2050** | **2060** | **2070** |
| **Population** | **61,729** | **79,661** | **93,459** | **108,319** | **125,171** | **143,660** |
| DIFFERENCE | 2020 | 2030 | 2040 | 2050 | 2060 | 2070 |
| Population | 14,049 | 19,764 | 19,125 | 18,437 | 17,657 | 16,800 |

| DRAFT | BASE | DRAFT | 2020 | 2030 | 2040 | 2050 | 2060 | 2070 |
|---|---|---|---|---|---|---|---|---|
| GPCD | 157 | Demand (AF) | 8,065 | 9,997 | 12,406 | 15,001 | 17,944 | 21,173 |
| **REVISED** | **BASE** | **REVISED** | **2020** | **2030** | **2040** | **2050** | **2060** | **2070** |
| **GPCD** | **162** | **Demand (AF)** | **10,787** | **13,742** | **16,122** | **18,685** | **21,592** | **24,782** |
| DIFFERENCE | BASE | DIFFERENCE | 2020 | 2030 | 2040 | 2050 | 2060 | 2070 |
| GPCD | 5 | Demand (AF) | 2,722 | 3,745 | 3,716 | 3,684 | 3,648 | 3,609 |

b. **County-Other, Williamson** – Request to decrease population based on moving 97% of population under Austin. (See Austin, Williamson County request above.) Demands have been recalculated based on the decreased population – no base GPCD changes.

| DRAFT | 2020 | 2030 | 2040 | 2050 | 2060 | 2070 |
|---|---|---|---|---|---|---|
| Population | 14,483 | 20,375 | 19,717 | 19,007 | 18,203 | 17,320 |
| **REVISED** | **2020** | **2030** | **2040** | **2050** | **2060** | **2070** |
| **Population** | **434** | **611** | **592** | **570** | **546** | **520** |
| DIFFERENCE | 2020 | 2030 | 2040 | 2050 | 2060 | 2070 |
| Population | -14,049 | -19,764 | -19,125 | -18,437 | -17,657 | -16,800 |

| DRAFT | BASE | DRAFT | 2020 | 2030 | 2040 | 2050 | 2060 | 2070 |
|---|---|---|---|---|---|---|---|---|
| GPCD | 148 | Demand (AF) | 2,248 | 3,089 | 2,958 | 2,838 | 2,712 | 2,579 |
| REVISED | BASE | **REVISED** | **2020** | **2030** | **2040** | **2050** | **2060** | **2070** |
| GPCD | 148 | **Demand (AF)** | **67** | **93** | **89** | **85** | **81** | **77** |
| DIFFERENCE | BASE | DIFFERENCE | 2020 | 2030 | 2040 | 2050 | 2060 | 2070 |
| GPCD | 0 | Demand (AF) | -2,181 | -2,996 | -2,869 | -2,753 | -2,631 | -2,502 |

c. **Wells Branch MUD** - Request to reduce GPCD to reflect revised Travis and Williamson population based on 2011 historical water use. See Travis County for additional explanation.

| DRAFT | BASE | DRAFT | 2020 | 2030 | 2040 | 2050 | 2060 | 2070 |
|---|---|---|---|---|---|---|---|---|
| GPCD | 107 | Demand (AF) | 117 | 115 | 113 | 112 | 112 | 112 |
| **REVISED** | **BASE** | **REVISED** | **2020** | **2030** | **2040** | **2050** | **2060** | **2070** |
| **GPCD** | **75** | **Demand (AF)** | **79** | **76** | **74** | **73** | **73** | **73** |
| DIFFERENCE | BASE | DIFFERENCE | 2020 | 2030 | 2040 | 2050 | 2060 | 2070 |
| GPCD | -32 | Demand (AF) | -38 | -39 | -39 | -39 | -39 | -39 |

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# Region K Non-Municipal Demand Projection Revision Memo

| | | | |
|---|---|---|---|
| To | Texas Water Development Board Staff | Page | 1 |
| CC | John Burke, Lauri Gillam, File | | |
| Subject | **Requested Non-Municipal Demand Projection Revisions** | | |
| From | Jaime Burke | | |
| Date | January 10, 2018 | | |

The Region K Regional Water Planning Group and the Region K Population and Water Demand Committee have spent the last several months reviewing the draft non-municipal demand projections from the TWDB and requesting input from stakeholders in the region to determine appropriate revisions for the TWDB staff to consider. At the January 10, 2018 Region K meeting, the Region K RWPG approved to request the following revisions to the draft non-municipal demand projections, for consideration by the TWDB staff.

**Non-Municipal Demand Projection Requested Revisions:**

1. **Mining Demands**

Region K is requesting revisions to the draft mining demand projections for Bastrop County. The majority of the demand projections in Bastrop County are for the Three Oaks Mine involving lignite coal mining. The Population and Water Demand Committee discussed that it is unlikely that increased mining will occur for next 50 years. The mining will more likely continue for another 20-25 more years of use before the reclamation process. Gravel mining in the county is expected to continue indefinitely. The region is requesting to begin decreasing the mining demands beginning in the 2050 decade, eliminating the lignite coal mining by 2060, and leaving only the gravel mining demands in 2060 and 2070. Please see below for the requested revisions for Bastrop County.

| RWPG | County | WUG Name | DRAFT | 2020 | 2030 | 2040 | 2050 | 2060 | 2070 |
|---|---|---|---|---|---|---|---|---|---|
| K | BASTROP | MINING | Demand (AF) | 2,884 | 6,813 | 7,498 | 8,263 | 9,085 | 9,996 |
| **K** | **BASTROP** | **MINING** | **REVISED** | 2020 | 2030 | 2040 | **2050** | **2060** | **2070** |
| **K** | **BASTROP** | **MINING** | **Demand (AF)** | 2,884 | 6,813 | 7,498 | **5,998** | **399** | **476** |
| K | BASTROP | MINING | DIFFERENCE | 2020 | 2030 | 2040 | 2050 | 2060 | 2070 |
| K | BASTROP | MINING | Demand (AF) | 0 | 0 | 0 | -2,265 | -8,686 | -9,520 |

2. **Steam-Electric Demands**

Region K is requesting revisions to the draft steam-electric demand projections for Llano County and Wharton County.

**Llano County:**

The Llano County demands are based on the Ferguson Power Plant water use. The 2020 draft water demand projections were developed for each county by using the highest county aggregated steam-electric power water use from 2010-2014. As the Ferguson Power Plant was under reconstruction during that time, the numbers provided for Llano were under-projected. Region K requests to use 2015-2016 data to revise the Llano County numbers to 1,748 acre-feet/year for all decades.

| RWPG | County | WUG Name | DRAFT | 2020 | 2030 | 2040 | 2050 | 2060 | 2070 |
|---|---|---|---|---|---|---|---|---|---|
| K | LLANO | STEAM-ELECTRIC | Demand (AF) | 6 | 6 | 6 | 6 | 6 | 6 |
| **K** | **LLANO** | **STEAM-ELECTRIC** | **REVISED** | **2020** | **2030** | **2040** | **2050** | **2060** | **2070** |
| **K** | **LLANO** | **STEAM-ELECTRIC** | **Demand (AF)** | **1,748** | **1,748** | **1,748** | **1,748** | **1,748** | **1,748** |
| K | LLANO | STEAM-ELECTRIC | DIFFERENCE | 2020 | 2030 | 2040 | 2050 | 2060 | 2070 |
| K | LLANO | STEAM-ELECTRIC | Demand (AF) | 1,742 | 1,742 | 1,742 | 1,742 | 1,742 | 1,742 |

**Wharton County:**

Wharton County is shared between Region K and Region P. Region K would like to request to revise the Region K portion of the Wharton County demands, based on the Colorado Bend facility being accidentally located in Region P for the draft demand projections, rather than in Region K. Moving that facility's demand to Region K would revise the Region K Wharton County numbers to 7,901acre-feet/year for all decades. Region P has requested a corresponding revision.

| RWPG | County | WUG Name | DRAFT | 2020 | 2030 | 2040 | 2050 | 2060 | 2070 |
|---|---|---|---|---|---|---|---|---|---|
| K | WHARTON | STEAM-ELECTRIC | Demand (AF) | 5,465 | 5,465 | 5,465 | 5,465 | 5,465 | 5,465 |
| **K** | **WHARTON** | **STEAM-ELECTRIC** | **REVISED** | **2020** | **2030** | **2040** | **2050** | **2060** | **2070** |
| **K** | **WHARTON** | **STEAM-ELECTRIC** | **Demand (AF)** | **7,901** | **7,901** | **7,901** | **7,901** | **7,901** | **7,901** |
| K | WHARTON | STEAM-ELECTRIC | DIFFERENCE | 2020 | 2030 | 2040 | 2050 | 2060 | 2070 |
| K | WHARTON | STEAM-ELECTRIC | Demand (AF) | 2,436 | 2,436 | 2,436 | 2,436 | 2,436 | 2,436 |

## 3. Manufacturing Demands

Region K is requesting revisions to the draft manufacturing demands in several counties, based on the inclusion of 2015 potentially unaccounted for manufacturing water use data provided by TWDB staff, and a request from City of Austin.

**Bastrop, Fayette, Gillespie, Hays, and Williamson Counties:**

In these counties, by adding the 2015 unaccounted for manufacturing water use volume to the TWDB-provided 2015 historical water use volume, the year 2015 water use becomes greater than the peak 2010-2014 water use. Region K requests to use the updated 2015 water use for the 2020 demands. Region K requests to apply the same percent increase from 2020 to 2030 as TWDB used to develop the draft projections. See table below for requested revisions.

**Travis County:**

In Travis County, by adding the 2015 unaccounted for manufacturing water use volume to the TWDB-provided 2015 historical water use volume, the year 2015 water use becomes greater than the peak 2010-2014 water use. Region K requests to use the updated 2015 water use for the 2020 demands. Region K requests to apply the same percent increase from 2020 to 2030 as TWDB used to develop the draft projections.

In addition, the City of Austin has provided documentation to support an increased manufacturing demand beyond the above numbers for the 2040-2070 decades, based on their expected industrial employment projections. These demand projections show growth even after passive conservation and water efficiency has been applied. The City of Austin's request has been included in this submittal as supporting documentation. Region K requests to increase the manufacturing demands in 2040-2070 to include the City of Austin's projections in Travis County, as shown below.

| RWPG | County | WUG Name | DRAFT | 2020 | 2030 | 2040 | 2050 | 2060 | 2070 |
|---|---|---|---|---|---|---|---|---|---|
| K | BASTROP | MANUFACTURING | Demand (AF) | 104 | 119 | 119 | 119 | 119 | 119 |
| **K** | **BASTROP** | **MANUFACTURING** | **REVISED** | **2020** | **2030** | **2040** | **2050** | **2060** | **2070** |
| **K** | **BASTROP** | **MANUFACTURING** | **Demand (AF)** | **188** | **215** | **215** | **215** | **215** | **215** |
| K | BASTROP | MANUFACTURING | DIFFERENCE | 2020 | 2030 | 2040 | 2050 | 2060 | 2070 |
| K | BASTROP | MANUFACTURING | Demand (AF) | 84 | 96 | 96 | 96 | 96 | 96 |
| RWPG | County | MANUFACTURING | DRAFT | 2020 | 2030 | 2040 | 2050 | 2060 | 2070 |
| K | FAYETTE | MANUFACTURING | Demand (AF) | 325 | 363 | 363 | 363 | 363 | 363 |
| **K** | **FAYETTE** | **MANUFACTURING** | **REVISED** | **2020** | **2030** | **2040** | **2050** | **2060** | **2070** |
| **K** | **FAYETTE** | **MANUFACTURING** | **Demand (AF)** | **396** | **442** | **442** | **442** | **442** | **442** |
| K | FAYETTE | MANUFACTURING | DIFFERENCE | 2020 | 2030 | 2040 | 2050 | 2060 | 2070 |
| K | FAYETTE | MANUFACTURING | Demand (AF) | 71 | 79 | 79 | 79 | 79 | 79 |
| RWPG | County | MANUFACTURING | DRAFT | 2020 | 2030 | 2040 | 2050 | 2060 | 2070 |
| K | GILLESPIE | MANUFACTURING | Demand (AF) | 21 | 25 | 25 | 25 | 25 | 25 |
| **K** | **GILLESPIE** | **MANUFACTURING** | **REVISED** | **2020** | **2030** | **2040** | **2050** | **2060** | **2070** |
| **K** | **GILLESPIE** | **MANUFACTURING** | **Demand (AF)** | **77** | **93** | **93** | **93** | **93** | **93** |
| K | GILLESPIE | MANUFACTURING | DIFFERENCE | 2020 | 2030 | 2040 | 2050 | 2060 | 2070 |
| K | GILLESPIE | MANUFACTURING | Demand (AF) | 56 | 68 | 68 | 68 | 68 | 68 |
| RWPG | County | MANUFACTURING | DRAFT | 2020 | 2030 | 2040 | 2050 | 2060 | 2070 |
| K | HAYS | MANUFACTURING | Demand (AF) | 149 | 174 | 174 | 174 | 174 | 174 |
| **K** | **HAYS** | **MANUFACTURING** | **REVISED** | **2020** | **2030** | **2040** | **2050** | **2060** | **2070** |
| **K** | **HAYS** | **MANUFACTURING** | **Demand (AF)** | **277** | **324** | **324** | **324** | **324** | **324** |
| K | HAYS | MANUFACTURING | DIFFERENCE | 2020 | 2030 | 2040 | 2050 | 2060 | 2070 |
| K | HAYS | MANUFACTURING | Demand (AF) | 128 | 150 | 150 | 150 | 150 | 150 |
| RWPG | County | MANUFACTURING | DRAFT | 2020 | 2030 | 2040 | 2050 | 2060 | 2070 |
| K | TRAVIS | MANUFACTURING | Demand (AF) | 11,597 | 13,085 | 13,085 | 13,085 | 13,085 | 13,085 |
| **K** | **TRAVIS** | **MANUFACTURING** | **REVISED** | **2020** | **2030** | **2040** | **2050** | **2060** | **2070** |
| **K** | **TRAVIS** | **MANUFACTURING** | **Demand (AF)** | **13,164** | **14,853** | **18,300** | **19,492** | **20,684** | **21,877** |
| K | TRAVIS | MANUFACTURING | DIFFERENCE | 2020 | 2030 | 2040 | 2050 | 2060 | 2070 |
| K | TRAVIS | MANUFACTURING | Demand (AF) | 1,567 | 1,768 | 5,215 | 6,407 | 7,599 | 8,792 |
| RWPG | County | MANUFACTURING | DRAFT | 2020 | 2030 | 2040 | 2050 | 2060 | 2070 |
| K | WILLIAMSON | MANUFACTURING | Demand (AF) | 3 | 4 | 4 | 4 | 4 | 4 |
| **K** | **WILLIAMSON** | **MANUFACTURING** | **REVISED** | **2020** | **2030** | **2040** | **2050** | **2060** | **2070** |
| **K** | **WILLIAMSON** | **MANUFACTURING** | **Demand (AF)** | **25** | **30** | **30** | **30** | **30** | **30** |
| K | WILLIAMSON | MANUFACTURING | DIFFERENCE | 2020 | 2030 | 2040 | 2050 | 2060 | 2070 |
| K | WILLIAMSON | MANUFACTURING | Demand (AF) | 22 | 26 | 26 | 26 | 26 | 26 |

## 4. Irrigation Demands

Region K is requesting revisions to the draft irrigation demand projections for Travis County, based on a data error, and for Colorado, Matagorda, and Wharton counties, based on the recent historical data being an inaccurate representation of surface water demand during a dry year.

**Travis County:**

TWDB staff found a data error with the historical water use for irrigation in Travis County, which was used to develop the draft projections. By correcting this error, the average 2010-2014 water use for Travis County was reduced from 6,010 acre-feet/year to 4,816 acre-feet/year. Region K requests to revise the draft projection for Travis County to reflect the correct average 2010-2014 water use of 4,816 acre-feet/year for all decades.

| RWPG | County | IRRIGATION | DRAFT | 2020 | 2030 | 2040 | 2050 | 2060 | 2070 |
|---|---|---|---|---|---|---|---|---|---|
| K | TRAVIS | IRRIGATION | Demand (AF) | 6,010 | 6,010 | 6,010 | 6,010 | 6,010 | 6,010 |
| **K** | **TRAVIS** | **IRRIGATION** | **REVISED** | **2020** | **2030** | **2040** | **2050** | **2060** | **2070** |
| **K** | **TRAVIS** | **IRRIGATION** | **Demand (AF)** | **4,816** | **4,816** | **4,816** | **4,816** | **4,816** | **4,816** |
| K | TRAVIS | IRRIGATION | DIFFERENCE | 2020 | 2030 | 2040 | 2050 | 2060 | 2070 |
| K | TRAVIS | IRRIGATION | Demand (AF) | -1,194 | -1,194 | -1,194 | -1,194 | -1,194 | -1,194 |

**Colorado, Matagorda, and Wharton Counties:**

Region K is requesting an increase to the draft irrigation demands in Colorado, Matagorda, and Wharton Counties. The Region K Population and Water Demand Committee met several times to discuss the irrigation demands in these counties, and determined that the draft irrigation demand projections were not representative of a dry/drought year demand because of the emergency curtailment of surface water from the Colorado River that occurred in 2012-2015. The Committee directed two members to develop an alternative methodology for calculating the surface water demands for the Garwood, Lakeside, Pierce Ranch, and Gulf Coast Irrigation Districts. A memo describing the methodology is included in this submittal as supporting documentation. This methodology was recommended by the Committee to the RWPG at the January 10, 2018 Region K meeting.

To calculate the revised total irrigation demands for these three counties, the Committee recommended to the RWPG to additionally include 2,400 acre-feet/year of non-rice irrigation demand in the Lakeside Irrigation District, the average 2010-2014 surface water use for other irrigation water rights in these counties (as provided by the TCEQ Water Use Reports data), and the average 2010-2014 groundwater use for irrigation in these counties. Meeting minutes describing these recommendations as well as a table summarizing the breakdown of water use components has been included in this submittal as supporting documentation. The Committee also recommended a decadal decrease of 2.69%, instead of keeping the projections flat. This percent decrease is consistent with the 2017 State Water Plan projections for these counties.

Region K approved to request the following revisions to the draft irrigation demands in Colorado, Matagorda, and Wharton counties at the January 10, 2018 Region K meeting, as shown in the table below.

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| RWPG | County | IRRIGATION | DRAFT | 2020 | 2030 | 2040 | 2050 | 2060 | 2070 |
| K | COLORADO | IRRIGATION | Demand (AF) | 123,682 | 123,682 | 123,682 | 123,682 | 123,682 | 123,682 |
| **K** | **COLORADO** | **IRRIGATION** | **REVISED** | **2020** | **2030** | **2040** | **2050** | **2060** | **2070** |
| **K** | **COLORADO** | **IRRIGATION** | **Demand (AF)** | **173,112** | **168,455** | **163,924** | **159,514** | **155,223** | **151,048** |
| K | COLORADO | IRRIGATION | DIFFERENCE | 2020 | 2030 | 2040 | 2050 | 2060 | 2070 |
| K | COLORADO | IRRIGATION | Demand (AF) | 49,430 | 44,773 | 40,242 | 35,832 | 31,541 | 27,366 |
| RWPG | County | IRRIGATION | DRAFT | 2020 | 2030 | 2040 | 2050 | 2060 | 2070 |
| K | MATAGORDA | IRRIGATION | Demand (AF) | 109,505 | 109,505 | 109,505 | 109,505 | 109,505 | 109,505 |
| **K** | **MATAGORDA** | **IRRIGATION** | **REVISED** | **2020** | **2030** | **2040** | **2050** | **2060** | **2070** |
| **K** | **MATAGORDA** | **IRRIGATION** | **Demand (AF)** | **191,588** | **186,434** | **181,419** | **176,539** | **171,790** | **167,169** |
| K | MATAGORDA | IRRIGATION | DIFFERENCE | 2020 | 2030 | 2040 | 2050 | 2060 | 2070 |
| K | MATAGORDA | IRRIGATION | Demand (AF) | 82,083 | 76,929 | 71,914 | 67,034 | 62,285 | 57,664 |
| RWPG | County | IRRIGATION | DRAFT | 2020 | 2030 | 2040 | 2050 | 2060 | 2070 |
| K | WHARTON | IRRIGATION | Demand (AF) | 147,543 | 147,543 | 147,543 | 147,543 | 147,543 | 147,543 |
| **K** | **WHARTON** | **IRRIGATION** | **REVISED** | **2020** | **2030** | **2040** | **2050** | **2060** | **2070** |
| **K** | **WHARTON** | **IRRIGATION** | **Demand (AF)** | **189,110** | **184,023** | **179,073** | **174,256** | **169,569** | **165,008** |
| K | WHARTON | IRRIGATION | DIFFERENCE | 2020 | 2030 | 2040 | 2050 | 2060 | 2070 |
| K | WHARTON | IRRIGATION | Demand (AF) | 41,567 | 36,480 | 31,530 | 26,713 | 22,026 | 17,465 |

## 5. Livestock Demands – no revisions requested

MEMO

To: Lauri Gillam, Chair
Region K Population and Water Demand Committee
Fr: Daniel Berglund
David Wheelock
Date: Oct 5, 2017

Re: Projected Irrigation Demands for 2021 Region K Water Plan - Colorado, Matagorda, Wharton counties

Lauri –

David and I have discussed Region K Irrigation Projections and have agreed on a methodology that we feel is appropriate considering the most current data is not representative of surface water demands. This methodology develops a base demand and keeps this demand flat for the duration of the planning period. Since no concerns were expressed regarding the groundwater demand projections, those values will simply be added to the agreed upon surface water demand projections at the county level. The TWDB representatives at the Committee meeting confirmed that our methodology should represent a dry year demand and for that reason we chose 2011. We felt that if we were to use the average of the 5 years prior to 2012, we would not be representing a dry year demand and could possibly understate future irrigation needs.

## Historical Data

The agricultural surface water diversions for the most recent 10 years of available data for the four irrigation operations in Region K are shown in Table 1. It is important to note that these quantities are river diversions, and therefore include both water applied at the farms, as well as canal losses, which represents the total surface water irrigation demand from the river. Table 2 shows the planted acreage for these irrigation divisions over the same period.

*Table 1. Historical Irrigation Surface Water Diversions (acre-feet)*

| Year | Garwood | Gulf Coast | Lakeside | Pierce Ranch | Total |
|---|---|---|---|---|---|
| 2007 | 45,205 | 83,535 | 56,360 | 14,285 | 199,386 |
| 2008 | 103,623 | 157,332 | 134,304 | 23,630 | 418,889 |
| 2009 | 100,150 | 197,610 | 115,888 | 28,795 | 442,443 |
| 2010 | 88,895 | 150,647 | 96,362 | 23,452 | 359,356 |
| 2011 | 117,667 | 170,633 | 142,488 | 33,526 | 464,314 |
| 2012 | 85,478 | 11,812 | 649 | 4,729 | 102,668 |
| 2013 | 90,474 | 10,696 | - | 4,101 | 105,271 |
| 2014 | 82,114 | - | - | 4,613 | 86,727 |
| 2015 | 66,548 | 1,667 | - | 6,508 | 74,723 |
| 2016 | 68,325 | 84,500 | 88,142 | 13,118 | 254,085 |

*Table 2. Historic Planted Acreage (acres)*

| Year | Garwood | | | Lakeside | | | Pierce Ranch | | | Gulf Coast | | | Total | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1st crop | 2nd crop | Supp* | 1st crop | 2nd crop | Supp* | 1st crop | 2nd crop | Supp* | 1st crop | 2nd crop | Supp* | 1st crop | 2nd crop | Supp* |
| 2007 | 12,989 | 9,899 | | 22,758 | 12,487 | 1,799 | 3,654 | 2,339 | 708 | 14,441 | 6,136 | 7,421 | 53,842 | 30,861 | 9,928 |
| 2008 | 17,133 | 14,453 | | 27,974 | 16,501 | 2,727 | 3,419 | 1,813 | 1,533 | 17,241 | 12,428 | 16,044 | 65,767 | 45,195 | 20,304 |
| 2009 | 17,371 | 14,342 | 1,842 | 27,786 | 12,433 | 351 | 4,402 | 3,848 | 3,609 | 21,778 | 17,816 | 14,517 | 71,337 | 48,439 | 20,319 |
| 2010 | 17,703 | 15,219 | 2,380 | 26,951 | 14,207 | 1,323 | 4,333 | 3,693 | 2,459 | 22,552 | 14,373 | 6,776 | 71,539 | 47,492 | 12,938 |
| 2011 | 18,687 | 14,651 | - | 27,554 | 12,736 | - | 6,792 | 3,693 | - | 18,316 | 15,120 | 12,404 | 71,349 | 46,200 | 12,404 |
| 2012 | 16,866 | 14,949 | - | - | - | - | - | 324 | 1,920 | - | - | 4,543 | 16,866 | 15,273 | 6,463 |
| 2013 | 18,638 | 16,982 | 1,799 | - | - | - | 506 | - | 2,027 | - | - | 3,077 | 19,144 | 16,982 | 6,903 |
| 2014 | 18,750 | 16,263 | 2,376 | - | - | - | | | | - | - | - | 18,750 | 16,263 | 2,376 |
| 2015 | 18,353 | 14,141 | 2,255 | - | - | - | 584 | | 1,094 | | | 1,820 | 18,937 | 14,141 | 5,169 |
| 2016 | 19,290 | 14,238 | 2,300 | 24,190 | 18,099 | 1,047 | 2,482 | 2,068 | 1,162 | 13,714 | 10,861 | 3,704 | 59,676 | 45,266 | 8,213 |

*Supp = Supplemental water (acreage that was planted in crops other than rice, such as turf grass, hay, row crops, aquaculture, and water for wildlife management)

Our suggested methodology is to use the most recent dry year with no curtailment. For that reason we used 2011 planted acreage and actual applied acre-foot per acre data, but reduced the use per acre planted to reflect recent improvements in irrigation efficiency and current LCRA contracting. For this method, an adjusted acre-foot per acre demand was calculated by capping the actual water use at each individual field by the acre-foot per acre duty stated in the water use contracts. The duties stated in the water use contracts were developed by LCRA in coordination with the farmers to reflect an irrigation rate that was considered reasonable and appropriate.

Table 3 shows the actual acre-foot per acre demands applied in each irrigation operation, the cap applied for the adjustment calculation, and the adjusted duty used to develop the base demand.

*Table 3. Actual and Adjusted Surface Water Acre-Feet per Acre Use for 2011*

| | | 2011 actual acre-foot per acre use | Duty specified in contract | 2011 adjusted acre-foot per acre demand |
|---|---|---|---|---|
| | | ac-ft/ac | | |
| 1st Crop | Garwood | 3.80 | 3.25 | 3.07 |
| | Lakeside | 3.34 | 3.25 | 2.99 |
| | Pierce Ranch | No on farm data | 3.25 | 3.03* |
| | Gulf Coast | 3.65 | 3.75 | 3.44 |
| 2nd Crop | Garwood | 2.54 | 2.00 | 1.93 |
| | Lakeside | 2.31 | 2.00 | 1.88 |
| | Pierce Ranch | No on farm data | 2.00 | 1.91 |
| | Gulf Coast | 2.31 | 2.50 | 2.16 |
| Supplemental | Garwood | No planted acreage | No contract duty | NA |
| | Lakeside | No planted acreage | No contract duty | NA |
| | Pierce Ranch | No planted acreage | No contract duty | NA |
| | Gulf Coast | 1.13 | No contract duty | 1.13** |

*Because data was not available by field, used Garwood and Lakeside average adjusted acre-foot per acre demand.

**Because there is no contract duty, no cap was applied and the actual acre-foot per acre application rate was used

These adjusted acre-foot per acre demands were then applied to the actual 2011 planted acreages to develop a base demand estimate. Because this demand represents an on farm demand, a canal loss factor was added to estimate the total diversion amount required to meet demand. Table 5 shows the 2011 planted acreages, adjusted acre-foot per acre demands, canal loss factors, and a total estimated base irrigation demand.  Demands for Pierce Ranch and Garwood were adjusted downward to reflect current contractual obligations.

*Table 5. Base Irrigation Demand (Surface Water) Calculation for Methodology B*

| | | 2011 Acres Planted (ac) | 2011 Adjusted acre-foot per acre demand | Calculated On-Farm Dry Year Use (ac-ft) | Approximate Canal Loss (%) | Calculated Base Demand with Canal Loss (ac-ft) |
|---|---|---|---|---|---|---|
| 1st Crop | Garwood | 18,687 | 3.07 | 57,369 | 20% | 71,711 |
| | Lakeside | 27,554 | 2.99 | 82,386 | 20% | 102,982 |
| | Pierce Ranch | 6,792 | 3.03 | 20,580 | 20% | 25,725 |
| | Gulf Coast | 18,316 | 3.44 | 63,007 | 30% | 90,010 |
| 2nd Crop | Garwood | 14,651 | 1.93 | 28,276 | 20% | 28,289(1) |
| | Lakeside | 12,736 | 1.88 | 23,943 | 20% | 29,929 |
| | Pierce Ranch | 3,693 | 1.91 | 7,035 | 20% | 4,275(2) |
| | Gulf Coast | 15,120 | 2.16 | 32,659 | 30% | 46,656 |
| Supplemental | Garwood | - | NA | - | 20% | - |
| | Lakeside | - | NA | - | 20% | - |
| | Pierce Ranch | - | NA | - | 20% | - |
| | Gulf Coast | 12,404 | 1.13 | 14,017 | 30% | 20,024 |
| **Total** | | **129,952** | | **329,272** | | **419,601** |

(1) Demand based on the current contractual obligation of up to 100,000 af per year to the Garwood irrigation division.

(2) Demand based on the contractual obligation of up to 30,000 af per year to Pierce Ranch.

# *APPENDIX 2D*

# *LCRWPG POPULATION AND WATER DEMAND COMMITTEE MEETING MINUTES*

## *MEETING MINUTES – SEPTEMBER 14, 2017*
## *MEETING MINUTES – OCTOBER 31, 2017*
## *MEETING MINUTES – DECEMBER 7, 2017*

**Lower Colorado Regional Water Planning Group**
**Population and Demand Committee Meeting**
**Meeting Minutes**
**September 14, 2017**

1. Lauri Gillam called meeting to order at 12:34 p.m.

2. Attendees (18)
   Lauri Gillam – Region K Population and Water Demand Committee Chair, Small Municipalities Rep
   David Wheelock –Region K, River Authority Rep
   John Burke – Region K, Water Utilities Rep
   James Sultemeier – Region K, Counties Rep
   David Lindsay – Region K, Recreation Rep (Alternate)
   Daniel Berglund – Region K, Small Business Rep
   Teresa Lutes – Region K, Municipalities Rep
   Barbara Johnson – Region K, Industry Rep
   Russ Robertson – Texas Dept. of Agriculture (Region K non-voting member)
   Lann Bookout – TWDB (Region K non-voting member)
   Jaime Burke – AECOM
   Alicia Smiley – AECOM
   James Kowis – James Kowis Consulting, LLC
   Yun Cho – TWDB
   William Alfaro – TWDB
   Stacy Pandey – LCRA
   Rebecca Batchelder – LCRA
   Helen Gerlach – Austin Water

3. Public Comments
   No Public Comments.

4. Meeting Objectives
   The purpose of this committee meeting was to review Population and Municipal and Non-Municipal Demand projections and feedback from stakeholders, and identify recommendations to take to planning group for the October 11th meeting. The deadline to send information to TWDB is January 12, 2018.

5. **Non-Municipal Demand Projections –** Most of the comments listed below were provided prior to this meeting, and the commenters were not necessarily at the meeting to participate in the discussion.
   a. **Livestock Demands**
      i. Comment 1 – Ron Fieseler
         1. Livestock data is already calculated per head of cattle – Perhaps the numbers are not updated. Data is somewhat unreliable. TWDB will provide raw data. Committee agrees to send Mr. Fieseler the raw data for his review.

2. To use an average based on five-year would not account for drought, but when drought hits, small cattle farmers tend to sell, so there is less water usage.
3. Blanco County has exotic animals - water usage cannot be accounted for from TWDB because it has been difficult to acquire the data.

ii. Comment 7 – Ann McElroy
1. Concern that domestic and livestock use is not being well-accounted for – it's embedded in livestock and county-other.
2. Inflows into domestic and livestock impoundments create a pseudo demand. TCEQ has tried and failed to gauge this demand. If it's not accounted for, it may be a concern. A gap in supply between livestock and municipal use.
3. D&L observation is legitimate, but there's not time or money to develop project. Investing in the research would drive up the cost of research. What would be the return on investment?

**iii. No potential revisions recommended other than possibly Blanco County.**

**b. Steam-Electric Demands**

i. Comment 5 – verbal
1. Llano County
   a. Reported information is incorrect based on Ferguson Plant, LCRA will submit revised numbers. TWDB acknowledged their draft number should be revised from 6 to 669 acre-feet.
   b. LCRA plans to submit request closer to historical uses.
2. Matagorda County Steam-Electric
   a. Jason Ludwig from STP said Matagorda numbers looked fine.
3. City of Austin and LCRA will coordinate to determine LCRA-Austin split for Fayette County. Overall numbers should be fine.
4. TWDB asked for any planned expansions to update demand projections.

**ii. No potential revisions recommended other than possibly Llano County.**

**c. Mining Demands**

i. Projections have stayed the same since last planning cycle.

ii. Comment 5 – verbal
1. Bastrop County Mining Demands
   a. Drop-off shown in historical water use from 2012-2015. Look into because no adjustments were made for this cycle.
   b. Disconnect of this cycle's draft projections because it was based on 2005-2009 data
   c. Unlikely that increased mining will occur for next 50 years. Likely 20-25 more years of use (lignite coal mining). Hold through 2040 decade

and cut off by 2050. Greatest pumpage comes towards the end (at deepest) before the reclamation process. Mining use not expected to drop to zero due to gravel mining in the county.

d. AECOM will work with James Kowis to develop draft revised Bastrop County numbers for consideration by RWPG.

iii. Central Texas Water Coalition
1. Concern that projected demands may not fully incorporate existing or future planned demands in Burnet County.
2. TWDB feels comfortable with numbers.
3. AECOM will check with GCD in Burnet County to see if they have data they can provide.

iv. Matagorda County
1. Matagorda mining demands have increased rapidly in the last few years. The historical demands are now higher than the projected demands (since they are based on 2005-2009 data).
2. What is causing the recent peak (historical water use)? Natural gas storage? TWDB will provide data.

**v. No potential revisions other than possibly Bastrop County, Burnet County, and Matagorda County recommended at this time.**

**d. Manufacturing Demands**

i. Quarries are listed as manufacturing – check to see if they're double counted in mining and manufacturing? TWDB will send additional data.

ii. Comment 2 – Paul Tybor
1. Gillespie County demands are on the low side, but okay, because based on water use survey

iii. Comment 5 – Travis County
1. Numbers decreased dramatically – last plan demands were 30,000 acre-feet to 90,000 acre-feet. Draft projections this cycle are 11,000 to 13,000 acre-feet. City of Austin revision request packet has 14,000 to 18,000 acre-feet (for 2040 through 2070).
2. Similar information to draft projections until 2040 but City of Austin sees demand increasing to 2070, instead of staying flat.
3. City requests an upward trend 2040-2070. Additional demand would be approximately 1,300 AFY additional in 2040, growing to an additional amount of 4,900 AFY in 2070.
4. TWDB only has 10-year employment projection, while City of Austin has a longer term. City will provide TWDB with Austin's employment projections.
5. TWDB mentioned there are several wholesale manufacturing demands that might get added to Travis County.

iv. **No potential revisions recommended other than possibly Travis County at this time.**

**e. Irrigation Demands**

i. Comment 3 – Donna Klaeger
   1. Ms. Klaeger may be remembering that interruptible water supply for irrigation was shown as going to 0 in the later decades. There were not a 0 value for irrigation demands in the previous plan, except for Williamson County.

ii. Daniel Berglund expressed concern that numbers obtained from the TWDB averaging method are artificially low due to impacts of drought in recent years. Five years is a small snapshot. Last cycle used 20 years of data.
   1. Committee came to a consensus that using the years 2010-2015 for analysis is not a good option for the surface water component of the agricultural demand projection. Noted that historical groundwater use for that period remained fairly constant and may be okay to use depending on methodology chosen for calculating demands.
      Instead of average from 2010-2015, will look at year with high planted acreage (like 2011). As an option to consider take a high acreage planted amount and multiply by normal usage per acre to get a draft demand for future projections.
   2. Conservation trends should be incorporated as best possible in the demand projection process. Conservation is also a water management strategy, so it should be considered regardless of the irrigation demand method used.

iii. AECOM will coordinate with David Wheelock, Daniel Berglund, and Stacy Pandey for acreage, water use information, etc. to present draft agricultural irrigation demand projections for the three main rice farming counties. New data and methodology information will be presented to the full RWPG at October 11th meeting for discussion and consideration.

iv. Comments received from CTWC regarding irrigation demands were discussed though discussion documented above.

v. AECOM noted the continual increase in Travis County and suggested we revisit the numbers. TWDB will look at the numbers again, and will respond with details.
   1. Suggestion was made that some of the increase in Travis County irrigation is from small vegetable farms producing locally-grown produce.

vi. **No potential revisions recommended other than possibly Colorado County, Matagorda County, Travis County, and Wharton County, at this time.**

**6. Draft Population and Municipal Demand projections**

a. Discussion of updated WUG Response Summary, noting new responses. About 55% of WUGs have responded.
    i. Specific discussion of
        1. North San Saba WSC – No documentation, small increase requested
        2. San Saba – No documentation, increase requested, but have confirmed with TWDB that the requested increase is not likely to be approved, will work with requestor on supplies and strategies to meet future needs.
        3. Wharton – Requesting large increases with a 5% growth rate, but given lack of documentation, committee does not recommend revising Wharton's numbers. Will look at them next cycle. Will work with Wharton to incorporate strategies and supplies as able.

b. Discussion of Requested Revision table:
    i. Granite Shoals – **Decrease approved for recommendation to RWPG**
    ii. Meadowlakes MUD – no request, but population decrease may be appropriate. Stacy Pandey and Lauri Gillam will reach out.
    iii. Fayette County WCID Monument Hill – demand increase requested based on documented water use reports. **AECOM will follow up with David Van Dresar, but committee comfortable with recommending revision to RWPG**.
    iv. North San Saba WSC – small population increase in later decades, based on expectation that current second homes will become retirement homes with permanent population. County-other would need to be decreased. **Committee comfortable with request because it is small, but TWDB may not agree due to lack of documentation**.
    v. Travis County – identified multiple revision requests for WUGs within county and potential population increase overall for the county. City of Austin submitted their request for revisions at the meeting. AECOM acknowledged that with all of the requests within Travis County, additional effort would be needed to go through all of them to achieve a balance. AECOM also needs to coordinate with West Travis County PUA on their numbers – unclear whether future demands would be retail or wholesale customers. Travis County WUGs would not be ready for any recommendation to the RWPG at the October 11th meeting.
    vi. Hays County – large requests from West Travis County PUA and Dripping Springs WSC (WTCPUA wholesale customer). Need to further coordinate with WTCPUA before coming back to the committee.

c. City of Austin – requests 54% split of Travis County-Other. City of Austin requests a revision to increase population numbers to extents of TWDB limits. City of Austin will provide a breakdown of their population increase request by county (Travis, Hays, and Williamson). AECOM will coordinate further with COA. Not ready for committee recommendation at this time.

d. TWDB draft projections for base GPCD numbers were based on city boundaries rather than the new utility boundaries. Historical population, water use, and GPCD estimate data sent out by TWDB at end of June shows GPCD estimates based on utility boundaries. In some cases, the GPCD numbers are very different from what was sent out with the draft projections. **Committee will recommend to RWPG that where different, Region K request to TWDB that the utility boundary GPCD number be used in place of the one sent out with the draft projections, except in cases where additional changes are being requested.** Still a question of how to communicate to the affected WUGs that this is happening.

7. Summarize recommendations
   a. Included above in minutes, highlighted in bold.

8. Agenda for next meeting
   a. Discussion is postponed until after the October meeting.

9. New/Other Business
   a. None

10. Public Comments
    a. None

11. Lauri Gillam adjourned at 4:18.

**Lower Colorado Regional Water Planning Group**
**Population and Water Demand Committee Meeting**
**City of Pflugerville, City Council Chambers**
**October 31, 2017**

1. Lauri Gillam called meeting to order at 10:15 a.m.

2. Attendees (21)
   Lauri Gillam – Region K Population and Water Demand Committee Chair, Small Municipalities Rep
   David Wheelock –Region K, River Authority Rep
   John Burke – Region K, Water Utilities Rep
   Daniel Berglund – Region K, Small Business Rep
   Ann McElroy – Region K, Environmental Rep
   David Lindsay – Region K, Recreation Rep (Alternate)
   Jeff Fox – Region K, Municipalities Rep (Alternate)
   Charlie Flatten – Region K, Environmental Rep (Alternate)
   Linda Raschke – Region K, Counties Rep (Alternate)
   Lann Bookout – TWDB (Region K non-voting member)
   Jaime Burke – AECOM
   Alicia Smiley – AECOM
   James Kowis – James Kowis Consulting, LLC
   Yun Cho – TWDB
   Stacy Pandey – LCRA
   Rebecca Batchelder – LCRA
   Helen Gerlach – Austin Water
   Heather Cooke – Austin Water
   Christianne Castleberry – Castleberry Engineering / Region K, Water Utilities Rep (Alternate)
   Cindy Smiley – Smiley Law Firm
   Earl Foster – Lakeway MUD

3. Public Comments
   a. No public comments.

4. Discuss meeting objectives – Jaime Burke – Meeting objective to discuss all potential revisions and determine recommendations to make to the RWPG.
   a. Draft Population, GPCD, and Municipal Demand projections
   b. Non-municipal demand projections
      i. Irrigation Demands
      ii. Manufacturing Demands
      iii. Steam-Electric Demands
      iv. Mining Demands
      v. Livestock Demands

5. Discuss Draft Population, GPCD, and Municipal Demand projections and potential revisions by county, as needed. Identify recommendations to make to the entire RWPG. – Jaime Burke

a. Potential revisions for counties and WUGs. WUGs shared with Region G and Region L will not be changed based on utility GPCD vs. city GPCD. Revisions to GPCD are generally only recommended if 10 GPCD or greater, unless specifically requested.
b. If there are significant decreases, based on a recommended change to GPCD, a notification will be sent to the utility regarding the change in order to provide an opportunity to comment before the January Region K meeting.
c. Bastrop County
    i. City of Bastrop - recommended decreased demands. (utility GPCD vs. city GPCD)
    ii. Bastrop County-Other - recommended decreased demands. (utility GPCD vs. city GPCD)
d. Blanco County
    i. City of Blanco - recommended decreased demands. (utility GPCD vs. city GPCD)
e. Burnet County
    i. City of Bertram – no revisions to demand since no information was received.
    ii. City of Burnet - recommended decreased demands. (utility GPCD vs. city GPCD)
    iii. Chisholm Trail SUD – request name change to Georgetown, as confirmed by Region G.
    iv. Cottonwood Shores - recommended increased demands. (utility GPCD vs. city GPCD)
    v. Burnet County-Other – The population and demands increase for Burnet County-Other to balance population decreases for Granite Shoals and Meadowlakes MUD, in order to keep the County population constant. The Committee agreed to recommend.
    vi. City of Granite Shoals - requested a population decrease and demand decrease. The Committee agreed to recommend.
    vii. City of Horseshoe Bay - recommended decreased demands (also in Llano County). (utility GPCD vs. city GPCD)
    viii. Kingsland WSC - recommended increased demands (also in Llano County). (utility GPCD vs. city GPCD)
    ix. Meadowlakes MUD - requested a population decrease due to buildout capacity and demand decrease. The Committee agreed to recommend.
f. Colorado County
    i. City of Weimar - recommended decreased demand. (utility GPCD vs. city GPCD)
g. Fayette County
    i. Fayette County-Other – recommended slight decrease in population to balance Fayette County WCID Monument Hill, and increased demand. (utility GPCD vs. city GPCD)
    ii. Fayette County WCID Monument Hill - requested to correct GPCD and demands to reflect historical data, and slightly increase 2020 population. The Committee agreed to recommend.
    iii. Fayette WSC - recommended increased demand. (utility GPCD vs. city GPCD)
    iv. City of La Grange - recommended increased demand. (utility GPCD vs. city GPCD)
h. Gillespie County – No revisions.
i. Hays County
    i. City of Austin - requested overall large population and water demand increase. A small portion of that increase is recommended to be added to the Hays County portion of the City of Austin. City has also requested to increase their GPCD to reflect the utility-boundary number. The Committee agreed to recommend.

   ii. Hays County-Other – Recommend population decreases to balance increases for City of Austin and Dripping Springs WSC, in order to keep County total unchanged. Population decreases also decrease demand.
   iii. Dripping Springs WSC - requested large population and resultant water demand increase. The WSC has documentation of existing population as well as current and pending development projects to support faster growth. The Committee agreed to recommend.
   iv. West Travis County PUA – requested decreased retail population in Hays County and increased retail population in Travis County. Decreases incorporate that the overall population numbers WTCPUA requested include wholesale customers such as Dripping Springs WSC. Committee agreed to recommend. Also recommended decreased demands (utility GPCD vs. city GPCD). See also Travis County

j. Llano County
   i. City of Horseshoe Bay - recommended decreased demands (also in Burnet County). (utility GPCD vs. city GPCD)
   ii. Kingsland WSC - recommended increased demands (also in Burnet County). (utility GPCD vs. city GPCD)
   iii. City of Llano - recommended decreased demands. (utility GPCD vs. city GPCD)
   iv. Sunrise Beach Village - recommended increased demand due to irregular source year for 2011. (utility GPCD vs. city GPCD) Linda Raschke is reaching out to mayor.

k. Matagorda County
   i. Markham MUD - recommended decreased demand. (utility GPCD vs. city GPCD)
   ii. Matagorda County WCID 6 - recommended decreased demand. (utility GPCD vs. city GPCD)
   iii. City of Palacios - recommended decreased demand. (utility GPCD vs. city GPCD)

l. Mills County – No revisions.

m. San Saba County
   i. North San Saba WSC – requested population and demand increase, but lacked any documentation. Committee recommends no revision due to lack of documentation.
   ii. Richland SUD - recommended increased demands. (utility GPCD vs. city GPCD). Region F is in agreement.
   iii. City of San Saba - recommended decreased demand in order to keep with methodology. (utility GPCD vs. city GPCD). Will reach out to San Saba for feedback.

n. Travis County
   i. Because Travis County is growing faster than predicted and Region K is 1.5% underprojected, committee will request to TWDB that the excess 1.5% (approximately 23,000 people in 2015) of population be added to Travis County.
   ii. Aqua Texas-Rivercrest is a sub-WUG to County-Other. Population and demand projections have been developed as part of the revision request to TWDB.
   iii. City of Austin - requested increase in population, based on the City demographer's projections. Committee is able to recommend some increase, based on the overall Travis County population increase, but not all. City also requested to increase GPCD from 156 to 162 GPCD, based on utility GPCD number. Committee agreed to recommend. The RWPG may consider action to support the

City of Austin submitting a separate request to the TWDB for their full projected population numbers.

iv. Barton Creek West WSC - recommended increased demand. (utility GPCD vs. city GPCD)
v. Barton Creek WSC - recommended increased demand. (utility GPCD vs. city GPCD)
vi. Cottonwood Creek MUD 1- recommended decreased demand. (utility GPCD vs. city GPCD)
vii. Travis County-Other used to balance county population projections, but adjusted to keep some population in the County in each decade.
viii. Hurst Creek MUD - recommended increased demand. (utility GPCD vs. city GPCD)
ix. Jonestown WSC - recommended increased demand. (utility GPCD vs. city GPCD)
x. City of Lago Vista - requested an increase in population. Committee recommended staying with draft numbers due to lack of documentation.
xi. Lakeway MUD - requested decreased population and demand, based on data they provided. Committee agreed to recommend decreases.
xii. City of Leander - requested increased population for 2020 and 2030 and requested decreased population for 2040-2070. Also requested increased GPCD, based on 2015 rate. Coordination with Region G and TWDB staff has occurred. Committee agreed to recommend revisions.
xiii. Manville WSC requested decreased population, based on information provided to Region K by Region G staff. Lower demands reflect population changes. Committee agreed to recommend revisions.
xiv. North Austin MUD 1- recommended increased demand. (utility GPCD vs. city GPCD)
xv. Oak Shores Water System - requested increased population and demand for 2020 and 2030 and requested decreased population and demand for 2040-2070. Small changes based on anticipated growth and buildout conditions.
xvi. City of Pflugerville - requested decreased population and demand. Committee agreed to recommend.
xvii. Rough Hollow in Travis County CRU (new WUG) – no recommendations to change numbers, just providing draft numbers for information.
xviii. Shady Hollow MUD - recommended increased demand. (utility GPCD vs. city GPCD)
xix. City of Sunset Valley- requested decreased population, providing calculations. Committee agreed to recommend. Also recommending increase to GPCD. (utility GPCD vs. city GPCD)
xx. Sweetwater CRU (new WUG) – no recommendations to change numbers, just providing draft numbers for information.
xxi. Travis County MUD 10 - recommended decreased demand. (utility GPCD vs. city GPCD)
xxii. Travis County MUD 2 - recommended decreased demand. (utility GPCD vs. city GPCD)
xxiii. Travis County MUD 4 - recommended decreased demand. (utility GPCD vs. city GPCD)
xxiv. Travis County WCID 10 - recommended increased demand. (utility GPCD vs. city GPCD)
xxv. Travis County WCID 17 – requested increase to 2020 population, based on 2016 population submitted to TWDB. Committee agreed to recommend. Also recommended increased demand. (utility GPCD vs. city GPCD)
xxvi. Travis County WCID 19 - recommended decreased demand. (utility GPCD vs. city GPCD)
xxvii. Travis County WCID 20 - recommended decreased demand. (utility GPCD vs. city GPCD)

xxviii. Travis County WCID Point Venture - requested increased population in 2020 based on 2015 population and current growth rates. 2030 population was then adjusted to better balance the growth between 2020 and 2040. 2040 – 2070 population was not changed. Committee agreed to recommend. Also recommended decreased demand. (utility GPCD vs. city GPCD)

xxix. Wells Branch MUD – requested increased population based on documentation of current single family and multi-family population. GPCD is decreased based on updated population numbers, resulting in decreased demands. Committee agreed to recommend.

xxx. West Travis County PUA - requested increased retail population in Travis County based on demographic study provided. Also requested lower GPCD, which includes both retail and wholesale and is lower than historical data shows for retail. Committee agreed to recommend a portion of the requested increase, based on the increase to Travis County's population. Committee did not agree to recommend requested GPCD, but recommended lower GPCD (utility GPCD vs. city GPCD).

o. Wharton County
   i. Wharton County-Other -recommended increased demand based on Region P request to slightly increase GPCD (utility GPCD vs. city GPCD).

p. Williamson County
   i. City of Austin – initially increased population to reflect moving the County-Other population under City of Austin, based on service area. TWDB asked that we check to see if some population should be left under County-Other. City of Austin is looking at the numbers.
   ii. Williamson County-Other – initially moved all of County-Other population under City of Austin. TWDB asked that we check to see if some population should be left under County-Other. City of Austin is looking at the numbers.
   iii. North Austin MUD 1 - recommended increased demand. (utility GPCD vs. city GPCD)
   iv. Wells Branch MUD - GPCD is decreased based on updated population numbers in Travis County, resulting in decreased demands. Committee agreed to recommend.

6. Discuss Draft Non-Municipal Demand projections and potential revisions by category, as needed. Identify recommendations to make to the entire RWPG. – Jaime Burke
   a. Irrigation Demands
      i. Concern regarding potential overlap / double-counting of irrigators using both surface water and groundwater. Discussion of using a consistent methodology for both water sources, or detailed inventory of groundwater.
      ii. Discussion of Daniel Berglund and David Wheelock's memo that developed proposed new surface water demand numbers for irrigation.
      iii. David Lindsay discussed possible issues with irrigation demand methodology. Discussed 1988 Adjudication Order. Suggested that for planning purposes, Gulf Coast number needs to be decreased, based on 5.25 acre-foot/acre. See separate meeting handout *"Irrigation Demand Metric and Associated Water Conservation Requirements Summary and Excerpts: Court Order from 1988 Adjudication of Water Rights; Certificates of Adjudication held by LCRA; LCRA's Water Management Plans (1989 +)"* for full discussion.
      iv. Committee agreed to schedule another meeting, to be able to discuss materials presented in more detail. No recommendations at this time.

b. Manufacturing Demands
    i. Discussion of "potential unaccounted manufacturing water use" data for 2015, provided by TWDB staff. Looked at what counties might have increased demands based on the addition of that data. Six counties would have increased demands that could be requested as revisions to the TWDB.
    ii. Discussion of City of Austin manufacturing increases for Travis County, based on their projected employment in the manufacturing sector from the City Demographer. The Committee had some concerns that there was a large jump in demand from 2030-2040 that wasn't well explained.
    iii. Committee agreed to recommend revisions for all six counties, except for Travis County. The City of Austin will take another look at their numbers, which will be considered at the next Committee meeting.
c. Steam-Electric Demands
    i. Llano County
        1. David Wheelock will submit request at next meeting.
    ii. Wharton County
        1. Moving portion of demand from Region P to Region K, based on accidentally being located in the incorrect region.
d. Mining Demands
    i. Bastrop County
        1. News article said mine was to be closed. Leaving revision request as-is for now.
e. Livestock Demands
    i. No comments.

7. Summarize recommendations to make to RWPG at January 10th meeting.
    a. Need additional discussion on Irrigation, Manufacturing, Steam-Electric, and Municipal (based on changes discussed at meeting and feedback expected from WUGs regarding GPCD change).
        i. A Doodle poll will be sent out to determine next meeting.
        ii. Location: City of Pflugerville.

8. New / Other Business
    a. None.

9. Public Comments – limit 3 minutes per person
    a. None.

10. Lauri Gillam adjourned at 2:40 p.m.

**Lower Colorado Regional Water Planning Group**
**Population and Water Demand Committee Meeting**
**City of Pflugerville Public Library**
**December 7, 2017**

1. Lauri Gillam called meeting to order at 10:14 a.m.
    a. Lauri Gillam mentioned that when receiving emails, in accordance with the Open Meetings Act requirements, please do not "reply to all." Members of a governing body (i.e. committee members) cannot correspond with one another regarding planning group business outside an open meeting. All correspondence should be sent directly to Jaime Burke.

2. Attendees (23)
   Lauri Gillam – Region K Population and Water Demand Committee Chair, Small Municipalities Rep
   David Wheelock –Region K, River Authority Rep
   John Burke – Region K, Water Utilities Rep
   Daniel Berglund – Region K, Small Business Rep
   Ann McElroy – Region K, Environmental Rep
   David Lindsay – Region K, Recreation Rep (Alternate)
   Teresa Lutes – Region K, Municipalities Rep
   Lann Bookout – TWDB (Region K non-voting member)
   Jaime Burke – AECOM
   Alicia Smiley – AECOM
   James Kowis – James Kowis Consulting, LLC
   Yun Cho – TWDB
   Katie Dahlberg – TWDB
   Stacy Pandey – LCRA
   Rebecca Batchelder – LCRA
   Jeff Fox – Austin Water / Region K, Municipalities Rep (Alternate)
   Helen Gerlach – Austin Water
   Christianne Castleberry – Castleberry Engineering / Region K, Water Utilities Rep (Alternate)
   Cindy Smiley – Smiley Law Firm
   Earl Foster – Lakeway MUD
   Susan Patton – CTWC
   Jo Karr Tedder – CTWC
   Jordan Furnans – LRE Water, LLC

3. Public Comments
    a. No public comments.

4. Minutes Approval
    a. Draft of September 14, 2017
        i. David Wheelock proposed to add note in (5) Non-Municipal Demand Projections that comments had been provided prior to meeting, and the commenters were not necessarily at the meeting.

b. Draft of October 31, 2017
    i. David Wheelock proposed to delete last sentence of (6aii).
    ii. Dave Lindsay proposed to add the following sentence to (6aiii):
    *See separate meeting handout "Irrigation Demand Metric and Associated Water Conservation Requirements Summary and Excerpts: Court Order from 1988 Adjudication of Water Rights; Certificates of Adjudication held by LCRA; LCRA's Water Management Plans (1989 +)" for full discussion.*

c. John Burke motioned to approve both sets of minutes with the noted changes. David Wheelock seconded. Committee passed.

5. Meeting Objectives
    a. Lauri Gillam commended AECOM for presenting such complicated information and organizing it well for the committee.
    b. The committee needs to finalize and approve recommendation for presentation to RWPG at the January 10, 2018 meeting.
    c. Jaime Burke lead discussion on revising:
        i. Municipal projections based on feedback from October 31st meeting
        ii. Manufacturing Demands for Travis County
        iii. Steam Electric for Llano County
        iv. Irrigation Demands, particularly in:
            1. Colorado County
            2. Wharton County
            3. Matagorda County

6. Municipal projections revisions (as discussed at the October 31st meeting.)
    a. Letters and emails were sent to WUGs whose draft projections have changed based on the utility boundary versus city boundary methodology agreed upon at the October 31st meeting. The following WUGs requested *not* to change their GPCD based on utility boundaries:
        i. Bastrop County-Other
        ii. Kingsland WSC
        iii. City of San Saba
        iv. Travis County WCID 17
        v. North Austin MUD No. 1
        vi. Teresa Lutes motioned to approve requests. John Burke seconded. Committee passed.
    b. Travis County
        i. As a result of Lago Vista not increasing population in draft projection due to lack of sufficient data, unaccounted population was added to City of Austin per request of the City.

   ii. City of Austin will revise request to break municipal request into portion that will fit under the population cap that TWDB staff have agreed to consider, and a supplemental request for the additional population that City of Austin actually expects to see. The RWPG will take the municipal requests up as separate agenda items at the January Region K meeting.
   iii. Region G and Region K need to coordinate to have the same draft projections for City of Leander. Committee came to a consensus to wait for the City to respond and the Region K planning group will decide on draft projections. This is due to incomplete information from City of Leander as of December 7th.

c. Williamson County
   i. Previously, Williamson County-Other population had been revised to zero (0) to reflect moving the entire population under City of Austin. Based on TWDB staff suggestion at October 31st meeting, City of Austin revisited the numbers and determined that 3% of the County-Other population should remain in County-Other. The remaining 97% was moved under City of Austin. This is because while this population may live in the Austin service area, they use wells for water.

d. John Burke motioned to approve changes as noted above. Dave Lindsay seconded. Committee passed.

7. Manufacturing Demands – Travis County
   a. City of Austin is requesting revisions to Manufacturing Demand in Travis County in 2040-2070 beyond what the committee agreed to recommend with the incorporation of the 2015 potentially unaccounted for additional manufacturing water use at the October 31st meeting:
      i. 2040: 14,853 to 18,299 AFY
      ii. 2050: 14,853 to 19,491 AFY
      iii. 2060: 14,853 to 20,683 AFY
      iv. 2070: 14,853 to 21,876 AFY
   b. Teresa Lutes provided additional documentation to back this request in the form of a handout. Main points include:
      i. When creating manufacturing demands, the North American Industry Classification System (NAICS) codes used by TWDB does not cover all manufacturing in City of Austin, leaving unaccounted water use in the industrial sector.
      ii. Austin Water's disaggregated demand model projects higher estimates of manufacturing demand than TWDB's current projections.
   c. TWDB staff asked that City of Austin provide additional data showing how the manufacturing growth will exceed anticipated water use efficiencies. Current trends for the State show water use for manufacturing decreasing even as manufacturing shows growth. City of Austin agreed to provide additional data. David Wheelock motioned to approve City of Austin's Manufacturing Demands projections. John Burke seconded. Committee passed.

8. Steam Electric – Llano County
   a. David Wheelock submitted a letter to Region K and presented the request to the committee to revise projections for Llano County. The 2020 water demands projections were developed for each county by using the highest county aggregated steam-electric power water use from 2010-2014. As the Ferguson Power Plant was under reconstruction during that time, the numbers provided for Llano were under-projected. Using 2015-2016 data, Wheelock proposed to alter the Llano County numbers to 1,748 acre-feet/year.
   b. Committee passed the approval to recommend the requested revision to the Llano County steam-electric demand.

9. Irrigation Demands
   a. Donna Klaeger (Region K, Counties Rep) submitted a letter of support to utilize the 5.25 acre-feet per acre-total water use waste standard requirement as a maximum allowable water usage metric for determining irrigation demand.
   b. Explanation of various source components that make up the irrigation demands in Colorado, Matagorda, and Wharton Counties (surface water for LCRA Irrigation Districts, surface water for other irrigation water rights, and groundwater) and that the Committee would need to choose a methodology for each component in order to determine the revised total by County.
   c. Surface Water for LCRA Irrigation Districts
      i. Discussion of whether demand is at the field or at the point of diversion. Decision that demand is at point of diversion, similar to previous plans.
      ii. Daniel Berglund noted that the total surface water numbers presented in 10/5/17 memo of 419,601 AF is less than 2015 LCRA WMP interim demands of 438,500 AF, and less than the 464,000 AF actually used in 2011.
      iii. Discussion whether 5.25 AF/A is a legal requirement, and that showing demands higher than that allows for wasted water.
      iv. Discussion focusing on 5.25 AF/A requirement for irrigation, rather than historical use, being a different methodology than other water use categories.
      v. Showing historical use shows what happens if nothing changes, and pushes the effort to look at conservation.
      vi. Concern that after 30 years, Gulf Coast Irrigation District has not made effort to reduce water use.
      vii. Conservation projects being done in Gulf Coast with grant funding that is available because of water management strategies listed in the Region K Water Plan.
      viii. Discussion of irrigation demand projections for Colorado, Matagorda, and Wharton counties being flat versus decreasing each decade. Committee fairly comfortable with decadal decrease of 2.69% over planning horizon, which is what Region K used in the last planning cycle.
      ix. Motion made by David Wheelock to recommend to Region K RWPG to accept the surface water numbers in the 10/5/17 memo, as summarized in 12/7/17 meeting

Handout 6 Item 1.a. for the 2020 demand. Include a reduction of 2.69% per decade for future decades. The RWPG will work to identify water management strategies that focus on conservation, along with possible other strategies. Lauri Gillam seconded. Motion passed, Dave Lindsay voted no.

d. Surface Water for other irrigation water rights
    i. Options presented included 1)last cycle's numbers (90th percentile of 2000-2011 water use), 2) 2011 water use, and 3) average of 2010-2014 water use.
    ii. Some concern that Colorado County numbers for the second two options are too low and don't reflect a true demand.
e. Groundwater
    i. Options presented included 1) 2011 water use, and 2) average 2010-2014 water use.
    ii. Some discussion, but no strong opinion for one option versus another.
f. Committee felt that because the TWDB draft projections used an average 2010-2014 water use, they would recommend that method for both the groundwater component and the surface water for other irrigation rights component. Ann McElroy made the motion, David Wheelock seconded, motion passed.
g. Additional Supplemental water discussion. David Wheelock mentioned that although supplemental (non-rice) water use had been included for the Gulf Coast irrigation district numbers, it hadn't been included for Lakeside irrigation district because in 2011, there wasn't a demand at Lakeside. Because there possibly should be, David Wheelock requested that 2,000 acres at 1.2 AF/A be added to the Lakeside irrigation district demand. Committee approved the motion.
h. Committee also approved to apply the 2.69% demand decrease per decade to the entire irrigation demand in Colorado, Wharton, and Matagorda counties.
i. Resulting breakdown of revised irrigation demands by county, and the projection of the 2020 demands out to 2070 – see attached sheet.

10. Additional Discussion
    a. Teresa Lutes wanted to encourage the Committee and the RWPG to take the information regarding irrigation water use that has been presented and discussed, and use it to identify conservation water management strategies in the 2021 Plan that will specifically reduce water demand, acknowledging that the recommended water demands based on historical water use have room for improvement and the region should do what it can to help make that happen. She also wanted to clarify the planning process and how it is broken into steps that are somewhat separate from each other. First step is to identify water demands, based on historical water use or some other determined methodology. Second step is to identify existing available water and supplies during drought conditions, separate from the demands. Third step is to compare the demands and existing water supplies to determine where there are "needs", or water shortages. Fourth step is to identify potential water management strategies, such as conservation or new water supply projects, to help meet the water

shortage. Including strategies/projects in the regional water plans allows the State to help provide financing to implement the projects, and helps to show specifically what projects need to occur in order to increase supply or reduce demand where it's needed.

11. Next meeting
    a. No meeting scheduled

12. New / Other Business
    a. None.

13. Public Comments – limit 3 minutes per person
    a. Jordan Furnans, LRE Water, LLC.
        i. Concerned that the Committee's recommendation of average 2010-2014 water use for the smaller non-LCRA irrigation water rights in the lower basin is not a good representation of normal water demand. Believes that the numbers used in the last cycle (90$^{th}$ percentile of 2000-2011 water use) are a better representation.
        ii. Believes use of 2011 planted acreage for calculating irrigation demands may be too high for future dry-year water demands based on changes to "open supply" concept.
        iii. Subsidence District study is coming out soon

14. Lauri Gillam adjourned at 2:10 p.m.

**Lower Colorado Regional Water Planning Group**
**Population and Water Demand Committee Meeting**
**City of Pflugerville Public Library**
**December 7, 2017**

Irrigation Demand Calculations Based on Committee Recommendations at 12/07/17 Meeting

| Irrigation District | Surface Water Demand (AFY) | |
|---|---|---|
| | Region K | Region P |
| Garwood | 84,000 | 16,000 |
| Lakeside* | 135,311 | |
| Pierce Ranch | 30,000 | |
| Gulf Coast** | 156,690 | |
| | | |
| Total | 406,001 | 16,000 |

| Irrigation District | Surface Water by County in Region K (AFY) | | |
|---|---|---|---|
| | Colorado | Wharton | Matagorda |
| Garwood [1] | 84,000 | 0 | 0 |
| Lakeside [2] | 55,478 | 79,833 | 0 |
| Pierce Ranch [3] | 0 | 30,000 | 0 |
| Gulf Coast [4] | | 7,835 | 148,855 |
| | | | |
| Other SW Rights in Lower Basin [5] | 94 | 2,885 | 8,814 |
| | | | |
| Total | 139,572 | 120,553 | 157,669 |

| | Groundwater by County in Region K (AFY) | | |
|---|---|---|---|
| | Colorado | Wharton | Matagorda |
| Avg 2010-2014 Use | 33,540 | 68,557 | 33,919 |

| | Total Demand by County in Region K (AFY) | | |
|---|---|---|---|
| | Colorado | Wharton | Matagorda |
| Revised Projection | 173,112 | 189,110 | 191,588 |
| Draft TWDB Projection | 123,682 | 147,543 | 109,595 |

*Includes 2,400 AF of Supplemental Water (non-rice irrigation)
**Includes 20,024 AF of Supplemental Water (non-rice irrigation)
[1] Region K portion of Garwood is 100% Colorado Co.
[2] Lakeside is 41% Colorado Co., 59% Wharton Co.
[3] Pierce Ranch is 100% Wharton Co.
[4] Gulf Coast is 92% Matagorda Co., 8% Wharton Co.
[5] Surface water rights other than LCRA, STPNOC, & Corpus Christi (TCEQ Water Use Reports Average 2010-2014)

Projections

| | Committee Recommended Revisions to Irrigation (AFY) | | | | | |
|---|---|---|---|---|---|---|
| | 2020 | 2030 | 2040 | 2050 | 2060 | 2070 |
| Colorado | 173,112 | 168,455 | 163,924 | 159,514 | 155,223 | 151,048 |
| Matagorda | 191,588 | 186,434 | 181,419 | 176,539 | 171,790 | 167,169 |
| Wharton | 189,110 | 184,023 | 179,073 | 174,256 | 169,569 | 165,008 |
| | | | | | | |
| Total (Lower Basin) | 553,810 | 538,912 | 524,416 | 510,309 | 496,582 | 483,225 |
| Total (Region K) | 582,407 | 567,509 | 553,013 | 538,906 | 525,179 | 511,822 |

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## APPENDICES

# CHAPTER 3.0: IDENTIFICATION OF CURRENTLY AVAILABLE WATER SUPPLIES

A key task in the preparation of the Lower Colorado Regional Water Plan (Region K Plan) is to determine the current available water supplies within the region. This information, when compared to the population and water demand projections, is critical in projecting water supply shortfalls and surpluses for the region, including the amount of shortfall, when a shortfall is expected to occur, and the county in which the shortfall is expected.

As presented in *Chapter 2*, the expected water demand in the Lower Colorado Regional Water Planning Area (LCRWPA) is projected to increase by approximately 17 percent while the population is projected to nearly double over the next 50 years. Therefore, the need to accurately identify available water supplies is a critical component of developing the regional plan.

The following sections of the chapter describe the methodologies utilized in developing estimates of currently available water supplies for the Lower Colorado Regional Water Planning Area (LCRWPA). This chapter also presents regional water supplies by county, major water providers, and the six Texas Water Development Board (TWDB) specified water-use categories.

## 3.1 TWDB GUIDELINES FOR REVISIONS TO WATER SUPPLIES

The Texas Water Development Board (TWDB) has promulgated rules for regional planning and has provided specific guidance to Regional Water Planning Groups (RWPGs) concerning the development of estimates of currently available water supplies. The guidance clearly indicates that the estimates of currently available water supplies shall reflect water that is reliably available to the area during a repeat of the Drought of Record (DOR) conditions. The definition of Drought of Record is "the period of time when historical records indicate that natural hydrological conditions would have provided the least amount of water supply," per TAC Title 31, Part 10, Chapter 357, Subchapter A, Rule 357.10. The specific methods used in determining the amount of currently available water vary depending upon whether it is a groundwater or surface water resource. A summary of TWDB guidelines and methods for estimating currently available water supply is presented below.

## 3.2 AVAILABLE WATER SOURCES TO THE LCRWPA

In accordance with the TWDB guidelines, five basic types of water supply exist within the LCRWPA. The types are as follows:

- Surface water supplies
- Groundwater supplies
- Supplies available through contractual arrangements
- Supplies available through the operation of a system of reservoirs or other supplies
- Reclaimed water

Since supplies available through the last three categories originated from either surface or groundwater sources, all available water supplies will be discussed in terms of being either of surface water origin or groundwater origin. The following sections present information concerning the available supply of water within the LCRWPA. That is to say, water that is physically present within the LCRWPA, whether it is present due to natural circumstances or it is present as a result of facilities constructed by one or more water users within the LCRWPA.

### 3.2.1 Surface Water Availability

Surface water sources include any water resource where water is obtained directly from a surface water body. This would include rivers, streams, creeks, lakes, ponds, and tanks. In the State of Texas, all waters contained in a watercourse (defined as having a defined bed and banks, a current of water, and a permanent source of supply, and includes rivers, natural streams, and lakes, and the storm water, flood water, and rainwater of every river, natural stream, canyon, ravine, depression, and watershed) are waters of the State and thus belong to the State. The State grants individuals, municipalities, water suppliers, industries, and others the right to divert and use this water through water rights permits. Water rights are considered property rights and can be bought, sold, or transferred with state approval. All of these permits are issued based on the concept of prior appropriation, or "first-in-time, first-in-right." Water rights issued by the State generally fall into two major categories:

- Run-of-River (ROR) Rights – Allow diversions of water directly from a water body as long as there is water in the stream and that water is not needed to meet a senior downstream water right. Availability of water to ROR rights is greatly impacted by drought conditions, particularly in the upper portions of a river basin.

- Stored Water Rights – Allow the impoundment of water by an owner in a reservoir. Water can be held for storage as long as the inflow is not needed to meet a senior downstream water right. Water stored in the reservoir can be withdrawn by the permittee at a later date to meet its or its customers' water demands. The storage of water in a reservoir gives the permittee a buffer against drought conditions.

A list of active water rights within the LCRWPA is contained in *Appendix 3A*.

In addition to the water rights permits issued by the State, individual landowners may use state waters without a specific permit for certain types of use. The most common of these uses is domestic and livestock use. Landowners are also allowed to construct impoundments on their own property with up to 200 acre-feet (ac-ft) of storage for domestic and livestock or certain wildlife management purposes (see Section 11.142, Texas Water Code). These types of water sources are generally referred to in this plan as "Local Supply Sources." Many individuals with land along a river or stream that have a riparian right can also divert a reasonable amount of water for domestic and livestock uses without a permit. In general, water captured or diverted for domestic and livestock purposes can be difficult to quantify and account for. The LCRWPG has had discussions regarding the volume of water that may be used for domestic and livestock purposes that may not be accounted for, and its potential impacts on the overall water supply in the region.

Water availability in Region K will be determined for the purposes of regional planning as prescribed by the TWDB water planning guidelines. The TWDB guidance requires that the amount of surface water available from each source be determined with the following assumptions:

- Water availability will be estimated based on a "firm yield" analysis. For an individual reservoir, firm yield is defined as the maximum water volume a reservoir can provide each year under a repeat of the Drought of Record using anticipated sedimentation rates and assuming that: all senior water rights will attempt to divert at their full authorized amounts, no return flows are included, and, all applicable permit conditions are met. For a reservoir system, this detailed analysis would produce the average annual withdrawals available through a simulated repeat of Drought of Record conditions considering the reservoir's long-term storage capabilities and drought period inflows, and evaporation. In addition, the firm yield calculation for Region K does not provide for any reserve water in the reservoir during a Drought of Record determination. For water rights based solely on run-of-river, the Drought of Record corresponds to the amount of water available in the worst single hydrologic year on record (currently 2011 for the majority of run-of-river water rights in Region K). Without available storage, water is no longer available if the river goes dry. In addition, a run-of-river right may not be able to divert even if there is water in the river or stream due to the constraints of the prior appropriation system or environmental flow limitations under such water right.

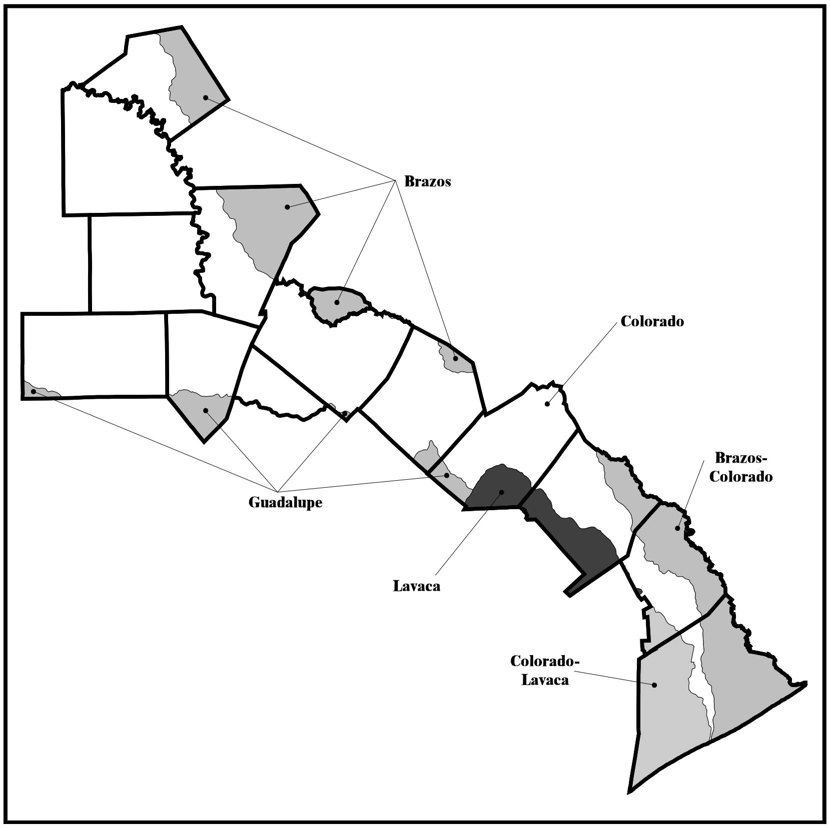
- Water availability will be based on the assumption that all senior water rights in the basin are being fully utilized. That is, water user groups cannot depend on "borrowing" water from unused water rights.

- Water supply is based on the infrastructure that is in place. For example, water would not be considered to be a supply from a reservoir if a user still needed to construct the water intake and pipeline to convey the water from the reservoir to the area of need.

The TWDB water planning guidelines provide regional planners the flexibility to request variances to the standard water supply modeling framework to address local issues related to current or future water supply modeling assumptions. Regional planning groups should strive to incorporate realistic modeling assumptions while balancing the need to plan for the full authorization of state granted water rights.

The LCRWPA extends across six different river basins, including the Brazos, Brazos-Colorado Coastal, Colorado, Colorado-Lavaca Coastal, Lavaca, and Guadalupe River Basins. *Figure 3.1* illustrates the location of each of these basins. The following sections discuss the available water sources in each river basin within the LCRWPA.

**Figure 3.1: River Basins Within the LCRWPA (Region K)**




### *3.2.1.1 Colorado River Basin*

The majority of the LCRWPA is contained in the Colorado River Basin. The primary sources of surface water within this basin are the Highland Lakes and run-of-river water from the Colorado River. However, several water user groups obtain water from tributaries or small off-channel reservoirs, including stock ponds.

#### *3.2.1.1.1 Water Availability Modeling for the 2021 Region K Water Plan*

This is the fourth planning cycle in which the TWDB has approved Region K to use a model other than the TCEQ Colorado River Water Availability Model (WAM) Run 3 to determine surface water availability in the region. Termed the Region K Cutoff Model, this model was developed during the 2011 planning cycle and has been updated for use in the 2021 planning cycle. Region K Water Modeling Committee meeting minutes are provided in *Appendix 3D*. A description of the Region K Cutoff Model can be found in *Appendix 3B*, along with the request and approval letters for allowing the use of the Region K Cutoff Model by TWDB. The model used prior to the 2011 planning cycle is discussed in detail in the 2006 and 2011 Region K plans.

The model is a modified version of the TCEQ WAM Run 3, where the basin is divided into two parts, an upper basin and a lower basin. The dividing points are the dams for Ivie Reservoir and Lake Brownwood. Most of the area in the upper basin part of the Region K Cutoff Model is included in Region F. Within the

Region K Cutoff Model, the water rights below Ivie Reservoir and Lake Brownwood are modeled based on prior appropriation (i.e. each water right has a priority date), however, no water rights downstream of the dividing points make prior appropriation calls on water rights upstream of the dividing points. All of the water rights are represented with their full authorization amounts. This model reflects the actual and historical water management operating conditions and existing contractual agreements between LCRA and certain upper basin water right holders.[1]

3.2.1.1.2.1 Highland Lakes System

LCRA operates the Highland Lakes System, consisting of Lakes Buchanan, Inks, LBJ, Marble Falls and Austin. Lakes Buchanan and Travis are major water supply reservoirs, while the other lakes are generally used as pass-through lakes. LCRA holds the water rights for each lake, other than Lake Austin which is owned by the City of Austin but operated by LCRA. The City of Austin holds the water right for and operates Lady Bird Lake.

LCRA operates the Highland Lakes as a system to provide a reliable source of water to its customers. LCRA has developed a "Water Management Plan for Lakes Buchanan and Travis" in response to requirements contained in a final order of adjudication of water rights for Lakes Buchanan and Travis. The Water Management Plan (WMP) was originally adopted in 1989 and has been amended several times, most recently in November 2015, although LCRA submitted an amended plan to TCEQ for approval in 2019. In WMP updates, LCRA determines the current combined firm yield of Lakes Buchanan and Travis based on a detailed analysis of the water availability for Lakes Buchanan and Travis through a simulated repeat of Drought of Record conditions. The WMP also contains a management strategy for meeting near-term projected demands of its firm water supply (i.e. municipal, industrial, and other use categories) customers, while continuing to provide water for environmental needs and downstream agricultural purposes, largely on an interruptible basis. The LCRA's current approved WMP determines the annual amount of interruptible water supply that can be made available while continuing to ensure the availability of water for firm demands in a simulated repeat of Drought of Record conditions using a system of curtailment triggers that are linked to water supply conditions that take into account inflows into and the combined storage of Lakes Buchanan and Travis on March 1 and July 1 of each year. The interruptible supply is generally comprised of uncommitted firm supply and committed firm supply that is not projected to be used within the planning period covered by the plan. As firm commitments and demands for water under those commitments increase over time, interruptible supplies are expected to be reduced more often to ensure the availability of water to firm customers in DOR conditions. Interruptible supplies are designed with curtailment triggers to provide more water per year during wetter times than the firm yield amount; however, curtailments based on the combined storage of Lakes Buchanan and Travis ensure that the Drought of Record average impact of interruptible water is less than the firm yield amount.

For the Regional Water Plan, the supply version of the Region K Cutoff Model does not incorporate the LCRA WMP and requires that interruptible supplies and environmental releases be turned off in order to calculate the firm yield calculation of Lakes Buchanan and Travis. The strategy version of the Region K Cutoff Model does incorporate the LCRA 2015 WMP including the components for curtailment triggers and environmental flow releases, used for the development and evaluation of some of the water management strategies in Chapter 5 of this Regional Water Plan.

[1] The City of Junction (Lake Junction) and City of Brady, (Brady Creek Lake) water rights are not included in the Region K Cutoff Model under the cutoff assumption, due to the fact that these entities do not have existing formal agreements in place regarding prior appropriation calls on water impoundments.

The firm yield of the Highland Lakes System was determined using the Region K Cutoff Model and adding up the various components of the Highland Lakes System. Some of the assumptions in the model for determining the firm yield of the system are described below:

- Water rights are protected based on prior appropriation doctrine;
- The hydrologic conditions in the 1940-2016 period are repeated. Hydrology previously had been through 2013. It should be noted that this hydrology is not the same as was used in the LCRA 2015 WMP. Evaluating the surface water availability using hydrology through 2016 changed the Drought of Record period from 1947-1957 to 2007-2016;
- Downstream, senior water rights are being fully utilized during this period. The water rights in the Lower Colorado Region are included in *Appendix 3A;*
- The LCRA 2015 WMP is not included in the supply version of the Region K Cutoff Model and is disengaged in determining the firm yield of the Highland Lakes System;
- Return flows are not used in the Region K Cutoff Model for the purposes of determining the firm yield of the system. Return flows are included in the modeling as a water management strategy later in the planning process.
- The LCRA cannot impose its priority rights for Lakes Buchanan and Travis against any upstream, junior water right with a priority date senior to November 1, 1987, so long as interruptible supplies are not curtailed;
- Historical net evaporation rates for the period of 1940 through 2016 were used;
- Downstream water demands are assumed to be met with inflows to the river below the Highland Lakes, to the extent possible; and
- The total system yield decreases over time due to sedimentation of the reservoirs. The methodology used to determine the projected reservoir capacity and related area-capacity-elevation curves for lakes Buchanan and Travis for 2020 through 2070 is from a memorandum authored by R.J. Brandes, dated 11/10/2010, which summarizes the basis and revised estimated quantities for sedimentation condition out to the year 2100. A copy of this memorandum is included in *Appendix 3B*.

**Table 3.1: Components of the Highland Lakes Firm Yield**

| Entity or Use | Region K Cutoff Model Results (Ac-Ft/Yr) | | | | | |
|---|---|---|---|---|---|---|
| | 2020 | 2030 | 2040 | 2050 | 2060 | 2070 |
| Water Available for LCRA Firm Contracts and Env Commitments* | 275,589 | 274,891 | 274,142 | 273,494 | 272,756 | 271,988 |
| LCRA Backup of STPNOC Run-of-River Water Right | 19,567 | 19,562 | 19,557 | 19,553 | 19,548 | 19,543 |
| LCRA Backup of City of Austin Municipal Run-of-River Water Rights** | 90,310 | 90,310 | 90,310 | 90,310 | 90,310 | 90,310 |
| LCRA Backup to Interruptible Run-of-River Water Rights | 0 | 0 | 0 | 0 | 0 | 0 |
| | | | | | | |
| **Total Highland Lakes Firm Yield** | **385,466** | **384,763** | **384,009** | **383,357** | **382,614** | **381,841** |
| **Total Highland Lakes Firm Yield Available for Consumptive Use#** | **352,026** | **351,323** | **350,569** | **349,917** | **349,174** | **348,401** |

Notes:

Colorado WAM provided by TCEQ, February 2018, Run 3. Hydrology extended through 2016. WRAP program by Dr. Ralph Wurbs, Texas A&M University, April 2018. Modeling performed by TES in August 2018.

Drought of Record (DOR) is October 2007 through December 2016 (9.25 years) for all decades.

* Includes firm water supplies for municipal, industrial, irrigation, and other water contracts. The LCRA 2015 WMP states that the amount of firm water allocated for environmental purposes is 33,440 AFY (10-year average). This amount is included in this line item.

** Amount shown does not include the additional firm water provided by a contractual commitment with LCRA for Austin's full municipal water supply of 325,000 AFY. The additional firm water is reflected in the table in the first row of modeled values.

# The amount of firm water allocated for environmental purposes (33,440 AFY) has been removed from the total in order to show the firm yield available for consumptive use allocation purposes.

*Table 3.1* above shows the components that make up the firm yield of the Highland Lakes System. The Region K Cutoff Model was used to determine the values in the table. The results were viewed using the April 2018 version of the WRAP modeling program. The firm yields were calculated for the 9.25-year DOR period (October 2007 through December 2016) for the 2020 through 2070 analyses. This analysis incorporated a full-to-full scenario, rather than a full-to-empty scenario for the reservoirs. Both scenarios were analyzed, with the full-to-full scenario producing a more conservative firm yield. It should be noted that incorporating months after the critical period (April 2015 – "empty") may skew the firm yield calculation slightly because of the variability of the Austin and STPNOC backup. The firm yield commitments are releases from system storage; they do not consist of run-of-river water.

New for this planning cycle, as required by TWDB, an additional firm yield analysis for the Highland Lakes was performed using the unmodified TCEQ Colorado River WAM Run 3, in order to show the planning impacts of using the Region K Cutoff Model to determine firm yields. The total Highland Lakes firm yield, as determined using the unmodified TCEQ Colorado River WAM Run 3 is 480,291 acre-feet/year. When compared to the Total Highland Lakes Firm Yield listed in *Table 3.1*, it can be seen that using the Region K Cutoff Model provides a more conservative firm yield value in any decade.

As shown in *Table 3.1* the Highland Lakes yield will decrease over time and this is due to sedimentation of the two supply reservoirs.

During and since the recent drought, reservoir inflows have been relatively low in comparison to historical inflows, even during periodic significant rainfall events. The Texas Water Development Board (TWDB) has undertaken two projects to evaluate rainfall-runoff trends in the Upper Colorado River Basin of Texas, including the San Saba Watershed. The Phase I report identified several potential causes, including: 1) construction of small reservoirs, 2) groundwater use, 3) average temperature changes, 4) changes to rainfall patterns, and 5) land use changes, including the existence of noxious brush. The Phase II effort evaluated rainfall patterns and reported:

- Most precipitation stations experienced increasing frequencies of rain events, with the number of annual rainy days increasing.
- Runoff-generating rainfall events tended to occur with equal frequency and magnitude over the 1940-2016 period of record for this analysis.

Regarding the other potential study issues, some of the relevant results and conclusions that were noted include:

- Most temperature gauges throughout the study area watersheds demonstrated increasing minimum temperatures with decreasing or stable maximum daily temperatures.
- Land use/cover change was noted as a large driver in some areas, resulting in reduction in runoff and streamflow. However, attempts to quantify acreage of noxious brush extent over time were not successful.
- Small pond usage (and construction) was noted to appear to be a driver of hydrologically significant changes in runoff and streamflow. For the San Saba Watershed, the analysis identified 7,191 small non-permitted ponds with an estimated storage of 17,243 acre feet.
- Attempts to analyze streamflow depletion due to groundwater pumping were not successful, primarily due to a lack of good data on alluvial well pumping and the number of active alluvial wells over time.

The new September 2019 Phase II report provided good additional information to help better understand the low inflows issue. However, additional comprehensive hydrologic study and analysis is still needed to understand the current correlation between precipitation and runoff and the cause(s) for the diminished inflows. The LCRWPG includes a legislative recommendation discussing this item in Chapter 8.

<u>3.2.1.1.2.2 Reservoirs</u>

The estimated firm yields for all existing reservoirs within the Colorado River Basin are presented in *Table 3.2*.

**Table 3.2: Reservoir Yields in the Colorado Basin (ac-ft/yr)**

| Reservoir Name or Owner | Region K Cutoff Model Results (Ac-Ft/Yr) | | | | | |
|---|---|---|---|---|---|---|
| | 2020 | 2030 | 2040 | 2050 | 2060 | 2070 |
| **Highland Lakes** | **352,026** | **351,323** | **350,569** | **349,917** | **349,174** | **348,401** |
| | | | | | | |
| Arbuckle Reservoir | * | * | * | * | * | * |
| Goldthwaite | 0 | 0 | 0 | 0 | 0 | 0 |
| Llano | * | * | * | * | * | * |
| Walter E. Long (Decker Lake) | 0 | 0 | 0 | 0 | 0 | 0 |
| Lake Bastrop | 0 | 0 | 0 | 0 | 0 | 0 |
| Lake Fayette | 0 | 0 | 0 | 0 | 0 | 0 |
| Lometa | 0 | 0 | 0 | 0 | 0 | 0 |
| STPNOC Reservoir | 66,260 | 66,260 | 66,260 | 66,260 | 66,260 | 66,260 |
| **Minor Reservoir Subtotal** | **66,260** | **66,260** | **66,260** | **66,260** | **66,260** | **66,260** |
| | | | | | | |
| **TOTAL** | **418,286** | **417,583** | **416,829** | **416,177** | **415,434** | **414,661** |

Notes:

Colorado WAM provided by TCEQ, February 2018, Run 3. WRAP program by Dr. Ralph Wurbs, Texas A&M University, April 2018. Modeling performed by TES in August 2018.

Drought of Record (DOR) is October 2007 through December 2016 (9.25 years) for all decades.

*Availability for these reservoirs was not determined using a firm yield analysis, although run-of-river water rights are associated with them. The Arbuckle Reservoir is associated with the Gulf Coast run-of-river water right, with the availability shown in *Table 3.3*. The Llano Reservoir is associated with Llano's run-of-river water rights, with an availability of 271 ac-ft/yr, as shown in *Table 3.24* (Llano ROR).

The Highland Lakes firm yield is discussed in detail in *Section 3.2.1.1.2.1*. Several smaller reservoirs in the LCRWPA are also located within the Colorado River Basin. Estimates for the firm yield of these reservoirs are based on the Region K Cutoff Model runs and a detailed discussion is provided below.

- LCRA's new lower basin off-channel reservoir (Arbuckle) has been included in the 2021 Region K Water Plan as an existing supply reservoir. In the 2016 Region K Water Plan, it was included as a water management strategy called the "Lane City Off-Channel Reservoir." The reservoir is located in Wharton County and has a capacity of 40,000 acre-feet, with water being pumped from the Colorado River to fill it, allowing the capture and storage of a significant amount of water downstream of the Highland Lakes. The reservoir is expected to be in operation by the end of 2020. The benefits of the reservoir are accounted for under the Gulf Coast run-of-river water right in *Table 3.3*.

- The **City of Goldthwaite** owns and operates a two-reservoir system as part of its water supply facilities. The reservoirs include a small reservoir with a capacity of 40 ac-ft adjacent to the river and a larger reservoir with a capacity of 200 ac-ft, both of which are located off-channel. The city pumps water from the Colorado River into the smaller reservoir and then pumps it into the larger reservoir, from which water is drawn for treatment. The size of the reservoirs are relatively small in comparison to the utility's water demand, which is projected to increase from 400 ac-ft in the year 2020 to 451 ac-ft in the year 2070. Based on the limited storage available, the firm yields of the reservoirs are dependent upon continued river flows throughout the year. It is estimated that the available storage would be depleted within four months once the river ceases flowing. Based on the Region K Cutoff Model, it was determined that the Goldthwaite reservoir system has a firm yield of 0 ac-ft/yr.

- The **City of Llano** owns and operates two reservoirs on the Llano River: City Lake and City Park Lake, both of which are formed by small channel dams. The two reservoirs were estimated to have a combined capacity of 503 ac-ft in 1988. This is significantly less than the original design capacity of 700 ac-ft. The decreased capacity is due to sedimentation rates in the two reservoirs. More recent surveys were performed in 2012, but the information from those surveys has not been received. Llano has two run-of-river water rights (1650 and 1655) on the Llano River that provide firm water during the Drought of Record of 271 ac-ft/yr, as shown in *Table 3.24*. Llano is one of the water right holders that have their regional water planning Drought of Record water availability significantly affected by the WAM modeling assumption that senior water right holders simultaneously divert and totally consume the water up to their full authorizations.

- **Lake Walter E. Long (Decker Lake)** is owned and operated by the City of Austin. The lake is formed by a dam on Decker Creek, which is a tributary to the Colorado River in Travis County. The City of Austin uses Decker to supply cooling water for an electrical generating plant. The City of Austin supplements the water supply to Decker by pumping water from the Colorado River based on run-of-river rights and a water supply contract with LCRA for stored water from the Highland Lakes. Therefore, because the water from Decker Lake has already been accounted for in run-of-river and LCRA backup amounts, the firm yield of the lake itself due to the Region K Cutoff Model is considered 0 ac-ft/yr.

- **Lake Bastrop** is owned and operated by the LCRA. The lake is formed by a dam on Spicey Creek, which is a tributary to Piney Creek and the Colorado River in Bastrop County. The LCRA uses water from Lake Bastrop for cooling purposes at its Sim Gideon Power Generating Station. Lake Bastrop is now primarily supplied from groundwater, although LCRA supplements the water supply at this lake by pumping water into the lake from the Colorado River. The surface water pumped into the lake is stored water from the Highland Lakes, and the groundwater supply is included as a groundwater source from the Carrizo-Wilcox Aquifer in Bastrop County. Therefore, because the water from Lake Bastrop has already been accounted for in groundwater supplies, run-of-river and LCRA backup amounts, the firm yield of the lake itself due to the Region K Cutoff Model is considered 0 ac-ft/yr. LCRA's groundwater production permit from the Lost Pines Groundwater Conservation District to use groundwater from the Simsboro formation at this site for industrial purposes is for 10,000 ac-ft/yr, with a five-year average of 6,500 ac-ft/yr.

- **Lake Fayette** is owned and operated by the LCRA. The lake is formed by a dam on Cedar Creek, which is a tributary to the Colorado River in Fayette County. The LCRA uses water from Lake Fayette for cooling purposes at the Fayette Power Project. The LCRA supplements the water supply at this lake by pumping water into the reservoir from the Colorado River. A portion of the water pumped is run-of-river water rights held by the City of Austin, which is co-owner in certain facilities at the Fayette Power Project. The remainder of the water pumped into the reservoir is stored water from the Highland Lakes and/or water can be provided under the Garwood water right permit CA 14-5434. Therefore, because the water from Lake Fayette has already been accounted for in run-of-river and LCRA backup amounts, the firm yield of the lake itself due to the Region K Cutoff Model is considered 0 ac-ft/yr.

- **Lometa Reservoir** is owned by LCRA and is being operated under a long term agreement with an operating company. The reservoir is formed by a dam on Salt Creek, which is a tributary to the Colorado River in Lampasas County. Water from Lometa Reservoir is being used for municipal purposes within the service area of the Lometa Water System. The reservoir was authorized to have a normal maximum operating capacity of 554.6 ac-ft. A maximum of 882 ac-ft of water is available for diversion from the

Colorado River, including 476 ac-ft for municipal demands and 406 ac-ft to offset evaporative losses through an upstream firm water supply contract with LCRA. Because this amount is included as part of the Highland Lakes firm yield, the reported firm yield of the Lometa Reservoir is 0 ac-ft/yr.

- **South Texas Project Reservoir**: The Main Cooling Reservoir associated with the South Texas Project Electric Generating Station is a 7,000-acre (surface area) off-channel reservoir located in Matagorda County. At the authorized maximum design operating level, the reservoir has a capacity of 202,600 ac-ft, or 9.6 percent of the total capacity of Lakes Travis and Buchanan as stated in the LCRA Water Management Plan. The firm yield from the Region K Cutoff Model is 66,260 ac-ft/yr.

  Reservoir water is withdrawn from the Colorado River adjacent to the site. Pumping from the river is intermittent, and this diversion normally occurs during periods of higher river flow. The reservoir design incorporates storage to account for periods during which river water is unavailable for the reservoir in order to support operation through a repeat of the Drought of Record conditions.

3.2.1.1.2.3 Run-of-River Water

Historically, the State of Texas has granted many of the run-of-river rights through an adjudication process that considered maximum historical uses. By rule, irrigation and other non-municipal water rights can be granted with availabilities less than 100%. As a result, some run-of-river rights may have been granted for more water than is available in a river during drought conditions. The use of water during drought conditions is controlled by the priority system, with the oldest water rights having first call on the flows in the river. The TCEQ Colorado River Basin WAM was developed to simulate the amount of water available with a basin water management scenario consistent with run-of-river availability calculated according to the doctrine of prior appropriation. Major factors used to calculate available water include:

- Senior downstream water rights are assumed to be fully utilized;
- No wastewater flows are returned to the river; and
- Inflows to the Highland Lakes are passed through the lakes to the extent that the water is needed to satisfy senior water rights downstream.

The results of this analysis for major run-of-river rights holders are presented in *Table 3.3*. The water availability presented in the table for most of the major run-of-river rights is based on the amount of run-of-river water that would be available during the driest year of the analysis period (2011 in the Region K Cutoff Model). Modeling output was reviewed to confirm that run-of-river availabilities were not over-estimated due to intra-year shortages. Region K has a very limited number of municipal water rights that are strictly run-of-river with no available storage or backup contract, and availabilities shown in this plan for those are based on the use-appropriate monthly percentages of the annual firm diversion being satisfied. The water availability for the Austin and STP Nuclear Operating Company water rights is based on the average annual water availability during the Drought of Record (DOR) period (2007-2016). This average availability was used since Austin has contracted with LCRA to supply stored water to firm up its run-of-river water rights during drought conditions. Because the Highland Lakes firm yield is averaged over the Drought of Record, including the stored water for Austin, it is appropriate to average the water rights' availabilities over the same period. Section 3.3.2 provides details of how Austin is able to receive up to 325,000 AFY of firm water for municipal and other beneficial water uses, if needed. The STP Nuclear

Operating Company has also contracted for backup supplies from LCRA, in addition to having a reservoir that allows for potential storage of water over the DOR period instead of having to use all of the water that is received in a particular year.

*Table 3.3* below shows the water availability for the major run-of-river rights along the Colorado River within the Lower Colorado Regional Water Planning Area. The Region K Cutoff Model was used to determine the values in the table. The following describes the methods used to determine the values in *Table 3.3*.

*LCRA (Garwood, Lakeside (#1 & 2), Gulf Coast, and Pierce Ranch*)

The Garwood, Lakeside (#1 & 2), Gulf Coast, and Pierce Ranch operations each have several water supplies, both run-of-river and supplemental interruptible supplies from the Highland Lakes. The run-of-river rights are listed in *Table 3.3*. The run-of-river water rights were summed for each irrigation operation to determine which year in the model had the minimum total diversion.

*Austin*

Austin has two municipal water rights shown in the table, CA 14-5471 and CA 14-5489. Because these water rights are backed up by LCRA through contract each year, an average during the DOR was used.

Austin has steam-electric water rights as shown in the table. The steam-electric water use portion of water right CA 14-5489 is backed up by a contract with LCRA, so an average during the DOR was used. The steam-electric water use portion of water right CA 14-5471 is not backed up by the LCRA, so the water availability for this right was determined by using the minimum amount of water available in any year during the analysis period.

**Table 3.3: Major Run-of-River Rights in the Colorado Basin (ac-ft/yr)**

| Water Right Number | Water Right Holder | Maximum Permitted Dixersion (ac-ft/yr) | Priority Date | Region K Cutoff Model | |
|---|---|---|---|---|---|
| | | | | 2020 | 2070 |
| CA 14-5434 | LCRA - Garwood | 133,000 | Nov 1, 1900 | 121,845 | 121,845 |
| | **Garwood** | **Sub-Total** | | **121,845** | **121,845** |
| | | | | | |
| CA 14-5475 | LCRA - Lakeside #1 Sr | 52,500 | Jan 4, 1901 | 2,780 | 2,780 |
| CA 14-5475 | LCRA - Lakeside #1 Jr | 78,750 | Nov 1, 1987 | 0 | 0 |
| CA 14-5475 | LCRA - Lakeside #2 | 55,000 | Sep 2, 1907 | 2,912 | 2,912 |
| | **Lakeside #1 and #2** | **Sub-Total** | | **5,692** | **5,692** |
| | | | | | |
| CA 14-5476 | LCRA - Gulf Coast Sr [1] | 228,570 | Dec 1, 1900 | 53,815 | 53,815 |
| CA 14-5476 | LCRA - Gulf Coast Jr | 33,930 | Nov 1, 1987 | 0 | 0 |
| | **Gulf Coast** | **Sub-Total** | | **53,815** | **53,815** |
| | | | | | |
| CA 14-5477 | LCRA - Pierce Ranch | 55,000 | Sep 1, 1907 | 2,912 | 2,912 |
| | **Pierce Ranch** | **Sub-Total** | | **2,912** | **2,912** |
| | | | | | |
| CA 14-5471 | City of Austin - (mun.) [2,3] | 250,000 | Jun 30, 1913 | 185,016 | 185,016 |
| CA 14-5471 | City of Austin - (mun.) [2, 4] | 21,403 | Jun 27, 1914 | 8,583 | 8,583 |
| CA 14-5471 | City of Austin - (stm.) | 24,000 | Jun 27, 1914 | 4,480 | 4,480 |
| CA 14-5489 | City of Austin - (mun.) [2] | 20,300 | Aug 20, 1945 | 7,247 | 7,247 |
| CA 14-5489 | City of Austin - (stm.) | 16,156 | Aug 20, 1945 | 5,099 | 5,099 |
| CA 14-5437 | STP Nuclear Operating Co.[5] | 102,000 | Jun 10, 1974 | n/a | n/a |
| CA 14-5434 | City of Corpus Christi [6] | 35,000 | Nov 2, 1900 | 22,101 | 22,101 |
| **Totals** | | **1,433,200** | | **416,790** | **416,790** |

Data Source: WRAP modeling program provided by Dr. Ralph Wurbs, Texas A&M University, April 2018 version. Region K Cutoff Model updated for 2021 plan. Modeling performed by TES in August 2018.

**Notes**:

Water availability reflects driest year during period of record (1940-2016) unless otherwise noted and does not include return flows. An explanation of the firm yield calculations is provided in Chapter 3, *Section 3.2.1.1.2.1*.

The Drought of Record (DOR) is October 2007 – December 2016 for 2020-2070.

[1] The Gulf Coast water right is associated with diverting water for storage in the Arbuckle Reservoir. See *Section 3.2.1.1.2.2*.

[2] The water availability was averaged over the Drought of Record period because of LCRA backup water.

[3] LCRA's water rights with a priority date junior to November 15, 1900, are subordinated in accordance with the City of Austin Certificate of Adjudication 14-5471, Amendment A, Section 5.a.

[4] The City of Austin's municipal water right authorization under 14-5471A with a priority date of June 27, 1914 is 22,403 ac-ft/yr. The annual authorizations of the City's municipal water rights were clarified in amendment 14-5471D. For modeling purposes in this plan, an annual authorization of 21,403 ac-ft/yr was used. However, the annual authorization will be corrected in future Region K models and plans.

[5] The water availability for STP is included as the firm yield of the STPNOC reservoir, shown in *Table 3.2* in *Section 3.2.1.1.2.2*.

[6] The water availability for this run-of-river water right was determined by using the minimum of water available in any year during the DOR. After discussions with Region N, the water availability entered into the TWDB database was not the one determined using the Region K Cutoff Model. Please see *Section 3.2.1.1.2.3* for additional details.

*STP Nuclear Operating Company*
The run-of-river water right CA 14-5437, jointly owned by STPNOC and LCRA, was determined by taking the average over the DOR period. This was done because there is a contract for backup from LCRA, and there is a reservoir that allows for storage of water over the DOR period, rather than having to use the entire amount of water received in a particular year. One of the STPNOC diversion points is within the tidal reaches of the Gulf of Mexico.

*Corpus Christi*
The water availability for this run-of-river water right was determined by using the minimum amount of water available in any year during the DOR. After discussions with Region N, the water availability entered into the TWDB database was not the one determined using the Region K Cutoff Model. Region N has a local multi-basin system model with different Drought of Record periods. By working as a system, the sources can be optimized to provide a minimum amount of water each year. Therefore, using the minimum annual amount as the availability for each source in their system may not be accurate. At Region N's request, the availability entered into the TWDB database was the full authorized diversion of 35,000 ac-ft/yr.

3.2.1.1.2.4 Local Surface Water Sources

Another category of available surface water is local supply sources. This category includes small diversions from the river or tributaries to the river, as well as stock ponds that have captured diffuse surface water located on individual's property. Information concerning these sources is limited. As a result, the information available from the TWDB developed during the first planning cycle was used as an initial estimate of the water availability during Drought of Record conditions with some numbers decreasing during plan updates to reflect the new Drought of Record. The results of this process are presented in *Table 3.4,* developed for the 2001 Region K Plan and updated for the 2021 Plan.

**Table 3.4: Other Surface Water Sources in the Colorado Basin (ac-ft/yr)**

| Local Supply Source Name | 2020 | 2030 | 2040 | 2050 | 2060 | 2070 |
|---|---|---|---|---|---|---|
| Livestock - basinwide | 6,596 | 6,596 | 6,596 | 6,596 | 6,596 | 6,596 |
| Other - basinwide* | 5,747 | 5,747 | 5,747 | 5,747 | 5,747 | 5,747 |
| Irrig. - Bastrop Co. | 786 | 786 | 786 | 786 | 786 | 786 |
| Irrig. - Blanco Co. | 67 | 67 | 67 | 67 | 67 | 67 |
| Irrig. - Burnet Co. | 276 | 276 | 276 | 276 | 276 | 276 |
| Irrig. - Colorado Co. | 3,000 | 3,000 | 3,000 | 3,000 | 3,000 | 3,000 |
| Irrig. - Fayette Co. | 534 | 534 | 534 | 534 | 534 | 534 |
| Irrig. - Gillespie Co. | 880 | 880 | 880 | 880 | 880 | 880 |
| Irrig. - Hays Co. | 41 | 41 | 41 | 41 | 41 | 41 |
| Irrig. - Llano Co. | 440 | 440 | 440 | 440 | 440 | 440 |
| Irrig. - Matagorda Co. | 900 | 900 | 900 | 900 | 900 | 900 |
| Irrig. - Mills Co. | 2,378 | 2,378 | 2,378 | 2,378 | 2,378 | 2,378 |
| Irrig. - San Saba Co. | 8,800 | 8,800 | 8,800 | 8,800 | 8,800 | 8,800 |
| Irrig. - Travis Co. | 756 | 756 | 756 | 756 | 756 | 756 |
| Irrig. - Wharton Co. | 7,650 | 7,650 | 7,650 | 7,650 | 7,650 | 7,650 |
| **Totals** | **38,851** | **38,851** | **38,851** | **38,851** | **38,851** | **38,851** |

Note: All of the sources listed in the table above are Local Supply Sources, which were updated for the 2021 Plan.
* Other includes uses such as mining and manufacturing.

### *3.2.1.2 Brazos River Basin*

A portion of the LCRWPA is located within the Brazos River Basin. This area is limited to portions of Bastrop, Burnet, Fayette, Mills, Travis, and Williamson Counties. The portion of Williamson County in Region K is completely contained within the City of Austin service area. The remainder of Williamson County is located in Region G.

Surface water sources for these areas are limited to local sources. There are no major reservoirs within the LCRWPA portion of the Brazos River Basin. *Table 3.5* contains a summary of the surface water available to the LCRWPA from the Brazos River Basin.

**Table 3.5: Surface Water Sources in the Brazos River Basin (ac-ft/yr)**

| Source Name | 2020 | 2030 | 2040 | 2050 | 2060 | 2070 |
|---|---|---|---|---|---|---|
| Livestock - basinwide | 1,046 | 1,046 | 1,046 | 1,046 | 1,046 | 1,046 |
| Other - basinwide* | 966 | 966 | 966 | 966 | 966 | 966 |
| **Totals** | **2,012** | **2,012** | **2,012** | **2,012** | **2,012** | **2,012** |

Note: All of the sources listed in the table above are Local Supply Sources, which were updated for the 2021 Plan.
* Other includes uses such as mining and manufacturing.

### *3.2.1.3 Brazos-Colorado Coastal Basin*

A portion of the LCRWPA is located within the Brazos-Colorado Coastal Basin. This area is limited to portions of Colorado, Matagorda, and Wharton Counties. Surface water sources for these areas are limited to local sources and a run-of-river water right from the San Bernard River. There are no major reservoirs within the LCRWPA portion of the Brazos-Colorado Coastal Basin. *Table 3.6* contains a summary of the surface water available to the LCRWPA from the Brazos-Colorado Coastal Basin.

**Table 3.6: Surface Water Sources in the Brazos-Colorado Coastal Basin (ac-ft/yr)**

| Source Name | 2020 | 2030 | 2040 | 2050 | 2060 | 2070 |
|---|---|---|---|---|---|---|
| San Bernard ROR | 2,332 | 2,332 | 2,332 | 2,332 | 2,332 | 2,332 |
| Livestock - basinwide | 1,238 | 1,238 | 1,238 | 1,238 | 1,238 | 1,238 |
| Irrig. - Matagorda Co. | 4,000 | 4,000 | 4,000 | 4,000 | 4,000 | 4,000 |
| Irrig. - Wharton Co. | 2,000 | 2,000 | 2,000 | 2,000 | 2,000 | 2,000 |
| **Totals** | **9,570** | **9,570** | **9,570** | **9,570** | **9,570** | **9,570** |

Note: All of the sources listed in the table above except for the San Bernard ROR are Local Supply Sources, which were updated for the 2021 Plan.

### *3.2.1.4 Colorado-Lavaca Coastal Basin*

A portion of the LCRWPA is located within the Colorado-Lavaca Coastal Basin. This area is limited to portions of Matagorda and Wharton Counties. Surface water sources for these areas are limited to local sources. There are no major reservoirs (other than the South Texas Project Reservoir described in Section 3.2.1.1.2.2) within the LCRWPA portion of the Colorado-Lavaca Coastal Basin, and there are no WUGs with rights to water from reservoirs in the Colorado-Lavaca Coastal Basin. Return flows originating in the

Colorado Basin from agriculture are sent to the Colorado-Lavaca Coastal Basin for use, but since the Region K Cutoff Model assumes full utilization of water rights and no return flows unless explicitly stated in the water right, these return flows were not taken into consideration for the Region K water availability analysis. *Table 3.7* contains a summary of the surface water available to the LCRWPA from the Colorado-Lavaca Coastal Basin.

**Table 3.7: Surface Water Sources in the Colorado-Lavaca Coastal Basin (ac-ft/yr)**

| Source Name | 2020 | 2030 | 2040 | 2050 | 2060 | 2070 |
|---|---|---|---|---|---|---|
| Livestock - basinwide | 788 | 788 | 788 | 788 | 788 | 788 |
| Irrig. - Matagorda Co. | 4,000 | 4,000 | 4,000 | 4,000 | 4,000 | 4,000 |
| **Totals** | **4,788** | **4,788** | **4,788** | **4,788** | **4,788** | **4,788** |

Note: All of the sources listed in the table above are Local Supply Sources, which were updated for the 2021 Plan.

### *3.2.1.5 Lavaca River Basin*

A portion of the LCRWPA is located within the Lavaca River Basin. This area is limited to portions of Colorado and Fayette Counties. Surface water sources for these areas are limited to local sources. There are no major reservoirs within the LCRWPA portion of the Lavaca River Basin, and there are no WUGs with rights to water from reservoirs in the Lavaca River Basin. *Table 3.8* contains a summary of the surface water available to the LCRWPA from the Lavaca River Basin.

**Table 3.8: Surface Water Sources in the Lavaca River Basin (ac-ft/yr)**

| Source Name | 2020 | 2030 | 2040 | 2050 | 2060 | 2070 |
|---|---|---|---|---|---|---|
| Livestock - basinwide | 851 | 851 | 851 | 851 | 851 | 851 |
| Irrig. - Colorado Co. | 4,002 | 4,002 | 4,002 | 4,002 | 4,002 | 4,002 |
| Irrig. - Fayette Co. | 20 | 20 | 20 | 20 | 20 | 20 |
| **Totals** | **4,873** | **4,873** | **4,873** | **4,873** | **4,873** | **4,873** |

Note: All of the sources listed in the table above are Local Supply Sources, which were updated for the 2021 Plan.

### *3.2.1.6 Guadalupe River Basin*

A portion of the LCRWPA is located within the Guadalupe River Basin. This area is limited to portions of Bastrop, Blanco, Fayette, Gillespie, Hays, and Travis Counties. Most of the surface water sources for these areas are limited to local sources. There are no major reservoirs within the LCRWPA portion of the Guadalupe River Basin. However, the City of Blanco owns and operates two, small, on-channel reservoirs on the Blanco River. The two reservoirs have a combined storage capacity of 168 ac-ft.

Anecdotal information provided by the City of Blanco indicates that the Blanco River has ceased flowing in the past, most notably during the summer of 1996. Information provided by the City of Blanco indicates that flow in the Blanco River ceased for a three-month period during that summer. The relatively small storage capacity of the two reservoirs will not sustain the projected demands from the City of Blanco for more than a four-month period when the river has ceased flowing.

Based on the Guadalupe-San Antonio River Basin WAM Run 3 from TCEQ, dated October 2014, the firm yield of the reservoir system is 463 ac-ft (water right C3877_1). *Table 3.9* contains a summary of the surface water available to the LCRWPA from the Guadalupe River Basin.

**Table 3.9: Surface Water Sources in the Guadalupe River Basin (ac-ft/yr)**

| Source Name | 2020 | 2030 | 2040 | 2050 | 2060 | 2070 |
|---|---|---|---|---|---|---|
| Livestock - basinwide [1] | 399 | 399 | 399 | 399 | 399 | 399 |
| Irrig. - Blanco Co. [1] | 9 | 9 | 9 | 9 | 9 | 9 |
| Blanco Reservoirs [2] | 463 | 463 | 463 | 463 | 463 | 463 |
| **Totals** | **871** | **871** | **871** | **871** | **871** | **871** |

[1] Local Supply Sources determined in the 2001 Plan, which were updated for the 2021 Plan.
[2] Firm Yield Data Source: Guadalupe-San Antonio River Basin WAM provided by TCEQ, October 2014, Run 3. WRAP modeling program provided by Dr. Ralph Wurbs, Texas A&M University, April 2018 version.

### 3.2.2 Groundwater Availability

Available groundwater is the volume of groundwater that can be withdrawn from an individual aquifer in accordance with the principle by which the aquifer is being managed or an assumed management approach. That managing principle, typically stated as a sustainability goal, can be stated in various ways, and the mechanism through which availabilities are being stated throughout Texas is evolving.

Before the advent of Groundwater Management Areas (GMAs) (HB 1763, 79th Legislature), an aquifer, or portion of an aquifer, may or may not have had a governmental entity managing the way that aquifer was being managed. If an aquifer, or portion of an aquifer, was managed, it was by a Groundwater Conservation District (GCD) whose jurisdiction can coincide with the boundary or boundaries of one or more counties or an aquifer. Most aquifers span multiple counties, and in that case the entire aquifer can be managed by one or more GCDs, with some portions not managed at all. There are also several Priority Groundwater Management Areas (PGMA) around the State, with portions of the Hill Country PGMA located within Region K. PGMAs are areas where critical groundwater problems exist. Region K has a GCD in every county located within the PGMA since the Southwestern Travis County GCD was confirmed in November 2019. The Hill Country Underground Water Conservation District (UWCD) in Gillespie County was created prior to the designation of the PGMA. The Blanco-Pedernales GCD in Blanco County was created after the PGMA designation, as was the Hays-Trinity GCD in Hays County. These GCDs give notice to the area residents that the declaration of the PGMA means that their water availability and quality will be at risk within the next 50 years. The Hays County Development Regulations have specific requirements listed for subdivisions served by individual water wells producing local groundwater within the PGMA. These requirements can be found in *Chapter 715, Sub-Chapter 3, Section 3.06* of the Hays County Development Regulations. GMAs are a different concept in that every county in the State is in one or more of sixteen GMAs, for the most part the major aquifers are not split across multiple GMAs, and the goal is to manage entire aquifer systems across political subdivisions in a consistent way. GCDs and GMAs are discussed in *Chapter 1* of this plan and on the TWDB website at http://www.twdb.texas.gov/groundwater/index.asp.

Early in the 2016-2021 regional water planning cycle, the GMAs in the LCRWPA adopted their Desired Future Condition (DFC) for their aquifers and the TWDB established the Modeled Available Groundwater (MAG) values for such aquifers. The GCDs within the PGMA had the same responsibility to adopt their DFC and establish a MAG for the aquifers in their district. If a MAG has been established for a particular aquifer, the TWDB requires that the MAG be considered the maximum amount of groundwater available for the regional water planning process. In cases where a MAG is not established for an aquifer, the local GCD or GMA representative was consulted regarding an appropriate availability volume.

The groundwater resources located in the region have been traditionally divided into those aquifers that yield large quantities of water over a relatively large area (major aquifers) and those aquifers yielding smaller quantities of water over smaller areas (minor aquifers). In the LCRWPA there are five major aquifers and six minor aquifers that provide usable groundwater supplies. The following discussion of the groundwater resources of the LCRWPA is divided into these two categories.

### *3.2.2.1 Major Aquifers*

The major aquifers in the LCRWPA are the Edwards-Trinity (Plateau), Trinity Group, Edwards (Balcones Fault Zone), Carrizo-Wilcox, and the Gulf Coast. These five aquifers provide a significant component of the water supply used within the LCRWPA beyond that provided by the Colorado River. Most of the cities with groundwater supplies in the planning region draw their water supply from one of the five major aquifers. Descriptions and availability volumes of each major aquifer are provided in the following sections.

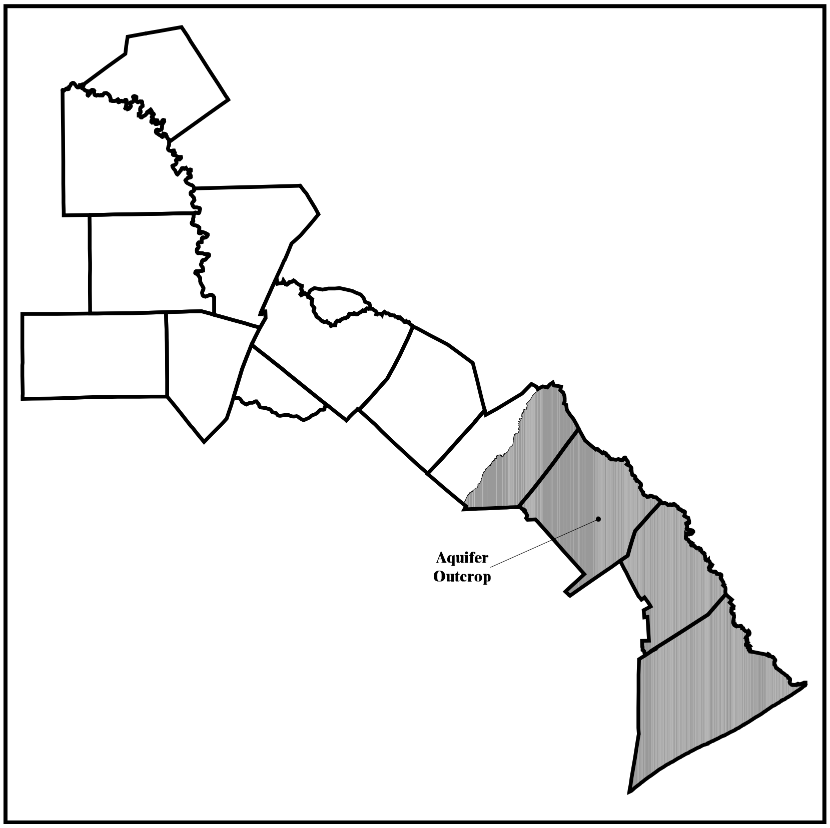
#### 3.2.2.1.1 Gulf Coast Aquifer System

*Location and Use*

The Gulf Coast Aquifer System forms an irregularly shaped belt along the Gulf of Mexico from Florida to Mexico. In Texas, the aquifer provides water to all or parts of 54 counties and extends from the Rio Grande northeastward to the Louisiana-Texas border.

Groundwater use from the Gulf Coast Aquifer System within the LCRWPA occurs in Colorado, Fayette, Matagorda, and Wharton Counties. TWDB records indicate that irrigation use accounts for the majority of groundwater pumpage from the aquifer. The location of the aquifer within the LCRWPA is illustrated in *Figure 3.2*.

**Figure 3.2: Gulf Coast Aquifer System Within the Lower Colorado Regional Water Planning Area**




*Hydrogeology*

The Gulf Coast Aquifer System consists of complex interbedded clays, silts, sands, and gravels, which are hydrologically connected to form a large, leaky artesian aquifer system. The system has four major subdivisions in the LCRWPA. The Jasper aquifer is the lowermost or most landward component of the aquifer system. The Jasper aquifer is composed of the Oakville Sand and may also include upper portions of the Catahoula Sandstone. The Burkeville confining layer separates the top of the Jasper aquifer from the bottom of the Evangeline aquifer. The Evangeline aquifer is composed of the Fleming and Goliad Sands. The Chicot aquifer, or upper component of the Gulf Coast aquifer system, consists of the Lissie, Willis, and Beaumont Formations; and overlying alluvial deposits. Maximum total sand thickness ranges from about 700 feet in the south to 1,300 feet in the northern extent.

*Water Quality*

Water quality is generally good in the shallower portion of the Gulf Coast Aquifer System. Groundwater containing less than 500 mg/l dissolved solids is usually encountered to a maximum depth of 3,200 feet in the aquifer from the San Antonio River Basin northeastward to Louisiana.

*Availability*

The Gulf Coast Aquifer System in Colorado, Fayette, Matagorda, and Wharton Counties is within GMA 15. The Groundwater Conservation Districts (GCD) within GMA 15 worked together to determine the desired future condition (DFC) of the Central Gulf Coast Aquifer. Desired future conditions are essentially management goals for each aquifer. The DFC for the Central Gulf Coast Aquifer, adopted by GMA 15 on April 29, 2016, is summarized as follows:

- No more than 13 feet of average drawdown by 2069 relative to January 2000 conditions.

The Texas Water Development Board (TWDB) took the DFC for the aquifer and ran a groundwater availability model (GAM) to estimate what annual production volume would meet the DFC conditions. This annual volume is considered the modeled available groundwater or MAG. The MAG, which is considered the maximum amount of groundwater available for the regional water planning process from a particular aquifer, is documented in TWDB reports, with the GMA 15 Central Gulf Coast aquifer MAG being documented in TWDB report GR 16-025_MAG, dated March 22, 2017. The report provides the MAG values for the Gulf Coast Aquifer System by county and basin, as shown in *Table 3.10* below.

**Table 3.10: Region K Water Availability* for the Gulf Coast Aquifer System (ac-ft/yr)**

| County | Basin | 2020 | 2030 | 2040 | 2050 | 2060 | 2070 |
|---|---|---|---|---|---|---|---|
| Colorado | Brazos-Colorado | 15,391 | 15,391 | 15,391 | 15,391 | 15,391 | 15,391 |
| Colorado | Colorado | 20,779 | 20,779 | 20,339 | 20,339 | 20,339 | 20,339 |
| Colorado | Lavaca | 39,712 | 39,712 | 37,953 | 37,953 | 36,806 | 36,806 |
| | ***County Total*** | ***75,882*** | ***75,882*** | ***73,683*** | ***73,683*** | ***72,536*** | ***72,536*** |
| Fayette | Brazos | 2 | 2 | 2 | 2 | 2 | 2 |
| Fayette | Colorado | 989 | 989 | 989 | 989 | 989 | 989 |
| Fayette | Lavaca | 862 | 862 | 862 | 862 | 862 | 862 |
| | ***County Total*** | ***1,853*** | ***1,853*** | ***1,853*** | ***1,853*** | ***1,853*** | ***1,853*** |
| Matagorda | Brazos-Colorado | 15,282 | 15,282 | 15,282 | 15,282 | 15,282 | 15,282 |
| Matagorda | Colorado | 3,217 | 3,217 | 3,217 | 3,217 | 3,217 | 3,217 |
| Matagorda | Colorado-Lavaca | 20,329 | 20,329 | 20,329 | 20,329 | 20,329 | 20,329 |
| | ***County Total*** | ***38,828*** | ***38,828*** | ***38,828*** | ***38,828*** | ***38,828*** | ***38,828*** |
| Wharton | Brazos-Colorado | 50,527 | 50,527 | 50,527 | 50,527 | 50,527 | 50,527 |
| Wharton | Colorado | 35,910 | 35,910 | 35,910 | 35,910 | 35,910 | 35,910 |
| Wharton | Colorado-Lavaca | 16,196 | 16,196 | 16,196 | 16,196 | 16,196 | 16,196 |
| Wharton | Lavaca | 579 | 579 | 579 | 579 | 579 | 579 |
| | ***County Total*** | ***103,212*** | ***103,212*** | ***103,212*** | ***103,212*** | ***103,212*** | ***103,212*** |
| **Region K** | **Region Total** | **219,775** | **219,775** | **217,576** | **217,576** | **216,429** | **216,429** |

Note: An explanation of the information presented in this table is provided in Section 3.2.2.1.1 *Availability*.
*All groundwater availability values in this table are based on Modeled Available Groundwater (MAG) numbers.

### 3.2.2.1.2 Carrizo-Wilcox Aquifer

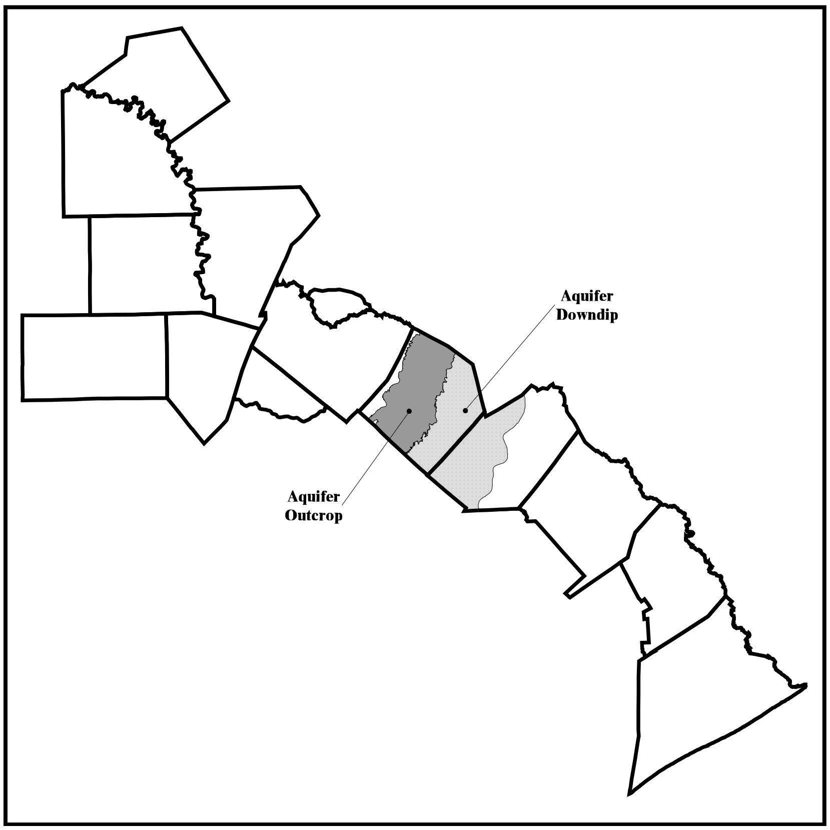
*Location and Use*

The Wilcox Group and the overlying Carrizo Formation of the Claiborne Group form a hydrologically connected system known as the Carrizo-Wilcox aquifer. This aquifer extends from the Rio Grande in South

Texas northeastward into Arkansas and Louisiana, providing water to all or parts of 60 counties in Texas. The Carrizo Sand and Wilcox Group occur at the surface along an outcrop band that parallels the Gulf Coast and dip beneath the land surface toward the coast except in the East Texas structural basin adjacent to the Sabine Uplift where the formations form a trough.

Use of water from the Carrizo-Wilcox aquifer in the LCRWPA occurs in Bastrop County and a portion of Fayette County. TWDB records indicate that municipal use accounts for the majority of groundwater pumpage from the aquifer. The location of the aquifer within the LCRWPA is illustrated in *Figure 3.3*.

**Figure 3.3: Carrizo-Wilcox Aquifer Within the Lower Colorado Regional Water Planning Area**




*Hydrogeology*

The Carrizo-Wilcox aquifer is predominantly composed of sand, locally interbedded with gravel, silt, clay, and lignite deposited during the Tertiary Period. North of the Colorado River, the Wilcox Group is generally divided into three distinct subdivisions. From the oldest and deepest to youngest these are the Hooper, Simsboro, and Calvert Bluff Formations. Of the three, the Simsboro Formation typically contains the most massive and coarsest sands and produces the largest quantities of water. South of the Colorado River, the Simsboro is absent as a distinct unit. The Wilcox portion of the aquifer varies significantly in thickness in the downdip artesian portion from 400 feet in portions of Fayette County (south of the Colorado River) to as much as 1,600 feet in Bastrop County. The Carrizo portion of the aquifer also varies in thickness in the downdip artesian portion from 200 feet to 400 feet across the LCRWPA.

*Water Quality*

Water from the Carrizo-Wilcox is fresh to slightly saline with quality problems limited to localized areas. In the outcrop the water is hard yet usually low in dissolved solids. Downdip, the water is softer, has a higher temperature, and contains increasing amounts of dissolved solids down-gradient. Hydrogen sulfide and methane may occur locally.

*Availability*

The Carrizo-Wilcox aquifer in Bastrop and Fayette Counties is within GMA 12. The Groundwater Conservation Districts (GCD) within GMA 12 worked together to determine the desired future condition (DFC) of the Carrizo-Wilcox Aquifer. Desired future conditions are essentially management goals for each aquifer. The DFC for the Carrizo-Wilcox Aquifer, adopted by GMA 12 on May 25, 2017, is summarized as follows:

- Carrizo Aquifer: No more than 62 feet of average drawdown between January 2000 and December 2069 within the Lost Pines Groundwater Conservation District (Bastrop County).
- Carrizo Aquifer: No more than 110 feet of average drawdown between January 2000 and December 2069 within the Fayette County Groundwater Conservation District (Fayette County).
- Simsboro (Middle Wilcox) Aquifer: No more than 240 feet of average drawdown between January 2000 and December 2069 within the Lost Pines Groundwater Conservation District (Bastrop County).

The Texas Water Development Board (TWDB) took the DFC for the aquifer and ran a groundwater availability model (GAM) to estimate what annual production volume would meet the DFC conditions. This volume is considered the modeled available groundwater or MAG. The MAG, which is considered the maximum amount of groundwater available for the regional water planning process from a particular aquifer, is documented in TWDB reports, with the GMA 12 Carrizo-Wilcox Aquifer MAG being documented in TWDB report GR 17-030_MAG, dated December 15, 2017. The report provides the MAG values for the Carrizo-Wilcox Aquifer by county and basin, as shown in *Table 3.11* below.

**Table 3.11: Region K Water Availability* for the Carrizo-Wilcox Aquifer (ac-ft/yr)**

| County | Basin | 2020 | 2030 | 2040 | 2050 | 2060 | 2070 |
|---|---|---|---|---|---|---|---|
| Bastrop | Brazos | 752 | 847 | 960 | 1,233 | 1,113 | 1,113 |
| Bastrop | Colorado | 20,696 | 23,206 | 25,169 | 28,570 | 27,823 | 27,823 |
| Bastrop | Guadalupe | 212 | 172 | 147 | 248 | 167 | 167 |
| | ***County Total*** | ***21,660*** | ***24,225*** | ***26,276*** | ***30,051*** | ***29,103*** | ***29,103*** |
| Fayette | Colorado | 4,565 | 4,565 | 4,565 | 4,565 | 4,565 | 4,565 |
| Fayette | Lavaca | 0 | 0 | 0 | 0 | 0 | 0 |
| Fayette | Guadalupe | 909 | 909 | 909 | 909 | 909 | 909 |
| | ***County Total*** | ***5,474*** | ***5,474*** | ***5,474*** | ***5,474*** | ***5,474*** | ***5,474*** |
| **Region K** | **Region Total** | **27,134** | **29,699** | **31,750** | **35,525** | **34,577** | **34,577** |

Note: An explanation of the information presented in this table is provided in Section 3.2.2.1.2 *Availability*.
*All groundwater availability values in this table are based on Modeled Available Groundwater (MAG) numbers.

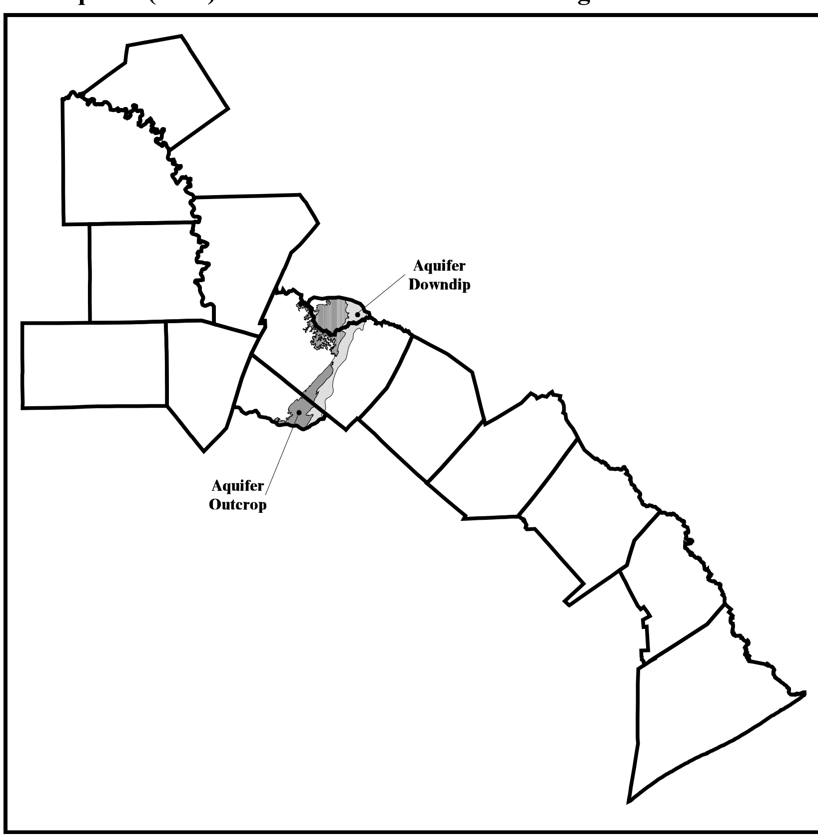
3.2.2.1.3 Edwards Aquifer (Balcones Fault Zone)

*Location and Use*

The Edwards aquifer (Balcones Fault Zone, or BFZ) covers approximately 4,350 square miles in parts of 11 counties. It forms a narrow belt extending along the base of the Balcones Escarpment from Kinney County through the San Antonio area northeastward to the Leon River in Bell County. A groundwater divide near Kyle in Hays County hydrologically separates the aquifer into the San Antonio and Barton Springs segments. The Colorado River divides the Barton Springs and Northern segments which are also considered hydrologically separate. The name Edwards aquifer (BFZ) distinguishes this aquifer from the Edwards-Trinity (Plateau) and Edwards-Trinity (High Plains) aquifers.

Groundwater use from the Edwards aquifer (BFZ) within the LCRWPA occurs in Hays, Travis, and Williamson Counties. TWDB records indicate that municipal use accounts for the majority of groundwater pumpage from the aquifer. Large springs feed several recreational areas and serve as habitat to several endangered species of plants and animals. Major river systems derive a significant amount of baseflow from Edwards aquifer (BFZ) spring flows that are utilized outside the Edwards region mainly for industrial and agricultural needs. The location of the aquifer within the LCRWPA is illustrated in *Figure 3.4.*

**Figure 3.4: Edwards Aquifer (BFZ) Within the Lower Colorado Regional Water Planning Area**



*Hydrogeology*

The Edwards aquifer (BFZ) is composed of limestone and dolomite deposited during the Cretaceous Period. The aquifer exists under water-table conditions in the outcrop and under artesian conditions where it dips into the subsurface and is confined below the overlying Del Rio Clay. The Edwards aquifer (BFZ) consists of the Georgetown Limestone and formations of the Edwards Group within the LCRWPA. Across the Edwards aquifer (BFZ) region, the aquifer thickness ranges from 200 to 600 feet.

Aquifer recharge occurs by the percolation of water on the aquifer outcrop (recharge zone). The recharge may occur by several methods: surface water percolating from streams and rivers draining the Edwards Plateau and which cross the outcrop; the percolation of rainfall runoff in ephemeral streams crossing the outcrop; and by direct infiltration of precipitation on the outcrop. This recharge reaches the aquifer through solution cavities, fracture crevices, faults, and sinkholes in the recharge zone. Unknown amounts of groundwater may enter the aquifer as lateral underflow from the Glen Rose Formation. Water in the aquifer generally moves from the recharge zone down-gradient and laterally toward natural discharge points such as Comal, San Marcos, Barton, and Salado springs.

A hydrologic divide occurs in the aquifer near Kyle in Hays County that separates the San Antonio segment of the aquifer from the Barton Springs and Northern segments of the aquifer. The Barton Springs segment is hydrologically bounded to the north by the Colorado River. The northern segment of the aquifer includes the area north of the Colorado River to Bell County. The area included in the LCRWPA is the area north of the Kyle groundwater divide and includes a portion of the Northern segment.

Groundwater moving through the aquifer system has dissolved large amounts of rock to create highly permeable zones in certain aquifer subdivisions and solution channels. Highly fractured areas near faults may be preferentially enhanced by solutioning to form conduits capable of transmitting large amounts of water. The solution features may facilitate rapid flow and augment the relatively high storage capacity of the aquifer. Due to the honeycombed and cavernous character of the aquifer, well yields are moderate to large. Several wells yield in excess of 16,000 gal/min and one well drilled in Bexar County flowed 37,000 gal/min from a 30-inch-diameter casing. The aquifer is significantly less permeable farther downdip where the concentration of dissolved solids in the water may abruptly exceed 1,000 mg/l.

*Water Quality*

The chemical quality of water in the aquifer is typically fresh, although hard, with dissolved solids concentrations averaging less than 500 mg/l. The downdip's relatively sharp interface between fresh and slightly saline water represents the extent of water containing less than 1,000 mg/l and is popularly known as the Bad Water Line (BWL). Within a relatively short distance down-gradient of the BWL, the groundwater becomes increasingly mineralized. This area is known as the Saline Zone of the Edwards Aquifer (BFZ). The position of the bad water line generally coincides with the alignment of IH 35 in the LCRWPA. The connection between the freshwater and saline zones is considered to be somewhat limited based on the fact that droughts and pumping have not caused the freshwater zone to become significantly more saline.

*Availability*

Due to its highly permeable nature in the fresh water zone, the Edwards aquifer (BFZ) responds quickly to changes and extremes in stress placed upon the system. This is indicated by the rapid fluctuations in water levels over relatively short periods of time. During times of adequate rainfall and recharge, the Edwards aquifer (BFZ) is able to supply sufficient amounts of water for all demands as well as sustain springflows at many locations throughout its extent. However, when recharge is low, water withdrawn from wells and water discharged at the springs comes mainly from aquifer storage. If these conditions persist, water in storage within the aquifer continues to be depleted with corresponding water-level declines and reduced spring flows.

Availability for the northern segment of the Edwards aquifer (BFZ) was established by the TWDB based on DFCs adopted by GMA 8 on January 31, 2017. The DFCs for Travis and Williamson counties within GMA 8 are as follows:

- Maintain at least 42 acre-feet per month of aggregated stream/spring flow during a repeat of the Drought of Record in Travis County.
- Maintain at least 60 acre-feet per month of aggregated stream/spring flow during a repeat of the Drought of Record in Williamson County.

Availability for the southern portion of the Edwards aquifer (BFZ) for the freshwater and saline zones was established by the TWDB based on DFCs adopted by GMA 10 on June 26, 2017. The DFCs for the Edwards (BFZ) Northern Subdivision and Edwards (BFZ) Northern Subdivision Saline Zone in Hays and Travis counties within GMA 10 are as follows:

Edwards (BFZ) Northern Subdivision

- Springflow at Barton Springs during average recharge conditions shall be no less than 49.7 cubic feet per second averaged over an 84 month (7-year) period;
- During extreme drought conditions, including those as severe as a recurrence of the 1950s Drought of Record, springflow of Barton Springs shall be no less than 6.5 cubic feet per second averaged on a monthly basis.

Edwards (BFZ) Northern Subdivision Saline Zone

- No more than 75 feet of regional average potentiometric surface drawdown due to pumping when compared to pre-development conditions.

The Texas Water Development Board (TWDB) took the DFCs for the aquifer and ran a groundwater availability model (GAM) to estimate what annual production volume would meet the DFC conditions. This volume is considered the modeled available groundwater or MAG. The MAG, which is considered the maximum amount of groundwater available for the regional water planning process from a particular aquifer, is documented in TWDB reports. The GMA 8 Edwards (BFZ) Aquifer MAG is documented in TWDB report GR 17-029_MAG, dated January 19, 2018. The GMA 10 Edwards (BFZ) Aquifer MAG is documented in TWDB report GR 16-033_MAG, dated July 20, 2018. The GMA 10 Saline Edwards (BFZ) Aquifer MAG is documented in TWDB report GR 16-033 MAG, dated July 20, 2018. The reports provide the MAG values for the Edwards (BFZ) Aquifer by county and basin, and the Saline Edwards (BFZ) Aquifer by county and basin, as shown in *Table 3.12* and *Table 3.13* below.

**Table 3.12: Region K Water Availability* for the Edwards Aquifer (BFZ) (ac-ft/yr)**

| County | Basin | 2020 | 2030 | 2040 | 2050 | 2060 | 2070 | Source |
|---|---|---|---|---|---|---|---|---|
| Hays | Colorado | 2,292 | 2,292 | 2,292 | 2,292 | 2,292 | 2,292 | GMA 10 |
| | ***County Total*** | ***2,292*** | ***2,292*** | ***2,292*** | ***2,292*** | ***2,292*** | ***2,292*** | |
| Travis | Brazos | 275 | 275 | 275 | 275 | 275 | 275 | GMA 8 |
| Travis | Colorado | 4,962 | 4,962 | 4,962 | 4,962 | 4,962 | 4,962 | GMA 8 |
| Travis | Colorado | 1,166 | 1,166 | 1,166 | 1,166 | 1,166 | 1,166 | GMA 10 |
| | ***County Total*** | ***6,403*** | ***6,403*** | ***6,403*** | ***6,403*** | ***6,403*** | ***6,403*** | |
| Williamson | Brazos | 6 | 6 | 6 | 6 | 6 | 6 | GMA 8 |
| Williamson | Colorado | 4 | 4 | 4 | 4 | 4 | 4 | GMA 8 |
| | ***County Total*** | ***10*** | ***10*** | ***10*** | ***10*** | ***10*** | ***10*** | |
| **Region K** | **Region Total** | **8,705** | **8,705** | **8,705** | **8,705** | **8,705** | **8,705** | |

Note: An explanation of the information presented in this table is provided in Section 3.2.2.1.3 *Availability*.
*All groundwater availability values in this table are based on Modeled Available Groundwater (MAG) numbers.

**Table 3.13: Region K Water Availability* for the Saline Edwards Aquifer (BFZ) (ac-ft/yr)**

| County | Basin | 2020 | 2030 | 2040 | 2050 | 2060 | 2070 | Source |
|---|---|---|---|---|---|---|---|---|
| Hays | Colorado | 66 | 66 | 66 | 66 | 66 | 66 | GMA 10 |
| | ***County Total*** | ***2,292*** | ***2,292*** | ***2,292*** | ***2,292*** | ***2,292*** | ***2,292*** | |
| Travis | Colorado | 5,073 | 5,073 | 5,073 | 5,073 | 5,073 | 5,073 | GMA 10 |
| Travis | Guadalupe | 280 | 280 | 280 | 280 | 280 | 280 | GMA 10 |
| | ***County Total*** | ***5,353*** | ***5,353*** | ***5,353*** | ***5,353*** | ***5,353*** | ***5,353*** | |
| **Region K** | **Region Total** | **7,645** | **7,645** | **7,645** | **7,645** | **7,645** | **7,645** | |

Note: An explanation of the information presented in this table is provided in Section 3.2.2.1.3 *Availability*.
*All groundwater availability values in this table are based on Modeled Available Groundwater (MAG) numbers.

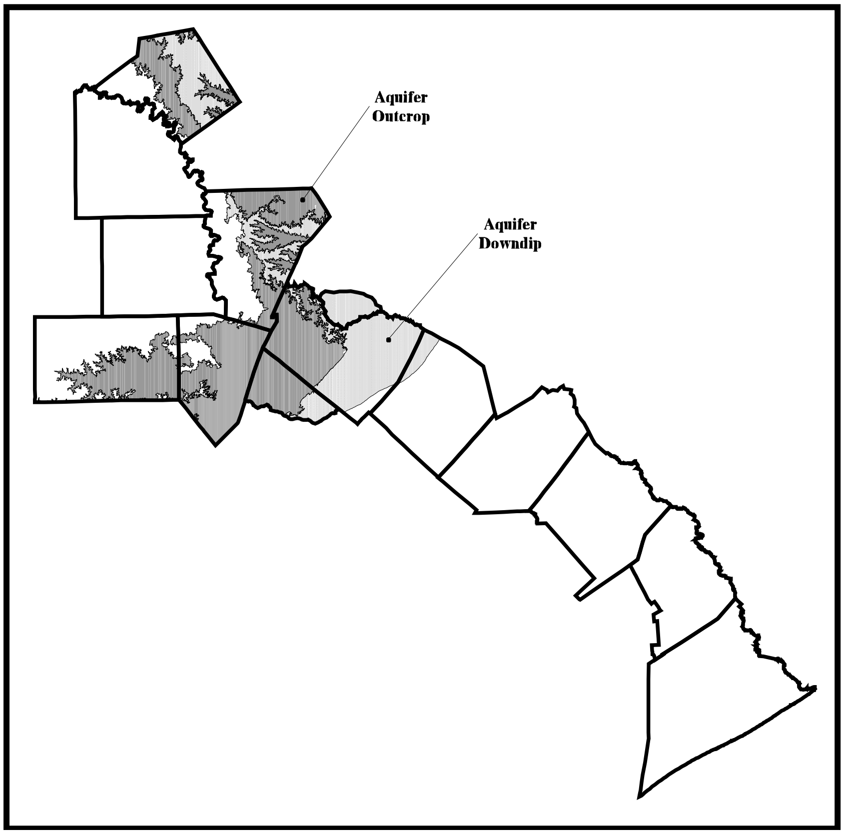
### 3.2.2.1.4 Trinity Aquifer

*Location and Use*

The Trinity aquifer consists of Cretaceous age rocks of the Trinity Group. The formations of the Trinity Group crop out in a band from the Red River in northern Texas to the Hill Country of South-Central Texas and provide water in all or parts of 55 counties. Trinity Group deposits also occur as far west as the Panhandle and Trans-Pecos regions where they are included as part of the Edwards-Trinity (High Plains) and Edwards-Trinity (Plateau) aquifers. Within much of the LCRWPA, the Trinity aquifer is exposed at the land surface as the erosion dissected margin of the Edwards Plateau.

Groundwater use from the Trinity aquifer in the LCRWPA occurs in Blanco, Burnet, Gillespie, Hays, Mills, Travis, and Williamson Counties. TWDB records indicate that municipal use accounts for the majority of groundwater pumpage from the aquifer. The location of the aquifer within the LCRWPA is illustrated in *Figure 3.5*.

**Figure 3.5: Trinity Aquifer Within the Lower Colorado Regional Water Planning Area**




*Hydrogeology*

The Trinity aquifer is composed of sand, clay, and limestone deposited during the Cretaceous Period. The aquifer in the LCRWPA is subdivided into the Upper, Middle, and Lower Trinity aquifers. The Upper Trinity is composed of the Upper Glen Rose Formation. The Middle Trinity aquifer is composed of the Lower Glen Rose Formation and the Hensell Sand and Cow Creek Limestone of the Travis Peak Formation. The Hammett Shale of the Travis Peak Formation is a confining zone between the Middle and Lower Trinity aquifers. The Lower Trinity aquifer is composed of the Sligo Limestone and the Hosston Formation (sand and conglomerate). The Glen Rose Formation and the Cow Creek Limestone are karsted but not as heavily solutioned as the Edwards aquifer (BFZ). There are evaporite mineral beds (principally anhydrite) associated with the contact of the Upper and Lower Glen Rose Formation that contribute to water quality issues in the certain areas of the Trinity aquifer within the LCRWPA. The formations of the Trinity aquifer thin from down-dip areas toward the outcrop. In some areas of the LCRWPA this thinning is pronounced. At the Balcones Escarpment the Trinity may be significantly displaced by the throw of faults associated with the Balcones Fault Zone. Trinity aquifer well yields typically range from less than 20 to more than 300 gallons per minute. The yields of wells in the Upper and Middle Trinity aquifers may be closely associated with the degree of local karst or solutioning features. The yield of wells from the Lower Trinity aquifer may be generally greater than the average yields of Upper or Lower Trinity aquifer wells.

*Water Quality*

Water quality from the Trinity aquifer is acceptable for most municipal and industrial purposes; however, excess concentrations of certain constituents in many places exceed drinking water standards. Heavy pumpage and water level declines in this region have contributed to deteriorating water quality in the aquifer. Wells completed in the Middle Trinity (especially the Hensell Sand) may exhibit levels of sodium, sulfate, and chloride, which are believed to be the result of leakage from the overlying Glen Rose. This is less likely to be true for wells completed in the Lower Trinity. The Hammett Shale acts as an aquitard and effectively prevents leakage from the overlying formations. In some areas, poor quality water occurs in and near wells that have not been properly cased. These wells may have deteriorated casings, insufficient casing or cement, or the casing may have been perforated at multiple depths in an effort to maximize the well yield. These wells serve as a conduit for poor quality water originating in the evaporite beds near the contact of the Upper and Lower Glen Rose Formations. Water quality declines in the downdip direction of all of the Trinity water-bearing units.

*Availability*

The groundwater availability estimate values for the northern Trinity aquifer in Burnet, Mills, Travis, and Williamson Counties are based on DFCs adopted by GMA 8 on January 31, 2017. The DFCs for the above mentioned counties within GMA 8 are as follows:

Burnet County
- Average drawdown of the Glen Rose aquifer should not exceed approximately 2 feet from January 1, 2010 through December 31, 2070.
- Average drawdown of the Hensell aquifer should not exceed approximately 7 feet from January 1, 2010 through December 31, 2070.
- Average drawdown of the Hosston aquifer should not exceed approximately 20 feet from January 1, 2010 through December 31, 2070.

Mills County
- Average drawdown of the Paluxy aquifer should not exceed approximately 1 foot from January 1, 2010 through December 31, 2070.
- Average drawdown of the Glen Rose aquifer should not exceed approximately 1 foot from January 1, 2010 through December 31, 2070.
- Average drawdown of the Hensell aquifer should not exceed approximately 2 feet from January 1, 2010 through December 31, 2070.
- Average drawdown of the Hosston aquifer should not exceed approximately 13 feet from January 1, 2010 through December 31, 2070.

Travis County
- Average drawdown of the Glen Rose aquifer should not exceed approximately 85 feet from January 1, 2010 through December 31, 2070.
- Average drawdown of the Hensell aquifer should not exceed approximately 50 feet from January 1, 2010 through December 31, 2070.
- Average drawdown of the Hosston aquifer should not exceed approximately 146 feet from January 1, 2010 through December 31, 2070.

Williamson County

- Average drawdown of the Glen Rose aquifer should not exceed approximately 77 feet from January 1, 2010 through December 31, 2070.
- Average drawdown of the Hensell aquifer should not exceed approximately 74 feet from January 1, 2010 through December 31, 2070.
- Average drawdown of the Hosston aquifer should not exceed approximately 177 feet from January 1, 2010 through December 31, 2070.

The groundwater availability estimate values for the Trinity aquifer in Blanco, Hays, and Travis Counties are based on DFCs submitted by GMA 9. The DFC for the Trinity aquifer within GMA 9 is as follows:

- Average drawdown of approximately 30 feet through 2060.

The groundwater availability estimate values for the Trinity aquifer in a portion of Travis County and a portion of Hays County are based on DFCs submitted by GMA 10. The DFC for the Trinity aquifer within GMA 10 is as follows:

- Average drawdown not to exceed 25 feet during average recharge conditions (including exempt and non-exempt use).

The Texas Water Development Board (TWDB) took the DFCs for the aquifer and ran a groundwater availability model (GAM) to estimate what annual production volume would meet the DFC conditions. This volume is considered the modeled available groundwater or MAG. The MAG, which is considered the maximum amount of groundwater available for the regional water planning process from a particular aquifer, is documented in TWDB reports. The GMA 8 Trinity Aquifer MAG being documented in TWDB report GR 17-029_MAG, dated January 19, 2018. The GMA 9 Trinity Aquifer MAG being documented in TWDB report GR 16-023_MAG, dated February 28, 2017. The GMA 10 Trinity Aquifer MAG being documented in TWDB Report GR 16-033_MAG, dated July 20, 2018. The reports provide the MAG values for the Trinity Aquifer by county and basin, as shown in *Table 3.14* below.

**Table 3.14: Region K Water Availability* for the Trinity Aquifer (ac-ft/yr)**

| County | Basin | 2020 | 2030 | 2040 | 2050 | 2060 | 2070 |
|---|---|---|---|---|---|---|---|
| Blanco | Colorado | 1,322 | 1,322 | 1,322 | 1,322 | 1,322 | 1,322 |
| Blanco | Guadalupe | 1,251 | 1,251 | 1,251 | 1,251 | 1,251 | 1,251 |
| | ***County Total*** | ***2,573*** | ***2,573*** | ***2,573*** | ***2,573*** | ***2,573*** | ***2,573*** |
| Burnet | Brazos | 3,138 | 3,131 | 3,138 | 3,131 | 3,138 | 3,131 |
| Burnet | Colorado | 759 | 756 | 759 | 756 | 759 | 756 |
| | ***County Total*** | ***3,897*** | ***3,887*** | ***3,897*** | ***3,887*** | ***3,897*** | ***3,887*** |
| Hays | Colorado | 5,690 | 5,687 | 5,686 | 5,686 | 5,686 | 5,686 |
| Hays | Guadalupe | 9 | 9 | 9 | 9 | 9 | 9 |
| | ***County Total*** | ***5,699*** | ***5,696*** | ***5,695*** | ***5,695*** | ***5,695*** | ***5,695*** |
| Mills | Brazos | 808 | 805 | 808 | 805 | 808 | 805 |
| Mills | Colorado | 1,669 | 1,665 | 1,669 | 1,665 | 1,669 | 1,665 |
| | ***County Total*** | ***2,477*** | ***2,470*** | ***2,477*** | ***2,470*** | ***2,477*** | ***2,470*** |
| Travis | Brazos | 1 | 1 | 1 | 1 | 1 | 1 |
| Travis | Colorado | 14,439 | 14,407 | 14,410 | 14,379 | 14,365 | 14,350 |
| Travis | Guadalupe | 2 | 2 | 2 | 2 | 2 | 2 |
| | ***County Total*** | ***14,442*** | ***14,410*** | ***14,413*** | ***14,382*** | ***14,368*** | ***14,353*** |
| Williamson | Brazos | 0 | 0 | 0 | 0 | 0 | 0 |
| Williamson | Colorado | 67 | 67 | 67 | 67 | 67 | 67 |
| | ***County Total*** | ***67*** | ***67*** | ***67*** | ***67*** | ***67*** | ***67*** |
| **Region K** | **Region Total** | **29,155** | **29,103** | **29,122** | **29,074** | **29,077** | **29,045** |

Note: An explanation of the information presented in this table is provided in Section 3.2.2.1.4 *Availability*.
*All groundwater availability values in this table are based on Modeled Available Groundwater (MAG) numbers.

### 3.2.2.1.5 Edwards-Trinity-Plateau, Pecos Valley, and Trinity Aquifer

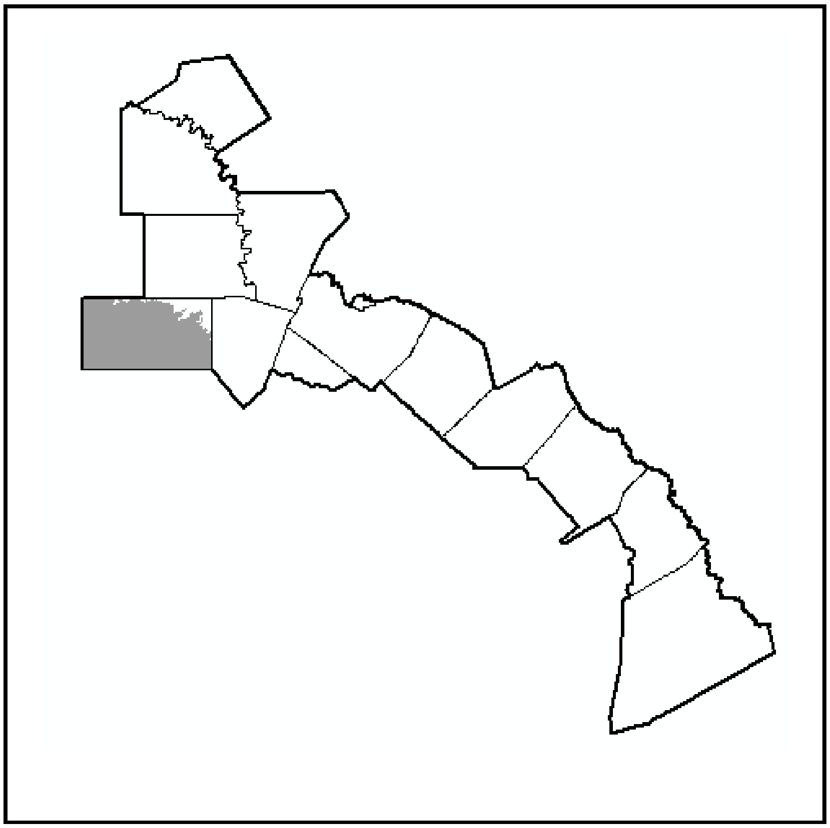
*Location and Use*

This planning cycle, the Edwards-Trinity (Plateau), Pecos Valley, and Trinity aquifers were considered by GMA 7 to be undifferentiated and were combined together when determining the DFC. A single-layer alternative groundwater flow model was used to determine the MAG for the combined aquifer.

The Edwards-Trinity-Plateau, Pecos Valley, and Trinity aquifer underlies the Edwards Plateau east of the Pecos River and the Stockton Plateau west of the Pecos River, providing water to all or parts of 38 counties. The aquifer extends from the Hill Country of Central Texas to the Trans-Pecos region of West Texas.

Groundwater use from the Edwards-Trinity-Plateau, Pecos Valley, and Trinity aquifer within the LCRWPA is limited to Gillespie County. TWDB records indicate that municipal use accounts for the majority of groundwater pumpage from the aquifer. The location of the aquifer within the LCRWPA is illustrated in *Figure 3.6.*

**Figure 3.6: Edwards-Trinity (Plateau), Pecos Valley, and Trinity Aquifer Within the Lower Colorado Regional Water Planning Area**



*Hydrogeology*

The aquifer consists of saturated sediments of lower Cretaceous age Trinity Group formations and overlying limestones and dolomites of the Comanche Peak, Edwards, and Georgetown Formations. Springs issuing from the aquifer form the headwaters for the Pedernales, Llano, and San Saba Rivers.

The aquifer generally exists under water table conditions, however, where the Trinity is fully saturated and a zone of low permeability occurs near the base of the overlying Edwards, artesian conditions may exist. Reported well yields commonly range from less than 50 gal/min, where saturated thickness is thin, to more than 1,000 gal/min, in areas outside of Region K where large capacity wells are completed in jointed and cavernous limestone.

*Water Quality*

Natural chemical quality of Edwards-Trinity-Plateau, Pecos Valley, and Trinity aquifer water ranges from fresh to slightly saline. The water is typically hard and may vary widely in concentrations of dissolved solids, composed mostly of calcium and bicarbonate. The salinity of the groundwater tends to increase toward the west. Water quality of springs issuing from the aquifer in the southern and eastern border areas is typically excellent.

*Availability*

The Edwards-Trinity-Plateau, Pecos Valley, and Trinity aquifer in Gillespie County is within GMA 7, although the Pecos Valley portion is not actually in Gillespie County. The Groundwater Conservation Districts (GCD) within GMA 7 worked together to determine the desired future condition (DFC) of the Edwards-Trinity-Plateau, Pecos Valley, and Trinity aquifer. Desired future conditions are essentially management goals for each aquifer. The DFC for the Edwards-Trinity-Plateau, Pecos Valley, and Trinity aquifer, adopted by GMA 7 on March 22, 2018, is summarized as follows:

- Average drawdown not to exceed 5 feet of drawdown from 2010 to 2070.

The Texas Water Development Board (TWDB) took the DFC for the aquifer and ran a groundwater availability model (GAM) to estimate what annual production volume would meet the DFC conditions. This volume is considered the modeled available groundwater or MAG. The MAG, which is considered the maximum amount of groundwater available for the regional water planning process from a particular aquifer, is documented in TWDB reports, with the GMA 7 Edwards-Trinity-Plateau, Pecos Valley, and Trinity aquifer MAG being documented in TWDB report GR 16-026_MAG, Version 2, dated September 21, 2018. The report provides the MAG values for the Edwards-Trinity-Plateau, Pecos Valley, and Trinity aquifer by county and basin, as shown in *Table 3.15* below.

**Table 3.15: Region K Water Availability* for the Edwards-Trinity-Plateau, Pecos Valley**, and Trinity Aquifer (ac-ft/yr)**

| County | Basin | 2020 | 2030 | 2040 | 2050 | 2060 | 2070 |
|---|---|---|---|---|---|---|---|
| Gillespie | Colorado | 4,843 | 4,843 | 4,843 | 4,843 | 4,843 | 4,843 |
| Gillespie | Guadalupe | 136 | 136 | 136 | 136 | 136 | 136 |
| | ***County Total*** | ***4,979*** | ***4,979*** | ***4,979*** | ***4,979*** | ***4,979*** | ***4,979*** |
| **Region K** | **Region Total** | **4,979** | **4,979** | **4,979** | **4,979** | **4,979** | **4,979** |

Note: An explanation of the information presented in this table is provided in Section 3.2.2.1.5 *Availability*.
*All groundwater availability values in this table are based on Modeled Available Groundwater (MAG) numbers.
**Note that the Pecos Valley Aquifer is not in Gillespie County.

### *3.2.2.2 Minor Aquifers*

The minor aquifers in the LCRWPA are the Hickory, Queen City, Sparta, Ellenburger-San Saba, Marble Falls, and Yegua-Jackson aquifers. These aquifers provide water supply to many of the cities and towns in the hill country of Central Texas, or in the case of the Sparta and Queen City aquifers, to farms, ranches, and small towns in Bastrop and Fayette Counties.

There are also WUGs in Region K that rely on alluvial aquifers for supply. These supplies are referred to as “Other Aquifer” since the actual aquifers have not been identified or named and the extent of the aquifer supply has not been determined.

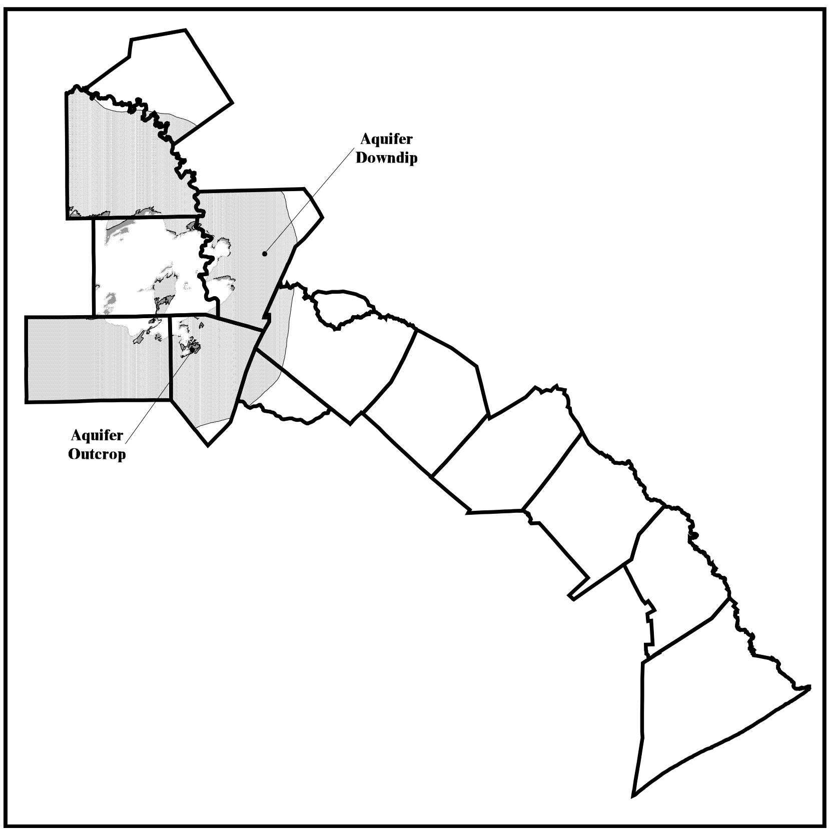
3.2.2.2.1 Hickory Aquifer

*Location and Use*

The Hickory aquifer underlies approximately 5,000 square miles in parts of 19 counties within the Llano Uplift region of Central Texas. Discontinuous outcrops of the Hickory sandstone overlie and flank the exposed Precambrian rocks that form the central core of the Uplift. The downdip artesian portion of the aquifer encircles the Uplift and extends to maximum depths approaching 4,500 feet.

Groundwater use from the Hickory aquifer within the LCRWPA occurs in Blanco, Burnet, Gillespie, Llano, and San Saba Counties. TWDB records indicate that irrigation is the largest use category of groundwater pumpage from the aquifer. The location of the aquifer within the LCRWPA is illustrated in *Figure 3.7.*

**Figure 3.7: Hickory Aquifer Within the Lower Colorado Regional Water Planning Area**




*Hydrogeology*

The Hickory aquifer, like the Marble Falls and Ellenburger-San Saba aquifers, was formed by the Llano Uplift, a distinct area of the state that includes portions of 19 counties. The Hickory Sandstone member of the Cambrian Riley Formation is composed of some of the oldest sedimentary rocks found in Texas. In most of the northern and western portions of the aquifer, the Hickory Sandstone Member can be differentiated into lower, middle, and upper units, which reach a maximum thickness of 480 feet in southwestern McCulloch County just northwest of the LCRWPA. In the southern and eastern extent of the aquifer, the Hickory Sandstone Member consists of only two units, which range in thickness from about 150 to 400 feet.

The Hickory aquifer has been compartmentalized by block faulting. The vertical displacement of faults ranges from a few feet to as much as 2,000 feet. Significant lateral displacement is also associated with these faults. Throughout its extent, the thickness of the aquifer is affected by the relief of the underlying Precambrian surface. Both of these elements have contributed to the significant variability that occurs in groundwater availability, movement, quality, and productivity.

Large wells used for irrigation and municipal supply may range from 200 to 500 gal/min. Some exceptional wells have been reported to have yields in excess of 1,000 gal/min. These would typically occur outside of the LCRWPA, northwest of the Llano Uplift.

*Water Quality*

In general, the quality of water from the Hickory aquifer could be described as moderate to low quality. The total dissolved solids concentrations vary from 300 to 500 mg/l. In some areas the groundwater may have dissolved solids concentrations as high as 3,000 mg/l. The water may contain alpha particle and total radium concentrations that may exceed safe drinking water levels soon to be issued by the EPA. Radon gas may also be entrained. Most of the radioactive groundwater is thought to be produced from the middle Hickory unit, while the upper Hickory unit produces water that exceeds safe drinking water concentrations for iron. High nitrate levels may be found in the shallower portions of the aquifer where there may be interaction with surface activities such as fertilizer applications and septic systems.

*Availability*

The Hickory aquifer spans several counties and several GMAs. The groundwater availability estimate values for the Hickory aquifer are based on desired future conditions (DFCs) submitted by the responsible GMAs. Desired future conditions are essentially management goals for each aquifer. The DFCs for the Hickory aquifer are as follows:

Burnet County (GMA 8) – DFC adopted on January 31, 2017
- Burnet County should maintain approximately 90 percent of saturated thickness from 2010 to 2070.

Gillespie County (GMA 7) – DFC adopted on September 22, 2016
- Total net decline in water levels shall not exceed nine (9) feet below 2010 water levels in the aquifer by 2070.

Mills County (GMA 8) – DFC adopted on January 31, 2017
- Mills County should maintain approximately 90 percent of saturated thickness from 2010 to 2070.

San Saba County (GMA 7) – DFC adopted on September 22, 2016
- Total net decline in water levels shall not exceed six (6) feet below 2010 water levels in the aquifer by 2070.

If a GMA determines that aquifer characteristics, groundwater demands, and current groundwater uses do not warrant adoption of a DFC, the aquifer can be classified "non-relevant" for joint groundwater planning purposes. When an aquifer or portion of an aquifer is identified as "non-relevant" and does not have a MAG associated with it, it is up to the planning group to determine the water availability of that aquifer or portion of aquifer for regional water planning purposes. GMA 7, the GMA managing the Hickory aquifer in Llano County, declared the aquifer as “non-relevant” in the September 21, 2018 TWDB report GR 16-026, Version 2. GMA 9, the GMA managing the Hickory aquifer in Blanco County, declared the aquifer as “non-relevant” in the February 28, 2017 TWDB report GR 16-023.

The Texas Water Development Board (TWDB) took the DFCs for the aquifer and ran a groundwater availability model (GAM) to estimate what annual production volume would meet the DFC conditions. This volume is considered the modeled available groundwater or MAG. The MAG, which is considered the maximum amount of groundwater available for the regional water planning process from a particular aquifer, is documented in TWDB reports.

- The GMA 7 Hickory aquifer MAG being documented in TWDB report GR 16-026_MAG, Version 2, dated September 21, 2018.
- The GMA 8 Hickory aquifer MAG being documented in TWDB report GR 17-029_MAG, dated January 19, 2018.

As part of TWDB's informal comments on the Region K Technical Memorandum, the TWDB staff conducted a modeling analysis related to the Llano Uplift aquifers and provided DFC-compatible “non-relevant” groundwater availability values for the Hickory Aquifer in Blanco County and Llano County. *Table 3.16* below lists the MAG values and the “non-relevant” groundwater availabilities for the Hickory Aquifer by county and basin.

**Table 3.16: Region K Water Availability* for the Hickory Aquifer (ac-ft/yr)**

| County | Basin | 2020 | 2030 | 2040 | 2050 | 2060 | 2070 |
|---|---|---|---|---|---|---|---|
| Blanco | Colorado | 383 | 382 | 383 | 382 | 383 | 382 |
| Blanco | Guadalupe | 0 | 0 | 0 | 0 | 0 | 0 |
| | ***County Total*** | ***383*** | ***382*** | ***383*** | ***382*** | ***383*** | ***382*** |
| Burnet | Brazos | 1,240 | 1,236 | 1,240 | 1,236 | 1,240 | 1,236 |
| Burnet | Colorado | 2,183 | 2,177 | 2,183 | 2,177 | 2,183 | 2,177 |
| | ***County Total*** | ***3,423*** | ***3,413*** | ***3,423*** | ***3,413*** | ***3,423*** | ***3,413*** |
| Gillespie | Colorado | 1,751 | 1,751 | 1,751 | 1,751 | 1,751 | 1,751 |
| Gillespie | Guadalupe | 0 | 0 | 0 | 0 | 0 | 0 |
| | ***County Total*** | ***1,751*** | ***1,751*** | ***1,751*** | ***1,751*** | ***1,751*** | ***1,751*** |
| Llano | Colorado | 2,027 | 2,021 | 2,027 | 2,021 | 2,027 | 2,021 |
| | ***County Total*** | ***2,027*** | ***2,021*** | ***2,027*** | ***2,021*** | ***2,027*** | ***2,021*** |
| Mills | Brazos | 7 | 7 | 7 | 7 | 7 | 7 |
| Mills | Colorado | 29 | 29 | 29 | 29 | 29 | 29 |
| | ***County Total*** | ***36*** | ***36*** | ***36*** | ***36*** | ***36*** | ***36*** |
| San Saba | Colorado | 7,680 | 7,680 | 7,680 | 7,680 | 7,680 | 7,680 |
| | ***County Total*** | ***7,680*** | ***7,680*** | ***7,680*** | ***7,680*** | ***7,680*** | ***7,680*** |
| **Region K** | **Region Total** | **15,300** | **15,283** | **15,300** | **15,283** | **15,300** | **15,283** |

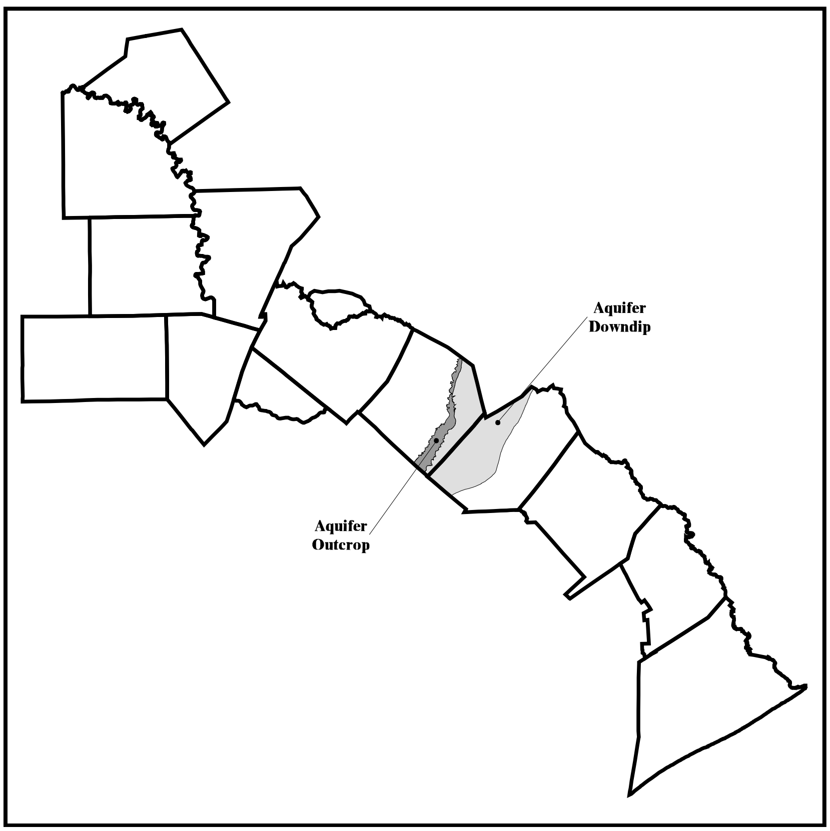
Note: An explanation of the information presented in this table is provided in Section 3.2.2.2.1 *Availability*.
*All groundwater availability values in this table with the exception of those listed for Blanco County and Llano County are based on Modeled Available Groundwater (MAG) numbers. Blanco County and Llano County values are DFC-compatible “non-relevant” groundwater availabilities provided by TWDB staff.

3.2.2.2.2 Queen City Aquifer

*Location and Use*

The Queen City aquifer extends in a band across most of the State from the Frio River in South Texas northeastward into Louisiana. The southwestern boundary is placed at the Frio River because of a facies change in the formation. This facies change results in reduced amounts of poorer quality water produced from this interval southwest of the Frio River. TWDB records indicate that irrigation and livestock use account for the majority of groundwater pumpage from the aquifer. The location of the aquifer within the LCRWPA is illustrated in *Figure 3.8*.

**Figure 3.8: Queen City Aquifer Within the Lower Colorado Regional Water Planning Area**




*Hydrogeology*

The Queen City aquifer is composed of sand, loosely cemented sandstone, and interbedded clay units of the Queen City Formation of the Tertiary Claiborne Group. These rocks slope downward or dip gently to the south and southeast toward the Gulf of Mexico. The total thickness of this aquifer is usually less than 500 feet in the LCRWPA. The Queen City aquifer generally parallels the Carrizo aquifer, and like the Carrizo, it has both a water table and artesian portion. Well yields are generally low with a few exceeding 400 gal/min.

*Water Quality*

Throughout most of the LCRWPA, the chemical quality of the Queen City aquifer water is excellent, but water quality may deteriorate fairly rapidly downdip. The water may be fairly acidic (low pH), have high iron concentrations, or contain hydrogen sulfide gas. All of these conditions are relatively easy to remedy with standard water treatment methods.

*Availability*

The Queen City aquifer in Bastrop and Fayette Counties is within GMA 12. The Groundwater Conservation Districts (GCD) within GMA 12 worked together to determine the desired future condition (DFC) of the Queen City aquifer. Desired future conditions are essentially management goals for each aquifer. The DFC for the Queen City aquifer, adopted by GMA 12 on May 25, 2017, is summarized as follows:

- No more than 15 feet of average drawdown between January 2000 and December 2069 within the Lost Pines Groundwater Conservation District (Bastrop County).
- No more than 64 feet of average drawdown between January 2000 and December 2069 within the Fayette County Groundwater Conservation District (Fayette County).

The Texas Water Development Board (TWDB) took the DFC for the aquifer and ran a groundwater availability model (GAM) to estimate what annual production volume would meet the DFC conditions. This volume is considered the modeled available groundwater or MAG. The MAG, which is considered the maximum amount of groundwater available for the regional water planning process from a particular aquifer, is documented in TWDB reports, with the GMA 12 Queen City aquifer MAG being documented in TWDB report GR 17-030_MAG, dated December 15, 2017. The report provides the MAG values for the Queen City aquifer by county and basin, as shown in *Table 3.17* below.

**Table 3.17: Region K Water Availability* for the Queen City Aquifer (ac-ft/yr)**

| County | Basin | 2020 | 2030 | 2040 | 2050 | 2060 | 2070 |
|---|---|---|---|---|---|---|---|
| Bastrop | Brazos | 49 | 47 | 46 | 44 | 42 | 42 |
| Bastrop | Colorado | 353 | 333 | 311 | 288 | 264 | 264 |
| Bastrop | Guadalupe | 156 | 161 | 166 | 173 | 180 | 180 |
| | ***County Total*** | ***558*** | ***541*** | ***523*** | ***505*** | ***486*** | ***486*** |
| Fayette | Colorado | 2,278 | 2,278 | 2,278 | 2,278 | 2,278 | 2,278 |
| Fayette | Lavaca | 0 | 0 | 0 | 0 | 0 | 0 |
| Fayette | Guadalupe | 430 | 430 | 430 | 430 | 430 | 430 |
| | ***County Total*** | ***2,708*** | ***2,708*** | ***2,708*** | ***2,708*** | ***2,708*** | ***2,708*** |
| **Region K** | **Region Total** | **3,266** | **3,249** | **3,231** | **3,213** | **3,194** | **3,194** |

Note: An explanation of the information presented in this table is provided in Section 3.2.2.2.2 *Availability*.
*All groundwater availability values in this table are based on Modeled Available Groundwater (MAG) numbers.

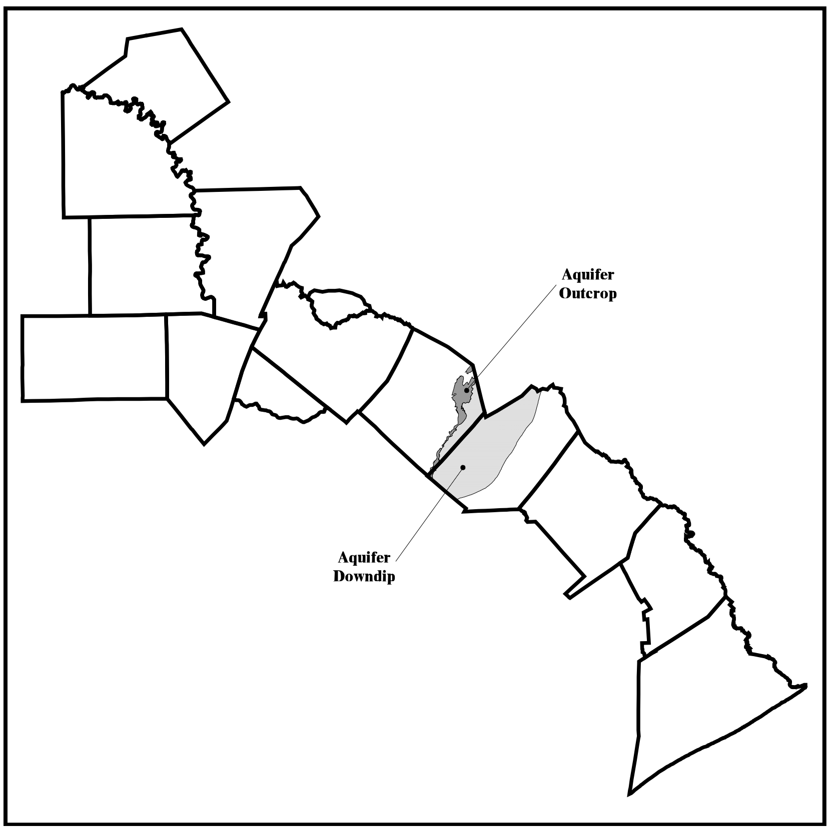
3.2.2.2.3 Sparta Aquifer

*Location and Use*

The Sparta aquifer extends in a narrow band across the state from the Frio River in South Texas northeastward to the Louisiana border in Sabine County. The southwestern boundary is placed at the Frio River because of a facies change in the formation, which makes it difficult to delineate the boundaries of the Sparta and contiguous formations southwestward. The facies change results in reduced amounts of water and poorer quality water produced from the interval.

Groundwater use from the Sparta aquifer within the LCRWPA occurs in Bastrop and Fayette Counties. TWDB records indicate that municipal, irrigation, livestock, and mining use account for the groundwater pumpage from the aquifer. The location of the aquifer within the LCRWPA is illustrated in *Figure 3.9*.

**Figure 3.9: Sparta Aquifer Within the Lower Colorado Regional Water Planning Area**




*Hydrogeology*

The Sparta Formation, like the Queen City, is part of the Claiborne Group. The aquifer consists of sand and interbedded clay with more massive sand beds in the basal section. Rocks composing the Sparta Formation also dip gently to the south and southeast toward the Gulf Coast, with a total thickness that can reach up to 300 feet. Yields of individual wells are generally low to moderate, but high capacity wells, producing 400 to 500 gal/min, are possible. The water occurs under water table conditions near the outcrop but becomes confined and is under artesian conditions downdip. Usable quality water may be recovered from as much as 2,000 feet below the surface.

*Water Quality*

Usable quality water is commonly found within the outcrop and for a few miles downdip. The water quality in most of this aquifer is excellent, but the quality does decrease in the downdip direction. In some areas the water can contain iron concentrations exceeding the safe drinking water standards.

*Availability*

The Sparta aquifer in Bastrop and Fayette Counties is within GMA 12. The Groundwater Conservation Districts (GCD) within GMA 12 worked together to determine the desired future condition (DFC) of the Sparta aquifer. Desired future conditions are essentially management goals for each aquifer. The DFC for the Sparta aquifer, adopted by GMA 12 on May 25, 2017, is summarized as follows:

- No more than 5 feet of average drawdown between January 2000 and December 2069 within the Lost Pines Groundwater Conservation District (Bastrop County).
- No more than 47 feet of average drawdown between January 2000 and December 2069 within the Fayette County Groundwater Conservation District (Fayette County).

The Texas Water Development Board (TWDB) took the DFC for the aquifer and ran a groundwater availability model (GAM) to estimate what annual production volume would meet the DFC conditions. This volume is considered the modeled available groundwater or MAG. The MAG, which is considered the maximum amount of groundwater available for the regional water planning process from a particular aquifer, is documented in TWDB reports, with the GMA 12 Sparta aquifer MAG being documented in TWDB report GR 17-030_MAG, dated December 15, 2017. The report provides the MAG values for the Sparta aquifer by county and basin, as shown in *Table 3.18* below.

**Table 3.18: Region K Water Availability* for the Sparta Aquifer (ac-ft/yr)**

| County | Basin | 2020 | 2030 | 2040 | 2050 | 2060 | 2070 |
|---|---|---|---|---|---|---|---|
| Bastrop | Brazos | 89 | 87 | 85 | 84 | 82 | 82 |
| Bastrop | Colorado | 785 | 784 | 783 | 782 | 781 | 781 |
| Bastrop | Guadalupe | 33 | 33 | 33 | 33 | 33 | 33 |
| | ***County Total*** | ***907*** | ***904*** | ***901*** | ***899*** | ***896*** | ***896*** |
| Fayette | Colorado | 1,659 | 1,649 | 1,626 | 1,612 | 1,619 | 1,619 |
| Fayette | Lavaca | 0 | 0 | 0 | 0 | 0 | 0 |
| Fayette | Guadalupe | 1,172 | 1,176 | 1,177 | 1,182 | 1,183 | 1,183 |
| | ***County Total*** | ***2,831*** | ***2,825*** | ***2,803*** | ***2,794*** | ***2,802*** | ***2,802*** |
| **Region K** | **Region Total** | **3,738** | **3,729** | **3,704** | **3,693** | **3,698** | **3,698** |

Note: An explanation of the information presented in this table is provided in Section 3.2.2.2.3, *Availability*.
*All groundwater availability values in this table are based on Modeled Available Groundwater (MAG) numbers.

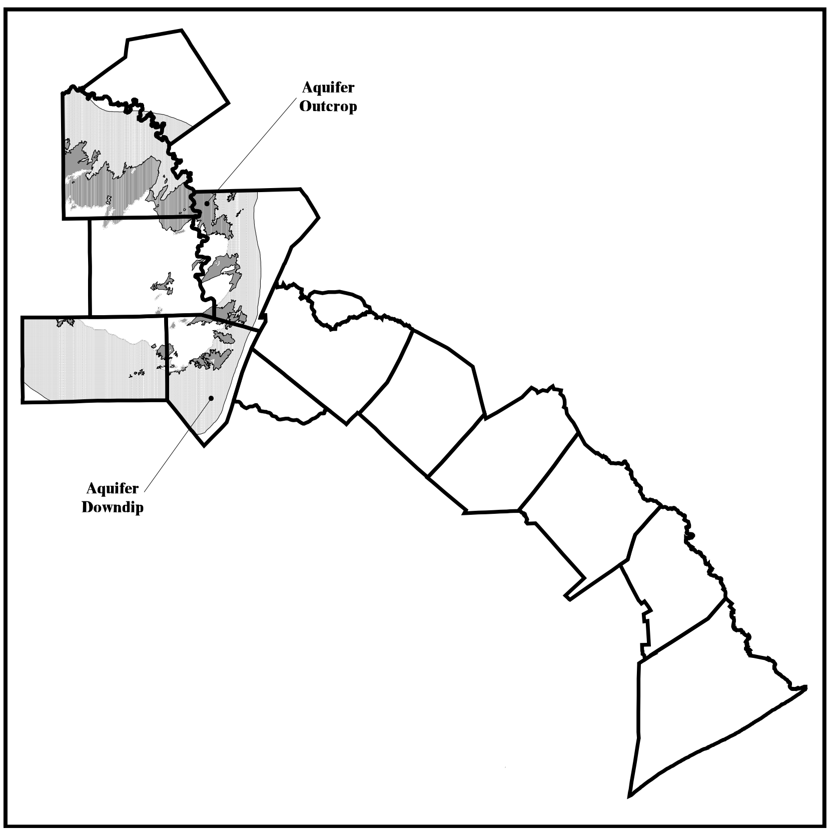
3.2.2.2.4 Ellenburger-San Saba Aquifer

*Location and Use*

The Ellenburger-San Saba aquifer underlies about 4,000 square miles in parts of 15 counties in the Llano Uplift area of Central Texas. Discontinuous outcrops of the aquifer generally encircle older rocks in the core of the uplift. The remaining downdip portion contains fresh to slightly saline water to depths of approximately 3,000 feet below land surface.

Groundwater use from the Ellenburger-San Saba aquifer within the LCRWPA occurs in Blanco, Burnet, Gillespie, Llano, Mills, and San Saba Counties. TWDB records indicate that municipal use accounts for the majority of groundwater pumpage from the aquifer. The location of the aquifer within the LCRWPA is illustrated in *Figure 3.10*.

**Figure 3.10: Ellenburger-San Saba Aquifer Within the Lower Colorado Regional Water Planning Area**




*Hydrogeology*

The Ellenburger-San Saba aquifer occurs in limestone and dolomite facies of the San Saba Member of the Wilbern Formation of the Late Cambrian Age; and in the Honeycut, Gorman, and Tanyard Formations of the Ellenburger Group. In the southeastern portion of the aquifer, these units have a combined maximum thickness of about 2,700 feet while in the northeastern portion of the aquifer and a maximum combined thickness is about 1,100 feet. In some areas where the overlying confining beds are thin or nonexistent the aquifer may be hydrologically connected to the Marble Falls aquifer.

Most of the water is under artesian conditions, even in the outcrop areas where impermeable carbonate rocks in the upper portion of the Ellenburger-San Saba function as confining layers. The aquifer is compartmentalized by block faulting with the fractures forming various sized cavities, which are the major water-bearing features.

The maximum capacity of wells used for municipal and irrigation purposes generally range from 200 to 600 gal/min. Most other wells produce less than 100 gal/min. The variable flow properties of the aquifer make it difficult to consistently obtain higher yield wells in some areas. Locations in the LCRWPA that have experienced this difficulty include the cities of Fredericksburg and Bertram.

*Water Quality*

Water produced from the aquifer may have dissolved concentrations that range from 200 mg/l to as high as 3,000 mg/l, but in most cases is usually less than 1,000 mg/l. The quality of water declines rapidly in the downdip direction.

*Availability*

The Ellenburger-San Saba aquifer spans several counties and several GMAs. The groundwater availability estimate values for the Ellenburger-San Saba aquifer are based on desired future conditions (DFCs) submitted by the responsible GMAs. Desired future conditions are essentially management goals for each aquifer. The DFCs for the Ellenburger-San Saba aquifer are as follows:

Burnet County (GMA 8) – DFC adopted on January 31, 2017
- Burnet County should maintain approximately 90 percent of the saturated thickness from 2010 to 2070.

Gillespie County (GMA 7) – DFC adopted on September 22, 2016
- Total net decline in water levels shall not exceed eight (8) feet below 2010 water levels in the aquifer by 2070.

Mills County (GMA 8) – DFC adopted on January 31, 2017
- Mills County should maintain approximately 90 percent of the saturated thickness from 2010 to 2070.

San Saba County (GMA 7) – DFC adopted on September 22, 2016
- Total net decline in water levels shall not exceed five (5) feet below 2010 water levels in the aquifer by 2070.

If a GMA determines that aquifer characteristics, groundwater demands, and current groundwater uses do not warrant adoption of a DFC, the aquifer can be classified “non-relevant” for joint groundwater planning purposes. When an aquifer or portion of an aquifer is identified as “non-relevant” and does not have a MAG associated with it, it is up to the planning group to determine the water availability of that aquifer or portion of aquifer for regional water planning purposes. GMA 7, the GMA managing the Ellenburger-San Saba aquifer in Llano County, declared the aquifer as “non-relevant” in the September 21, 2018 TWDB report GR 16-026, Version 2. GMA 9, the GMA managing the Ellenburger-San Saba aquifer in Blanco County, declared the aquifer as “non-relevant” in the February 28, 2017 TWDB report GR 16-023.

The Texas Water Development Board (TWDB) took the DFCs for the aquifer and ran a groundwater availability model (GAM) to estimate what annual production volume would meet the DFC conditions. This volume is considered the modeled available groundwater or MAG. The MAG, which is considered the maximum amount of groundwater available for the regional water planning process from a particular aquifer, is documented in TWDB reports.

- The GMA 7 Ellenburger-San Saba aquifer MAG being documented in TWDB report GR 16-026_MAG, dated September 21, 2018.
- The GMA 8 Ellenburger-San Saba aquifer MAG being documented in TWDB report GR 17-029_MAG, dated January 19, 2018.

As part of TWDB's informal comments on the Region K Technical Memorandum, the TWDB staff conducted a modeling analysis related to the Llano Uplift aquifers and provided DFC-compatible "non-relevant" groundwater availability values for the Ellenburger-San Saba Aquifer in Blanco County and Llano County. *Table 3.19* below lists the MAG values and the "non-relevant" groundwater availabilities for the Ellenburger-San Saba Aquifer by county and basin.

**Table 3.19: Region K Water Availability* for the Ellenburger-San Saba Aquifer (ac-ft/yr)**

| County | Basin | 2020 | 2030 | 2040 | 2050 | 2060 | 2070 |
|---|---|---|---|---|---|---|---|
| Blanco | Colorado | 1,952 | 1,946 | 1,952 | 1,946 | 1,952 | 1,946 |
| | ***County Total*** | ***1,952*** | ***1,946*** | ***1,952*** | ***1,946*** | ***1,952*** | ***1,946*** |
| Burnet | Brazos | 3,833 | 3,822 | 3,833 | 3,822 | 3,833 | 3,822 |
| Burnet | Colorado | 7,024 | 7,005 | 7,024 | 7,005 | 7,024 | 7,005 |
| | ***County Total*** | ***10,857*** | ***10,827*** | ***10,857*** | ***10,827*** | ***10,857*** | ***10,827*** |
| Gillespie | Colorado | 6,294 | 6,294 | 6,294 | 6,294 | 6,294 | 6,294 |
| Gillespie | Guadalupe | 0 | 0 | 0 | 0 | 0 | 0 |
| | ***County Total*** | ***6,294*** | ***6,294*** | ***6,294*** | ***6,294*** | ***6,294*** | ***6,294*** |
| Llano | Colorado | 409 | 408 | 409 | 408 | 409 | 408 |
| | ***County Total*** | ***409*** | ***408*** | ***409*** | ***408*** | ***409*** | ***408*** |
| Mills | Brazos | 93 | 93 | 93 | 93 | 93 | 93 |
| Mills | Colorado | 407 | 406 | 407 | 406 | 407 | 406 |
| | ***County Total*** | ***500*** | ***499*** | ***500*** | ***499*** | ***500*** | ***499*** |
| San Saba | Colorado | 7,890 | 7,890 | 7,890 | 7,890 | 7,890 | 7,890 |
| | ***County Total*** | ***7,890*** | ***7,890*** | ***7,890*** | ***7,890*** | ***7,890*** | ***7,890*** |
| **Region K** | **Region Total** | **27,902** | **27,864** | **27,902** | **27,864** | **27,902** | **27,864** |

Note: An explanation of the information presented in this table is provided in Section 3.2.2.2.4 *Availability*.

*All groundwater availability values in this table with the exception of those listed for Blanco County and Llano County are based on Modeled Available Groundwater (MAG) numbers. Blanco County and Llano County values are DFC-compatible "non-relevant" groundwater availabilities provided by TWDB staff.

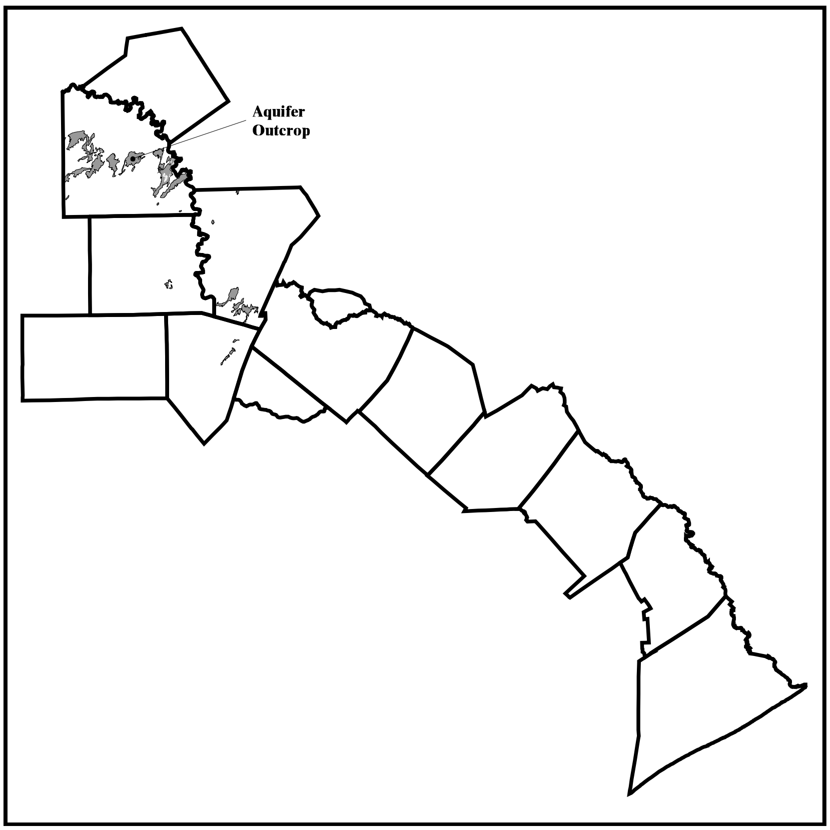
3.2.2.2.5 Marble Falls Aquifer

*Location and Use*

The Marble Falls aquifer occurs in several separated outcrops, primarily along the northern and eastern flanks of the Llano Uplift region of Central Texas. The downdip portion of the aquifer is of unknown extent.

Current groundwater use from the Marble Falls aquifer within the LCRWPA occurs in Burnet and San Saba Counties. TWDB records indicate that mining use accounts for the majority of groundwater pumpage from the aquifer. The location of the aquifer within the LCRWPA is illustrated in *Figure 3.11*.

**Figure 3.11: Marble Falls Aquifer Within the Lower Colorado Regional Water Planning Area**




*Hydrogeology*

This aquifer occurs in the fractures, solution cavities, and channels of the limestone rocks of the Marble Falls Formation of the Pennsylvanian Bend Group. The maximum thickness of the formation is 600 feet. Numerous large springs discharge from the aquifer and provide a significant portion of the baseflow of the San Saba River in McCulloch and San Saba Counties; and to the Colorado River in San Saba and Lampasas Counties. The aquifer contributes flow to the San Saba springs, which is the source of drinking water for the City of San Saba. In some areas where the confining layers are thin or nonexistent, the Marble Falls aquifer may be hydrologically connected to the San Saba-Ellenburger aquifer. Some wells have been known to produce as much as 2,000 gal/min; however, most wells produce at rates significantly less than this amount.

*Water Quality*

The water produced from this aquifer is suitable for most purposes, but some wells in Blanco County have produced water with high nitrate concentrations. The downdip portion of the aquifer is not extensive, but in these areas the water becomes highly mineralized. Because the limestone formation comprising this aquifer is relatively shallow, it is susceptible to pollution by surface uses and activities.

*Availability*

The Marble Falls aquifer spans several counties and several GMAs. The groundwater availability estimate values for the Marble Falls aquifer are based on desired future conditions (DFCs) submitted by the responsible GMAs. Desired future conditions are essentially management goals for each aquifer. The DFCs for the Marble Falls aquifer are as follows:

Burnet County (GMA 8) – DFC adopted on January 31, 2017
- Burnet County should maintain approximately 90 percent of the saturated thickness from 2010 to 2070.

Mills County (GMA 8) – DFC adopted on January 31, 2017
- Mills County should maintain approximately 90 percent of the saturated thickness from 2010 to 2070

If a GMA determines that aquifer characteristics, groundwater demands, and current groundwater uses do not warrant adoption of a DFC, the aquifer can be classified "non-relevant" for joint groundwater planning purposes. When an aquifer or portion of an aquifer is identified as "non-relevant" and does not have a MAG associated with it, it is up to the planning group to determine the water availability of that aquifer or portion of aquifer for regional water planning purposes. GMA 7, the GMA managing the Marble Falls aquifer in San Saba County, declared the aquifer as "non-relevant" in the September 21, 2018 TWDB report GR 16-026 Version 2. GMA 9, the GMA managing the Marble Falls aquifer in Blanco County, declared the aquifer as "non-relevant" in the February 28, 2017 TWDB report GR 16-023.

The Texas Water Development Board (TWDB) took the DFCs for the aquifer and ran a groundwater availability model (GAM) to estimate what annual production volume would meet the DFC conditions. This volume is considered the modeled available groundwater or MAG. The MAG, which is considered the maximum amount of groundwater available for the regional water planning process from a particular aquifer, is documented in TWDB reports.

- The GMA 8 Marble Falls aquifer MAG being documented in TWDB report GR17-029_MAG dated January 19, 2018.

Availability of the Marble Falls aquifer in Blanco County was determined based on the estimated recharge listed in the GAM Run 18-003 Blanco-Pedernales Groundwater Conservation District Groundwater Management Plan (TWDB, April 3, 2018).

As part of TWDB's informal comments on the Region K Technical Memorandum, the TWDB staff conducted a modeling analysis related to the Llano Uplift aquifers and provided DFC-compatible "non-relevant" groundwater availability values for the Marble Falls Aquifer in San Saba County.

*Table 3.20* below lists the MAG values and the "non-relevant" groundwater availabilities for the Marble Falls Aquifer by county and basin.

**Table 3.20: Region K Water Availability* for the Marble Falls Aquifer (ac-ft/yr)**

| County | Basin | 2020 | 2030 | 2040 | 2050 | 2060 | 2070 |
|---|---|---|---|---|---|---|---|
| Blanco | Colorado | 199 | 199 | 199 | 199 | 199 | 199 |
| | ***County Total*** | ***199*** | ***199*** | ***199*** | ***199*** | ***199*** | ***199*** |
| Burnet | Brazos | 1,387 | 1,383 | 1,387 | 1,383 | 1,387 | 1,383 |
| Burnet | Colorado | 1,357 | 1,353 | 1,357 | 1,353 | 1,357 | 1,353 |
| | ***County Total*** | ***2,744*** | ***2,736*** | ***2,744*** | ***2,736*** | ***2,744*** | ***2,736*** |
| Mills | Brazos | 1 | 1 | 1 | 1 | 1 | 1 |
| Mills | Colorado | 24 | 24 | 24 | 24 | 24 | 24 |
| | ***County Total*** | ***25*** | ***25*** | ***25*** | ***25*** | ***25*** | ***25*** |
| San Saba | Colorado | 4,355 | 4,343 | 4,355 | 4,343 | 4,355 | 4,343 |
| | ***County Total*** | ***4,355*** | ***4,343*** | ***4,355*** | ***4,343*** | ***4,355*** | ***4,343*** |
| **Region K** | **Region Total** | **7,323** | **7,303** | **7,323** | **7,303** | **7,323** | **7,303** |

Note: An explanation of the information presented in this table is provided in Section 3.2.2.2.5 *Availability*.
*All groundwater availability values in this table with the exception of those listed for Blanco County and San Saba County are based on Modeled Available Groundwater (MAG) numbers. Blanco County values are based on the estimated recharge listed in the GAM Run 18-003 Blanco-Pedernales Groundwater Conservation District Groundwater Management Plan (TWDB, April 3, 2018). San Saba County values are DFC-compatible "non-relevant" groundwater availabilities provided by TWDB staff.

### 3.2.2.2.6 Yegua-Jackson Aquifer

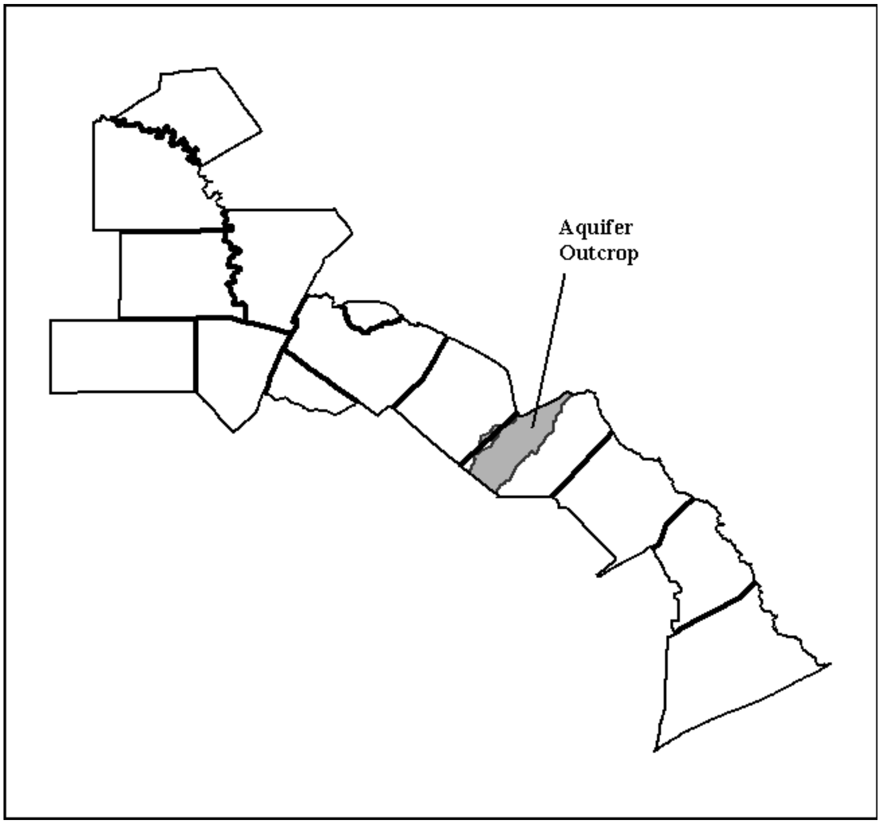
*Location and Use*

The Yequa-Jackson Aquifer extends in a narrow band from the Rio Grande Valley across the state to the Sabine River and Louisiana. It covers 10,904 square miles and exists within 34 counties.

The Yegua-Jackson Aquifer includes water bearing parts of the Yegua Formation and the Jackson Group. Within the LCRWPA, the Yegua Formation outcrops in Fayette County in a band approximately four to eight miles wide along the Bastrop-Fayette County line. The formation downdips at a rate of 150 feet per mile and reaches its deepest depth of 2,800 feet below mean sea level along the Fayette-Lavaca County line. The yields of most wells in the Yegua-Jackson are generally small, ranging from less than 50 gallons per minute to over 300 gallons per minute. Groundwater use in Fayette County is primarily by rural landowners for domestic and livestock water supply.

The Jackson Group Formation outcrops in Fayette County within the LCRWPA in a band approximately three to eight miles wide along the northeasterly line from Flatonia to La Grange. The formation dips within Fayette County at a rate of approximately 150 feet per mile and reaches its deepest depth of 2,200 feet below mean sea level near Fayetteville. Groundwater from the Jackson Group in Fayette County is used by the cities of Ledbetter, Flatonia, and Schulenburg as well as rural property owners.

**Figure 3.12: Yegua-Jackson Aquifer Within the Lower Colorado Regional Water Planning Area**




*Hydrogeology*

The Yegua-Jackson Aquifer's geologic units consist of complexly interbedded sand, silt, and clay layers originally deposited as fluvial and deltaic sediments. Most groundwater is produced from the sand units of the aquifer with the more significant productivity occurring in areas of more extensive fluvial channel sands and thick deltaic sands. Usable quality groundwater is generally limited to sands in the outcrop or slightly downdip. Net freshwater sands are generally less than 200 feet deep at any location within the aquifer.

*Water Quality*

Where the thicker, more extensive sand layers occur in the outcrop and slightly downdip, significant amounts of fresh to slightly saline water is available. Water quality varies greatly within the aquifer, and shallow occurrences of poor-quality water are not uncommon. The chemical quality of the groundwater is variable due to the variability of the composition of the sediments that make up the aquifer and the variability of how easily water moves through the aquifer. In all areas the aquifer becomes highly mineralized downdip.

*Availability*

The Yegua-Jackson aquifer in Fayette County is within GMA 12. The Groundwater Conservation Districts (GCD) within GMA 12 worked together to determine the desired future condition (DFC) of the Yegua-

Jackson aquifer. Desired future conditions are essentially management goals for each aquifer. The DFC for the Yegua-Jackson aquifer, adopted by GMA 12 on May 25, 2017, is summarized as follows:

- No more than 77 feet of average drawdown between January 2010 and December 2069 within the Fayette County Groundwater Conservation District (Fayette County).

The Texas Water Development Board (TWDB) took the DFC for the aquifer and ran a groundwater availability model (GAM) The Texas Water Development Board (TWDB) took the DFCs for the aquifer and ran a groundwater availability model (GAM) to estimate what annual production volume would meet the DFC conditions. This volume is considered the modeled available groundwater or MAG. The MAG, which is considered the maximum amount of groundwater available for the regional water planning process from a particular aquifer, is documented in TWDB reports, with the GMA 12 Yegua-Jackson aquifer MAG being documented in TWDB report GR 17-030_MAG, dated December 15, 2017. The report provides the MAG values for the Yegua-Jackson aquifer by county and basin, as shown in *Table 3.21* below.

**Table 3.21: Region K Water Availability* for the Yegua-Jackson Aquifer (ac-ft/yr)**

| County | Basin | 2020 | 2030 | 2040 | 2050 | 2060 | 2070 |
|---|---|---|---|---|---|---|---|
| Fayette | Colorado | 7,075 | 7,075 | 7,075 | 7,075 | 7,074 | 7,074 |
| Fayette | Guadalupe | 694 | 694 | 694 | 694 | 694 | 694 |
| Fayette | Lavaca | 1,493 | 1,493 | 1,493 | 1,493 | 1,493 | 1,493 |
| | ***County Total*** | ***9,262*** | ***9,262*** | ***9,262*** | ***9,262*** | ***9,261*** | ***9,261*** |
| **Region K** | **Region Total** | **9,262** | **9,262** | **9,262** | **9,262** | **9,261** | **9,261** |

Note: An explanation of the information presented in this table is provided in Section 3.2.2.2.6 *Availability*.
*All groundwater availability values in this table are based on Modeled Available Groundwater (MAG) numbers.

3.2.2.2.7 Other Aquifer

Other Aquifer refers to alluvial aquifer water supplies that have not been identified, named, or studied. These alluvial aquifers are being used by a few WUGs in Region K as supply sources. The most likely source of these Other Aquifer supplies in Region K is the Colorado River Alluvium and related terrace deposits. Other Aquifer supplies were only considered for counties where WUGs specifically list alluvial aquifer type supplies as a source or where municipal or industrial WUGs could potentially utilize these alluvial supplies.

The availability of Other Aquifer supplies is not based on Modeled Available Groundwater (MAG) and instead, was determined based on current groundwater pumping reported in the TWDB historical groundwater use report for 2011, as well as permit data from Groundwater Conservation Districts, where applicable. Specific methodologies for each county and basin are listed below:

Other Aquifer (Bastrop County, Colorado Basin)

- The availability was determined based on TCEQ Drinking Water Watch (DWW) database listed total production for City of Bastrop, along with published TWDB historical groundwater pumpage data for Bastrop County WCID 2 and Mining in Bastrop County, Colorado Basin. Same methodology used for 2016 Plan.

Other Aquifer (Burnet County, Brazos Basin)

- The availability was determined based on mining groundwater usage listed in the TWDB historical groundwater pumpage data. Same methodology used for 2016 Plan.

Other Aquifer (Burnet County, Colorado Basin)

- The availability was determined based on discussion with Central Texas Groundwater Conservation District regarding alluvial permits and Granite/Granite Gravel Aquifer permits, as well as published TWDB historical groundwater pumpage data for other/unknown aquifers for exempt uses. Same methodology used for 2016 Plan.

Other Aquifer (Fayette County, Colorado Basin)

- The availability was determined based on discussion with Fayette County Groundwater Conservation District regarding alluvial supplies during the 2016 planning cycle. No changes to the methodology for this cycle.

Other Aquifer (Llano County, Colorado Basin)

- The availability was determined based on review of published TWDB historical groundwater pumpage data for County-Other, Kingsland WSC, and Livestock in Llano County. Same methodology used for 2016 Plan.

Other Aquifer (Travis County, Colorado Basin)

- The availability was determined based on review of published TWDB historical groundwater pumpage data for water uses in Travis County. In addition, the TCEQ DWW database lists the source of the City of Manor's groundwater wells as alluvial. Same methodology used for 2016 Plan.

Other Aquifer (Travis County, Guadalupe Basin)

- The availability was determined based on review of published TWDB historical groundwater pumpage data for water uses in Travis County. Same methodology used for 2016 Plan.

*Table 3.22* contains a summary of the Other Aquifer sources available to the LCRWPA.

**Table 3.22: Region K Water Availability* from Other Aquifer (ac-ft/yr)**

| County | Basin | 2020 | 2030 | 2040 | 2050 | 2060 | 2070 |
|---|---|---|---|---|---|---|---|
| Bastrop | Colorado | 5,340 | 5,340 | 5,340 | 5,340 | 5,340 | 5,340 |
| | ***County Total*** | ***5,340*** | ***5,340*** | ***5,340*** | ***5,340*** | ***5,340*** | ***5,340*** |
| Burnet | Brazos | 433 | 433 | 433 | 433 | 433 | 433 |
| Burnet | Colorado | 3,672 | 3,672 | 3,672 | 3,672 | 3,672 | 3,672 |
| | ***County Total*** | ***4,105*** | ***4,105*** | ***4,105*** | ***4,105*** | ***4,105*** | ***4,105*** |
| Fayette | Colorado | 834 | 834 | 834 | 834 | 834 | 834 |
| | ***County Total*** | ***834*** | ***834*** | ***834*** | ***834*** | ***834*** | ***834*** |
| Llano | Colorado | 629 | 629 | 629 | 629 | 629 | 629 |
| | ***County Total*** | ***629*** | ***629*** | ***629*** | ***629*** | ***629*** | ***629*** |
| Travis | Colorado | 3,770 | 3,770 | 3,770 | 3,770 | 3,770 | 3,770 |
| Travis | Guadalupe | 112 | 112 | 112 | 112 | 112 | 112 |
| | ***County Total*** | ***3,882*** | ***3,882*** | ***3,882*** | ***3,882*** | ***3,882*** | ***3,882*** |
| **Region K** | **Region Total** | **14,790** | **14,790** | **14,790** | **14,790** | **14,790** | **14,790** |

Note: An explanation of the information presented in this table is provided in Section 3.2.2.2.6.
*No groundwater availability values in this table are based on Modeled Available Groundwater (MAG) numbers.

## 3.2.3 Current Available Reclaimed Water

Another category of water for use in the Colorado Basin is reclaimed water. Reclaimed water is wastewater effluent that has been treated to a level that is safe to be directly used to meet various water needs. At this time, reclaimed water in Region K is used for non-potable uses only, such as irrigation or industrial uses. Reclaimed water is currently used by Austin, Burnet, Horseshoe Bay, Hurst Creek MUD, Lago Vista, Marble Falls, Travis County WCID 17, West Travis County PUA, and Manufacturing in Travis County. *Table 3.23* contains a summary of the reclaimed water supplies that are currently being used, as reported through WUG surveys.

**Table 3.23: Reclaimed Water Sources in the Colorado River Basin (ac-ft/yr)**

| Reclaimed Water Source Name | 2020 | 2030 | 2040 | 2050 | 2060 | 2070 |
|---|---|---|---|---|---|---|
| Direct Reuse – Burnet Co.[1] | 2,200 | 2,200 | 2,200 | 2,200 | 2,200 | 2,200 |
| Direct Reuse – Llano Co. [2] | 589 | 589 | 589 | 589 | 589 | 589 |
| Direct Reuse – Travis Co. [3] | 6,989 | 6,989 | 6,989 | 6,989 | 6,989 | 6,989 |
| **Totals** | **9,778** | **9,778** | **9,778** | **9,778** | **9,778** | **9,778** |

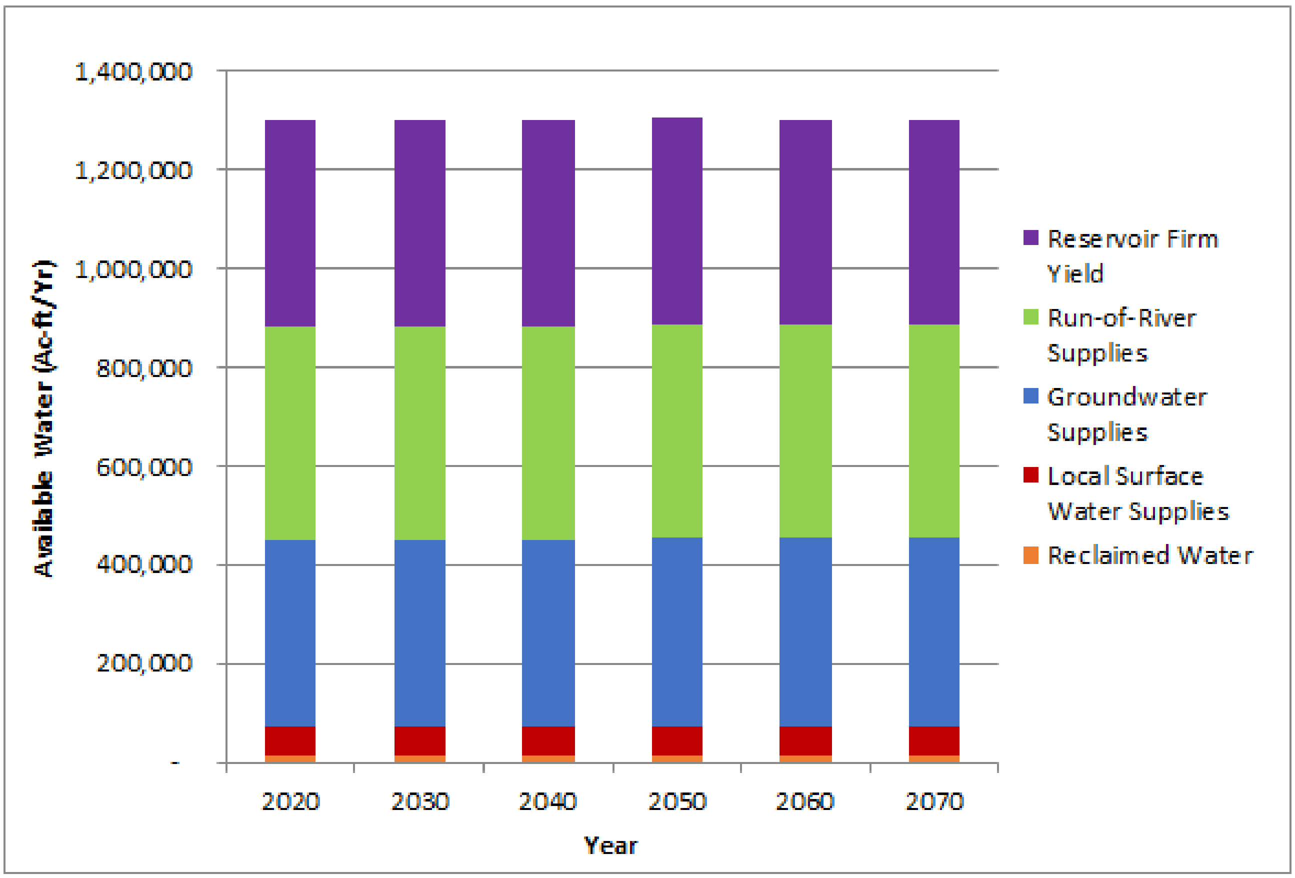
[1] Burnet County WUGs using direct reuse for irrigation purposes include Burnet (520 AFY) and Marble Falls (1,680 AFY)

[2] Llano County WUG using direct reuse for irrigation purposes is Horseshoe Bay (589 AFY, shared between Burnet and Llano Counties.)
[3] Travis County WUGs using direct reuse include Austin (4,571 AFY, selling a portion to Manufacturing in Travis County), Hurst Creek MUD (106 AFY), Lago Vista (415 AFY), Travis County WCID 17 (1,205 AFY), and West Travis County PUA (692 AFY, shared between Hays and Travis Counties.)

### 3.2.4 Regional Water Availability Summary

The TWDB guidelines for regional water planning process require that a summary of the water sources available to the region be presented. Detailed information concerning water source availability for the region is presented in *Appendix 3C* which contains the DB22 reports from TWDB. This information is presented graphically in *Figure 3.13* and is summarized in *Table 3.24*. As indicated, under current conditions, a total of approximately 1.3 million ac-ft of water is available annually to the LCRWPA under Drought of Record conditions. Of this amount, approximately 71 percent is from surface water sources and 29 percent is from groundwater sources.

**Figure 3.13: Total Water Available in Region K During a Drought of Record**




Note: See *Table 3.24* for numerical values.

**Table 3.24: Total Water Available in the Lower Colorado Regional Planning Area During a Drought of Record (ac-ft/yr)**

| Water Source | 2020 | 2030 | 2040 | 2050 | 2060 | 2070 |
|---|---|---|---|---|---|---|
| **Run-of-River Water** | **432,896** | **432,896** | **432,896** | **432,896** | **432,896** | **432,896** |
| City of Austin - ROR Municipal [1] | 201,393 | 201,393 | 201,393 | 201,393 | 201,393 | 201,393 |
| City of Austin - ROR Steam Electric [1] | 9,636 | 9,636 | 9,636 | 9,636 | 9,636 | 9,636 |
| LCRA - Garwood ROR | 121,845 | 121,845 | 121,845 | 121,845 | 121,845 | 121,845 |
| LCRA - Gulf Coast ROR | 53,815 | 53,815 | 53,815 | 53,815 | 53,815 | 53,815 |
| LCRA - Lakeside ROR | 5,692 | 5,692 | 5,692 | 5,692 | 5,692 | 5,692 |
| LCRA - Pierce Ranch ROR | 2,912 | 2,912 | 2,912 | 2,912 | 2,912 | 2,912 |
| San Bernard ROR | 2,332 | 2,332 | 2,332 | 2,332 | 2,332 | 2,332 |
| Llano ROR | 271 | 271 | 271 | 271 | 271 | 271 |
| Garwood (Corpus Christi) ROR | 35,000 | 35,000 | 35,000 | 35,000 | 35,000 | 35,000 |
| **Reservoir Water** | **418,749** | **418,046** | **417,292** | **416,640** | **415,897** | **415,124** |
| Highland Lakes [2] | 352,026 | 351,323 | 350,569 | 349,917 | 349,174 | 348,401 |
| STPNOC Reservoir | 66,260 | 66,260 | 66,260 | 66,260 | 66,260 | 66,260 |
| Goldthwaite Reservoir | 0 | 0 | 0 | 0 | 0 | 0 |
| Llano Reservoir | 0 | 0 | 0 | 0 | 0 | 0 |
| Blanco Reservoir | 463 | 463 | 463 | 463 | 463 | 463 |
| **Reclaimed Water** | **12,567** | **12,567** | **12,567** | **12,567** | **12,567** | **12,567** |
| Reclaimed Water (Reuse) | 12,567 | 12,567 | 12,567 | 12,567 | 12,567 | 12,567 |
| **Local Surface Water [3]** | **59,599** | **59,599** | **59,599** | **59,599** | **59,599** | **59,599** |
| Irrigation Local Supply [4] | 41,106 | 41,106 | 41,106 | 41,106 | 41,106 | 41,106 |
| Livestock Local Supply | 10,918 | 10,918 | 10,918 | 10,918 | 10,918 | 10,918 |
| Other Local Supply | 7,575 | 7,575 | 7,575 | 7,575 | 7,575 | 7,575 |
| **Groundwater** | **376,748** | **379,160** | **379,283** | **382,906** | **381,321** | **381,214** |
| Carrizo-Wilcox Aquifer | 27,134 | 29,699 | 31,750 | 35,525 | 34,577 | 34,577 |
| Edwards (BFZ) Aquifer (includes Saline Zone) | 14,124 | 14,124 | 14,124 | 14,124 | 14,124 | 14,124 |
| Edwards-Trinity-Plateau, Pecos Valley, and Trinity Aquifer | 4,979 | 4,979 | 4,979 | 4,979 | 4,979 | 4,979 |
| Ellenburger-San Saba Aquifer | 27,902 | 27,864 | 27,902 | 27,864 | 27,902 | 27,864 |
| Gulf Coast Aquifer | 219,775 | 219,775 | 217,796 | 217,796 | 217,096 | 217,096 |
| Hickory Aquifer | 15,300 | 15,283 | 15,300 | 15,283 | 15,300 | 15,283 |
| Marble Falls Aquifer | 7,323 | 7,303 | 7,323 | 7,303 | 7,323 | 7,303 |
| Queen City Aquifer | 3,266 | 3,249 | 3,231 | 3,213 | 3,194 | 3,194 |
| Sparta Aquifer | 3,738 | 3,729 | 3,704 | 3,693 | 3,698 | 3,698 |
| Trinity Aquifer | 29,155 | 29,103 | 29,122 | 29,074 | 29,077 | 29,045 |
| Yegua-Jackson Aquifer | 9,262 | 9,262 | 9,262 | 9,262 | 9,261 | 9,261 |
| Other Aquifer | 14,790 | 14,790 | 14,790 | 14,790 | 14,790 | 14,790 |
| **Totals** | **1,300,559** | **1,302,268** | **1,301,637** | **1,304,608** | **1,302,280** | **1,301,400** |

Notes: Downstream water availability does not include return flows.
The water availability numbers in this table reflect water that is physically present in the region. This does not necessarily mean that this water is available to WUGs for immediate use as defined in *Table 3.33*.
Groundwater availabilities are discussed in Section 3.2.2.

[1] Refer to *Table 3.3* and *Table 3.28* for a breakdown of what is included in the COA ROR rights.
[2] Refer to *Table 3.1* for a breakdown of the Highland Lakes.
[3] Local Supply Sources are presented in *Tables 3.4, 3.6, 3.7, 3.8, 3.9, and 3.10*.
[4] Irrigation Local Supply Sources are included in the TWDB database (DB22) with the Run-of-River sources.

## 3.3 MAJOR WATER PROVIDERS

The RWPGs are required to prepare estimates of the water available to the Major Water Providers within each region. The LCRWPG has identified three Major Water Providers: LCRA, Austin, and West Travis County Public Utility Agency. The water supplies available to these three entities are discussed in the following sections.

### 3.3.1 LCRA Water Availability

The LCRA owns the rights to significant quantities of water within the LCRWPA. The majority of water that is available to LCRA during a repeat of the Drought of Record is associated with the Highland Lakes System. The LCRA also has two additional smaller reservoirs that it operates in association with two power generating facilities (Fayette Power Project and Sim Gideon/Lost Pines Power Park), although no water availability is specifically associated with those reservoirs for regional water planning purposes. LCRA has developed groundwater supplies in Bastrop County as another source of water. In addition, the LCRA has acquired many of the senior run-of-river water rights in the lower basin. LCRA recently constructed the Arbuckle Reservoir in Wharton County, but the water availability associated with that reservoir is included under the LCRA-Gulf Coast water right. *Table 3.25* contains a summary of the water that is available to the LCRA.

**Table 3.25: Total Water Available to the Lower Colorado River Authority (ac-ft/yr)**

| Water Rights Holder/Source | Water Availability During Drought of Record [1] | | | | | |
|---|---|---|---|---|---|---|
| | 2020 | 2030 | 2040 | 2050 | 2060 | 2070 |
| LCRA - Garwood | 121,845 | 121,845 | 121,845 | 121,845 | 121,845 | 121,845 |
| LCRA - Gulf Coast [2] | 53,815 | 53,815 | 53,815 | 53,815 | 53,815 | 53,815 |
| LCRA - Lakeside #1 and #2 | 5,692 | 5,692 | 5,692 | 5,692 | 5,692 | 5,692 |
| LCRA - Pierce Ranch | 2,912 | 2,912 | 2,912 | 2,912 | 2,912 | 2,912 |
| LCRA - Highland Lakes | 352,026 | 351,323 | 350,569 | 349,917 | 349,174 | 348,401 |
| Carrizo-Wilcox Aquifer [3] | 2,609 | 3,522 | 4,022 | 5,156 | 4,836 | 4,727 |
| **Totals** | **538,899** | **539,109** | **538,855** | **539,337** | **538,274** | **537,392** |

Data Source: Colorado WAM provided by TCEQ, Feb 2018, Run 3 – modified to Region K Cutoff Model with hydrology through 2016. WRAP program by Dr. Ralph Wurbs, Texas A&M University, April 2018.
Note: Downstream water availability does not include return flows.
[1] The firm yield determinations for the LCRA ROR rights are discussed in Section 3.2.1.1.2.3 and are presented in *Table 3.3*. The Highland Lakes firm yield determination is discussed in Section 3.2.1.1.2.1 and is presented in *Table 3.1*.
[2] The benefit of the Arbuckle Reservoir is included in the Gulf Coast water right.
[3] LCRA has a permit for Carrizo-Wilcox aquifer groundwater in Bastrop County. The amount shown is not the full permitted volume, but the amount available for planning purposes that meets TWDB requirements for regional water planning.

The LCRA makes the majority of this water available to its customers for various uses through water sales contracts. These firm customer contracts are assumed to renew through the planning period. In addition, the LCRA operates three irrigation divisions (Lakeside, Garwood, and Gulf Coast) in the lower basin and also provides water to Pierce Ranch. These divisions and Pierce Ranch are provided irrigation water, subject to interruption, for agricultural crop (rice and other crops) production in Colorado, Wharton, and Matagorda Counties. *Table 3.26* and *3.27* contain summaries of current LCRA water supply commitments and projected irrigation demands, by Water User Groups. The firm commitments from LCRA total 391,758 ac-ft/yr in 2020 (which does not include environmental commitments) and decrease over the planning period to 391,735 ac-ft/yr in 2070. *Table 3.27* lists the projected irrigation demands in the Lower Basin using water supplies from LCRA, some of which are met through portions of the run-of-river water rights for Garwood, Gulf Coast, Lakeside, and Pierce Ranch, listed in the table above, as well as in *Table 3.3*. Footnotes for *Table 3.26* are on page 3-55.

**Table 3.26: LCRA Firm Water Commitment Summary (ac-ft/yr)**

| County/WUG | 2020 | 2030 | 2040 | 2050 | 2060 | 2070 |
|---|---|---|---|---|---|---|
| Environmental Commitments* | 33,440 | 33,440 | 33,440 | 33,440 | 33,440 | 33,440 |
| **Bastrop County** | | | | | | |
| County-Other | 744 | 744 | 744 | 744 | 744 | 744 |
| Irrigation | 850 | 850 | 850 | 850 | 850 | 850 |
| Steam Electric | 9,720 | 9,720 | 9,720 | 9,720 | 9,720 | 9,720 |
| **Burnet County** | | | | | | |
| Burnet | 4,100 | 4,100 | 4,100 | 4,100 | 4,100 | 4,100 |
| Cottonwood Shores | 495 | 495 | 495 | 495 | 495 | 495 |
| Corix Utilities Texas Inc. (also in Llano, Mills, and San Saba Counties) | 475 | 475 | 475 | 475 | 475 | 475 |
| Granite Shoals | 830 | 830 | 830 | 830 | 830 | 830 |
| Horseshoe Bay (also in Llano Co.) | 2,225 | 2,225 | 2,225 | 2,225 | 2,225 | 2,225 |
| Marble Falls | 3,000 | 3,000 | 3,000 | 3,000 | 3,000 | 3,000 |
| County-Other | 2,249 | 2,249 | 2,249 | 2,249 | 2,249 | 2,249 |
| Irrigation | 333 | 333 | 333 | 333 | 333 | 333 |
| Manufacturing | 500 | 500 | 500 | 500 | 500 | 500 |
| **Fayette County** | | | | | | |
| County-Other | 27 | 27 | 27 | 27 | 27 | 27 |
| Steam Electric (LCRA) | 37,500 | 37,500 | 37,500 | 37,500 | 37,500 | 37,500 |
| Steam Electric (COA) | 7,500 | 7,500 | 7,500 | 7,500 | 7,500 | 7,500 |
| **Gillespie County** | | | | | | |
| County-Other | 56 | 56 | 56 | 56 | 56 | 56 |
| **Hays County** | | | | | | |
| Dripping Springs WSC | 1,632 | 1,632 | 1,632 | 1,632 | 1,632 | 1,632 |
| Hays County WCID 1 | 717 | 717 | 717 | 717 | 717 | 717 |
| Hays County WCID 2 | 684 | 684 | 684 | 684 | 684 | 684 |
| **Lampasas County (Region G)** | | | | | | |
| Corix Utilities Texas Inc. (Lometa) | 665 | 665 | 665 | 665 | 665 | 665 |
| **Llano County** | | | | | | |
| Kingsland WSC (also in Burnet Co.) | 1,150 | 1,150 | 1,150 | 1,150 | 1,150 | 1,150 |
| Sunrise Beach Village | 200 | 200 | 200 | 200 | 200 | 200 |
| County-Other | 2,272 | 2,272 | 2,272 | 2,272 | 2,272 | 2,272 |
| Irrigation | 1,514 | 1,514 | 1,514 | 1,514 | 1,514 | 1,514 |
| Steam Electric | 2,500 | 2,500 | 2,500 | 2,500 | 2,500 | 2,500 |
| **Matagorda County** | | | | | | |
| Manufacturing | 16,955 | 16,955 | 16,955 | 16,955 | 16,955 | 16,955 |

| County/WUG | 2020 | 2030 | 2040 | 2050 | 2060 | 2070 |
|---|---|---|---|---|---|---|
| Steam Electric [1] | 19,567 | 19,562 | 19,557 | 19,552 | 19,547 | 19,543 |
| **San Saba County** | | | | | | |
| County-Other | 20 | 20 | 20 | 20 | 20 | 20 |
| **Travis County** | | | | | | |
| Austin - Municipal [2] | 123,607 | 123,607 | 123,607 | 123,607 | 123,607 | 123,607 |
| Austin - Steam Electric [3] | 11,056 | 11,056 | 11,056 | 11,056 | 11,056 | 11,057 |
| Briarcliff | 400 | 400 | 400 | 400 | 400 | 400 |
| Cypress Ranch WCID 1 | 436 | 436 | 436 | 436 | 436 | 436 |
| Deer Creek Ranch Water | 250 | 250 | 250 | 250 | 250 | 250 |
| Hurst Creek MUD | 1,600 | 1,600 | 1,600 | 1,600 | 1,600 | 1,600 |
| Jonestown WSC | 526 | 526 | 526 | 526 | 526 | 526 |
| Lago Vista | 6,500 | 6,500 | 6,500 | 6,500 | 6,500 | 6,500 |
| Lakeway MUD | 3,069 | 3,069 | 3,069 | 3,069 | 3,069 | 3,069 |
| Loop 360 WSC | 1,250 | 1,250 | 1,250 | 1,250 | 1,250 | 1,250 |
| Oak Shores Water System | 203 | 203 | 203 | 203 | 203 | 203 |
| Pflugerville | 12,000 | 12,000 | 12,000 | 12,000 | 12,000 | 12,000 |
| Rough Hollow in Travis County | 1,795 | 1,795 | 1,795 | 1,795 | 1,795 | 1,795 |
| Senna Hills MUD | 404 | 404 | 404 | 404 | 404 | 404 |
| Sweetwater Community | 1,514 | 1,514 | 1,514 | 1,514 | 1,514 | 1,514 |
| Travis County MUD 10 | 96 | 96 | 96 | 96 | 96 | 96 |
| Travis County MUD 4 | 4,316 | 4,316 | 4,316 | 4,316 | 4,316 | 4,316 |
| Travis County WCID 17 | 9,299 | 9,299 | 9,299 | 9,299 | 9,299 | 9,299 |
| Travis County WCID 18 | 1,400 | 1,400 | 1,400 | 1,400 | 1,400 | 1,400 |
| Travis County WCID 20 | 1,135 | 1,135 | 1,135 | 1,135 | 1,135 | 1,135 |
| Travis County WCID Point Venture | 285 | 285 | 285 | 285 | 285 | 285 |
| West Travis County PUA [4] (also in Hays County) | 9,450 | 9,450 | 9,450 | 9,450 | 9,450 | 9,450 |
| County-Other | 8,626 | 8,626 | 8,626 | 8,626 | 8,626 | 8,626 |
| County-Other (Aqua Texas - Rivercrest) | 467 | 467 | 467 | 467 | 467 | 467 |
| Irrigation | 4,018 | 4,018 | 4,018 | 4,018 | 4,018 | 4,018 |
| Manufacturing | 76 | 76 | 76 | 76 | 76 | 76 |
| **Williamson County (Region G)** | | | | | | |
| Cedar Park [5] (also in Travis County, Region K) | 20,500 | 20,500 | 20,500 | 20,500 | 20,500 | 20,500 |
| Leander [6] (also in Travis County, Region K) | 24,000 | 24,000 | 24,000 | 24,000 | 24,000 | 24,000 |
| Brazos River Authority | 25,000 | 25,000 | 25,000 | 25,000 | 25,000 | 25,000 |
| **TOTAL*** | **391,758** | **391,753** | **391,748** | **391,743** | **391,738** | **391,735** |

**Footnotes are on the following page**

*Environmental demands are not one of the six water uses planned for in regional water planning. These commitments are not included in the Total for this table in order to be comparable to Table 3.25. The Highland Lakes yield in Table 3.25 does not include firm environmental commitments.

[1] The Matagorda Steam Electric value is based on the Region K Cutoff Model results for the average annual amount of LCRA backup supplies needed to supplement the STPNOC/LCRA water right.

[2] The Austin-Municipal value is based on the Region K Cutoff Model results for the amount of LCRA backup supplies needed to supplement Austin's municipal water rights.

[3] The Austin-Steam Electric value is based on the Region K Cutoff Model results for the amount of LCRA backup supplies needed to supplement Austin's steam-electric water rights.

[4] Cedar Park is located in both Region G and Region K, and it serves Williamson-Travis Counties MUD #1 (WUG).

[5] West Travis County PUA serves multiple Water User Groups in Hays and Travis Counties including Dripping Springs WSC, Hays County WCID 1 and 2, Barton Creek West WSC, Deer Creek Ranch Water, Rough Hollow in Travis County, Senna Hills MUD, Sweetwater Community, Irrigation, and County-Other. Those listed in this table have water contracts with LCRA, and contracts for treatment and transport/delivery of water with West Travis County PUA.

[6] Leander is located in both Region G and Region K.

**Table 3.27: LCRA Projected Irrigation Division Demand Summary (ac-ft/yr)**

| County/WUG | 2020 | 2030 | 2040 | 2050 | 2060 | 2070 |
|---|---|---|---|---|---|---|
| **Colorado County** | | | | | | |
| Irrigation [1, 4] | 155,478 | 151,295 | 147,226 | 143,265 | 139,411 | 135,662 |
| **Matagorda County** | | | | | | |
| Irrigation [2, 4] | 148,855 | 144,851 | 140,954 | 137,163 | 133,473 | 129,883 |
| **Wharton County** | | | | | | |
| Irrigation [3, 4] | 117,668 | 114,503 | 111,423 | 108,426 | 105,509 | 102,671 |
| **TOTAL** | 422,001 | 410,649 | 399,603 | 388,853 | 378,393 | 368,215 |

[1] The LCRA Colorado County Irrigation Demand represents the portion of the total Colorado County Irrigation demand that includes supplies from LCRA ROR water rights and supplemental interruptible stored water from the Highland Lakes on an annual contract basis. The methodology for determining these demands is discussed in Chapter 2. The decrease over time is proportional to the total demand's decrease.

[2] The LCRA Matagorda County Irrigation Demand represents the portion of the total Matagorda County Irrigation demand that includes supplies from LCRA ROR water rights and supplemental interruptible stored water from the Highland Lakes on an annual contract basis. The methodology for determining these demands is discussed in Chapter 2. The decrease over time is proportional to the total demand's decrease.

[3] The LCRA Wharton County Irrigation Demand represents the portion of the total Wharton County Irrigation demand (K and P) that includes supplies from LCRA ROR water rights and supplemental interruptible stored water from the Highland Lakes on an annual contract basis. The methodology for determining these demands is discussed in Chapter 2. The decrease over time is proportional to the total demand's decrease.

[4] These are not firm commitments.

Based on the current 2015 LCRA Water Management Plan, the LCRA will release water from storage on an interruptible basis when the levels in the Highland Lakes are above a prescribed level at the beginning of the year. During drought conditions, this water may not be available for users or is available in limited quantities. Therefore, in accordance with the TWDB guidance, interruptible water supplied by LCRA is not being considered as a "currently available water supply." The availability of interruptible water will be addressed in *Chapter 5* discussing management strategies to meet identified water shortages.

### 3.3.2 Austin Water Availability

Austin has run-of-river water rights to divert and use water from the Colorado River. Hydrologic conditions are such that Austin's full authorized diversion amount of water is not available to Austin under these water rights. As a result, Austin has entered into a contract with LCRA to firm up these water rights with water stored in the Highland Lakes. In addition, Austin uses reclaimed water (reuse) to currently meet a portion of its demands. *Table 3.28* contains a summary of the water available to Austin.

**Table 3.28: Austin Water Availability (ac-ft/yr)**

| Water Right / Agreement | Water Right Holder | Water Supply Source | Water Availabilty During Drought of Record (Ac-Ft/Yr) | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | | 2020 | 2030 | 2040 | 2050 | 2060 | 2070 |
| 5471 | COA [1] | ROR - Municipal | 150,765 | 150,765 | 150,765 | 150,765 | 150,765 | 150,765 |
| 5471 | COA [1] | ROR - Municipal | 34,798 | 34,798 | 34,798 | 34,798 | 34,798 | 34,798 |
| 5471 | COA [2] | ROR - Municipal | 8,583 | 8,583 | 8,583 | 8,583 | 8,583 | 8,583 |
| 5489 | COA [3] | ROR - Municipal | 7,247 | 7,247 | 7,247 | 7,247 | 7,247 | 7,247 |
| COA Municipal & Manufacturing ROR Subtotal | | | 201,393 | 201,393 | 201,393 | 201,393 | 201,393 | 201,393 |
| 5471 | LCRA Backup [1] | Highland Lakes | 64,437 | 64,437 | 64,437 | 64,437 | 64,437 | 64,437 |
| 5471 | LCRA Backup [2] | Highland Lakes | 12,820 | 12,820 | 12,820 | 12,820 | 12,820 | 12,820 |
| 5489 | LCRA Backup [3] | Highland Lakes | 13,053 | 13,053 | 13,053 | 13,053 | 13,053 | 13,053 |
| Remaining Contract | LCRA Contract | Highland Lakes | 33,297 | 33,297 | 33,297 | 33,297 | 33,297 | 33,297 |
| LCRA Municipal & Manufacturing Backup Subtotal | | | 123,607 | 123,607 | 123,607 | 123,607 | 123,607 | 123,607 |
| Austin Reclaimed Water (Reuse) | | | 4,571 | 4,571 | 4,571 | 4,571 | 4,571 | 4,571 |
| **Municipal & Manufacturing Total** | | | **329,571** | **329,571** | **329,571** | **329,571** | **329,571** | **329,571** |
| 5471 (Lady Bird Lake) | COA | ROR - Steam Electric | 4,140 | 4,140 | 4,140 | 4,140 | 4,140 | 4,140 |
| 5471 (FPP) | COA | ROR - Steam Electric | 396 | 396 | 396 | 396 | 396 | 396 |
| 5489 (Decker) | COA | ROR - Steam Electric | 0 | 0 | 0 | 0 | 0 | 0 |
| 5489 (Decker) [4] | COA | ROR - Steam Electric | 5,100 | 5,100 | 5,100 | 5,100 | 5,100 | 5,100 |
| COA Steam Electric ROR Subtotal | | | 9,636 | 9,636 | 9,636 | 9,636 | 9,636 | 9,636 |
| Lady Bird Lake Contract | LCRA Contract | Highland Lakes | 0 | 0 | 0 | 0 | 0 | 0 |
| Decker Contract [4] | LCRA Contract | Highland Lakes | 11,056 | 11,056 | 11,056 | 11,056 | 11,056 | 11,056 |
| FPP & Sandhill Contract | LCRA Contract | Highland Lakes | 7,016 | 7,016 | 7,016 | 7,016 | 7,016 | 7,016 |
| LCRA Steam Electric Backup Subtotal | | | 18,072 | 18,072 | 18,072 | 18,072 | 18,072 | 18,072 |
| **Steam Electric Total** | | | **27,708** | **27,708** | **27,708** | **27,708** | **27,708** | **27,708** |

[1] These two City of Austin ROR Rights and the LCRA backup total 250,000 ac-ft/yr.
[2] The City of Austin ROR Right and the LCRA backup total 21,403 ac-ft/yr.
[3] The City of Austin ROR Right and the LCRA backup total 20,300 ac-ft/yr.
[4] The Decker ROR right and the LCRA contract total 16,156 ac-ft/yr.

Austin provides treated water to customers within its service area. In addition, the City has contracts to provide treated water on a wholesale basis to cities, districts, and water supply corporations in surrounding areas. *Table 3.29* contains a summary of the Austin water commitments. Contracts which are expected to terminate, not be renewed, and may subsequently be supplied by LCRA during the planning period are identified as so in the table below by showing 0 ac-ft/yr of supply in the applicable decades. Details related to water management strategies for new LCRA contracts are provided in *Chapter 5*. Austin will continue to treat and deliver the LCRA contracted water for those entities.

**Table 3.29: Austin Water Commitment Summary (ac-ft/yr)**

| Water User Group (WUG) | County | Basin | 2020 | 2030 | 2040 | 2050 | 2060 | 2070 |
|---|---|---|---|---|---|---|---|---|
| Austin | Hays | Colorado | 188 | 827 | 1,304 | 2,063 | 3,025 | 4,357 |
| Austin | Travis | Colorado | 170,686 | 198,992 | 230,751 | 252,570 | 269,954 | 293,513 |
| Manufacturing [1] | Travis | Colorado | 12,422 | 14,111 | 14,397 | 14,853 | 14,853 | 14,853 |
| Creedmoor-Maha WSC [1] | Travis | Colorado | 839 | 839 | 0 | 0 | 0 | 0 |
| Manor [1] | Travis | Colorado | 1,680 | 1,680 | 0 | 0 | 0 | 0 |
| North Austin MUD 1 | Travis | Colorado | 81 | 78 | 0 | 0 | 0 | 0 |
| Northtown MUD | Travis | Colorado | 728 | 841 | 0 | 0 | 0 | 0 |
| Rollingwood | Travis | Colorado | 1,120 | 1,120 | 0 | 0 | 0 | 0 |
| Shady Hollow MUD | Travis | Colorado | 793 | 775 | 759 | 750 | 749 | 749 |
| Sunset Valley | Travis | Colorado | 716 | 716 | 0 | 0 | 0 | 0 |
| Travis County WCID 10 [2] | Travis | Colorado | 3,360 | 3,360 | 0 | 0 | 0 | 0 |
| Wells Branch MUD | Travis | Colorado | 1,397 | 1,352 | 0 | 0 | 0 | 0 |
| Windermere Utility | Travis | Colorado | 2,240 | 2,240 | 0 | 0 | 0 | 0 |
| Austin | Williamson | Brazos | 10,787 | 13,742 | 16,122 | 18,685 | 21,592 | 24,782 |
| County-Other (COA Retail portion) | Williamson | Brazos | 87 | 87 | 87 | 87 | 87 | 87 |
| North Austin MUD 1 | Williamson | Brazos | 774 | 747 | 0 | 0 | 0 | 0 |
| Wells Branch MUD | Williamson | Brazos | 80 | 77 | 0 | 0 | 0 | 0 |
| **TOTAL** | | | **207,978** | **241,584** | **263,420** | **289,008** | **310,260** | **338,341** |
| | | | | | | | | |
| Steam-Electric [3] | Fayette [4] | Colorado | 10,300 | 10,300 | 10,300 | 10,300 | 10,300 | 10,300 |
| Steam-Electric [3] | Travis | Colorado | 10,253 | 10,253 | 10,253 | 10,253 | 10,253 | 10,253 |
| **TOTAL** | | | **20,553** | **20,553** | **20,553** | **20,553** | **20,553** | **20,553** |

[1] These WUGs are also served by other entities.

[2] Travis County WCID 10 sells 1,564 ac-ft of the Austin commitment to West Lake Hills.

[3] Austin's portion of the STPNOC demand is included in the STPNOC total steam-electric demand in Matagorda County.

[4] Austin's portion based on estimated current supply levels and approved projections.

### 3.3.3 West Travis County Public Utility Agency Water Availability

West Travis County Public Utility Agency (WTCPUA) is a publicly owned utility providing water and wastewater services to both retail and wholesale customers in western Travis and northern Hays counties. Nearly all of the wholesale water customers WTCPUA delivers to has a contract for water from LCRA and a contract for treatment and transport from WTCPUA. Because WTCPUA is responsible for developing the infrastructure to deliver the water to its wholesale customers, Region K determined it most appropriate to associate the wholesale customer demands and water sales with WTCPUA. Water supplies and commitments for the WUG and its wholesale customers are listed below in *Tables 3.30* and *3.31*.

**Table 3.30: Total Water Available to the West Travis County Public Utility Agency (ac-ft/yr)**

| Water Supply Source | Water Availability During Drought of Record | | | | | |
|---|---|---|---|---|---|---|
| | 2020 | 2030 | 2040 | 2050 | 2060 | 2070 |
| LCRA Contract with WTCPUA | 9,450 | 9,450 | 9,450 | 9,450 | 9,450 | 9,450 |
| WTCPUA Reclaimed Water | 692 | 692 | 692 | 692 | 692 | 692 |
| LCRA Contracts with WTCPUA Wholesale Customers | 8,537 | 8,537 | 8,537 | 8,537 | 8,537 | 8,537 |
| **Totals** | **18,679** | **18,679** | **18,679** | **18,679** | **18,679** | **18,679** |

**Table 3.31: West Travis County PUA Treat and Transport (ac-ft/yr)**

| Water User Group (WUG) | 2020 | 2030 | 2040 | 2050 | 2060 | 2070 |
|---|---|---|---|---|---|---|
| **Hays County** | | | | | | |
| West Travis County PUA | 4,499 | 5,590 | 6,273 | 7,711 | 9,151 | 10,593 |
| Dripping Springs WSC [1] | 1,632 | 1,632 | 1,632 | 1,632 | 1,632 | 1,632 |
| Hays County WCID 1 [1] | 717 | 717 | 717 | 717 | 717 | 717 |
| Hays County WCID 2 [1] | 684 | 684 | 684 | 684 | 684 | 684 |
| **Travis County** | | | | | | |
| West Travis County PUA | 6,698 | 7,357 | 7,925 | 8,824 | 9,398 | 9,914 |
| Barton Creek West WSC | 440 | 440 | 440 | 440 | 440 | 440 |
| County-Other [2] | 1,640 | 1,640 | 1,640 | 1,640 | 1,640 | 1,640 |
| Deer Creek Ranch Water [1] | 250 | 250 | 250 | 250 | 250 | 250 |
| Irrigation [1] | 62 | 62 | 62 | 62 | 62 | 62 |
| Rough Hollow in Travis County [1] | 1,795 | 1,795 | 1,795 | 1,795 | 1,795 | 1,795 |
| Senna Hills MUD [1] | 404 | 404 | 404 | 404 | 404 | 404 |
| Sweetwater Community [1] | 1,514 | 1,514 | 1,514 | 1,514 | 1,514 | 1,514 |
| **TOTAL** | **20,335** | **22,085** | **23,336** | **25,673** | **27,687** | **29,645** |

[1] These wholesale customers have water contracts for these volumes with LCRA, but WTCPUA provides the treatment and transport of the water to their community

[2] For County-Other in Travis County, several smaller communities make up the wholesale customers that are delivered water by WTCPUA. One of these smaller communities, Crystal Mountain HOA, does not have a water contract with LCRA; they purchase 161 AFY directly from WTCPUA. The rest of the wholesale customers falling under County-Other have a water contract with LCRA, while WTCPUA provides the treatment and transport of the water to their community,

## 3.4 WATER SUPPLIES AVAILABLE TO WATER USER GROUPS

Estimates of the total available supply of water within the LCRWPA during a repeat of the Drought of Record conditions are presented in *Section 3.2*. However, the availability of this water to each of the water user groups is dependent upon the WUG's location and the infrastructure capacity or permits/contracts that are in place to move the water where it is needed. The following sections discuss the currently available water supplies for each of the water user groups within the LCRWPA. The water supply amounts presented in this section are a total of permitted/contracted amount and/or infrastructure capacity for the WUGs in the LCRWPA. Firm contacts are assumed to be renewed through the planning period, unless identified specifically in *Table 3.29*. The amount presented in *Section 3.2* (*Table 3.24*) is the total water available for LCRWPA established through modeling effort or regulatory limit.

The amount of total water supply available to the WUGs in Region K is less than the total available water to the region presented in *Table 3.24*, since the water supply for the WUGs is limited by current supplies owned or controlled by each WUG, location relative to the source, and infrastructure limitations. There is water available in Region K that is not currently being used by WUGs because they do not have the needs right now, or they do not have the means to utilize the source at this time. The following sections present the amount of water supply that is currently available to the WUGs (current permits/contracts and infrastructure capacities).

### 3.4.1 Surface Water Supplies Available to Water User Groups

As previously stated, there are four primary categories of surface water to be considered. The categories include water stored in reservoirs, run-of-river water rights, local surface water supplies, and reclaimed water. The surface water supplies are available to the water user groups in a variety of methods. Many users of water throughout the basin have contracts with one of the three designated Major Water Providers within the Region. Other users of surface water generally obtain water from small reservoirs or from other local sources such as stock ponds. Surface water information was also obtained from the TCEQ Water Utility Database (plant production capacities).

Information concerning the available surface water supply for each county within the LCRWPA is presented in *Table 3.32*. Detailed information concerning water supply availability for individual WUGs is presented in *Appendix 3C* in the DB22 reports from TWDB.

**Table 3.32: Summary of Surface Water Supply to WUGs by County (ac-ft/yr)**

| County | 2020 Supply | 2030 Supply | 2040 Supply | 2050 Supply | 2060 Supply | 2070 Supply |
|---|---|---|---|---|---|---|
| Bastrop | 10,143 | 9,229 | 8,729 | 7,597 | 7,917 | 8,026 |
| Blanco | 1,383 | 1,384 | 1,383 | 1,383 | 1,383 | 1,384 |
| Burnet | 16,614 | 16,644 | 16,670 | 16,697 | 16,722 | 16,744 |
| Colorado | 70,735 | 70,735 | 70,735 | 70,735 | 70,735 | 70,735 |
| Fayette | 47,263 | 47,263 | 47,263 | 47,263 | 47,263 | 47,263 |
| Gillespie | 742 | 742 | 742 | 742 | 742 | 742 |
| Hays | 11,272 | 11,822 | 12,188 | 12,807 | 13,610 | 14,761 |
| Llano | 10,100 | 10,100 | 10,100 | 10,100 | 10,100 | 10,100 |
| Matagorda | 127,125 | 127,125 | 127,125 | 127,125 | 127,125 | 127,125 |
| Mills | 3,082 | 3,082 | 3,082 | 3,082 | 3,082 | 3,083 |
| San Saba | 4,235 | 4,235 | 4,235 | 4,235 | 4,235 | 4,235 |
| Travis | 399,534 | 397,019 | 395,958 | 392,865 | 389,485 | 385,598 |
| Wharton | 36,125 | 36,125 | 36,125 | 36,125 | 36,125 | 36,125 |
| Williamson | 11,728 | 14,653 | 16,209 | 18,772 | 21,679 | 24,869 |
| **Regional Totals** | **750,081** | **750,158** | **750,544** | **749,528** | **750,203** | **750,790** |

Note: The supplies presented in this table are supplies currently available to the WUGs (current contracts and infrastructure capacities). Surface water availability excludes return flows.

### 3.4.2 Groundwater Supplies Available to Water User Groups

Groundwater supplies were allocated to the various WUGs within the LCRWPA using data from various sources. Information provided by the water user group was entered when available. Permit information was entered for various groundwater conservation districts, and supplies were estimated based upon the TCEQ Water Utility Database information (well production capacities). In addition, in cases where total supplies exceeded the Modeled Available Groundwater (MAG), WUG supplies were cut back proportionally to prevent over allocation.

Information concerning the available groundwater supply for each county within the LCRWPA is presented in *Table 3.33*. Detailed information concerning water supply availability for individual WUGs is presented in *Appendix 3C* in the DB22 reports from TWDB.

**Table 3.33: Summary of Groundwater Supply to WUGs by County (ac-ft/yr)**

| County | 2020 Supply | 2030 Supply | 2040 Supply | 2050 Supply | 2060 Supply | 2070 Supply |
|---|---|---|---|---|---|---|
| Bastrop | 26,479 | 28,262 | 30,312 | 33,676 | 32,432 | 32,371 |
| Blanco | 3,887 | 3,895 | 3,898 | 3,900 | 3,903 | 3,904 |
| Burnet | 11,159 | 11,159 | 11,159 | 11,159 | 11,159 | 11,159 |
| Colorado | 61,038 | 61,038 | 61,038 | 61,038 | 61,038 | 61,038 |
| Fayette | 8,484 | 8,426 | 8,352 | 8,340 | 8,342 | 8,336 |
| Gillespie | 11,015 | 11,015 | 11,015 | 11,015 | 11,015 | 11,015 |
| Hays | 7,971 | 7,958 | 7,956 | 7,960 | 7,962 | 7,966 |
| Llano | 1,527 | 1,527 | 1,527 | 1,527 | 1,527 | 1,527 |
| Matagorda | 37,544 | 37,544 | 37,544 | 37,544 | 37,544 | 37,544 |
| Mills | 2,426 | 2,426 | 2,426 | 2,426 | 2,426 | 2,426 |
| San Saba | 7,756 | 7,756 | 7,756 | 7,752 | 7,756 | 7,758 |
| Travis | 20,199 | 20,621 | 21,332 | 21,907 | 22,055 | 21,572 |
| Wharton | 92,528 | 92,528 | 92,528 | 92,528 | 92,528 | 92,528 |
| Williamson | 41 | 41 | 41 | 41 | 41 | 41 |
| **Regional Totals** | **292,054** | **294,196** | **296,884** | **300,813** | **299,728** | **299,185** |

Note: The supplies presented in this table are supplies currently available to the WUGs (current permits and infrastructure capacities).

### 3.4.3 WUG Water Supply Summary

Information concerning the available water supply to WUGs in each county within the LCRWPA is presented in *Table 3.34.* There is water available in Region K that is not currently being used by WUGs because they do not have the needs right now, or they do not have the means to utilize the source at this time. *Table 3.34* shows the amount of water supply that is currently available to the WUGs (current permits/contracts and infrastructure capacities). As the contracts and permits expire, it is assumed they will be renewed at their currently contracted amount.

Detailed information concerning water supply available for every individual WUG in Region K is presented in *Appendix 3C* which contains the DB22 reports from TWDB.

**Table 3.34: Total Water Supply to WUGs by County (ac-ft/yr)**

| County | 2020 Supply | 2030 Supply | 2040 Supply | 2050 Supply | 2060 Supply | 2070 Supply |
|---|---|---|---|---|---|---|
| Bastrop | 36,622 | 37,491 | 39,041 | 41,273 | 40,349 | 40,397 |
| Blanco | 5,270 | 5,279 | 5,281 | 5,283 | 5,286 | 5,288 |
| Burnet | 27,773 | 27,803 | 27,829 | 27,856 | 27,881 | 27,903 |
| Colorado | 131,773 | 131,773 | 131,773 | 131,773 | 131,773 | 131,773 |
| Fayette | 55,747 | 55,689 | 55,615 | 55,603 | 55,605 | 55,599 |
| Gillespie | 11,757 | 11,757 | 11,757 | 11,757 | 11,757 | 11,757 |
| Hays | 19,243 | 19,780 | 20,144 | 20,767 | 21,572 | 22,727 |
| Llano | 11,627 | 11,627 | 11,627 | 11,627 | 11,627 | 11,627 |
| Matagorda | 164,669 | 164,669 | 164,669 | 164,669 | 164,669 | 164,669 |
| Mills | 5,508 | 5,508 | 5,508 | 5,508 | 5,508 | 5,509 |
| San Saba | 11,991 | 11,991 | 11,991 | 11,987 | 11,991 | 11,993 |
| Travis | 419,733 | 417,640 | 417,290 | 414,772 | 411,540 | 407,170 |
| Wharton | 128,653 | 128,653 | 128,653 | 128,653 | 128,653 | 128,653 |
| Williamson | 11,769 | 14,694 | 16,250 | 18,813 | 21,720 | 24,910 |
| **Regional Totals** | **1,042,135** | **1,044,354** | **1,047,428** | **1,050,341** | **1,049,931** | **1,049,975** |

Note: The supplies presented in this table are supplies currently available to the WUGs (current permits/contracts and infrastructure capacities).

# *APPENDIX 3A*

# *LOWER COLORADO REGIONAL WATER PLANNING AREA TCEQ ACTIVE WATER RIGHTS*

# Lower Colorado Regional Water Planning Area
# TCEQ Active Water Rights - December 14, 2018

| WR NO | WR ISSUE DATE | AMENDMENT LETTER | OWNER NAME | DIVERSION AMOUNT (AFY) | USE | PRIORITY DATE | CONSUMPTIVE AMOUNT (AFY) | STORAGE AMOUNT (AF) | BASIN | WATER MASTER AREA | COUNTY |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 3448 | 04/29/1977 | | WHITE, JOHN W | | RECREATION | 11/15/1976 | | 36.0000 | 14 | NOT IN WM AREA | BASTROP |
| 3491 | 09/09/1977 | | FRIENDS OF CLEAR SPRINGS LAKE | | RECREATION | 03/14/1977 | | 83.0000 | 14 | NOT IN WM AREA | BASTROP |
| 3849 | 07/16/1985 | | DUNCAN, DAN L | | RECREATION | 08/30/1976 | | 427.0000 | 18 | SOUTH TEXAS | BASTROP |
| 5084 | 10/31/1986 | | SUN WEST INVESTMENTS INC | 4.00 | AGRICULTURE - IRRIGATION \| RECREATION | 08/14/1986 | | 14.5000 | 14 | NOT IN WM AREA | BASTROP |
| 5398 | 08/26/1988 | | HORTON, JOHN COLEMAN III \| HORTON, WILMOT ROBERDEAU | 120.00 | AGRICULTURE - IRRIGATION | 03/31/1954 | | | 14 | NOT IN WM AREA | BASTROP |
| 5399 | 08/26/1988 | | PENDLETON, BELLE | 26.00 | AGRICULTURE - IRRIGATION | 06/30/1955 | | | 14 | NOT IN WM AREA | BASTROP |
| 5400 | 08/26/1988 | | DONALDSON, JERRY B | 8.00 | AGRICULTURE - IRRIGATION | 04/30/1955 | | | 14 | NOT IN WM AREA | BASTROP |
| 5402 | 08/26/1988 | | LLOYD, KETHA | 348.00 | AGRICULTURE - IRRIGATION | 12/31/1905 | | | 14 | NOT IN WM AREA | BASTROP |
| 5403 | 08/26/1988 | | PROKOP, MERLE A JR | 5.00 | AGRICULTURE - IRRIGATION | 07/31/1966 | | | 14 | NOT IN WM AREA | BASTROP |
| 5404 | 08/26/1988 | | TEXAS PARKS AND WILDLIFE DEPARTMENT | | RECREATION | 05/19/1969 | | 68.0000 | 14 | NOT IN WM AREA | BASTROP |
| 5405 | 08/26/1988 | | HUGHES, EDWARD L | 8.40 | AGRICULTURE - IRRIGATION | 12/31/1960 | | 18.0000 | 14 | NOT IN WM AREA | BASTROP |
| 5406 | 08/26/1988 | | LOVEJOY, J B | 2.10 | AGRICULTURE - IRRIGATION | 12/31/1962 | | 16.0000 | 14 | NOT IN WM AREA | BASTROP |
| 5407 | 08/26/1988 | | ROD, AJ | 80.00 | AGRICULTURE - IRRIGATION | 12/09/1974 | | | 14 | NOT IN WM AREA | BASTROP |
| 5408 | 08/26/1988 | | TEXAS PARKS AND WILDLIFE DEPARTMENT | | RECREATION | 08/25/1969 | | 177.0000 | 14 | NOT IN WM AREA | BASTROP |
| 5411 | 08/26/1988 | | CLAUSEN, STEPHEN WAYNE \| HALL, SUSAN GRACE TRAMP | 15.00 | AGRICULTURE - IRRIGATION | 02/23/1970 | | 50.0000 | 14 | NOT IN WM AREA | BASTROP |
| 5412 | 08/26/1988 | | HORSESHOE LAKE PROPERTY OWNERS ASSOCIATION INC | | RECREATION | 04/08/1975 | | 8.2000 | 14 | NOT IN WM AREA | BASTROP |
| 5413 | 08/26/1988 | | DROEMER, CARL | 61.00 | AGRICULTURE - IRRIGATION | 09/16/1974 | | 465.0000 | 14 | NOT IN WM AREA | BASTROP |
| 5414 | 08/26/1988 | | LAKE THUNDERBIRD OWNERS ASSOCIATION INC | | RECREATION | 01/27/1975 | | 56.0000 | 14 | NOT IN WM AREA | BASTROP |
| 5414 | 08/26/1988 | | LAKE THUNDERBIRD OWNERS ASSOCIATION INC | | RECREATION | 10/15/1973 | | 103.0000 | 14 | NOT IN WM AREA | BASTROP |
| 5415 | 08/26/1988 | | INDIAN LAKE OWNERS ASSOCIATION | | RECREATION | 10/01/1973 | | 540.0000 | 14 | NOT IN WM AREA | BASTROP |
| 5473 | 06/28/1989 | A | LOWER COLORADO RIVER AUTHORITY | 10750.00 | INDUSTRIAL \| INDUSTRIAL - POWER GENERATION \| RECREATION \| WA | 03/04/1963 | | 16590.0000 | 14 | NOT IN WM AREA | BASTROP |
| 1470 | 08/15/1980 | | SCHUMANN, WERNER \| TEXAS PARKS AND WILDLIFE DEPARTMENT | 50.00 | AGRICULTURE - IRRIGATION | 12/31/1967 | | | 14 | NOT IN WM AREA | BLANCO |
| 1472 | 08/15/1980 | | LINDIG, AL LOUIS \| LINDIG, BRENDA | 7.00 | AGRICULTURE - IRRIGATION | 12/31/1933 | | | 14 | NOT IN WM AREA | BLANCO |
| 1473 | 08/15/1980 | | OBOYLE, JOHN W JR | 276.00 | AGRICULTURE - IRRIGATION | 12/31/1964 | | 10.5000 | 14 | NOT IN WM AREA | BLANCO |
| 1477 | 08/15/1980 | | KELLER EQUIPMENT COMPANY | 4.25 | AGRICULTURE - IRRIGATION | 12/31/1964 | | 15.0000 | 14 | NOT IN WM AREA | BLANCO |
| 1478 | 08/15/1980 | | MOONEY, JAMES J | 9.00 | AGRICULTURE - IRRIGATION | 08/16/1965 | | | 14 | NOT IN WM AREA | BLANCO |
| 1479 | 08/15/1980 | | CITY OF JOHNSON CITY | 220.00 | MUNICIPAL/DOMESTIC | 11/29/1966 | | | 14 | NOT IN WM AREA | BLANCO |
| 1479 | 08/15/1980 | | CITY OF JOHNSON CITY | | RECREATION | 11/29/1966 | | 345.0000 | 14 | NOT IN WM AREA | BLANCO |
| 1480 | 08/15/1980 | | MILLER CREEK RV RESORT INC \| ROUNTREE, JUDY \| ROUNTREE, PAUL | | RECREATION | 04/17/1967 | | 30.0000 | 14 | NOT IN WM AREA | BLANCO |
| 1481 | 08/15/1980 | | TEXAS PARKS AND WILDLIFE DEPARTMENT | 30.00 | MUNICIPAL/DOMESTIC | 04/24/1972 | | | 14 | NOT IN WM AREA | BLANCO |
| 1482 | 08/15/1980 | | FRASHER, NANCY WARREN | 34.00 | AGRICULTURE - IRRIGATION | 09/07/1962 | | | 14 | NOT IN WM AREA | BLANCO |
| 3673 | 06/18/1979 | | WRC LAKESIDE PARTNERS LP | 7.00 | AGRICULTURE - IRRIGATION | 02/05/1979 | | | 18 | SOUTH TEXAS | BLANCO |
| 3728 | 04/23/1980 | | FICKLE, ERIKA H \| MARSHALL, MARIE \| MARSHALL, STEVE | | RECREATION | 01/07/1980 | | 6.0000 | 18 | SOUTH TEXAS | BLANCO |
| 3871 | 07/16/1985 | | HAAS, W J | 6.00 | AGRICULTURE - IRRIGATION | 09/30/1957 | | 4.0000 | 18 | SOUTH TEXAS | BLANCO |
| 3871 | 07/16/1985 | | HAAS, W J | 6.00 | AGRICULTURE - IRRIGATION | 09/30/1967 | | 2.0000 | 18 | SOUTH TEXAS | BLANCO |
| 3872 | 07/19/1985 | | THE KYLE BENNETT LIVING TRUST | 4.60 | AGRICULTURE - IRRIGATION | 11/25/1974 | | | 18 | SOUTH TEXAS | BLANCO |
| 3872 | 07/19/1985 | | HAMMOND FAMILY FARM LTD | 20.31 | AGRICULTURE - IRRIGATION | 11/25/1974 | | | 18 | SOUTH TEXAS | BLANCO |
| 3872 | 07/19/1985 | | HAMMOND FAMILY FARM LTD | | AGRICULTURE - IRRIGATION | 11/25/1974 | | 23.0000 | 18 | SOUTH TEXAS | BLANCO |
| 3872 | 07/19/1985 | | STETLER FAMILY LIVING TRUST | 7.09 | AGRICULTURE - IRRIGATION | 11/25/1974 | | | 18 | SOUTH TEXAS | BLANCO |
| 3872 | 07/19/1985 | | STETLER FAMILY LIVING TRUST | | AGRICULTURE - IRRIGATION | 11/25/1974 | | 9.0000 | 18 | SOUTH TEXAS | BLANCO |
| 3873 | 07/19/1985 | | MCCLAIN, ELSIE LEE \| MCCLAIN, HENRY | 48.00 | AGRICULTURE - IRRIGATION | 06/30/1957 | | 9.0150 | 18 | SOUTH TEXAS | BLANCO |
| 3873 | 07/19/1985 | | MCCLAIN, ELSIE LEE \| MCCLAIN, HENRY | 1.00 | AGRICULTURE - STOCKRAISING \| INDUSTRIAL | 06/30/1957 | | | 18 | SOUTH TEXAS | BLANCO |
| 3874 | 07/16/1985 | | DRENTH, JUDITH D \| DRENTH, ROBERT C | 24.00 | AGRICULTURE - IRRIGATION | 11/30/1963 | | | 18 | SOUTH TEXAS | BLANCO |
| 3874 | 07/16/1985 | | DRENTH, JUDITH D \| DRENTH, ROBERT C | | AGRICULTURE - IRRIGATION | 11/30/1963 | | 5.0000 | 18 | SOUTH TEXAS | BLANCO |
| 3875 | 07/16/1985 | | MCCOMBS LEGACY LTD | 45.00 | AGRICULTURE - IRRIGATION | 05/31/1963 | | 10.0000 | 18 | SOUTH TEXAS | BLANCO |
| 3876 | 07/16/1985 | | ATWELL, WILLIAM W | | RECREATION | 05/28/1974 | | | 18 | SOUTH TEXAS | BLANCO |
| 3876 | 07/16/1985 | | HAILE, NORVAL K \| HAILE, STEPHNE K \| ZERCHER, WAYNE A | | RECREATION | 05/28/1974 | | 30.0000 | 18 | SOUTH TEXAS | BLANCO |
| 3877 | 07/16/1985 | | CITY OF BLANCO | 600.00 | MUNICIPAL/DOMESTIC | 08/29/1955 | | 168.4700 | 18 | SOUTH TEXAS | BLANCO |
| 3878 | 07/16/1985 | | TEXAS PARKS AND WILDLIFE DEPARTMENT | | RECREATION | 05/26/1969 | | 62.0000 | 18 | SOUTH TEXAS | BLANCO |
| 3879 | 07/16/1985 | | MARSHALL, MARIE \| MARSHALL, STEPHEN E | | RECREATION | 06/14/1976 | | 30.0000 | 18 | SOUTH TEXAS | BLANCO |
| 3930 | 12/23/1982 | | WAYMOND LIGHTFOOT TRUSTEE | | RECREATION | 09/20/1982 | | 16.8000 | 18 | SOUTH TEXAS | BLANCO |
| 3988 | 06/24/1983 | | A DEAN MABRY ET AL \| MABRY, A DEAN | | RECREATION | 01/10/1983 | | 2.0000 | 18 | SOUTH TEXAS | BLANCO |
| 4041 | 10/28/1983 | | LUXURY TRAILS INC | | RECREATION | 05/23/1983 | | 2.5200 | 14 | NOT IN WM AREA | BLANCO |
| 5556 | 12/30/1996 | | LUCAS, MARCIA R | 20.00 | AGRICULTURE - IRRIGATION | 07/31/1996 | | | 18 | SOUTH TEXAS | BLANCO |
| 1468 | 08/15/1980 | | REDSTONE RANCH II LTD | 400.00 | AGRICULTURE - IRRIGATION | 04/01/1963 | | | 14 | NOT IN WM AREA | BLANCO \| GILLESPIE |
| 1468 | 08/15/1980 | | MATTHEWS, MARY F \| MATTHEWS, RAYMOND T | 84.00 | AGRICULTURE - IRRIGATION | 04/01/1963 | | | 14 | NOT IN WM AREA | BLANCO \| GILLESPIE |
| 1468 | 08/15/1980 | | CURRIER, JAN \| CURRIER, JOHN | 16.00 | AGRICULTURE - IRRIGATION | 04/01/1963 | | | 14 | NOT IN WM AREA | BLANCO \| GILLESPIE |
| 2607 | 08/31/1983 | | GOODRICH RANCH COMPANY | 43.42 | AGRICULTURE - IRRIGATION | 03/31/1955 | | | 14 | NOT IN WM AREA | BURNET |
| 2607 | 08/31/1983 | | JGE HOLDINGS LTD | 121.58 | AGRICULTURE - IRRIGATION | 03/31/1955 | | | 14 | NOT IN WM AREA | BURNET |
| 2608 | 08/31/1983 | | GOODRICH RANCH COMPANY | | DOMESTIC AND LIVESTOCK | 09/07/1950 | | 780.0000 | 14 | NOT IN WM AREA | BURNET |
| 2609 | 08/31/1983 | | JOHANSON, JAMES BARBER | 33.00 | AGRICULTURE - IRRIGATION | 12/31/1948 | | | 14 | NOT IN WM AREA | BURNET |
| 2614 | 08/31/1983 | | WENDAL LEE PHILLIPS FAMILY PARTNERSHIP LTD | 27.30 | AGRICULTURE - IRRIGATION | 12/31/1953 | | | 14 | NOT IN WM AREA | BURNET |
| 2614 | 08/31/1983 | | STUSIE LLC | 18.70 | AGRICULTURE - IRRIGATION | 12/31/1953 | | | 14 | NOT IN WM AREA | BURNET |
| 2615 | 08/31/1983 | | FOX, TROY | 149.07 | AGRICULTURE - IRRIGATION | 12/31/1959 | | | 14 | NOT IN WM AREA | BURNET |
| 2615 | 08/31/1983 | | ESTATE OF C A BARNETT | 0.93 | AGRICULTURE - IRRIGATION | 12/31/1959 | | | 14 | NOT IN WM AREA | BURNET |
| 2629 | 08/31/1983 | | RHOADES, ARLENE B | 8.00 | AGRICULTURE - IRRIGATION | 12/31/1956 | | | 14 | NOT IN WM AREA | BURNET |
| 2630 | 08/31/1983 | | HEFNER, AGNES ANDERSON | 438.00 | AGRICULTURE - IRRIGATION | 07/04/1956 | | | 14 | NOT IN WM AREA | BURNET |
| 2631 | 08/31/1983 | | TEXAS GRANITE CORPORATION | 33.00 | INDUSTRIAL | 05/23/1950 | | 13.0000 | 14 | NOT IN WM AREA | BURNET |
| 2631 | 08/31/1983 | | TEXAS GRANITE CORPORATION | 55.00 | AGRICULTURE - IRRIGATION | 07/15/1965 | | | 14 | NOT IN WM AREA | BURNET |
| 2632 | 08/31/1983 | B | CITY OF MEADOWLAKES | 89.00 | AGRICULTURE - IRRIGATION \| MUNICIPAL/DOMESTIC | 03/27/1905 | | | 14 | NOT IN WM AREA | BURNET |
| 2632 | 08/31/1983 | B | CITY OF MEADOWLAKES | 400.00 | AGRICULTURE \| MUNICIPAL/DOMESTIC | 03/27/1905 | | | 14 | NOT IN WM AREA | BURNET |
| 2632 | 08/31/1983 | B | CITY OF MEADOWLAKES | 78.00 | AGRICULTURE - IRRIGATION \| MUNICIPAL/DOMESTIC | 04/04/1895 | | | 14 | NOT IN WM AREA | BURNET |
| 2633 | 08/31/1983 | | BREWER, JOAN | 18.00 | AGRICULTURE - IRRIGATION | 12/31/1934 | | | 14 | NOT IN WM AREA | BURNET |
| 2634 | 08/31/1983 | | ABOU SAMRA, JOAN ESTELLE \| ABOU SAMRA, MOUSTAPHA | 144.00 | AGRICULTURE - IRRIGATION | 12/31/1953 | | | 14 | NOT IN WM AREA | BURNET |
| 2635 | 08/31/1983 | | FELPS LLC | 11.00 | AGRICULTURE - IRRIGATION | 12/31/1953 | | | 14 | NOT IN WM AREA | BURNET |
| 2636 | 08/31/1983 | | PRATT, BILLIE J | 2.20 | AGRICULTURE - IRRIGATION | 03/31/1966 | | | 14 | NOT IN WM AREA | BURNET |
| 2637 | 08/31/1983 | | PRATT, BILLIE J | 5.50 | AGRICULTURE - IRRIGATION | 03/31/1966 | | | 14 | NOT IN WM AREA | BURNET |
| 2638 | 08/31/1983 | | PRATT, BILLIE J | 5.50 | AGRICULTURE - IRRIGATION | 03/31/1966 | | | 14 | NOT IN WM AREA | BURNET |
| 2639 | 08/31/1983 | | SMITH, JANICE L \| SMITH, P H | 9.70 | AGRICULTURE - IRRIGATION | 03/31/1966 | | | 14 | NOT IN WM AREA | BURNET |
| 2640 | 08/31/1983 | | FUSSELL, BLANCHE \| FUSSELL, R G | 10.10 | AGRICULTURE - IRRIGATION | 03/31/1966 | | 3.0000 | 14 | NOT IN WM AREA | BURNET |
| 2641 | 08/31/1983 | | ALLEN, G S | 253.00 | AGRICULTURE - IRRIGATION | 02/28/1958 | | | 14 | NOT IN WM AREA | BURNET |
| 2642 | 08/31/1983 | | CIMARRON RANCH PROPERTIES LP | 89.00 | AGRICULTURE - IRRIGATION | 12/31/1961 | | | 14 | NOT IN WM AREA | BURNET |
| 2643 | 08/31/1983 | | LEWIS, COSTILLO C | 80.00 | AGRICULTURE - IRRIGATION | 04/30/1967 | | | 14 | NOT IN WM AREA | BURNET |

# Lower Colorado Regional Water Planning Area
## TCEQ Active Water Rights - December 14, 2018

| WR NO | WR ISSUE DATE | AMENDMENT LETTER | OWNER NAME | DIVERSION AMOUNT (AFY) | USE | PRIORITY DATE | CONSUMPTIVE AMOUNT (AFY) | STORAGE AMOUNT (AF) | BASIN | WATER MASTER AREA | COUNTY |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2989 | 04/30/1984 | | HOLLOWAY, JAMES \| HOLLOWAY, LINDA | 9.33 | AGRICULTURE - IRRIGATION | 12/31/1923 | | | 12 | BRAZOS | BURNET |
| 2989 | 04/30/1984 | | REID, GARY L \| REID, LORETTA J | 18.67 | AGRICULTURE - IRRIGATION | 12/31/1923 | | | 12 | BRAZOS | BURNET |
| 2990 | 04/30/1984 | | MAAS, BARBARA \| MAAS, HERBERT A | 63.00 | AGRICULTURE - IRRIGATION | 04/30/1966 | | | 12 | BRAZOS | BURNET |
| 2991 | 04/30/1984 | A | SAWTOOTH ENTERPRISES LTD | 145.00 | AGRICULTURE - IRRIGATION | 12/31/1965 | | | 12 | BRAZOS | BURNET |
| 2991 | 04/30/1984 | A | SAWTOOTH ENTERPRISES LTD | | AGRICULTURE - IRRIGATION | 04/29/2002 | | 4.0200 | 12 | BRAZOS | BURNET |
| 2992 | 04/30/1984 | B | BROWN, JOSEPH CARLTON \| BROWN, MARY KATHYRN \| BROWN, WALTER C | 34.00 | AGRICULTURE - IRRIGATION | 03/14/1954 | | 8.0000 | 12 | BRAZOS | BURNET |
| 2992 | 04/30/1984 | B | GAGE, MARY ANGELINE \| MARY ANGELINE GAGE HERITAGE TRUST | 34.00 | AGRICULTURE - IRRIGATION | 03/14/1954 | | | 12 | BRAZOS | BURNET |
| 2993 | 04/30/1984 | | SMITH, ARTHUR PAUL \| SMITH, THELMA | 24.59 | AGRICULTURE - IRRIGATION | 12/31/1925 | | 25.0000 | 12 | BRAZOS | BURNET |
| 2993 | 04/30/1984 | | G BAR M RANCH INC | 19.24 | AGRICULTURE - IRRIGATION | 12/31/1925 | | | 12 | BRAZOS | BURNET |
| 2993 | 04/30/1984 | | LANE, BEN G JR \| LANE, KAY K | 0.17 | AGRICULTURE - IRRIGATION | 12/31/1925 | | | 12 | BRAZOS | BURNET |
| 2994 | 04/30/1984 | | SPENCER, BETTY LOU RACHEL \| SPENCER, THOMAS MORRIS | 6.00 | AGRICULTURE - IRRIGATION | 12/31/1925 | | | 12 | BRAZOS | BURNET |
| 2995 | 04/30/1984 | | MORSE RANCH A PARTNERSHIP | 120.00 | AGRICULTURE - IRRIGATION | 03/07/1966 | | | 12 | BRAZOS | BURNET |
| 3411 | 02/23/1977 | | CITY OF MEADOWLAKES | 403.00 | AGRICULTURE - IRRIGATION \| MUNICIPAL/DOMESTIC \| RECREATION | 11/22/1976 | | 140.0000 | 14 | NOT IN WM AREA | BURNET |
| 3735 | 02/28/1985 | | RYLANDER, GARY RAY \| RYLANDER, HENRY GRADY III | 26.00 | AGRICULTURE - IRRIGATION | 06/30/1963 | | | 12 | BRAZOS | BURNET |
| 5116 | 03/18/1987 | | BUCKNER BAPTIST BENEVOLENCES | | RECREATION | 12/30/1986 | | 3.0000 | 14 | NOT IN WM AREA | BURNET |
| 5193 | 12/15/1988 | | GREENSMITHS INC | | RECREATION \| WATER QUALITY | 09/06/1988 | | 6.1400 | 14 | NOT IN WM AREA | BURNET |
| 5327 | 02/14/1991 | | CITY OF BURNET | | RECREATION | 10/26/1990 | | 10.0000 | 14 | NOT IN WM AREA | BURNET |
| 5452 | 04/16/1993 | | BASKIN FAMILY CAMPS LP | | RECREATION | 02/23/1993 | | 160.0000 | 14 | NOT IN WM AREA | BURNET |
| 5480 | 06/28/1989 | | LOWER COLORADO RIVER AUTHORITY | 15700.00 | INDUSTRIAL | 03/29/1926 | 15700.0000 | 138500.0000 | 14 | NOT IN WM AREA | BURNET |
| 5480 | 06/28/1989 | | LOWER COLORADO RIVER AUTHORITY | | HYDROELECTRIC \| WATER QUALITY | 03/29/1926 | | | 14 | NOT IN WM AREA | BURNET |
| 5481 | 06/28/1989 | | LOWER COLORADO RIVER AUTHORITY | | HYDROELECTRIC \| WATER QUALITY | 03/29/1926 | | 8760.0000 | 14 | NOT IN WM AREA | BURNET |
| 5593 | 02/20/1998 | | GLAZE, JENNIFER S \| GLAZE, JERRY W | 130.00 | AGRICULTURE - IRRIGATION | 07/01/1997 | | | 12 | BRAZOS | BURNET \| LAMPASAS |
| 5478 | 06/29/1989 | C | LOWER COLORADO RIVER AUTHORITY | 1500000.00 | AGRICULTURE - IRRIGATION \| INDUSTRIAL \| MINING \| MUNICIPAL/DO | 03/29/1926 | | 992475.0000 | 14 | NOT IN WM AREA | BURNET \| LLANO |
| 5478 | 06/29/1989 | C | LOWER COLORADO RIVER AUTHORITY | | DOMESTIC AND LIVESTOCK \| HYDROELECTRIC \| RECHARGE \| RECREAT | 03/29/1926 | | | 14 | NOT IN WM AREA | BURNET \| LLANO |
| 5479 | 06/28/1989 | | LOWER COLORADO RIVER AUTHORITY | | HYDROELECTRIC \| RECREATION \| WATER QUALITY | 03/29/1926 | | 17545.0000 | 14 | NOT IN WM AREA | BURNET \| LLANO |
| 5058 | 08/18/1986 | | HHCC PROPERTIES INC | | RECREATION | 05/16/1986 | | 37.0000 | 14 | NOT IN WM AREA | BURNET \| TRAVIS |
| 2079 | 07/03/1981 | | LAKE SHERIDAN ESTATES INC | | RECREATION | 10/07/1963 | | 455.0000 | 16 | SOUTH TEXAS | COLORADO |
| 2080 | 07/03/1981 | | ENGSTROM BROTHERS PARTNERSHIP | 248.00 | AGRICULTURE - IRRIGATION | 12/31/1938 | | | 16 | SOUTH TEXAS | COLORADO |
| 2081 | 07/03/1981 | | ENGSTROM, BRAD \| ENGSTROM, BRADLEY ELVEN \| ENGSTROM, CHARLES K | 683.27 | AGRICULTURE - IRRIGATION | 04/30/1955 | | | 16 | SOUTH TEXAS | COLORADO |
| 2085 | 07/03/1981 | | WIED, WILLIAM MARK | 13.00 | AGRICULTURE - IRRIGATION | 12/31/1962 | | | 16 | SOUTH TEXAS | COLORADO |
| 2086 | 07/03/1981 | | MATZKE, JEANETTER RICHTER \| TAMORA PARTNERS LTD | 282.00 | AGRICULTURE - IRRIGATION | 04/30/1955 | | | 16 | SOUTH TEXAS | COLORADO |
| 2087 | 07/03/1981 | | KORENEK, LEO M | 84.00 | AGRICULTURE - IRRIGATION | 04/30/1946 | | 20.0000 | 16 | SOUTH TEXAS | COLORADO |
| 2088 | 07/03/1981 | | KORENEK, LEO M | 45.00 | AGRICULTURE - IRRIGATION | 04/30/1924 | | | 16 | SOUTH TEXAS | COLORADO |
| 2089 | 07/03/1981 | | HOFFMAN, LOUIS P | 48.00 | AGRICULTURE - IRRIGATION | 05/31/1966 | | | 16 | SOUTH TEXAS | COLORADO |
| 3415 | 02/07/1985 | | HUBENAK, DEBORAH ANN \| KENNEDY, DONNA PLENGEYER \| OTETER, DIAN | 13.52 | AGRICULTURE - IRRIGATION | 05/31/1964 | | | 13 | NOT IN WM AREA | COLORADO |
| 3415 | 02/07/1985 | | STALNAKER, GEORGE F \| STALNAKER, PHYLLYS A | 10.03 | AGRICULTURE - IRRIGATION | 05/31/1964 | | | 13 | NOT IN WM AREA | COLORADO |
| 3415 | 02/07/1985 | | JORDAN, JAMES ROBERT | 1.17 | AGRICULTURE - IRRIGATION | 05/31/1964 | | | 13 | NOT IN WM AREA | COLORADO |
| 3415 | 02/07/1985 | | CORLEY, MARIDEE BATLA | 0.28 | AGRICULTURE - IRRIGATION | 05/31/1964 | | | 13 | NOT IN WM AREA | COLORADO |
| 3416 | 02/07/1985 | | ADKINS, JOHN W | 150.00 | AGRICULTURE - IRRIGATION | 07/14/1980 | | | 13 | NOT IN WM AREA | COLORADO |
| 3417 | 02/07/1985 | | ADKINS, ALICE M | 150.00 | AGRICULTURE - IRRIGATION | 07/14/1980 | | | 13 | NOT IN WM AREA | COLORADO |
| 3904 | 10/14/1982 | | WEID, NOBERT \| WISHERT, PAT | 60.00 | AGRICULTURE - IRRIGATION | 11/16/1981 | | | 16 | SOUTH TEXAS | COLORADO |
| 3906 | 10/14/1982 | | POPP, HERBERT J \| POPP, JOSEPHINE | 140.00 | AGRICULTURE - IRRIGATION | 11/16/1981 | | 20.0000 | 16 | SOUTH TEXAS | COLORADO |
| 3908 | 10/14/1982 | | MILLER, ELIZABETH B | 279.00 | AGRICULTURE - IRRIGATION | 11/16/1981 | | | 16 | SOUTH TEXAS | COLORADO |
| 5156 | 11/23/1987 | | US DEPARTMENT OF THE INTERIOR FISH AND WILDLIFE SERVICE | | AGRICULTURE - WILDLIFE MANAGEMENT | 09/15/1987 | | 91.0000 | 13 | NOT IN WM AREA | COLORADO |
| 5425 | 08/26/1988 | | TREFNY, CHARLES T | 76.00 | AGRICULTURE - IRRIGATION | 07/31/1956 | | 10.0000 | 14 | NOT IN WM AREA | COLORADO |
| 5429 | 08/26/1988 | | JOHNSON, C G | 73.00 | AGRICULTURE - IRRIGATION | 07/31/1949 | | | 14 | NOT IN WM AREA | COLORADO |
| 5432 | 08/26/1988 | A | TREFNY, CHARLES T | 21.00 | AGRICULTURE - IRRIGATION | 08/31/1951 | | | 14 | NOT IN WM AREA | COLORADO |
| 5475 | 06/28/1989 | B | LOWER COLORADO RIVER AUTHORITY | 186250.00 | AGRICULTURE - IRRIGATION \| INDUSTRIAL \| MINING \| MUNICIPAL/DO | 01/04/1901 | | 9600.0000 | 14 | NOT IN WM AREA | COLORADO |
| 5523 | 06/01/1995 | | POWERS, CLARK \| POWERS, VICKI | 300.00 | AGRICULTURE - IRRIGATION | 03/01/1995 | | | 13 | NOT IN WM AREA | COLORADO |
| 5728 | 08/10/2001 | | CITY OF WEIMAR | 23.00 | AGRICULTURE - IRRIGATION | 01/25/2001 | | 12.5000 | 14 | NOT IN WM AREA | COLORADO |
| 5434 | 06/28/1989 | F | LOWER COLORADO RIVER AUTHORITY | 133000.00 | AGRICULTURE - IRRIGATION \| INDUSTRIAL \| MUNICIPAL/DOMESTIC | 11/01/1900 | | 86.0000 | 14 | NOT IN WM AREA | COLORADO \| MATAGORDA \| WHARTON |
| 5434 | 06/28/1989 | F | CITY OF CORPUS CHRISTI | 35000.00 | AGRICULTURE - IRRIGATION \| INDUSTRIAL \| MUNICIPAL/DOMESTIC | 11/02/1900 | | | 14 | NOT IN WM AREA | COLORADO \| MATAGORDA \| WHARTON |
| 5731 | 04/29/2011 | | LOWER COLORADO RIVER AUTHORITY | 853514.00 | AGRICULTURE - IRRIGATION \| FLOOD CONTROL \| INDUSTRIAL \| MUNI | 02/28/2001 | | 500000.0000 | 14 | NOT IN WM AREA | COLORADO \| MATAGORDA \| WHARTON |
| 2075 | 07/03/1981 | | TOWNSEND, O C | 2.00 | AGRICULTURE - IRRIGATION | 12/31/1954 | | 1.7500 | 16 | SOUTH TEXAS | FAYETTE |
| 2075 | 07/03/1981 | | WRIGHT, H D \| WRIGHT, LETA | 2.00 | AGRICULTURE - IRRIGATION | 12/31/1954 | | | 16 | SOUTH TEXAS | FAYETTE |
| 3469 | 06/22/1977 | | ZAVODA, JEAN HOLLAND | | RECREATION | 06/14/1976 | | 44.0000 | 14 | NOT IN WM AREA | FAYETTE |
| 3522 | 11/10/1977 | | WETH, JOHN | 35.00 | AGRICULTURE - IRRIGATION | 06/20/1977 | | 33.0000 | 14 | NOT IN WM AREA | FAYETTE |
| 5410 | 08/26/1988 | | FIVE H AND ONE LTD | | RECREATION | 02/17/1975 | | 391.0000 | 14 | NOT IN WM AREA | FAYETTE |
| 5416 | 08/26/1988 | | CLEAR LAKE PINES MAINTENANCE CORPORATION | | RECREATION | 09/16/1974 | | 322.0000 | 14 | NOT IN WM AREA | FAYETTE |
| 5417 | 08/26/1988 | | OEDING, G W | | RECREATION | 09/17/1973 | | 181.4000 | 14 | NOT IN WM AREA | FAYETTE |
| 5418 | 08/26/1988 | | KAPPLER, EDMUND \| KAPPLER, RUBEN H \| KAPPLER, WANDA | 128.00 | AGRICULTURE - IRRIGATION | 02/10/1975 | | 189.0000 | 14 | NOT IN WM AREA | FAYETTE |
| 5420 | 08/26/1988 | | GOLDAPP, WILLIAM | 32.00 | AGRICULTURE - IRRIGATION | 06/10/1968 | | 32.0000 | 14 | NOT IN WM AREA | FAYETTE |
| 5421 | 08/26/1988 | | LEHMANN, WILLIE G | 30.00 | AGRICULTURE - IRRIGATION | 05/22/1972 | | | 14 | NOT IN WM AREA | FAYETTE |
| 5422 | 08/26/1988 | | LEHMANN, ROBERT | 3.00 | AGRICULTURE - IRRIGATION | 06/30/1967 | | | 14 | NOT IN WM AREA | FAYETTE |
| 5423 | 08/26/1988 | | CLEAR LAKE PINES INC | | RECREATION | 07/05/1976 | | 59.0000 | 14 | NOT IN WM AREA | FAYETTE |
| 5424 | 08/26/1988 | | BARTEK, DOLORES M \| BARTEK, ERNEST G | 47.00 | AGRICULTURE - IRRIGATION | 07/31/1967 | | 59.0000 | 14 | NOT IN WM AREA | FAYETTE |
| 5426 | 08/26/1988 | | HAGEMANN, HOWARD RAY \| JACKSON, BETTY RUTH | 10.00 | AGRICULTURE - IRRIGATION | 07/31/1956 | | | 14 | NOT IN WM AREA | FAYETTE |
| 5427 | 08/26/1988 | | HENSEL, C A | 14.00 | AGRICULTURE - IRRIGATION | 07/31/1956 | | 7.5000 | 14 | NOT IN WM AREA | FAYETTE |
| 5428 | 08/26/1988 | | JOHNSON, BETTY R \| JOHNSON, RALPH T | 15.00 | AGRICULTURE - IRRIGATION | 07/31/1956 | | | 14 | NOT IN WM AREA | FAYETTE |
| 5433 | 08/26/1988 | | REYNOLDS, KELLY K | 35.00 | AGRICULTURE - IRRIGATION | 11/04/1974 | | 200.0000 | 14 | NOT IN WM AREA | FAYETTE |
| 5474 | 06/28/1989 | A | LOWER COLORADO RIVER AUTHORITY | | INDUSTRIAL \| INDUSTRIAL - POWER GENERATION \| WATER QUALITY | 02/03/1975 | | 122530.0000 | 14 | NOT IN WM AREA | FAYETTE |
| 5474 | 06/28/1989 | A | LOWER COLORADO RIVER AUTHORITY | | INDUSTRIAL \| INDUSTRIAL - POWER GENERATION \| WATER QUALITY | 02/03/1975 | | | 14 | NOT IN WM AREA | FAYETTE |
| 5471 | 06/28/1989 | D | CITY OF AUSTIN | | RECREATION | 12/31/1928 | | 10.7000 | 14 | NOT IN WM AREA | FAYETTE \| TRAVIS |
| 5471 | 06/28/1989 | D | CITY OF AUSTIN | 24000.00 | HYDROELECTRIC \| INDUSTRIAL \| INDUSTRIAL - POWER GENERATION \| | 06/27/1914 | 24000.0000 | | 14 | NOT IN WM AREA | FAYETTE \| TRAVIS |
| 5471 | 06/28/1989 | D | CITY OF AUSTIN | | INDUSTRIAL \| INDUSTRIAL - POWER GENERATION \| RECREATION \| WA | 06/27/1914 | | | 14 | NOT IN WM AREA | FAYETTE \| TRAVIS |
| 5471 | 06/28/1989 | D | CITY OF AUSTIN | 271403.00 | MUNICIPAL/DOMESTIC | 06/30/1913 | | 24520.0000 | 14 | NOT IN WM AREA | FAYETTE \| TRAVIS |
| 5471 | 06/28/1989 | D | CITY OF AUSTIN | 1150.00 | AGRICULTURE - IRRIGATION | 06/30/1913 | | | 14 | NOT IN WM AREA | FAYETTE \| TRAVIS |
| 5471 | 06/28/1989 | D | CITY OF AUSTIN | | HYDROELECTRIC \| WATER QUALITY | 06/30/1913 | | | 14 | NOT IN WM AREA | FAYETTE \| TRAVIS |
| 1405 | 08/15/1980 | A | CUATRO ESTRELLAS LTD | 5.64 | AGRICULTURE - IRRIGATION | 12/31/1959 | | | 14 | NOT IN WM AREA | GILLESPIE |
| 1405 | 08/15/1980 | A | VEHLE, MARY C | 15.41 | AGRICULTURE - IRRIGATION | 12/31/1959 | | | 14 | NOT IN WM AREA | GILLESPIE |
| 1405 | 08/15/1980 | A | SECHRIST, RICHARD L | 12.38 | AGRICULTURE - IRRIGATION | 12/31/1959 | | 15.0000 | 14 | NOT IN WM AREA | GILLESPIE |
| 1405 | 08/15/1980 | A | REDDING RANCH LTD | 9.07 | AGRICULTURE - IRRIGATION | 12/31/1959 | | | 14 | NOT IN WM AREA | GILLESPIE |
| 1405 | 08/15/1980 | A | CUATRO ESTRELLAS LTD | 1.86 | AGRICULTURE - IRRIGATION | 12/31/1964 | | | 14 | NOT IN WM AREA | GILLESPIE |

| WR NO | WR ISSUE DATE | AMENDMENT LETTER | OWNER NAME | DIVERSION AMOUNT (AFY) | USE | PRIORITY DATE | CONSUMPTIVE AMOUNT (AFY) | STORAGE AMOUNT (AF) | BASIN | WATER MASTER AREA | COUNTY |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1405 | 08/15/1980 | A | VEHLE, MARY C | 5.07 | AGRICULTURE - IRRIGATION | 12/31/1964 | | | 14 | NOT IN WM AREA | GILLESPIE |
| 1405 | 08/15/1980 | A | SECHRIST, RICHARD L | 4.08 | AGRICULTURE - IRRIGATION | 12/31/1964 | | 15.0000 | 14 | NOT IN WM AREA | GILLESPIE |
| 1405 | 08/15/1980 | A | REDDING RANCH LTD | 2.99 | AGRICULTURE - IRRIGATION | 12/31/1964 | | | 14 | NOT IN WM AREA | GILLESPIE |
| 1405 | 08/15/1980 | A | CUATRO ESTRELLAS LTD | 2.07 | AGRICULTURE - IRRIGATION | 12/31/1965 | | | 14 | NOT IN WM AREA | GILLESPIE |
| 1405 | 08/15/1980 | A | VEHLE, MARY C | 5.65 | AGRICULTURE - IRRIGATION | 12/31/1965 | | | 14 | NOT IN WM AREA | GILLESPIE |
| 1405 | 08/15/1980 | A | SECHRIST, RICHARD L | 4.55 | AGRICULTURE - IRRIGATION | 12/31/1965 | | 15.0000 | 14 | NOT IN WM AREA | GILLESPIE |
| 1405 | 08/15/1980 | A | REDDING RANCH LTD | 3.33 | AGRICULTURE - IRRIGATION | 12/31/1965 | | | 14 | NOT IN WM AREA | GILLESPIE |
| 1406 | 08/15/1980 | | REDDING RANCH LTD | 8.00 | AGRICULTURE - IRRIGATION | 09/30/1957 | | | 14 | NOT IN WM AREA | GILLESPIE |
| 1407 | 08/15/1980 | | CRENWELGE, GENE \| CRENWELGE, PENNY LEIGH GRONA | 17.38 | AGRICULTURE - IRRIGATION | 12/31/1940 | | | 14 | NOT IN WM AREA | GILLESPIE |
| 1407 | 08/15/1980 | | FALCON SEABOARD DIVERSIFIED INC | 24.55 | AGRICULTURE - IRRIGATION | 12/31/1940 | | 75.0000 | 14 | NOT IN WM AREA | GILLESPIE |
| 1407 | 08/15/1980 | | FIELDLER, SANDRA GRONA \| GRONA, CLETIS \| REID, KYNA GRONA | 11.75 | AGRICULTURE - IRRIGATION | 12/31/1940 | | | 14 | NOT IN WM AREA | GILLESPIE |
| 1407 | 08/15/1980 | | ROBINSON, JOHN \| ROBINSON, LYNEE E C | 6.32 | AGRICULTURE - IRRIGATION | 12/31/1940 | | | 14 | NOT IN WM AREA | GILLESPIE |
| 1408 | 08/15/1980 | | VEHLE, MARY C | 8.25 | AGRICULTURE - IRRIGATION | 12/31/1955 | | 27.0000 | 14 | NOT IN WM AREA | GILLESPIE |
| 1409 | 08/15/1980 | | BIERSCHWALE, KEYSER | 12.50 | AGRICULTURE - IRRIGATION | 12/31/1958 | | 8.0000 | 14 | NOT IN WM AREA | GILLESPIE |
| 1410 | 08/15/1980 | | HARRIS, SCOTT \| HARRIS, TAMMY | 25.34 | AGRICULTURE - IRRIGATION | 12/31/1970 | | | 14 | NOT IN WM AREA | GILLESPIE |
| 1411 | 08/15/1980 | | MEEK, BETTY \| MEEK, PAUL D | 50.00 | AGRICULTURE - IRRIGATION | 12/31/1951 | | | 14 | NOT IN WM AREA | GILLESPIE |
| 1412 | 08/15/1980 | | BONN, TERRY | 118.00 | AGRICULTURE - IRRIGATION | 03/31/1955 | | | 14 | NOT IN WM AREA | GILLESPIE |
| 1413 | 08/15/1980 | | HENKE, EDWIN \| HENKE, WERNER | 20.60 | AGRICULTURE - IRRIGATION | 09/30/1954 | | 2.0000 | 14 | NOT IN WM AREA | GILLESPIE |
| 1414 | 08/15/1980 | | KOTT, ERNEST W | 12.00 | AGRICULTURE - IRRIGATION | 12/31/1955 | | | 14 | NOT IN WM AREA | GILLESPIE |
| 1415 | 08/15/1980 | | JUENKE, HILMER \| JUENKE, STEVE | 12.50 | AGRICULTURE - IRRIGATION | 07/01/1974 | | 9.0000 | 14 | NOT IN WM AREA | GILLESPIE |
| 1416 | 08/15/1980 | | BONN, CORRINE \| BONN, MELVIN | 21.75 | AGRICULTURE - IRRIGATION | 04/30/1955 | | | 14 | NOT IN WM AREA | GILLESPIE |
| 1417 | 08/15/1980 | | HENKE, ROY RICHARDS | 10.90 | AGRICULTURE - IRRIGATION | 05/31/1938 | | | 14 | NOT IN WM AREA | GILLESPIE |
| 1417 | 08/15/1980 | | BRYLA, SUSAN GAIL \| HENKE, ALLEN ROY | 93.60 | AGRICULTURE - IRRIGATION | 05/31/1938 | | | 14 | NOT IN WM AREA | GILLESPIE |
| 1417 | 08/15/1980 | | COP, E J | 2.90 | AGRICULTURE - IRRIGATION | 05/31/1938 | | | 14 | NOT IN WM AREA | GILLESPIE |
| 1417 | 08/15/1980 | | CHEYENNE INTERESTS INC \| WILLIAM E COOPER INC | 116.30 | AGRICULTURE - IRRIGATION | 05/31/1938 | | | 14 | NOT IN WM AREA | GILLESPIE |
| 1417 | 08/15/1980 | | HENKE, ALLEN ROY | 16.30 | AGRICULTURE - IRRIGATION | 05/31/1938 | | | 14 | NOT IN WM AREA | GILLESPIE |
| 1417 | 08/15/1980 | | BRYLA, SUSAN GAIL \| CHEYENNE INTERESTS INC \| HENKE, ALLEN ROY \| WILLIAM E COOP | | AGRICULTURE - IRRIGATION | 05/31/1938 | | 145.0000 | 14 | NOT IN WM AREA | GILLESPIE |
| 1418 | 08/15/1980 | | KOTT, NATHAN | 44.00 | AGRICULTURE - IRRIGATION | 12/31/1955 | | | 14 | NOT IN WM AREA | GILLESPIE |
| 1419 | 08/15/1980 | | HEIMANN, WALTON JAMES | 3.00 | AGRICULTURE - IRRIGATION | 04/30/1960 | | | 14 | NOT IN WM AREA | GILLESPIE |
| 1420 | 08/15/1980 | | WISSEMANN, LILLIAN M \| WISSEMANN, STANLEY | 9.86 | AGRICULTURE - IRRIGATION | 01/10/1967 | | | 14 | NOT IN WM AREA | GILLESPIE |
| 1420 | 08/15/1980 | | YUCA LILY LIMITED | 10.14 | AGRICULTURE - IRRIGATION | 01/10/1967 | | | 14 | NOT IN WM AREA | GILLESPIE |
| 1421 | 08/15/1980 | | PARRISH, BARBARA H \| PARRISH, DONALD M | 66.71 | AGRICULTURE - IRRIGATION | 12/31/1935 | | 5.0000 | 14 | NOT IN WM AREA | GILLESPIE |
| 1421 | 08/15/1980 | | MCLAUGHLIN, BRIAN THOMAS | 31.29 | AGRICULTURE - IRRIGATION | 12/31/1935 | | | 14 | NOT IN WM AREA | GILLESPIE |
| 1422 | 08/15/1980 | A | WEIRICH BROS INC | 50.20 | MINING | 12/31/1959 | | | 14 | NOT IN WM AREA | GILLESPIE |
| 1423 | 08/15/1980 | | HAGEL, BARBARA BECKMANN \| HAGEL, BRAIDEN BEN \| HAGEL, HOLLI KATE | 80.00 | AGRICULTURE - IRRIGATION | 04/15/1967 | | 8.0000 | 14 | NOT IN WM AREA | GILLESPIE |
| 1424 | 08/15/1980 | | RODRIGUEZ, A JABLER \| RODRIGUEZ, DEBRA J | 33.00 | AGRICULTURE - IRRIGATION | 06/30/1964 | | | 14 | NOT IN WM AREA | GILLESPIE |
| 1425 | 08/15/1980 | | GILBERT, ANNETTE \| GILBERT, RAY E | 2.00 | AGRICULTURE - IRRIGATION | 12/31/1963 | | | 14 | NOT IN WM AREA | GILLESPIE |
| 1426 | 08/15/1980 | | BURGESS, F W | 17.00 | AGRICULTURE - IRRIGATION | 04/30/1963 | | | 14 | NOT IN WM AREA | GILLESPIE |
| 1427 | 08/15/1980 | A | CITY OF FREDERICKSBURG | | RECREATION | 04/01/1968 | | 100.0000 | 14 | NOT IN WM AREA | GILLESPIE |
| 1428 | 08/15/1980 | | RIOS, GUSTAVO \| RIOS, JACQUELYN | 1.50 | AGRICULTURE - IRRIGATION | 12/31/1952 | | | 14 | NOT IN WM AREA | GILLESPIE |
| 1428 | 08/15/1980 | | BROWN, WILLIAM GOULD \| JEANETTE BROWN | 9.68 | AGRICULTURE - IRRIGATION | 12/31/1952 | | | 14 | NOT IN WM AREA | GILLESPIE |
| 1428 | 08/15/1980 | | HOLLIMON, DABS BROWN \| HOLLIMON, JOHN E | 9.82 | AGRICULTURE - IRRIGATION | 12/31/1952 | | | 14 | NOT IN WM AREA | GILLESPIE |
| 1429 | 08/15/1980 | | ERNST, KERMIT | 5.75 | AGRICULTURE - IRRIGATION | 12/31/1951 | | | 14 | NOT IN WM AREA | GILLESPIE |
| 1429 | 08/15/1980 | | GILLESPIE COUNTY | 0.25 | AGRICULTURE - IRRIGATION | 12/31/1951 | | | 14 | NOT IN WM AREA | GILLESPIE |
| 1430 | 08/15/1980 | | BOOS, RICKY DEAN | 25.00 | AGRICULTURE - IRRIGATION | 12/31/1950 | | | 14 | NOT IN WM AREA | GILLESPIE |
| 1431 | 08/15/1980 | | WISSEMANN, LILLIAN M | 11.00 | AGRICULTURE - IRRIGATION | 04/15/1967 | | | 14 | NOT IN WM AREA | GILLESPIE |
| 1432 | 08/15/1980 | | SOLBRIG, BETTY \| SOLBRIG, DAYTON | 25.00 | AGRICULTURE - IRRIGATION | 12/31/1947 | | 16.0000 | 14 | NOT IN WM AREA | GILLESPIE |
| 1432 | 08/15/1980 | | PIPKIN, DRU C \| PIPKIN, MARVIN G | 11.50 | AGRICULTURE - IRRIGATION | 12/31/1947 | | | 14 | NOT IN WM AREA | GILLESPIE |
| 1433 | 08/15/1980 | | STEHLING, THEODORE J | 30.00 | AGRICULTURE - IRRIGATION | 01/11/1949 | | 7.8100 | 14 | NOT IN WM AREA | GILLESPIE |
| 1434 | 08/15/1980 | | PERRY, J HARDIN | 6.00 | AGRICULTURE - IRRIGATION | 12/31/1963 | | | 14 | NOT IN WM AREA | GILLESPIE |
| 1435 | 08/15/1980 | | ESTATE OF CLEMENS IMMEL | 4.00 | AGRICULTURE - IRRIGATION | 12/31/1957 | | | 14 | NOT IN WM AREA | GILLESPIE |
| 1435 | 08/15/1980 | | ESTATE OF CLEMENS IMMEL | 8.00 | INDUSTRIAL | 12/31/1957 | | | 14 | NOT IN WM AREA | GILLESPIE |
| 1436 | 08/15/1980 | | MILLARD, GAY NELL \| VESTAL, DAN ROBERT \| VESTAL, HAL EDWARD | 12.00 | AGRICULTURE - IRRIGATION | 05/31/1965 | | | 14 | NOT IN WM AREA | GILLESPIE |
| 1437 | 08/15/1980 | | BROWN, DOR W JR \| BROWN, VIRGINIA \| KLIER, KATHY L | 30.00 | AGRICULTURE - IRRIGATION | 04/30/1964 | | | 14 | NOT IN WM AREA | GILLESPIE |
| 1438 | 08/15/1980 | | FRANTZEN, HENRY J | 3.98 | AGRICULTURE - IRRIGATION | 12/31/1952 | | | 14 | NOT IN WM AREA | GILLESPIE |
| 1438 | 08/15/1980 | | FRANTZEN, LESTER C | 33.02 | AGRICULTURE - IRRIGATION | 12/31/1952 | | | 14 | NOT IN WM AREA | GILLESPIE |
| 1438 | 08/15/1980 | | DWARHUS, ALBERT G JR | 3.00 | AGRICULTURE - IRRIGATION | 12/31/1952 | | | 14 | NOT IN WM AREA | GILLESPIE |
| 1439 | 08/15/1980 | | WEINHEIMER, HILMER | 221.00 | AGRICULTURE - IRRIGATION | 05/31/1948 | | | 14 | NOT IN WM AREA | GILLESPIE |
| 1440 | 08/15/1980 | A | BOOT RANCH HOLDINGS LLC | 121.00 | AGRICULTURE - IRRIGATION \| RECREATION | 12/31/1943 | | 195.0000 | 14 | NOT IN WM AREA | GILLESPIE |
| 1441 | 08/15/1980 | A | BOOT RANCH HOLDINGS LLC | | AGRICULTURE - IRRIGATION \| RECREATION | 11/08/2005 | | 87.0000 | 14 | NOT IN WM AREA | GILLESPIE |
| 1441 | 08/15/1980 | A | BOOT RANCH HOLDINGS LLC | | AGRICULTURE - IRRIGATION \| RECREATION | 12/31/1943 | | 6.0000 | 14 | NOT IN WM AREA | GILLESPIE |
| 1441 | 08/15/1980 | A | BOOT RANCH HOLDINGS LLC | | AGRICULTURE - IRRIGATION \| RECREATION | 12/31/1943 | | 56.0000 | 14 | NOT IN WM AREA | GILLESPIE |
| 1441 | 08/15/1980 | A | BOOT RANCH HOLDINGS LLC | 34.00 | AGRICULTURE - IRRIGATION | 12/31/1943 | | | 14 | NOT IN WM AREA | GILLESPIE |
| 1442 | 08/15/1980 | | MANER, LISTON | 12.00 | AGRICULTURE - IRRIGATION | 12/31/1940 | | 13.0000 | 14 | NOT IN WM AREA | GILLESPIE |
| 1443 | 08/15/1980 | | PATTESON, EUGENE | 13.18 | AGRICULTURE - IRRIGATION | 12/31/1966 | | | 14 | NOT IN WM AREA | GILLESPIE |
| 1443 | 08/15/1980 | | PATTESON, JANICE C | 0.25 | AGRICULTURE - IRRIGATION | 12/31/1966 | | | 14 | NOT IN WM AREA | GILLESPIE |
| 1443 | 08/15/1980 | | PATTESON, EUGENE \| PATTESON, TROY L | 1.57 | AGRICULTURE - IRRIGATION | 12/31/1966 | | | 14 | NOT IN WM AREA | GILLESPIE |
| 1444 | 08/15/1980 | | K & S SUPPLY CORPORATION | 100.00 | AGRICULTURE - IRRIGATION | 12/31/1915 | | 60.0000 | 14 | NOT IN WM AREA | GILLESPIE |
| 1445 | 08/15/1980 | A | MOHR, WAYNE E | 30.00 | MINING | 12/31/1951 | | 5.0000 | 14 | NOT IN WM AREA | GILLESPIE |
| 1446 | 08/15/1980 | | MEDICINE BOW RIVER RANCH LIMITED PARTNERSHIP | 45.00 | AGRICULTURE - IRRIGATION | 12/31/1964 | | | 14 | NOT IN WM AREA | GILLESPIE |
| 1447 | 08/15/1980 | | PAINTER, MICHAEL G | 21.00 | AGRICULTURE - IRRIGATION | 08/31/1964 | | | 14 | NOT IN WM AREA | GILLESPIE |
| 1447 | 08/15/1980 | | SMITH, CONNIE \| SMITH, ROBERT | 10.00 | AGRICULTURE - IRRIGATION | 08/31/1964 | | | 14 | NOT IN WM AREA | GILLESPIE |
| 1449 | 08/15/1980 | | HOHENBERGER, DANIEL | 26.00 | AGRICULTURE - IRRIGATION | 12/31/1966 | | | 14 | NOT IN WM AREA | GILLESPIE |
| 1450 | 08/15/1980 | | UNDERWOOD, JASON \| UNDERWOOD, MARTHA | 35.00 | AGRICULTURE - IRRIGATION | 12/31/1943 | | 35.0000 | 14 | NOT IN WM AREA | GILLESPIE |
| 1452 | 08/15/1980 | | PETSCH, SHEILA E | 18.50 | AGRICULTURE - IRRIGATION | 12/31/1952 | | 37.0000 | 14 | NOT IN WM AREA | GILLESPIE |
| 1452 | 08/15/1980 | | BELL, JEANINE M | 18.50 | AGRICULTURE - IRRIGATION | 12/31/1952 | | | 14 | NOT IN WM AREA | GILLESPIE |
| 1453 | 08/15/1980 | | WEHMEYER, WILLIE A JR | 41.00 | AGRICULTURE - IRRIGATION | 12/31/1964 | | | 14 | NOT IN WM AREA | GILLESPIE |
| 1454 | 08/15/1980 | | WEHMEYER, WILLIE A JR | 67.50 | AGRICULTURE - IRRIGATION | 12/31/1962 | | | 14 | NOT IN WM AREA | GILLESPIE |
| 1456 | 08/15/1980 | | MIKOSH, ROSS | 1.67 | AGRICULTURE - IRRIGATION | 12/31/1967 | | | 14 | NOT IN WM AREA | GILLESPIE |
| 1456 | 08/15/1980 | | BERHENDS, MELVIN RAY | 6.50 | AGRICULTURE - IRRIGATION | 12/31/1967 | | | 14 | NOT IN WM AREA | GILLESPIE |
| 1456 | 08/15/1980 | | MIKOSH, BERT ALAN | 2.33 | AGRICULTURE - IRRIGATION | 12/31/1967 | | | 14 | NOT IN WM AREA | GILLESPIE |
| 1457 | 08/15/1980 | | BERNARD STAUDT ESTATE | 14.00 | AGRICULTURE - IRRIGATION | 12/31/1965 | | | 14 | NOT IN WM AREA | GILLESPIE |
| 1458 | 08/15/1980 | | NEBGEN, HILMAR O | 1.70 | AGRICULTURE - IRRIGATION | 08/01/1966 | | | 14 | NOT IN WM AREA | GILLESPIE |

| WR NO | WR ISSUE DATE | AMENDMENT LETTER | OWNER NAME | DIVERSION AMOUNT (AFY) | USE | PRIORITY DATE | CONSUMPTIVE AMOUNT (AFY) | STORAGE AMOUNT (AF) | BASIN | WATER MASTER AREA | COUNTY |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1459 | 08/15/1980 | A | RUEBSAHM, RUBEN | 25.50 | AGRICULTURE - IRRIGATION | 12/31/1953 | | | 14 | NOT IN WM AREA | GILLESPIE |
| 1460 | 08/15/1980 | A | KIMBERLY S ZUBERBUELER TRUST | 9.85 | AGRICULTURE - IRRIGATION | 12/31/1948 | | | 14 | NOT IN WM AREA | GILLESPIE |
| 1460 | 08/15/1980 | A | KIMBERLEY S ZUBERBUELER | 0.04 | AGRICULTURE - IRRIGATION | 12/31/1948 | | | 14 | NOT IN WM AREA | GILLESPIE |
| 1460 | 08/15/1980 | A | ROBERT L ZUBERBUELER | 0.12 | AGRICULTURE - IRRIGATION | 12/31/1948 | | | 14 | NOT IN WM AREA | GILLESPIE |
| 1461 | 08/15/1980 | | THE LBJ COMPANY | 3.26 | AGRICULTURE - IRRIGATION | 12/31/1966 | | | 14 | NOT IN WM AREA | GILLESPIE |
| 1461 | 08/15/1980 | | FULTON, JOE KIRK | 499.83 | AGRICULTURE - IRRIGATION | 12/31/1966 | | | 14 | NOT IN WM AREA | GILLESPIE |
| 1461 | 08/15/1980 | | HOWARD, J MIKE \| HOWARD, MARTHA | 13.81 | AGRICULTURE - IRRIGATION | 12/31/1966 | | | 14 | NOT IN WM AREA | GILLESPIE |
| 1461 | 08/15/1980 | | HULETT, BYRON C \| HULETT, ELIZABETH C | 13.10 | AGRICULTURE - IRRIGATION | 12/31/1966 | | | 14 | NOT IN WM AREA | GILLESPIE |
| 1462 | 08/15/1980 | | TEXAS PARKS AND WILDLIFE DEPARTMENT | | RECREATION | 05/08/1972 | | 73.0000 | 14 | NOT IN WM AREA | GILLESPIE |
| 1463 | 08/15/1980 | | ERNEST HODGES ESTATE \| HODGES, WILLIAM BATTS | 39.00 | AGRICULTURE - IRRIGATION | 12/31/1950 | | 2.5000 | 14 | NOT IN WM AREA | GILLESPIE |
| 1464 | 08/15/1980 | | THE LBJ COMPANY | 86.00 | AGRICULTURE - IRRIGATION | 01/08/1952 | | 48.0000 | 14 | NOT IN WM AREA | GILLESPIE |
| 1465 | 08/15/1980 | | US DEPARTMENT OF THE INTERIOR NATIONAL PARK SERVICE | 114.00 | AGRICULTURE - IRRIGATION | 01/08/1952 | | | 14 | NOT IN WM AREA | GILLESPIE |
| 1466 | 08/15/1980 | A | THE LBJ COMPANY \| US DEPARTMENT OF THE INTERIOR NATIONAL PARK SI | 1243.96 | AGRICULTURE - IRRIGATION | 12/31/1952 | | | 14 | NOT IN WM AREA | GILLESPIE |
| 1466 | 08/15/1980 | A | FULTON, JOE KIRK | 16.04 | AGRICULTURE - IRRIGATION | 04/08/1952 | | | 14 | NOT IN WM AREA | GILLESPIE |
| 1467 | 08/15/1980 | | AUSTIN INVESTMENTS CO \| US DEPARTMENT OF THE INTERIOR NATIONAL | 220.00 | AGRICULTURE - IRRIGATION | 12/31/1953 | | 36.0000 | 14 | NOT IN WM AREA | GILLESPIE |
| 1469 | 08/15/1980 | | TEXAS PARKS AND WILDLIFE DEPARTMENT | 160.00 | AGRICULTURE - IRRIGATION | 03/31/1964 | | | 14 | NOT IN WM AREA | GILLESPIE |
| 1471 | 08/15/1980 | | ESTATE OF J O TANNER | 21.70 | AGRICULTURE - IRRIGATION | 12/31/1944 | | 9.0000 | 14 | NOT IN WM AREA | GILLESPIE |
| 1471 | 08/15/1980 | | TANNER, GEORGE RICHARD | 1.30 | AGRICULTURE - IRRIGATION | 12/31/1944 | | | 14 | NOT IN WM AREA | GILLESPIE |
| 1471 | 08/15/1980 | | LINDIG, KENNETH | 33.00 | AGRICULTURE - IRRIGATION | 12/31/1944 | | | 14 | NOT IN WM AREA | GILLESPIE |
| 1474 | 08/15/1980 | | EP3 RANCH LLC | 25.93 | AGRICULTURE - IRRIGATION | 12/31/1900 | | 45.0000 | 14 | NOT IN WM AREA | GILLESPIE |
| 1474 | 08/15/1980 | | LIFE ESTATE OF KERMIT R ECKHARDT | 0.07 | AGRICULTURE - IRRIGATION | 12/31/1900 | | 45.0000 | 14 | NOT IN WM AREA | GILLESPIE |
| 1475 | 08/15/1980 | A | OTTMERS, CHARLES | 3.00 | AGRICULTURE - IRRIGATION | 12/31/1942 | | 1.5000 | 14 | NOT IN WM AREA | GILLESPIE |
| 1476 | 08/15/1980 | | OTTMERS, JOHNNIE W | 3.00 | AGRICULTURE - IRRIGATION | 12/31/1966 | | 4.0000 | 14 | NOT IN WM AREA | GILLESPIE |
| 1632 | 08/15/1980 | | BAETHAGE, BRADLEY OWEN \| BAETHAGE, EDNA M | 5.73 | AGRICULTURE - IRRIGATION | 03/31/1954 | | | 14 | NOT IN WM AREA | GILLESPIE |
| 1632 | 08/15/1980 | | BAETHAGE, EDNA M \| BAETHAGE, MICHAEL VANCE | 7.75 | AGRICULTURE - IRRIGATION | 03/31/1954 | | | 14 | NOT IN WM AREA | GILLESPIE |
| 1632 | 08/15/1980 | | HOOPER, BYRON KEITH \| HOOPER, LENNAH JO | 9.52 | AGRICULTURE - IRRIGATION | 03/31/1954 | | | 14 | NOT IN WM AREA | GILLESPIE |
| 1988 | 07/17/1981 | | ESTATE OF JIMMIE L QUERNER SR | 128.00 | AGRICULTURE - IRRIGATION | 12/31/1960 | | | 18 | SOUTH TEXAS | GILLESPIE |
| 2619 | 08/31/1983 | | TEAGUE, BILL | 114.00 | AGRICULTURE - IRRIGATION | 09/30/1962 | | | 14 | NOT IN WM AREA | GILLESPIE |
| 2620 | 08/31/1983 | | ERSCH, LEVY | 1.00 | AGRICULTURE - IRRIGATION | 04/30/1966 | | | 14 | NOT IN WM AREA | GILLESPIE |
| 2621 | 08/31/1983 | | PETERSEN, DANIEL J | 15.00 | AGRICULTURE - IRRIGATION | 12/31/1935 | | 55.0000 | 14 | NOT IN WM AREA | GILLESPIE |
| 2622 | 08/31/1983 | | RABKE, LEROY | 0.50 | INDUSTRIAL | 09/30/1944 | | 0.7500 | 14 | NOT IN WM AREA | GILLESPIE |
| 3405 | 02/10/1977 | | PETERSEN, DANIEL J | 55.00 | AGRICULTURE - IRRIGATION | 11/08/1976 | | 55.0000 | 14 | NOT IN WM AREA | GILLESPIE |
| 3409 | 02/17/1977 | | HEXT, J D | 19.00 | AGRICULTURE - IRRIGATION | 11/22/1976 | | 19.0000 | 14 | NOT IN WM AREA | GILLESPIE |
| 5427 | 12/08/1992 | | CITY OF FREDERICKSBURG | | RECREATION | 07/15/1992 | | 0.0400 | 14 | NOT IN WM AREA | GILLESPIE |
| 1448 | 08/15/1980 | | KLINKSIEK, VICTOR | 22.00 | AGRICULTURE - IRRIGATION | 12/31/1923 | | | 14 | NOT IN WM AREA | GILLESPIE \| KENDALL |
| 5086 | 10/31/1986 | | CARRIGAN, STEPHEN P | 88.00 | AGRICULTURE - IRRIGATION | 08/15/1986 | | | 14 | NOT IN WM AREA | HAYS |
| 5273 | 04/23/1990 | | COYOTE CREW RANCH LTD | 60.00 | AGRICULTURE - IRRIGATION | 12/18/1989 | | | 14 | NOT IN WM AREA | HAYS |
| 5360 | 08/28/1991 | | RIVER OAKS RANCH DEVELOPMENT CORPORATION | | RECREATION | 05/15/1991 | | 130.0000 | 14 | NOT IN WM AREA | HAYS |
| 5387 | 08/26/1988 | | ARNOLD, JAMES H JR \| ARNOLD, JESSAMINE J \| ARNOLD, PATRICIA | 60.67 | AGRICULTURE - IRRIGATION | 01/13/1965 | | | 14 | NOT IN WM AREA | HAYS |
| 5387 | 08/26/1988 | | ARNOLD, JAMES H JR | 60.67 | AGRICULTURE - IRRIGATION | 01/13/1965 | | | 14 | NOT IN WM AREA | HAYS |
| 5387 | 08/26/1988 | | CUNNINGHAM, ISABELLA C M \| CUNNINGHAM, WILLIAM H | 60.66 | AGRICULTURE - IRRIGATION | 01/13/1965 | | | 14 | NOT IN WM AREA | HAYS |
| 5388 | 08/26/1988 | | MATHIS, TRAVIS ALLISON | 16.00 | AGRICULTURE - IRRIGATION | 07/31/1965 | | | 14 | NOT IN WM AREA | HAYS |
| 5389 | 08/26/1988 | | ALEXANDER, ALMA WIDEN \| ALEXANDER, CHRISTOPHER PERRY \| ALEXANDI | 4.86 | AGRICULTURE - IRRIGATION | 12/31/1939 | | | 14 | NOT IN WM AREA | HAYS |
| 5389 | 08/26/1988 | | HANCOCK HANKS INVESTMENTS LTD | 0.14 | AGRICULTURE - IRRIGATION | 12/31/1939 | | | 14 | NOT IN WM AREA | HAYS |
| 5390 | 08/26/1988 | | DICKSON, BETTY SLAUGHTER \| SLAUGHTER FAMILY RANCH LIMITED PARTN | 6.00 | AGRICULTURE - IRRIGATION | 12/31/1954 | | 6.0000 | 14 | NOT IN WM AREA | HAYS |
| 5391 | 08/26/1988 | | ELLIOTT, KATHRYN LAURA NAGEL | 12.00 | AGRICULTURE - IRRIGATION | 05/31/1955 | | 5.0000 | 14 | NOT IN WM AREA | HAYS |
| 5696 | 06/01/2001 | | LA VENTANA RANCH OWNERS ASSOCIATION INC | | RECREATION | 08/15/2000 | | 0.0700 | 14 | NOT IN WM AREA | HAYS |
| 5696 | 06/01/2001 | | LA VENTANA RANCH OWNERS ASSOCIATION INC | | RECREATION | 08/15/2000 | | 0.2500 | 14 | NOT IN WM AREA | HAYS |
| 5696 | 06/01/2001 | | LA VENTANA RANCH OWNERS ASSOCIATION INC | | RECREATION | 08/15/2000 | | 1.0000 | 14 | NOT IN WM AREA | HAYS |
| 5768 | 07/28/2003 | | NATERRA LAND OF TEXAS LLC | | RECREATION | 03/25/2002 | | 0.0734 | 14 | NOT IN WM AREA | HAYS |
| 1571 | 08/15/1980 | B | KINGSLAND WATER SUPPLY CORPORATION | 40.00 | MUNICIPAL/DOMESTIC | 05/31/1910 | | | 14 | NOT IN WM AREA | LLANO |
| 1639 | 08/15/1980 | B | CHANAS RANCH LLC | 25.00 | AGRICULTURE - IRRIGATION | 03/29/1976 | | 60.0000 | 14 | NOT IN WM AREA | LLANO |
| 1639 | 08/15/1980 | B | CHANAS RANCH LLC | 84.00 | AGRICULTURE - IRRIGATION | 07/31/1963 | | | 14 | NOT IN WM AREA | LLANO |
| 1642 | 08/15/1980 | | LEIFESTE, RANDOLPH C | 5.00 | AGRICULTURE - IRRIGATION \| INDUSTRIAL | 12/31/1956 | | | 14 | NOT IN WM AREA | LLANO |
| 1643 | 08/15/1980 | | PERKINS, CHARLES T JR \| PERKINS, RHONDA | 1.00 | INDUSTRIAL | 12/31/1959 | | | 14 | NOT IN WM AREA | LLANO |
| 1644 | 08/15/1980 | | GRENWELGE, NORMAN H | 30.00 | AGRICULTURE - IRRIGATION \| INDUSTRIAL | 12/31/1947 | | | 14 | NOT IN WM AREA | LLANO |
| 1645 | 08/15/1980 | | COWAN, JANELL B | | RECREATION | 12/31/1960 | | 16.0000 | 14 | NOT IN WM AREA | LLANO |
| 1645 | 08/15/1980 | | BUSH, THOMAS P | | RECREATION | 12/31/1960 | | 16.0000 | 14 | NOT IN WM AREA | LLANO |
| 1645 | 08/15/1980 | | BUSH, THOMAS P | | RECREATION | 12/31/1960 | | 36.0000 | 14 | NOT IN WM AREA | LLANO |
| 1646 | 08/15/1980 | | MOSS, LUKE | | RECREATION | 12/31/1954 | | 40.0000 | 14 | NOT IN WM AREA | LLANO |
| 1647 | 08/15/1980 | | TALKINGTON, RACHEL E JONES | 15.00 | AGRICULTURE - IRRIGATION | 12/31/1900 | | | 14 | NOT IN WM AREA | LLANO |
| 1648 | 08/15/1980 | | KOTHMANN, FLOYD | 2.00 | AGRICULTURE - IRRIGATION | 12/31/1930 | | | 14 | NOT IN WM AREA | LLANO |
| 1649 | 08/15/1980 | | JONES, ODIS K | 6.00 | AGRICULTURE - IRRIGATION | 12/31/1964 | | | 14 | NOT IN WM AREA | LLANO |
| 1650 | 08/15/1980 | A | CITY OF LLANO | 400.00 | MUNICIPAL/DOMESTIC | 12/10/1956 | | 317.0000 | 14 | NOT IN WM AREA | LLANO |
| 1650 | 08/15/1980 | A | CITY OF LLANO | 100.00 | AGRICULTURE - IRRIGATION | 06/01/1976 | | | 14 | NOT IN WM AREA | LLANO |
| 1651 | 08/15/1980 | | GRIFFIN, CELIA J \| GRIFFIN, STEVE | 24.00 | AGRICULTURE - IRRIGATION | 09/30/1964 | | | 14 | NOT IN WM AREA | LLANO |
| 1652 | 08/15/1980 | | COLLIER MATERIALS INC | 11.00 | AGRICULTURE - IRRIGATION | 03/31/1966 | | | 14 | NOT IN WM AREA | LLANO |
| 1653 | 08/15/1980 | | MOSS, LUKE | | RECREATION | 12/31/1945 | | 276.0000 | 14 | NOT IN WM AREA | LLANO |
| 1654 | 08/15/1980 | | MOSS, MAUD | | RECREATION | 12/31/1939 | | 251.0000 | 14 | NOT IN WM AREA | LLANO |
| 1655 | 08/15/1980 | A | CITY OF LLANO | | MUNICIPAL/DOMESTIC | 12/10/1956 | | 183.0000 | 14 | NOT IN WM AREA | LLANO |
| 1655 | 08/15/1980 | A | CITY OF LLANO | 1200.00 | MUNICIPAL/DOMESTIC | 06/13/1914 | | 200.0000 | 14 | NOT IN WM AREA | LLANO |
| 1655 | 08/15/1980 | A | CITY OF LLANO | 180.00 | AGRICULTURE - IRRIGATION | 06/13/1914 | | | 14 | NOT IN WM AREA | LLANO |
| 1656 | 08/15/1980 | | CLYMER, GUY L | | RECREATION | 11/29/1946 | | 3.0000 | 14 | NOT IN WM AREA | LLANO |
| 1657 | 08/15/1980 | | TURBIVILLE, LEONARD | 1.00 | AGRICULTURE - IRRIGATION | 12/31/1964 | | | 14 | NOT IN WM AREA | LLANO |
| 1658 | 08/15/1980 | | LONG, D MALCOLM | 60.00 | AGRICULTURE - IRRIGATION | 12/31/1904 | | | 14 | NOT IN WM AREA | LLANO |
| 1659 | 08/15/1980 | | FRANK M SILER TESTAMENTARY TRUST | 24.00 | AGRICULTURE - IRRIGATION | 09/18/1918 | | | 14 | NOT IN WM AREA | LLANO |
| 2610 | 08/31/1983 | | T-BAR-O RANCH PARTNERSHIP LTD | 99.00 | AGRICULTURE - IRRIGATION | 08/31/1957 | | | 14 | NOT IN WM AREA | LLANO |
| 2611 | 08/31/1983 | | BORDERS, PANSY \| ESTATE OF ELLEN WILLIAMS \| LYNN, BERNIS \| WILLIAN | 48.46 | AGRICULTURE - IRRIGATION | 12/31/1910 | | | 14 | NOT IN WM AREA | LLANO |
| 2611 | 08/31/1983 | | MCGINTY PROPERTIES LTD | 3.54 | AGRICULTURE - IRRIGATION | 12/31/1910 | | | 14 | NOT IN WM AREA | LLANO |
| 2612 | 08/31/1983 | | LACKEY, JIMMEY GLYNN \| LACKEY, SHEILAH JAN | 12.00 | AGRICULTURE - IRRIGATION | 05/31/1955 | | | 14 | NOT IN WM AREA | LLANO |
| 2613 | 08/31/1983 | | SOUTHERN PACIFIC LINES | 1.00 | OTHER | 01/19/1915 | | | 14 | NOT IN WM AREA | LLANO |
| 2616 | 08/31/1983 | | HALL, ANN ETTA | | RECREATION | 12/31/1935 | | 24.0000 | 14 | NOT IN WM AREA | LLANO |
| 2617 | 08/31/1983 | | CARROLL, LILY E \| CARROLL, TOM R \| RATLIFF, J A \| RATLIFF, J M \| RATLIFF, LYNN | | RECREATION | 12/31/1950 | | 20.0000 | 14 | NOT IN WM AREA | LLANO |

| WR NO | WR ISSUE DATE | AMENDMENT LETTER | OWNER NAME | DIVERSION AMOUNT (AFY) | USE | PRIORITY DATE | CONSUMPTIVE AMOUNT (AFY) | STORAGE AMOUNT (AF) | BASIN | WATER MASTER AREA | COUNTY |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2618 | 08/31/1983 | | DALRYMPLE, MILDRED INKS \| INKS, JAMES M | | RECREATION | 12/31/1939 | | 90.0000 | 14 | NOT IN WM AREA | LLANO |
| 2623 | 08/31/1983 | | OEHLER, SAMUEL | 3.05 | AGRICULTURE - IRRIGATION | 12/31/1964 | | 5.0000 | 14 | NOT IN WM AREA | LLANO |
| 2623 | 08/31/1983 | | JONATHAN, SCHOOLER C \| SCHOOLER, MARIKA | 3.96 | AGRICULTURE - IRRIGATION | 12/31/1964 | | | 14 | NOT IN WM AREA | LLANO |
| 2624 | 08/31/1983 | | HOHMANN, HAROLD DONOVAN \| HOHMANN, WINONA | 6.56 | AGRICULTURE - IRRIGATION | 03/31/1966 | | 11.0000 | 14 | NOT IN WM AREA | LLANO |
| 2625 | 08/31/1983 | | HOHMANN, HAROLD DONOVAN \| HOHMANN, OTTO DOYLE | 6.05 | AGRICULTURE - IRRIGATION | 03/31/1966 | | | 14 | NOT IN WM AREA | LLANO |
| 2626 | 08/31/1983 | | HOHMANN, OTTO DOYLE | 10.39 | AGRICULTURE - IRRIGATION | 03/31/1966 | | | 14 | NOT IN WM AREA | LLANO |
| 2627 | 08/31/1983 | | MOSS, E J | 1.00 | AGRICULTURE - IRRIGATION | 12/31/1966 | | | 14 | NOT IN WM AREA | LLANO |
| 2628 | 08/31/1983 | | ESTATE OF ETHEL MAE MOSS | 4.00 | INDUSTRIAL | 12/31/1955 | | | 14 | NOT IN WM AREA | LLANO |
| 3883 | 06/18/1982 | | LAKE LYNDON B JOHNSON IMPROVEMENT CORPORATION | 750.00 | AGRICULTURE - IRRIGATION \| RECREATION | 02/17/1982 | | 26.4000 | 14 | NOT IN WM AREA | LLANO |
| 4121 | 06/07/1984 | | HORSESHOE BAY RESORT DESTINATIONS LLC | | RECREATION | 04/25/1983 | | 21.3000 | 14 | NOT IN WM AREA | LLANO |
| 4152 | 11/01/1984 | | HORSESHOE BAY RESORT DESTINATIONS LLC | | RECREATION | 07/10/1984 | | 3.6000 | 14 | NOT IN WM AREA | LLANO |
| 5033 | 08/04/1986 | | ESTATE OF C H SLATOR \| GILLAN, DEBORAH SLATOR | | DOMESTIC AND LIVESTOCK | 12/12/1985 | | | 14 | NOT IN WM AREA | LLANO |
| 3426 | 02/07/1985 | | RUNNELLS, JOHN S | 15.02 | AGRICULTURE - IRRIGATION | 03/01/1971 | | | 13 | NOT IN WM AREA | MATAGORDA |
| 3426 | 02/07/1985 | | BLAYLOCK, PATRICIA \| BLAYLOCK, TIMOTHY R | 26.16 | AGRICULTURE - IRRIGATION | 03/01/1971 | | | 13 | NOT IN WM AREA | MATAGORDA |
| 3426 | 02/07/1985 | | ESTATE OF C L SMITH | 1.82 | AGRICULTURE - IRRIGATION | 03/01/1971 | | | 13 | NOT IN WM AREA | MATAGORDA |
| 3427 | 02/07/1985 | | TOWLER, BEN H JR | 6.10 | AGRICULTURE - IRRIGATION | 11/07/1977 | | | 13 | NOT IN WM AREA | MATAGORDA |
| 3427 | 02/07/1985 | | MICHAEL D STONE \| STONE, MICHAEL D | 23.90 | AGRICULTURE - IRRIGATION | 11/07/1977 | | | 13 | NOT IN WM AREA | MATAGORDA |
| 3428 | 02/07/1985 | | ESTATE OF P J REEVES JR | 20.00 | AGRICULTURE - IRRIGATION | 11/06/1978 | | | 13 | NOT IN WM AREA | MATAGORDA |
| 3429 | 02/07/1985 | | ALFORD, JANICE K | 40.00 | AGRICULTURE - IRRIGATION | 06/27/1977 | | | 13 | NOT IN WM AREA | MATAGORDA |
| 3430 | 02/07/1985 | | HUDGINS DIVISION OF H D HUDGINS | 800.00 | AGRICULTURE - IRRIGATION | 11/01/1954 | | 190.0000 | 13 | NOT IN WM AREA | MATAGORDA |
| 3431 | 02/07/1985 | | PRUETT, MICHAEL J | 44.47 | AGRICULTURE - IRRIGATION | 08/25/1964 | | | 13 | NOT IN WM AREA | MATAGORDA |
| 3431 | 02/07/1985 | | HUDGINS, SAMANTHA ANNETTE | 40.53 | AGRICULTURE - IRRIGATION | 08/25/1964 | | | 13 | NOT IN WM AREA | MATAGORDA |
| 3432 | 02/07/1985 | | JONES, JOHNNY WAYNE \| JONES, VICKI LYNN | 2.00 | AGRICULTURE - IRRIGATION | 12/12/1977 | | | 13 | NOT IN WM AREA | MATAGORDA |
| 3432 | 02/07/1985 | | JONES, JOHNNY WAYNE \| JONES, VICKI LYNN | 78.00 | AGRICULTURE - IRRIGATION | 04/18/1983 | | | 13 | NOT IN WM AREA | MATAGORDA |
| 3434 | 02/07/1985 | | KOPNICKY, DONALD R \| KOPNICKY, JANICE MARIE | 30.00 | AGRICULTURE - IRRIGATION | 10/29/1979 | | | 13 | NOT IN WM AREA | MATAGORDA |
| 3435 | 02/07/1985 | | BLAIR, PAULINE H \| COPPOCK, MICHAEL ANDREW \| HUEBNER, JOHN A JR \| | 550.00 | AGRICULTURE - IRRIGATION | 04/02/1969 | | 2.0000 | 13 | NOT IN WM AREA | MATAGORDA |
| 3435 | 02/07/1985 | | BLAIR, PAULINE H \| COPPOCK, MICHAEL ANDREW \| HUEBNER, JOHN A JR \| | 250.00 | AGRICULTURE - IRRIGATION | 04/26/1982 | | | 13 | NOT IN WM AREA | MATAGORDA |
| 3436 | 02/07/1985 | A | STEPHEN T SLIVA INC | 676.65 | AGRICULTURE - IRRIGATION | 12/16/1974 | | 5.7000 | 13 | NOT IN WM AREA | MATAGORDA |
| 3436 | 02/07/1985 | A | MATTHES, JUANITA LETULLE \| MATTHES, RUSSELL A | 203.35 | AGRICULTURE - IRRIGATION | 12/16/1974 | | | 13 | NOT IN WM AREA | MATAGORDA |
| 3437 | 02/07/1985 | | SAVAGE, FRANCIS I | 410.96 | AGRICULTURE - IRRIGATION | 09/11/1967 | | | 13 | NOT IN WM AREA | MATAGORDA |
| 3437 | 02/07/1985 | | STANLEY, O B | 2339.04 | AGRICULTURE - IRRIGATION | 09/11/1967 | | | 13 | NOT IN WM AREA | MATAGORDA |
| 3438 | 02/07/1985 | A | E CROSS CATTLE CO INC | 600.00 | AGRICULTURE - IRRIGATION | 06/21/1990 | | | 13 | NOT IN WM AREA | MATAGORDA |
| 3438 | 02/07/1985 | A | E CROSS CATTLE CO INC | 668.00 | AGRICULTURE - IRRIGATION | 06/25/1914 | | | 13 | NOT IN WM AREA | MATAGORDA |
| 3439 | 02/07/1985 | | E CROSS CATTLE CO INC | 592.00 | AGRICULTURE - IRRIGATION | 06/25/1914 | | | 13 | NOT IN WM AREA | MATAGORDA |
| 3795 | 03/05/1981 | | LILLIAN G ZERNICEK TRUST | 80.00 | AGRICULTURE - IRRIGATION | 12/22/1980 | | | 13 | NOT IN WM AREA | MATAGORDA |
| 3846 | 02/16/1982 | | MOORE, LINDA C | 90.00 | AGRICULTURE - IRRIGATION | 11/09/1981 | | 4.2000 | 13 | NOT IN WM AREA | MATAGORDA |
| 3895 | 09/14/1982 | | THE MINZE LAND INVESTMENTS LIMITED PARTNERSHIP | 1000.00 | AGRICULTURE - IRRIGATION | 05/17/1982 | | 3.0000 | 13 | NOT IN WM AREA | MATAGORDA |
| 3957 | 04/04/1983 | | FUTURO FARMS INC \| HARDY, G P III | 450.00 | AGRICULTURE - IRRIGATION | 01/10/1983 | | 10.0000 | 13 | NOT IN WM AREA | MATAGORDA |
| 3967 | 04/29/1983 | | EASTMAN, MARY ANNIE \| MCAFERTY, BETTY GENE | 35.00 | AGRICULTURE - IRRIGATION | 12/20/1982 | | | 13 | NOT IN WM AREA | MATAGORDA |
| 3972 | 04/29/1983 | | JENKINS, KAREN H \| JENKINS, WILLIAM R | 1500.00 | AGRICULTURE - IRRIGATION | 01/31/1983 | | | 15 | NOT IN WM AREA | MATAGORDA |
| 3992 | 06/24/1983 | | RUNNELLS PASTURE COMPANY LTD | 219.00 | AGRICULTURE - IRRIGATION | 02/28/1983 | | | 13 | NOT IN WM AREA | MATAGORDA |
| 4122 | 06/20/1984 | | COOK, ELAINE HOLUB \| DAVIDSON, BARBARA ANN \| EVERLING, KATHERINE | 25.00 | AGRICULTURE - IRRIGATION | 11/28/1983 | | | 13 | NOT IN WM AREA | MATAGORDA |
| 4207 | 04/29/1985 | | APPELT, LESLIE L \| CULWELL, DON A | 750.00 | AGRICULTURE - AQUACULTURE \| INDUSTRIAL | 01/03/1985 | | 31.2800 | 15 | NOT IN WM AREA | MATAGORDA |
| 4207 | 04/29/1985 | | APPELT, LESLIE L \| CULWELL, DON A | 1500.00 | AGRICULTURE \| INDUSTRIAL | 01/03/1985 | | 79.4500 | 15 | NOT IN WM AREA | MATAGORDA |
| 4207 | 04/29/1985 | | APPELT, LESLIE L \| CULWELL, DON A | | RECREATION | 01/03/1985 | | 82.0000 | 15 | NOT IN WM AREA | MATAGORDA |
| 4780 | 01/20/1987 | | JOHNSON, MAX CORNELIUS \| MARONEY, JOYCE JOHNSON | 400.00 | AGRICULTURE - IRRIGATION | 11/24/1969 | | 400.0000 | 15 | NOT IN WM AREA | MATAGORDA |
| 4781 | 01/20/1987 | | PETERSEN, GLORIA \| PETERSEN, LAWRENCE J | 400.00 | AGRICULTURE - IRRIGATION | 01/24/1916 | | | 15 | NOT IN WM AREA | MATAGORDA |
| 4782 | 01/20/1987 | B | TRES CREEK LLC | 120.00 | AGRICULTURE - IRRIGATION | 01/24/1916 | | | 15 | NOT IN WM AREA | MATAGORDA |
| 4783 | 01/20/1987 | | HARPER, LOUIS F | 301.00 | AGRICULTURE - IRRIGATION | 12/31/1961 | | | 15 | NOT IN WM AREA | MATAGORDA |
| 4786 | 01/20/1987 | | PRIESMEYER, ARTHUR A | 93.00 | AGRICULTURE - IRRIGATION | 12/31/1945 | | | 15 | NOT IN WM AREA | MATAGORDA |
| 4787 | 01/20/1987 | | TRES CREEK LLC | 20615.00 | AGRICULTURE - IRRIGATION | 05/31/1909 | | 457.3000 | 15 | NOT IN WM AREA | MATAGORDA |
| 4788 | 01/20/1987 | | CHAMBLEE, GUY CLIFFORD \| HUTSON, GLEN \| WASHINGTON, BONNIE JEAN | 7.00 | AGRICULTURE - IRRIGATION | 12/31/1956 | | | 15 | NOT IN WM AREA | MATAGORDA |
| 5099 | 12/23/1986 | | MATAGORDA BAY AQUACULTURE INC | 316.00 | AGRICULTURE - AQUACULTURE \| INDUSTRIAL | 09/25/1986 | | 50.0000 | 15 | NOT IN WM AREA | MATAGORDA |
| 5436 | 08/26/1988 | A | WYLIE VENTURES LLC | 1443.00 | AGRICULTURE - IRRIGATION | 06/26/1914 | | | 14 | NOT IN WM AREA | MATAGORDA |
| 5437 | 06/28/1989 | B | STP NUCLEAR OPERATING COMPANY | | INDUSTRIAL \| INDUSTRIAL - POWER GENERATION | 06/10/1974 | 80125.0000 | 202988.0000 | 14 | NOT IN WM AREA | MATAGORDA |
| 5437 | 06/28/1989 | B | LOWER COLORADO RIVER AUTHORITY \| NRG TEXAS LP \| STP NUCLEAR OPE | 102000.00 | INDUSTRIAL \| INDUSTRIAL - POWER GENERATION | 06/10/1974 | | | 14 | NOT IN WM AREA | MATAGORDA |
| 5438 | 02/22/1993 | | MATAGORDA COUNTY DRAINAGE DISTRICT 1 | 260.00 | FLOOD CONTROL | 11/17/1992 | | | 13 | NOT IN WM AREA | MATAGORDA |
| 5609 | 06/05/1998 | | TEXAS BRINE COMPANY LLC | | INDUSTRIAL | 05/28/1998 | | | 14 | NOT IN WM AREA | MATAGORDA |
| 5682 | 04/25/2001 | A | CORNELIUS, HERFF | 2400.00 | AGRICULTURE - AQUACULTURE \| AGRICULTURE - IRRIGATION \| INDUS | 03/27/2000 | | 404.0000 | 13 | NOT IN WM AREA | MATAGORDA |
| 12496 | 11/06/2017 | | POPEK AND SON | 200.00 | AGRICULTURE - IRRIGATION | 04/08/2010 | | 4.2000 | 13 | NOT IN WM AREA | MATAGORDA |
| 13333 | | | OXEA CORPORATION | 5334.00 | INDUSTRIAL | | | | 14 | NOT IN WM AREA | MATAGORDA |
| 4790 | 01/20/1987 | | SOUTH TEXAS LAND LIMITED PARTNERSHIP | 1500.00 | AGRICULTURE - IRRIGATION | 01/12/1976 | | 271.0000 | 15 | NOT IN WM AREA | MATAGORDA \| WHARTON |
| 5476 | 06/28/1989 | D | LOWER COLORADO RIVER AUTHORITY | 262500.00 | AGRICULTURE - IRRIGATION \| INDUSTRIAL \| INSTREAM \| MINING \| MU | 12/01/1900 | | 1865.0000 | 14 | NOT IN WM AREA | MATAGORDA \| WHARTON |
| 5476 | 06/28/1989 | D | LOWER COLORADO RIVER AUTHORITY | | AGRICULTURE - IRRIGATION \| INDUSTRIAL \| INSTREAM \| MINING \| MU | 12/01/1900 | | 52000.0000 | 14 | NOT IN WM AREA | MATAGORDA \| WHARTON |
| 1744 | 04/13/1981 | | GILGER, L L | 95.00 | AGRICULTURE - IRRIGATION | 12/31/1963 | | | 14 | NOT IN WM AREA | MILLS |
| 1745 | 04/13/1981 | | GRAVES, JOHN JUDSON \| NORWOOD, MARJORIE JEAN GRAVES \| WHITE, CA | 20.00 | AGRICULTURE - IRRIGATION | 10/15/1974 | | 20.0000 | 14 | NOT IN WM AREA | MILLS |
| 1745 | 04/13/1981 | | GRAVES, JOHN JUDSON \| NORWOOD, MARJORIE JEAN GRAVES \| WHITE, CA | 80.00 | AGRICULTURE - IRRIGATION | 07/14/1969 | | 80.0000 | 14 | NOT IN WM AREA | MILLS |
| 1746 | 04/13/1981 | | GRAVES, JOHN JUDSON \| NORWOOD, MARJORIE JEAN GRAVES \| WHITE, CA | 118.00 | AGRICULTURE - IRRIGATION | 10/15/1974 | | 118.0000 | 14 | NOT IN WM AREA | MILLS |
| 1746 | 04/13/1981 | | GRAVES, JOHN JUDSON \| NORWOOD, MARJORIE JEAN GRAVES \| WHITE, CA | 160.00 | AGRICULTURE - IRRIGATION | 12/31/1906 | | 72.0000 | 14 | NOT IN WM AREA | MILLS |
| 1748 | 04/13/1981 | | ZEPHYR LAND COMPANY | 77.67 | AGRICULTURE - IRRIGATION | 12/31/1904 | | 90.0000 | 14 | NOT IN WM AREA | MILLS |
| 1748 | 04/13/1981 | | SLEDGE CATTLE COMPANY INC | 47.33 | AGRICULTURE - IRRIGATION | 12/31/1904 | | | 14 | NOT IN WM AREA | MILLS |
| 1749 | 04/13/1981 | | SLEDGE CATTLE COMPANY INC | 20.00 | AGRICULTURE - IRRIGATION | 11/02/1964 | | 18.0000 | 14 | NOT IN WM AREA | MILLS |
| 1750 | 04/13/1981 | | WYLIE, J DON | 32.00 | AGRICULTURE - IRRIGATION | 11/12/1969 | | 32.0000 | 14 | NOT IN WM AREA | MILLS |
| 1751 | 04/13/1981 | | STALCUP, MARY ALICE | 200.00 | AGRICULTURE - IRRIGATION | 04/27/1970 | | | 14 | NOT IN WM AREA | MILLS |
| 1751 | 04/13/1981 | | ROSS, PEGGY JEAN | | AGRICULTURE - IRRIGATION | 04/27/1970 | | 336.0000 | 14 | NOT IN WM AREA | MILLS |
| 1752 | 04/13/1981 | | KING, P V | 127.00 | AGRICULTURE - IRRIGATION | 03/01/1973 | | 127.0000 | 14 | NOT IN WM AREA | MILLS |
| 1753 | 04/13/1981 | | MANGHAM, HENRY T | 52.00 | AGRICULTURE - IRRIGATION | 06/09/1969 | | 83.0000 | 14 | NOT IN WM AREA | MILLS |
| 1754 | 04/13/1981 | | STARKS, ROBERT | 60.00 | AGRICULTURE - IRRIGATION | 07/22/1968 | | 85.0000 | 14 | NOT IN WM AREA | MILLS |
| 1755 | 04/13/1981 | | GUILBEAUX RANCH LLC | 60.00 | AGRICULTURE - IRRIGATION | 02/02/1970 | | 108.0000 | 14 | NOT IN WM AREA | MILLS |
| 1756 | 04/13/1981 | | ANDERSON, NANCY RUHMANN \| ANDERSON, VIRGIL KEITH | 16.00 | AGRICULTURE - IRRIGATION | 12/31/1964 | | | 14 | NOT IN WM AREA | MILLS |
| 1757 | 04/13/1981 | | MILLS COUNTY HUNTING AND FISHING CLUB | | RECREATION | 07/06/1916 | | 650.0000 | 14 | NOT IN WM AREA | MILLS |
| 1758 | 04/13/1981 | | TUBB, HARVEY C | 3.00 | AGRICULTURE - IRRIGATION | 08/31/1965 | | | 14 | NOT IN WM AREA | MILLS |
| 1758 | 04/13/1981 | | FARMER, JAMES R \| FARMER, LYNN A | 3.00 | AGRICULTURE - IRRIGATION | 08/31/1965 | | | 14 | NOT IN WM AREA | MILLS |

| WR NO | WR ISSUE DATE | AMENDMENT LETTER | OWNER NAME | DIVERSION AMOUNT (AFY) | USE | PRIORITY DATE | CONSUMPTIVE AMOUNT (AFY) | STORAGE AMOUNT (AF) | BASIN | WATER MASTER AREA | COUNTY |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1759 | 04/13/1981 | | STANSBERRY, W M | 69.00 | AGRICULTURE - IRRIGATION | 03/31/1965 | | | 14 | NOT IN WM AREA | MILLS |
| 1760 | 04/13/1981 | | DUREN TRUST | 60.00 | AGRICULTURE - IRRIGATION | 02/07/1972 | | 70.0000 | 14 | NOT IN WM AREA | MILLS |
| 1761 | 04/13/1981 | | DOLLINS, JAMES G III \| DOLLINS, THERESA K | 4.00 | AGRICULTURE - IRRIGATION | 12/31/1957 | | | 14 | NOT IN WM AREA | MILLS |
| 1762 | 04/13/1981 | | STERLING SPIES, GINGER | 26.59 | AGRICULTURE - IRRIGATION | 12/31/1955 | | | 14 | NOT IN WM AREA | MILLS |
| 1762 | 04/13/1981 | | STERLING KAUFFMAN, GWEN | 11.66 | AGRICULTURE - IRRIGATION | 12/31/1955 | | | 14 | NOT IN WM AREA | MILLS |
| 1762 | 04/13/1981 | | DORIS CATHERINE STERLING TRUSTEE | 2.74 | AGRICULTURE - IRRIGATION | 12/31/1955 | | | 14 | NOT IN WM AREA | MILLS |
| 1920 | 04/20/1981 | A | MADDOX, TOMMY \| MADDOX, WALLACE | 15.00 | INDUSTRIAL | 12/31/1915 | | | 14 | NOT IN WM AREA | MILLS |
| 1920 | 04/20/1981 | A | MADDOX, TOMMY \| MADDOX, WALLACE | 14.00 | INDUSTRIAL | 06/03/1914 | | | 14 | NOT IN WM AREA | MILLS |
| 2524 | 08/31/1983 | | MIIW RANCH LLC | 120.00 | AGRICULTURE - IRRIGATION | 12/31/1923 | | | 14 | NOT IN WM AREA | MILLS |
| 2526 | 08/31/1983 | | HICKS, CHARLES ALLEN | 4.39 | AGRICULTURE - IRRIGATION | 05/15/1963 | | | 14 | NOT IN WM AREA | MILLS |
| 2526 | 08/31/1983 | | BEZNER, CHRISTOPHER N \| BEZNER, PAGE | 2.10 | AGRICULTURE - IRRIGATION | 05/15/1963 | | | 14 | NOT IN WM AREA | MILLS |
| 2526 | 08/31/1983 | | JOYCE GAYLE HICKS ESTATE | 7.51 | AGRICULTURE - IRRIGATION | 05/15/1963 | | | 14 | NOT IN WM AREA | MILLS |
| 2527 | 08/31/1983 | | HICKS, CHARLES ALLEN | 14.00 | AGRICULTURE - IRRIGATION | 05/15/1963 | | | 14 | NOT IN WM AREA | MILLS |
| 2528 | 08/31/1983 | | LONG, TRUMAN | 203.00 | AGRICULTURE - IRRIGATION | 03/04/1916 | | | 14 | NOT IN WM AREA | MILLS |
| 2532 | 08/31/1983 | | ESTATE OF A J BECK | 90.00 | AGRICULTURE - IRRIGATION | 05/07/1973 | | 196.0000 | 14 | NOT IN WM AREA | MILLS |
| 2535 | 08/31/1983 | | CLAWSON, KATHLEEN \| CLAWSON, LANCE \| SWENSON, DAVID | 163.00 | AGRICULTURE - IRRIGATION | 06/22/1914 | | | 14 | NOT IN WM AREA | MILLS |
| 2535 | 08/31/1983 | | PRATT, GEORGE M \| PRATT, SUZANNE D | 150.00 | AGRICULTURE - IRRIGATION | 06/22/1914 | | | 14 | NOT IN WM AREA | MILLS |
| 2535 | 08/31/1983 | | CLAWSON, KATHLEEN \| CLAWSON, LANCE \| SWENSON, DAVID | 30.00 | AGRICULTURE - IRRIGATION | 09/19/1977 | | | 14 | NOT IN WM AREA | MILLS |
| 2535 | 08/31/1983 | | PRATT, GEORGE M \| PRATT, SUZANNE D | | AGRICULTURE - IRRIGATION | 09/19/1977 | | 30.0000 | 14 | NOT IN WM AREA | MILLS |
| 2537 | 08/31/1983 | | BENNETT, CRISTY TANNER | 125.00 | AGRICULTURE - IRRIGATION | 12/31/1913 | | | 14 | NOT IN WM AREA | MILLS |
| 2538 | 08/31/1983 | | BERRY, GRENETTA BELL | 16.70 | AGRICULTURE - IRRIGATION | 05/31/1913 | | | 14 | NOT IN WM AREA | MILLS |
| 2538 | 08/31/1983 | | BORHO, BILLY W \| BORHO, GLORIA L | 66.30 | AGRICULTURE - IRRIGATION | 05/31/1913 | | | 14 | NOT IN WM AREA | MILLS |
| 2539 | 08/31/1983 | | BERRY, GRENETTA BELL | 102.00 | AGRICULTURE - IRRIGATION | 06/30/1906 | | | 14 | NOT IN WM AREA | MILLS |
| 2541 | 08/31/1983 | | LEWIS, KIMBERLY PRICE \| NICKEL, RENEE RAINBOLT \| RAINBOLT, SHERAL | 57.00 | AGRICULTURE - IRRIGATION | 12/31/1905 | | 100.0000 | 14 | NOT IN WM AREA | MILLS |
| 2542 | 08/31/1983 | | HALE, GERALD G | 13.00 | AGRICULTURE - IRRIGATION | 08/15/1967 | | | 14 | NOT IN WM AREA | MILLS |
| 2543 | 08/31/1983 | | HALE, GERALD G | 100.00 | AGRICULTURE - IRRIGATION | 12/31/1956 | | | 14 | NOT IN WM AREA | MILLS |
| 2544 | 08/31/1983 | | WILCOX, MARY BESS | 16.00 | AGRICULTURE - IRRIGATION | 12/31/1957 | | | 14 | NOT IN WM AREA | MILLS |
| 2545 | 08/31/1983 | | GEESLIN, AMY J \| GEESLIN, DAVID G | 16.00 | AGRICULTURE - IRRIGATION | 12/31/1957 | | | 14 | NOT IN WM AREA | MILLS |
| 2547 | 08/31/1983 | | DUNLAP, ANDREA \| DUNLAP, RYON | 171.00 | AGRICULTURE - IRRIGATION | 09/30/1965 | | 30.0000 | 14 | NOT IN WM AREA | MILLS |
| 2549 | 08/31/1983 | B | NANCY A LEONARD INVESTMENT COMPANY LP \| OP LEONARD JR INVESTME | 249.00 | AGRICULTURE - IRRIGATION | 12/31/1905 | | | 14 | NOT IN WM AREA | MILLS |
| 2551 | 08/31/1983 | | COCKRELL, WILLIAM HAYDEN \| SMITH, MARGARET DOGGETT | 81.00 | AGRICULTURE - IRRIGATION | 12/31/1926 | | 12.0000 | 14 | NOT IN WM AREA | MILLS |
| 2552 | 08/31/1983 | | HUGHES, BARBARA \| HUGHES, MARTIN DVM | 36.90 | AGRICULTURE - IRRIGATION | 12/31/1950 | | | 14 | NOT IN WM AREA | MILLS |
| 2552 | 08/31/1983 | | LONG, AMANDA LOUISE \| LONG, ROBERT LEE JR | 72.91 | AGRICULTURE - IRRIGATION | 12/31/1950 | | | 14 | NOT IN WM AREA | MILLS |
| 2553 | 08/31/1983 | A | CITY OF GOLDTHWAITE | 800.00 | MUNICIPAL/DOMESTIC | 05/06/1960 | | 315.0000 | 14 | NOT IN WM AREA | MILLS |
| 2553 | 08/31/1983 | A | CITY OF GOLDTHWAITE | 700.00 | INDUSTRIAL | 05/06/1960 | | | 14 | NOT IN WM AREA | MILLS |
| 2553 | 08/31/1983 | A | CITY OF GOLDTHWAITE | 250.00 | AGRICULTURE - IRRIGATION | 05/06/1960 | | | 14 | NOT IN WM AREA | MILLS |
| 2554 | 08/31/1983 | | MILLSAPPS, SIBYL W \| MILLSAPPS, STUART C JR | 24.00 | AGRICULTURE - IRRIGATION | 09/27/1949 | | | 14 | NOT IN WM AREA | MILLS |
| 2555 | 08/31/1983 | | HARTLEY, FRED E \| HARTLEY, LILLIE MARGARET | 34.00 | AGRICULTURE - IRRIGATION | 02/26/1968 | | | 14 | NOT IN WM AREA | MILLS |
| 2556 | 08/31/1983 | | A&A LANDSCAPE & IRRIGATION LP | 75.00 | AGRICULTURE - IRRIGATION | 12/31/1952 | | | 14 | NOT IN WM AREA | MILLS |
| 2565 | 08/31/1983 | | ESTATE OF OTHEL OTTO SMITH | 100.00 | AGRICULTURE - IRRIGATION | 06/30/1964 | | | 14 | NOT IN WM AREA | MILLS |
| 2566 | 08/31/1983 | | WATSON, MARIE \| WATSON, SAM | 159.00 | AGRICULTURE - IRRIGATION | 12/31/1952 | | | 14 | NOT IN WM AREA | MILLS |
| 2568 | 08/31/1983 | | LANDRUM, KELLIS | 168.00 | AGRICULTURE - IRRIGATION | 12/31/1963 | | | 14 | NOT IN WM AREA | MILLS |
| 2569 | 08/31/1983 | | JOHNSON, R C | 105.61 | AGRICULTURE - IRRIGATION | 12/31/1905 | | | 14 | NOT IN WM AREA | MILLS |
| 2569 | 08/31/1983 | | GBI TRUST | 2.39 | AGRICULTURE - IRRIGATION | 12/31/1905 | | | 14 | NOT IN WM AREA | MILLS |
| 2576 | 08/31/1983 | | BURNHAM, DONALD D | 84.00 | AGRICULTURE - IRRIGATION | 12/31/1941 | | | 14 | NOT IN WM AREA | MILLS |
| 2916 | 04/30/1984 | | SCHWARTZ, LEE ROY | 53.00 | AGRICULTURE - IRRIGATION | 05/31/1959 | | | 12 | BRAZOS | MILLS |
| 2917 | 04/30/1984 | | WITZSCHE, RUTH \| WITZSCHE, WILFORD | 25.00 | AGRICULTURE - IRRIGATION | 03/31/1963 | | 8.0000 | 12 | BRAZOS | MILLS |
| 2918 | 04/30/1984 | | MARWITZ, PAMELA ANN | 20.00 | AGRICULTURE - IRRIGATION | 04/30/1949 | | 2.0000 | 12 | BRAZOS | MILLS |
| 2920 | 04/30/1984 | | HOPPER, ALAN DOUG | 12.00 | AGRICULTURE - IRRIGATION | 05/31/1965 | | 6.0000 | 12 | BRAZOS | MILLS |
| 2954 | 04/30/1984 | | MCCASLAND, CHARLES | | DOMESTIC AND LIVESTOCK | 07/11/1977 | | 310.0000 | 12 | BRAZOS | MILLS |
| 2955 | 04/30/1984 | | SHELTON, CATHRYN A \| SHELTON, MARTIN P \| SHELTON, PAUL L | 150.00 | AGRICULTURE - IRRIGATION | 07/01/1968 | | 180.0000 | 12 | BRAZOS | MILLS |
| 2957 | 04/30/1984 | | MOORE, HOWARD K | 65.00 | AGRICULTURE - IRRIGATION | 08/31/1940 | | | 12 | BRAZOS | MILLS |
| 5111 | 06/10/1987 | | NEW HORIZONS RANCH AND CENTER INC | 15.00 | MUNICIPAL/DOMESTIC \| RECREATION | 11/24/1986 | | 62.7600 | 14 | NOT IN WM AREA | MILLS |
| 2472 | 08/31/1983 | A | NANCY ALICE LEONARD INVESTMENT COMPANY LTD \| OP LEONARD JR INVE | 1460.00 | AGRICULTURE - IRRIGATION | 12/31/1961 | | | 14 | NOT IN WM AREA | MILLS \| SAN SABA |
| 2536 | 08/31/1983 | A | BRADLEY D BOYD AND REBECCA G BOYD LIVING TRUST | 140.00 | AGRICULTURE - IRRIGATION | 12/31/1912 | | | 14 | NOT IN WM AREA | MILLS \| SAN SABA |
| 2536 | 08/31/1983 | A | STOWELL, ALBERT J | 96.00 | AGRICULTURE - IRRIGATION | 12/31/1912 | | | 14 | NOT IN WM AREA | MILLS \| SAN SABA |
| 2550 | 08/31/1983 | | NANCY ALICE LEONARD INVESTMENT COMPANY LTD \| OP LEONARD JR INVE | 3374.00 | AGRICULTURE - IRRIGATION | 12/31/1903 | | 322.0000 | 14 | NOT IN WM AREA | MILLS \| SAN SABA |
| 2550 | 08/31/1983 | | NANCY ALICE LEONARD INVESTMENT COMPANY LTD \| OP LEONARD JR INVE | 306.00 | AGRICULTURE - IRRIGATION | 12/31/1925 | | | 14 | NOT IN WM AREA | MILLS \| SAN SABA |
| 2563 | 08/31/1983 | A | WHITE, DAVID MARK \| WHITE, SHELIA JEAN | 70.00 | AGRICULTURE - IRRIGATION | 12/31/1937 | | | 14 | NOT IN WM AREA | MILLS \| SAN SABA |
| 2563 | 08/31/1983 | A | NANCY ALICE LEONARD INVESTMENT COMPANY LTD \| OP LEONARD JR INVE | 173.00 | AGRICULTURE - IRRIGATION | 12/31/1937 | | | 14 | NOT IN WM AREA | MILLS \| SAN SABA |
| 1847 | 04/20/1981 | A | LLANO PARTNERS LTD | 200.00 | AGRICULTURE - IRRIGATION | 12/31/1951 | | | 14 | NOT IN WM AREA | SAN SABA |
| 1856 | 04/20/1981 | | HAWKINS, KATHLEEN | 18.28 | AGRICULTURE - IRRIGATION | 06/24/1914 | | | 14 | NOT IN WM AREA | SAN SABA |
| 1856 | 04/20/1981 | | DUNNAGAN, JUDY | 15.72 | AGRICULTURE - IRRIGATION | 06/26/1914 | | | 14 | NOT IN WM AREA | SAN SABA |
| 1857 | 04/20/1981 | | HAWKINS, KATHLEEN | 6.00 | AGRICULTURE - IRRIGATION | 06/24/1914 | | | 14 | NOT IN WM AREA | SAN SABA |
| 1858 | 04/20/1981 | A | BYRD, JOHN WORTH | 19.00 | AGRICULTURE - IRRIGATION | 06/24/1914 | | | 14 | NOT IN WM AREA | SAN SABA |
| 1859 | 04/20/1981 | | BESSENT, CHRISTINE DIANE POOL \| STEWART, PATSY MARSCHALL | 171.00 | AGRICULTURE - IRRIGATION | 06/27/1914 | | 3.0000 | 14 | NOT IN WM AREA | SAN SABA |
| 1860 | 04/20/1981 | | BAKER, DONNA B \| BAKER, LARRY | 96.00 | AGRICULTURE - IRRIGATION | 06/27/1914 | | | 14 | NOT IN WM AREA | SAN SABA |
| 1861 | 04/20/1981 | | BESSENT, CHRISTINE DIANE POOL \| BESSENT, WILLARD KEITH | 20.00 | AGRICULTURE - IRRIGATION | 06/27/1914 | | | 14 | NOT IN WM AREA | SAN SABA |
| 1862 | 04/20/1981 | | BESSENT, CHRISTINE DIANE POOL \| BESSENT, WILLARD KEITH | 28.00 | AGRICULTURE - IRRIGATION | 06/27/1914 | | | 14 | NOT IN WM AREA | SAN SABA |
| 1863 | 04/20/1981 | | CHURCHILL, BOBBIE \| CHURCHILL, FRANK | 15.00 | AGRICULTURE - IRRIGATION | 06/27/1914 | | | 14 | NOT IN WM AREA | SAN SABA |
| 1863 | 04/20/1981 | | SHOOK, JIMMY \| SHOOK, LAURA \| SHOOK, NANCY | 35.00 | AGRICULTURE - IRRIGATION | 06/27/1914 | | | 14 | NOT IN WM AREA | SAN SABA |
| 1864 | 04/20/1981 | | ELLIS, SHARON KAY | 7.26 | AGRICULTURE - IRRIGATION | 04/25/1914 | | | 14 | NOT IN WM AREA | SAN SABA |
| 1864 | 04/20/1981 | | FOWLER, BARBARA \| FOWLER, DON D | 25.74 | AGRICULTURE - IRRIGATION | 04/25/1914 | | | 14 | NOT IN WM AREA | SAN SABA |
| 1865 | 04/20/1981 | | JOHNSON, CLARENCE G III | 15.00 | AGRICULTURE - IRRIGATION | 04/25/1914 | | | 14 | NOT IN WM AREA | SAN SABA |
| 1866 | 04/20/1981 | | SEIDERS SAN SABA RANCH LTD | 93.00 | AGRICULTURE - IRRIGATION | 12/31/1947 | | | 14 | NOT IN WM AREA | SAN SABA |
| 1867 | 04/20/1981 | | JOHNSON REVOCABLE TRUST | 54.00 | AGRICULTURE - IRRIGATION | 12/31/1935 | | | 14 | NOT IN WM AREA | SAN SABA |
| 1868 | 04/20/1981 | | JOHNSON REVOCABLE TRUST | 190.00 | AGRICULTURE - IRRIGATION | 12/31/1918 | | | 14 | NOT IN WM AREA | SAN SABA |
| 1869 | 04/20/1981 | | OWENS, ELIZABETH E \| OWENS, HOMER R | 25.73 | AGRICULTURE - IRRIGATION | 12/31/1925 | | | 14 | NOT IN WM AREA | SAN SABA |
| 1869 | 04/20/1981 | | STENCIL, AMY \| STENCIL, CRAIG | 20.64 | AGRICULTURE - IRRIGATION | 12/31/1925 | | | 14 | NOT IN WM AREA | SAN SABA |
| 1869 | 04/20/1981 | | FISHER, CASEY JOE \| FISHER, KRISTY LEIGH | 20.64 | AGRICULTURE - IRRIGATION | 12/31/1925 | | | 14 | NOT IN WM AREA | SAN SABA |
| 1870 | 04/20/1981 | | OWENS, ELIZABETH E \| OWENS, HOMER R | 88.00 | AGRICULTURE - IRRIGATION | 05/02/1914 | | | 14 | NOT IN WM AREA | SAN SABA |
| 1871 | 04/20/1981 | | CONNER, LARRY GENE | 120.00 | AGRICULTURE - IRRIGATION | 12/31/1955 | | | 14 | NOT IN WM AREA | SAN SABA |
| 1872 | 04/20/1981 | | TRIPLE M CATTLE CO | 225.00 | AGRICULTURE - IRRIGATION | 06/24/1914 | | | 14 | NOT IN WM AREA | SAN SABA |

| WR NO | WR ISSUE DATE | AMENDMENT LETTER | OWNER NAME | DIVERSION AMOUNT (AFY) | USE | PRIORITY DATE | CONSUMPTIVE AMOUNT (AFY) | STORAGE AMOUNT (AF) | BASIN | WATER MASTER AREA | COUNTY |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1873 | 04/20/1981 | | CONNER, EUGENE | 104.00 | AGRICULTURE - IRRIGATION | 12/31/1952 | | | 14 | NOT IN WM AREA | SAN SABA |
| 1874 | 04/20/1981 | | HARDMAN, DENNIS \| HARDMAN, TERESA | 34.10 | AGRICULTURE - IRRIGATION | 12/31/1922 | | | 14 | NOT IN WM AREA | SAN SABA |
| 1874 | 04/20/1981 | | AMONETT, BEN F \| AMONETT, LURA L \| SCARBOROUGH, TRACY S | 0.90 | AGRICULTURE - IRRIGATION | 12/31/1922 | | | 14 | NOT IN WM AREA | SAN SABA |
| 1875 | 04/20/1981 | | MARTIN, CAROL SUGAR \| MARTIN, JOHN MARCUS | 114.00 | AGRICULTURE - IRRIGATION | 06/22/1914 | | | 14 | NOT IN WM AREA | SAN SABA |
| 1876 | 04/20/1981 | | ESTATE OF RILEY C HARKEY \| HARKEY, BONNIE | 112.00 | AGRICULTURE - IRRIGATION | 12/31/1922 | | | 14 | NOT IN WM AREA | SAN SABA |
| 1876 | 04/20/1981 | | MARTIN, CAROL ANN \| MARTIN, JOHN MARCUS | 30.00 | AGRICULTURE - IRRIGATION | 12/31/1922 | | | 14 | NOT IN WM AREA | SAN SABA |
| 1877 | 04/20/1981 | | HARKEY, BONNIE | 146.00 | AGRICULTURE - IRRIGATION | 11/14/1914 | | | 14 | NOT IN WM AREA | SAN SABA |
| 1878 | 04/20/1981 | | ESTATE OF RILEY C HARKEY | 120.00 | AGRICULTURE - IRRIGATION | 12/31/1910 | | | 14 | NOT IN WM AREA | SAN SABA |
| 1879 | 04/20/1981 | | CHILDRESS, MARSHA NELLE \| HARKEY, RANDY KIRK | 25.00 | AGRICULTURE - IRRIGATION | 12/31/1913 | | | 14 | NOT IN WM AREA | SAN SABA |
| 1880 | 04/02/1981 | | EDMONDSON, CHRISTINE BAGLEY | 29.00 | AGRICULTURE - IRRIGATION | 12/31/1956 | | | 14 | NOT IN WM AREA | SAN SABA |
| 1881 | 04/20/1981 | B | BAGLEY, DEAN JR | 103.00 | AGRICULTURE - IRRIGATION | 12/31/1910 | | | 14 | NOT IN WM AREA | SAN SABA |
| 1881 | 04/20/1981 | B | ADAMS, CONNIE BAGLEY | 37.30 | AGRICULTURE - IRRIGATION | 12/31/1910 | | | 14 | NOT IN WM AREA | SAN SABA |
| 1881 | 04/20/1981 | B | EDMONDSON, CHRISTINE BAGLEY | 20.70 | AGRICULTURE - IRRIGATION | 12/31/1910 | | | 14 | NOT IN WM AREA | SAN SABA |
| 1882 | 04/20/1981 | | DICKENSON, PEGGY NELL \| DICKENSON, RICHARD KEITH | 150.00 | AGRICULTURE - IRRIGATION | 12/31/1919 | | | 14 | NOT IN WM AREA | SAN SABA |
| 1883 | 04/20/1981 | | LEWIS, BYRON E \| LEWIS, GEORGIA L | 31.00 | AGRICULTURE - IRRIGATION | 12/31/1933 | | | 14 | NOT IN WM AREA | SAN SABA |
| 1884 | 04/20/1981 | B | JAMES B BONHAM CORPORATION | 42.00 | AGRICULTURE - IRRIGATION | 12/31/1963 | | | 14 | NOT IN WM AREA | SAN SABA |
| 1884 | 04/20/1981 | B | SRK RANCH LLC | 30.00 | AGRICULTURE - IRRIGATION | 12/31/1963 | | | 14 | NOT IN WM AREA | SAN SABA |
| 1885 | 04/20/1981 | | WOOD, T N | 64.00 | AGRICULTURE - IRRIGATION | 09/04/1962 | | 81.0000 | 14 | NOT IN WM AREA | SAN SABA |
| 1886 | 04/20/1981 | | LAMBERT, RICKY \| LAMBERT, SUSANA | 30.60 | AGRICULTURE - IRRIGATION | 12/31/1911 | | | 14 | NOT IN WM AREA | SAN SABA |
| 1886 | 04/20/1981 | | MIFFLETON, MAXINE | 4.20 | AGRICULTURE - IRRIGATION | 12/31/1911 | | | 14 | NOT IN WM AREA | SAN SABA |
| 1886 | 04/20/1981 | | MCBRIDE, JOSEPHINE \| MCBRIDE, RONNIE | 4.20 | AGRICULTURE - IRRIGATION | 12/31/1911 | | | 14 | NOT IN WM AREA | SAN SABA |
| 1887 | 04/20/1981 | | LAMBERT, ROGER RICKY \| LAMBERT, SUSANA | 329.00 | AGRICULTURE - IRRIGATION | 12/31/1911 | | | 14 | NOT IN WM AREA | SAN SABA |
| 1888 | 04/20/1981 | A | SLOAN LIVESTOCK LTD | 88.00 | AGRICULTURE - IRRIGATION | 12/31/1956 | | | 14 | NOT IN WM AREA | SAN SABA |
| 1889 | 04/20/1981 | | CRUTSINGER, HOPE | 41.00 | AGRICULTURE - IRRIGATION | 12/31/1925 | | | 14 | NOT IN WM AREA | SAN SABA |
| 1890 | 04/20/1981 | | THE GREAT SAN SABA RIVER PECAN COMPANY INC | 434.00 | AGRICULTURE - IRRIGATION | 12/31/1911 | | | 14 | NOT IN WM AREA | SAN SABA |
| 1892 | 04/20/1981 | | THE ESTATE OF JOHN P MCCONNELL JR | 52.55 | AGRICULTURE - IRRIGATION | 12/31/1953 | | | 14 | NOT IN WM AREA | SAN SABA |
| 1892 | 04/20/1981 | | EARLY, JOHNETTE MCCONNELL \| MCCONNELL, PATTY JOHNENE \| THE ESTA | 180.45 | AGRICULTURE - IRRIGATION | 12/31/1953 | | | 14 | NOT IN WM AREA | SAN SABA |
| 1893 | 04/20/1981 | | BAGLEY, DEAN JR | 52.00 | AGRICULTURE - IRRIGATION | 12/31/1959 | | | 14 | NOT IN WM AREA | SAN SABA |
| 1894 | 04/20/1981 | A | BAGLEY, GAILIAN DEAN JR | 272.00 | AGRICULTURE - IRRIGATION | 12/31/1913 | | | 14 | NOT IN WM AREA | SAN SABA |
| 1895 | 04/20/1981 | | THE GREAT SAN SABA RIVER PECAN COMPANY INC | 48.00 | AGRICULTURE - IRRIGATION | 12/31/1955 | | | 14 | NOT IN WM AREA | SAN SABA |
| 1896 | 04/20/1981 | | BAGLEY, GAILIAN DEAN JR | 64.00 | AGRICULTURE - IRRIGATION | 12/31/1950 | | | 14 | NOT IN WM AREA | SAN SABA |
| 1897 | 04/20/1981 | | MARTIN, BETTY \| MARTIN, WILTON | 80.00 | AGRICULTURE - IRRIGATION | 05/16/1914 | | | 14 | NOT IN WM AREA | SAN SABA |
| 1898 | 04/20/1981 | | GILGER, DAVID | 40.00 | AGRICULTURE - IRRIGATION | 03/30/1914 | | | 14 | NOT IN WM AREA | SAN SABA |
| 1898 | 04/20/1981 | | GILGER, DAVID | 20.00 | AGRICULTURE - IRRIGATION | 04/24/1914 | | | 14 | NOT IN WM AREA | SAN SABA |
| 1899 | 04/20/1981 | | OWEN-GILGER INC | 340.00 | AGRICULTURE - IRRIGATION | 12/31/1929 | | | 14 | NOT IN WM AREA | SAN SABA |
| 1900 | 04/20/1981 | | STIFFLEMIRE, STEVE D | 54.00 | AGRICULTURE - IRRIGATION | 12/31/1954 | | | 14 | NOT IN WM AREA | SAN SABA |
| 1901 | 04/20/1981 | | BAGLEY, ROY | 49.00 | AGRICULTURE - IRRIGATION | 12/31/1940 | | | 14 | NOT IN WM AREA | SAN SABA |
| 1902 | 04/20/1981 | | SANDERSON, GLENNETTA \| SANDERSON, JOHN T | 2.00 | AGRICULTURE - IRRIGATION | 12/31/1963 | | | 14 | NOT IN WM AREA | SAN SABA |
| 1903 | 04/20/1981 | A | CITY OF SAN SABA | 550.00 | MUNICIPAL/DOMESTIC | 06/29/1914 | | 30.0000 | 14 | NOT IN WM AREA | SAN SABA |
| 1903 | 04/20/1981 | A | CITY OF SAN SABA | 245.00 | MUNICIPAL/DOMESTIC | 06/29/1914 | | | 14 | NOT IN WM AREA | SAN SABA |
| 1903 | 04/20/1981 | A | CITY OF SAN SABA | 245.00 | AGRICULTURE - IRRIGATION | 06/29/1914 | | | 14 | NOT IN WM AREA | SAN SABA |
| 1904 | 04/20/1981 | | MILLICAN, WINSTON MIKE | 5.00 | AGRICULTURE - IRRIGATION | 12/31/1966 | | | 14 | NOT IN WM AREA | SAN SABA |
| 1905 | 04/20/1981 | | TOWNSEND, L F \| TOWNSEND, MARY B | 38.00 | AGRICULTURE - IRRIGATION | 12/31/1912 | | | 14 | NOT IN WM AREA | SAN SABA |
| 1906 | 04/20/1981 | | CITY OF SAN SABA | 54.00 | AGRICULTURE - IRRIGATION | 12/31/1920 | | | 14 | NOT IN WM AREA | SAN SABA |
| 1907 | 04/20/1981 | | MCCONNELL, PATSY RAYE | 198.00 | AGRICULTURE - IRRIGATION | 12/31/1933 | | | 14 | NOT IN WM AREA | SAN SABA |
| 1908 | 04/20/1981 | | OWEN, W L JR | 40.00 | AGRICULTURE - IRRIGATION | 10/08/1914 | | | 14 | NOT IN WM AREA | SAN SABA |
| 1908 | 04/20/1981 | | OWEN, W L JR | 10.00 | AGRICULTURE - IRRIGATION | 12/31/1930 | | | 14 | NOT IN WM AREA | SAN SABA |
| 1909 | 04/20/1981 | | SMITH, JOE C | 84.00 | AGRICULTURE - IRRIGATION | 12/31/1963 | | | 14 | NOT IN WM AREA | SAN SABA |
| 1910 | 04/20/1981 | | HUBBERT, EDGAR JR \| HUBBERT, LORENA | 14.00 | AGRICULTURE - IRRIGATION | 06/26/1914 | | 1.0000 | 14 | NOT IN WM AREA | SAN SABA |
| 1911 | 04/20/1981 | A | SHOOK, JIMMY N \| SHOOK, NANCY | 95.00 | AGRICULTURE - IRRIGATION | 12/31/1883 | | 0.5000 | 14 | NOT IN WM AREA | SAN SABA |
| 1912 | 04/20/1981 | | GAGE, ERROL DEAN \| GAGE, TONY MIKE | 112.00 | AGRICULTURE - IRRIGATION | 12/31/1915 | | | 14 | NOT IN WM AREA | SAN SABA |
| 1914 | 04/20/1981 | | BURNHAM, MARTHA OWEN \| BURNHAM, REAGAN O \| BURNHAM, RENICE \| S | 207.00 | AGRICULTURE - IRRIGATION | 12/31/1931 | | | 14 | NOT IN WM AREA | SAN SABA |
| 1915 | 04/20/1981 | | MAHAN, MAX | 220.00 | AGRICULTURE - IRRIGATION | 12/31/1918 | | | 14 | NOT IN WM AREA | SAN SABA |
| 1916 | 04/20/1981 | | JOHNSON, ALAN LANE \| JOHNSON, DIANA R | 103.00 | AGRICULTURE - IRRIGATION | 12/31/1908 | | | 14 | NOT IN WM AREA | SAN SABA |
| 1917 | 04/20/1981 | | BURNHAM, MARTHA OWEN \| BURNHAM, REAGAN O \| BURNHAM, RENICE \| S | 188.00 | AGRICULTURE - IRRIGATION | 12/31/1918 | | | 14 | NOT IN WM AREA | SAN SABA |
| 1918 | 04/20/1981 | | REAVIS, MIKE \| REAVIS, VALERIE | 40.00 | AGRICULTURE - IRRIGATION | 04/25/1914 | | | 14 | NOT IN WM AREA | SAN SABA |
| 1919 | 04/20/1981 | | 2016 SHAHAN FAMILY PARTNERSHIP LP | 15.00 | AGRICULTURE - IRRIGATION | 06/03/1914 | | | 14 | NOT IN WM AREA | SAN SABA |
| 1921 | 04/20/1981 | | SAN SABA IRREVOCABLE TRUST AGREEMENT | 20.00 | AGRICULTURE - IRRIGATION | 12/31/1904 | | | 14 | NOT IN WM AREA | SAN SABA |
| 1922 | 04/20/1981 | | SHAHAN, WAYNE R | 40.00 | AGRICULTURE - IRRIGATION | 06/03/1914 | | | 14 | NOT IN WM AREA | SAN SABA |
| 1924 | 04/20/1981 | | OLIVER, RAYMOND A | 49.00 | AGRICULTURE - IRRIGATION | 12/31/1905 | | | 14 | NOT IN WM AREA | SAN SABA |
| 1925 | 04/20/1981 | | HOLLADAY, SALLY ANN | 37.00 | AGRICULTURE - IRRIGATION | 05/30/1914 | | | 14 | NOT IN WM AREA | SAN SABA |
| 1926 | 04/20/1981 | | OLIVER, NORMA R \| OLIVER, R L JR \| OLIVER, ROBERT CLEMENTS \| OLIVER | 4.85 | AGRICULTURE - IRRIGATION | 12/31/1905 | | | 14 | NOT IN WM AREA | SAN SABA |
| 1926 | 04/20/1981 | | HILL, LANCE T \| WELLS, KAREN A | 0.33 | AGRICULTURE - IRRIGATION | 12/31/1905 | | | 14 | NOT IN WM AREA | SAN SABA |
| 1926 | 04/20/1981 | | JOLLEY, BARBARA \| JOLLEY, JOSEPH | 0.82 | AGRICULTURE - IRRIGATION | 12/31/1905 | | | 14 | NOT IN WM AREA | SAN SABA |
| 1927 | 04/20/1981 | | ALTIZER, MARJORIE ANN OBANON | 54.00 | AGRICULTURE - IRRIGATION | 12/31/1905 | | | 14 | NOT IN WM AREA | SAN SABA |
| 1928 | 04/20/1981 | | MILLICAN, ELSIE | 118.00 | AGRICULTURE - IRRIGATION | 12/31/1905 | | | 14 | NOT IN WM AREA | SAN SABA |
| 1929 | 04/20/1981 | | LIPTAK, WINNIFRED | 53.00 | AGRICULTURE - IRRIGATION | 12/31/1907 | | | 14 | NOT IN WM AREA | SAN SABA |
| 2452 | 02/07/1983 | | LEONARD, O P JR | 225.00 | AGRICULTURE - IRRIGATION | 06/26/1914 | | 15.0000 | 14 | NOT IN WM AREA | SAN SABA |
| 2452 | 02/07/1983 | | LEONARD, O P JR | 28.00 | AGRICULTURE - IRRIGATION | 06/26/1914 | | | 14 | NOT IN WM AREA | SAN SABA |
| 2452 | 02/07/1983 | | LEONARD, O P JR | 750.00 | AGRICULTURE - IRRIGATION | 11/19/1973 | | 470.0000 | 14 | NOT IN WM AREA | SAN SABA |
| 2452 | 02/07/1983 | | LEONARD, O P JR | 145.00 | AGRICULTURE - IRRIGATION | 12/31/1864 | | | 14 | NOT IN WM AREA | SAN SABA |
| 2452 | 02/07/1983 | | LEONARD, O P JR | 69.00 | AGRICULTURE - IRRIGATION | 12/31/1870 | | | 14 | NOT IN WM AREA | SAN SABA |
| 2452 | 02/07/1983 | | LEONARD, O P JR | 85.00 | AGRICULTURE - IRRIGATION | 12/31/1938 | | | 14 | NOT IN WM AREA | SAN SABA |
| 2516 | 08/31/1983 | A | KEETER, J PHILLIP | 11.90 | AGRICULTURE - IRRIGATION | 12/31/1966 | | | 14 | NOT IN WM AREA | SAN SABA |
| 2518 | 08/31/1983 | | GRANT, OSCAR L | 6.10 | AGRICULTURE - IRRIGATION | 12/31/1966 | | | 14 | NOT IN WM AREA | SAN SABA |
| 2519 | 08/31/1983 | | IRBY, JEAN | 8.00 | AGRICULTURE - IRRIGATION | 12/31/1966 | | | 14 | NOT IN WM AREA | SAN SABA |
| 2523 | 08/31/1983 | | LAFFERTY, TOM | 90.00 | AGRICULTURE - IRRIGATION | 07/20/1970 | | 90.0000 | 14 | NOT IN WM AREA | SAN SABA |
| 2525 | 08/31/1983 | | DRAPER, C BARTON \| DRAPER, IDA LUCILLE | 620.00 | AGRICULTURE - IRRIGATION | 12/31/1903 | | | 14 | NOT IN WM AREA | SAN SABA |
| 2529 | 08/31/1983 | | LOCKLEAR, T WARD | 239.00 | AGRICULTURE - IRRIGATION | 12/31/1924 | | | 14 | NOT IN WM AREA | SAN SABA |
| 2530 | 08/31/1983 | | RIVER CREEK LIMITED A TX LIMITED PARTNERSHIP | 41.00 | AGRICULTURE - IRRIGATION | 12/31/1904 | | | 14 | NOT IN WM AREA | SAN SABA |
| 2531 | 08/31/1983 | | BARNEY, RICHARD M | 28.08 | AGRICULTURE - IRRIGATION | 12/31/1960 | | 30.0000 | 14 | NOT IN WM AREA | SAN SABA |
| 2531 | 08/31/1983 | | STEWART LIVING TRUST | 43.33 | AGRICULTURE - IRRIGATION | 12/31/1960 | | | 14 | NOT IN WM AREA | SAN SABA |
| 2531 | 08/31/1983 | | TAPP, DON \| TAPP, JOYCE | 73.48 | AGRICULTURE - IRRIGATION | 12/31/1960 | | | 14 | NOT IN WM AREA | SAN SABA |

| WR NO | WR ISSUE DATE | AMENDMENT LETTER | OWNER NAME | DIVERSION AMOUNT (AFY) | USE | PRIORITY DATE | CONSUMPTIVE AMOUNT (AFY) | STORAGE AMOUNT (AF) | BASIN | WATER MASTER AREA | COUNTY |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2531 | 08/31/1983 | | REAGAN, MARILYN \| REAGAN, PAT | 55.11 | AGRICULTURE - IRRIGATION | 12/31/1960 | | | 14 | NOT IN WM AREA | SAN SABA |
| 2533 | 08/31/1983 | | BUSH, NANCY C \| BUSH, ROGER D | 44.00 | AGRICULTURE - IRRIGATION | 12/31/1912 | | | 14 | NOT IN WM AREA | SAN SABA |
| 2533 | 08/31/1983 | | BUSH, NANCY C | 44.00 | AGRICULTURE - IRRIGATION | 12/31/1912 | | | 14 | NOT IN WM AREA | SAN SABA |
| 2533 | 08/31/1983 | | CUMMINGS, KITTY JO SIMPSON | 44.00 | AGRICULTURE - IRRIGATION | 12/31/1912 | | | 14 | NOT IN WM AREA | SAN SABA |
| 2534 | 08/31/1983 | | NETTLESHIP FAMILY TRUST | 156.00 | AGRICULTURE - IRRIGATION | 12/31/1955 | | | 14 | NOT IN WM AREA | SAN SABA |
| 2540 | 08/31/1983 | | EDMONDSON, J C | 67.00 | AGRICULTURE - IRRIGATION | 12/31/1937 | | | 14 | NOT IN WM AREA | SAN SABA |
| 2546 | 08/31/1983 | | OREAR, CHERIE L \| OREAR, KENNETH O | 1600.00 | AGRICULTURE - IRRIGATION | 12/31/1956 | | 180.0000 | 14 | NOT IN WM AREA | SAN SABA |
| 2557 | 08/31/1983 | | BARFIELD, JOHN | 15.84 | AGRICULTURE - IRRIGATION | 08/31/1928 | | | 14 | NOT IN WM AREA | SAN SABA |
| 2558 | 08/31/1983 | | CAMPBELL, CECIL | 71.10 | AGRICULTURE - IRRIGATION | 08/31/1928 | | | 14 | NOT IN WM AREA | SAN SABA |
| 2559 | 08/31/1983 | | OSWALD, J C \| OSWALD, LOUISE | 27.00 | AGRICULTURE - IRRIGATION | 08/31/1928 | | | 14 | NOT IN WM AREA | SAN SABA |
| 2560 | 08/31/1983 | | MILLICAN, DEBORAH \| MILLICAN, ROBERT E | 27.00 | AGRICULTURE - IRRIGATION | 08/31/1928 | | | 14 | NOT IN WM AREA | SAN SABA |
| 2561 | 08/31/1983 | | CAMPBELL, CECIL | 39.06 | AGRICULTURE - IRRIGATION | 08/31/1928 | | 3.5000 | 14 | NOT IN WM AREA | SAN SABA |
| 2562 | 08/31/1983 | | CHRISTIAN, JACKIE \| LANGE, BONNIE \| WHITT, JAMES MARVIN \| WHITT, M | 49.42 | AGRICULTURE - IRRIGATION | 07/31/1913 | | | 14 | NOT IN WM AREA | SAN SABA |
| 2562 | 08/31/1983 | | BANNISTER, JOHN H \| BANNISTER, NANCY C | 46.58 | AGRICULTURE - IRRIGATION | 07/31/1913 | | | 14 | NOT IN WM AREA | SAN SABA |
| 2564 | 08/31/1983 | | COX, MARILYNE | 151.50 | AGRICULTURE - IRRIGATION | 12/31/1929 | | | 14 | NOT IN WM AREA | SAN SABA |
| 2564 | 08/31/1983 | | SCHIEFFER, CINDEE J | 151.50 | AGRICULTURE - IRRIGATION | 12/31/1929 | | | 14 | NOT IN WM AREA | SAN SABA |
| 2564 | 08/31/1983 | | ESCANABA BEND LLC | 151.50 | AGRICULTURE - IRRIGATION | 12/31/1929 | | | 14 | NOT IN WM AREA | SAN SABA |
| 2564 | 08/31/1983 | | OLIVER INVESTMENTS LLC | 151.50 | AGRICULTURE - IRRIGATION | 12/31/1929 | | | 14 | NOT IN WM AREA | SAN SABA |
| 2564 | 08/31/1983 | | SIMPSON, IRMA NELL \| SIMPSON, LUTHER W | 474.00 | AGRICULTURE - IRRIGATION | 12/31/1929 | | | 14 | NOT IN WM AREA | SAN SABA |
| 2564 | 08/31/1983 | | MONTGOMERY, JULIE E \| MONTGOMERY, KENDALL C | 20.00 | AGRICULTURE - IRRIGATION | 12/31/1929 | | | 14 | NOT IN WM AREA | SAN SABA |
| 2571 | 08/31/1983 | | CROMER FAMILY RANCHES LTD | 113.00 | AGRICULTURE - IRRIGATION | 07/31/1965 | | | 14 | NOT IN WM AREA | SAN SABA |
| 2572 | 08/31/1983 | | FREEMAN, ALTA FERN EDMONDSON | 232.00 | AGRICULTURE - IRRIGATION | 06/30/1910 | | | 14 | NOT IN WM AREA | SAN SABA |
| 2573 | 08/31/1983 | | BURKE, N MONETTE \| BURKE, STEPHEN | 11.00 | AGRICULTURE - IRRIGATION | 12/31/1952 | | | 14 | NOT IN WM AREA | SAN SABA |
| 2574 | 08/31/1983 | A | OLIVER, JOHN J | 45.00 | AGRICULTURE - IRRIGATION | 12/31/1911 | | | 14 | NOT IN WM AREA | SAN SABA |
| 2575 | 08/31/1983 | | WELLS, JOYCE WOOD \| WOOD, TOMMIE WORTH | 93.00 | AGRICULTURE - IRRIGATION | 12/31/1911 | | | 14 | NOT IN WM AREA | SAN SABA |
| 2577 | 08/31/1983 | | HAMBLEN, CHEREE | 44.00 | AGRICULTURE - IRRIGATION | 12/31/1911 | | | 14 | NOT IN WM AREA | SAN SABA |
| 2577 | 08/31/1983 | | WEINRICH, KEVIN F \| WEINRICH, LESLIE | 44.00 | AGRICULTURE - IRRIGATION | 12/31/1911 | | | 14 | NOT IN WM AREA | SAN SABA |
| 2578 | 08/31/1983 | | GRIMES, MICHAEL P \| GRIMES, SUE BETH OBANON | 30.00 | AGRICULTURE - IRRIGATION | 12/31/1940 | | | 14 | NOT IN WM AREA | SAN SABA |
| 2582 | 08/31/1983 | | ROCKAFELLOW, MICHAEL H \| ROCKAFELLOW, TAMELA L | 71.00 | AGRICULTURE - IRRIGATION | 12/31/1905 | | | 14 | NOT IN WM AREA | SAN SABA |
| 2582 | 08/31/1983 | | DICK GLOVER CO INC \| GEMSTAR INC | | DOMESTIC AND LIVESTOCK \| RECREATION | 12/31/1905 | | 14.0000 | 14 | NOT IN WM AREA | SAN SABA |
| 2583 | 08/31/1983 | | ROCKAFELLOW, MICHAEL H \| ROCKAFELLOW, TAMELA L | 259.00 | AGRICULTURE - IRRIGATION | 12/31/1912 | | | 14 | NOT IN WM AREA | SAN SABA |
| 2584 | 08/31/1983 | | MCDOWELL, MARJORIE C \| MYLES D MCDOWELL FAMILY TRUST | 96.00 | AGRICULTURE - IRRIGATION | 06/23/1914 | | | 14 | NOT IN WM AREA | SAN SABA |
| 2591 | 08/31/1983 | | MCCOY, JUDITH ANNE \| MCCOY, KENNETH R | 73.00 | AGRICULTURE - IRRIGATION | 01/31/1911 | | | 14 | NOT IN WM AREA | SAN SABA |
| 2593 | 08/31/1983 | | MCCOY, JUDITH ANNE \| MCCOY, KENNETH R | 57.00 | AGRICULTURE - IRRIGATION | 09/30/1963 | | | 14 | NOT IN WM AREA | SAN SABA |
| 2595 | 08/31/1983 | | BURGESS, REBECCA F \| BURGESS, WILLIAM G | 205.00 | AGRICULTURE - IRRIGATION | 12/31/1914 | | | 14 | NOT IN WM AREA | SAN SABA |
| 2601 | 08/31/1983 | | WARREN, KELCY | 105.00 | AGRICULTURE - IRRIGATION | 12/31/1957 | | | 14 | NOT IN WM AREA | SAN SABA |
| 2602 | 08/31/1983 | | PORCH, W D | 30.00 | AGRICULTURE - IRRIGATION | 06/30/1964 | | 4.0000 | 14 | NOT IN WM AREA | SAN SABA |
| 2603 | 08/31/1983 | | BRISTER, JACKIE | 187.00 | AGRICULTURE - IRRIGATION | 05/31/1907 | | | 14 | NOT IN WM AREA | SAN SABA |
| 2604 | 08/31/1983 | | CLARK, W N | 60.00 | AGRICULTURE - IRRIGATION | 05/31/1907 | | | 14 | NOT IN WM AREA | SAN SABA |
| 2606 | 08/31/1983 | | MILLICAN, ELSIE \| MILLICAN, ROBERT EUGENE \| MILLICAN, WINSTON MIKE | 18.00 | AGRICULTURE - IRRIGATION | 12/31/1961 | | 0.5000 | 14 | NOT IN WM AREA | SAN SABA |
| 3575 | 06/13/1978 | | BATES, LOU ERA \| SOFGE, H D | | DOMESTIC AND LIVESTOCK | 02/27/1978 | | 276.0000 | 14 | NOT IN WM AREA | SAN SABA |
| 5288 | 07/30/1990 | | JONES, KIMBERLEA GAYLE \| JONES, TOMMY LEE | 20.00 | AGRICULTURE - IRRIGATION | 03/20/1990 | | | 14 | NOT IN WM AREA | SAN SABA |
| 13395 | 12/14/2017 | | SLOAN LIVESTOCK LTD | 24.50 | AGRICULTURE - IRRIGATION | | | | 14 | NOT IN WM AREA | SAN SABA |
| 2644 | 08/31/1983 | A | US DEPARTMENT OF THE INTERIOR FISH AND WILDLIFE SERVICE | 27.67 | AGRICULTURE - IRRIGATION \| RECREATION | 12/31/1954 | | | 14 | NOT IN WM AREA | TRAVIS |
| 2645 | 08/31/1983 | | CITY OF LAGO VISTA | 9.00 | AGRICULTURE - IRRIGATION | 01/28/1974 | | 5.0000 | 14 | NOT IN WM AREA | TRAVIS |
| 2646 | 08/31/1983 | | ANDERSON, JAMES L | 0.07 | AGRICULTURE - IRRIGATION | 04/30/1964 | | | 14 | NOT IN WM AREA | TRAVIS |
| 2647 | 08/31/1983 | | TEXAS CONFERENCE ASSOCIATION OF SEVENTH-DAY ADVENTISTS | 5.70 | AGRICULTURE - IRRIGATION | 04/30/1964 | | | 14 | NOT IN WM AREA | TRAVIS |
| 2648 | 08/31/1983 | | SAAAM LTD | 0.23 | AGRICULTURE - IRRIGATION | 04/30/1964 | | | 14 | NOT IN WM AREA | TRAVIS |
| 2649 | 08/31/1983 | | ANDERSON, JAMES L | 5.90 | AGRICULTURE - IRRIGATION | 07/31/1963 | | | 14 | NOT IN WM AREA | TRAVIS |
| 2649 | 08/31/1983 | | DOUGLASS, CAROLYN | 4.10 | AGRICULTURE - IRRIGATION | 07/31/1963 | | | 14 | NOT IN WM AREA | TRAVIS |
| 2650 | 08/31/1983 | | TALBOTT, MARVIN T \| TALBOTT, PEGGY JEAN | 1.00 | AGRICULTURE - IRRIGATION | 07/31/1963 | | | 14 | NOT IN WM AREA | TRAVIS |
| 2651 | 08/31/1983 | A | US DEPARTMENT OF THE INTERIOR FISH AND WILDLIFE SERVICE | 14.33 | AGRICULTURE - IRRIGATION \| RECREATION | 12/31/1954 | | 9.0000 | 14 | NOT IN WM AREA | TRAVIS |
| 3344 | 10/21/1976 | | ONION CREEK CLUB | 12.00 | AGRICULTURE - IRRIGATION | 08/02/1976 | | 12.0000 | 14 | NOT IN WM AREA | TRAVIS |
| 3379 | 12/14/1976 | | HYDE PARK BAPTIST CHURCH | | RECREATION | 09/13/1976 | | 64.0000 | 14 | NOT IN WM AREA | TRAVIS |
| 3414 | 02/28/1977 | | COE, ROBERT \| SANSOM, CARROLL \| SANSOM, JAMES | 200.00 | AGRICULTURE - IRRIGATION | 09/27/1976 | | | 14 | NOT IN WM AREA | TRAVIS |
| 3815 | 06/23/1981 | | APACHE SHORES INC | | RECREATION | 03/30/1981 | | 128.0000 | 14 | NOT IN WM AREA | TRAVIS |
| 3841 | 12/08/1981 | A | BALCONES COUNTRY CLUB MEMBERSHIP ASSOCIATION INC | 76.00 | AGRICULTURE - IRRIGATION | 09/21/1981 | | 76.0000 | 14 | NOT IN WM AREA | TRAVIS |
| 3841 | 12/08/1981 | A | BALCONES COUNTRY CLUB MEMBERSHIP ASSOCIATION INC | | RECREATION | 09/21/1981 | | 36.0000 | 14 | NOT IN WM AREA | TRAVIS |
| 4008 | 08/31/1983 | | CITY OF AUSTIN | | RECREATION | 04/18/1983 | | 5.2000 | 14 | NOT IN WM AREA | TRAVIS |
| 4025 | 09/09/1983 | | THE LAKEWAY COMPANY | | AGRICULTURE - IRRIGATION | 04/18/1983 | | 19.0000 | 14 | NOT IN WM AREA | TRAVIS |
| 4169 | 01/21/1985 | A | HURST CREEK MUD OF TRAVIS COUNTY TEXAS | 700.00 | AGRICULTURE - IRRIGATION | 11/01/1982 | | 76.0000 | 14 | NOT IN WM AREA | TRAVIS |
| 4169 | 01/21/1985 | A | HURST CREEK MUD OF TRAVIS COUNTY TEXAS | 1000.00 | RECREATION | 11/01/1982 | | | 14 | NOT IN WM AREA | TRAVIS |
| 5042 | 06/30/1986 | | TEXAS CONFERENCE ASSOCIATION OF SEVENTH-DAY ADVENTISTS | | RECREATION | 01/29/1986 | | 32.0000 | 14 | NOT IN WM AREA | TRAVIS |
| 5070 | 09/29/1986 | | HH AUSTIN HOTEL ASSOCIATES LP | | RECREATION | 06/27/1986 | | 1.0300 | 14 | NOT IN WM AREA | TRAVIS |
| 5070 | 09/29/1986 | | HH AUSTIN HOTEL ASSOCIATES LP | 3395.00 | RECREATION | 06/27/1986 | | | 14 | NOT IN WM AREA | TRAVIS |
| 5095 | 12/15/1986 | | NORWOOD UNITED PARK | | RECREATION | 09/08/1986 | | 10.0000 | 14 | NOT IN WM AREA | TRAVIS |
| 5102 | 12/23/1986 | | AUSTIN AQUAPLEX PUD HOA INC | | RECREATION | 10/08/1986 | | 143.8700 | 14 | NOT IN WM AREA | TRAVIS |
| 5179 | 08/16/1988 | | WINDERMERE | | OTHER | 05/04/1988 | | | 14 | NOT IN WM AREA | TRAVIS |
| 5268 | 03/08/1990 | B | APPLIED MATERIALS INC | | RECREATION | 12/06/1989 | | 111.5000 | 14 | NOT IN WM AREA | TRAVIS |
| 5269 | 03/08/1990 | | MARKBOROUGH DEVELOPMENT COMPANY LIMITED | | RECREATION | 12/06/1989 | | 6.6000 | 14 | NOT IN WM AREA | TRAVIS |
| 5368 | 08/26/1988 | | TAYLOR WOODROW COMMUNITIES STEINER RANCH LTD | 122.84 | AGRICULTURE - IRRIGATION | 06/30/1954 | | | 14 | NOT IN WM AREA | TRAVIS |
| 5368 | 08/26/1988 | | 239 RIO VISTA LTD | 13.50 | AGRICULTURE - IRRIGATION | 06/30/1954 | | | 14 | NOT IN WM AREA | TRAVIS |
| 5368 | 08/26/1988 | | LAKE AUSTIN LAND AND CATTLE LTD | 1.13 | AGRICULTURE - IRRIGATION | 06/30/1954 | | | 14 | NOT IN WM AREA | TRAVIS |
| 5368 | 08/26/1988 | | MINI ME MGMT | 11.81 | AGRICULTURE - IRRIGATION | 06/30/1954 | | | 14 | NOT IN WM AREA | TRAVIS |
| 5368 | 08/26/1988 | | THL INVESTMENTS LTD | 7.99 | AGRICULTURE - IRRIGATION | 06/30/1954 | | | 14 | NOT IN WM AREA | TRAVIS |
| 5368 | 08/26/1988 | | LA DF WATERWORKS LTD | 1.65 | AGRICULTURE - IRRIGATION | 06/30/1954 | | | 14 | NOT IN WM AREA | TRAVIS |
| 5368 | 08/26/1988 | | MCCARTHY, MICHAEL G | 0.64 | AGRICULTURE - IRRIGATION | 06/30/1954 | | | 14 | NOT IN WM AREA | TRAVIS |
| 5368 | 08/26/1988 | | STEINER, ROBERT L | 0.18 | AGRICULTURE - IRRIGATION | 06/30/1954 | | | 14 | NOT IN WM AREA | TRAVIS |
| 5368 | 08/26/1988 | | FINN, RONALD LEE | 0.18 | AGRICULTURE - IRRIGATION | 06/30/1954 | | | 14 | NOT IN WM AREA | TRAVIS |
| 5368 | 08/26/1988 | | WILKERSON, DORIS | 0.05 | AGRICULTURE - IRRIGATION | 06/30/1954 | | | 14 | NOT IN WM AREA | TRAVIS |
| 5368 | 08/26/1988 | | CHOWNING, CLIFTON \| CHOWNING, JAY C | 0.03 | AGRICULTURE - IRRIGATION | 06/30/1954 | | | 14 | NOT IN WM AREA | TRAVIS |
| 5369 | 08/26/1988 | | BOHLS CATTLE RANCH AND INVESTMENTS VENTURE | 22.00 | AGRICULTURE - IRRIGATION | 12/31/1939 | | | 14 | NOT IN WM AREA | TRAVIS |
| 5371 | 08/26/1988 | | FOWLER, MARION | 8.00 | AGRICULTURE - IRRIGATION | 12/12/1956 | | | 14 | NOT IN WM AREA | TRAVIS |

# Lower Colorado Regional Water Planning Area
# TCEQ Active Water Rights - December 14, 2018

| WR NO | WR ISSUE DATE | AMENDMENT LETTER | OWNER NAME | DIVERSION AMOUNT (AFY) | USE | PRIORITY DATE | CONSUMPTIVE AMOUNT (AFY) | STORAGE AMOUNT (AF) | BASIN | WATER MASTER AREA | COUNTY |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 5372 | 08/26/1988 | | NALLE BUNNY RUN FARM LIMITED LIABILITY COMPANY | 23.84 | AGRICULTURE - IRRIGATION | 12/31/1948 | | | 14 | NOT IN WM AREA | TRAVIS |
| 5372 | 08/26/1988 | | HILL COUNTRY CONSERVANCY | 1.16 | AGRICULTURE - IRRIGATION | 12/31/1948 | | | 14 | NOT IN WM AREA | TRAVIS |
| 5373 | 08/26/1988 | | GAMEL, WILLIAM G \| GRANT, EARL L \| JOHNSON, DAVID O \| MUELLER, RAN | 11.00 | AGRICULTURE - IRRIGATION | 12/31/1966 | | | 14 | NOT IN WM AREA | TRAVIS |
| 5374 | 08/26/1988 | | GREAT HILL LTD | 13.00 | AGRICULTURE - IRRIGATION | 01/20/1976 | | | 14 | NOT IN WM AREA | TRAVIS |
| 5374 | 08/26/1988 | | GREAT HILL LTD | | RECREATION | 01/20/1976 | | 31.0000 | 14 | NOT IN WM AREA | TRAVIS |
| 5375 | 08/26/1988 | A | BROOK ANNE JOHNSON BROESCHE TRUST 1 \| CURT D JOHNSON TRUST 1 \| | 40.00 | AGRICULTURE - IRRIGATION | 08/16/1965 | | 6.5000 | 14 | NOT IN WM AREA | TRAVIS |
| 5376 | 08/26/1988 | | HILL COUNTRY GOLF INC | | RECREATION | 03/13/1972 | | 44.4000 | 14 | NOT IN WM AREA | TRAVIS |
| 5377 | 08/26/1988 | A | CITY OF AUSTIN | | RECREATION | 03/24/1975 | | 2.0000 | 14 | NOT IN WM AREA | TRAVIS |
| 5378 | 12/18/1991 | | BALCONES COUNTRY CLUB MEMBERSHIP ASSOCIATION INC | 60.00 | AGRICULTURE - IRRIGATION | 08/27/1991 | | | 14 | NOT IN WM AREA | TRAVIS |
| 5378 | 12/18/1991 | | BALCONES COUNTRY CLUB MEMBERSHIP ASSOCIATION INC | | RECREATION | 08/27/1991 | | 14.5000 | 14 | NOT IN WM AREA | TRAVIS |
| 5379 | 08/26/1988 | | FISH, MELANIE BAILEY \| FITZPATRICK, ARLENE BOLM \| FITZPATRICK, CURT | 1323.00 | AGRICULTURE - IRRIGATION | 06/10/1914 | | | 14 | NOT IN WM AREA | TRAVIS |
| 5380 | 08/26/1988 | B | CAPITOL AGGREGATES INC | 242.00 | MINING | 11/17/1964 | | | 14 | NOT IN WM AREA | TRAVIS |
| 5380 | 08/26/1988 | B | CAPITOL AGGREGATES INC | 27.00 | INDUSTRIAL | 11/17/1964 | | | 14 | NOT IN WM AREA | TRAVIS |
| 5380 | 08/26/1988 | B | CAPITOL AGGREGATES INC | 2540.00 | INDUSTRIAL \| MINING | 09/11/1972 | 340.0000 | 115.0000 | 14 | NOT IN WM AREA | TRAVIS |
| 5382 | 08/26/1988 | | GILL, ROBERT M \| MCMORRIS, JOANNA \| MCMORRIS, NORMA JEAN \| MCMO | 50.00 | AGRICULTURE - IRRIGATION | 06/29/1914 | | | 14 | NOT IN WM AREA | TRAVIS |
| 5384 | 08/26/1988 | | MCMORRIS, WILLIAM D JR | 74.00 | AGRICULTURE - IRRIGATION | 06/29/1914 | | | 14 | NOT IN WM AREA | TRAVIS |
| 5385 | 08/26/1988 | | GILL, ROBERT M \| MCMORRIS, JOANNA \| MCMORRIS, NORMA JEAN \| MCMO | 67.00 | AGRICULTURE - IRRIGATION | 03/04/1916 | | | 14 | NOT IN WM AREA | TRAVIS |
| 5386 | 08/26/1988 | | TEXAS INDUSTRIES INC | 110.00 | MINING | 05/25/1970 | 11.0000 | | 14 | NOT IN WM AREA | TRAVIS |
| 5392 | 08/26/1988 | | CLARK, JEANIE \| CLARK, RANN L | 2.00 | AGRICULTURE - IRRIGATION \| RECREATION | 01/15/1973 | | 2.0000 | 14 | NOT IN WM AREA | TRAVIS |
| 5393 | 06/28/1989 | B | TEXAS REGIONAL LANDFILL COMPANY LP | 17.00 | INDUSTRIAL | 06/30/1963 | | | 14 | NOT IN WM AREA | TRAVIS |
| 5393 | 06/28/1989 | B | TEXAS REGIONAL LANDFILL COMPANY LP | 3.00 | AGRICULTURE - IRRIGATION | 06/30/1963 | | | 14 | NOT IN WM AREA | TRAVIS |
| 5393 | 06/28/1989 | B | TEXAS REGIONAL LANDFILL COMPANY LP | 70.00 | INDUSTRIAL | 06/30/1963 | | | 14 | NOT IN WM AREA | TRAVIS |
| 5393 | 06/28/1989 | B | TEXAS REGIONAL LANDFILL COMPANY LP | 25.00 | AGRICULTURE - IRRIGATION | 06/30/1963 | | 20.0000 | 14 | NOT IN WM AREA | TRAVIS |
| 5394 | 08/26/1988 | | JOHNSON, PEARCE | 150.00 | AGRICULTURE - IRRIGATION | 04/25/1899 | | | 14 | NOT IN WM AREA | TRAVIS |
| 5396 | 08/26/1988 | A | BASTROP ENERGY PARTNERS LP | 180.00 | AGRICULTURE - IRRIGATION \| INDUSTRIAL \| INDUSTRIAL - POWER GE | 11/12/1913 | | | 14 | NOT IN WM AREA | TRAVIS |
| 5397 | 08/26/1988 | | WASHINGTON, CLARENCE | 17.00 | AGRICULTURE - AQUACULTURE \| INDUSTRIAL \| RECREATION | 11/20/1967 | | 64.0000 | 14 | NOT IN WM AREA | TRAVIS |
| 5401 | 08/26/1988 | | SIMECEK, J W | 30.00 | AGRICULTURE - IRRIGATION | 04/30/1963 | | 77.0000 | 14 | NOT IN WM AREA | TRAVIS |
| 5482 | 06/28/1989 | C | LOWER COLORADO RIVER AUTHORITY | | MUNICIPAL/DOMESTIC | 03/29/1926 | | 1170752.0000 | 14 | NOT IN WM AREA | TRAVIS |
| 5482 | 06/28/1989 | C | LOWER COLORADO RIVER AUTHORITY | 1470.00 | AGRICULTURE - IRRIGATION \| INDUSTRIAL \| MINING | 03/29/1926 | | | 14 | NOT IN WM AREA | TRAVIS |
| 5482 | 06/28/1989 | C | LOWER COLORADO RIVER AUTHORITY | | HYDROELECTRIC \| INSTREAM \| RECREATION | 03/29/1926 | | | 14 | NOT IN WM AREA | TRAVIS |
| 5483 | 08/26/1988 | A | BODDEN, CARLEEN \| BODDEN, NIX O | 0.50 | AGRICULTURE - IRRIGATION | 12/31/1961 | | | 14 | NOT IN WM AREA | TRAVIS |
| 5483 | 08/26/1988 | A | MURRAY, JEROME | 0.50 | AGRICULTURE - IRRIGATION | 12/31/1961 | | | 14 | NOT IN WM AREA | TRAVIS |
| 5489 | 06/28/1989 | A | CITY OF AUSTIN | | INDUSTRIAL \| INDUSTRIAL - POWER GENERATION \| RECREATION \| WA | 02/23/1965 | | 33940.0000 | 14 | NOT IN WM AREA | TRAVIS |
| 5489 | 06/28/1989 | A | CITY OF AUSTIN | 20300.00 | MUNICIPAL/DOMESTIC | 08/20/1945 | | | 14 | NOT IN WM AREA | TRAVIS |
| 5489 | 06/28/1989 | A | CITY OF AUSTIN | 16156.00 | INDUSTRIAL \| INDUSTRIAL - POWER GENERATION \| WATER QUALITY | 08/20/1945 | | | 14 | NOT IN WM AREA | TRAVIS |
| 5491 | 06/28/1989 | | HEJL, ROBERT D | 22.00 | AGRICULTURE - IRRIGATION \| INDUSTRIAL | 12/31/1952 | | 3.5000 | 14 | NOT IN WM AREA | TRAVIS |
| 5542 | 03/01/1996 | | WELLS BRANCH MUD | | RECREATION | 11/20/1995 | | 15.0000 | 14 | NOT IN WM AREA | TRAVIS |
| 5564 | 04/11/1997 | | NATIONAL INSTRUMENTS CORPORATION | | RECREATION | 12/09/1996 | | 4.1000 | 14 | NOT IN WM AREA | TRAVIS |
| 5677 | 03/23/2000 | B | LOWER COLORADO RIVER AUTHORITY | 24000.00 | MUNICIPAL/DOMESTIC | 02/02/2000 | | | 14 | NOT IN WM AREA | TRAVIS |
| 5730 | 08/22/2001 | | BRAZOS RIVER AUTHORITY | 25000.00 | AGRICULTURE - IRRIGATION \| INDUSTRIAL \| MUNICIPAL/DOMESTIC | 03/07/1938 | | | 14 | NOT IN WM AREA | TRAVIS |
| 5781 | 12/14/2004 | | BAE SYSTEMS INC | | RECREATION | 07/03/2002 | | 4.3300 | 14 | NOT IN WM AREA | TRAVIS |
| 5790 | 08/26/2003 | | CITY OF PFLUGERVILLE | 12000.00 | MUNICIPAL/DOMESTIC \| RECREATION | 12/20/2002 | | 1700.0000 | 14 | NOT IN WM AREA | TRAVIS |
| 5888 | 01/30/2006 | | NINE HIDDEN LAKE LTD | | RECREATION | 06/06/2005 | | 89.7000 | 14 | NOT IN WM AREA | TRAVIS |
| 12215 | 05/21/2008 | | BUTLER FAMILY PARTNERSHIP LTD \| CERCO DEVELOPMENT INC | | RECREATION | 07/26/2007 | | 69.3000 | 14 | NOT IN WM AREA | TRAVIS |
| 12413 | 03/23/2010 | | NORTHTOWN MUD | | RECREATION | 05/21/2009 | | 3.2400 | 14 | NOT IN WM AREA | TRAVIS |
| 12417 | 10/15/2010 | | LAKESIDE WCID 2-C \| LAKESIDE WCID 2-D | | AGRICULTURE - IRRIGATION \| RECREATION | 07/28/2009 | | 69.2000 | 14 | NOT IN WM AREA | TRAVIS |
| 12526 | 11/18/2009 | | CITY OF AUSTIN | 165.00 | AGRICULTURE - IRRIGATION \| RECREATION | | | | 14 | NOT IN WM AREA | TRAVIS |
| 13334 | | | ESTATE OF LENORA REIMERS | 85.00 | MUNICIPAL/DOMESTIC | | | | 14 | NOT IN WM AREA | TRAVIS |
| 13443 | 04/27/2018 | | MARINA CLUB HOMEOWNERS ASSOCIATION INC | 58.17 | AGRICULTURE | | | | 14 | NOT IN WM AREA | TRAVIS |
| 4007 | 08/23/1983 | C | CITY OF CEDAR PARK | | MUNICIPAL/DOMESTIC | 07/18/1983 | | | 14 | BRAZOS | TRAVIS \| WILLIAMSON |
| 4007 | 08/23/1983 | C | CITY OF CEDAR PARK | 5600.00 | AGRICULTURE - IRRIGATION \| INDUSTRIAL \| MUNICIPAL/DOMESTIC | 07/18/1983 | | | 14 | BRAZOS | TRAVIS \| WILLIAMSON |
| 3418 | 02/07/1985 | | ANDERSON, HARRY H \| ANDERSON, NANCY B | 110.00 | AGRICULTURE - IRRIGATION | 12/31/1910 | | 10.0000 | 13 | NOT IN WM AREA | WHARTON |
| 3418 | 02/07/1985 | | ANDERSON, HARRY H \| ANDERSON, NANCY B | 1010.00 | AGRICULTURE - IRRIGATION | 05/07/1979 | | | 13 | NOT IN WM AREA | WHARTON |
| 3418 | 02/07/1985 | | LAAS, BETTY J | 480.00 | AGRICULTURE - IRRIGATION | 05/07/1979 | | | 13 | NOT IN WM AREA | WHARTON |
| 3419 | 02/07/1985 | | ANDERSON, HARRY H \| ANDERSON, NANCY B | 800.00 | AGRICULTURE - IRRIGATION | 05/07/1979 | | 10.0000 | 13 | NOT IN WM AREA | WHARTON |
| 3420 | 02/07/1985 | | PEMM PARTNERS LTD | 300.00 | AGRICULTURE - IRRIGATION | 09/10/1979 | | 300.0000 | 13 | NOT IN WM AREA | WHARTON |
| 3814 | 06/23/1981 | | FORGASON, JAMES L | 912.00 | AGRICULTURE - IRRIGATION | 03/24/1981 | | | 13 | NOT IN WM AREA | WHARTON |
| 3816 | 05/30/1981 | | BAXTER, MARY JOCHETZ \| JOCHETZ, CHARLES DAVID \| JOCHETZ, JAMES E | 400.00 | AGRICULTURE - IRRIGATION | 05/30/1981 | | | 13 | NOT IN WM AREA | WHARTON |
| 3847 | 02/16/1982 | | HLAVINKA COMPANY \| S W K LAND CO | 1011.00 | AGRICULTURE - IRRIGATION | 11/30/1981 | | | 13 | NOT IN WM AREA | WHARTON |
| 3887 | 07/05/1982 | | RABIUS, JO MARIE \| RABIUS, RAYMOND A | 275.00 | AGRICULTURE - IRRIGATION | 04/19/1982 | | | 13 | NOT IN WM AREA | WHARTON |
| 3926 | 12/01/1982 | | CORMAN, BRENDA JEAN BURROUGHS \| CORMAN, CHERRY FAYE ADAMS \| C | 300.00 | AGRICULTURE - IRRIGATION | 09/07/1982 | | | 13 | NOT IN WM AREA | WHARTON |
| 4177 | 02/01/1985 | | GUESS, WAYNE ALLEN | 75.05 | AGRICULTURE - IRRIGATION | 09/25/1984 | | | 13 | NOT IN WM AREA | WHARTON |
| 4177 | 02/01/1985 | | GUESS, THERESA ANN \| GUESS, WAYNE ALLEN | 88.95 | AGRICULTURE - IRRIGATION | 09/25/1984 | | | 13 | NOT IN WM AREA | WHARTON |
| 4229 | 06/26/1985 | | MARCIAL SORREL II TRUST | 297.00 | AGRICULTURE - IRRIGATION | 03/19/1985 | | 34.4100 | 13 | NOT IN WM AREA | WHARTON |
| 4243 | 09/17/1985 | | MILLER, GALE \| MILLER, MARY BETH | | DOMESTIC AND LIVESTOCK \| RECREATION | 05/07/1985 | | 138.7100 | 15 | NOT IN WM AREA | WHARTON |
| 4243 | 09/17/1985 | | MILLER, GALE \| MILLER, MARY BETH | 110.51 | RECREATION | 05/07/1985 | | | 15 | NOT IN WM AREA | WHARTON |
| 4284 | 01/23/1986 | | ROBERTS, DONALD G \| ROBERTS, GARY W | 450.00 | AGRICULTURE - IRRIGATION | 07/30/1985 | | | 13 | NOT IN WM AREA | WHARTON |
| 4288 | 01/29/1986 | | BROWN, JUDY MACHA \| MACHA, GENE \| MACHA, LARRY \| MACHA, LEROY | 1151.10 | AGRICULTURE - IRRIGATION | 09/03/1985 | | | 13 | NOT IN WM AREA | WHARTON |
| 4773 | 01/20/1987 | | HOLUB, EDMUND | 160.00 | AGRICULTURE - IRRIGATION | 12/31/1951 | | | 15 | NOT IN WM AREA | WHARTON |
| 4774 | 01/20/1987 | | GANN, JOHN T JR | 63.00 | AGRICULTURE - IRRIGATION | 06/30/1948 | | | 15 | NOT IN WM AREA | WHARTON |
| 4775 | 01/20/1987 | | ALLEN, KATHRYN | 640.00 | AGRICULTURE - IRRIGATION | 12/31/1941 | | | 15 | NOT IN WM AREA | WHARTON |
| 4776 | 01/20/1987 | | GANN, JOHN T JR | 227.50 | AGRICULTURE - IRRIGATION | 12/31/1941 | | | 15 | NOT IN WM AREA | WHARTON |
| 4777 | 01/20/1987 | | PATSY RUTH COX FAMILY LIMITED PARTNERSHIP | 640.00 | AGRICULTURE - IRRIGATION | 04/30/1944 | | | 15 | NOT IN WM AREA | WHARTON |
| 4778 | 01/20/1987 | | HLAVINKA, JAMES R | 1093.00 | AGRICULTURE - IRRIGATION | 03/31/1953 | | | 15 | NOT IN WM AREA | WHARTON |
| 4779 | 01/20/1987 | | SOUTH TEXAS RICE INC | 347.25 | AGRICULTURE - IRRIGATION | 04/30/1923 | | | 15 | NOT IN WM AREA | WHARTON |
| 4779 | 01/20/1987 | | CALLAHAN, ELIAS R | 115.75 | AGRICULTURE - IRRIGATION | 04/30/1923 | | | 15 | NOT IN WM AREA | WHARTON |
| 4784 | 01/20/1987 | | SOUTH TEXAS LAND LIMITED PARTNERSHIP | 324.00 | AGRICULTURE - IRRIGATION | 04/30/1944 | | | 15 | NOT IN WM AREA | WHARTON |
| 4785 | 01/20/1987 | | MAREK FARMS | 26.00 | AGRICULTURE - IRRIGATION | 04/30/1944 | | | 15 | NOT IN WM AREA | WHARTON |
| 5324 | 05/07/1991 | | RABIUS CHILDRENS TRUST CARE OF TIMOTHY RABIUS TRUSTEE | 87.00 | AGRICULTURE - IRRIGATION | 10/25/1990 | | | 13 | NOT IN WM AREA | WHARTON |
| 5338 | 03/19/1991 | A | STONE, BERNARD O JR | 420.00 | AGRICULTURE - IRRIGATION | 12/19/1990 | | | 13 | NOT IN WM AREA | WHARTON |
| 5435 | 08/26/1988 | A | TRI-GEN LAND CORP | 192.00 | AGRICULTURE - IRRIGATION | 12/31/1955 | | | 14 | NOT IN WM AREA | WHARTON |
| 5459 | 08/19/1993 | | S & S FARMS JOINT VENTURE | 1000.00 | AGRICULTURE - IRRIGATION | 04/21/1993 | | | 13 | NOT IN WM AREA | WHARTON |
| 5477 | 06/28/1989 | D | LOWER COLORADO RIVER AUTHORITY | 55000.00 | AGRICULTURE - IRRIGATION \| INDUSTRIAL \| MUNICIPAL/DOMESTIC \| I | 09/01/1907 | | | 14 | NOT IN WM AREA | WHARTON |

# Lower Colorado Regional Water Planning Area
# TCEQ Active Water Rights - December 14, 2018

| WR NO | WR ISSUE DATE | AMENDMENT LETTER | OWNER NAME | DIVERSION AMOUNT (AFY) | USE | PRIORITY DATE | CONSUMPTIVE AMOUNT (AFY) | STORAGE AMOUNT (AF) | BASIN | WATER MASTER AREA | COUNTY |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 5568 | 06/20/1997 | | MORRISON TRUST | 1120.00 | AGRICULTURE - IRRIGATION | 01/15/1997 | | | 13 | NOT IN WM AREA | WHARTON |
| 5573 | 06/20/1997 | | ANSLEY, ANNIE LEE | 1289.00 | AGRICULTURE - IRRIGATION | 01/21/1997 | | | 13 | NOT IN WM AREA | WHARTON |
| 5623 | 11/05/1999 | | CALLAWAY, STEVEN C \| MEYERS, CINDY C | 185.00 | AGRICULTURE - IRRIGATION | 04/06/1999 | | | 13 | NOT IN WM AREA | WHARTON |
| 5674 | 08/31/2000 | | PREISLER, DOROTHY \| PREISLER, F JOE \| PREISLER, JAMES A \| PREISLER, J | 152.00 | AGRICULTURE - IRRIGATION | 02/04/2000 | | | 13 | NOT IN WM AREA | WHARTON |
| 5684 | 08/31/2000 | | ANSLEY, HUDGINS DUNNAM \| ANSLEY, MORROW LOU \| ANSLEY, WILLIAM A | 184.00 | AGRICULTURE - IRRIGATION | 05/05/2000 | | | 13 | NOT IN WM AREA | WHARTON |
| 5685 | 08/31/2000 | | SIKORA, MARIE E | 33.00 | AGRICULTURE - IRRIGATION | 05/05/2000 | | | 13 | NOT IN WM AREA | WHARTON |
| 5702 | 12/20/2001 | | HUDGINS, REX \| HUDGINS, STEVE | 217.00 | AGRICULTURE - IRRIGATION | 11/01/2000 | | | 13 | NOT IN WM AREA | WHARTON |
| 5721 | 07/17/2001 | | MULLANI, LINDA \| MULLANI, NIZAR | 72.00 | AGRICULTURE - IRRIGATION | 11/16/2000 | | | 13 | NOT IN WM AREA | WHARTON |
| 13112 | 03/23/2017 | | TURNER, THOMAS J | 232.50 | AGRICULTURE - IRRIGATION | 12/30/2015 | | 1.0300 | 16 | SOUTH TEXAS | WHARTON |
| 396 | 07/21/1977 | | TEXAS UTILITIES ELECTRIC COMPANY | 3500.00 | INDUSTRIAL \| INDUSTRIAL - POWER GENERATION \| WATER QUALITY | | 3500.0000 | | 12 | NOT IN WM AREA | |
| 411 | 12/19/1977 | | CITY OF CLYDE | 1534000.00 | INDUSTRIAL \| INDUSTRIAL - POWER GENERATION \| WATER QUALITY | | 11837.0000 | | 12 | NOT IN WM AREA | |
| 1264 | 11/15/1982 | A | CITY OF ASPERMONT | 118.00 | MUNICIPAL/DOMESTIC | | | | 12 | NOT IN WM AREA | |
| 1265 | 11/15/1982 | | CITY OF OBRIEN | 10.00 | MUNICIPAL/DOMESTIC | | | | 12 | NOT IN WM AREA | |
| 1266 | 11/15/1982 | | CITY OF ROCHESTER | 26.00 | MUNICIPAL/DOMESTIC | | | | 12 | NOT IN WM AREA | |
| 1267 | 11/15/1982 | | CITY OF RULE | 45.00 | MUNICIPAL/DOMESTIC | | | | 12 | NOT IN WM AREA | |
| 1268 | 11/15/1982 | | CITY OF BENJAMIN | 13.00 | MUNICIPAL/DOMESTIC | | | | 12 | NOT IN WM AREA | |
| 1899 | 01/01/1992 | | CITY OF GRAHAM | 1000.00 | MUNICIPAL/DOMESTIC | | | | 12 | NOT IN WM AREA | |
| 2327 | 02/01/2000 | A | CITY OF STAMFORD | 1820.00 | MUNICIPAL/DOMESTIC | | | | 12 | NOT IN WM AREA | |
| 2347 | 09/17/2001 | | WEST TEXAS UTILITIES CO | 2200.00 | INDUSTRIAL \| INDUSTRIAL - POWER GENERATION | | | | 12 | NOT IN WM AREA | |
| 2356 | 09/01/2001 | | CITY OF ROUND ROCK | 6944.00 | MUNICIPAL/DOMESTIC | | | | 12 | NOT IN WM AREA | |
| 2362 | 09/01/2001 | | CITY OF GEORGETOWN | 22168.00 | MUNICIPAL/DOMESTIC | | | | 12 | NOT IN WM AREA | |
| 2376 | 09/10/2001 | | BRAZOS RIVER AUTHORITY | 3000.00 | MUNICIPAL/DOMESTIC | | | | 12 | NOT IN WM AREA | |
| 2430 | 09/01/2002 | | CITY OF ROUND ROCK | 4500.00 | MUNICIPAL/DOMESTIC | | | | 12 | NOT IN WM AREA | |
| 5887 | | | SEA CENTER TEXAS | | MARICULTURE | | | | 12 | NOT IN WM AREA | |
| 12814 | 02/13/2006 | | CITY OF ROUND ROCK | 9484.00 | MUNICIPAL/DOMESTIC | | | | 12 | NOT IN WM AREA | |
| 12907 | 06/11/2013 | | THE DOW CHEMICAL COMPANY | | AGRICULTURE - IRRIGATION | | | 31.1400 | 12 | NOT IN WM AREA | |
| 12970 | 06/21/2013 | | BRAZOS RIVER AUTHORITY | | INDUSTRIAL \| MUNICIPAL/DOMESTIC | | | | 12 | NOT IN WM AREA | |
| 13414 | 02/16/2018 | | ZACHRY INDUSTRIAL INC | 79.00 | INDUSTRIAL | | | | 12 | NOT IN WM AREA | |
| 5067 | 08/18/1986 | | OMAR ARLT TRUST \| ROBERT STRUNK TRUST \| ULLMAN, ELIZABETH ANN | 2290.00 | AGRICULTURE - IRRIGATION | 06/04/1986 | | | 13 | NOT IN WM AREA | |
| 132 | 07/14/1971 | | SOUTHWESTERN GRAPHITE COMPANY | 400.00 | MINING | 06/14/1942 | | | 14 | NOT IN WM AREA | |
| 327 | 08/05/1977 | A | STP NUCLEAR OPERATING COMPANY | 102000.00 | INDUSTRIAL \| INDUSTRIAL - POWER GENERATION | | | | 14 | NOT IN WM AREA | |
| 426 | 03/30/1978 | | CITY OF ROBERT LEE | 50.00 | MUNICIPAL/DOMESTIC | | | | 14 | NOT IN WM AREA | |
| 1120 | 04/09/1981 | | US DEPARTMENT OF THE INTERIOR FISH AND WILDLIFE SERVICE | 100.00 | INDUSTRIAL | | | | 14 | NOT IN WM AREA | |
| 1164 | 10/22/1981 | | CITY OF EARLY | 1228.00 | MUNICIPAL/DOMESTIC | | | | 14 | NOT IN WM AREA | |
| 1166 | 10/30/1981 | B | HURST CREEK MUNICIPAL UTILITY DISTRICT | 1600.00 | INDUSTRIAL \| MUNICIPAL/DOMESTIC | | | | 14 | NOT IN WM AREA | |
| 1196 | 03/24/1982 | | CITY OF LAWN | 200.00 | MUNICIPAL/DOMESTIC | | | | 14 | NOT IN WM AREA | |
| 1229 | 09/14/1982 | | DAVENPORT RANCH MUD 1 | 1700.00 | MUNICIPAL/DOMESTIC | | | | 14 | NOT IN WM AREA | |
| 1242 | 09/14/1982 | | TRAVIS COUNTY WCID 20 | 1100.00 | MUNICIPAL/DOMESTIC | | | | 14 | NOT IN WM AREA | |
| 1368 | 12/09/1983 | | CITY OF GRANITE SHOALS | 830.00 | MUNICIPAL/DOMESTIC | | | | 14 | NOT IN WM AREA | |
| 1394 | 03/09/1984 | | BRADLEY, GARY L | 101.00 | MUNICIPAL/DOMESTIC | | | | 14 | NOT IN WM AREA | |
| 1409 | 04/18/1984 | A | CITY OF LAGO VISTA | 6500.00 | MUNICIPAL/DOMESTIC | | | | 14 | NOT IN WM AREA | |
| 1448 | 07/13/1984 | | STRAUS, JOCELYN LEVI | 630.00 | MUNICIPAL/DOMESTIC | | | | 14 | NOT IN WM AREA | |
| 1481 | 10/29/1984 | B | TRAVIS COUNTY WCID 18 | 1400.00 | MUNICIPAL/DOMESTIC | | | | 14 | NOT IN WM AREA | |
| 1490 | 12/10/1984 | | RESORT RANCH OF LAKE TRAVIS INC | 50.00 | MUNICIPAL/DOMESTIC | | | | 14 | NOT IN WM AREA | |
| 1490 | 12/10/1984 | | RESORT RANCH OF LAKE TRAVIS INC | 100.00 | AGRICULTURE - IRRIGATION | | | | 14 | NOT IN WM AREA | |
| 1505 | 01/31/1985 | B | CITY OF BURNET | 4100.00 | MUNICIPAL/DOMESTIC | | | | 14 | NOT IN WM AREA | |
| 1522 | 06/12/1985 | | EANES ISD | 37.00 | MUNICIPAL/DOMESTIC | | | | 14 | NOT IN WM AREA | |
| 1582 | 02/28/1986 | | TRAVIS COUNTY WCID 20 | 35.00 | MUNICIPAL/DOMESTIC | | | | 14 | NOT IN WM AREA | |
| 1626 | 04/20/1987 | | BROOKESMITH WSC | 307.00 | MUNICIPAL/DOMESTIC | | | | 14 | NOT IN WM AREA | |
| 1738 | 09/27/1989 | | GARWOOD IRRIGATION COMPANY LLC | | AGRICULTURE - IRRIGATION | 04/20/1989 | | | 14 | NOT IN WM AREA | |
| 1763 | 03/08/1990 | | CITY OF SANTA ANNA | 113.00 | MUNICIPAL/DOMESTIC | | | | 14 | NOT IN WM AREA | |
| 1772 | 06/05/1990 | | CITY OF AUSTIN | 250000.00 | MUNICIPAL/DOMESTIC | | | | 14 | NOT IN WM AREA | |
| 1825 | 09/23/1991 | C | RIVER PLACE MUNICIPAL UTILITY DISTRICT | 900.00 | MUNICIPAL/DOMESTIC | | | | 14 | NOT IN WM AREA | |
| 1833 | 12/03/1991 | A | LAKESIDE UTILITIES INC | 25.00 | MUNICIPAL/DOMESTIC | | | | 14 | NOT IN WM AREA | |
| 1836 | 01/01/1992 | | CITY OF MARBLE FALLS | 2000.00 | MUNICIPAL/DOMESTIC | | | | 14 | NOT IN WM AREA | |
| 1851 | 10/02/1990 | A | JONES, KIMBERLEA GAYLE \| JONES, TOMMY LEE | 20.00 | AGRICULTURE - IRRIGATION | | | | 14 | NOT IN WM AREA | |
| 1877 | 07/31/1992 | | CITY OF LEANDER | 64.00 | AGRICULTURE - IRRIGATION | | | | 14 | NOT IN WM AREA | |
| 1924 | 12/29/1993 | | TREFNY, CHARLES T | 400.00 | AGRICULTURE - IRRIGATION | | | | 14 | NOT IN WM AREA | |
| 1925 | 12/29/1993 | A | MUELLER, DONNA ZAPALAC \| ZAPALAC, KENNETH | 300.00 | AGRICULTURE - IRRIGATION | | | | 14 | NOT IN WM AREA | |
| 1926 | 12/03/1993 | | VOLENTE BEACH INC | 1.00 | RECREATION | | | | 14 | NOT IN WM AREA | |
| 1930 | 12/29/1993 | | HIGHLAND LAKES ATHLETIC CORPORATION | 6.00 | AGRICULTURE - IRRIGATION | | | | 14 | NOT IN WM AREA | |
| 1950 | 01/25/1994 | | HORSESHOE BAY PROPERTY OWNERS ASSOCIATION INC | 27.00 | AGRICULTURE - IRRIGATION | | | | 14 | NOT IN WM AREA | |
| 1953 | 01/25/1994 | B | POINT VENTURE PROPERTY OWNERS ASSOCIATION INC | 75.00 | AGRICULTURE - IRRIGATION | | | | 14 | NOT IN WM AREA | |
| 1955 | 01/25/1994 | A | BARTON CREEK RESORT & COUNTRY CLUB | 500.00 | AGRICULTURE - IRRIGATION | | | | 14 | NOT IN WM AREA | |
| 1956 | 01/25/1994 | | HORSESHOE BAY APPLEHEAD PROPERTY OWNERS ASSOCIATION INC | 27.00 | AGRICULTURE - IRRIGATION | | | | 14 | NOT IN WM AREA | |
| 1959 | 01/21/1994 | C | RIVER PLACE GOLF GROUP LP | 92.07 | AGRICULTURE - IRRIGATION | | | | 14 | NOT IN WM AREA | |
| 1961 | 04/05/1994 | | HYATT CORPORATION | 15.00 | AGRICULTURE - IRRIGATION | | | | 14 | NOT IN WM AREA | |
| 1962 | 03/04/1994 | | BRYANT, DON M \| BRYANT, KATHIE A | 21.00 | MUNICIPAL/DOMESTIC | | | | 14 | NOT IN WM AREA | |
| 1963 | 03/24/1994 | | CDT COLLECTING INC | 850.00 | AGRICULTURE - IRRIGATION | | | | 14 | NOT IN WM AREA | |
| 1964 | 03/24/1994 | A | USAA REAL ESTATE COMPANY | 18.50 | MUNICIPAL/DOMESTIC | | | | 14 | NOT IN WM AREA | |
| 1969 | 04/29/1994 | A | RICHARD T SUTTLE J TRUSTEE | 30.00 | AGRICULTURE - IRRIGATION | | | | 14 | NOT IN WM AREA | |
| 1975 | 03/24/1994 | A | HERMOSA OFFICE PARK PUD OWNERS ASSOCIATION INC | 15.00 | AGRICULTURE - IRRIGATION | | | | 14 | NOT IN WM AREA | |
| 2079 | 08/20/1996 | | HIDDEN VALLEY SUBDIVISION COOPERATIVE | 10.00 | MUNICIPAL/DOMESTIC | | | | 14 | NOT IN WM AREA | |
| 2262 | 05/22/2000 | | PECAN UTILITIES COMPANY INC | 30.00 | MUNICIPAL/DOMESTIC | | | | 14 | NOT IN WM AREA | |
| 2288 | 09/28/2000 | | LLANO COUNTY MUD 1 | 87.00 | MUNICIPAL/DOMESTIC | | | | 14 | NOT IN WM AREA | |
| 2299 | 08/28/1998 | | INVERNESS UTILITY COMPANY INC | 49.50 | MUNICIPAL/DOMESTIC | | | | 14 | NOT IN WM AREA | |
| 2330 | 01/18/2000 | | AMENDED AND RESTATED 1989 TRUST \| TESTAMENTARY TRUSTS ESTATES | 55000.00 | AGRICULTURE - IRRIGATION | | | | 14 | NOT IN WM AREA | |
| 2342 | 07/31/2001 | | BASTROP ENERGY PARTNERS LP | 3220.00 | INDUSTRIAL | | | | 14 | NOT IN WM AREA | |
| 2358 | 08/22/2001 | | BRAZOS RIVER AUTHORITY | 25000.00 | MUNICIPAL/DOMESTIC | | | | 14 | NOT IN WM AREA | |
| 2381 | 06/13/2001 | | CITY OF CEDAR PARK | 18000.00 | MUNICIPAL/DOMESTIC | | | | 14 | NOT IN WM AREA | |
| 2399 | 04/22/2002 | | RAINBOW MATERIALS LP | 46.00 | INDUSTRIAL | | | | 14 | NOT IN WM AREA | |
| 2405 | 07/18/2002 | | DRIPPING SPRINGS WSC | 560.00 | MUNICIPAL/DOMESTIC | | | | 14 | NOT IN WM AREA | |
| 2414 | 09/25/2002 | | CITY OF PFLUGERVILLE | 12000.00 | MUNICIPAL/DOMESTIC | | | | 14 | NOT IN WM AREA | |

| WR NO | WR ISSUE DATE | AMENDMENT LETTER | OWNER NAME | DIVERSION AMOUNT (AFY) | USE | PRIORITY DATE | CONSUMPTIVE AMOUNT (AFY) | STORAGE AMOUNT (AF) | BASIN | WATER MASTER AREA | COUNTY |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2435 | 06/12/2003 | | CITY OF MARBLE FALLS | 1000.00 | MUNICIPAL/DOMESTIC | | | | 14 | NOT IN WM AREA | |
| 2444 | 05/23/2003 | | TRAVIS COUNTY WCID 17 | 8800.00 | MUNICIPAL/DOMESTIC | | | | 14 | NOT IN WM AREA | |
| 2464 | 04/01/2004 | A | CITY OF LIBERTY HILL | 600.00 | MUNICIPAL/DOMESTIC | | | | 14 | NOT IN WM AREA | |
| 2519 | 11/02/2005 | A | THE TRAILS PROPERTY OWNERS ASSOCIATION INC | 45.00 | RECREATION | | | | 14 | NOT IN WM AREA | |
| 12028 | 10/11/2005 | | JONESTOWN WSC | 460.00 | MUNICIPAL/DOMESTIC | | | | 14 | NOT IN WM AREA | |
| 12065 | 06/02/2006 | A | HIGHLAND LAKES GOLF COURSE | 5.00 | AGRICULTURE - IRRIGATION | | | | 14 | NOT IN WM AREA | |
| 12125 | 08/23/2006 | | WINDERMERE OAKS WSC | 55.00 | MUNICIPAL/DOMESTIC | | | | 14 | NOT IN WM AREA | |
| 12129 | 07/21/2006 | | INVERNESS POINT WATER SYSTEM | 150.00 | MUNICIPAL/DOMESTIC | | | | 14 | NOT IN WM AREA | |
| 12130 | 07/11/2006 | | N-HAYS INVESTORS I LP | 625.00 | MUNICIPAL/DOMESTIC | | | | 14 | NOT IN WM AREA | |
| 12135 | 04/27/2006 | | CENTEX DESTINATION PROPERTIES | 499.00 | RECREATION | | | | 14 | NOT IN WM AREA | |
| 12137 | 04/15/2007 | C | POTTS LAND COMPANY LLC | 20.00 | AGRICULTURE - IRRIGATION | | | | 14 | NOT IN WM AREA | |
| 12171 | 12/27/2006 | | PECOS LAND DEVELOPMENT LLC | 60.00 | MUNICIPAL/DOMESTIC | | | | 14 | NOT IN WM AREA | |
| 12172 | 08/11/2006 | | BARTON CREEK LAKESIDE IRRIGATION COMPANY INC | 196.41 | RECREATION | | | | 14 | NOT IN WM AREA | |
| 12174 | 12/29/2006 | | LAKE TRAVIS RANCH LLC | 840.00 | RECREATION | | | | 14 | NOT IN WM AREA | |
| 12196 | 01/01/2007 | B | SOUTH CENTRAL WATER COMPANY | 640.00 | MUNICIPAL/DOMESTIC | | | | 14 | NOT IN WM AREA | |
| 12197 | 12/21/2006 | | THE WATERS CONDOMINIUM ASSOCIATION | 16.00 | RECREATION | | | | 14 | NOT IN WM AREA | |
| 12198 | 12/27/2006 | | PENINSULA BLUFFS LP | 60.00 | MUNICIPAL/DOMESTIC | | | | 14 | NOT IN WM AREA | |
| 12200 | 02/21/2006 | | EFD LTD | 2500.00 | MUNICIPAL/DOMESTIC | | | | 14 | NOT IN WM AREA | |
| 12216 | 04/03/2007 | | THE CLUB AT WATERFORD LP | 300.00 | MUNICIPAL/DOMESTIC | | | | 14 | NOT IN WM AREA | |
| 12237 | 05/25/2007 | | TRAVIS COUNTY | 108.00 | AGRICULTURE - IRRIGATION \| RECREATION | | | | 14 | NOT IN WM AREA | |
| 12240 | 06/12/2007 | A | SPICEWOOD BEACH PROPERTY OWNERS ASSOCIATION INC | 8.00 | AGRICULTURE - IRRIGATION | | | | 14 | NOT IN WM AREA | |
| 12251 | 07/18/2007 | | BRYANT, KATHIE | 25.00 | MUNICIPAL/DOMESTIC | | | | 14 | NOT IN WM AREA | |
| 12254 | 07/26/2007 | | TERRY JACKSON INC | 1.50 | MINING | | | | 14 | NOT IN WM AREA | |
| 12258 | 08/21/2007 | | WEST CYPRESS HILLS WCID 1 | 491.00 | MUNICIPAL/DOMESTIC | | | | 14 | NOT IN WM AREA | |
| 12259 | 08/21/2007 | | CITY OF LEANDER | 24000.00 | MUNICIPAL/DOMESTIC | | | | 14 | NOT IN WM AREA | |
| 12260 | 08/21/2007 | | CYPRESS RANCH WCID 1 | 436.00 | MUNICIPAL/DOMESTIC | | | | 14 | NOT IN WM AREA | |
| 12274 | 09/06/2007 | | TRAVIS MEADOW L P | 35.00 | RECREATION | | | | 14 | NOT IN WM AREA | |
| 12275 | 08/08/2007 | | EAGLE MOUNTAIN RESERVE LLC | 123.00 | MUNICIPAL/DOMESTIC | | | | 14 | NOT IN WM AREA | |
| 12288 | 11/07/2007 | | KMS VENTURES INC \| RGK RENTALS LTD | 499.00 | MUNICIPAL/DOMESTIC | | | | 14 | NOT IN WM AREA | |
| 12289 | 10/15/2007 | | CLUBCORP GOLF OF TEXAS LP | 230.00 | AGRICULTURE - IRRIGATION | | | | 14 | NOT IN WM AREA | |
| 12290 | 07/24/2007 | | BALCONES COUNTRY CLUB MEMBERSHIP ASSOCIATION INC | 250.00 | RECREATION | | | | 14 | NOT IN WM AREA | |
| 12294 | 11/21/2007 | | COLOVISTA ESTATES INC | 44.23 | AGRICULTURE - IRRIGATION | | | | 14 | NOT IN WM AREA | |
| 12311 | 11/30/2007 | B | H2 INTERESTS LLC | 345.00 | MUNICIPAL/DOMESTIC | | | | 14 | NOT IN WM AREA | |
| 12312 | 12/07/2007 | A | TXI OPERATIONS LP | 75.76 | INDUSTRIAL | | 75.7600 | | 14 | NOT IN WM AREA | |
| 12374 | 03/11/2008 | | LAKE TRAVIS RANCH LLC | 495.00 | MUNICIPAL/DOMESTIC | | | | 14 | NOT IN WM AREA | |
| 12382 | 07/24/2008 | | LAKEWAY MUD | 3069.00 | MUNICIPAL/DOMESTIC | | | | 14 | NOT IN WM AREA | |
| 12385 | 08/25/2008 | | PK-RE DEVELOPMENT COMPANY INC | 100.00 | MUNICIPAL/DOMESTIC | | | | 14 | NOT IN WM AREA | |
| 12397 | 09/17/2008 | | CITY OF DRIPPING SPRINGS \| HEADWATERS MUD | 506.00 | MUNICIPAL/DOMESTIC | | | | 14 | NOT IN WM AREA | |
| 12398 | 09/25/2008 | B | TRAVIS COUNTY MUD 12 | 1680.00 | MUNICIPAL/DOMESTIC | | | | 14 | NOT IN WM AREA | |
| 12400 | 09/26/2008 | | BULL CREEK MANAGEMENT LLC | 65.00 | MUNICIPAL/DOMESTIC | | | | 14 | NOT IN WM AREA | |
| 12401 | 10/02/2008 | | LOOP 360 WATER SUPPLY CORPORATION | 1250.00 | MUNICIPAL/DOMESTIC | | | | 14 | NOT IN WM AREA | |
| 12402 | 09/05/2008 | A | FRISCH AUF VALLEY COUNTRY CLUB | 75.00 | AGRICULTURE - IRRIGATION | | | | 14 | NOT IN WM AREA | |
| 12421 | 10/15/2008 | A | CITY OF AUSTIN | 262.00 | AGRICULTURE - IRRIGATION \| RECREATION | | | | 14 | NOT IN WM AREA | |
| 12440 | 01/22/2009 | | GRASON VOLENTE INVESTMENTS LTD | 235.00 | MUNICIPAL/DOMESTIC | | | | 14 | NOT IN WM AREA | |
| 12441 | 02/16/2009 | | LAZY NINE MUD 1A | 973.81 | MUNICIPAL/DOMESTIC | | | | 14 | NOT IN WM AREA | |
| 12455 | 03/27/2009 | | THE ISLAND ON LAKE TRAVIS CONDOMINIUM OWNERS ASSOCIATION INC | 11.00 | AGRICULTURE - IRRIGATION | | | | 14 | NOT IN WM AREA | |
| 12463 | 05/06/2009 | | JAFFE INTERESTS LP | 1475.00 | AGRICULTURE - IRRIGATION | | | | 14 | NOT IN WM AREA | |
| 12521 | 10/08/2009 | | LAZY NINE MUD 1E | 539.66 | MUNICIPAL/DOMESTIC | | | | 14 | NOT IN WM AREA | |
| 12522 | 01/01/2010 | A | UNDERGROUND SERVICES MARKHAM LP | 11621.00 | INDUSTRIAL | | | | 14 | NOT IN WM AREA | |
| 12546 | 06/08/2009 | | THE AUSTIN Y M B L SUNSHINE CAMP | 2.50 | MUNICIPAL/DOMESTIC | | | | 14 | NOT IN WM AREA | |
| 12547 | 06/01/2009 | | 6D RANCH LTD | 45.28 | AGRICULTURE - IRRIGATION | | | | 14 | NOT IN WM AREA | |
| 12568 | 09/10/2010 | | CITY OF HORSESHOE BAY | 2225.00 | MUNICIPAL/DOMESTIC | | | | 14 | NOT IN WM AREA | |
| 12639 | 08/05/2010 | A | APPLIED MATERIALS INC | 64.00 | RECREATION | | | | 14 | NOT IN WM AREA | |
| 12644 | 08/05/2011 | | CITY OF COTTONWOOD SHORES | 495.00 | MUNICIPAL/DOMESTIC | | | | 14 | NOT IN WM AREA | |
| 12659 | 04/21/2010 | | STARK WATERFORD LLC | 300.00 | AGRICULTURE - IRRIGATION | | | | 14 | NOT IN WM AREA | |
| 12660 | 11/05/2009 | | LEHMANN, GARY | 104.90 | AGRICULTURE - IRRIGATION | | | | 14 | NOT IN WM AREA | |
| 12666 | 10/01/2009 | | WEST TRAVIS COUNTY MUD 3 | 62.40 | AGRICULTURE - IRRIGATION \| RECREATION | | | | 14 | NOT IN WM AREA | |
| 12671 | 01/01/2011 | | HEART OF TEXAS BAPTIST ENCAMPMENT | 40.00 | AGRICULTURE - IRRIGATION | | | | 14 | NOT IN WM AREA | |
| 12691 | 08/05/2010 | | APPLIED MATERIALS INC | 64.00 | RECREATION | | | 111.5000 | 14 | NOT IN WM AREA | |
| 12775 | 12/22/2011 | D | LOWER COLORADO RIVER AUTHORITY | | INDUSTRIAL \| INDUSTRIAL - POWER GENERATION | | | | 14 | NOT IN WM AREA | |
| 12776 | 12/22/2011 | D | LOWER COLORADO RIVER AUTHORITY | | INDUSTRIAL \| INDUSTRIAL - POWER GENERATION | | | | 14 | NOT IN WM AREA | |
| 12860 | 11/30/2011 | | TRAVIS COUNTY MUD 4 | 3501.00 | MUNICIPAL/DOMESTIC | | | | 14 | NOT IN WM AREA | |
| 12862 | 01/10/2012 | | CITY OF AUSTIN | 7500.00 | INDUSTRIAL | | | | 14 | NOT IN WM AREA | |
| 12863 | 04/19/2012 | | ST STEPHENS EPISCOPAL SCHOOL | 72.70 | AGRICULTURE - IRRIGATION | | | | 14 | NOT IN WM AREA | |
| 12864 | 03/15/2012 | A | REUNION RANCH WCID | 262.00 | AGRICULTURE - IRRIGATION \| MUNICIPAL/DOMESTIC | | | | 14 | NOT IN WM AREA | |
| 12865 | 11/30/2011 | | KINGSLAND WATER SUPPLY CORPORATION | 1500.00 | MUNICIPAL/DOMESTIC | | | | 14 | NOT IN WM AREA | |
| 12873 | 12/07/2011 | | CITY OF SUNRISE BEACH VILLAGE | 200.00 | MUNICIPAL/DOMESTIC | | | | 14 | NOT IN WM AREA | |
| 12874 | 04/05/2012 | | TWIN CREEKS GOLF GROUP LP | 343.00 | AGRICULTURE - IRRIGATION | | | | 14 | NOT IN WM AREA | |
| 12885 | 05/16/2012 | | KENT REAL ESTATE II LP | 642.00 | AGRICULTURE - IRRIGATION | | | | 14 | NOT IN WM AREA | |
| 12886 | 04/30/2012 | | WEST TRAVIS COUNTY PUBLIC UTILITY AGENCY | 9000.00 | MUNICIPAL/DOMESTIC | | | | 14 | NOT IN WM AREA | |
| 12895 | 04/30/2012 | | WEST TRAVIS COUNTY PUBLIC UTILITY AGENCY | 450.00 | AGRICULTURE - IRRIGATION | | | | 14 | NOT IN WM AREA | |
| 12899 | 06/22/2012 | | SENNA HILLS MUD | 404.00 | MUNICIPAL/DOMESTIC | | 402.0000 | | 14 | NOT IN WM AREA | |
| 12900 | 06/28/2012 | | JONESTOWN WSC | 562.00 | MUNICIPAL/DOMESTIC | | | | 14 | NOT IN WM AREA | |
| 12901 | 06/04/2012 | | THE AUSTIN GOLF CLUB | 200.00 | AGRICULTURE - IRRIGATION | | | | 14 | NOT IN WM AREA | |
| 12902 | 06/27/2012 | | DRIPPING SPRINGS WSC | 1126.16 | MUNICIPAL/DOMESTIC | | | | 14 | NOT IN WM AREA | |
| 12903 | 06/27/2012 | | TRAVIS COUNTY MUD 10 | 96.00 | MUNICIPAL/DOMESTIC | | | | 14 | NOT IN WM AREA | |
| 12912 | 07/27/2012 | | CITY OF MEADOWLAKES | 75.00 | AGRICULTURE - IRRIGATION | | | | 14 | NOT IN WM AREA | |
| 12913 | 07/26/2012 | | WINDERMERE OAKS WSC | 59.00 | MUNICIPAL/DOMESTIC | | | | 14 | NOT IN WM AREA | |
| 12914 | 10/20/2009 | | THE RESERVE AT LAKE TRAVIS RESIDENTIAL COMMUNITY INC | 203.00 | AGRICULTURE - IRRIGATION \| RECREATION | | | | 14 | NOT IN WM AREA | |
| 12916 | 10/28/2009 | | AUSTIN COUNTRY CLUB | 355.60 | AGRICULTURE - IRRIGATION | | | | 14 | NOT IN WM AREA | |
| 12917 | 02/24/2010 | | PEDERNALES GOLF CLUB INC | 82.00 | AGRICULTURE - IRRIGATION | | | | 14 | NOT IN WM AREA | |
| 12918 | 03/28/2011 | | LA GRANGE ISD | 27.00 | AGRICULTURE - IRRIGATION | | | | 14 | NOT IN WM AREA | |
| 12919 | 09/06/2011 | | BLUEBONNET HILL GOLF COURSE LTD | 199.00 | AGRICULTURE - IRRIGATION | | | | 14 | NOT IN WM AREA | |

## Lower Colorado Regional Water Planning Area
## TCEQ Active Water Rights - December 14, 2018

| WR NO | WR ISSUE DATE | AMENDMENT LETTER | OWNER NAME | DIVERSION AMOUNT (AFY) | USE | PRIORITY DATE | CONSUMPTIVE AMOUNT (AFY) | STORAGE AMOUNT (AF) | BASIN | WATER MASTER AREA | COUNTY |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 12920 | 10/30/2009 | | VILLAGE OF BRIARCLIFF | 400.00 | MUNICIPAL/DOMESTIC | | | | 14 | NOT IN WM AREA | |
| 12926 | 09/06/2011 | | CAMP LONGHORN LTD | 50.00 | MUNICIPAL/DOMESTIC | | | | 14 | NOT IN WM AREA | |
| 12926 | 09/06/2011 | | CAMP LONGHORN LTD | 50.00 | AGRICULTURE - IRRIGATION | | | | 14 | NOT IN WM AREA | |
| 12927 | 08/10/2009 | | JONES, TOMMY LEE | 20.00 | AGRICULTURE - IRRIGATION | | | | 14 | NOT IN WM AREA | |
| 12928 | 08/06/2012 | | BLUE LAKE GOLF CLUB INC | 12.00 | AGRICULTURE - IRRIGATION | | | | 14 | NOT IN WM AREA | |
| 12929 | 10/04/2011 | | VISTA MUD | 476.00 | MUNICIPAL/DOMESTIC | | | | 14 | NOT IN WM AREA | |
| 12930 | 06/01/2010 | | HIGHLAND LAKES GOLF CLUB INC | 10.00 | AGRICULTURE - IRRIGATION | | | | 14 | NOT IN WM AREA | |
| 12933 | 01/01/2011 | | STARK WATERFORD LLC | 471.00 | MUNICIPAL/DOMESTIC | | | | 14 | NOT IN WM AREA | |
| 12934 | 08/30/2010 | | HAYS COUNTY WCID 2 | 628.25 | MUNICIPAL/DOMESTIC | | | | 14 | NOT IN WM AREA | |
| 12935 | 11/18/2011 | | FS ROBINHOOD 26 A LLC | 12.00 | MUNICIPAL/DOMESTIC | | | | 14 | NOT IN WM AREA | |
| 12936 | 10/04/2011 | | VISTA MUD | 448.00 | AGRICULTURE - IRRIGATION | | | | 14 | NOT IN WM AREA | |
| 12937 | 08/20/2012 | | LAKEWAY ROUGH HOLLOW SOUTH COMMUNITY INC | 115.00 | AGRICULTURE - IRRIGATION | | | | 14 | NOT IN WM AREA | |
| 12955 | 11/27/2012 | | STAR S RANCH INC | 59.00 | AGRICULTURE - IRRIGATION | | | | 14 | NOT IN WM AREA | |
| 12982 | 01/10/2013 | | THE ISLAND ON LAKE TRAVIS CONDOMINIUM OWNERS ASSOCIATION INC | 1728.00 | AGRICULTURE - IRRIGATION \| INDUSTRIAL | | | | 14 | NOT IN WM AREA | |
| 12983 | 02/04/2013 | | JEREMIAH VENTURE LP | 498.00 | MUNICIPAL/DOMESTIC | | | | 14 | NOT IN WM AREA | |
| 12991 | 12/15/2012 | | PK-RE DEVELOPMENT COMPANY INC | 202.80 | MUNICIPAL/DOMESTIC | | | | 14 | NOT IN WM AREA | |
| 12997 | 12/19/2012 | | WEST TRAVIS COUNTY PUBLIC UTILITY AGENCY | 336.00 | MUNICIPAL/DOMESTIC | | | | 14 | NOT IN WM AREA | |
| 13022 | 02/20/2013 | | JORDAN, LEN D | 8.00 | MUNICIPAL/DOMESTIC | | | | 14 | NOT IN WM AREA | |
| 13027 | 10/14/2013 | | LOWER COLORADO RIVER AUTHORITY | | AGRICULTURE - IRRIGATION | | | | 14 | NOT IN WM AREA | |
| 13054 | 04/11/2013 | | COLOVISTA COUNTRY CLUB PROPERTY OWNERS ASSOCIATION | 44.23 | AGRICULTURE - IRRIGATION | | | | 14 | NOT IN WM AREA | |
| 13065 | 05/23/2013 | | TRAVIS COUNTY WCID POINT VENTURE | 285.00 | MUNICIPAL/DOMESTIC | | | | 14 | NOT IN WM AREA | |
| 13070 | 06/26/2013 | | TRAVIS COUNTY MUD 4 | 815.00 | AGRICULTURE - IRRIGATION | | | | 14 | NOT IN WM AREA | |
| 13079 | 08/16/2013 | | AQUA UTILITIES INC | 467.08 | MUNICIPAL/DOMESTIC | | | | 14 | NOT IN WM AREA | |
| 13082 | 08/28/2013 | | TRAVIS COUNTY WCID 17 | 499.00 | AGRICULTURE - IRRIGATION | | | | 14 | NOT IN WM AREA | |
| 13084 | 09/17/2013 | | DEER CREEK RANCH WATER CO LLC | 250.00 | MUNICIPAL/DOMESTIC | | | | 14 | NOT IN WM AREA | |
| 13091 | 07/30/2014 | | CORIX UTILITIES TEXAS INC | 475.00 | MUNICIPAL/DOMESTIC | | | | 14 | NOT IN WM AREA | |
| 13150 | 09/14/2014 | | ESCONDIDO GOLF AND LAKE CLUB | 400.00 | AGRICULTURE - IRRIGATION | | | | 14 | NOT IN WM AREA | |
| 13151 | 06/16/2014 | | HAYS COUNTY WCID 2 | 684.33 | MUNICIPAL/DOMESTIC | | | | 14 | NOT IN WM AREA | |
| 13152 | 06/18/2014 | | HAYS COUNTY WATER CONTROL AND IMPROVEMENT DISTRICT 1 | 717.28 | MUNICIPAL/DOMESTIC | | | | 14 | NOT IN WM AREA | |
| 13153 | 07/14/2014 | | GRAY WOLF GOLF LLC | 300.00 | AGRICULTURE - IRRIGATION \| RECREATION | | | | 14 | NOT IN WM AREA | |
| 13175 | 12/30/2014 | A | LOWER COLORADO RIVER AUTHORITY | | INDUSTRIAL \| MUNICIPAL/DOMESTIC | | | | 14 | NOT IN WM AREA | |
| 13196 | 01/01/2015 | | BAE SYSTEMS INFORMATION AND ELECTRONIC SYSTEMS INTEGRATION IN | 4.33 | RECREATION | | | | 14 | NOT IN WM AREA | |
| 13197 | 04/30/2015 | | TRAVIS COUNTY WCID 18 | 1400.00 | MUNICIPAL/DOMESTIC | | | | 14 | NOT IN WM AREA | |
| 13203 | 03/02/2015 | A | TRAVIS COUNTY IMPROVEMENT DISTRICT 1 | 1603.00 | MUNICIPAL/DOMESTIC | | | | 14 | NOT IN WM AREA | |
| 13317 | 03/28/2007 | | LOWER COLORADO RIVER AUTHORITY | 117.50 | MUNICIPAL/DOMESTIC | | | | 14 | NOT IN WM AREA | |
| 13366 | 06/30/2017 | | COLEMAN, LISA | 29.17 | AGRICULTURE \| MARICULTURE | | | | 14 | NOT IN WM AREA | |
| 13439 | 04/27/2018 | | MENDELL FAMILY PARTNERSHIP LTD | 7.20 | AGRICULTURE | | | | 14 | NOT IN WM AREA | |
| 13440 | 04/27/2018 | | THE COSTA BELLA WATERFRONT COMMUNITY INC | 9.00 | AGRICULTURE | | | | | NOT IN WM AREA | |
| 13442 | 04/27/2018 | | THE WATERS CONDOMINIUM ASSOCIATION | 15.00 | AGRICULTURE - IRRIGATION | | | | | NOT IN WM AREA | |
| 13444 | 05/30/2018 | | POTTS LAND COMPANY LLC | 19.61 | AGRICULTURE | | | | | NOT IN WM AREA | |
| 13445 | 05/30/2018 | | CANYON OAKS HOMEOWNERS ASSOCIATION INC | 5.00 | AGRICULTURE - IRRIGATION | | | | | NOT IN WM AREA | |
| 13446 | 05/30/2018 | | HIGHLAND MANAGEMENT INC | 330.00 | MUNICIPAL/DOMESTIC | | | | | NOT IN WM AREA | |
| 13447 | 05/30/2018 | | BACK OF THE MOON OWNERS ASSOCIATION INC | 5.00 | AGRICULTURE | | | | | NOT IN WM AREA | |
| 13448 | 05/30/2018 | | SPICEWOOD BEACH PROPERTY OWNERS ASSOCIATION INC | 8.00 | AGRICULTURE | | | | | NOT IN WM AREA | |
| 13451 | 05/30/2018 | | LBJ YACHT CLUB & MARINA LTD | 9.00 | AGRICULTURE | | | | | NOT IN WM AREA | |
| 13452 | 05/30/2018 | | BRIDGEPOINT PROPERTY OWNERS ASSOCIATION INC | 3.00 | RECREATION | | | | | NOT IN WM AREA | |
| 13453 | 05/30/2018 | | SUNSET POINT RV RESORT | 19.00 | AGRICULTURE | | | | | NOT IN WM AREA | |
| 13517 | 08/29/2018 | | BRAMMER ENGINEERING INC | 315.00 | MINING | | | | | NOT IN WM AREA | |

# *APPENDIX 3B*

## *DESCRIPTION OF REGION K WAM RUN 3 CUTOFF MODEL*

### *3B.1 HYDROLOGIC VARIANCE REQUEST TO TWDB*

### *3B.2 HYDROLOGIC VARIANCE – FOLLW-UP QUESTIONS FROM TWDB AND REGION K RESPONSES*

### *3B.3 TWDB HYDROLOGIC VARIANCE APPROVAL LETTER*

### *3B.4 CURRENT AND PROJECTED ELEVATION-AREA-CAPACITY RELATIONSHIPS FOR LAKES TRAVIS AND BUCHANAN ON THE COLORADO RIVER, TEXAS*

**Lower Colorado River Authority**, Administrative Agent
P.O. Box 220, Austin, Texas 78767
(512) 473-3200, Fax (512) 473-3551



January 12, 2018

Mr. Jeff Walker, Executive Administrator
Texas Water Development Board (TWDB)
P.O. Box 13231
1700 North Congress Avenue
Austin, Texas 78711-3231

**Re: Request by the Lower Colorado Regional Water Planning Group (Region K) to use a modified TCEQ WAM Run 3 for surface water availability modeling in the 2021 Region K Water Plan development**

Dear Mr. Walker:

On January 10, 2018, the Lower Colorado Regional Water Planning Group (Region K) authorized submitting this request to you for approval of using the Region K WAM Run 3 Cutoff Model (Cutoff Model) in determining availability of surface water resources for development of the 2021 Region K Regional Water Plan (RWP).

Previously in development of the 2011 Region K RWP, Region K determined that the standard TCEQ full-basin WAM Run 3 did not adequately reflect the historical operation of water rights and existing contractual commitments in the Colorado River Basin and subsequently requested and received TWDB's permission to use the Cutoff Model in determining surface water availability for the 2011 RWP.

Region K again requested to use the Cutoff Model for the 2016 Region K RWP, after making some updates that reflected new data and changed conditions within the basin. That request was also approved by TWDB, with limitations identified for water management strategy analysis.

The Cutoff Model proposed for this 2021 RWP uses the same assumptions as approved previously by TWDB plus some limited revisions to include appropriate updates and provide clarification to the assumptions. The attached **Table A - Summary of Region K Cutoff Model Modeling Assumptions** outlines all of the major assumptions and identifies where a change to an assumption has been made since the 2016 Plan.

There are two basic purposes for applying a WAM in the context of regional water planning. One is to establish the available firm supply of surface water under drought-of-record conditions for each individual existing surface water right and for each decade of the planning period. The second is to analyze potential strategies for meeting projected future water demand shortages by decade, including strategies that potentially involve new appropriations of state water.

Our understanding of the application and use of WAMs for these different purposes in the Region K planning process is described in the following sections.

REGION K SUPPLY ANALYSES

Region K requests to perform water supply availability analyses using the Cutoff Model. This Cutoff Model reflects historical and current water management operations in the basin with regard to existing water rights, and as such, it provides the most realistic representation of available water supplies during drought-of-record conditions for individual water rights. The basic assumptions included in this model as it is to be applied for purposes of the supply analyses for Region K are identified in the attached **Table A column 1**. The basic assumptions that differ from those included in the standard TCEQ Colorado WAM Run 3 are as follows:

1. All water rights at and above Lakes O.H. Ivie and Brownwood are senior to downstream water rights (while maintaining relative date priority in rights upstream). This assumption reflects historical and current water management operational practices between the upper and lower Colorado Basin, and allows for increased water availability upstream of Lakes O.H. Ivie and Brownwood in Region F and decreased availability downstream in Region K.
2. Expand the period of naturalized flows to include 1940-2016. Extending the hydrology period to 2016 will allow for better analysis of the recent drought and may identify a new "drought of record".
3. Calculation of the firm yield for the Buchanan-Travis Reservoir System. These two reservoirs are operated as a system, and their firm yield should be determined as such.
4. Include provisions of LCRA-STP 2006 Settlement Agreement. This is an agreement that is not included in the TCEQ WAM Run 3, but is representative of current water management operations in the basin.
5. The 2015 LCRA Water Management Plan environmental flow criteria is not used for water supply analysis. An amount of firm water (33,440 AFY) is allocated per year, and is a commitment from the firm yield of the Highland Lakes.
6. 2015 LCRA Water Management Plan Interruptible Water is turned off for water supply analysis.

As noted, it is our understanding that estimates of future drought-of-record surface water supplies for specific water rights are to be made by decade through the year 2070 assuming that reservoir capacities will be gradually reduced over time due to sedimentation. The changing reservoir capacities would be the only variables in these simulations of future supply quantities.

REGION K STRATEGY ANALYSES

The analysis of potential surface water supply strategies can involve different WAM modeling approaches depending on the nature of a particular strategy and the purpose for which the analysis is being made. First and foremost, for a strategy that represents a new appropriation of surface water from TCEQ, the amount of water that the strategy is capable of producing under drought-of-record conditions should be determined under the same permitting assumptions used by TCEQ. This means that the strategy should be analyzed using TCEQ's standard full-basin WAM Run 3 as it currently exists with all existing water rights in the entire Colorado River Basin fully exercised in accordance with their authorized impoundment and diversion amounts and with no return flows. The result of this analysis will define a reasonable estimate of the legal quantity of water available from implementing the strategy, and this will be the maximum amount of water that can be relied upon for the strategy in the Region K planning process. The basic assumptions included in this WAM Run 3 model as it is to be applied for purposes of analyzing new surface water appropriations for potential Region K strategies also are identified in the attached **Table A column 2**.

The other important application of a WAM for strategy analysis involves the evaluation of how a particular water supply strategy will serve to meet the projected future water demands of a particular water user over time on a decade-by-decade basis through 2070. This is fundamental to the regional water planning process, and according to TWDB guidance, should reflect realistic future conditions. In this regard, the Cutoff Model provides the most useful tool for making these evaluations since it reflects historical and current water management operational practices between the upper and lower Colorado Basin with regard to existing water rights and provides the most realistic representation of water availability during drought-of-record conditions for individual water rights.

For the strategy evaluations undertaken in support of the Region K planning process, the effects of different types of water supply strategies can be incorporated into the Cutoff Model in terms of new supplies, including strategies such as a new groundwater source, an aquifer storage-recovery project, seawater or brackish groundwater desalinization, indirect reuse of return flows, an interbasin surface water or groundwater transfer, or a new surface water appropriation. Once included in the Cutoff Model, these new sources of supply then would be available to meet the projected demands for specific surface water users at different decades in the future. These simulations with the Cutoff Model would be made for specific decadal conditions with regard to the water demands of individual surface water users and with regard to reservoir storage capacities as influenced by future sedimentation. For a strategy involving a new appropriation of surface water, the maximum amount of water available under the strategy would be limited to that amount determined from the previous analysis of the strategy using TCEQ's standard full-basin WAM Run 3 model under fully-authorized water rights conditions. This would ensure that the available supply of water relied upon from the strategy for planning purposes would be consistent with the legal amount of water that could potentially be permitted by TCEQ. While the specific assumptions incorporated in the Cutoff Model for these types of strategy planning simulations may vary depending on the particular strategies being evaluated, the basic assumptions are listed in the attached **Table A column 3**.

CONCLUSION

We believe that the WAM modeling approach outlined above is consistent with directives from TWDB regarding regional water planning and meets the requirements of TCEQ with regard to how strategies involving potential new appropriations of surface water are analyzed and represented in the regional planning process. Furthermore, we believe that this approach will provide the most realistic estimates of future available surface water supplies that reflect actual water management operations in the basin with regard to existing water rights.

We appreciate your consideration of this submittal. If you have any questions about this request, please contact me as shown below.

Respectfully submitted,

John E. Burke
Region K Chairman
512-914-3474
JohnEBurke@RegionK.org

Enclosures: Table A - Summary of Region K Cutoff Model Modeling Assumptions

Cc: Lann Bookout, TWDB (electronically)
Teresa Lutes, Region K Water Modeling Committee Chair (electronically)
Jaime Burke, AECOM (electronically)

# TABLE A
## SUMMARY OF REGION K CUTOFF MODEL MODELING ASSUMPTIONS
## REGARDING SUPPLY AND STRATEGY ANALYSES
## FOR 2021 REGIONAL PLAN DEVELOPMENT

| NO. | ASSUMPTION | (1) SUPPLY ANALYSIS | (2) STRATEGY ANALYSIS | (3) | Change from 2016 Planning Cycle |
|---|---|---|---|---|---|
| | | Region K Cutoff Model by Decade | TCEQ Full-Basin WAM Run 3 | Region K Cutoff Model by Decade | |
| 1 | Use TCEQ Full-Basin WAM Run 3 Without Modification for New Appropriation Water Supply Strategies Analysis | No | Yes | No | No Change |
| 2 | All Rights at and Above Ivie/Brownwood Senior to Downstream Rights (maintaining relative date priority in rights upstream) | Yes | No | Yes | No Change |
| 3 | Use Expanded 1940-2016 Naturalized Flows | Yes | No | Yes | Extended hydrology period to 2016 |
| 4 | Determine Firm Yield for Buchanan-Travis Reservoir System | Yes | No | No | No Change |
| 5 | Use Sediment-Adjusted Future Reservoir Storage by Decade | Yes | No | Yes | No Change |
| 6 | Use 2015 Water Management Plan Environmental Flow Criteria | No* | Yes | Yes | Changed "2010" to "2015"; Added a footnote for clarification |
| 7 | Set All Water Right Demands at Authorized Diversion Amounts | Yes | Yes | No | No Change |
| 8 | Include Provisions of LCRA-STP 2006 Settlement Agreement | Yes | No | Yes | No Change |
| 9 | Include Operating Rules for Lakes Buchanan and Travis to Reflect Combined Firm Yield Operation | Yes | Yes | Yes | Revised "Maintain Consistent Levels of Drawdown in the Lakes" to say "Reflect Combined Firm Yield Operations" |
| 10 | Include Latest Approved LCRA Permits and Amendments (as of December 2017) | Yes | Yes | Yes | Added "(as of December 2017)" |
| 11 | Include 2015 Water Management Plan Highland Lakes Interruptible Water | No | Yes | Yes | Changed "2010" to "2015" |
| 12 | Adjust 2015 Water Management Plan Environmental Flow Triggers (Decadal) | No | No | Yes | Changed "2010" to "2015"; Added "(Decadal)" for clarification |
| 13 | Set All Region K Municipal and Industrial Water Right Demands at Projected Future Demand Amounts by Decade | No | No | Yes | Expanded "M&I" to "Municipal and Industrial" for clarification |
| 14 | Modify Curtailment of Highland Lakes Interruptible Water as Necessary to Satisfy LCRA Future Firm Municipal and Industrial Demands | No | No | Yes | Expanded "M&I" to "Municipal and Industrial" for clarification |
| 15 | Set LCRA Lower Basin Irrigation Demands Equal to Projected Future Demands by Decade | No | No | Yes | Removed "Weather Variable" after the word "Future" |
| 16 | Include LCRA Irrigation Return Flows to the Colorado River | No | No | Only As A Strategy | No Change |
| 17 | Include Return Flows from Austin Wastewater Treatment Plants | No | Only As A Strategy | Only As A Strategy | No Change |
| 18 | Include Other Municipal and Industrial Return Flows | No | Only As A Strategy | Only As A Strategy | Expanded "M&I" to "Municipal and Industrial" for clarification |
| 19 | Include Reuse Provisions and Environmental Flow Requirements of LCRA-Austin 2007 Settlement Agreement | No | Only As A Strategy | Only As A Strategy | No Change |

* The LCRA 2015 Water Management Plan states that the amount of firm water allocated for environmental purposes is 33,440 acre-feet per year (10-year average). This amount is a commitment from the firm yield of the Highland Lakes.

Note: TCEQ SB-3 requirements will be taken into consideration in strategies involving a new appropriation of water.

**Burke, Jaime**

| | |
|---|---|
| **From:** | Lann Bookout <Lann.Bookout@twdb.texas.gov> |
| **Sent:** | Friday, January 26, 2018 2:00 PM |
| **To:** | 'johnburke41@gmail.com'; Burke, Jaime |
| **Cc:** | Temple McKinnon; Sarah Backhouse; Matt Nelson |
| **Subject:** | Follow-up questions about Region K's Hydrologic Variance Request |

John;
Our preliminary review of the Region K hydrologic variance request generated a couple of questions. It would help us more completely understand your request if you could provide some clarification or additional information to the following questions:

1. *Please explain why, per item #6 (or item No. 11, Table A) of the January 12th request, is it proposed that the 2015 LCRA Water Management Plan Interruptible Water be turned off for the existing water supply analysis if the stated intent of Region K's analysis is to "reflect the historical operation of water rights and existing contractual commitments" in the basin? Please explain a) the specific reason/purpose of turning these anticipated water releases off even though, our understanding is that LCRA's management plan requires certain interruptible releases will continue to be made to downstream users (prior to the onset of the occurrence of a drought) based on reservoir elevations and b) what net effect doing so will have on the estimates of existing basin supplies under drought of record conditions, and hence the identified water needs. For example, does excluding these diversions in the modelling result in increasing or decreasing the estimated volume of existing supply that would be actually be expected to be available under actual drought conditions vs incorporating interruptible diversions in the modelling?*

*2. Similarly, please also explain why items 12 and 19 in Table A (the management plans environmental flow triggers and reuse provisions and environmental flow requirements of LCRA Austin settlement agreement) are also proposed to not be incorporated in modelling analyses of existing supplies. Provide additional information regarding why these items are proposed not to be incorporated into the existing supply analysis and what effect doing so has on estimates of existing basin supplies under DOR conditions vs incorporating these items.*

I hope to hear from you soon on this so we can continue our evaluation of your request. Since this is just a clarification to your letter, an email response is sufficient.

Lann Bookout
Project Manager, Regional Water Planning
Texas Water Development Board
Lann.Bookout@twdb.texas.gov
512-936-9439

**Burke, Jaime**

---

**From:** Lann Bookout <Lann.Bookout@twdb.texas.gov>
**Sent:** Friday, February 09, 2018 11:10 AM
**To:** 'johnburke41@gmail.com'; Burke, Jaime
**Cc:** Sarah Backhouse; Temple McKinnon
**Subject:** Additional questions on Region K's Hydrologic Variance

John:
In the request in the basic assumptions listed 1-6 on page 2. Can you provide some additional explanation on number 4 and 5 shown below:

4. Include provisions of LCRA-STP 2006 Settlement Agreement. This is an agreement that is not included in the TCEQ WAM Run 3, but is representative of current water management operations in the basin.
5. The 2015 LCRA Water Management Plan environmental flow criteria is not used for water supply analysis. An amount of firm water (33,440 AFY) is allocated per year, and is a commitment from the firm yield of the Highland Lakes.

For number 4 - What elements of the agreement affect the modeling of other LCRA water rights and briefly how is the agreement represented in the model?
For number 5 – Please explain the rationale of not including the WMP environmental flow criteria but including 33,440 afy allocation of firm water and how is this applied in the Cutoff model.

I hope to hear from you soon on this and our previous questions so we can continue our evaluation of your request. Since this is
just a clarification to your letter, an email response is sufficient.

Lann Bookout
Project Manager, Regional Water Planning
Texas Water Development Board
Lann.Bookout@twdb.texas.gov
512-936-9439

Lann Bookout
Project Manager, Regional Water Planning
Texas Water Development Board
Lann.Bookout@twdb.texas.gov
512-936-9439

**Burke, Jaime**

| | |
|---|---|
| **From:** | Burke, Jaime |
| **Sent:** | Friday, February 16, 2018 5:13 PM |
| **To:** | 'Lann Bookout' |
| **Cc:** | Sarah Backhouse; Temple McKinnon; Matt Nelson; 'johnburke41@gmail.com'; Teresa Lutes (External); 'David Wheelock'; Rebecca Batchelder |
| **Subject:** | RE: Additional questions on Region K's Hydrologic Variance |
| **Attachments:** | Region_K_Hydrologic_Variance_Request_JAN2018.pdf |

Lann,

Thank you for the opportunity to provide clarification to the letter that was submitted related to the hydrologic variance request for Region K. Within this email, we are providing responses for the four questions you have asked, and have attached the original Region K request letter for reference. Please let us know if we can provide any additional information.

**From the January 26, 2018 email from TWDB:**

1. *Please explain why, per item #6 (or item No. 11, Table A) of the January 12th request, is it proposed that the 2015 LCRA Water Management Plan Interruptible Water be turned off for the existing water supply analysis if the stated intent of Region K's analysis is to "reflect the historical operation of water rights and existing contractual commitments" in the basin? Please explain a) the specific reason/purpose of turning these anticipated water releases off even though, our understanding is that LCRA's management plan requires certain interruptible releases will continue to be made to downstream users (prior to the onset of the occurrence of a drought) based on reservoir elevations and b) what net effect doing so will have on the estimates of existing basin supplies under drought of record conditions, and hence the identified water needs. For example, does excluding these diversions in the modelling result in increasing or decreasing the estimated volume of existing supply that would be actually be expected to be available under actual drought conditions vs incorporating interruptible diversions in the modelling?*

<u>Background</u>

The firm yield of lakes Buchanan and Travis is estimated using a Water Availability Model with all senior water rights fully utilized. The yield from the lakes is included in LCRA's system water supply which is the basis for LCRA entering into long term contracts to supply water to municipal and industrial customers and is the basis of allocations of firm supply made in the regional water planning processes.

A court order in 1988 (1988 Adjudication Order) allows the unused portion of the firm yield to be used for other beneficial purposes, i.e. interruptible water for agricultural irrigation. However, the 1988 Adjudication Order prohibits supplying interruptible water that would impair availability of firm water for municipal and industrial users. The WMP is structured such that some of the unused supply (ie. firm yield) of lakes Buchanan and Travis is made available as interruptible stored water and sold to irrigators for a single irrigation season.

The 1988 Adjudication Order and the water rights for lakes Buchanan and Travis require an operating plan (i.e. Water Management Plan (WMP)) that "LCRA shall interrupt or curtail the supply of water . . . pursuant to commitments that are specifically subject to interruption or curtailment, to the extent necessary to allow LCRA to satisfy all demand for . . . firm, uninterruptible water commitments". The 1988 Adjudication Order also calls for the calculation of the firm yield of the combined lakes Buchanan and Travis through a repeat of the drought of record.

LCRA amends the WMP as firm demands increase and this reduces the amount of supply available for interruptible uses. LCRA will continue to amend the WMP over time to ensure that firm demands continue to be met.

Under the operational rules of the WMP and over the course of a multi-year drought, the sum of water supplied to all uses from the lakes (ie. firm and interruptible demands) will not exceed the combined firm yield of lakes Buchanan and Travis. For firm yield modeling purposes, whether water is diverted from the lakes for an interruptible use or a firm use is transparent to the hydrologic calculation.

Response to Question 1.

Response 1.a. Region K specifies the WMP (i.e, interruptible water) be turned off for water supply estimates for these reasons:

- TWDB Regional Planning Rules require (and Region K agrees) that supply estimates be made for firm yield conditions with all water rights fully utilized.

- Imposing the WMP operation onto the supply estimate does not follow the directive to use firm yield. When the WMP is in operation, firm demands on the lakes are less than firm yield, interruptible demands are imposed on the lakes, and downstream water rights are not operated at their fullest authorization. The WMP is subject to revision, and has been revised several times since the first plan was approved in 1989. These revisions address, among other things, increases to firm demands that tend to reduce the amount of water available to interruptible customers. In the context of long-term water planning, the existence of the WMP should not preclude access to the full firm yield of lakes Buchanan and Travis in the future when firm demands begin to approach the firm yield.

Response 1.b: If the Water Management Plan and interruptible stored water was included in the existing water supply analysis (instead of a firm yield model with no interruptible water) the results would tend to be similar. This is because the average annual amount of water that can be supplied from a reservoir system during the critical drought period without going empty is essentially the same regardless of whether the water being diverted consists of some interruptible water and some firm water or consists of all firm water.

*2. Similarly, please also explain why items 12 and 19 in Table A (the management plans environmental flow triggers and reuse provisions and environmental flow requirements of LCRA Austin settlement agreement) are also proposed to not be incorporated in modelling analyses of existing supplies. Provide additional information regarding why these items are proposed not to be incorporated into the existing supply analysis and what effect doing so has on estimates of existing basin supplies under DOR conditions vs incorporating these items.*

Response to Question 2.

Response 2: Specific environmental flow criteria are required based on the Water Management Plan, and the WMP is subject to change. As the WMP changes, the environmental flow levels (such as subsistence, base-dry and base-average) as well as the manner in which LCRA attempts to attain those flow levels may change. LCRA expects to continue to make water available for environmental flow needs into the future and the LCRA Board has committed a portion of LCRA's firm supply to help meet such needs. When evaluating existing supplies to what demands can be met out into the future, it is appropriate to look at the firm yield model as discussed in the prior response. Out of that firm supply, it is then appropriate to deduct the amount that has been committed out of LCRA's firm supply to help meet environmental flow needs. Meeting environmental flow requirements with an allocation of firm yield does not change the estimated existing basin supply under DOR conditions.

Regarding the 2007 LCRA-Austin Settlement Agreement, the reuse and environmental flow provisions of that agreement address how return flows can be used to help meet environmental flow commitments and potential future supply projects. These provisions are separate and apart from the underlying water rights. The City of Austin and LCRA have a bed and banks permit application pending approval at TCEQ, which would be required to implement a potential future project utilizing that permit. Further, Region K does not include Austin's return flows in estimating water supply availability for regional planning. As discussed in the 2016 Region K water plan, the City of Austin (and Region K) consider Austin's return flows as a resource for future water management strategies and supplies.

**And, from the February 9, 2018 email from TWDB:**

*In the request in the basic assumptions listed 1-6 on page 2. Can you provide some additional explanation on number 4 and 5 shown below:*

> 4. Include provisions of LCRA-STP 2006 Settlement Agreement. This is an agreement that is not included in the TCEQ WAM Run 3, but is representative of current water management operations in the basin.
>
> 5. The 2015 LCRA Water Management Plan environmental flow criteria is not used for water supply analysis. An amount of firm water (33,440 AFY) is allocated per year, and is a commitment from the firm yield of the Highland Lakes.

*3. Regarding basic assumption number 4 - What elements of the agreement affect the modeling of other LCRA water rights and briefly how is the agreement represented in the model?*

<u>Response to Question 3.</u>

In the Region K Cutoff Model, South Texas Project (STP) attempts to divert their full authorized consumptive demand in priority order under CA 14-5437 at the priority date granted in the water right (i.e., June, 1974). There are no elements of the agreement that affect diversions to other LCRA water rights or the modeling of other LCRA water rights.

The LCRA-STP 2006 Settlement Agreement commits LCRA to providing water from storage from lakes Buchanan and Travis in the event STP cannot meet its water needs from CA 14-5437. Stored water from lakes Buchanan and Travis is a "back up" supply to STP and this agreement does not affect other LCRA water rights. This back up supply is a firm water commitment, and is appropriate to include in the model.

*4. Regarding basic assumption number 5 – Please explain the rationale of not including the WMP environmental flow criteria but including 33,440 afy allocation of firm water and how is this applied in the Cutoff model.*

<u>Response to Question 4.</u>

Refer to Response number 2, above for the rationale of not including the WMP environmental flow criteria in the Cutoff supply model. The allocation of 33,440 acft/yr from the firm yield to meet environmental flows is done as a post-process to the Cutoff model and is treated as an obligation against LCRA's firm supplies.

Thank you,
Jaime

**Jaime Burke, P.E.**
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March 28, 2018

Mr. John Burke, P.E.
Region K Chair
Lower Colorado Regional Water Planning Group (Region K)
17310 Hill Lakes Court
Cypress, Texas 77429

RE: Region K Regional Water Planning Group (RWPG) request for approval to modify existing surface water availability hydrologic assumptions for development of the 2021 Region K Regional Water Plan (RWP)

Dear Mr. Burke:

The Texas Water Development Board (TWDB) has reviewed your requests dated January 12, 2018 to use the Region K Water Availability Model (WAM) Run 3 Cutoff Model. The cutoff model is approved for use in determining current water supply availability and for evaluation of water management strategies in the development of the 2021 Region K RWP.

Your request stated that the cutoff model began with the Texas Commission on Environmental Quality (TCEQ) WAM Run 3 and was modified to more accurately reflect simulation of historic operations and operation of water rights and existing contractual commitments in the Colorado River Basin. The request further indicated that since approved and used in the 2016 Region K plan this version will contain updates and some clarifications. The Region K hydrologic variance request states that TCEQ full-basin WAM Run 3 will be used without modification for any analysis that includes a new appropriation water supply. This letter confirms that the TWDB approves the assumptions that makeup the Region K Cutoff Model for supply and water management strategy analysis for the development of the 2021Region K RWP, as specified in Table A of the request. This table is included as Attachment 1 to this letter.

While the TWDB authorizes these modifications to evaluate existing water supplies and water management strategies for development of the 2021 Region K RWP, it is the responsibility of the planning group to ensure that the resulting estimates of water availability are reasonable for drought planning purposes and will reflect conditions expected in the event of actual drought conditions; and in all other regards will be evaluated in accordance with the contract Exhibit C, *General Guidelines for Fifth Cycle of Regional Water Plan Development*.

If you have any questions, please do not hesitate to contact Lann Bookout, project manager for Region K, at 512-936-9439 or via email at lann.bookout@twdb.texas.gov.

Sincerely,

Jeff Walker
Executive Administrator

Attachment: Table A

c w/att: David Wheelock, Administrator
Jaime Burke, Consultant
Lann Bookout, Project Manager

**TABLE A**
**SUMMARY OF REGION K CUTOFF MODEL MODELING ASSUMPTIONS**
**REGARDING SUPPLY AND STRATEGY ANALYSES**
**FOR 2021 REGIONAL PLAN DEVELOPMENT**

| NO. | ASSUMPTION | (1) SUPPLY ANALYSIS | (2) STRATEGY ANALYSIS | (3) | Change from 2016 Planning Cycle |
|---|---|---|---|---|---|
| | | Region K Cutoff Model by Decade | TCEQ Full-Basin WAM Run 3 | Region K Cutoff Model by Decade | |
| 1 | Use TCEQ Full-Basin WAM Run 3 Without Modification for New Appropriation Water Supply Strategies Analysis | No | Yes | No | No Change |
| 2 | All Rights at and Above Ivie/Brownwood Senior to Downstream Rights (maintaining relative date priority in rights upstream) | Yes | No | Yes | No Change |
| 3 | Use Expanded 1940-2016 Naturalized Flows | Yes | No | Yes | Extended hydrology period to 2016 |
| 4 | Determine Firm Yield for Buchanan-Travis Reservoir System | Yes | No | No | No Change |
| 5 | Use Sediment-Adjusted Future Reservoir Storage by Decade | Yes | No | Yes | No Change |
| 6 | Use 2015 Water Management Plan Environmental Flow Criteria | No* | Yes | Yes | Changed "2010" to "2015"; Added a footnote for clarification |
| 7 | Set All Water Right Demands at Authorized Diversion Amounts | Yes | Yes | No | No Change |
| 8 | Include Provisions of LCRA-STP 2006 Settlement Agreement | Yes | No | Yes | No Change |
| 9 | Include Operating Rules for Lakes Buchanan and Travis to Reflect Combined Firm Yield Operation | Yes | Yes | Yes | Revised "Maintain Consistent Levels of Drawdown in the Lakes" to say "Reflect Combined Firm Yield Operations" |
| 10 | Include Latest Approved LCRA Permits and Amendments (as of December 2017) | Yes | Yes | Yes | Added "(as of December 2017)" |
| 11 | Include 2015 Water Management Plan Highland Lakes Interruptible Water | No | Yes | Yes | Changed "2010" to "2015" |
| 12 | Adjust 2015 Water Management Plan Environmental Flow Triggers (Decadal) | No | No | Yes | Changed "2010" to "2015"; Added "(Decadal)" for clarification |
| 13 | Set All Region K Municipal and Industrial Water Right Demands at Projected Future Demand Amounts by Decade | No | No | Yes | Expanded "M&I" to "Municipal and Industrial" for clarification |
| 14 | Modify Curtailment of Highland Lakes Interruptible Water as Necessary to Satisfy LCRA Future Firm Municipal and Industrial Demands | No | No | Yes | Expanded "M&I" to "Municipal and Industrial" for clarification |
| 15 | Set LCRA Lower Basin Irrigation Demands Equal to Projected Future Demands by Decade | No | No | Yes | Removed "Weather Variable" after the word "Future" |
| 16 | Include LCRA Irrigation Return Flows to the Colorado River | No | No | Only As A Strategy | No Change |

| | | | | | |
|---|---|---|---|---|---|
| 17 | Include Return Flows from Austin Wastewater Treatment Plants | No | Only As A Strategy | Only As A Strategy | No Change |
| 18 | Include Other Municipal and Industrial Return Flows | No | Only As A Strategy | Only As A Strategy | Expanded "M&I" to "Municipal and Industrial" for clarification |
| 19 | Include Reuse Provisions and Environmental Flow Requirements of LCRAAustin 2007 Settlement Agreement | No | Only As A Strategy | Only As A Strategy | No Change |

* The LCRA 2015 Water Management Plan states that the amount of firm water allocated for environmental purposes is 33,440 acre-feet per year (10-year average). This amount is a commitment from the firm yield of the Highland Lakes.

Note: TCEQ SB-3 requirements will be taken into consideration in strategies involving a new appropriation of water.

*January 5, 2018*

# TECHNICAL MEMORANDUM

To: LCRA Water Supply Planning Team

From: Robert J. Brandes, P.E.

Subject: Current and Projected Elevation-Area-Capacity Relationships for Lakes Travis and Buchanan on the Colorado River, Texas

Date: November 11, 2010

The purpose of this Technical Memorandum is to document the data and procedures used for developing projections of expected future storage capacities and surface areas of Lakes Travis and Buchanan as these reservoirs are subject to ongoing and continual sedimentation. Projections of elevation-area-capacity relationships have been made by decade beginning in the year 2010 and extending through the year 2100. It is anticipated that these relationships will be used for all of LCRA's water supply planning activities until additional data become available in the future to make appropriate revisions.

Sedimentation in reservoirs is a natural process that results when inflows carry sediment loads generated by runoff from contributing watersheds. Every reservoir experiences some degree of sedimentation, with a variety of factors causing sedimentation rates to vary. These factors relate primarily to differences in the characteristics of the drainage areas that contribute inflows and sediment loadings to the reservoirs, including their size and shape, rainfall and evaporation patterns, soil properties and distributions, topography and land use practices, and type and extent of vegetative cover. Certainly these factors are different for Lakes Travis and Buchanan.

Another major factor that influences sediment loadings to Lakes Travis and Buchanan is the existence of upstream reservoirs. For example, Lake Travis is located immediately downstream of the upper chain of Highland Lakes, including Lake Buchanan, which serve as receptors for sediment loadings from upstream watersheds before they can be discharged into Lake Travis. The contributing watershed of Lake Travis below the Highland Lakes, i.e. below Lake Marble Falls, is approximately 1,700 square miles[1]. All of the Highland Lakes reservoirs above Lake Travis have been in existence for at least 60 of the approximately 70 years that Lake Travis has been in operation, and Lake Buchanan has been in existence for the entire time. O. H. Ivie Reservoir and Lake Brownwood are major reservoirs currently located upstream of Lake Buchanan that limit its contributing drainage area. The watershed below these reservoirs that contributes inflows to Lake Buchanan covers approximately 6,600 square miles. From the time of initial impoundment of Lake Buchanan around 1938 until O. H. Ivie Reservoir was constructed in 1989, the contributing watershed of Lake Buchanan varied depending on when

[1] All drainage areas cited herein were derived from the input data files for the TCEQ's Water Availability Model of the Colorado River Basin.

different upstream reservoirs were constructed, ranging from an initial maximum of 16,300 square miles from 1938 to 1951, down to about 14,900 square miles from 1951 to 1969, and then down to about 9,800 square miles from 1969 to 1989. These different contributing watersheds reflect different combinations of the Lake Buchanan drainage area that existed below Lake Nasworthy on the South Concho River (constructed in 1930), O. C. Fisher Reservoir on the North Concho River (constructed in 1951), E. V. Spence Reservoir on the Colorado River (constructed in 1969), and Lake Brownwood on Pecan Bayou (constructed in 1933). The relative differences in the size of the contributing watersheds for Lakes Travis and Buchanan (i.e., 1,700 square miles versus 6,800 square miles since 1989 and from 9,800 up to 16,300 square miles prior to that time) and the sediment retention in the upper chain of Highland Lakes immediately upstream of Lake Travis produce different quantities of inflow and sediment loadings to these reservoirs, which in turn affect their rates of sedimentation and available storage capacities. Based on these factors alone, more sediment loadings should be discharged into and accumulated in Lake Buchanan than in Lake Travis.

## LAKE TRAVIS

The most recent study of the elevation-area-capacity characteristics of Lake Travis was conducted by the Texas Water Development Board (TWDB, 2009) using field survey data collected with a multi-frequency (200 kHz, 50 kHz, and 24 kHz) sub-bottom profiling depth sounder during April-July of 2008, supplemented with high-resolution LIDAR ground elevation data provided by LCRA based on measurements made during January 2007. Results from this study indicate that the conservation storage capacity of Lake Travis at elevation 681.0 feet above mean sea level (msl)[2] as of the time of the surveys was 1,134,956 acre-feet, with a corresponding surface area of 19,297 acres. Based on analyses of the multi-frequency sub-bottom depth data, the distribution and accumulation of sediment within Lake Travis also was analyzed and determined by the TWDB, and these results indicate that 16,974 acre-feet of sediment have been deposited within the reservoir since it first began to impound water around 1940. This is equivalent to an average annual sedimentation rate of approximately 250 acre-feet/year.

Based on LCRA records (LCRA, 1999), the most recent hydrographic survey of Lake Travis prior to the 2008 TWDB survey was conducted in 1993, and the conservation storage capacity of the reservoir was reported at that time to be 1,128,974 acre-feet. Data from the 1993 survey were combined with elevation data from a 1997 aerial mapping project to generate revised and updated elevation-area-capacity tables for Lake Travis. These results indicated that the conservation storage capacity of the reservoir as of 1997 was 1,132,172 acre-feet.

It is significant to note that the conservation storage capacity of Lake Travis as determined by the TWDB based on the 2008 survey and 2007 LIDAR data is greater than both of the conservation storage capacities that were reported in 1993 and 1997. This would suggest that the reservoir has not accumulated any sediment since the mid 1990s and, in fact, has gained storage capacity.

[2] Elevations cited in this Technical Memorandum are based on the National Geodetic Vertical Datum 1929 (NGVD 29), which is the datum normally used by LCRA when reporting lake elevations. This datum is 0.6 feet lower than the datum referenced in the TWDB report, the North American Vertical Datum 1988 (NAVD 88), and appropriate adjustments have been made for extracting the storage capacity and surface area data used in this Technical Memorandum.

This, of course, is highly unlikely and inconsistent with the sediment depth measurements reported by the TWDB based on the multi-frequency sub-bottom depth data collected during the 2008 survey.  As noted by the TWDB in its 2009 report, "*Due to differences in the methodologies used during this 2008 survey and previous Lake Travis surveys, comparison of these values is not recommended.*"

Because storage capacity data from the most recent hydrographic surveys and studies of Lake Travis appear to be inconsistent with regard to sedimentation effects, they cannot be used to develop meaningful estimates of sedimentation rates or projections of future reservoir storage capacity.  However, since the size of the contributing watershed for Lake Travis and the existence of the upper chain of Highland Lakes immediately upstream of Lake Travis essentially have not changed for the past 60 years, the TWDB's 2008 estimate of the historical sedimentation rate within the reservoir based on accumulated sediment since its initial impoundment does provide a useful basis for estimating the reservoir's future sediment accumulations and storage capacity.  Using the TWDB's estimate of 250 acre-feet/year for the annual sedimentation rate, projections of future sedimentation volumes and corresponding maximum conservation storage capacities have been made for each decade beginning with 2010 and extending through the year 2100.  These results are presented in Table 1 in Rows 25 and 17, respectively.  As shown, based on these calculations, the maximum conservation storage capacity of Lake Travis is projected to decrease from 1,134,456 acre-feet in 2010 down to 1,111,956 acre-feet in the year 2100, a reduction of 22,500 acre-feet, or about two percent.  The graph in Figure 1 illustrates the projected reduction in the future conservation storage capacity of Lake Travis out to the year 2100 and also compares these projections to previous estimates of the conservation storage capacity based on the original as-built calculations and previous hydrographic survey and topographic data.  Considering the more sophisticated approach and state-of-the-art procedures utilized in the most recent study conducted by the TWDB, the projected values of conservation storage capacity for Lake Travis are considered to be reasonable and sufficiently accurate for purposes of LCRA's water supply planning until these data are revised and updated by future studies.

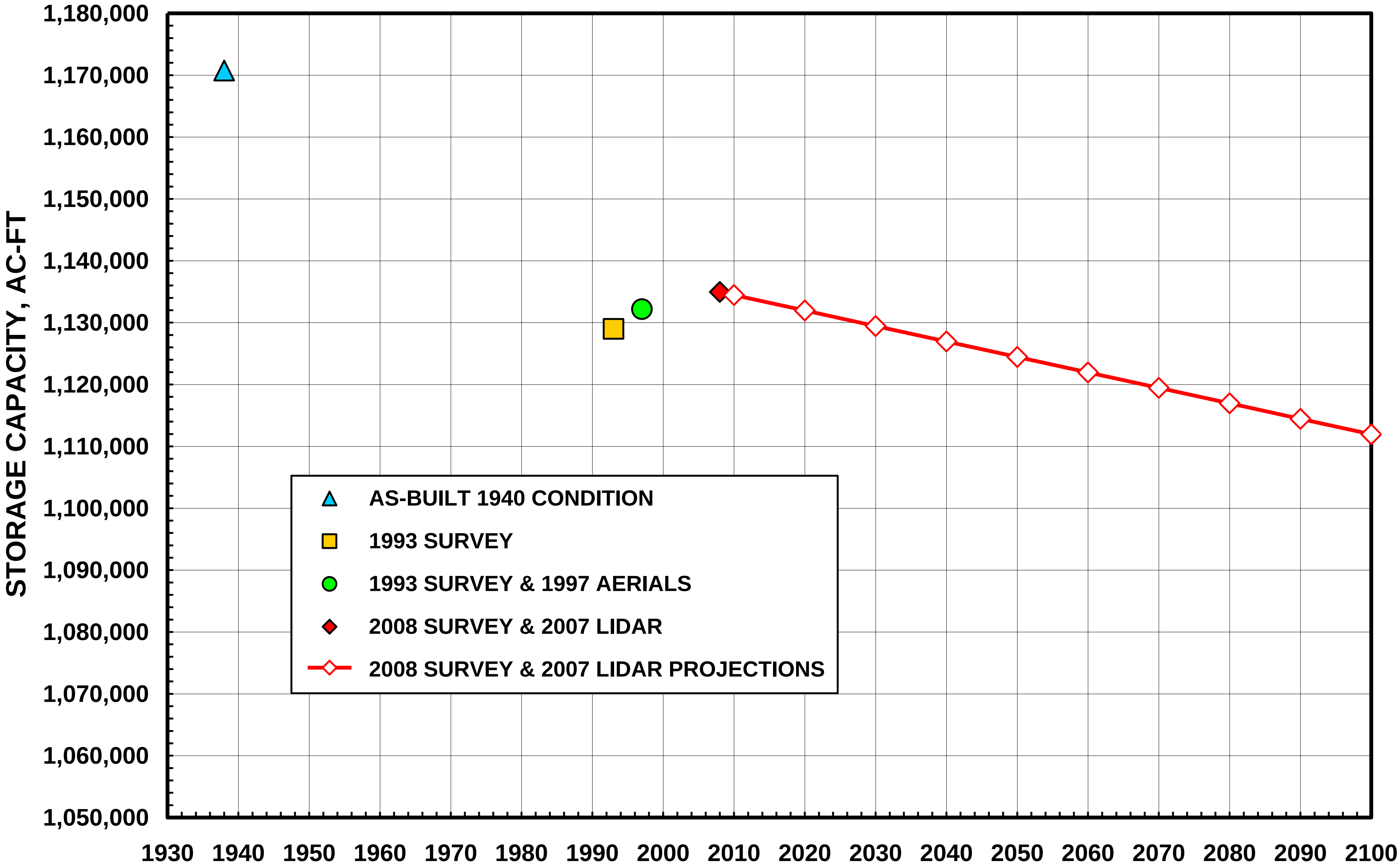
The distribution of the projected conservation storage capacities in Table 1 over the depth of Lake Travis has been accomplished by assuming that the current vertical distribution of storage relative to the maximum conservation storage capacity will be maintained as future sedimentation occurs within the reservoir.  This distribution for elevations below the top of the conservation pool is shown in Column 4 of Table 1, and these factors have been applied to the maximum conservation storage capacity at elevation 681.0 feet msl for each decade to establish the storage quantities at the elevations below the top of the conservation pool.  For elevations above the top of the conservation pool (> 681.0 feet msl), the same incremental increases in storage capacity as those determined and reported in the TWDB's 2008 study have been maintained for each future decadal condition, assuming that sedimentation effects will be minimal at these higher elevations.

## TABLE 1
## LAKE TRAVIS PROJECTED STORAGE CONDITIONS BASED ON
## 250 AC-FT/YEAR CONSTANT ANNUAL SEDIMENTATION RATE AS DETERMINED BY TWDB MAY 2009 STUDY

| | (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) | (9) | (10) | (11) | (12) | (13) | (14) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | **WATER SURFACE** | **TWDB 2008 SURVEY RESULTS** | | **STORAGE DEPTH** | **LAKE TRAVIS PROJECTED STORAGE CAPACITY BY DECADE** | | | | | | | | | |
| | **ELEVATION Feet** | **SURFACE AREA* acres** | **STORAGE CAPACITY* ac-ft** | **PROPOR-TIONAL FACTOR** | **2010** | **2020** | **2030** | **2040** | **2050** | **2060** | **2070** | **2080** | **2090** | **2100** |
| (1) | 500.0 | 0 | 0 | 0.0000 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| (2) | 502.0 | 24 | 8 | 0.0000 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 |
| (3) | 515.0 | 486 | 3,552 | 0.0031 | 3,550 | 3,543 | 3,535 | 3,527 | 3,519 | 3,511 | 3,503 | 3,496 | 3,488 | 3,480 |
| (4) | 530.0 | 1,030 | 15,009 | 0.0132 | 15,002 | 14,969 | 14,936 | 14,903 | 14,870 | 14,837 | 14,804 | 14,771 | 14,738 | 14,705 |
| (5) | 545.0 | 1,584 | 34,370 | 0.0303 | 34,355 | 34,279 | 34,203 | 34,128 | 34,052 | 33,976 | 33,901 | 33,825 | 33,749 | 33,673 |
| (6) | 560.0 | 2,321 | 63,665 | 0.0561 | 63,637 | 63,497 | 63,356 | 63,216 | 63,076 | 62,936 | 62,796 | 62,655 | 62,515 | 62,375 |
| (7) | 575.0 | 3,400 | 105,997 | 0.0934 | 105,950 | 105,717 | 105,483 | 105,250 | 105,016 | 104,783 | 104,549 | 104,316 | 104,082 | 103,849 |
| (8) | 590.0 | 4,753 | 167,110 | 0.1472 | 167,036 | 166,668 | 166,300 | 165,932 | 165,564 | 165,196 | 164,828 | 164,460 | 164,092 | 163,723 |
| (9) | 605.0 | 6,178 | 248,300 | 0.2188 | 248,191 | 247,644 | 247,097 | 246,550 | 246,003 | 245,456 | 244,909 | 244,362 | 243,815 | 243,268 |
| (10) | 620.0 | 7,935 | 354,000 | 0.3119 | 353,844 | 353,064 | 352,285 | 351,505 | 350,725 | 349,945 | 349,165 | 348,386 | 347,606 | 346,826 |
| (11) | 635.0 | 9,885 | 487,427 | 0.4295 | 487,212 | 486,139 | 485,065 | 483,991 | 482,918 | 481,844 | 480,770 | 479,697 | 478,623 | 477,549 |
| (12) | 650.0 | 12,327 | 652,275 | 0.5747 | 651,988 | 650,551 | 649,114 | 647,677 | 646,241 | 644,804 | 643,367 | 641,930 | 640,493 | 639,057 |
| (13) | 660.0 | 14,229 | 784,863 | 0.6915 | 784,517 | 782,788 | 781,060 | 779,331 | 777,602 | 775,873 | 774,144 | 772,415 | 770,687 | 768,958 |
| (14) | 665.0 | 15,301 | 858,656 | 0.7566 | 858,278 | 856,386 | 854,495 | 852,604 | 850,712 | 848,821 | 846,929 | 845,038 | 843,147 | 841,255 |
| (15) | 670.0 | 16,535 | 938,224 | 0.8267 | 937,811 | 935,744 | 933,677 | 931,611 | 929,544 | 927,477 | 925,411 | 923,344 | 921,277 | 919,211 |
| (16) | 675.0 | 17,770 | 1,023,950 | 0.9022 | 1,023,499 | 1,021,243 | 1,018,988 | 1,016,732 | 1,014,477 | 1,012,221 | 1,009,966 | 1,007,711 | 1,005,455 | 1,003,200 |
| (17) | 681.0 | 19,297 | 1,134,956 | 1.0000 | 1,134,456 | 1,131,956 | 1,129,456 | 1,126,956 | 1,124,456 | 1,121,956 | 1,119,456 | 1,116,956 | 1,114,456 | 1,111,956 |
| (18) | 685.0 | 20,400 | 1,214,515 | n/a | 1,214,015 | 1,211,515 | 1,209,015 | 1,206,515 | 1,204,015 | 1,201,515 | 1,199,015 | 1,196,515 | 1,194,015 | 1,191,515 |
| (19) | 690.0 | 21,598 | 1,319,504 | n/a | 1,319,004 | 1,316,504 | 1,314,004 | 1,311,504 | 1,309,004 | 1,306,504 | 1,304,004 | 1,301,504 | 1,299,004 | 1,296,504 |
| (20) | 695.0 | 22,892 | 1,430,666 | n/a | 1,430,166 | 1,427,666 | 1,425,166 | 1,422,666 | 1,420,166 | 1,417,666 | 1,415,166 | 1,412,666 | 1,410,166 | 1,407,666 |
| (21) | 700.0 | 24,327 | 1,548,645 | n/a | 1,548,145 | 1,545,645 | 1,543,145 | 1,540,645 | 1,538,145 | 1,535,645 | 1,533,145 | 1,530,645 | 1,528,145 | 1,525,645 |
| (22) | 705.0 | 25,904 | 1,674,150 | n/a | 1,673,650 | 1,671,150 | 1,668,650 | 1,666,150 | 1,663,650 | 1,661,150 | 1,658,650 | 1,656,150 | 1,653,650 | 1,651,150 |
| (23) | 710.0 | 27,679 | 1,808,053 | n/a | 1,807,553 | 1,805,053 | 1,802,553 | 1,800,053 | 1,797,553 | 1,795,053 | 1,792,553 | 1,790,053 | 1,787,553 | 1,785,053 |
| (24) | 715.0 | 29,527 | 1,951,075 | n/a | 1,950,575 | 1,948,075 | 1,945,575 | 1,943,075 | 1,940,575 | 1,938,075 | 1,935,575 | 1,933,075 | 1,930,575 | 1,928,075 |
| (25) | Sediment Accumulation Since 2008 at 250 ac-ft/yr: | | | | 500 | 3,000 | 5,500 | 8,000 | 10,500 | 13,000 | 15,500 | 18,000 | 20,500 | 23,000 |

* Values reflect LCRA re-adjustment of datum used in May 2009 TWDB report to match normal datum used by LCRA - 0.6 feet subtracted from TWDB reported elevations.

FIGURE 1
HISTORICAL AND PROJECTED CONSERVATION STORAGE CAPACITY FOR LAKE TRAVIS



Water surface areas over the depth of the reservoir below the top of the conservation pool have been calculated assuming that the calculated incremental depths (Dinc) between specified elevations remain unchanged from the 2008 surveyed condition into the future. This then allows the projected future water surface areas at different elevations to be calculated as follows:

$$A2 = (S2 - S1) / (0.5 \times Dinc) - A1$$

where: A2 = Area of Top Surface of Elevation Increment
A1 = Area of Bottom Surface of Elevation Increment
S2 = Storage at Top Elevation of Elevation Increment
S1 = Storage at Bottom Elevation of Elevation Increment
Dinc = 2008 Incremental Volume ÷ 2008 Average Incremental Area

For elevations above the top of the conservation pool, it has been assumed that surface areas will remain unchanged from the 2008 surveyed condition into the future. The resulting projected water surface areas for Lake Travis are listed by decade in Table 2.

**LAKE BUCHANAN**

Procedures and calculations similar to those used for Lake Travis also have been applied for estimating future elevation-area-capacity data by decade for Lake Buchanan. The most recent study of the elevation-area-capacity characteristics of Lake Buchanan was conducted by the Texas Water Development Board (TWDB, 2007) using field survey data collected with a multi-frequency (200 kHz, 50 kHz, and 24 kHz) sub-bottom profiling depth sounder during March-April of 2006, supplemented with high-resolution LIDAR ground elevation data provided by LCRA based on measurements made December 31, 2006 and January 1, 2007.

Results from the most recent TWDB study indicate that the conservation storage capacity of Lake Buchanan at elevation 1020.0 feet msl as of the time of the surveys was 875,588 acre-feet, with a corresponding surface area of 22,017 acres. Based on analyses of the multi-frequency sub-bottom depth data, the distribution and accumulation of sediment within Lake Buchanan also was analyzed and determined by the TWDB, and these results indicate that at least 34,275 acre-feet of sediment have been deposited within the reservoir since it first began to impound water around 1938. This is equivalent to an average annual sedimentation rate of 504 acre-feet/year. This annual rate of sedimentation is about twice the rate reported by the TWDB for Lake Travis based on its 2008 survey, which is consistent with what would be expected, considering, as noted above, (1) the relative differences in the size of the contributing watersheds for Lakes Travis and Buchanan (i.e., 1,700 square miles versus 6,600 square miles since 1989 and between 9,800 and 16,300 square miles prior to that time) and (2) the sediment retention in the upper chain of Highland Lakes immediately upstream of Lake Travis. Furthermore, according to the TWDB, it's estimate of the total volume of sediment within the reservoir upon which the sedimentation rate is based may somewhat underestimated since portions of the reservoir were too shallow during the 2006 survey for operation of the multi-frequency depth sounder.

Based on LCRA records (LCRA, 1999), the most recent hydrographic survey of Lake Buchanan prior to the 2006 TWDB survey was conducted in 1991, and the conservation storage capacity of the reservoir was reported at that time to be 881,474 acre-feet. Later, data from the 1991 survey

# TABLE 2
# LAKE TRAVIS PROJECTED WATER SURFACE AREA BASED ON
# 250 AC-FT/YEAR CONSTANT ANNUAL SEDIMENTATION RATE AS DETERMINED BY TWDB MAY 2009 STUDY

| | (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) | (9) | (10) | (11) | (12) | (13) | (14) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | **WATER SURFACE ELEVATION** | **TWDB 2008 SURVEY RESULTS** | | | **LAKE TRAVIS PROJECTED SURFACE AREA BY DECADE** | | | | | | | | | |
| | | **VALUES FOR DEPTH INCREMENTS** | | | **2010** | **2020** | **2030** | **2040** | **2050** | **2060** | **2070** | **2080** | **2090** | **2100** |
| | **Feet** | **AREA* acres** | **STORAGE* ac-ft** | **DEPTH* feet** | | | | | | | | | | |
| (1) | 500.0 | n/a | n/a | n/a | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| (2) | 502.0 | 12 | 8 | 0.7 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 |
| (3) | 515.0 | 255 | 3,544 | 13.9 | 486 | 485 | 484 | 483 | 482 | 480 | 479 | 478 | 477 | 476 |
| (4) | 530.0 | 758 | 11,457 | 15.1 | 1,030 | 1,027 | 1,025 | 1,023 | 1,020 | 1,018 | 1,016 | 1,014 | 1,011 | 1,009 |
| (5) | 545.0 | 1,307 | 19,361 | 14.8 | 1,583 | 1,580 | 1,576 | 1,573 | 1,569 | 1,566 | 1,562 | 1,559 | 1,555 | 1,552 |
| (6) | 560.0 | 1,953 | 29,295 | 15.0 | 2,320 | 2,315 | 2,310 | 2,305 | 2,300 | 2,294 | 2,289 | 2,284 | 2,279 | 2,274 |
| (7) | 575.0 | 2,861 | 42,332 | 14.8 | 3,399 | 3,391 | 3,384 | 3,376 | 3,369 | 3,361 | 3,354 | 3,346 | 3,339 | 3,331 |
| (8) | 590.0 | 4,077 | 61,113 | 15.0 | 4,751 | 4,740 | 4,730 | 4,719 | 4,709 | 4,699 | 4,688 | 4,678 | 4,667 | 4,657 |
| (9) | 605.0 | 5,466 | 81,190 | 14.9 | 6,175 | 6,162 | 6,148 | 6,134 | 6,121 | 6,107 | 6,094 | 6,080 | 6,066 | 6,053 |
| (10) | 620.0 | 7,057 | 105,700 | 15.0 | 7,932 | 7,914 | 7,897 | 7,879 | 7,862 | 7,844 | 7,827 | 7,809 | 7,792 | 7,774 |
| (11) | 635.0 | 8,910 | 133,427 | 15.0 | 9,881 | 9,859 | 9,837 | 9,815 | 9,794 | 9,772 | 9,750 | 9,728 | 9,706 | 9,685 |
| (12) | 650.0 | 11,106 | 164,848 | 14.8 | 12,322 | 12,294 | 12,267 | 12,240 | 12,213 | 12,186 | 12,159 | 12,131 | 12,104 | 12,077 |
| (13) | 660.0 | 13,278 | 132,588 | 10.0 | 14,223 | 14,191 | 14,160 | 14,129 | 14,097 | 14,066 | 14,035 | 14,003 | 13,972 | 13,941 |
| (14) | 665.0 | 14,765 | 73,793 | 5.0 | 15,294 | 15,261 | 15,227 | 15,193 | 15,159 | 15,126 | 15,092 | 15,058 | 15,025 | 14,991 |
| (15) | 670.0 | 15,918 | 79,568 | 5.0 | 16,528 | 16,491 | 16,455 | 16,418 | 16,382 | 16,346 | 16,309 | 16,273 | 16,236 | 16,200 |
| (16) | 675.0 | 17,153 | 85,726 | 5.0 | 17,762 | 17,723 | 17,684 | 17,645 | 17,606 | 17,566 | 17,527 | 17,488 | 17,449 | 17,410 |
| (17) | 681.0 | 18,534 | 111,006 | 6.0 | 19,288 | 19,246 | 19,203 | 19,161 | 19,118 | 19,076 | 19,033 | 18,991 | 18,948 | 18,906 |
| (18) | 685.0 | n/a | n/a | n/a | 20,400 | 20,400 | 20,400 | 20,400 | 20,400 | 20,400 | 20,400 | 20,400 | 20,400 | 20,400 |
| (19) | 690.0 | n/a | n/a | n/a | 21,598 | 21,598 | 21,598 | 21,598 | 21,598 | 21,598 | 21,598 | 21,598 | 21,598 | 21,598 |
| (20) | 695.0 | n/a | n/a | n/a | 22,892 | 22,892 | 22,892 | 22,892 | 22,892 | 22,892 | 22,892 | 22,892 | 22,892 | 22,892 |
| (21) | 700.0 | n/a | n/a | n/a | 24,327 | 24,327 | 24,327 | 24,327 | 24,327 | 24,327 | 24,327 | 24,327 | 24,327 | 24,327 |
| (22) | 705.0 | n/a | n/a | n/a | 25,904 | 25,904 | 25,904 | 25,904 | 25,904 | 25,904 | 25,904 | 25,904 | 25,904 | 25,904 |
| (23) | 710.0 | n/a | n/a | n/a | 27,679 | 27,679 | 27,679 | 27,679 | 27,679 | 27,679 | 27,679 | 27,679 | 27,679 | 27,679 |
| (24) | 715.0 | n/a | n/a | n/a | 29,527 | 29,527 | 29,527 | 29,527 | 29,527 | 29,527 | 29,527 | 29,527 | 29,527 | 29,527 |

* Values reflect LCRA re-adjustment of datum used in May 2009 TWDB report to match normal datum used by LCRA - 0.6 feet subtracted from TWDB reported elevations.

were combined with elevation data from a 1997 aerial mapping project to generate revised and updated elevation-area-capacity tables for Lake Buchanan. These results indicated that the conservation storage capacity of the reservoir as of 1997 was 877,674 acre-feet.

Based on data from the 1997 and the 2006 hydrographic surveys of Lake Buchanan, the change in the conservation storage capacity of the reservoir represents a reduction of 2,086 acre-feet. This change in storage volume over approximately nine years equates to a sedimentation rate of only 232 acre-feet/year. This sedimentation rate is less than that determined by the TWDB for Lake Travis (250 acre-feet/year) based on actual field measurements of sediment volume. A sedimentation rate for Lake Buchanan less than that for Lake Travis is counter to what would be expected given the relative differences in the size of the contributing watersheds for Lakes Travis and Buchanan and the fact that sediment discharges into Lake Travis are substantially retained in the upper chain of Highland Lakes, including Lake Buchanan. While it is possible that current sediment discharges into Lake Buchanan may be somewhat reduced from historical levels because of the construction of Lake O. H. Ivie in 1989 upstream of Lake Buchanan, the contributing drainage area for Lake Buchanan below Lake O. H. Ivie still covers 6,600 square miles, which is substantially more than the Lake Travis contributing watershed below its upstream reservoirs (1,700 square miles). Furthermore, given that the conservation storage capacities for Lake Buchanan based on the 1997 and the 2006 surveys may not be comparable, as noted by the TWDB, because of differences in the methodologies used during the surveys, the sedimentation rate derived from the hydrographic survey data may not effectively represent actual sedimentation conditions in the reservoir.

For the above reasons, the lower sedimentation rate derived from the 1997 and the 2006 hydrographic survey data is not considered appropriate for projecting future reservoir storage capacities in Lake Buchanan. Instead, the higher sedimentation rate of 504 acre-feet/year as determined by the TWDB based on the 2006 sediment depth measurements is believed to be a more reasonable estimate. While this estimated sedimentation rate may be considered somewhat high for projecting future storage capacity because it reflects historical sedimentation conditions before Lake O. H. Ivie was constructed, it has also been noted by the TWDB that this rate may be somewhat low because of the TWDB's inability to make complete sediment measurements in portions of the reservoir that were too shallow during the 2006 survey for operation of the multi-frequency depth sounder equipment. Considering these offsetting factors, the sedimentation rate based on theTWDB's 2006 estimate of sediment volume within Lake Buchanan is believed to provide a meaningful and useful basis for estimating the reservoir's future sediment accumulations and conservation storage capacity.

Using the TWDB-based estimate of 504 acre-feet/year for the annual sedimentation rate, projections of future sedimentation volumes and corresponding maximum conservation storage capacities for Lake Buchanan have been made for each decade beginning with 2010 and extending through the year 2100. These results are presented in Table 3 in Rows 26 and 17, respectively. As shown, based on these calculations, the maximum conservation storage capacity of Lake Buchanan is projected to decrease from 873,572 acre-feet in 2010 down to 828,208 acre-feet in the year 2100, a reduction of 45,364 acre-feet, or about five percent.

The graph in Figure 2 illustrates the projected reduction in the future conservation storage capacity of Lake Buchanan out to the year 2100 and also compares these projections to previous estimates of the conservation storage capacity based on the original as-built calculations and previous hydrographic survey and topographic data. As shown, the projected future rate of storage reduction is considerably lower than that indicated by the apparent rate that occurred from 1938 when the reservoir was initially impounded to the early 1990s when the hydrographic surveys were first undertaken. The earlier higher rate of sedimentation may be influenced by the validity of the initial reservoir storage volume itself and the fact that O. H. Ivie Reservoir did not exist during most of this time. Furthermore, as explained above, the adopted future sedimentation rate may be somewhat low because of the TWDB's inability to make complete sediment measurements in portions of Lake Buchanan that were too shallow during the 2006 survey for operation of the multi-frequency depth sounder equipment. Considering these factors and the more sophisticated approach and state-of-the-art procedures utilized in the most recent study conducted by the TWDB, the projected values of conservation storage capacity for Lake Buchanan are considered to be reasonable and sufficiently accurate for purposes of LCRA's water supply planning until these data are revised and updated by future studies.

The distribution of the projected conservation storage capacities in Table 3 over the depth of Lake Buchanan below the top of its conservation pool (< 1020 feet msl) has been accomplished using the same procedures described above for Lake Travis. This distribution is shown in Column 4 of Table 3, and these factors have been applied to the maximum conservation storage capacity at elevation 1020.0 feet msl for each decade to establish the storage quantities at the lower elevations. For elevations above the top of the conservation pool, the same incremental increases in storage capacity as those determined and reported in the TWDB's 2007 study have been maintained for each future decadal condition, assuming that sedimentation effects will be minimal at these higher elevations. Corresponding water surface areas over the depth of the reservoir also have been calculated using the same approach as that applied for Lake Travis. These calculations and the resulting projected water surface areas by decade for Lake Buchanan are presented in Table 4.

**REFERENCES**

Lower Colorado River Authority (1999); "Report on the History of the Highland Lakes Capacity Tables"; Surveying & Mapping Department; Austin, Texas.

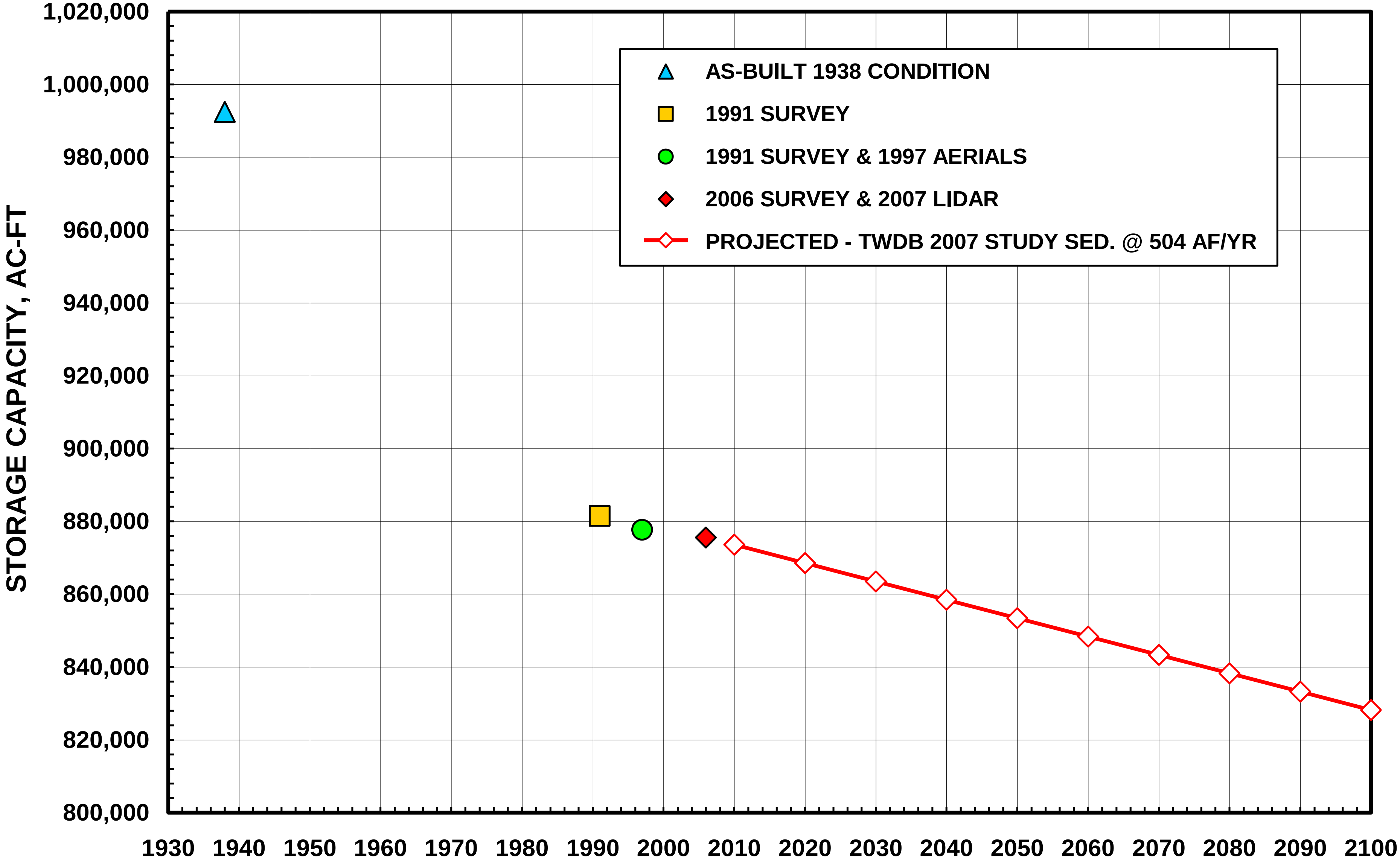
Texas Water Development Board (2007); "Volumetric and Sedimentation Survey of Lake Buchanan, March-April 2006 Survey"; Austin, Texas.

Texas Water Development Board (2008); "Volumetric and Sedimentation Survey of Lake Travis, April-July 2008 Survey"; Austin, Texas.

# TABLE 3
# LAKE BUCHANAN PROJECTED STORAGE CONDITIONS BASED ON
# 504 AC-FT/YEAR CONSTANT ANNUAL SEDIMENTATION RATE AS DETERMINED BY TWDB AUGUST 2007 STUDY

| | (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) | (9) | (10) | (11) | (12) | (13) | (14) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | **WATER SURFACE** | **TWDB 2006 SURVEY DATA** | | **STORAGE DEPTH** | **LAKE BUCHANAN PROJECTED STORAGE CAPACITY BY DECADE** | | | | | | | | | |
| | **ELEVATION Feet** | **SURFACE AREA acres** | **STORAGE CAPACITY ac-ft** | **PROPOR-TIONAL FACTOR** | **2010** | **2020** | **2030** | **2040** | **2050** | **2060** | **2070** | **2080** | **2090** | **2100** |
| (1) | 910.0 | 0 | 0 | 0.0000 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| (2) | 915.0 | 25 | 16 | 0.0000 | 16 | 16 | 16 | 16 | 16 | 16 | 15 | 15 | 15 | 15 |
| (3) | 920.0 | 285 | 779 | 0.0009 | 777 | 773 | 768 | 764 | 759 | 755 | 750 | 746 | 741 | 737 |
| (4) | 930.0 | 875 | 6,200 | 0.0071 | 6,186 | 6,150 | 6,114 | 6,079 | 6,043 | 6,007 | 5,972 | 5,936 | 5,900 | 5,865 |
| (5) | 940.0 | 1,823 | 19,394 | 0.0221 | 19,349 | 19,238 | 19,126 | 19,014 | 18,903 | 18,791 | 18,679 | 18,568 | 18,456 | 18,345 |
| (6) | 950.0 | 3,250 | 44,352 | 0.0507 | 44,250 | 43,995 | 43,739 | 43,484 | 43,229 | 42,973 | 42,718 | 42,463 | 42,207 | 41,952 |
| (7) | 960.0 | 5,140 | 85,710 | 0.0979 | 85,513 | 85,019 | 84,526 | 84,032 | 83,539 | 83,046 | 82,552 | 82,059 | 81,565 | 81,072 |
| (8) | 970.0 | 7,453 | 148,370 | 0.1695 | 148,028 | 147,174 | 146,320 | 145,466 | 144,612 | 143,758 | 142,904 | 142,050 | 141,195 | 140,341 |
| (9) | 980.0 | 10,152 | 236,306 | 0.2699 | 235,762 | 234,402 | 233,041 | 231,681 | 230,321 | 228,960 | 227,600 | 226,240 | 224,879 | 223,519 |
| (10) | 990.0 | 12,750 | 351,054 | 0.4009 | 350,246 | 348,225 | 346,204 | 344,183 | 342,162 | 340,141 | 338,120 | 336,099 | 334,079 | 332,058 |
| (11) | 995.0 | 14,097 | 418,122 | 0.4775 | 417,159 | 414,752 | 412,345 | 409,938 | 407,531 | 405,124 | 402,717 | 400,310 | 397,903 | 395,496 |
| (12) | 1000.0 | 15,602 | 491,941 | 0.5618 | 490,808 | 487,976 | 485,144 | 482,312 | 479,481 | 476,649 | 473,817 | 470,985 | 468,153 | 465,321 |
| (13) | 1005.0 | 17,383 | 574,537 | 0.6562 | 573,214 | 569,907 | 566,599 | 563,292 | 559,984 | 556,677 | 553,370 | 550,062 | 546,755 | 543,447 |
| (14) | 1010.0 | 19,340 | 666,347 | 0.7610 | 664,813 | 660,977 | 657,141 | 653,305 | 649,469 | 645,633 | 641,797 | 637,961 | 634,125 | 630,289 |
| (15) | 1015.0 | 21,066 | 767,654 | 0.8767 | 765,886 | 761,467 | 757,048 | 752,629 | 748,210 | 743,791 | 739,372 | 734,953 | 730,534 | 726,114 |
| (16) | 1018.0 | 21,701 | 831,889 | 0.9501 | 829,973 | 825,185 | 820,396 | 815,607 | 810,818 | 806,029 | 801,240 | 796,451 | 791,662 | 786,874 |
| (17) | 1020.0 | 22,017 | 875,588 | 1.0000 | 873,572 | 868,531 | 863,491 | 858,451 | 853,410 | 848,370 | 843,329 | 838,289 | 833,248 | 828,208 |
| (18) | 1022.0 | 22,611 | 920,173 | n/a | 918,157 | 913,116 | 908,076 | 903,036 | 897,995 | 892,955 | 887,914 | 882,874 | 877,833 | 872,793 |
| (19) | 1024.0 | 23,225 | 965,946 | n/a | 963,930 | 958,889 | 953,849 | 948,809 | 943,768 | 938,728 | 933,687 | 928,647 | 923,606 | 918,566 |
| (20) | 1026.0 | 23,770 | 1,012,867 | n/a | 1,010,851 | 1,005,810 | 1,000,770 | 995,730 | 990,689 | 985,649 | 980,608 | 975,568 | 970,527 | 965,487 |
| (21) | 1028.0 | 24,294 | 1,060,851 | n/a | 1,058,835 | 1,053,794 | 1,048,754 | 1,043,714 | 1,038,673 | 1,033,633 | 1,028,592 | 1,023,552 | 1,018,511 | 1,013,471 |
| (22) | 1030.0 | 24,810 | 1,109,877 | n/a | 1,107,861 | 1,102,820 | 1,097,780 | 1,092,740 | 1,087,699 | 1,082,659 | 1,077,618 | 1,072,578 | 1,067,537 | 1,062,497 |
| (23) | 1032.0 | 25,319 | 1,159,927 | n/a | 1,157,911 | 1,152,870 | 1,147,830 | 1,142,790 | 1,137,749 | 1,132,709 | 1,127,668 | 1,122,628 | 1,117,587 | 1,112,547 |
| (24) | 1034.0 | 25,838 | 1,211,002 | n/a | 1,208,986 | 1,203,945 | 1,198,905 | 1,193,865 | 1,188,824 | 1,183,784 | 1,178,743 | 1,173,703 | 1,168,662 | 1,163,622 |
| (25) | 1035.0 | 26,097 | 1,236,930 | n/a | 1,234,914 | 1,229,873 | 1,224,833 | 1,219,793 | 1,214,752 | 1,209,712 | 1,204,671 | 1,199,631 | 1,194,590 | 1,189,550 |
| (26) | Sediment Accumulation Since 2006 at 504 ac-ft/yr: | | | | 2,016 | 7,057 | 12,097 | 17,138 | 22,178 | 27,218 | 32,259 | 37,299 | 42,340 | 47,380 |

**FIGURE 2**
**HISTORICAL AND PROJECTED CONSERVATION STORAGE CAPACITY FOR LAKE BUCHANAN**



# TABLE 4
# LAKE BUCHANAN PROJECTED WATER SURFACE AREA BASED ON
# 504 AC-FT/YEAR CONSTANT ANNUAL SEDIMENTATION RATE AS DETERMINED BY TWDB AUGUST 2007 STUDY

| | (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) | (9) | (10) | (11) | (12) | (13) | (14) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | **WATER SURFACE ELEVATION Feet** | **TWDB 2006 SURVEY DATA AVERAGE VALUES FOR DEPTH INCREMENTS** | | | **LAKE BUCHANAN PROJECTED SURFACE AREA BY DECADE** | | | | | | | | | |
| | | **AREA acres** | **CAPACITY ac-ft** | **DEPTH feet** | **2010** | **2020** | **2030** | **2040** | **2050** | **2060** | **2070** | **2080** | **2090** | **2100** |
| (1) | 910.0 | n/a | n/a | n/a | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| (2) | 915.0 | 13 | 16 | 1.3 | 25 | 25 | 25 | 25 | 24 | 24 | 24 | 24 | 24 | 24 |
| (3) | 920.0 | 155 | 763 | 4.9 | 284 | 283 | 281 | 279 | 278 | 276 | 274 | 273 | 271 | 270 |
| (4) | 930.0 | 580 | 5,421 | 9.3 | 873 | 868 | 863 | 858 | 853 | 848 | 843 | 838 | 833 | 828 |
| (5) | 940.0 | 1,349 | 13,194 | 9.8 | 1,819 | 1,808 | 1,798 | 1,787 | 1,777 | 1,766 | 1,756 | 1,745 | 1,735 | 1,724 |
| (6) | 950.0 | 2,537 | 24,958 | 9.8 | 3,243 | 3,224 | 3,205 | 3,186 | 3,168 | 3,149 | 3,130 | 3,112 | 3,093 | 3,074 |
| (7) | 960.0 | 4,195 | 41,358 | 9.9 | 5,128 | 5,099 | 5,069 | 5,039 | 5,010 | 4,980 | 4,951 | 4,921 | 4,891 | 4,862 |
| (8) | 970.0 | 6,297 | 62,660 | 10.0 | 7,436 | 7,393 | 7,350 | 7,307 | 7,264 | 7,221 | 7,178 | 7,136 | 7,093 | 7,050 |
| (9) | 980.0 | 8,803 | 87,936 | 10.0 | 10,129 | 10,070 | 10,012 | 9,953 | 9,895 | 9,836 | 9,778 | 9,720 | 9,661 | 9,603 |
| (10) | 990.0 | 11,451 | 114,748 | 10.0 | 12,721 | 12,647 | 12,574 | 12,500 | 12,427 | 12,354 | 12,280 | 12,207 | 12,133 | 12,060 |
| (11) | 995.0 | 13,424 | 67,068 | 5.0 | 14,065 | 13,983 | 13,902 | 13,821 | 13,740 | 13,659 | 13,578 | 13,496 | 13,415 | 13,334 |
| (12) | 1000.0 | 14,850 | 73,819 | 5.0 | 15,566 | 15,476 | 15,386 | 15,297 | 15,207 | 15,117 | 15,027 | 14,937 | 14,848 | 14,758 |
| (13) | 1005.0 | 16,493 | 82,596 | 5.0 | 17,343 | 17,243 | 17,143 | 17,043 | 16,943 | 16,843 | 16,743 | 16,642 | 16,542 | 16,442 |
| (14) | 1010.0 | 18,362 | 91,810 | 5.0 | 19,295 | 19,184 | 19,073 | 18,961 | 18,850 | 18,739 | 18,627 | 18,516 | 18,405 | 18,293 |
| (15) | 1015.0 | 20,203 | 101,307 | 5.0 | 21,017 | 20,896 | 20,775 | 20,654 | 20,532 | 20,411 | 20,290 | 20,169 | 20,047 | 19,926 |
| (16) | 1018.0 | 21,384 | 64,235 | 3.0 | 21,651 | 21,526 | 21,401 | 21,276 | 21,151 | 21,026 | 20,901 | 20,777 | 20,652 | 20,527 |
| (17) | 1020.0 | 21,859 | 43,699 | 2.0 | 21,966 | 21,840 | 21,713 | 21,586 | 21,459 | 21,333 | 21,206 | 21,079 | 20,952 | 20,826 |
| (18) | 1022.0 | n/a | n/a | n/a | 22,611 | 22,611 | 22,611 | 22,611 | 22,611 | 22,611 | 22,611 | 22,611 | 22,611 | 22,611 |
| (19) | 1024.0 | n/a | n/a | n/a | 23,225 | 23,225 | 23,225 | 23,225 | 23,225 | 23,225 | 23,225 | 23,225 | 23,225 | 23,225 |
| (20) | 1026.0 | n/a | n/a | n/a | 23,770 | 23,770 | 23,770 | 23,770 | 23,770 | 23,770 | 23,770 | 23,770 | 23,770 | 23,770 |
| (21) | 1028.0 | n/a | n/a | n/a | 24,294 | 24,294 | 24,294 | 24,294 | 24,294 | 24,294 | 24,294 | 24,294 | 24,294 | 24,294 |
| (22) | 1030.0 | n/a | n/a | n/a | 24,810 | 24,810 | 24,810 | 24,810 | 24,810 | 24,810 | 24,810 | 24,810 | 24,810 | 24,810 |
| (23) | 1032.0 | n/a | n/a | n/a | 25,319 | 25,319 | 25,319 | 25,319 | 25,319 | 25,319 | 25,319 | 25,319 | 25,319 | 25,319 |
| (24) | 1034.0 | n/a | n/a | n/a | 25,838 | 25,838 | 25,838 | 25,838 | 25,838 | 25,838 | 25,838 | 25,838 | 25,838 | 25,838 |
| (25) | 1035.0 | n/a | n/a | n/a | 26,097 | 26,097 | 26,097 | 26,097 | 26,097 | 26,097 | 26,097 | 26,097 | 26,097 | 26,097 |

# APPENDIX 3C

# TWDB DB22 REPORTS FOR WATER AVAILABILITY AND WATER SUPPLIES

# Region K Source Availability

| GROUNDWATER SOURCE TYPE | | | | SOURCE AVAILABILITY (ACRE-FEET PER YEAR) | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| SOURCE NAME | COUNTY | BASIN | SALINITY * | 2020 | 2030 | 2040 | 2050 | 2060 | 2070 |
| CARRIZO-WILCOX AQUIFER | BASTROP | BRAZOS | FRESH | 752 | 847 | 960 | 1,233 | 1,113 | 1,113 |
| CARRIZO-WILCOX AQUIFER | BASTROP | COLORADO | FRESH | 20,696 | 23,206 | 25,169 | 28,570 | 27,823 | 27,823 |
| CARRIZO-WILCOX AQUIFER | BASTROP | GUADALUPE | FRESH | 212 | 172 | 147 | 248 | 167 | 167 |
| CARRIZO-WILCOX AQUIFER | FAYETTE | COLORADO | FRESH | 4,565 | 4,565 | 4,565 | 4,565 | 4,565 | 4,565 |
| CARRIZO-WILCOX AQUIFER | FAYETTE | GUADALUPE | FRESH | 909 | 909 | 909 | 909 | 909 | 909 |
| CARRIZO-WILCOX AQUIFER | FAYETTE | LAVACA | FRESH | 0 | 0 | 0 | 0 | 0 | 0 |
| EDWARDS-BFZ AQUIFER | HAYS | COLORADO | FRESH | 2,292 | 2,292 | 2,292 | 2,292 | 2,292 | 2,292 |
| EDWARDS-BFZ AQUIFER | HAYS | COLORADO | SALINE | 66 | 66 | 66 | 66 | 66 | 66 |
| EDWARDS-BFZ AQUIFER | TRAVIS | BRAZOS | FRESH | 275 | 275 | 275 | 275 | 275 | 275 |
| EDWARDS-BFZ AQUIFER | TRAVIS | COLORADO | FRESH | 1,166 | 1,166 | 1,166 | 1,166 | 1,166 | 1,166 |
| EDWARDS-BFZ AQUIFER | TRAVIS | COLORADO | FRESH/ BRACKISH | 4,962 | 4,962 | 4,962 | 4,962 | 4,962 | 4,962 |
| EDWARDS-BFZ AQUIFER | TRAVIS | COLORADO | SALINE | 5,073 | 5,073 | 5,073 | 5,073 | 5,073 | 5,073 |
| EDWARDS-BFZ AQUIFER | TRAVIS | GUADALUPE | SALINE | 280 | 280 | 280 | 280 | 280 | 280 |
| EDWARDS-BFZ AQUIFER | WILLIAMSON | BRAZOS | FRESH | 6 | 6 | 6 | 6 | 6 | 6 |
| EDWARDS-BFZ AQUIFER | WILLIAMSON | COLORADO | FRESH | 4 | 4 | 4 | 4 | 4 | 4 |
| EDWARDS-TRINITY-PLATEAU AQUIFER | BLANCO | COLORADO | FRESH | 0 | 0 | 0 | 0 | 0 | 0 |
| EDWARDS-TRINITY-PLATEAU AQUIFER | BLANCO | GUADALUPE | FRESH | 0 | 0 | 0 | 0 | 0 | 0 |
| EDWARDS-TRINITY-PLATEAU, PECOS VALLEY, AND TRINITY AQUIFERS | GILLESPIE | COLORADO | FRESH | 4,843 | 4,843 | 4,843 | 4,843 | 4,843 | 4,843 |
| EDWARDS-TRINITY-PLATEAU, PECOS VALLEY, AND TRINITY AQUIFERS | GILLESPIE | GUADALUPE | FRESH | 136 | 136 | 136 | 136 | 136 | 136 |
| ELLENBURGER-SAN SABA AQUIFER | BLANCO | COLORADO | FRESH | 1,952 | 1,946 | 1,952 | 1,946 | 1,952 | 1,946 |
| ELLENBURGER-SAN SABA AQUIFER | BURNET | BRAZOS | FRESH | 3,833 | 3,822 | 3,833 | 3,822 | 3,833 | 3,822 |
| ELLENBURGER-SAN SABA AQUIFER | BURNET | COLORADO | FRESH | 7,024 | 7,005 | 7,024 | 7,005 | 7,024 | 7,005 |
| ELLENBURGER-SAN SABA AQUIFER | GILLESPIE | COLORADO | FRESH | 6,294 | 6,294 | 6,294 | 6,294 | 6,294 | 6,294 |
| ELLENBURGER-SAN SABA AQUIFER | GILLESPIE | GUADALUPE | FRESH | 0 | 0 | 0 | 0 | 0 | 0 |
| ELLENBURGER-SAN SABA AQUIFER | LLANO | COLORADO | FRESH | 409 | 408 | 409 | 408 | 409 | 408 |
| ELLENBURGER-SAN SABA AQUIFER | MILLS | BRAZOS | FRESH | 93 | 93 | 93 | 93 | 93 | 93 |
| ELLENBURGER-SAN SABA AQUIFER | MILLS | COLORADO | FRESH | 407 | 406 | 407 | 406 | 407 | 406 |
| ELLENBURGER-SAN SABA AQUIFER | SAN SABA | COLORADO | FRESH | 7,890 | 7,890 | 7,890 | 7,890 | 7,890 | 7,890 |
| GULF COAST AQUIFER SYSTEM | COLORADO | BRAZOS-COLORADO | FRESH | 15,391 | 15,391 | 15,391 | 15,391 | 15,391 | 15,391 |
| GULF COAST AQUIFER SYSTEM | COLORADO | COLORADO | FRESH | 20,779 | 20,779 | 20,339 | 20,339 | 20,339 | 20,339 |
| GULF COAST AQUIFER SYSTEM | COLORADO | LAVACA | FRESH | 39,712 | 39,712 | 37,953 | 37,953 | 36,806 | 36,806 |
| GULF COAST AQUIFER SYSTEM | FAYETTE | BRAZOS | FRESH | 2 | 2 | 2 | 2 | 2 | 2 |
| GULF COAST AQUIFER SYSTEM | FAYETTE | COLORADO | FRESH | 989 | 989 | 989 | 989 | 989 | 989 |
| GULF COAST AQUIFER SYSTEM | FAYETTE | LAVACA | FRESH | 862 | 862 | 862 | 862 | 862 | 862 |
| GULF COAST AQUIFER SYSTEM | MATAGORDA | BRAZOS-COLORADO | FRESH | 15,282 | 15,282 | 15,282 | 15,282 | 15,282 | 15,282 |
| GULF COAST AQUIFER SYSTEM | MATAGORDA | COLORADO | FRESH/ BRACKISH | 3,217 | 3,217 | 3,217 | 3,217 | 3,217 | 3,217 |
| GULF COAST AQUIFER SYSTEM | MATAGORDA | COLORADO-LAVACA | FRESH | 20,329 | 20,329 | 20,329 | 20,329 | 20,329 | 20,329 |
| GULF COAST AQUIFER SYSTEM | WHARTON | BRAZOS-COLORADO | FRESH | 50,527 | 50,527 | 50,527 | 50,527 | 50,527 | 50,527 |
| GULF COAST AQUIFER SYSTEM | WHARTON | COLORADO | FRESH | 35,910 | 35,910 | 35,910 | 35,910 | 35,910 | 35,910 |

* Salinity field indicates whether the source availability is considered 'fresh' (less than 1,000 mg/L), 'brackish' (1,000 to 10,000 mg/L), 'saline' (10,001 mg/L to 34,999 mg/L), or 'seawater' (35,000 mg/L or greater). Sources can also be labeled as 'fresh/brackish' or 'brackish/saline', if a combination of the salinity types is appropriate.
** Since reservoir sources can exist across multiple counties, the county field value, 'reservoir' is applied to all reservoir sources.

# Region K Source Availability

| GROUNDWATER SOURCE TYPE | | | | SOURCE AVAILABILITY (ACRE-FEET PER YEAR) | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| SOURCE NAME | COUNTY | BASIN | SALINITY * | 2020 | 2030 | 2040 | 2050 | 2060 | 2070 |
| GULF COAST AQUIFER SYSTEM | WHARTON | COLORADO-LAVACA | FRESH | 16,196 | 16,196 | 16,196 | 16,196 | 16,196 | 16,196 |
| GULF COAST AQUIFER SYSTEM | WHARTON | LAVACA | FRESH | 579 | 579 | 579 | 579 | 579 | 579 |
| HICKORY AQUIFER | BLANCO | COLORADO | FRESH | 383 | 382 | 383 | 382 | 383 | 382 |
| HICKORY AQUIFER | BURNET | BRAZOS | FRESH | 1,240 | 1,236 | 1,240 | 1,236 | 1,240 | 1,236 |
| HICKORY AQUIFER | BURNET | COLORADO | FRESH | 2,183 | 2,177 | 2,183 | 2,177 | 2,183 | 2,177 |
| HICKORY AQUIFER | GILLESPIE | COLORADO | FRESH | 1,751 | 1,751 | 1,751 | 1,751 | 1,751 | 1,751 |
| HICKORY AQUIFER | GILLESPIE | GUADALUPE | FRESH | 0 | 0 | 0 | 0 | 0 | 0 |
| HICKORY AQUIFER | HAYS | COLORADO | FRESH | 0 | 0 | 0 | 0 | 0 | 0 |
| HICKORY AQUIFER | LLANO | COLORADO | FRESH | 2,027 | 2,021 | 2,027 | 2,021 | 2,027 | 2,021 |
| HICKORY AQUIFER | MILLS | BRAZOS | FRESH | 7 | 7 | 7 | 7 | 7 | 7 |
| HICKORY AQUIFER | MILLS | COLORADO | FRESH | 29 | 29 | 29 | 29 | 29 | 29 |
| HICKORY AQUIFER | SAN SABA | COLORADO | FRESH | 7,680 | 7,680 | 7,680 | 7,680 | 7,680 | 7,680 |
| MARBLE FALLS AQUIFER | BLANCO | COLORADO | FRESH | 199 | 199 | 199 | 199 | 199 | 199 |
| MARBLE FALLS AQUIFER | BURNET | BRAZOS | FRESH | 1,387 | 1,383 | 1,387 | 1,383 | 1,387 | 1,383 |
| MARBLE FALLS AQUIFER | BURNET | COLORADO | FRESH | 1,357 | 1,353 | 1,357 | 1,353 | 1,357 | 1,353 |
| MARBLE FALLS AQUIFER | MILLS | BRAZOS | FRESH | 1 | 1 | 1 | 1 | 1 | 1 |
| MARBLE FALLS AQUIFER | MILLS | COLORADO | FRESH | 24 | 24 | 24 | 24 | 24 | 24 |
| MARBLE FALLS AQUIFER | SAN SABA | COLORADO | FRESH | 4,355 | 4,343 | 4,355 | 4,343 | 4,355 | 4,343 |
| OTHER AQUIFER | BASTROP | COLORADO | FRESH | 5,340 | 5,340 | 5,340 | 5,340 | 5,340 | 5,340 |
| OTHER AQUIFER | BURNET | BRAZOS | FRESH | 433 | 433 | 433 | 433 | 433 | 433 |
| OTHER AQUIFER | BURNET | COLORADO | FRESH | 3,672 | 3,672 | 3,672 | 3,672 | 3,672 | 3,672 |
| OTHER AQUIFER | FAYETTE | COLORADO | FRESH | 834 | 834 | 834 | 834 | 834 | 834 |
| OTHER AQUIFER | LLANO | COLORADO | FRESH | 629 | 629 | 629 | 629 | 629 | 629 |
| OTHER AQUIFER | TRAVIS | COLORADO | FRESH | 3,770 | 3,770 | 3,770 | 3,770 | 3,770 | 3,770 |
| OTHER AQUIFER | TRAVIS | GUADALUPE | FRESH | 112 | 112 | 112 | 112 | 112 | 112 |
| QUEEN CITY AQUIFER | BASTROP | BRAZOS | FRESH | 49 | 47 | 46 | 44 | 42 | 42 |
| QUEEN CITY AQUIFER | BASTROP | COLORADO | FRESH | 353 | 333 | 311 | 288 | 264 | 264 |
| QUEEN CITY AQUIFER | BASTROP | GUADALUPE | FRESH | 156 | 161 | 166 | 173 | 180 | 180 |
| QUEEN CITY AQUIFER | FAYETTE | COLORADO | FRESH | 2,278 | 2,278 | 2,278 | 2,278 | 2,278 | 2,278 |
| QUEEN CITY AQUIFER | FAYETTE | GUADALUPE | FRESH | 430 | 430 | 430 | 430 | 430 | 430 |
| QUEEN CITY AQUIFER | FAYETTE | LAVACA | FRESH | 0 | 0 | 0 | 0 | 0 | 0 |
| SPARTA AQUIFER | BASTROP | BRAZOS | FRESH | 89 | 87 | 85 | 84 | 82 | 82 |
| SPARTA AQUIFER | BASTROP | COLORADO | FRESH | 785 | 784 | 783 | 782 | 781 | 781 |
| SPARTA AQUIFER | BASTROP | GUADALUPE | FRESH | 33 | 33 | 33 | 33 | 33 | 33 |
| SPARTA AQUIFER | FAYETTE | COLORADO | FRESH | 1,659 | 1,649 | 1,626 | 1,612 | 1,619 | 1,619 |
| SPARTA AQUIFER | FAYETTE | GUADALUPE | FRESH | 1,172 | 1,176 | 1,177 | 1,182 | 1,183 | 1,183 |
| SPARTA AQUIFER | FAYETTE | LAVACA | FRESH | 0 | 0 | 0 | 0 | 0 | 0 |
| TRINITY AQUIFER | BLANCO | COLORADO | FRESH | 1,322 | 1,322 | 1,322 | 1,322 | 1,322 | 1,322 |
| TRINITY AQUIFER | BLANCO | GUADALUPE | FRESH | 1,251 | 1,251 | 1,251 | 1,251 | 1,251 | 1,251 |
| TRINITY AQUIFER | BURNET | BRAZOS | FRESH | 3,138 | 3,131 | 3,138 | 3,131 | 3,138 | 3,131 |
| TRINITY AQUIFER | BURNET | COLORADO | FRESH | 759 | 756 | 759 | 756 | 759 | 756 |
| TRINITY AQUIFER | HAYS | COLORADO | FRESH | 5,690 | 5,687 | 5,686 | 5,686 | 5,686 | 5,686 |
| TRINITY AQUIFER | HAYS | GUADALUPE | FRESH | 9 | 9 | 9 | 9 | 9 | 9 |
| TRINITY AQUIFER | MILLS | BRAZOS | FRESH | 808 | 805 | 808 | 805 | 808 | 805 |

* Salinity field indicates whether the source availability is considered 'fresh' (less than 1,000 mg/L), 'brackish' (1,000 to 10,000 mg/L), 'saline' (10,001 mg/L to 34,999 mg/L), or 'seawater' (35,000 mg/L or greater). Sources can also be labeled as 'fresh/brackish' or 'brackish/saline', if a combination of the salinity types is appropriate.
** Since reservoir sources can exist across multiple counties, the county field value, 'reservoir' is applied to all reservoir sources.

# Region K Source Availability

| GROUNDWATER SOURCE TYPE | | | | SOURCE AVAILABILITY (ACRE-FEET PER YEAR) | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| **SOURCE NAME** | **COUNTY** | **BASIN** | **SALINITY *** | **2020** | **2030** | **2040** | **2050** | **2060** | **2070** |
| TRINITY AQUIFER | MILLS | COLORADO | FRESH | 1,669 | 1,665 | 1,669 | 1,665 | 1,669 | 1,665 |
| TRINITY AQUIFER | TRAVIS | BRAZOS | FRESH | 1 | 1 | 1 | 1 | 1 | 1 |
| TRINITY AQUIFER | TRAVIS | COLORADO | FRESH | 5,767 | 5,752 | 5,767 | 5,752 | 5,767 | 5,752 |
| TRINITY AQUIFER | TRAVIS | COLORADO | FRESH/ BRACKISH | 8,672 | 8,655 | 8,643 | 8,627 | 8,598 | 8,598 |
| TRINITY AQUIFER | TRAVIS | GUADALUPE | FRESH | 2 | 2 | 2 | 2 | 2 | 2 |
| TRINITY AQUIFER | WILLIAMSON | BRAZOS | FRESH | 0 | 0 | 0 | 0 | 0 | 0 |
| TRINITY AQUIFER | WILLIAMSON | COLORADO | FRESH | 67 | 67 | 67 | 67 | 67 | 67 |
| YEGUA-JACKSON AQUIFER | FAYETTE | COLORADO | FRESH | 7,075 | 7,075 | 7,075 | 7,075 | 7,074 | 7,074 |
| YEGUA-JACKSON AQUIFER | FAYETTE | GUADALUPE | FRESH | 694 | 694 | 694 | 694 | 694 | 694 |
| YEGUA-JACKSON AQUIFER | FAYETTE | LAVACA | FRESH | 1,493 | 1,493 | 1,493 | 1,493 | 1,493 | 1,493 |
| | | | **GROUNDWATER SOURCE AVAILABILITY TOTAL** | **376,748** | **379,160** | **379,063** | **382,686** | **380,654** | **380,547** |

| REUSE SOURCE TYPE | | | | SOURCE AVAILABILITY (ACRE-FEET PER YEAR) | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| **SOURCE NAME** | **COUNTY** | **BASIN** | **SALINITY *** | **2020** | **2030** | **2040** | **2050** | **2060** | **2070** |
| DIRECT REUSE | BURNET | COLORADO | FRESH | 2,200 | 2,200 | 2,200 | 2,200 | 2,200 | 2,200 |
| DIRECT REUSE | HAYS | COLORADO | FRESH | 100 | 1,120 | 1,120 | 1,120 | 1,680 | 1,680 |
| DIRECT REUSE | LLANO | COLORADO | FRESH | 589 | 589 | 589 | 589 | 589 | 589 |
| DIRECT REUSE | TRAVIS | COLORADO | FRESH | 9,778 | 9,778 | 9,778 | 9,778 | 9,778 | 9,778 |
| | | | **REUSE SOURCE AVAILABILITY TOTAL** | **12,667** | **13,687** | **13,687** | **13,687** | **14,247** | **14,247** |

| SURFACE WATER SOURCE TYPE | | | | SOURCE AVAILABILITY (ACRE-FEET PER YEAR) | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| **SOURCE NAME** | **COUNTY** | **BASIN** | **SALINITY *** | **2020** | **2030** | **2040** | **2050** | **2060** | **2070** |
| BLANCO LAKE/RESERVOIR | RESERVOIR** | GUADALUPE | FRESH | 463 | 463 | 463 | 463 | 463 | 463 |
| BRAZOS LIVESTOCK LOCAL SUPPLY | BASTROP | BRAZOS | FRESH | 94 | 94 | 94 | 94 | 94 | 94 |
| BRAZOS LIVESTOCK LOCAL SUPPLY | BURNET | BRAZOS | FRESH | 630 | 630 | 630 | 630 | 630 | 630 |
| BRAZOS LIVESTOCK LOCAL SUPPLY | MILLS | BRAZOS | FRESH | 321 | 321 | 321 | 321 | 321 | 321 |
| BRAZOS LIVESTOCK LOCAL SUPPLY | WILLIAMSON | BRAZOS | FRESH | 1 | 1 | 1 | 1 | 1 | 1 |
| BRAZOS OTHER LOCAL SUPPLY | BURNET | BRAZOS | FRESH/ BRACKISH | 966 | 966 | 966 | 966 | 966 | 966 |
| BRAZOS-COLORADO LIVESTOCK LOCAL SUPPLY | COLORADO | BRAZOS-COLORADO | FRESH | 203 | 203 | 203 | 203 | 203 | 203 |
| BRAZOS-COLORADO LIVESTOCK LOCAL SUPPLY | MATAGORDA | BRAZOS-COLORADO | FRESH | 664 | 664 | 664 | 664 | 664 | 664 |
| BRAZOS-COLORADO LIVESTOCK LOCAL SUPPLY | WHARTON | BRAZOS-COLORADO | FRESH | 371 | 371 | 371 | 371 | 371 | 371 |
| BRAZOS-COLORADO RUN-OF-RIVER | MATAGORDA | BRAZOS-COLORADO | FRESH | 4,000 | 4,000 | 4,000 | 4,000 | 4,000 | 4,000 |
| BRAZOS-COLORADO RUN-OF-RIVER | WHARTON | BRAZOS-COLORADO | FRESH | 4,332 | 4,332 | 4,332 | 4,332 | 4,332 | 4,332 |
| COLORADO LIVESTOCK LOCAL SUPPLY | BASTROP | COLORADO | FRESH | 696 | 696 | 696 | 696 | 696 | 696 |
| COLORADO LIVESTOCK LOCAL SUPPLY | BLANCO | COLORADO | FRESH | 101 | 101 | 101 | 101 | 101 | 101 |
| COLORADO LIVESTOCK LOCAL SUPPLY | BURNET | COLORADO | FRESH | 582 | 582 | 582 | 582 | 582 | 582 |
| COLORADO LIVESTOCK LOCAL SUPPLY | COLORADO | COLORADO | FRESH | 860 | 860 | 860 | 860 | 860 | 860 |
| COLORADO LIVESTOCK LOCAL SUPPLY | FAYETTE | COLORADO | FRESH | 1,370 | 1,370 | 1,370 | 1,370 | 1,370 | 1,370 |
| COLORADO LIVESTOCK LOCAL SUPPLY | GILLESPIE | COLORADO | FRESH | 515 | 515 | 515 | 515 | 515 | 515 |
| COLORADO LIVESTOCK LOCAL SUPPLY | HAYS | COLORADO | FRESH | 220 | 220 | 220 | 220 | 220 | 220 |

* Salinity field indicates whether the source availability is considered ‘fresh’ (less than 1,000 mg/L), ‘brackish’ (1,000 to 10,000 mg/L), ‘saline’ (10,001 mg/L to 34,999 mg/L), or ‘seawater’ (35,000 mg/L or greater). Sources can also be labeled as ‘fresh/brackish’ or ‘brackish/saline’, if a combination of the salinity types is appropriate.
** Since reservoir sources can exist across multiple counties, the county field value, ‘reservoir’ is applied to all reservoir sources.

# Region K Source Availability

| SURFACE WATER SOURCE TYPE | | | | SOURCE AVAILABILITY (ACRE-FEET PER YEAR) | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| SOURCE NAME | COUNTY | BASIN | SALINITY * | 2020 | 2030 | 2040 | 2050 | 2060 | 2070 |
| COLORADO LIVESTOCK LOCAL SUPPLY | LLANO | COLORADO | FRESH | 414 | 414 | 414 | 414 | 414 | 414 |
| COLORADO LIVESTOCK LOCAL SUPPLY | MILLS | COLORADO | FRESH | 360 | 360 | 360 | 360 | 360 | 360 |
| COLORADO LIVESTOCK LOCAL SUPPLY | SAN SABA | COLORADO | FRESH | 900 | 900 | 900 | 900 | 900 | 900 |
| COLORADO LIVESTOCK LOCAL SUPPLY | TRAVIS | COLORADO | FRESH | 463 | 463 | 463 | 463 | 463 | 463 |
| COLORADO LIVESTOCK LOCAL SUPPLY | WHARTON | COLORADO | FRESH | 115 | 115 | 115 | 115 | 115 | 115 |
| COLORADO OTHER LOCAL SUPPLY | BASTROP | COLORADO | FRESH | 58 | 58 | 58 | 58 | 58 | 58 |
| COLORADO OTHER LOCAL SUPPLY | GILLESPIE | COLORADO | FRESH | 158 | 158 | 158 | 158 | 158 | 158 |
| COLORADO OTHER LOCAL SUPPLY | TRAVIS | COLORADO | FRESH | 6,336 | 6,336 | 6,336 | 6,336 | 6,336 | 6,336 |
| COLORADO RUN-OF-RIVER | BASTROP | COLORADO | FRESH | 786 | 786 | 786 | 786 | 786 | 786 |
| COLORADO RUN-OF-RIVER | BLANCO | COLORADO | FRESH | 67 | 67 | 67 | 67 | 67 | 67 |
| COLORADO RUN-OF-RIVER | BURNET | COLORADO | FRESH | 843 | 843 | 843 | 843 | 843 | 843 |
| COLORADO RUN-OF-RIVER | COLORADO | COLORADO | FRESH | 130,537 | 130,537 | 130,537 | 130,537 | 130,537 | 130,537 |
| COLORADO RUN-OF-RIVER | FAYETTE | COLORADO | FRESH | 534 | 534 | 534 | 534 | 534 | 534 |
| COLORADO RUN-OF-RIVER | GILLESPIE | COLORADO | FRESH | 880 | 880 | 880 | 880 | 880 | 880 |
| COLORADO RUN-OF-RIVER | HAYS | COLORADO | FRESH | 41 | 41 | 41 | 41 | 41 | 41 |
| COLORADO RUN-OF-RIVER | LLANO | COLORADO | FRESH | 440 | 440 | 440 | 440 | 440 | 440 |
| COLORADO RUN-OF-RIVER | MATAGORDA | COLORADO | FRESH | 89,715 | 89,715 | 89,715 | 89,715 | 89,715 | 89,715 |
| COLORADO RUN-OF-RIVER | MILLS | COLORADO | FRESH | 2,378 | 2,378 | 2,378 | 2,378 | 2,378 | 2,378 |
| COLORADO RUN-OF-RIVER | SAN SABA | COLORADO | FRESH | 8,800 | 8,800 | 8,800 | 8,800 | 8,800 | 8,800 |
| COLORADO RUN-OF-RIVER | TRAVIS | COLORADO | FRESH | 211,785 | 211,785 | 211,785 | 211,785 | 211,785 | 211,785 |
| COLORADO RUN-OF-RIVER | WHARTON | COLORADO | FRESH | 10,562 | 10,562 | 10,562 | 10,562 | 10,562 | 10,562 |
| COLORADO-LAVACA LIVESTOCK LOCAL SUPPLY | MATAGORDA | COLORADO-LAVACA | FRESH | 708 | 708 | 708 | 708 | 708 | 708 |
| COLORADO-LAVACA LIVESTOCK LOCAL SUPPLY | WHARTON | COLORADO-LAVACA | FRESH | 80 | 80 | 80 | 80 | 80 | 80 |
| COLORADO-LAVACA RUN-OF-RIVER | MATAGORDA | COLORADO-LAVACA | FRESH | 4,000 | 4,000 | 4,000 | 4,000 | 4,000 | 4,000 |
| GOLDTHWAITE LAKE/RESERVOIR | RESERVOIR** | COLORADO | FRESH | 0 | 0 | 0 | 0 | 0 | 0 |
| GUADALUPE LIVESTOCK LOCAL SUPPLY | BASTROP | GUADALUPE | FRESH | 72 | 72 | 72 | 72 | 72 | 72 |
| GUADALUPE LIVESTOCK LOCAL SUPPLY | BLANCO | GUADALUPE | FRESH | 129 | 129 | 129 | 129 | 129 | 129 |
| GUADALUPE LIVESTOCK LOCAL SUPPLY | FAYETTE | GUADALUPE | FRESH | 142 | 142 | 142 | 142 | 142 | 142 |
| GUADALUPE LIVESTOCK LOCAL SUPPLY | GILLESPIE | GUADALUPE | FRESH | 32 | 32 | 32 | 32 | 32 | 32 |
| GUADALUPE LIVESTOCK LOCAL SUPPLY | TRAVIS | GUADALUPE | FRESH | 24 | 24 | 24 | 24 | 24 | 24 |
| GUADALUPE RUN-OF-RIVER | BLANCO | GUADALUPE | FRESH | 9 | 9 | 9 | 9 | 9 | 9 |
| HIGHLAND LAKES LAKE/RESERVOIR SYSTEM | RESERVOIR** | COLORADO | FRESH | 352,026 | 351,323 | 350,569 | 349,917 | 349,174 | 348,401 |
| LAVACA LIVESTOCK LOCAL SUPPLY | COLORADO | LAVACA | FRESH | 465 | 465 | 465 | 465 | 465 | 465 |
| LAVACA LIVESTOCK LOCAL SUPPLY | FAYETTE | LAVACA | FRESH | 386 | 386 | 386 | 386 | 386 | 386 |
| LAVACA RUN-OF-RIVER | COLORADO | LAVACA | FRESH | 4,002 | 4,002 | 4,002 | 4,002 | 4,002 | 4,002 |
| LAVACA RUN-OF-RIVER | FAYETTE | LAVACA | FRESH | 20 | 20 | 20 | 20 | 20 | 20 |
| LLANO LAKE/RESERVOIR | RESERVOIR** | COLORADO | FRESH | 0 | 0 | 0 | 0 | 0 | 0 |
| LLANO RUN-OF-RIVER | LLANO | COLORADO | FRESH | 271 | 271 | 271 | 271 | 271 | 271 |
| STPNOC LAKE/RESERVOIR | RESERVOIR** | COLORADO | FRESH/ BRACKISH | 66,260 | 66,260 | 66,260 | 66,260 | 66,260 | 66,260 |
| **SURFACE WATER SOURCE AVAILABILITY TOTAL** | | | | **911,187** | **910,484** | **909,730** | **909,078** | **908,335** | **907,562** |

| | | | | | | |
|---|---|---|---|---|---|---|
| **REGION K SOURCE AVAILABILITY TOTAL** | **1,300,602** | **1,303,331** | **1,302,480** | **1,305,451** | **1,303,236** | **1,302,356** |

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## Region K Source Availability

* Salinity field indicates whether the source availability is considered 'fresh' (less than 1,000 mg/L), 'brackish' (1,000 to 10,000 mg/L), 'saline' (10,001 mg/L to 34,999 mg/L), or 'seawater' (35,000 mg/L or greater). Sources can also be labeled as 'fresh/brackish' or 'brackish/saline', if a combination of the salinity types is appropriate.

** Since reservoir sources can exist across multiple counties, the county field value, 'reservoir' is applied to all reservoir sources.

# Region K Water User Group (WUG) Existing Water Supply

| WUG NAME | SOURCE REGION | SOURCE DESCRIPTION | EXISTING SUPPLY (ACRE-FEET PER YEAR) | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | | 2020 | 2030 | 2040 | 2050 | 2060 | 2070 |
| AQUA WSC* | K | CARRIZO-WILCOX AQUIFER \| BASTROP COUNTY | 90 | 116 | 150 | 197 | 262 | 347 |
| LEE COUNTY WSC* | G | CARRIZO-WILCOX AQUIFER \| LEE COUNTY | 168 | 190 | 228 | 282 | 351 | 432 |
| LEE COUNTY WSC* | G | QUEEN CITY AQUIFER \| LEE COUNTY | 6 | 6 | 8 | 10 | 12 | 15 |
| LEE COUNTY WSC* | G | SPARTA AQUIFER \| LEE COUNTY | 12 | 13 | 16 | 20 | 24 | 30 |
| COUNTY-OTHER | K | CARRIZO-WILCOX AQUIFER \| BASTROP COUNTY | 21 | 21 | 21 | 21 | 21 | 21 |
| MINING | K | CARRIZO-WILCOX AQUIFER \| BASTROP COUNTY | 450 | 450 | 450 | 450 | 29 | 29 |
| LIVESTOCK | K | LOCAL SURFACE WATER SUPPLY | 94 | 94 | 94 | 94 | 94 | 94 |
| IRRIGATION | K | CARRIZO-WILCOX AQUIFER \| BASTROP COUNTY | 215 | 215 | 215 | 215 | 215 | 215 |
| IRRIGATION | K | QUEEN CITY AQUIFER \| BASTROP COUNTY | 49 | 47 | 46 | 44 | 42 | 42 |
| | | **BRAZOS BASIN TOTAL** | **1,105** | **1,152** | **1,228** | **1,333** | **1,050** | **1,225** |
| AQUA WSC* | K | CARRIZO-WILCOX AQUIFER \| BASTROP COUNTY | 8,848 | 8,848 | 9,356 | 10,547 | 9,528 | 8,745 |
| BASTROP | K | OTHER AQUIFER \| BASTROP COUNTY | 2,758 | 2,758 | 2,758 | 2,758 | 2,758 | 2,758 |
| BASTROP COUNTY WCID 2 | K | CARRIZO-WILCOX AQUIFER \| BASTROP COUNTY | 766 | 854 | 915 | 1,026 | 968 | 930 |
| BASTROP COUNTY WCID 2 | K | OTHER AQUIFER \| BASTROP COUNTY | 472 | 472 | 472 | 472 | 472 | 472 |
| CREEDMOOR-MAHA WSC* | K | CARRIZO-WILCOX AQUIFER \| BASTROP COUNTY | 145 | 145 | 145 | 145 | 145 | 145 |
| ELGIN | K | CARRIZO-WILCOX AQUIFER \| BASTROP COUNTY | 1,317 | 1,674 | 2,155 | 2,288 | 2,189 | 2,097 |
| LEE COUNTY WSC* | G | CARRIZO-WILCOX AQUIFER \| LEE COUNTY | 226 | 260 | 311 | 385 | 477 | 587 |
| LEE COUNTY WSC* | G | QUEEN CITY AQUIFER \| LEE COUNTY | 8 | 9 | 11 | 13 | 16 | 20 |
| LEE COUNTY WSC* | G | SPARTA AQUIFER \| LEE COUNTY | 16 | 18 | 22 | 27 | 33 | 41 |
| POLONIA WSC* | L | CARRIZO-WILCOX AQUIFER \| CALDWELL COUNTY | 81 | 84 | 91 | 102 | 118 | 138 |
| SMITHVILLE | K | CARRIZO-WILCOX AQUIFER \| BASTROP COUNTY | 1,464 | 1,632 | 1,749 | 1,961 | 1,850 | 1,777 |
| COUNTY-OTHER | K | CARRIZO-WILCOX AQUIFER \| BASTROP COUNTY | 631 | 823 | 1,084 | 1,443 | 1,933 | 2,589 |
| COUNTY-OTHER | K | HIGHLAND LAKES LAKE/RESERVOIR SYSTEM | 744 | 744 | 744 | 744 | 744 | 744 |
| MANUFACTURING | K | CARRIZO-WILCOX AQUIFER \| BASTROP COUNTY | 215 | 215 | 215 | 215 | 215 | 215 |
| MINING | K | LOCAL SURFACE WATER SUPPLY | 8 | 7 | 7 | 9 | 9 | 9 |
| MINING | K | OTHER AQUIFER \| BASTROP COUNTY | 2,110 | 2,110 | 2,110 | 2,110 | 2,110 | 2,110 |
| STEAM ELECTRIC POWER | K | CARRIZO-WILCOX AQUIFER \| BASTROP COUNTY | 2,609 | 3,522 | 4,022 | 5,156 | 4,836 | 4,727 |
| STEAM ELECTRIC POWER | K | HIGHLAND LAKES LAKE/RESERVOIR SYSTEM | 7,679 | 6,766 | 6,266 | 5,132 | 5,452 | 5,561 |
| LIVESTOCK | K | LOCAL SURFACE WATER SUPPLY | 696 | 696 | 696 | 696 | 696 | 696 |
| LIVESTOCK | K | QUEEN CITY AQUIFER \| BASTROP COUNTY | 17 | 17 | 17 | 17 | 17 | 17 |
| LIVESTOCK | K | SPARTA AQUIFER \| BASTROP COUNTY | 298 | 298 | 298 | 298 | 298 | 298 |
| IRRIGATION | K | CARRIZO-WILCOX AQUIFER \| BASTROP COUNTY | 2,471 | 2,471 | 2,471 | 2,471 | 2,471 | 2,471 |
| IRRIGATION | K | HIGHLAND LAKES LAKE/RESERVOIR SYSTEM | 850 | 850 | 850 | 850 | 850 | 850 |
| IRRIGATION | K | QUEEN CITY AQUIFER \| BASTROP COUNTY | 321 | 316 | 294 | 271 | 247 | 247 |
| IRRIGATION | K | SPARTA AQUIFER \| BASTROP COUNTY | 240 | 240 | 240 | 240 | 240 | 240 |
| | | **COLORADO BASIN TOTAL** | **34,990** | **35,829** | **37,299** | **39,376** | **38,672** | **38,484** |
| AQUA WSC* | K | CARRIZO-WILCOX AQUIFER \| BASTROP COUNTY | 64 | 82 | 106 | 140 | 185 | 246 |
| COUNTY-OTHER | K | CARRIZO-WILCOX AQUIFER \| BASTROP COUNTY | 34 | 39 | 45 | 54 | 67 | 83 |
| MINING | K | CARRIZO-WILCOX AQUIFER \| BASTROP COUNTY | 142 | 97 | 66 | 66 | 64 | 48 |
| LIVESTOCK | K | LOCAL SURFACE WATER SUPPLY | 72 | 72 | 72 | 72 | 72 | 72 |
| IRRIGATION | K | CARRIZO-WILCOX AQUIFER \| BASTROP COUNTY | 36 | 36 | 36 | 36 | 36 | 36 |
| IRRIGATION | K | QUEEN CITY AQUIFER \| BASTROP COUNTY | 156 | 161 | 166 | 173 | 180 | 180 |
| IRRIGATION | K | SPARTA AQUIFER \| BASTROP COUNTY | 23 | 23 | 23 | 23 | 23 | 23 |
| | | **GUADALUPE BASIN TOTAL** | **527** | **510** | **514** | **564** | **627** | **688** |
| | | **BASTROP COUNTY TOTAL** | **36,622** | **37,491** | **39,041** | **41,273** | **40,349** | **40,397** |
| JOHNSON CITY | K | ELLENBURGER-SAN SABA AQUIFER \| BLANCO COUNTY | 118 | 118 | 118 | 118 | 118 | 118 |
| JOHNSON CITY | K | TRINITY AQUIFER \| BLANCO COUNTY | 282 | 282 | 282 | 282 | 282 | 282 |
| COUNTY-OTHER | K | ELLENBURGER-SAN SABA AQUIFER \| BLANCO COUNTY | 249 | 249 | 249 | 249 | 249 | 249 |

*A single asterisk next to a WUG's name denotes that the WUG is split by two or more planning regions.

# Region K Water User Group (WUG) Existing Water Supply

| WUG NAME | SOURCE REGION | SOURCE DESCRIPTION | EXISTING SUPPLY (ACRE-FEET PER YEAR) | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | | 2020 | 2030 | 2040 | 2050 | 2060 | 2070 |
| COUNTY-OTHER | K | HICKORY AQUIFER \| BLANCO COUNTY | 76 | 76 | 76 | 76 | 76 | 76 |
| COUNTY-OTHER | K | TRINITY AQUIFER \| BLANCO COUNTY | 514 | 514 | 514 | 514 | 514 | 514 |
| MINING | K | ELLENBURGER-SAN SABA AQUIFER \| BLANCO COUNTY | 5 | 5 | 5 | 5 | 5 | 5 |
| LIVESTOCK | K | ELLENBURGER-SAN SABA AQUIFER \| BLANCO COUNTY | 255 | 255 | 255 | 255 | 255 | 255 |
| LIVESTOCK | K | LOCAL SURFACE WATER SUPPLY | 101 | 101 | 101 | 101 | 101 | 101 |
| LIVESTOCK | K | TRINITY AQUIFER \| BLANCO COUNTY | 161 | 161 | 161 | 161 | 161 | 161 |
| IRRIGATION | K | ELLENBURGER-SAN SABA AQUIFER \| BLANCO COUNTY | 816 | 816 | 816 | 816 | 816 | 816 |
| IRRIGATION | K | HICKORY AQUIFER \| BLANCO COUNTY | 163 | 163 | 163 | 163 | 163 | 163 |
| | | **COLORADO BASIN TOTAL** | **2,740** | **2,740** | **2,740** | **2,740** | **2,740** | **2,740** |
| BLANCO | K | BLANCO LAKE/RESERVOIR | 463 | 463 | 463 | 463 | 463 | 463 |
| BLANCO | L | CANYON LAKE/RESERVOIR | 600 | 600 | 600 | 600 | 600 | 600 |
| CANYON LAKE WATER SERVICE* | L | CANYON LAKE/RESERVOIR | 118 | 119 | 118 | 118 | 118 | 119 |
| CANYON LAKE WATER SERVICE* | K | TRINITY AQUIFER \| BLANCO COUNTY | 2 | 2 | 2 | 2 | 3 | 3 |
| CANYON LAKE WATER SERVICE* | L | TRINITY AQUIFER \| COMAL COUNTY | 105 | 113 | 116 | 118 | 120 | 121 |
| COUNTY-OTHER | K | TRINITY AQUIFER \| BLANCO COUNTY | 674 | 674 | 674 | 674 | 674 | 674 |
| LIVESTOCK | K | LOCAL SURFACE WATER SUPPLY | 101 | 101 | 101 | 101 | 101 | 101 |
| LIVESTOCK | K | TRINITY AQUIFER \| BLANCO COUNTY | 48 | 48 | 48 | 48 | 48 | 48 |
| IRRIGATION | K | TRINITY AQUIFER \| BLANCO COUNTY | 419 | 419 | 419 | 419 | 419 | 419 |
| | | **GUADALUPE BASIN TOTAL** | **2,530** | **2,539** | **2,541** | **2,543** | **2,546** | **2,548** |
| | | **BLANCO COUNTY TOTAL** | **5,270** | **5,279** | **5,281** | **5,283** | **5,286** | **5,288** |
| BERTRAM | K | ELLENBURGER-SAN SABA AQUIFER \| BURNET COUNTY | 367 | 367 | 367 | 367 | 367 | 367 |
| BERTRAM | K | TRINITY AQUIFER \| BURNET COUNTY | 3 | 3 | 3 | 3 | 3 | 3 |
| BURNET | K | ELLENBURGER-SAN SABA AQUIFER \| BURNET COUNTY | 14 | 14 | 14 | 14 | 14 | 14 |
| GEORGETOWN* | G | BRAZOS RIVER AUTHORITY LITTLE RIVER LAKE/RESERVOIR SYSTEM | 84 | 100 | 114 | 128 | 140 | 150 |
| KEMPNER WSC* | G | BRAZOS RIVER AUTHORITY LITTLE RIVER LAKE/RESERVOIR SYSTEM | 132 | 146 | 158 | 171 | 184 | 196 |
| COUNTY-OTHER | K | TRINITY AQUIFER \| BURNET COUNTY | 1,578 | 1,578 | 1,578 | 1,578 | 1,578 | 1,578 |
| MINING | K | LOCAL SURFACE WATER SUPPLY | 966 | 966 | 966 | 966 | 966 | 966 |
| MINING | K | OTHER AQUIFER \| BURNET COUNTY | 433 | 433 | 433 | 433 | 433 | 433 |
| MINING | K | TRINITY AQUIFER \| BURNET COUNTY | 300 | 300 | 300 | 300 | 300 | 300 |
| LIVESTOCK | K | LOCAL SURFACE WATER SUPPLY | 444 | 444 | 444 | 444 | 444 | 444 |
| LIVESTOCK | K | TRINITY AQUIFER \| BURNET COUNTY | 186 | 186 | 186 | 186 | 186 | 186 |
| IRRIGATION | K | TRINITY AQUIFER \| BURNET COUNTY | 430 | 430 | 430 | 430 | 430 | 430 |
| | | **BRAZOS BASIN TOTAL** | **4,937** | **4,967** | **4,993** | **5,020** | **5,045** | **5,067** |
| BURNET | K | DIRECT REUSE | 520 | 520 | 520 | 520 | 520 | 520 |
| BURNET | K | ELLENBURGER-SAN SABA AQUIFER \| BURNET COUNTY | 887 | 887 | 887 | 887 | 887 | 887 |
| BURNET | K | HIGHLAND LAKES LAKE/RESERVOIR SYSTEM | 3,226 | 3,226 | 3,226 | 3,226 | 3,226 | 3,226 |
| CORIX UTILITIES TEXAS INC* | K | ELLENBURGER-SAN SABA AQUIFER \| BURNET COUNTY | 9 | 9 | 9 | 9 | 9 | 9 |
| CORIX UTILITIES TEXAS INC* | K | HIGHLAND LAKES LAKE/RESERVOIR SYSTEM | 185 | 185 | 185 | 185 | 185 | 185 |
| CORIX UTILITIES TEXAS INC* | K | OTHER AQUIFER \| BURNET COUNTY | 104 | 104 | 104 | 104 | 104 | 104 |
| COTTONWOOD SHORES | K | HIGHLAND LAKES LAKE/RESERVOIR SYSTEM | 495 | 495 | 495 | 495 | 495 | 495 |
| GRANITE SHOALS | K | HIGHLAND LAKES LAKE/RESERVOIR SYSTEM | 830 | 830 | 830 | 830 | 830 | 830 |
| HORSESHOE BAY | K | DIRECT REUSE | 83 | 83 | 83 | 83 | 83 | 83 |
| HORSESHOE BAY | K | HIGHLAND LAKES LAKE/RESERVOIR SYSTEM | 398 | 398 | 398 | 398 | 398 | 398 |
| KINGSLAND WSC | K | HIGHLAND LAKES LAKE/RESERVOIR SYSTEM | 64 | 64 | 64 | 64 | 64 | 64 |
| KINGSLAND WSC | K | OTHER AQUIFER \| LLANO COUNTY | 17 | 17 | 17 | 17 | 17 | 17 |

*A single asterisk next to a WUG's name denotes that the WUG is split by two or more planning regions.

# Region K Water User Group (WUG) Existing Water Supply

| WUG NAME | SOURCE REGION | SOURCE DESCRIPTION | EXISTING SUPPLY (ACRE-FEET PER YEAR) 2020 | 2030 | 2040 | 2050 | 2060 | 2070 |
|---|---|---|---|---|---|---|---|---|
| MARBLE FALLS | K | DIRECT REUSE | 1,680 | 1,680 | 1,680 | 1,680 | 1,680 | 1,680 |
| MARBLE FALLS | K | HIGHLAND LAKES LAKE/RESERVOIR SYSTEM | 3,000 | 3,000 | 3,000 | 3,000 | 3,000 | 3,000 |
| MEADOWLAKES | K | COLORADO RUN-OF-RIVER | 567 | 567 | 567 | 567 | 567 | 567 |
| COUNTY-OTHER | K | ELLENBURGER-SAN SABA AQUIFER \| BURNET COUNTY | 1,363 | 1,363 | 1,363 | 1,363 | 1,363 | 1,363 |
| COUNTY-OTHER | K | HICKORY AQUIFER \| BURNET COUNTY | 184 | 184 | 184 | 184 | 184 | 184 |
| COUNTY-OTHER | K | HIGHLAND LAKES LAKE/RESERVOIR SYSTEM | 2,249 | 2,249 | 2,249 | 2,249 | 2,249 | 2,249 |
| COUNTY-OTHER | K | MARBLE FALLS AQUIFER \| BURNET COUNTY | 134 | 134 | 134 | 134 | 134 | 134 |
| COUNTY-OTHER | K | OTHER AQUIFER \| BURNET COUNTY | 958 | 958 | 958 | 958 | 958 | 958 |
| COUNTY-OTHER | K | TRINITY AQUIFER \| BURNET COUNTY | 477 | 477 | 477 | 477 | 477 | 477 |
| MANUFACTURING | K | HIGHLAND LAKES LAKE/RESERVOIR SYSTEM | 500 | 500 | 500 | 500 | 500 | 500 |
| MANUFACTURING | K | TRINITY AQUIFER \| BURNET COUNTY | 12 | 12 | 12 | 12 | 12 | 12 |
| MINING | K | ELLENBURGER-SAN SABA AQUIFER \| BURNET COUNTY | 1 | 1 | 1 | 1 | 1 | 1 |
| MINING | K | OTHER AQUIFER \| BURNET COUNTY | 2,351 | 2,351 | 2,351 | 2,351 | 2,351 | 2,351 |
| MINING | K | TRINITY AQUIFER \| BURNET COUNTY | 80 | 80 | 80 | 80 | 80 | 80 |
| LIVESTOCK | K | ELLENBURGER-SAN SABA AQUIFER \| BURNET COUNTY | 327 | 327 | 327 | 327 | 327 | 327 |
| LIVESTOCK | K | HICKORY AQUIFER \| BURNET COUNTY | 10 | 10 | 10 | 10 | 10 | 10 |
| LIVESTOCK | K | LOCAL SURFACE WATER SUPPLY | 582 | 582 | 582 | 582 | 582 | 582 |
| LIVESTOCK | K | MARBLE FALLS AQUIFER \| BURNET COUNTY | 20 | 20 | 20 | 20 | 20 | 20 |
| LIVESTOCK | K | TRINITY AQUIFER \| BURNET COUNTY | 122 | 122 | 122 | 122 | 122 | 122 |
| IRRIGATION | K | COLORADO RUN-OF-RIVER | 276 | 276 | 276 | 276 | 276 | 276 |
| IRRIGATION | K | ELLENBURGER-SAN SABA AQUIFER \| BURNET COUNTY | 675 | 675 | 675 | 675 | 675 | 675 |
| IRRIGATION | K | HICKORY AQUIFER \| BURNET COUNTY | 52 | 52 | 52 | 52 | 52 | 52 |
| IRRIGATION | K | HIGHLAND LAKES LAKE/RESERVOIR SYSTEM | 333 | 333 | 333 | 333 | 333 | 333 |
| IRRIGATION | K | TRINITY AQUIFER \| BURNET COUNTY | 65 | 65 | 65 | 65 | 65 | 65 |
| | | **COLORADO BASIN TOTAL** | **22,836** | **22,836** | **22,836** | **22,836** | **22,836** | **22,836** |
| | | **BURNET COUNTY TOTAL** | **27,773** | **27,803** | **27,829** | **27,856** | **27,881** | **27,903** |
| EAGLE LAKE | K | GULF COAST AQUIFER SYSTEM \| COLORADO COUNTY | 176 | 176 | 176 | 176 | 176 | 176 |
| COUNTY-OTHER | K | GULF COAST AQUIFER SYSTEM \| COLORADO COUNTY | 210 | 210 | 210 | 210 | 210 | 210 |
| MANUFACTURING | K | GULF COAST AQUIFER SYSTEM \| COLORADO COUNTY | 15 | 15 | 15 | 15 | 15 | 15 |
| MINING | K | GULF COAST AQUIFER SYSTEM \| COLORADO COUNTY | 170 | 170 | 170 | 170 | 170 | 170 |
| LIVESTOCK | K | GULF COAST AQUIFER SYSTEM \| COLORADO COUNTY | 164 | 164 | 164 | 164 | 164 | 164 |
| LIVESTOCK | K | LOCAL SURFACE WATER SUPPLY | 39 | 39 | 39 | 39 | 39 | 39 |
| IRRIGATION | K | COLORADO RUN-OF-RIVER | 17,818 | 17,818 | 17,818 | 17,818 | 17,818 | 17,818 |
| IRRIGATION | K | GULF COAST AQUIFER SYSTEM \| COLORADO COUNTY | 11,722 | 11,722 | 11,722 | 11,722 | 11,722 | 11,722 |
| | | **BRAZOS-COLORADO BASIN TOTAL** | **30,314** | **30,314** | **30,314** | **30,314** | **30,314** | **30,314** |
| COLUMBUS | K | GULF COAST AQUIFER SYSTEM \| COLORADO COUNTY | 1,720 | 1,720 | 1,720 | 1,720 | 1,720 | 1,720 |
| CORIX UTILITIES TEXAS INC* | K | GULF COAST AQUIFER SYSTEM \| COLORADO COUNTY | 36 | 36 | 36 | 36 | 36 | 36 |
| EAGLE LAKE | K | GULF COAST AQUIFER SYSTEM \| COLORADO COUNTY | 400 | 400 | 400 | 400 | 400 | 400 |
| WEIMAR | K | GULF COAST AQUIFER SYSTEM \| COLORADO COUNTY | 187 | 187 | 187 | 187 | 187 | 187 |
| COUNTY-OTHER | K | GULF COAST AQUIFER SYSTEM \| COLORADO COUNTY | 877 | 877 | 877 | 877 | 877 | 877 |
| MANUFACTURING | K | GULF COAST AQUIFER SYSTEM \| COLORADO COUNTY | 59 | 59 | 59 | 59 | 59 | 59 |
| MINING | K | COLORADO RUN-OF-RIVER | 1,808 | 1,808 | 1,808 | 1,808 | 1,808 | 1,808 |
| MINING | K | GULF COAST AQUIFER SYSTEM \| COLORADO COUNTY | 3,398 | 3,398 | 3,398 | 3,398 | 3,398 | 3,398 |
| STEAM ELECTRIC POWER | | NO WATER SUPPLY ASSOCIATED WITH WUG | 0 | 0 | 0 | 0 | 0 | 0 |
| LIVESTOCK | K | GULF COAST AQUIFER SYSTEM \| COLORADO COUNTY | 265 | 265 | 265 | 265 | 265 | 265 |
| LIVESTOCK | K | LOCAL SURFACE WATER SUPPLY | 860 | 860 | 860 | 860 | 860 | 860 |
| IRRIGATION | K | COLORADO RUN-OF-RIVER | 15,068 | 15,068 | 15,068 | 15,068 | 15,068 | 15,068 |
| IRRIGATION | K | GULF COAST AQUIFER SYSTEM \| COLORADO COUNTY | 12,700 | 12,700 | 12,700 | 12,700 | 12,700 | 12,700 |

*A single asterisk next to a WUG's name denotes that the WUG is split by two or more planning regions.

# Region K Water User Group (WUG) Existing Water Supply

| WUG NAME | SOURCE REGION | SOURCE DESCRIPTION | EXISTING SUPPLY (ACRE-FEET PER YEAR) | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | | 2020 | 2030 | 2040 | 2050 | 2060 | 2070 |
| | | **COLORADO BASIN TOTAL** | **37,378** | **37,378** | **37,378** | **37,378** | **37,378** | **37,378** |
| WEIMAR | K | GULF COAST AQUIFER SYSTEM \| COLORADO COUNTY | 382 | 382 | 382 | 382 | 382 | 382 |
| COUNTY-OTHER | K | GULF COAST AQUIFER SYSTEM \| COLORADO COUNTY | 502 | 502 | 502 | 502 | 502 | 502 |
| MANUFACTURING | K | GULF COAST AQUIFER SYSTEM \| COLORADO COUNTY | 1,058 | 1,058 | 1,058 | 1,058 | 1,058 | 1,058 |
| MINING | K | GULF COAST AQUIFER SYSTEM \| COLORADO COUNTY | 280 | 280 | 280 | 280 | 280 | 280 |
| STEAM ELECTRIC POWER | | NO WATER SUPPLY ASSOCIATED WITH WUG | 0 | 0 | 0 | 0 | 0 | 0 |
| LIVESTOCK | K | GULF COAST AQUIFER SYSTEM \| COLORADO COUNTY | 174 | 174 | 174 | 174 | 174 | 174 |
| LIVESTOCK | K | LOCAL SURFACE WATER SUPPLY | 199 | 199 | 199 | 199 | 199 | 199 |
| IRRIGATION | K | COLORADO RUN-OF-RIVER | 30,941 | 30,941 | 30,941 | 30,941 | 30,941 | 30,941 |
| IRRIGATION | K | GULF COAST AQUIFER SYSTEM \| COLORADO COUNTY | 26,543 | 26,543 | 26,543 | 26,543 | 26,543 | 26,543 |
| IRRIGATION | K | LAVACA RUN-OF-RIVER | 4,002 | 4,002 | 4,002 | 4,002 | 4,002 | 4,002 |
| | | **LAVACA BASIN TOTAL** | **64,081** | **64,081** | **64,081** | **64,081** | **64,081** | **64,081** |
| | | **COLORADO COUNTY TOTAL** | **131,773** | **131,773** | **131,773** | **131,773** | **131,773** | **131,773** |
| AQUA WSC* | K | CARRIZO-WILCOX AQUIFER \| BASTROP COUNTY | 4 | 4 | 5 | 5 | 5 | 5 |
| FAYETTE COUNTY WCID MONUMENT HILL | K | GULF COAST AQUIFER SYSTEM \| FAYETTE COUNTY | 235 | 235 | 235 | 235 | 235 | 235 |
| FAYETTE WSC | K | OTHER AQUIFER \| FAYETTE COUNTY | 675 | 675 | 675 | 675 | 675 | 675 |
| FAYETTE WSC | K | SPARTA AQUIFER \| FAYETTE COUNTY | 225 | 225 | 225 | 225 | 225 | 225 |
| LA GRANGE | K | YEGUA-JACKSON AQUIFER \| FAYETTE COUNTY | 1,294 | 1,294 | 1,294 | 1,294 | 1,294 | 1,294 |
| LEE COUNTY WSC* | G | CARRIZO-WILCOX AQUIFER \| LEE COUNTY | 565 | 564 | 558 | 554 | 541 | 519 |
| LEE COUNTY WSC* | G | QUEEN CITY AQUIFER \| LEE COUNTY | 19 | 19 | 19 | 19 | 19 | 18 |
| LEE COUNTY WSC* | G | SPARTA AQUIFER \| LEE COUNTY | 39 | 39 | 39 | 38 | 37 | 36 |
| WEST END WSC* | H | GULF COAST AQUIFER SYSTEM \| AUSTIN COUNTY | 130 | 142 | 153 | 167 | 183 | 201 |
| COUNTY-OTHER | K | GULF COAST AQUIFER SYSTEM \| FAYETTE COUNTY | 526 | 526 | 526 | 526 | 526 | 526 |
| COUNTY-OTHER | K | HIGHLAND LAKES LAKE/RESERVOIR SYSTEM | 27 | 27 | 27 | 27 | 27 | 27 |
| COUNTY-OTHER | K | OTHER AQUIFER \| FAYETTE COUNTY | 159 | 159 | 159 | 159 | 159 | 159 |
| COUNTY-OTHER | K | SPARTA AQUIFER \| FAYETTE COUNTY | 29 | 29 | 29 | 29 | 29 | 29 |
| MANUFACTURING | K | GULF COAST AQUIFER SYSTEM \| FAYETTE COUNTY | 3 | 3 | 3 | 3 | 3 | 3 |
| MINING | K | SPARTA AQUIFER \| FAYETTE COUNTY | 367 | 367 | 367 | 367 | 367 | 367 |
| MINING | K | YEGUA-JACKSON AQUIFER \| FAYETTE COUNTY | 919 | 919 | 919 | 919 | 919 | 919 |
| STEAM ELECTRIC POWER | K | COLORADO RUN-OF-RIVER | 396 | 396 | 396 | 396 | 396 | 396 |
| STEAM ELECTRIC POWER | K | HIGHLAND LAKES LAKE/RESERVOIR SYSTEM | 44,516 | 44,516 | 44,516 | 44,516 | 44,516 | 44,516 |
| LIVESTOCK | K | GULF COAST AQUIFER SYSTEM \| FAYETTE COUNTY | 185 | 185 | 185 | 185 | 185 | 185 |
| LIVESTOCK | K | LOCAL SURFACE WATER SUPPLY | 1,370 | 1,370 | 1,370 | 1,370 | 1,370 | 1,370 |
| IRRIGATION | K | COLORADO RUN-OF-RIVER | 534 | 534 | 534 | 534 | 534 | 534 |
| IRRIGATION | K | SPARTA AQUIFER \| FAYETTE COUNTY | 77 | 77 | 77 | 77 | 77 | 77 |
| | | **COLORADO BASIN TOTAL** | **52,294** | **52,305** | **52,311** | **52,320** | **52,322** | **52,316** |
| FAYETTE WSC | K | SPARTA AQUIFER \| FAYETTE COUNTY | 150 | 150 | 150 | 150 | 150 | 150 |
| FLATONIA | K | YEGUA-JACKSON AQUIFER \| FAYETTE COUNTY | 89 | 89 | 89 | 89 | 89 | 89 |
| COUNTY-OTHER | K | YEGUA-JACKSON AQUIFER \| FAYETTE COUNTY | 124 | 124 | 124 | 124 | 124 | 124 |
| MINING | K | SPARTA AQUIFER \| FAYETTE COUNTY | 159 | 159 | 159 | 159 | 159 | 159 |
| LIVESTOCK | K | LOCAL SURFACE WATER SUPPLY | 142 | 142 | 142 | 142 | 142 | 142 |
| IRRIGATION | K | SPARTA AQUIFER \| FAYETTE COUNTY | 109 | 109 | 109 | 109 | 109 | 109 |
| | | **GUADALUPE BASIN TOTAL** | **773** | **773** | **773** | **773** | **773** | **773** |
| FAYETTE WSC | K | SPARTA AQUIFER \| FAYETTE COUNTY | 101 | 101 | 101 | 101 | 101 | 101 |
| FLATONIA | K | YEGUA-JACKSON AQUIFER \| FAYETTE COUNTY | 386 | 386 | 386 | 386 | 386 | 386 |
| SCHULENBURG | K | GULF COAST AQUIFER SYSTEM \| FAYETTE COUNTY | 218 | 218 | 218 | 218 | 218 | 218 |
| SCHULENBURG | K | YEGUA-JACKSON AQUIFER \| FAYETTE COUNTY | 622 | 622 | 622 | 622 | 622 | 622 |

*A single asterisk next to a WUG's name denotes that the WUG is split by two or more planning regions.

# Region K Water User Group (WUG) Existing Water Supply

| WUG NAME | SOURCE REGION | SOURCE DESCRIPTION | EXISTING SUPPLY (ACRE-FEET PER YEAR) | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | | 2020 | 2030 | 2040 | 2050 | 2060 | 2070 |
| COUNTY-OTHER | K | GULF COAST AQUIFER SYSTEM \| FAYETTE COUNTY | 13 | 13 | 13 | 13 | 13 | 13 |
| MANUFACTURING | K | GULF COAST AQUIFER SYSTEM \| FAYETTE COUNTY | 399 | 399 | 399 | 399 | 399 | 399 |
| MINING | K | GULF COAST AQUIFER SYSTEM \| FAYETTE COUNTY | 224 | 224 | 205 | 184 | 184 | 184 |
| MINING | K | YEGUA-JACKSON AQUIFER \| FAYETTE COUNTY | 130 | 61 | 0 | 0 | 0 | 0 |
| LIVESTOCK | K | GULF COAST AQUIFER SYSTEM \| FAYETTE COUNTY | 7 | 7 | 7 | 7 | 7 | 7 |
| LIVESTOCK | K | LOCAL SURFACE WATER SUPPLY | 278 | 278 | 278 | 278 | 278 | 278 |
| IRRIGATION | K | YEGUA-JACKSON AQUIFER \| FAYETTE COUNTY | 302 | 302 | 302 | 302 | 302 | 302 |
| | | **LAVACA BASIN TOTAL** | **2,680** | **2,611** | **2,531** | **2,510** | **2,510** | **2,510** |
| | | **FAYETTE COUNTY TOTAL** | **55,747** | **55,689** | **55,615** | **55,603** | **55,605** | **55,599** |
| FREDERICKSBURG | K | ELLENBURGER-SAN SABA AQUIFER \| GILLESPIE COUNTY | 3,831 | 3,831 | 3,831 | 3,831 | 3,831 | 3,831 |
| FREDERICKSBURG | K | HICKORY AQUIFER \| GILLESPIE COUNTY | 612 | 612 | 612 | 612 | 612 | 612 |
| COUNTY-OTHER | K | EDWARDS-TRINITY-PLATEAU, PECOS VALLEY, AND TRINITY AQUIFERS \| GILLESPIE COUNTY | 1,534 | 1,534 | 1,534 | 1,534 | 1,534 | 1,534 |
| COUNTY-OTHER | K | ELLENBURGER-SAN SABA AQUIFER \| GILLESPIE COUNTY | 542 | 542 | 542 | 542 | 542 | 542 |
| COUNTY-OTHER | K | HICKORY AQUIFER \| GILLESPIE COUNTY | 183 | 183 | 183 | 183 | 183 | 183 |
| COUNTY-OTHER | K | HIGHLAND LAKES LAKE/RESERVOIR SYSTEM | 56 | 56 | 56 | 56 | 56 | 56 |
| MANUFACTURING | K | EDWARDS-TRINITY-PLATEAU, PECOS VALLEY, AND TRINITY AQUIFERS \| GILLESPIE COUNTY | 34 | 34 | 34 | 34 | 34 | 34 |
| MANUFACTURING | K | ELLENBURGER-SAN SABA AQUIFER \| GILLESPIE COUNTY | 398 | 398 | 398 | 398 | 398 | 398 |
| MANUFACTURING | K | HICKORY AQUIFER \| GILLESPIE COUNTY | 150 | 150 | 150 | 150 | 150 | 150 |
| MANUFACTURING | K | LOCAL SURFACE WATER SUPPLY | 158 | 158 | 158 | 158 | 158 | 158 |
| MINING | K | EDWARDS-TRINITY-PLATEAU, PECOS VALLEY, AND TRINITY AQUIFERS \| GILLESPIE COUNTY | 50 | 50 | 50 | 50 | 50 | 50 |
| MINING | K | HICKORY AQUIFER \| GILLESPIE COUNTY | 5 | 5 | 5 | 5 | 5 | 5 |
| LIVESTOCK | K | EDWARDS-TRINITY-PLATEAU, PECOS VALLEY, AND TRINITY AQUIFERS \| GILLESPIE COUNTY | 511 | 511 | 511 | 511 | 511 | 511 |
| LIVESTOCK | K | ELLENBURGER-SAN SABA AQUIFER \| GILLESPIE COUNTY | 266 | 266 | 266 | 266 | 266 | 266 |
| LIVESTOCK | K | HICKORY AQUIFER \| GILLESPIE COUNTY | 266 | 266 | 266 | 266 | 266 | 266 |
| LIVESTOCK | K | LOCAL SURFACE WATER SUPPLY | 515 | 515 | 515 | 515 | 515 | 515 |
| IRRIGATION | K | EDWARDS-TRINITY-PLATEAU, PECOS VALLEY, AND TRINITY AQUIFERS \| GILLESPIE COUNTY | 1,640 | 1,640 | 1,640 | 1,640 | 1,640 | 1,640 |
| IRRIGATION | K | ELLENBURGER-SAN SABA AQUIFER \| GILLESPIE COUNTY | 652 | 652 | 652 | 652 | 652 | 652 |
| IRRIGATION | K | HICKORY AQUIFER \| GILLESPIE COUNTY | 210 | 210 | 210 | 210 | 210 | 210 |
| | | **COLORADO BASIN TOTAL** | **11,613** | **11,613** | **11,613** | **11,613** | **11,613** | **11,613** |
| COUNTY-OTHER | K | EDWARDS-TRINITY-PLATEAU, PECOS VALLEY, AND TRINITY AQUIFERS \| GILLESPIE COUNTY | 90 | 90 | 90 | 90 | 90 | 90 |
| LIVESTOCK | K | EDWARDS-TRINITY-PLATEAU, PECOS VALLEY, AND TRINITY AQUIFERS \| GILLESPIE COUNTY | 41 | 41 | 41 | 41 | 41 | 41 |
| LIVESTOCK | K | LOCAL SURFACE WATER SUPPLY | 13 | 13 | 13 | 13 | 13 | 13 |
| | | **GUADALUPE BASIN TOTAL** | **144** | **144** | **144** | **144** | **144** | **144** |
| | | **GILLESPIE COUNTY TOTAL** | **11,757** | **11,757** | **11,757** | **11,757** | **11,757** | **11,757** |
| AUSTIN | K | COLORADO RUN-OF-RIVER | 188 | 827 | 1,304 | 2,063 | 3,025 | 4,357 |
| BUDA* | L | CANYON LAKE/RESERVOIR | 1,381 | 1,292 | 1,181 | 1,041 | 882 | 701 |
| BUDA* | L | CARRIZO-WILCOX AQUIFER \| GONZALES COUNTY | 1,120 | 1,120 | 1,120 | 1,120 | 1,120 | 1,120 |
| BUDA* | K | EDWARDS-BFZ AQUIFER \| HAYS COUNTY | 678 | 678 | 678 | 678 | 678 | 678 |
| CIMARRON PARK WATER | K | EDWARDS-BFZ AQUIFER \| HAYS COUNTY | 291 | 291 | 291 | 291 | 291 | 291 |
| DEER CREEK RANCH WATER | K | HIGHLAND LAKES LAKE/RESERVOIR SYSTEM | 125 | 125 | 125 | 125 | 125 | 125 |
| DRIPPING SPRINGS WSC | K | HIGHLAND LAKES LAKE/RESERVOIR SYSTEM | 1,632 | 1,632 | 1,632 | 1,632 | 1,632 | 1,632 |
| DRIPPING SPRINGS WSC | K | TRINITY AQUIFER \| HAYS COUNTY | 1,025 | 1,025 | 1,025 | 1,025 | 1,025 | 1,025 |
| GOFORTH SUD* | L | EDWARDS-BFZ AQUIFER \| HAYS COUNTY | 6 | 7 | 8 | 10 | 10 | 10 |

*A single asterisk next to a WUG's name denotes that the WUG is split by two or more planning regions.

# Region K Water User Group (WUG) Existing Water Supply

| WUG NAME | SOURCE REGION | SOURCE DESCRIPTION | EXISTING SUPPLY (ACRE-FEET PER YEAR) | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | | 2020 | 2030 | 2040 | 2050 | 2060 | 2070 |
| GOFORTH SUD* | L | TRINITY AQUIFER \| HAYS COUNTY | 87 | 76 | 73 | 75 | 77 | 81 |
| HAYS | K | EDWARDS-BFZ AQUIFER \| HAYS COUNTY | 183 | 180 | 180 | 180 | 180 | 180 |
| HAYS COUNTY WCID 1 | K | HIGHLAND LAKES LAKE/RESERVOIR SYSTEM | 821 | 808 | 801 | 798 | 717 | 717 |
| HAYS COUNTY WCID 2 | K | HIGHLAND LAKES LAKE/RESERVOIR SYSTEM | 580 | 593 | 600 | 603 | 684 | 684 |
| WEST TRAVIS COUNTY PUBLIC UTILITY AGENCY | K | DIRECT REUSE | 278 | 278 | 278 | 278 | 278 | 278 |
| WEST TRAVIS COUNTY PUBLIC UTILITY AGENCY | K | HIGHLAND LAKES LAKE/RESERVOIR SYSTEM | 4,349 | 4,349 | 4,349 | 4,349 | 4,349 | 4,349 |
| COUNTY-OTHER* | K | EDWARDS-BFZ AQUIFER \| HAYS COUNTY | 663 | 663 | 663 | 663 | 663 | 663 |
| COUNTY-OTHER* | K | TRINITY AQUIFER \| HAYS COUNTY | 1,654 | 1,654 | 1,654 | 1,654 | 1,654 | 1,654 |
| MANUFACTURING* | K | EDWARDS-BFZ AQUIFER \| HAYS COUNTY | 468 | 468 | 468 | 468 | 468 | 468 |
| MINING | K | TRINITY AQUIFER \| HAYS COUNTY | 314 | 314 | 314 | 314 | 314 | 314 |
| STEAM ELECTRIC POWER | L | CANYON LAKE/RESERVOIR | 1,389 | 1,389 | 1,389 | 1,389 | 1,389 | 1,389 |
| STEAM ELECTRIC POWER | L | DIRECT REUSE | 309 | 309 | 309 | 309 | 309 | 309 |
| LIVESTOCK* | K | LOCAL SURFACE WATER SUPPLY | 220 | 220 | 220 | 220 | 220 | 220 |
| LIVESTOCK* | K | TRINITY AQUIFER \| HAYS COUNTY | 700 | 700 | 700 | 700 | 700 | 700 |
| IRRIGATION* | K | EDWARDS-BFZ AQUIFER \| HAYS COUNTY | 8 | 8 | 8 | 8 | 8 | 8 |
| IRRIGATION* | K | TRINITY AQUIFER \| HAYS COUNTY | 774 | 774 | 774 | 774 | 774 | 774 |
| | | **COLORADO BASIN TOTAL** | **19,243** | **19,780** | **20,144** | **20,767** | **21,572** | **22,727** |
| | | **HAYS COUNTY TOTAL** | **19,243** | **19,780** | **20,144** | **20,767** | **21,572** | **22,727** |
| CORIX UTILITIES TEXAS INC* | K | HIGHLAND LAKES LAKE/RESERVOIR SYSTEM | 262 | 262 | 262 | 262 | 262 | 262 |
| HORSESHOE BAY | K | DIRECT REUSE | 506 | 506 | 506 | 506 | 506 | 506 |
| HORSESHOE BAY | K | HIGHLAND LAKES LAKE/RESERVOIR SYSTEM | 1,827 | 1,827 | 1,827 | 1,827 | 1,827 | 1,827 |
| KINGSLAND WSC | K | HIGHLAND LAKES LAKE/RESERVOIR SYSTEM | 1,086 | 1,086 | 1,086 | 1,086 | 1,086 | 1,086 |
| KINGSLAND WSC | K | OTHER AQUIFER \| LLANO COUNTY | 53 | 53 | 53 | 53 | 53 | 53 |
| LLANO | K | LLANO LAKE/RESERVOIR | 0 | 0 | 0 | 0 | 0 | 0 |
| LLANO | K | LLANO RUN-OF-RIVER | 271 | 271 | 271 | 271 | 271 | 271 |
| SUNRISE BEACH VILLAGE | K | ELLENBURGER-SAN SABA AQUIFER \| LLANO COUNTY | 60 | 60 | 60 | 60 | 60 | 60 |
| SUNRISE BEACH VILLAGE | K | HIGHLAND LAKES LAKE/RESERVOIR SYSTEM | 200 | 200 | 200 | 200 | 200 | 200 |
| COUNTY-OTHER | K | ELLENBURGER-SAN SABA AQUIFER \| LLANO COUNTY | 115 | 115 | 115 | 115 | 115 | 115 |
| COUNTY-OTHER | K | HICKORY AQUIFER \| LLANO COUNTY | 143 | 143 | 143 | 143 | 143 | 143 |
| COUNTY-OTHER | K | HIGHLAND LAKES LAKE/RESERVOIR SYSTEM | 2,272 | 2,272 | 2,272 | 2,272 | 2,272 | 2,272 |
| COUNTY-OTHER | K | OTHER AQUIFER \| LLANO COUNTY | 412 | 412 | 412 | 412 | 412 | 412 |
| MANUFACTURING | K | HICKORY AQUIFER \| LLANO COUNTY | 4 | 4 | 4 | 4 | 4 | 4 |
| MINING | K | ELLENBURGER-SAN SABA AQUIFER \| LLANO COUNTY | 3 | 3 | 3 | 3 | 3 | 3 |
| STEAM ELECTRIC POWER | K | HIGHLAND LAKES LAKE/RESERVOIR SYSTEM | 1,748 | 1,748 | 1,748 | 1,748 | 1,748 | 1,748 |
| LIVESTOCK | K | ELLENBURGER-SAN SABA AQUIFER \| LLANO COUNTY | 20 | 20 | 20 | 20 | 20 | 20 |
| LIVESTOCK | K | HICKORY AQUIFER \| LLANO COUNTY | 179 | 179 | 179 | 179 | 179 | 179 |
| LIVESTOCK | K | LOCAL SURFACE WATER SUPPLY | 414 | 414 | 414 | 414 | 414 | 414 |
| LIVESTOCK | K | OTHER AQUIFER \| LLANO COUNTY | 138 | 138 | 138 | 138 | 138 | 138 |
| IRRIGATION | K | HICKORY AQUIFER \| LLANO COUNTY | 400 | 400 | 400 | 400 | 400 | 400 |
| IRRIGATION | K | HIGHLAND LAKES LAKE/RESERVOIR SYSTEM | 1,514 | 1,514 | 1,514 | 1,514 | 1,514 | 1,514 |
| | | **COLORADO BASIN TOTAL** | **11,627** | **11,627** | **11,627** | **11,627** | **11,627** | **11,627** |
| | | **LLANO COUNTY TOTAL** | **11,627** | **11,627** | **11,627** | **11,627** | **11,627** | **11,627** |
| BAY CITY | K | GULF COAST AQUIFER SYSTEM \| MATAGORDA COUNTY | 2,906 | 2,906 | 2,906 | 2,906 | 2,906 | 2,906 |
| CANEY CREEK MUD OF MATAGORDA COUNTY | K | GULF COAST AQUIFER SYSTEM \| MATAGORDA COUNTY | 1,226 | 1,226 | 1,226 | 1,226 | 1,226 | 1,226 |
| CORIX UTILITIES TEXAS INC* | K | GULF COAST AQUIFER SYSTEM \| MATAGORDA COUNTY | 70 | 70 | 70 | 70 | 70 | 70 |
| MATAGORDA COUNTY WCID 6 | K | GULF COAST AQUIFER SYSTEM \| MATAGORDA COUNTY | 116 | 116 | 116 | 116 | 116 | 116 |

*A single asterisk next to a WUG's name denotes that the WUG is split by two or more planning regions.

# Region K Water User Group (WUG) Existing Water Supply

| WUG NAME | SOURCE REGION | SOURCE DESCRIPTION | EXISTING SUPPLY (ACRE-FEET PER YEAR) 2020 | 2030 | 2040 | 2050 | 2060 | 2070 |
|---|---|---|---|---|---|---|---|---|
| MATAGORDA WASTE DISPOSAL & WSC | K | GULF COAST AQUIFER SYSTEM \| MATAGORDA COUNTY | 55 | 55 | 55 | 55 | 55 | 55 |
| COUNTY-OTHER | K | GULF COAST AQUIFER SYSTEM \| MATAGORDA COUNTY | 544 | 544 | 544 | 544 | 544 | 544 |
| MINING | K | GULF COAST AQUIFER SYSTEM \| MATAGORDA COUNTY | 56 | 56 | 56 | 56 | 56 | 56 |
| LIVESTOCK | K | GULF COAST AQUIFER SYSTEM \| MATAGORDA COUNTY | 280 | 280 | 280 | 280 | 280 | 280 |
| LIVESTOCK | K | LOCAL SURFACE WATER SUPPLY | 329 | 329 | 329 | 329 | 329 | 329 |
| IRRIGATION | K | BRAZOS-COLORADO RUN-OF-RIVER | 4,000 | 4,000 | 4,000 | 4,000 | 4,000 | 4,000 |
| IRRIGATION | K | COLORADO RUN-OF-RIVER | 16,657 | 16,657 | 16,657 | 16,657 | 16,657 | 16,657 |
| IRRIGATION | K | GULF COAST AQUIFER SYSTEM \| MATAGORDA COUNTY | 10,000 | 10,000 | 10,000 | 10,000 | 10,000 | 10,000 |
| | | **BRAZOS-COLORADO BASIN TOTAL** | **36,239** | **36,239** | **36,239** | **36,239** | **36,239** | **36,239** |
| BAY CITY | K | GULF COAST AQUIFER SYSTEM \| MATAGORDA COUNTY | 6 | 6 | 6 | 6 | 6 | 6 |
| CORIX UTILITIES TEXAS INC* | K | GULF COAST AQUIFER SYSTEM \| MATAGORDA COUNTY | 14 | 14 | 14 | 14 | 14 | 14 |
| MATAGORDA WASTE DISPOSAL & WSC | K | GULF COAST AQUIFER SYSTEM \| MATAGORDA COUNTY | 330 | 330 | 330 | 330 | 330 | 330 |
| COUNTY-OTHER | K | GULF COAST AQUIFER SYSTEM \| MATAGORDA COUNTY | 174 | 174 | 174 | 174 | 174 | 174 |
| MANUFACTURING | K | COLORADO RUN-OF-RIVER | 13,803 | 13,803 | 13,803 | 13,803 | 13,803 | 13,803 |
| MANUFACTURING | K | GULF COAST AQUIFER SYSTEM \| MATAGORDA COUNTY | 1,576 | 1,576 | 1,576 | 1,576 | 1,576 | 1,576 |
| MANUFACTURING | K | HIGHLAND LAKES LAKE/RESERVOIR SYSTEM | 3,152 | 3,152 | 3,152 | 3,152 | 3,152 | 3,152 |
| MINING | K | GULF COAST AQUIFER SYSTEM \| MATAGORDA COUNTY | 8 | 8 | 8 | 8 | 8 | 8 |
| STEAM ELECTRIC POWER | K | GULF COAST AQUIFER SYSTEM \| MATAGORDA COUNTY | 3,000 | 3,000 | 3,000 | 3,000 | 3,000 | 3,000 |
| STEAM ELECTRIC POWER | K | STPNOC LAKE/RESERVOIR | 66,260 | 66,260 | 66,260 | 66,260 | 66,260 | 66,260 |
| LIVESTOCK | K | GULF COAST AQUIFER SYSTEM \| MATAGORDA COUNTY | 94 | 94 | 94 | 94 | 94 | 94 |
| IRRIGATION | K | COLORADO RUN-OF-RIVER | 1,209 | 1,209 | 1,209 | 1,209 | 1,209 | 1,209 |
| | | **COLORADO BASIN TOTAL** | **89,626** | **89,626** | **89,626** | **89,626** | **89,626** | **89,626** |
| MARKHAM MUD | K | GULF COAST AQUIFER SYSTEM \| MATAGORDA COUNTY | 116 | 116 | 116 | 116 | 116 | 116 |
| PALACIOS | K | GULF COAST AQUIFER SYSTEM \| MATAGORDA COUNTY | 1,064 | 1,064 | 1,064 | 1,064 | 1,064 | 1,064 |
| COUNTY-OTHER | K | GULF COAST AQUIFER SYSTEM \| MATAGORDA COUNTY | 574 | 574 | 574 | 574 | 574 | 574 |
| MINING | K | GULF COAST AQUIFER SYSTEM \| MATAGORDA COUNTY | 36 | 36 | 36 | 36 | 36 | 36 |
| LIVESTOCK | K | GULF COAST AQUIFER SYSTEM \| MATAGORDA COUNTY | 299 | 299 | 299 | 299 | 299 | 299 |
| LIVESTOCK | K | LOCAL SURFACE WATER SUPPLY | 215 | 215 | 215 | 215 | 215 | 215 |
| IRRIGATION | K | COLORADO RUN-OF-RIVER | 17,500 | 17,500 | 17,500 | 17,500 | 17,500 | 17,500 |
| IRRIGATION | K | COLORADO-LAVACA RUN-OF-RIVER | 4,000 | 4,000 | 4,000 | 4,000 | 4,000 | 4,000 |
| IRRIGATION | K | GULF COAST AQUIFER SYSTEM \| MATAGORDA COUNTY | 15,000 | 15,000 | 15,000 | 15,000 | 15,000 | 15,000 |
| | | **COLORADO-LAVACA BASIN TOTAL** | **38,804** | **38,804** | **38,804** | **38,804** | **38,804** | **38,804** |
| | | **MATAGORDA COUNTY TOTAL** | **164,669** | **164,669** | **164,669** | **164,669** | **164,669** | **164,669** |
| GOLDTHWAITE | K | TRINITY AQUIFER \| MILLS COUNTY | 12 | 12 | 12 | 12 | 12 | 12 |
| COUNTY-OTHER | K | ELLENBURGER-SAN SABA AQUIFER \| MILLS COUNTY | 71 | 71 | 71 | 71 | 71 | 71 |
| COUNTY-OTHER | K | TRINITY AQUIFER \| MILLS COUNTY | 84 | 84 | 84 | 84 | 84 | 84 |
| MINING | K | TRINITY AQUIFER \| MILLS COUNTY | 2 | 2 | 2 | 2 | 2 | 2 |
| LIVESTOCK | K | LOCAL SURFACE WATER SUPPLY | 321 | 321 | 321 | 321 | 321 | 321 |
| IRRIGATION | K | TRINITY AQUIFER \| MILLS COUNTY | 1,251 | 1,251 | 1,251 | 1,251 | 1,251 | 1,251 |
| | | **BRAZOS BASIN TOTAL** | **1,741** | **1,741** | **1,741** | **1,741** | **1,741** | **1,741** |
| BROOKESMITH SUD* | F | BROWNWOOD LAKE/RESERVOIR | 7 | 7 | 7 | 7 | 7 | 7 |
| CORIX UTILITIES TEXAS INC* | K | HIGHLAND LAKES LAKE/RESERVOIR SYSTEM | 13 | 13 | 13 | 13 | 13 | 13 |
| GOLDTHWAITE | K | ELLENBURGER-SAN SABA AQUIFER \| SAN SABA COUNTY | 245 | 245 | 245 | 245 | 245 | 245 |
| GOLDTHWAITE | K | TRINITY AQUIFER \| MILLS COUNTY | 176 | 176 | 176 | 176 | 176 | 176 |
| ZEPHYR WSC* | F | BROWNWOOD LAKE/RESERVOIR | 3 | 3 | 3 | 3 | 3 | 4 |
| COUNTY-OTHER | K | TRINITY AQUIFER \| MILLS COUNTY | 331 | 331 | 331 | 331 | 331 | 331 |
| MANUFACTURING | K | TRINITY AQUIFER \| MILLS COUNTY | 2 | 2 | 2 | 2 | 2 | 2 |

*A single asterisk next to a WUG's name denotes that the WUG is split by two or more planning regions.

# Region K Water User Group (WUG) Existing Water Supply

| WUG NAME | SOURCE REGION | SOURCE DESCRIPTION | EXISTING SUPPLY (ACRE-FEET PER YEAR) | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | | 2020 | 2030 | 2040 | 2050 | 2060 | 2070 |
| MINING | K | TRINITY AQUIFER \| MILLS COUNTY | 2 | 2 | 2 | 2 | 2 | 2 |
| LIVESTOCK | K | ELLENBURGER-SAN SABA AQUIFER \| MILLS COUNTY | 89 | 89 | 89 | 89 | 89 | 89 |
| LIVESTOCK | K | LOCAL SURFACE WATER SUPPLY | 360 | 360 | 360 | 360 | 360 | 360 |
| LIVESTOCK | K | TRINITY AQUIFER \| MILLS COUNTY | 161 | 161 | 161 | 161 | 161 | 161 |
| IRRIGATION | K | COLORADO RUN-OF-RIVER | 2,378 | 2,378 | 2,378 | 2,378 | 2,378 | 2,378 |
| | | **COLORADO BASIN TOTAL** | **3,767** | **3,767** | **3,767** | **3,767** | **3,767** | **3,768** |
| | | **MILLS COUNTY TOTAL** | **5,508** | **5,508** | **5,508** | **5,508** | **5,508** | **5,509** |
| CORIX UTILITIES TEXAS INC* | K | HIGHLAND LAKES LAKE/RESERVOIR SYSTEM | 15 | 15 | 15 | 15 | 15 | 15 |
| NORTH SAN SABA WSC | K | ELLENBURGER-SAN SABA AQUIFER \| SAN SABA COUNTY | 195 | 195 | 195 | 195 | 195 | 195 |
| RICHLAND SUD* | K | ELLENBURGER-SAN SABA AQUIFER \| SAN SABA COUNTY | 150 | 150 | 150 | 148 | 150 | 151 |
| RICHLAND SUD* | K | MARBLE FALLS AQUIFER \| SAN SABA COUNTY | 150 | 150 | 150 | 148 | 150 | 151 |
| SAN SABA | K | COLORADO RUN-OF-RIVER | 0 | 0 | 0 | 0 | 0 | 0 |
| SAN SABA | K | ELLENBURGER-SAN SABA AQUIFER \| SAN SABA COUNTY | 1,246 | 1,246 | 1,246 | 1,246 | 1,246 | 1,246 |
| COUNTY-OTHER | K | ELLENBURGER-SAN SABA AQUIFER \| SAN SABA COUNTY | 120 | 120 | 120 | 120 | 120 | 120 |
| COUNTY-OTHER | K | HICKORY AQUIFER \| SAN SABA COUNTY | 80 | 80 | 80 | 80 | 80 | 80 |
| COUNTY-OTHER | K | HIGHLAND LAKES LAKE/RESERVOIR SYSTEM | 20 | 20 | 20 | 20 | 20 | 20 |
| COUNTY-OTHER | K | MARBLE FALLS AQUIFER \| SAN SABA COUNTY | 24 | 24 | 24 | 24 | 24 | 24 |
| MANUFACTURING | K | MARBLE FALLS AQUIFER \| SAN SABA COUNTY | 12 | 12 | 12 | 12 | 12 | 12 |
| MINING | K | HICKORY AQUIFER \| SAN SABA COUNTY | 301 | 301 | 301 | 301 | 301 | 301 |
| MINING | K | MARBLE FALLS AQUIFER \| SAN SABA COUNTY | 1,238 | 1,238 | 1,238 | 1,238 | 1,238 | 1,238 |
| LIVESTOCK | K | ELLENBURGER-SAN SABA AQUIFER \| SAN SABA COUNTY | 198 | 198 | 198 | 198 | 198 | 198 |
| LIVESTOCK | K | HICKORY AQUIFER \| SAN SABA COUNTY | 111 | 111 | 111 | 111 | 111 | 111 |
| LIVESTOCK | K | LOCAL SURFACE WATER SUPPLY | 900 | 900 | 900 | 900 | 900 | 900 |
| LIVESTOCK | K | MARBLE FALLS AQUIFER \| SAN SABA COUNTY | 9 | 9 | 9 | 9 | 9 | 9 |
| IRRIGATION | K | COLORADO RUN-OF-RIVER | 3,300 | 3,300 | 3,300 | 3,300 | 3,300 | 3,300 |
| IRRIGATION | K | ELLENBURGER-SAN SABA AQUIFER \| SAN SABA COUNTY | 3,045 | 3,045 | 3,045 | 3,045 | 3,045 | 3,045 |
| IRRIGATION | K | HICKORY AQUIFER \| SAN SABA COUNTY | 877 | 877 | 877 | 877 | 877 | 877 |
| | | **COLORADO BASIN TOTAL** | **11,991** | **11,991** | **11,991** | **11,987** | **11,991** | **11,993** |
| | | **SAN SABA COUNTY TOTAL** | **11,991** | **11,991** | **11,991** | **11,987** | **11,991** | **11,993** |
| AQUA WSC* | K | CARRIZO-WILCOX AQUIFER \| BASTROP COUNTY | 1,088 | 1,226 | 1,362 | 1,524 | 1,671 | 1,809 |
| AUSTIN | K | COLORADO RUN-OF-RIVER | 165,981 | 160,981 | 170,904 | 167,135 | 163,267 | 158,745 |
| AUSTIN | K | DIRECT REUSE | 2,691 | 2,391 | 2,391 | 2,391 | 2,391 | 2,391 |
| AUSTIN | K | HIGHLAND LAKES LAKE/RESERVOIR SYSTEM | 123,607 | 123,607 | 123,607 | 123,607 | 123,607 | 123,607 |
| BARTON CREEK WEST WSC | K | HIGHLAND LAKES LAKE/RESERVOIR SYSTEM | 440 | 440 | 440 | 440 | 440 | 440 |
| BARTON CREEK WSC | K | HIGHLAND LAKES LAKE/RESERVOIR SYSTEM | 307 | 307 | 307 | 307 | 307 | 307 |
| BRIARCLIFF | K | HIGHLAND LAKES LAKE/RESERVOIR SYSTEM | 400 | 400 | 400 | 400 | 400 | 400 |
| CEDAR PARK* | K | HIGHLAND LAKES LAKE/RESERVOIR SYSTEM | 1,638 | 1,574 | 1,822 | 1,888 | 1,887 | 1,887 |
| COTTONWOOD CREEK MUD 1 | G | CARRIZO-WILCOX AQUIFER \| BURLESON COUNTY | 95 | 107 | 120 | 129 | 138 | 148 |
| CREEDMOOR-MAHA WSC* | K | COLORADO RUN-OF-RIVER | 839 | 839 | 0 | 0 | 0 | 0 |
| CREEDMOOR-MAHA WSC* | K | EDWARDS-BFZ AQUIFER \| TRAVIS COUNTY | 318 | 296 | 273 | 245 | 216 | 187 |
| CYPRESS RANCH WCID 1 | K | HIGHLAND LAKES LAKE/RESERVOIR SYSTEM | 1 | 1 | 1 | 1 | 1 | 1 |
| CYPRESS RANCH WCID 1 | K | TRINITY AQUIFER \| TRAVIS COUNTY | 222 | 222 | 222 | 222 | 222 | 222 |
| DEER CREEK RANCH WATER | K | HIGHLAND LAKES LAKE/RESERVOIR SYSTEM | 125 | 125 | 125 | 125 | 125 | 125 |
| ELGIN | K | CARRIZO-WILCOX AQUIFER \| BASTROP COUNTY | 255 | 357 | 453 | 563 | 662 | 754 |
| GARFIELD WSC | K | TRINITY AQUIFER \| TRAVIS COUNTY | 260 | 260 | 260 | 260 | 260 | 260 |
| HORNSBY BEND UTILITY | G | CARRIZO-WILCOX AQUIFER \| BURLESON COUNTY | 944 | 944 | 944 | 944 | 944 | 944 |
| HURST CREEK MUD | K | DIRECT REUSE | 106 | 106 | 106 | 106 | 106 | 106 |
| HURST CREEK MUD | K | HIGHLAND LAKES LAKE/RESERVOIR SYSTEM | 1,600 | 1,600 | 1,600 | 1,600 | 1,600 | 1,600 |

*A single asterisk next to a WUG's name denotes that the WUG is split by two or more planning regions.

# Region K Water User Group (WUG) Existing Water Supply

| WUG NAME | SOURCE REGION | SOURCE DESCRIPTION | EXISTING SUPPLY (ACRE-FEET PER YEAR) | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | | 2020 | 2030 | 2040 | 2050 | 2060 | 2070 |
| JONESTOWN WSC | K | HIGHLAND LAKES LAKE/RESERVOIR SYSTEM | 750 | 750 | 750 | 750 | 750 | 750 |
| KELLY LANE WCID 1 | K | TRINITY AQUIFER \| TRAVIS COUNTY | 388 | 388 | 388 | 388 | 388 | 388 |
| LAGO VISTA | K | DIRECT REUSE | 415 | 415 | 415 | 415 | 415 | 415 |
| LAGO VISTA | K | HIGHLAND LAKES LAKE/RESERVOIR SYSTEM | 3,451 | 3,451 | 3,451 | 3,451 | 3,451 | 3,451 |
| LAKEWAY MUD | K | HIGHLAND LAKES LAKE/RESERVOIR SYSTEM | 3,069 | 3,069 | 3,069 | 3,069 | 3,069 | 3,069 |
| LEANDER* | K | HIGHLAND LAKES LAKE/RESERVOIR SYSTEM | 1,202 | 1,684 | 1,738 | 1,269 | 1,079 | 941 |
| LOOP 360 WSC | K | HIGHLAND LAKES LAKE/RESERVOIR SYSTEM | 1,250 | 1,250 | 1,250 | 1,250 | 1,250 | 1,250 |
| MANOR | G | CARRIZO-WILCOX AQUIFER \| BURLESON COUNTY | 404 | 504 | 996 | 1,329 | 1,810 | 1,873 |
| MANOR | K | COLORADO RUN-OF-RIVER | 1,680 | 1,680 | 0 | 0 | 0 | 0 |
| MANOR | K | EDWARDS-BFZ AQUIFER \| TRAVIS COUNTY | 10 | 10 | 10 | 10 | 10 | 10 |
| MANOR | K | OTHER AQUIFER \| TRAVIS COUNTY | 679 | 679 | 679 | 679 | 679 | 679 |
| MANOR | K | TRINITY AQUIFER \| TRAVIS COUNTY | 547 | 547 | 547 | 547 | 547 | 547 |
| MANVILLE WSC* | G | CARRIZO-WILCOX AQUIFER \| BURLESON COUNTY | 213 | 268 | 315 | 355 | 368 | 354 |
| MANVILLE WSC* | G | CARRIZO-WILCOX AQUIFER \| LEE COUNTY | 1,478 | 1,504 | 1,486 | 1,460 | 918 | 208 |
| MANVILLE WSC* | K | EDWARDS-BFZ AQUIFER \| TRAVIS COUNTY | 325 | 324 | 320 | 317 | 313 | 308 |
| MANVILLE WSC* | K | HIGHLAND LAKES LAKE/RESERVOIR SYSTEM | 1,929 | 1,932 | 1,930 | 1,927 | 1,920 | 1,910 |
| MANVILLE WSC* | G | OTHER AQUIFER \| WILLIAMSON COUNTY | 152 | 153 | 152 | 150 | 146 | 141 |
| MANVILLE WSC* | K | TRINITY AQUIFER \| TRAVIS COUNTY | 375 | 373 | 367 | 362 | 355 | 349 |
| NORTH AUSTIN MUD 1 | K | COLORADO RUN-OF-RIVER | 81 | 78 | 0 | 0 | 0 | 0 |
| NORTHTOWN MUD | K | COLORADO RUN-OF-RIVER | 728 | 841 | 0 | 0 | 0 | 0 |
| OAK SHORES WATER SYSTEM | K | HIGHLAND LAKES LAKE/RESERVOIR SYSTEM | 203 | 203 | 203 | 203 | 203 | 203 |
| OAK SHORES WATER SYSTEM | K | TRINITY AQUIFER \| TRAVIS COUNTY | 82 | 82 | 82 | 82 | 82 | 82 |
| PFLUGERVILLE* | K | EDWARDS-BFZ AQUIFER \| TRAVIS COUNTY | 2,531 | 2,531 | 2,530 | 2,530 | 2,529 | 2,526 |
| PFLUGERVILLE* | K | HIGHLAND LAKES LAKE/RESERVOIR SYSTEM | 9,513 | 9,498 | 9,479 | 9,458 | 9,435 | 9,410 |
| ROLLINGWOOD | K | COLORADO RUN-OF-RIVER | 1,120 | 1,120 | 0 | 0 | 0 | 0 |
| ROUGH HOLLOW IN TRAVIS COUNTY | K | HIGHLAND LAKES LAKE/RESERVOIR SYSTEM | 1,795 | 1,795 | 1,795 | 1,795 | 1,795 | 1,795 |
| ROUND ROCK* | K | HIGHLAND LAKES LAKE/RESERVOIR SYSTEM | 278 | 315 | 352 | 395 | 434 | 470 |
| SENNA HILLS MUD | K | HIGHLAND LAKES LAKE/RESERVOIR SYSTEM | 404 | 404 | 404 | 404 | 404 | 404 |
| SHADY HOLLOW MUD | K | COLORADO RUN-OF-RIVER | 793 | 775 | 759 | 750 | 749 | 749 |
| SUNSET VALLEY | K | COLORADO RUN-OF-RIVER | 716 | 716 | 0 | 0 | 0 | 0 |
| SUNSET VALLEY | K | EDWARDS-BFZ AQUIFER \| TRAVIS COUNTY | 40 | 40 | 40 | 40 | 40 | 40 |
| SWEETWATER COMMUNITY | K | HIGHLAND LAKES LAKE/RESERVOIR SYSTEM | 1,514 | 1,514 | 1,514 | 1,514 | 1,514 | 1,514 |
| TRAVIS COUNTY MUD 10 | K | HIGHLAND LAKES LAKE/RESERVOIR SYSTEM | 96 | 96 | 96 | 96 | 96 | 96 |
| TRAVIS COUNTY MUD 14 | K | CARRIZO-WILCOX AQUIFER \| BASTROP COUNTY | 224 | 224 | 224 | 224 | 224 | 224 |
| TRAVIS COUNTY MUD 2 | G | CARRIZO-WILCOX AQUIFER \| BURLESON COUNTY | 322 | 322 | 322 | 322 | 322 | 322 |
| TRAVIS COUNTY MUD 2 | K | TRINITY AQUIFER \| TRAVIS COUNTY | 218 | 218 | 218 | 218 | 218 | 218 |
| TRAVIS COUNTY MUD 4 | K | HIGHLAND LAKES LAKE/RESERVOIR SYSTEM | 3,560 | 3,562 | 3,564 | 3,565 | 3,565 | 3,565 |
| TRAVIS COUNTY WCID 10 | K | COLORADO RUN-OF-RIVER | 3,360 | 3,360 | 0 | 0 | 0 | 0 |
| TRAVIS COUNTY WCID 17 | K | DIRECT REUSE | 1,205 | 1,205 | 1,205 | 1,205 | 1,205 | 1,205 |
| TRAVIS COUNTY WCID 17 | K | HIGHLAND LAKES LAKE/RESERVOIR SYSTEM | 8,800 | 8,800 | 8,800 | 8,800 | 8,800 | 8,800 |
| TRAVIS COUNTY WCID 18 | K | HIGHLAND LAKES LAKE/RESERVOIR SYSTEM | 1,400 | 1,400 | 1,400 | 1,400 | 1,400 | 1,400 |
| TRAVIS COUNTY WCID 19 | K | HIGHLAND LAKES LAKE/RESERVOIR SYSTEM | 449 | 447 | 445 | 444 | 444 | 444 |
| TRAVIS COUNTY WCID 20 | K | HIGHLAND LAKES LAKE/RESERVOIR SYSTEM | 1,135 | 1,135 | 1,135 | 1,135 | 1,135 | 1,135 |
| TRAVIS COUNTY WCID POINT VENTURE | K | HIGHLAND LAKES LAKE/RESERVOIR SYSTEM | 285 | 285 | 285 | 285 | 285 | 285 |
| WELLS BRANCH MUD | K | COLORADO RUN-OF-RIVER | 1,397 | 1,352 | 0 | 0 | 0 | 0 |
| WEST TRAVIS COUNTY PUBLIC UTILITY AGENCY | K | DIRECT REUSE | 414 | 414 | 414 | 414 | 414 | 414 |

*A single asterisk next to a WUG's name denotes that the WUG is split by two or more planning regions.

# Region K Water User Group (WUG) Existing Water Supply

| WUG NAME | SOURCE REGION | SOURCE DESCRIPTION | EXISTING SUPPLY (ACRE-FEET PER YEAR) | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | | 2020 | 2030 | 2040 | 2050 | 2060 | 2070 |
| WEST TRAVIS COUNTY PUBLIC UTILITY AGENCY | K | HIGHLAND LAKES LAKE/RESERVOIR SYSTEM | 4,500 | 4,500 | 4,500 | 4,500 | 4,500 | 4,500 |
| WILLIAMSON COUNTY WSID 3* | G | CARRIZO-WILCOX AQUIFER \| LEE COUNTY | 111 | 130 | 125 | 121 | 117 | 114 |
| WILLIAMSON COUNTY WSID 3* | K | TRINITY AQUIFER \| TRAVIS COUNTY | 29 | 35 | 33 | 32 | 31 | 30 |
| WILLIAMSON TRAVIS COUNTIES MUD 1* | K | HIGHLAND LAKES LAKE/RESERVOIR SYSTEM | 201 | 201 | 201 | 202 | 201 | 202 |
| WINDERMERE UTILITY | K | COLORADO RUN-OF-RIVER | 2,240 | 2,240 | 0 | 0 | 0 | 0 |
| WINDERMERE UTILITY | K | EDWARDS-BFZ AQUIFER \| TRAVIS COUNTY | 1,062 | 1,062 | 1,062 | 1,062 | 1,062 | 1,062 |
| WINDERMERE UTILITY | K | HIGHLAND LAKES LAKE/RESERVOIR SYSTEM | 307 | 307 | 307 | 307 | 307 | 307 |
| COUNTY-OTHER \| AQUA TEXAS - RIVERCREST | K | HIGHLAND LAKES LAKE/RESERVOIR SYSTEM | 467 | 467 | 467 | 467 | 467 | 467 |
| COUNTY-OTHER | G | CARRIZO-WILCOX AQUIFER \| BURLESON COUNTY | 299 | 287 | 274 | 265 | 256 | 246 |
| COUNTY-OTHER | K | HIGHLAND LAKES LAKE/RESERVOIR SYSTEM | 6,681 | 6,681 | 6,681 | 6,681 | 6,681 | 6,681 |
| COUNTY-OTHER | K | TRINITY AQUIFER \| TRAVIS COUNTY | 4,451 | 4,451 | 4,451 | 4,451 | 4,451 | 4,451 |
| MANUFACTURING | K | COLORADO RUN-OF-RIVER | 10,542 | 11,931 | 12,217 | 12,673 | 12,673 | 12,673 |
| MANUFACTURING | K | DIRECT REUSE | 1,880 | 2,180 | 2,180 | 2,180 | 2,180 | 2,180 |
| MANUFACTURING | K | EDWARDS-BFZ AQUIFER \| TRAVIS COUNTY | 666 | 666 | 666 | 666 | 666 | 666 |
| MANUFACTURING | K | HIGHLAND LAKES LAKE/RESERVOIR SYSTEM | 76 | 76 | 76 | 76 | 76 | 76 |
| MINING | K | LOCAL SURFACE WATER SUPPLY | 2,230 | 2,830 | 3,477 | 4,083 | 4,749 | 5,512 |
| MINING | K | TRINITY AQUIFER \| TRAVIS COUNTY | 1,237 | 1,237 | 1,237 | 1,237 | 1,237 | 1,237 |
| STEAM ELECTRIC POWER | K | COLORADO RUN-OF-RIVER | 9,240 | 9,240 | 9,240 | 9,240 | 9,240 | 9,240 |
| STEAM ELECTRIC POWER | K | HIGHLAND LAKES LAKE/RESERVOIR SYSTEM | 5,153 | 5,153 | 5,153 | 5,153 | 5,153 | 5,153 |
| LIVESTOCK | K | LOCAL SURFACE WATER SUPPLY | 463 | 463 | 463 | 463 | 463 | 463 |
| LIVESTOCK | K | TRINITY AQUIFER \| TRAVIS COUNTY | 46 | 46 | 46 | 46 | 46 | 46 |
| IRRIGATION | K | EDWARDS-BFZ AQUIFER \| TRAVIS COUNTY | 150 | 150 | 150 | 150 | 150 | 150 |
| IRRIGATION | K | HIGHLAND LAKES LAKE/RESERVOIR SYSTEM | 4,018 | 4,018 | 4,018 | 4,018 | 4,018 | 4,018 |
| IRRIGATION | K | LOCAL SURFACE WATER SUPPLY | 756 | 756 | 756 | 756 | 756 | 756 |
| IRRIGATION | K | TRINITY AQUIFER \| TRAVIS COUNTY | 800 | 800 | 800 | 800 | 800 | 800 |
| | | **COLORADO BASIN TOTAL** | **419,502** | **417,403** | **417,046** | **414,523** | **411,285** | **406,907** |
| CREEDMOOR-MAHA WSC* | K | EDWARDS-BFZ AQUIFER \| TRAVIS COUNTY | 60 | 60 | 60 | 60 | 60 | 60 |
| GOFORTH SUD* | L | EDWARDS-BFZ AQUIFER \| HAYS COUNTY | 1 | 1 | 1 | 0 | 0 | 0 |
| GOFORTH SUD* | L | TRINITY AQUIFER \| HAYS COUNTY | 5 | 5 | 5 | 5 | 5 | 5 |
| COUNTY-OTHER | K | OTHER AQUIFER \| TRAVIS COUNTY | 112 | 112 | 112 | 112 | 112 | 112 |
| MINING | K | LOCAL SURFACE WATER SUPPLY | 35 | 41 | 48 | 54 | 60 | 68 |
| LIVESTOCK | K | LOCAL SURFACE WATER SUPPLY | 18 | 18 | 18 | 18 | 18 | 18 |
| | | **GUADALUPE BASIN TOTAL** | **231** | **237** | **244** | **249** | **255** | **263** |
| | | **TRAVIS COUNTY TOTAL** | **419,733** | **417,640** | **417,290** | **414,772** | **411,540** | **407,170** |
| BOLING MWD | K | GULF COAST AQUIFER SYSTEM \| WHARTON COUNTY | 156 | 156 | 156 | 156 | 156 | 156 |
| WHARTON | K | GULF COAST AQUIFER SYSTEM \| WHARTON COUNTY | 1,112 | 1,086 | 1,066 | 1,041 | 1,014 | 988 |
| WHARTON COUNTY WCID 2 | K | GULF COAST AQUIFER SYSTEM \| WHARTON COUNTY | 1,218 | 1,218 | 1,218 | 1,218 | 1,218 | 1,218 |
| COUNTY-OTHER* | K | GULF COAST AQUIFER SYSTEM \| WHARTON COUNTY | 1,164 | 1,164 | 1,164 | 1,164 | 1,164 | 1,164 |
| MANUFACTURING* | K | GULF COAST AQUIFER SYSTEM \| WHARTON COUNTY | 69 | 69 | 69 | 69 | 69 | 69 |
| MINING* | K | GULF COAST AQUIFER SYSTEM \| WHARTON COUNTY | 41 | 41 | 41 | 41 | 41 | 41 |
| STEAM ELECTRIC POWER* | K | GULF COAST AQUIFER SYSTEM \| WHARTON COUNTY | 1 | 1 | 1 | 1 | 1 | 1 |
| LIVESTOCK* | K | GULF COAST AQUIFER SYSTEM \| WHARTON COUNTY | 302 | 302 | 302 | 302 | 302 | 302 |
| LIVESTOCK* | K | LOCAL SURFACE WATER SUPPLY | 149 | 149 | 149 | 149 | 149 | 149 |
| IRRIGATION* | K | BRAZOS-COLORADO RUN-OF-RIVER | 1,900 | 1,900 | 1,900 | 1,900 | 1,900 | 1,900 |
| IRRIGATION* | K | COLORADO RUN-OF-RIVER | 14,751 | 14,751 | 14,751 | 14,751 | 14,751 | 14,751 |
| IRRIGATION* | K | GULF COAST AQUIFER SYSTEM \| WHARTON COUNTY | 38,091 | 38,091 | 38,091 | 38,091 | 38,091 | 38,091 |

*A single asterisk next to a WUG's name denotes that the WUG is split by two or more planning regions.

# Region K Water User Group (WUG) Existing Water Supply

| WUG NAME | SOURCE REGION | SOURCE DESCRIPTION | EXISTING SUPPLY (ACRE-FEET PER YEAR) 2020 | 2030 | 2040 | 2050 | 2060 | 2070 |
|---|---|---|---|---|---|---|---|---|
| | | **BRAZOS-COLORADO BASIN TOTAL** | **58,954** | **58,928** | **58,908** | **58,883** | **58,856** | **58,830** |
| EL CAMPO* | P | GULF COAST AQUIFER SYSTEM \| WHARTON COUNTY | 6 | 6 | 6 | 6 | 6 | 6 |
| WHARTON | K | GULF COAST AQUIFER SYSTEM \| WHARTON COUNTY | 756 | 782 | 802 | 827 | 854 | 880 |
| COUNTY-OTHER* | K | GULF COAST AQUIFER SYSTEM \| WHARTON COUNTY | 600 | 600 | 600 | 600 | 600 | 600 |
| COUNTY-OTHER* | P | GULF COAST AQUIFER SYSTEM \| WHARTON COUNTY | 57 | 57 | 57 | 57 | 57 | 57 |
| MANUFACTURING* | K | GULF COAST AQUIFER SYSTEM \| WHARTON COUNTY | 102 | 102 | 102 | 102 | 102 | 102 |
| MINING* | K | GULF COAST AQUIFER SYSTEM \| WHARTON COUNTY | 27 | 27 | 27 | 27 | 27 | 27 |
| STEAM ELECTRIC POWER* | K | GULF COAST AQUIFER SYSTEM \| WHARTON COUNTY | 7,900 | 7,900 | 7,900 | 7,900 | 7,900 | 7,900 |
| LIVESTOCK* | K | GULF COAST AQUIFER SYSTEM \| WHARTON COUNTY | 206 | 206 | 206 | 206 | 206 | 206 |
| LIVESTOCK* | K | LOCAL SURFACE WATER SUPPLY | 115 | 115 | 115 | 115 | 115 | 115 |
| IRRIGATION* | K | COLORADO RUN-OF-RIVER | 16,786 | 16,786 | 16,786 | 16,786 | 16,786 | 16,786 |
| IRRIGATION* | K | GULF COAST AQUIFER SYSTEM \| WHARTON COUNTY | 25,558 | 25,558 | 25,558 | 25,558 | 25,558 | 25,558 |
| | | **COLORADO BASIN TOTAL** | **52,113** | **52,139** | **52,159** | **52,184** | **52,211** | **52,237** |
| COUNTY-OTHER* | K | GULF COAST AQUIFER SYSTEM \| WHARTON COUNTY | 231 | 231 | 231 | 231 | 231 | 231 |
| MINING* | K | GULF COAST AQUIFER SYSTEM \| WHARTON COUNTY | 6 | 6 | 6 | 6 | 6 | 6 |
| LIVESTOCK* | K | GULF COAST AQUIFER SYSTEM \| WHARTON COUNTY | 107 | 107 | 107 | 107 | 107 | 107 |
| LIVESTOCK* | K | LOCAL SURFACE WATER SUPPLY | 74 | 74 | 74 | 74 | 74 | 74 |
| IRRIGATION* | K | COLORADO RUN-OF-RIVER | 2,350 | 2,350 | 2,350 | 2,350 | 2,350 | 2,350 |
| IRRIGATION* | K | GULF COAST AQUIFER SYSTEM \| WHARTON COUNTY | 14,587 | 14,587 | 14,587 | 14,587 | 14,587 | 14,587 |
| | | **COLORADO-LAVACA BASIN TOTAL** | **17,355** | **17,355** | **17,355** | **17,355** | **17,355** | **17,355** |
| COUNTY-OTHER* | K | GULF COAST AQUIFER SYSTEM \| WHARTON COUNTY | 231 | 231 | 231 | 231 | 231 | 231 |
| | | **LAVACA BASIN TOTAL** | **231** | **231** | **231** | **231** | **231** | **231** |
| | | **WHARTON COUNTY TOTAL** | **128,653** | **128,653** | **128,653** | **128,653** | **128,653** | **128,653** |
| AUSTIN | K | COLORADO RUN-OF-RIVER | 10,787 | 13,742 | 16,122 | 18,685 | 21,592 | 24,782 |
| NORTH AUSTIN MUD 1 | K | COLORADO RUN-OF-RIVER | 774 | 747 | 0 | 0 | 0 | 0 |
| WELLS BRANCH MUD | K | COLORADO RUN-OF-RIVER | 80 | 77 | 0 | 0 | 0 | 0 |
| COUNTY-OTHER* | K | COLORADO RUN-OF-RIVER | 87 | 87 | 87 | 87 | 87 | 87 |
| COUNTY-OTHER* | K | EDWARDS-BFZ AQUIFER \| WILLIAMSON COUNTY | 6 | 6 | 6 | 6 | 6 | 6 |
| MANUFACTURING* | K | TRINITY AQUIFER \| WILLIAMSON COUNTY | 30 | 30 | 30 | 30 | 30 | 30 |
| MINING* | K | TRINITY AQUIFER \| WILLIAMSON COUNTY | 5 | 5 | 5 | 5 | 5 | 5 |
| | | **BRAZOS BASIN TOTAL** | **11,769** | **14,694** | **16,250** | **18,813** | **21,720** | **24,910** |
| | | **WILLIAMSON COUNTY TOTAL** | **11,769** | **14,694** | **16,250** | **18,813** | **21,720** | **24,910** |
| | | **REGION K EXISTING WATER SUPPLY TOTAL** | **1,042,135** | **1,044,354** | **1,047,428** | **1,050,341** | **1,049,931** | **1,049,975** |

*A single asterisk next to a WUG's name denotes that the WUG is split by two or more planning regions.

## Region K Source Water Balance (Availability - WUG Supply)

| GROUNDWATER SOURCE TYPE | | | | SOURCE WATER BALANCE (ACRE-FEET PER YEAR) | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| **SOURCE NAME** | **COUNTY** | **BASIN** | **SALINITY*** | **2020** | **2030** | **2040** | **2050** | **2060** | **2070** |
| CARRIZO-WILCOX AQUIFER | BASTROP | BRAZOS | FRESH | 66 | 161 | 274 | 547 | 848 | 848 |
| CARRIZO-WILCOX AQUIFER | BASTROP | COLORADO | FRESH | 0 | 463 | 182 | 82 | 89 | 148 |
| CARRIZO-WILCOX AQUIFER | BASTROP | GUADALUPE | FRESH | 0 | 0 | 0 | 92 | 0 | 0 |
| CARRIZO-WILCOX AQUIFER | FAYETTE | COLORADO | FRESH | 4,565 | 4,565 | 4,565 | 4,565 | 4,565 | 4,565 |
| CARRIZO-WILCOX AQUIFER | FAYETTE | GUADALUPE | FRESH | 909 | 909 | 909 | 909 | 909 | 909 |
| CARRIZO-WILCOX AQUIFER | FAYETTE | LAVACA | FRESH | 0 | 0 | 0 | 0 | 0 | 0 |
| EDWARDS-BFZ AQUIFER | HAYS | COLORADO | FRESH | 1 | 4 | 4 | 4 | 4 | 4 |
| EDWARDS-BFZ AQUIFER | HAYS | COLORADO | SALINE | 66 | 66 | 66 | 66 | 66 | 66 |
| EDWARDS-BFZ AQUIFER | TRAVIS | BRAZOS | FRESH | 275 | 275 | 275 | 275 | 275 | 275 |
| EDWARDS-BFZ AQUIFER | TRAVIS | COLORADO | FRESH | 116 | 116 | 116 | 116 | 116 | 116 |
| EDWARDS-BFZ AQUIFER | TRAVIS | COLORADO | FRESH/ BRACKISH | 20 | 20 | 20 | 20 | 20 | 20 |
| EDWARDS-BFZ AQUIFER | TRAVIS | COLORADO | SALINE | 5,073 | 5,073 | 5,073 | 5,073 | 5,073 | 5,073 |
| EDWARDS-BFZ AQUIFER | TRAVIS | GUADALUPE | SALINE | 280 | 280 | 280 | 280 | 280 | 280 |
| EDWARDS-BFZ AQUIFER | WILLIAMSON | BRAZOS | FRESH | 0 | 0 | 0 | 0 | 0 | 0 |
| EDWARDS-BFZ AQUIFER | WILLIAMSON | COLORADO | FRESH | 4 | 4 | 4 | 4 | 4 | 4 |
| EDWARDS-TRINITY-PLATEAU AQUIFER | BLANCO | COLORADO | FRESH | 0 | 0 | 0 | 0 | 0 | 0 |
| EDWARDS-TRINITY-PLATEAU AQUIFER | BLANCO | GUADALUPE | FRESH | 0 | 0 | 0 | 0 | 0 | 0 |
| EDWARDS-TRINITY-PLATEAU, PECOS VALLEY, AND TRINITY AQUIFERS | GILLESPIE | COLORADO | FRESH | 1,074 | 1,074 | 1,074 | 1,074 | 1,074 | 1,074 |
| EDWARDS-TRINITY-PLATEAU, PECOS VALLEY, AND TRINITY AQUIFERS | GILLESPIE | GUADALUPE | FRESH | 5 | 5 | 5 | 5 | 5 | 5 |
| ELLENBURGER-SAN SABA AQUIFER | BLANCO | COLORADO | FRESH | 509 | 503 | 509 | 503 | 509 | 503 |
| ELLENBURGER-SAN SABA AQUIFER | BURNET | BRAZOS | FRESH | 3,833 | 3,822 | 3,833 | 3,822 | 3,833 | 3,822 |
| ELLENBURGER-SAN SABA AQUIFER | BURNET | COLORADO | FRESH | 3,381 | 3,362 | 3,381 | 3,362 | 3,381 | 3,362 |
| ELLENBURGER-SAN SABA AQUIFER | GILLESPIE | COLORADO | FRESH | 605 | 605 | 605 | 605 | 605 | 605 |
| ELLENBURGER-SAN SABA AQUIFER | GILLESPIE | GUADALUPE | FRESH | 0 | 0 | 0 | 0 | 0 | 0 |
| ELLENBURGER-SAN SABA AQUIFER | LLANO | COLORADO | FRESH | 211 | 210 | 211 | 210 | 211 | 210 |
| ELLENBURGER-SAN SABA AQUIFER | MILLS | BRAZOS | FRESH | 22 | 22 | 22 | 22 | 22 | 22 |
| ELLENBURGER-SAN SABA AQUIFER | MILLS | COLORADO | FRESH | 318 | 317 | 318 | 317 | 318 | 317 |
| ELLENBURGER-SAN SABA AQUIFER | SAN SABA | COLORADO | FRESH | 2,535 | 2,535 | 2,535 | 2,535 | 2,535 | 2,535 |
| GULF COAST AQUIFER SYSTEM | COLORADO | BRAZOS-COLORADO | FRESH | 2,934 | 2,934 | 2,934 | 2,934 | 2,934 | 2,934 |
| GULF COAST AQUIFER SYSTEM | COLORADO | COLORADO | FRESH | 1,137 | 1,137 | 697 | 697 | 697 | 697 |
| GULF COAST AQUIFER SYSTEM | COLORADO | LAVACA | FRESH | 10,773 | 10,773 | 9,014 | 9,014 | 7,867 | 7,867 |
| GULF COAST AQUIFER SYSTEM | FAYETTE | BRAZOS | FRESH | 2 | 2 | 2 | 2 | 2 | 2 |
| GULF COAST AQUIFER SYSTEM | FAYETTE | COLORADO | FRESH | 40 | 40 | 40 | 40 | 40 | 40 |
| GULF COAST AQUIFER SYSTEM | FAYETTE | LAVACA | FRESH | 1 | 1 | 20 | 41 | 41 | 41 |
| GULF COAST AQUIFER SYSTEM | MATAGORDA | BRAZOS-COLORADO | FRESH | 78 | 78 | 78 | 78 | 78 | 78 |
| GULF COAST AQUIFER SYSTEM | MATAGORDA | COLORADO | FRESH/ BRACKISH | 850 | 850 | 850 | 850 | 850 | 850 |
| GULF COAST AQUIFER SYSTEM | MATAGORDA | COLORADO-LAVACA | FRESH | 356 | 356 | 356 | 356 | 356 | 356 |
| GULF COAST AQUIFER SYSTEM | WHARTON | BRAZOS-COLORADO | FRESH | 8,374 | 8,400 | 8,420 | 8,445 | 8,472 | 8,498 |
| GULF COAST AQUIFER SYSTEM | WHARTON | COLORADO | FRESH | 760 | 734 | 714 | 689 | 662 | 636 |

* Salinity field indicates whether the source availability is considered 'fresh' (less than 1,000 mg/L), 'brackish' (1,000 to 10,000 mg/L), 'saline' (10,001 mg/L to 34,999 mg/L), or 'seawater' (35,000 mg/L or greater). Sources can also be labeled as 'fresh/brackish' or 'brackish/saline', if a combination of the salinity types is appropriate.
** Since reservoir sources can exist across multiple counties, the county field value, 'reservoir' is applied to all reservoir sources.

# Region K Source Water Balance (Availability - WUG Supply)

| GROUNDWATER SOURCE TYPE | | | | SOURCE WATER BALANCE (ACRE-FEET PER YEAR) | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| SOURCE NAME | COUNTY | BASIN | SALINITY* | 2020 | 2030 | 2040 | 2050 | 2060 | 2070 |
| GULF COAST AQUIFER SYSTEM | WHARTON | COLORADO-LAVACA | FRESH | 1,265 | 1,265 | 1,265 | 1,265 | 1,265 | 1,265 |
| GULF COAST AQUIFER SYSTEM | WHARTON | LAVACA | FRESH | 348 | 348 | 348 | 348 | 348 | 348 |
| HICKORY AQUIFER | BLANCO | COLORADO | FRESH | 144 | 143 | 144 | 143 | 144 | 143 |
| HICKORY AQUIFER | BURNET | BRAZOS | FRESH | 1,240 | 1,236 | 1,240 | 1,236 | 1,240 | 1,236 |
| HICKORY AQUIFER | BURNET | COLORADO | FRESH | 1,937 | 1,931 | 1,937 | 1,931 | 1,937 | 1,931 |
| HICKORY AQUIFER | GILLESPIE | COLORADO | FRESH | 325 | 325 | 325 | 325 | 325 | 325 |
| HICKORY AQUIFER | GILLESPIE | GUADALUPE | FRESH | 0 | 0 | 0 | 0 | 0 | 0 |
| HICKORY AQUIFER | HAYS | COLORADO | FRESH | 0 | 0 | 0 | 0 | 0 | 0 |
| HICKORY AQUIFER | LLANO | COLORADO | FRESH | 1,301 | 1,295 | 1,301 | 1,295 | 1,301 | 1,295 |
| HICKORY AQUIFER | MILLS | BRAZOS | FRESH | 7 | 7 | 7 | 7 | 7 | 7 |
| HICKORY AQUIFER | MILLS | COLORADO | FRESH | 29 | 29 | 29 | 29 | 29 | 29 |
| HICKORY AQUIFER | SAN SABA | COLORADO | FRESH | 6,311 | 6,311 | 6,311 | 6,311 | 6,311 | 6,311 |
| MARBLE FALLS AQUIFER | BLANCO | COLORADO | FRESH | 199 | 199 | 199 | 199 | 199 | 199 |
| MARBLE FALLS AQUIFER | BURNET | BRAZOS | FRESH | 1,387 | 1,383 | 1,387 | 1,383 | 1,387 | 1,383 |
| MARBLE FALLS AQUIFER | BURNET | COLORADO | FRESH | 1,203 | 1,199 | 1,203 | 1,199 | 1,203 | 1,199 |
| MARBLE FALLS AQUIFER | MILLS | BRAZOS | FRESH | 1 | 1 | 1 | 1 | 1 | 1 |
| MARBLE FALLS AQUIFER | MILLS | COLORADO | FRESH | 24 | 24 | 24 | 24 | 24 | 24 |
| MARBLE FALLS AQUIFER | SAN SABA | COLORADO | FRESH | 2,766 | 2,754 | 2,766 | 2,754 | 2,766 | 2,754 |
| OTHER AQUIFER | BASTROP | COLORADO | FRESH | 0 | 0 | 0 | 0 | 0 | 0 |
| OTHER AQUIFER | BURNET | BRAZOS | FRESH | 0 | 0 | 0 | 0 | 0 | 0 |
| OTHER AQUIFER | BURNET | COLORADO | FRESH | 259 | 259 | 259 | 259 | 259 | 259 |
| OTHER AQUIFER | FAYETTE | COLORADO | FRESH | 0 | 0 | 0 | 0 | 0 | 0 |
| OTHER AQUIFER | LLANO | COLORADO | FRESH | 9 | 9 | 9 | 9 | 9 | 9 |
| OTHER AQUIFER | TRAVIS | COLORADO | FRESH | 3,091 | 3,091 | 3,091 | 3,091 | 3,091 | 3,091 |
| OTHER AQUIFER | TRAVIS | GUADALUPE | FRESH | 0 | 0 | 0 | 0 | 0 | 0 |
| QUEEN CITY AQUIFER | BASTROP | BRAZOS | FRESH | 0 | 0 | 0 | 0 | 0 | 0 |
| QUEEN CITY AQUIFER | BASTROP | COLORADO | FRESH | 15 | 0 | 0 | 0 | 0 | 0 |
| QUEEN CITY AQUIFER | BASTROP | GUADALUPE | FRESH | 0 | 0 | 0 | 0 | 0 | 0 |
| QUEEN CITY AQUIFER | FAYETTE | COLORADO | FRESH | 2,278 | 2,278 | 2,278 | 2,278 | 2,278 | 2,278 |
| QUEEN CITY AQUIFER | FAYETTE | GUADALUPE | FRESH | 430 | 430 | 430 | 430 | 430 | 430 |
| QUEEN CITY AQUIFER | FAYETTE | LAVACA | FRESH | 0 | 0 | 0 | 0 | 0 | 0 |
| SPARTA AQUIFER | BASTROP | BRAZOS | FRESH | 89 | 87 | 85 | 84 | 82 | 82 |
| SPARTA AQUIFER | BASTROP | COLORADO | FRESH | 247 | 246 | 245 | 244 | 243 | 243 |
| SPARTA AQUIFER | BASTROP | GUADALUPE | FRESH | 10 | 10 | 10 | 10 | 10 | 10 |
| SPARTA AQUIFER | FAYETTE | COLORADO | FRESH | 961 | 951 | 928 | 914 | 921 | 921 |
| SPARTA AQUIFER | FAYETTE | GUADALUPE | FRESH | 653 | 657 | 658 | 663 | 664 | 664 |
| SPARTA AQUIFER | FAYETTE | LAVACA | FRESH | 0 | 0 | 0 | 0 | 0 | 0 |
| TRINITY AQUIFER | BLANCO | COLORADO | FRESH | 332 | 332 | 332 | 332 | 332 | 332 |
| TRINITY AQUIFER | BLANCO | GUADALUPE | FRESH | 0 | 0 | 0 | 0 | 0 | 0 |
| TRINITY AQUIFER | BURNET | BRAZOS | FRESH | 641 | 634 | 641 | 634 | 641 | 634 |
| TRINITY AQUIFER | BURNET | COLORADO | FRESH | 3 | 0 | 3 | 0 | 3 | 0 |
| TRINITY AQUIFER | HAYS | COLORADO | FRESH | 1,223 | 1,220 | 1,219 | 1,219 | 1,219 | 1,219 |
| TRINITY AQUIFER | HAYS | GUADALUPE | FRESH | 9 | 9 | 9 | 9 | 9 | 9 |
| TRINITY AQUIFER | MILLS | BRAZOS | FRESH | 324 | 321 | 324 | 321 | 324 | 321 |

* Salinity field indicates whether the source availability is considered 'fresh' (less than 1,000 mg/L), 'brackish' (1,000 to 10,000 mg/L), 'saline' (10,001 mg/L to 34,999 mg/L), or 'seawater' (35,000 mg/L or greater). Sources can also be labeled as 'fresh/brackish' or 'brackish/saline', if a combination of the salinity types is appropriate.
** Since reservoir sources can exist across multiple counties, the county field value, 'reservoir' is applied to all reservoir sources.

# Region K Source Water Balance (Availability - WUG Supply)

| GROUNDWATER SOURCE TYPE | | | | SOURCE WATER BALANCE (ACRE-FEET PER YEAR) | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| SOURCE NAME | COUNTY | BASIN | SALINITY* | 2020 | 2030 | 2040 | 2050 | 2060 | 2070 |
| TRINITY AQUIFER | MILLS | COLORADO | FRESH | 132 | 128 | 132 | 128 | 132 | 128 |
| TRINITY AQUIFER | TRAVIS | BRAZOS | FRESH | 1 | 1 | 1 | 1 | 1 | 1 |
| TRINITY AQUIFER | TRAVIS | COLORADO | FRESH | 1,864 | 1,849 | 1,864 | 1,849 | 1,864 | 1,849 |
| TRINITY AQUIFER | TRAVIS | COLORADO | FRESH/ BRACKISH | 3,549 | 3,532 | 3,520 | 3,504 | 3,475 | 3,475 |
| TRINITY AQUIFER | TRAVIS | GUADALUPE | FRESH | 2 | 2 | 2 | 2 | 2 | 2 |
| TRINITY AQUIFER | WILLIAMSON | BRAZOS | FRESH | 0 | 0 | 0 | 0 | 0 | 0 |
| TRINITY AQUIFER | WILLIAMSON | COLORADO | FRESH | 32 | 32 | 32 | 32 | 32 | 32 |
| YEGUA-JACKSON AQUIFER | FAYETTE | COLORADO | FRESH | 4,862 | 4,862 | 4,862 | 4,862 | 4,861 | 4,861 |
| YEGUA-JACKSON AQUIFER | FAYETTE | GUADALUPE | FRESH | 481 | 481 | 481 | 481 | 481 | 481 |
| YEGUA-JACKSON AQUIFER | FAYETTE | LAVACA | FRESH | 53 | 122 | 183 | 183 | 183 | 183 |
| | | | **GROUNDWATER SOURCE WATER BALANCE TOTAL** | **89,210** | **89,689** | **87,471** | **87,623** | **86,774** | **86,726** |

| REUSE SOURCE TYPE | | | | SOURCE WATER BALANCE (ACRE-FEET PER YEAR) | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| SOURCE NAME | COUNTY | BASIN | SALINITY* | 2020 | 2030 | 2040 | 2050 | 2060 | 2070 |
| DIRECT REUSE | BURNET | COLORADO | FRESH | 0 | 0 | 0 | 0 | 0 | 0 |
| DIRECT REUSE | HAYS | COLORADO | FRESH | 100 | 1,120 | 1,120 | 1,120 | 1,680 | 1,680 |
| DIRECT REUSE | LLANO | COLORADO | FRESH | 0 | 0 | 0 | 0 | 0 | 0 |
| DIRECT REUSE | TRAVIS | COLORADO | FRESH | 2,789 | 2,789 | 2,789 | 2,789 | 2,789 | 2,789 |
| | | | **REUSE SOURCE WATER BALANCE TOTAL** | **2,889** | **3,909** | **3,909** | **3,909** | **4,469** | **4,469** |

| SURFACE WATER SOURCE TYPE | | | | SOURCE WATER BALANCE (ACRE-FEET PER YEAR) | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| SOURCE NAME | COUNTY | BASIN | SALINITY* | 2020 | 2030 | 2040 | 2050 | 2060 | 2070 |
| BLANCO LAKE/RESERVOIR | RESERVOIR** | GUADALUPE | FRESH | 0 | 0 | 0 | 0 | 0 | 0 |
| BRAZOS LIVESTOCK LOCAL SUPPLY | BASTROP | BRAZOS | FRESH | 0 | 0 | 0 | 0 | 0 | 0 |
| BRAZOS LIVESTOCK LOCAL SUPPLY | BURNET | BRAZOS | FRESH | 186 | 186 | 186 | 186 | 186 | 186 |
| BRAZOS LIVESTOCK LOCAL SUPPLY | MILLS | BRAZOS | FRESH | 0 | 0 | 0 | 0 | 0 | 0 |
| BRAZOS LIVESTOCK LOCAL SUPPLY | WILLIAMSON | BRAZOS | FRESH | 1 | 1 | 1 | 1 | 1 | 1 |
| BRAZOS OTHER LOCAL SUPPLY | BURNET | BRAZOS | FRESH/ BRACKISH | 0 | 0 | 0 | 0 | 0 | 0 |
| BRAZOS-COLORADO LIVESTOCK LOCAL SUPPLY | COLORADO | BRAZOS-COLORADO | FRESH | 164 | 164 | 164 | 164 | 164 | 164 |
| BRAZOS-COLORADO LIVESTOCK LOCAL SUPPLY | MATAGORDA | BRAZOS-COLORADO | FRESH | 335 | 335 | 335 | 335 | 335 | 335 |
| BRAZOS-COLORADO LIVESTOCK LOCAL SUPPLY | WHARTON | BRAZOS-COLORADO | FRESH | 222 | 222 | 222 | 222 | 222 | 222 |
| BRAZOS-COLORADO RUN-OF-RIVER | MATAGORDA | BRAZOS-COLORADO | FRESH | 0 | 0 | 0 | 0 | 0 | 0 |
| BRAZOS-COLORADO RUN-OF-RIVER | WHARTON | BRAZOS-COLORADO | FRESH | 2,432 | 2,432 | 2,432 | 2,432 | 2,432 | 2,432 |
| COLORADO LIVESTOCK LOCAL SUPPLY | BASTROP | COLORADO | FRESH | 0 | 0 | 0 | 0 | 0 | 0 |
| COLORADO LIVESTOCK LOCAL SUPPLY | BLANCO | COLORADO | FRESH | 0 | 0 | 0 | 0 | 0 | 0 |
| COLORADO LIVESTOCK LOCAL SUPPLY | BURNET | COLORADO | FRESH | 0 | 0 | 0 | 0 | 0 | 0 |
| COLORADO LIVESTOCK LOCAL SUPPLY | COLORADO | COLORADO | FRESH | 0 | 0 | 0 | 0 | 0 | 0 |
| COLORADO LIVESTOCK LOCAL SUPPLY | FAYETTE | COLORADO | FRESH | 0 | 0 | 0 | 0 | 0 | 0 |
| COLORADO LIVESTOCK LOCAL SUPPLY | GILLESPIE | COLORADO | FRESH | 0 | 0 | 0 | 0 | 0 | 0 |
| COLORADO LIVESTOCK LOCAL SUPPLY | HAYS | COLORADO | FRESH | 0 | 0 | 0 | 0 | 0 | 0 |

* Salinity field indicates whether the source availability is considered ‘fresh’ (less than 1,000 mg/L), ‘brackish’ (1,000 to 10,000 mg/L), ‘saline’ (10,001 mg/L to 34,999 mg/L), or ‘seawater’ (35,000 mg/L or greater). Sources can also be labeled as ‘fresh/brackish’ or ‘brackish/saline’, if a combination of the salinity types is appropriate.
** Since reservoir sources can exist across multiple counties, the county field value, ‘reservoir’ is applied to all reservoir sources.

# Region K Source Water Balance (Availability - WUG Supply)

| SURFACE WATER SOURCE TYPE | | | | SOURCE WATER BALANCE (ACRE-FEET PER YEAR) | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| **SOURCE NAME** | **COUNTY** | **BASIN** | **SALINITY*** | **2020** | **2030** | **2040** | **2050** | **2060** | **2070** |
| COLORADO LIVESTOCK LOCAL SUPPLY | LLANO | COLORADO | FRESH | 0 | 0 | 0 | 0 | 0 | 0 |
| COLORADO LIVESTOCK LOCAL SUPPLY | MILLS | COLORADO | FRESH | 0 | 0 | 0 | 0 | 0 | 0 |
| COLORADO LIVESTOCK LOCAL SUPPLY | SAN SABA | COLORADO | FRESH | 0 | 0 | 0 | 0 | 0 | 0 |
| COLORADO LIVESTOCK LOCAL SUPPLY | TRAVIS | COLORADO | FRESH | 0 | 0 | 0 | 0 | 0 | 0 |
| COLORADO LIVESTOCK LOCAL SUPPLY | WHARTON | COLORADO | FRESH | 0 | 0 | 0 | 0 | 0 | 0 |
| COLORADO OTHER LOCAL SUPPLY | BASTROP | COLORADO | FRESH | 50 | 51 | 51 | 49 | 49 | 49 |
| COLORADO OTHER LOCAL SUPPLY | GILLESPIE | COLORADO | FRESH | 0 | 0 | 0 | 0 | 0 | 0 |
| COLORADO OTHER LOCAL SUPPLY | TRAVIS | COLORADO | FRESH | 3,315 | 2,709 | 2,055 | 1,443 | 771 | 0 |
| COLORADO RUN-OF-RIVER | BASTROP | COLORADO | FRESH | 786 | 786 | 786 | 786 | 786 | 786 |
| COLORADO RUN-OF-RIVER | BLANCO | COLORADO | FRESH | 67 | 67 | 67 | 67 | 67 | 67 |
| COLORADO RUN-OF-RIVER | BURNET | COLORADO | FRESH | 0 | 0 | 0 | 0 | 0 | 0 |
| COLORADO RUN-OF-RIVER | COLORADO | COLORADO | FRESH | 0 | 0 | 0 | 0 | 0 | 0 |
| COLORADO RUN-OF-RIVER | FAYETTE | COLORADO | FRESH | 0 | 0 | 0 | 0 | 0 | 0 |
| COLORADO RUN-OF-RIVER | GILLESPIE | COLORADO | FRESH | 880 | 880 | 880 | 880 | 880 | 880 |
| COLORADO RUN-OF-RIVER | HAYS | COLORADO | FRESH | 41 | 41 | 41 | 41 | 41 | 41 |
| COLORADO RUN-OF-RIVER | LLANO | COLORADO | FRESH | 440 | 440 | 440 | 440 | 440 | 440 |
| COLORADO RUN-OF-RIVER | MATAGORDA | COLORADO | FRESH | 0 | 0 | 0 | 0 | 0 | 0 |
| COLORADO RUN-OF-RIVER | MILLS | COLORADO | FRESH | 0 | 0 | 0 | 0 | 0 | 0 |
| COLORADO RUN-OF-RIVER | SAN SABA | COLORADO | FRESH | 5,500 | 5,500 | 5,500 | 5,500 | 5,500 | 5,500 |
| COLORADO RUN-OF-RIVER | TRAVIS | COLORADO | FRESH | 756 | 756 | 756 | 756 | 756 | 756 |
| COLORADO RUN-OF-RIVER | WHARTON | COLORADO | FRESH | 0 | 0 | 0 | 0 | 0 | 0 |
| COLORADO-LAVACA LIVESTOCK LOCAL SUPPLY | MATAGORDA | COLORADO-LAVACA | FRESH | 493 | 493 | 493 | 493 | 493 | 493 |
| COLORADO-LAVACA LIVESTOCK LOCAL SUPPLY | WHARTON | COLORADO-LAVACA | FRESH | 6 | 6 | 6 | 6 | 6 | 6 |
| COLORADO-LAVACA RUN-OF-RIVER | MATAGORDA | COLORADO-LAVACA | FRESH | 0 | 0 | 0 | 0 | 0 | 0 |
| GOLDTHWAITE LAKE/RESERVOIR | RESERVOIR** | COLORADO | FRESH | 0 | 0 | 0 | 0 | 0 | 0 |
| GUADALUPE LIVESTOCK LOCAL SUPPLY | BASTROP | GUADALUPE | FRESH | 0 | 0 | 0 | 0 | 0 | 0 |
| GUADALUPE LIVESTOCK LOCAL SUPPLY | BLANCO | GUADALUPE | FRESH | 28 | 28 | 28 | 28 | 28 | 28 |
| GUADALUPE LIVESTOCK LOCAL SUPPLY | FAYETTE | GUADALUPE | FRESH | 0 | 0 | 0 | 0 | 0 | 0 |
| GUADALUPE LIVESTOCK LOCAL SUPPLY | GILLESPIE | GUADALUPE | FRESH | 19 | 19 | 19 | 19 | 19 | 19 |
| GUADALUPE LIVESTOCK LOCAL SUPPLY | TRAVIS | GUADALUPE | FRESH | 6 | 6 | 6 | 6 | 6 | 6 |
| GUADALUPE RUN-OF-RIVER | BLANCO | GUADALUPE | FRESH | 9 | 9 | 9 | 9 | 9 | 9 |
| HIGHLAND LAKES LAKE/RESERVOIR SYSTEM | RESERVOIR** | COLORADO | FRESH | 0 | 0 | 0 | 0 | 0 | 0 |
| LAVACA LIVESTOCK LOCAL SUPPLY | COLORADO | LAVACA | FRESH | 266 | 266 | 266 | 266 | 266 | 266 |
| LAVACA LIVESTOCK LOCAL SUPPLY | FAYETTE | LAVACA | FRESH | 108 | 108 | 108 | 108 | 108 | 108 |
| LAVACA RUN-OF-RIVER | COLORADO | LAVACA | FRESH | 0 | 0 | 0 | 0 | 0 | 0 |
| LAVACA RUN-OF-RIVER | FAYETTE | LAVACA | FRESH | 20 | 20 | 20 | 20 | 20 | 20 |
| LLANO LAKE/RESERVOIR | RESERVOIR** | COLORADO | FRESH | 0 | 0 | 0 | 0 | 0 | 0 |
| LLANO RUN-OF-RIVER | LLANO | COLORADO | FRESH | 0 | 0 | 0 | 0 | 0 | 0 |

* Salinity field indicates whether the source availability is considered 'fresh' (less than 1,000 mg/L), 'brackish' (1,000 to 10,000 mg/L), 'saline' (10,001 mg/L to 34,999 mg/L), or 'seawater' (35,000 mg/L or greater). Sources can also be labeled as 'fresh/brackish' or 'brackish/saline', if a combination of the salinity types is appropriate.

** Since reservoir sources can exist across multiple counties, the county field value, 'reservoir' is applied to all reservoir sources.

## Region K Source Water Balance (Availability - WUG Supply)

| SURFACE WATER SOURCE TYPE | | | | SOURCE WATER BALANCE (ACRE-FEET PER YEAR) | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| **SOURCE NAME** | **COUNTY** | **BASIN** | **SALINITY*** | **2020** | **2030** | **2040** | **2050** | **2060** | **2070** |
| STPNOC LAKE/RESERVOIR | RESERVOIR** | COLORADO | FRESH/ BRACKISH | 0 | 0 | 0 | 0 | 0 | 0 |
| **SURFACE WATER SOURCE WATER BALANCE TOTAL** | | | | **16,130** | **15,525** | **14,871** | **14,257** | **13,585** | **12,814** |

| | | | | | | |
|---|---|---|---|---|---|---|
| **REGION K SOURCE WATER BALANCE TOTAL** | **108,229** | **109,123** | **106,251** | **105,789** | **104,828** | **104,009** |

* Salinity field indicates whether the source availability is considered 'fresh' (less than 1,000 mg/L), 'brackish' (1,000 to 10,000 mg/L), 'saline' (10,001 mg/L to 34,999 mg/L), or 'seawater' (35,000 mg/L or greater). Sources can also be labeled as 'fresh/brackish' or 'brackish/saline', if a combination of the salinity types is appropriate.

** Since reservoir sources can exist across multiple counties, the county field value, 'reservoir' is applied to all reservoir sources.

# *APPENDIX 3D*

# *REGION K WATER MODELING COMMITTEE MEETING MINUTES*

**Lower Colorado Regional Water Planning Group**
**Water Modeling Committee Meeting**
**LCRA Dalchau Service Center, Conference Room A504**
**December 13, 2017**

1. Teresa Lutes called meeting to order at 10:02 a.m.

2. Attendees (21)
   Teresa Lutes – Region K Water Modeling Committee Chair, Municipalities Rep
   Jason Ludwig – Region K, Electric Generating Utilities Rep
   David Wheelock –Region K, River Authority Rep
   Barbara Johnson – Region K, Industries Rep
   Jennifer Walker – Region K, Environmental Rep
   Mike Reagor – Region K, Small Municipalities Rep
   Jim Brasher – Region K, GMA-15 Rep
   David Lindsay – Region K, Recreation Rep (Alternate)
   Jeff Fox – Region K, Municipalities Rep (Alternate)
   David Bradsby –TPWD (Region K non-voting member)
   Lann Bookout – TWDB (Region K non-voting member)
   Jaime Burke – AECOM
   Alicia Smiley – AECOM
   James Kowis – James Kowis Consulting, LLC
   Joe Trungale – Trungale Engineering
   Rebecca Batchelder – LCRA
   Leonard Oliver – LCRA
   Helen Gerlach – Austin Water
   Richard Hoffpauir – Hoffpauir Consulting
   Jordan Furnans – LRE Water, LLC
   Cindy Smiley – Smiley Law Firm

3. Public Comments
   a. Jordan Furnans – LRE Water, LLC
      i. Heard that LCRA might be working on extending the naturalized hydrology data set for the Colorado Basin through 2016, and asked if anyone could confirm.

4. Purpose of Water Modeling Committee
   a. Water Availability
      i. Surface water and groundwater availability modeling issues
         1. In previous cycle, committee covered both surface and groundwater, but previous cycle had limited groundwater modeling due to Modeled Available Groundwater numbers (MAGs) being provided by TWDB, based on submitted Desired Future Conditions (DFCs) from groundwater conservation districts (GCDs) and groundwater management areas (GMAs). Groundwater coordination mainly occurred by reaching

out to Groundwater Conservation Districts for input. Discussion of specifics on methodologies to be used this planning round was tabled for future discussion.
    a. MAGs are being updated and may be available for this round of planning.
2. MAG (Modeled Available Groundwater) Peak Factor is a new TWDB concept that this Committee may want to address or may want to pass to another Committee for 2021 RWP. Using it allows for a range of MAG fluctuation during particularly wet/dry years. This may be similar to a temporary over drafting concept included in some limited situations in past Region K plans.
3. Role of Committee:
    a. Evaluate previous modeling assumptions and recommend changes needed for 2021 Regional Water Plan (RWP).
    b. Review request to TWDB for approval to use alternative modeling assumptions and make recommendations to the Region K Regional Water Planning Group (RWPG).
    c. Review results of modeling and recommend actions to RWPG.
    d. Committee consensus was to have role include review of modeling and availability information for both groundwater and surface water.

b. Water Management Strategies
    i. Role of Committee:
        1. Evaluate previous modeling assumptions and recommend changes needed for 2021 RWP.
        2. Review request to TWDB requesting approval to use alternative modeling assumptions and make recommendations to the RWPG.
        3. Work with Water Management Strategies Committee to evaluate results of strategy modeling.
        4. Committee consensus was to have role include review of modeling related to water management strategies for both groundwater and surface water, where applicable.

5. TWDB Guidelines for Surface Availability Modeling
    a. On December 7, TWDB published proposed revisions to regional water planning rules and proposed revisions to the contractual guidance document *First Amended General Guidelines for Fifth Cycle of Regional Water Plan Development (Exhibit C)* for public comment, due by January 31, 2018. Rules will be in flux during analysis work so we will plan to monitor the process to see if and how any rule changes may affect any technical aspects of modeling.
    b. Reviewed guidelines (Chapter 3: Water Availability and Existing Water Supplies)
        i. Standard model and anticipated sedimentation
        ii. “Firm” availability for reservoirs and run-of-river

iii. Estimation for domestic and livestock use
iv. Standard criteria and assumptions
v. Hydrologic variances

6. Region K Cutoff Model and assumptions from previous cycle
   a. Region K Cutoff Model
      i. James Kowis explained the history of the WAM (Water Availability Model) Cutoff Model. TCEQ WAM Run 3 – the water availability model used by TCEQ and TWDB – is a full basin model that does not include effects of real world operational practices between the upper and lower Colorado River basin. The WAM Cutoff Model, in which all of the water rights located at Lake O.H. Ivie and upstream and at Lake Brownwood and upstream maintain their relative priority order but are all given seniority in the model over water rights downstream, has been used in previous Plan Cycles to better simulate real-world operational practices. During the 2016 Plan Cycle, the Cutoff Model developed during the 2011 Plan cycle was updated and the hydrology of the model was extended from 1940-1998 to 1940-2013.
   b. Combined agenda items 6 and 7 to review 2016 Plan assumptions and determine updates needed simultaneously.
      i. Update Table A – Summary of Region K WAM Modeling Assumptions. Bolded text indicates recommended changes from previous cycle.
         1. Item 1 – Use TCEQ Full-Basin WAM Run 3 without modification for new appropriation water supply strategies analysis
            a. No change.
            b. Joe Trungale asked if LCRA will provide the Cutoff Model for this cycle. David Wheelock confirmed and stated that updated models will be sent to Jaime Burke.
         2. Item 2 – All rights at and above Ivie/Brownwood senior to downstream rights (maintaining relative date priority in rights upstream)
            a. No change.
         3. Item 3 – Use Expanded 1940-2009 naturalized flows [Note that during the course of the last planning cycle the naturalized flows were further extended through 2013]
            a. Revise to “Use Expanded 1940-**2016** Naturalized Flows”
         4. Item 4 – Determine firm yield for Buchanan-Travis Reservoir System
            a. No change.
            b. Discussion of Arbuckle Reservoir (formerly Lane City Reservoir). It will not be included as part of the calculation of the combined firm yield for Lakes Buchanan-Travis, but will be included in the WAM as part of the analysis.
         5. Item 5 – Use sediment-adjusted future reservoir storage by decade
            a. No change.
         6. Item 6 – Use 2010 Water Management Plan environmental flow criteria
            a. Revise to “Use **2015** Water Management Plan Environmental Flow Criteria”

   b. Add an asterisk in Column 1 with a footnote explaining that firm water allocated for environmental purposes is 33,440 AFY (10-year average).
7. Item 7 – Set all water right demands at authorized diversion amounts
   a. No change.
8. Item 8 – Include provisions of LCRA-STP 2006 Settlement Agreement
   a. No change.
9. Item 9 – Include Operating Rules for Lakes Buchanan and Travis to maintain consistent levels of drawdown in the lakes
   a. Revise to "Include Operating Rules for Lakes Buchanan and Travis to **reflect combined firm yield operation**."
   b. David Wheelock offered to answer questions on this recommended change, as needed.
10. Item 10 – Include latest approved LCRA Permits and Amendments
    a. Revise to "Include latest approved LCRA Permits and Amendments **as of December 2017**"
11. Item 11 – Include 2010 Water Management Plan Highland Lakes interruptible water
    a. Revise to "Include **2015** Water Management Plan Highland Lakes Interruptible Water"
12. Item 12 – Adjust 2010 Water Management Plan environmental flow triggers
    a. Revise to "Adjust **2015** Water Management Plan Environmental Flow Triggers (decadal)"
13. Item 13 – Set all Region M&I water right demands at projected future demand amounts by decade
    a. Revise to "Set all Region K **Municipal and Industrial** water right demands at projected future demand amounts by decade"
14. Item 14 – Modify curtailment of Highland Lakes' interruptible water as necessary to satisfy LCRA future firm M&I demands
    a. Revise to "Modify curtailment of Highland Lakes' interruptible water as necessary to satisfy LCRA future firm **Municipal and Industrial** demands."
15. Item 15 – Set LCRA Lower Basin irrigation demands equal to projected future weather-variable demands by decade
    a. Revise to "Set LCRA Lower Basin irrigation demands equal to projected future demands by decade"
    b. "weather-variable" demand was deleted.
16. Item 16 – Include LCRA irrigation return flows to the Colorado River
    a. No change.
    b. Only incorporated into model as a water management strategy.
17. Item 17 – Include return flows from Austin wastewater treatment plants
    a. No change.
    b. Only incorporated into model as a water management strategy.

18. Item 18 – Include other M&I return flows
    a. Revise to "Include other **Municipal and Industrial** return flows."
    b. Only incorporated into model as a water management strategy.
19. Item 19 – Include reuse provisions and environmental flow requirements of LCRA-Austin 2007 Settlement Agreement
    a. No change.
    b. Only incorporated into model as a water management strategy.

ii. Teresa Lutes mentioned that consideration of potential impacts from future climate uncertainty is an area of planning that this committee and the full group will likely want to have some discussion about in this planning cycle. At various times in the past the planning group has had some discussion about ways to approach addressing consideration of this issue. It was briefly discussed that there may be ways through drought planning and water management strategies evaluation part of the process to look at climate uncertainty.

iii. Committee consensus is to review and comment on revisions to assumptions and the hydrologic variance request electronically. Committee will plan to hold another meeting prior to the January 10' 2018 Region K meeting, at 9:00 am, to further review and consider a vote to recommend the revised assumptions and the hydrologic variance request to the full RWPG. The Committee meeting will also include an educational session to help interested RWPG members and the public better understand surface water modeling and the WAM Cutoff Model.

7. Timeline
   a. RWPG to consider a vote on approval of submitting a hydrologic variance request to TWDB at the January 10th full Region K Regional Water Planning Group (RWPG) meeting.
   b. If approved by RWPG, after submittal of hydrologic variance request, TWDB may take up to 60 days to review and approve the request. After receiving TWDB approval, modeling efforts can begin.
   c. LCRA anticipates having extended naturalized hydrology data (through 2016) available for use with the Region K Cutoff Model in the April-May timeframe.
   d. Technical Memorandum that incorporates water availability data into the needs analysis is due September 10, 2018. RWPG will need to review and approve the technical memorandum at a meeting prior to that date.

8. Next meeting
   a. The next Region K Water Modeling Committee will be held on January 10, 2018 at 9:00 AM, prior to the full Region K meeting (to be held at LCRA Dalchau Service Center). The meeting will include an information session about modeling. During the meeting, Water Modeling Committee will consider action to recommend the revised Region K Cutoff Model Modeling Assumptions and the hydrologic variance request to the RWPG for approval and submittal to TWDB.

9. New / Other Business

a. None.

10. Public Comments
    a. No public comments.

11. Teresa Lutes adjourned the meeting at 12:51 p.m.

**Lower Colorado Regional Water Planning Group**
**Water Modeling Committee Meeting**
**AECOM, Oasis Conference Room**
**April 5, 2018**

1. Teresa Lutes called meeting to order at 10:10 a.m.

2. Attendees (23)
   Committee Members:
   Teresa Lutes – Region K Water Modeling Committee Chair, Municipalities Rep
   David Wheelock –Region K, River Authority Rep
   David Lindsay – Region K, Recreation Rep (Alternate)
   Mike Reagor – Region K, Small Municipalities Rep
   John Burke –Region K Chair, Water Utilities Rep
   Doug Powell – Region K, Recreation Rep
   Jason Ludwig – Region K, Electric Utilities Rep
   Jim Brasher – Region K, GMA-12 Rep
   David Bradsby – Region K, TPWD Rep
   Lann Bookout – TWDB

   Additional Attendees:
   Ann McElroy – Region K, Environmental Rep
   Lauri Gillam – Region K, Small Municipalities Rep
   Jaime Burke – AECOM
   Alicia Smiley – AECOM
   Joe Trungale – Trungale Engineering
   Rebecca Batchelder – LCRA
   Leonard Oliver – LCRA
   Stacey Pandey – LCRA
   Helen Gerlach – Austin Water
   Richard Hoffpauir – Hoffpauir Consulting
   Christianne Castleberry – Castleberry Engineering, Region K Water Utilities Alternate
   Mike Keester – LRE Water, LLC
   Cindy Smiley – Smiley Law Firm

3. Public Comments
   a. None.

4. Minutes Approval
   a. Draft of January 10, 2018.
      i. David Lindsay commented on 6.b.; related to RWPG's hydrologic variance request Assumption Item #11 (no interruptible water included in supply analysis, only as a strategy); group decided to discuss later in meeting
      ii. David Wheelock motioned to approve minutes. John Burke seconded. Committee approved minutes.

5. Hydrologic Variance Request Status

a. TWDB approved request on March 28, 2018 to use the Region K Water Availability Model (WAM) Run 3 Cutoff Model.
    i. See attached approval letter.
    ii. Approval means Region K can move forward to supply analysis.
b. Considering interruptible water for supply analysis
    i. Approved variance request only considers interruptible water as a strategy.
        1. David Lindsay requested a discussion on this assumption because water modeling assumes lakes are full at the beginning of a run and the water management plan allows large releases for interruptible use when levels are high.
        2. Discussion of differences between modeling firm yield for supply analysis for regional water planning and LCRA Water Management Plan system operations modeling.

6. Domestic and Livestock Use for Water Supplies and Modeling
    a. Ann McElroy requested a discussion, as she lives on the San Saba River and is concerned about flows in upper basin. Riparian water rights are superior water rights, and permitters/planners do not know who those water rights users are and how much they use for Domestic and Livestock purposes. Riparian water rights pertain to a landowner whose property borders a river has a right to use water from that river on his land.
        i. McElroy requests to reasonably quantify use and availability of riparian rights into the model.
    b. Discussion: Domestic and Livestock use are already included in County-Other projections, although water use from local supplies is difficult to quantify.
        i. Naturalized flows in the modeling account for historic removal and capture of river water by landowners for use, such as domestic and livestock use, on land bordering the river; it's not shown as available to anyone.
        ii. Demand may have grown since naturalized flows have been created, but riparian demand tends to be self-limiting. The broad process of regional water planning may not be suited for capturing those exact numbers. A more local study may be appropriate.
        iii. Naturalized flows through 2013 were included in the 2016 Plan modeling. For the 2021 RWP, naturalized flows will be updated through 2016.
    c. Teresa Lutes suggested considering water management strategies that could help keep the rivers flowing for longer. This is related to uncertainties in the future with new drought-of-record and climate change in the future.

7. Region K Cutoff Model
    a. Sedimentation
        i. David Wheelock – Region K has always used projected sedimentation conditions. The numbers Region K used in the 2016 RWP are based on the 2000-2005 bathymetric survey data. The TWDB survey from 2006-2008 hasn't been incorporated into the model. Wheelock proposes updating the sedimentation dataset with the 2006-2008 survey. The rate of sedimentation would be reduced, resulting in a greater amount of available storage. The next survey

should be performed in the next 1-2 years, and will not be available in time to incorporate into the 2021 RWP.

ii. David Wheelock motioned to update the sedimentation values with 2006-2008 information. Jason Ludwig seconded. Committee passed motion.

b. Arbuckle Reservoir

i. Previously known as Lane City Reservoir, the Arbuckle Reservoir was recommended as a strategy in the 2016 SWP. It is currently under construction, and will be completed in late 2018. The committee had to choose whether to incorporate it as a strategy or as an available supply in the 2021 plan.

ii. David Wheelock motioned to advise the Region K Planning Group to consider the Arbuckle Reservoir as an available supply in the 2021 Plan. Jim Brasher seconded. Committee passed motion.

c. Other Items

i. Joe Trungale would like to get a small group together to discuss the differences between the LCRA WMP model and TCEQ Run 3 modeling for strategies.

ii. Teresa Lutes proposes to discuss planning for droughts worse than the drought-of-record, including sensitivity analyses, as an agenda item at a follow-up meeting.

1. To address future worse drought-of-records, the scope of the committee may need reevaluation.
2. Recommended strategies need to be based off modeling because strategies are a reflection of need/shortage.
3. Ways to address uncertainty include considering additional strategies beyond just meeting the need, and/or moving strategies up a decade from when they are planned to be needed.

d. Timeline

i. The Technical Memorandum with needs analysis is due September 10, 2018.

1. In order to approve the memorandum before the due date, the RWPG may need to adjust Region K meeting date.

ii. Expect updated model from LCRA in late May or early June. AECOM team will began the availability modeling after that.

8. Groundwater Availability

a. Modeled Available Groundwater (MAG) volumes have been updated for several GMAs.

i. See attached handout.

9. New / Other Business

a. None.

10. Next meeting

a. The next meeting will occur in early June. A Doodle poll will be sent out.

11. Public Comments

a. No public comments.

12. Teresa Lutes adjourned at 12:10 p.m.

**Lower Colorado Regional Water Planning Group**
**Water Modeling Committee Meeting**
**LCRA, Redbud Center**
**June 27, 2018**

1. Teresa Lutes called meeting to order at 10:02 a.m.

2. Attendees (31)
   Committee Members:
   Teresa Lutes – Region K Water Modeling Committee Chair, Municipalities Rep
   David Wheelock –Region K, River Authority Rep
   Mike Reagor – Region K, Small Municipalities Rep
   Doug Powell – Region K, Recreation Rep
   Jason Ludwig – Region K, Electric Utilities Rep
   Jim Brasher – Region K, GMA-12 Rep
   Ron Fieseler – Region K, GMA-9 Rep
   Ann McElroy – Region K, Environmental Rep
   David Bradsby – Region K, TPWD Rep
   Lann Bookout – TWDB

   Additional Attendees:
   Jaime Burke – AECOM
   Alicia Smiley – AECOM
   Joe Trungale – Trungale Engineering
   Richard Hoffpauir – Hoffpauir Consulting
   James Kowis – J Kowis Consulting, LLC
   Andrew Austin-Petersen – LCRA
   Lauren Graber – LCRA
   Ron Anderson – LCRA
   Helen Gerlach – Austin Water
   Ross Crow – City of Austin
   Christianne Castleberry – Castleberry Engineering, Region K Water Utilities Alternate
   Cindy Smiley – Smiley Law Firm
   Jo Karr Tedder – CTWC
   Tom Harrison
   Richard Golladay
   Paul King – Rancher, Burnet County
   Norman Johns – National Wildlife Federation
   Dan Roark – PLTA
   Andy McConnell – Sunset Commission
   Danielle Nasr – Sunset Commission
   Mikayla Garrison – Sunset Commission
   Erick Fajardo – Sunset Commission

3. Public Comments

    a. None.

4. Minutes Approval
    a. Draft of April 5, 2018.
        i. David Wheelock requested changes to 6.a. and 6.b.i.
            1. 6.a. Change “Riparian water rights are the most senior water right…” to “Riparian water rights are superior water rights…”
            2. 6.b.i. Add the word ‘historic’ to read, “Naturalized flows in the modeling account for the *historic* removal and capture of river water…”
        ii. David Wheelock motioned to approve minutes. Jim Brasher seconded. Committee approved minutes.

5. Region K Cutoff Model
    a. Background and effort-to-date
        i. Hydrologic variance is approved by TWDB
        ii. LCRA’s consultant developed Cutoff Model with assumptions. Initial numbers need to be entered in Database before technical memorandum is due in September.
    b. Presentation and discussion of initial results
        i. Assumptions incorporated in Cutoff Model
        ii. The new drought of record begins with 10/07. The lowest combined storage in Lakes Buchanan and Travis is reached in 4/15. The hydrologic record ends with 12/16. However, reservoir combined storage does not completely return to full in the last month of the hydrologic record. Use the available data for estimating reservoir firm yield over the new drought of record, 10/07 through 12/16. Additional hydrologic data may be available in the next regional planning period. Full storage is based on reservoir elevation-volume studies for the Highland Lakes.
        iii. Firm yield for Highland Lakes is averaged over drought-of-record.
        iv. Lower sedimentation rate in the Highland Lakes than last cycle based on most recent surveys, completed in 2006 and 2008.
        v. Presentation of preliminary results based on 1950s drought
        vi. Presentation of preliminary results based on recent drought
        vii. Preliminary HL firm yield for new plan compared with 2016 plan: Decrease in firm yield in 2020 (-26,548) due to new drought of record but reduced decrease in storage over time offsets firm yield in 2070 (-343)
        viii. Major Run-of-River Rights
            1. Arbuckle Reservoir is providing an increase in availability for Gulf Coast Sr. water rights.
            2. STP shows more run-of-river water in recent drought than 50s drought.
            3. Overall increase of about 50,000 acre-feet for major run of river water rights as compared to last cycle.
    c. Path forward
        i. Pending update to evaporation file by TCEQ.
        ii. David Wheelock suggests running from full-to-empty reservoir drought period rather than full-to-full. Joe Trungale showed the committee the full-to-empty analysis. The firm yield increased as compared to full-to-full. Committee preferred the more conservative full-to-

full. Can include explanation of both methods and reasons for choosing one over the other in Drought Chapter of 2021 Plan (Ch. 7).

   iii. Teresa Lutes suggests it would be helpful (over time) to consider a more conservative model where reservoirs do not empty all the way (safe yield approach). This would be in future cycles.
   iv. Teresa Lutes asked about the use pattern assumption used for LCRA's lower basin water rights in the preliminary numbers shown at the meeting. The monthly demand pattern was changed from a multi-use pattern, as was used in the last Region K planning round, to an industrial pattern. The group discussed this and it was decided to have the consultant run the WAM with the multi-use pattern for consistency with the last planning round. Making a change to the pattern had not been previously discussed or sought in the hydrologic variance. The group decided to hold a Water Modeling Committee meeting briefly before the July 11th meeting to review the water availability estimates with the multi-use pattern, which are anticipated to be more conservative. The committee will plan to review the new numbers at the meeting and consider making a recommendation to the full Region K group.

d. Ann McElroy asked how much water is lost to Region F from subordination. David Wheelock responded that 90,000 acre-feet is the estimated effect of the subordination on the Highland Lakes firm yield, based on a legal agreement between CRMWD and LCRA. TCEQ uses the full-basin model for permitting purposes. Teresa replied Cutoff Model is more reflective of conservative planning due to contractual commitments.

6. City of Austin hydrologic conditions presentation – Richard Hoffpauir
   a. COA has been working on a 100-year integrated water resources plan in a process called Water Forward. The plan will be updated every five years. The presentation's purpose is to provide an overview of the hydrologic modeling for COA's plan and food-for-thought for Region K.
   b. Teresa Lutes: In future meetings, Water Modeling Committee can discuss how ideas from COA's studies could be integrated into Region K process.

7. Modeled Available Groundwater (MAG) Peak Factor
   a. MAG peak factor can be used this cycle to expand groundwater availability during times of drought, if able to show that less is used during wetter periods and Desired Future Condition is not exceeded.
   b. Discussion is postponed to next meeting.

8. New / Other Business
   a. None.

9. Next meeting
   a. July 11, 2018 – Proposed times
      i. Prior to Region K meeting ~ 9:30 am – Water Modeling Committee Meeting
         1. Committee Chair Teresa Lutes will not be at meeting – Helen Gerlach will act as alternate.
         2. Review new numbers and approve to recommend to Region for inclusion in Tech Memo.

10. Public Comments

   a. Jo Karr Tedder asked that if there are low inflows, does the RWPG adjust the WAM to adjust for changes in the watershed? Looking at the historical averages, how do we end up with more stored water in 2070?
      i. Lann Bookout responded, saying that modeling incorporates additional years of data as able.
      ii. Combined storage still decreases over time, but is greater than last cycle due to the updated sedimentation rates.
   b. Tom Harrison commented that small impoundments keep water from flowing downstream. The RWPG should make the effort to ensure those and alluvial wells are accurately tracked.
   c. Cindy Smiley asked when the draft of Technical Memorandum comes out for review.
      i. The draft Technical Memorandum is scheduled to come out on August 22. There is a 14-day comment period.
      ii. The RWPG meeting is scheduled for August 29.

11. Teresa Lutes adjourned at 12:12 p.m.

**Lower Colorado Regional Water Planning Group**
**Water Modeling Committee Meeting**
**LCRA, Dalchau Service Center, A503**
**July 11, 2018**

1. Mike Reagor called meeting to order at 9:45 a.m.

2. Attendees (25)
   Committee Members:
   Mike Reagor – Region K Water Modeling Committee Chair Alternate, Small Municipalities Rep
   Helen Gerlach – Region K, Municipalities Rep (Alternate)
   David Wheelock –Region K, River Authority Rep
   Doug Powell – Region K, Recreation Rep
   Jason Ludwig – Region K, Electric Utilities Rep
   Jim Brasher – Region K, GMA-12 Rep
   David Bradsby – Region K, TPWD Rep
   David Lindsay – Region K, Recreation Rep (Alternate)
   Ron Fieseler – Region K, GMA-9 Rep
   Ann McElroy – Region K, Environmental Rep
   Lann Bookout – TWDB

   Additional Attendees:
   Jaime Burke – AECOM
   Alicia Smiley – AECOM
   Donna Klaeger – Region K, Counties Rep
   Joe Trungale – Trungale Engineering
   Rebecca Batchelder – LCRA
   Ross Crow – City of Austin
   Richard Hoffpauir – Hoffpauir Consulting
   Christianne Castleberry – Castleberry Engineering, Region K Water Utilities Alternate
   James Kowis – James Kowis Consulting, LLC
   Cindy Smiley – Smiley Law Firm
   Jordan Furnans – LRE Water, LLC
   Emily Brannen – LRE Water, LLC
   Paul King – Rancher, Burnet County
   John Q. Barnard – TWDB

3. Public Comments
   a. None.

4. Minutes Approval
   a. Draft of June 27, 2018.
      i. Ann McElroy requested addition to 5.d.
         1. Add, "*90,000 AF is the estimated effect of the subordination on the Highland Lakes firm yield, based on a legal agreement between CRMWD and LCRA. TCEQ uses full-basin model for permitting purposes*."
      ii. Donna Klaeger requested changes to 5.b.iv.

1. Rephrase to read, "*Lower sedimentation rate* in the Highland Lakes than last cycle *based on most recent surveys, completed in 2006 and 2008.*"

iii. Teresa Lutes provided changes to 5.b.ii, 5.c.iv., and 6.a.

1. Rephrase 5.b.ii to read, "*The new drought of record begins with 10/07. The lowest combined storage in Lakes Buchanan and Travis is reached in 4/15. The hydrologic record ends with 12/16. However, reservoir combined storage does not completely return to full in the last month of the hydrologic record. Use the available data for estimating reservoir firm yield over the new drought of record, 10/07 through 12/16. Additional hydrologic data may be available in the next regional planning period. Full storage is based on reservoir elevation-volume studies for the Highland Lakes.*"
2. Add 5.c.iv, "*Teresa Lutes asked about the use pattern assumption used for LCRA's lower basin water rights in the preliminary numbers shown at the meeting. The monthly demand pattern was changed from a multi-use pattern, as was used in the last Region K planning round, to an industrial pattern. The group discussed this and it was decided to have the consultant run the WAM with the multi-use pattern for consistency with the last planning round. Making a change to the pattern had not been previously discussed or sought in the hydrologic variance. The group decided to hold a Water Modeling Committee meeting briefly before the July 11th meeting to review the water availability estimates with the multi-use pattern, which are anticipated to be more conservative. The committee will plan to review the new numbers at the meeting and consider making a recommendation to the full Region K group.*"
3. Rephrase 6.a to read, "*COA has been working on a 100-year integrated water resources plan in a process called Water Forward. The plan will be updated every five years. The presentation's purpose is to provide an overview of the hydrologic modeling for COA's plan and food-for-thought for Region K.*"

iv. Mike Reagor motioned to approve minutes. Committee approved minutes.

5. Region K Cutoff Model
    a. Joe Trungale incorporated two (2) changes to the Region K Cutoff Model since June 27, 2018 meeting:
        i. Incorporated most recent evaporation file available from TCEQ
            1. Change had no effect on Cutoff Model results for Region K
        ii. Changed lower basin water rights from industrial pattern use to multi-use pattern
            1. The resulting numbers were more conservative for Highland Lakes, but made more water available for run-of-river
    b. Sedimentation discussion.
        i. The numbers Region K used in the 2016 RWP are based on the 2000-2005 bathymetric survey data. The most recent TWDB survey from 2006-2008 was

incorporated into the model for the 2021 RWP. The rate of sedimentation is reduced, resulting in a greater amount of available storage.

   ii. Donna Klaeger mentioned concern that the surveys did not include sedimentation that may have occurred after the 2007 flood, but the 2006-2008 survey is the best information to-date.

c. Ann McElroy asked for definition of the environmental commitments as a component of the Highland Lakes firm yield.
   i. Region K Cutoff Model results identified the water available for contract holder use and environmental releases. Environmental releases include commitments to release water from the lakes for environmental purposes such as instream flows and bay and estuary inflows. More information can be found in LCRA's Water Management Plan.

d. David Lindsay presented information related to recent inflows and their comparison to historical inflows.
   i. Chart prepared by Dr. Bill McNeese shows last 10 years of inflows to the Highland Lakes are much lower than the average historical inflows.
   ii. TWDB report prepared by Kennedy Resource Company discusses four potential activities that may have had impacts on the recent inflows: noxious brush, small reservoirs, groundwater declines, and historical temperature changes and drought conditions.
   iii. Discussion regarding low inflows and the potential impacts to the water availability modeling.

e. David Wheelock motioned to recommend initial surface water availability numbers using multi-use pattern to RWPG for inclusion in the September 2018 Technical Memorandum. Ron Fieseler seconded. Committee passed motion.

6. Public Comments
   a. None.

7. Mike Reagor adjourned at 10:21 a.m.

**Lower Colorado Regional Water Planning Group**
**Water Modeling Committee Meeting**
**AECOM, Barton Springs Conference Room**
**October 23, 2019**

1. Teresa Lutes called meeting to order at 1:06 p.m.

2. Attendees (13)
   Committee Members:
   Teresa Lutes – Region K Water Modeling Committee Chair, Municipalities Rep
   David Wheelock – Region K, River Authority Rep
   Doug Powell – Region K, Recreation Rep
   Jason Ludwig – Region K, Electric Utilities Rep
   David Bradsby – Region K, TPWD Rep
   Jim Luther – Region K, Burnet County Rep
   Ann McElroy – Region K, Environmental Rep

   Additional Attendees:
   Jaime Burke – AECOM
   Alicia Smiley – AECOM
   Joe Trungale – Trungale Engineering
   Richard Hoffpauir – Hoffpauir Consulting
   Rebecca Batchelder – LCRA
   Leonard Oliver – LCRA

3. Public Comments
   a. None.

4. Minutes Approval
   a. Draft of July 11, 2018.
      i. Doug Powell motioned to approve minutes. David Wheelock seconded. Committee approved minutes.

5. Region K Draft Chapter 3 Comments
   a. Committee reviewed comments submitted by LCRA.
      i. 3.2.1.1.2.2 – Table 3.2 – The original availability for STPNOC (71,030 ac-ft/yr) was shown as the run-of-river volume averaged over Region K's drought of record (2008-2016) plus the LCRA backup for that time period (~19,000 ac-ft/yr). LCRA expressed concern that the firm yield for STPNOC's reservoir is defined by the 1950s drought, not the new drought, and that by using the new drought, the RWPG is overestimating the amount of water available. Consultant performed a new firm yield analysis on STPNOC's reservoir; firm yield was run with hydrology through 2016 while the defining drought was in the 1950s. Jason Ludwig confirmed that the new availability of 66,260 ac-ft/yr is representative.

Although the new firm yield analysis resulted in a supply resulting in a water shortage, the committee agreed to proceed with new methodology.

ii. Section 3.2.1.1.2.2 – Ann McElroy expressed concern that Goldthwaite was discussed in Chapter 3. Jaime Burke explained the reservoirs listed are existing, not proposed, reservoirs; proposed reservoirs are included in Chapter 5.

iii. Section 3.2.1.1.2.2 – David Wheelock wanted to know why the Llano Reservoir availability of 271 ac-ft isn't included in Table 3.2. Jaime Burke responded that it is considered run-of-river right rather than a reservoir; consultant will add an asterisk noting Llano's availability as a run-of-river right.

iv. Section 3.2.1.1.2.3 – Table 3.3

1. Teresa Lutes and Richard Hoffpauir requested hiding water rights where there are blanks in the diversion column, as it simplifies presentation and does not affect other tables.
2. Teresa Lutes commented that in future cycles, the authorization for 21,403 ac-ft/yr should be 22,403 ac-ft/yr. A temporary 1,000 ac-ft authorization to be used for irrigation has since become a permanent authorization for multiple uses. Consultant will add a footnote clarifying this information.

v. David Wheelock requested that all aquifer availability tables indicate whether or not the availability is based on the Modeled Available Groundwater (MAG).

b. Committee reviewed comments submitted by David Lindsay in an August 15, 2019 email.

i. Section 3.2.1 – Added text to bullet point noting that firm yield calculation does not provide for any reserve during a Drought of Record determination.

ii. Section 3.2.1.1.2.1 – LCRA provided real-time language edits to better describe the status and operations of the water in the Highland Lakes System.

iii. Section 3.2.1.1.2.2 – Suggested edit to change text to reflect that the new Arbuckle Reservoir is not yet operational due to a leaking problem will not be changed as the Arbuckle expected to be in operations by the end of 2020.

iv. Section 3.2.3 – Given that the region recently experienced a new Drought of Record, and run-of-river is linked to the lowest historical flows, Lindsay expressed concern to see that Table 3.24 showed an increase of 40,000 for Gulf Coast in the run-of-river category and 25,000 for STP Nuclear. Committee discussed methodology of sources and noted that STP may change.

6. Region K Cutoff Model

a. Joe Trungale presented the hydrologic variance modeling assumptions used to create the Region K Cutoff Model.

b. After the hydrologic variance is applied, the Highland Lakes go dry during the most recent Drought of Record (DOR). Triggers within this model needed adjustment to ensure interruptible water isn't provided before the Highland Lakes go dry.

i. Trungale changed triggers for automatic transitions to extraordinary drought using look-ahead logic, which cuts off interruptible water. In this situation, 2060 is highest demand decade, and the Highland Lakes go dry for a month with no interruptible water.

1. Committee discussed how model should be reported in the RWP. Last cycle, it was presented as an average over the DOR.
2. David Wheelock asked if model included run-of-river. Trungale responded that this is just the backup water from Highland Lakes – this is for Lakes Buchanan and Travis interruptible stored water.
3. Trungale highlighted implications of model regarding environmental flows and water available for irrigation. Committee discussed impacts of strategies other than return flows. The model baseline is needed to quantify strategy benefit/yield.
    a. David Wheelock said the environmental benefit baseline should include return flows. Teresa Lutes disagreed, as it could create an invalid environmental analysis. Richard Hoffpauir suggested two runs.
    b. Environmental impacts will be reported cumulatively not by individual strategy. Committee may need to meet again to discuss environmental impacts or pass responsibility over to strategy committee once strategies are adopted.

7. Public Comments
    a. None.

8. Teresa Lutes adjourned at 3:05 p.m.

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## APPENDICES

# CHAPTER 4.0: IDENTIFICATION OF WATER NEEDS

## 4.1 IDENTIFICATION OF WATER NEEDS

The comparison of water demands for each water user group (WUG) to the water supplies available to each WUG within the Lower Colorado Regional Water Planning Area (LCRWPA) is a simple mathematical comparison of the estimates developed in *Chapters 2* and *3* of this report. This comparison was completed and summarized in two different ways. First, a comparison of water demands and supplies was completed on a county-by-county basis. Second, a comparison of the water demands and supplies for the three designated major water providers within the LCRWPA was also completed.

Region-wide, the comparison of available water supplies and water demands identified 50 WUGs that have projected water supply shortages, or “needs,” by the year 2040, and an additional 20 WUGs with projected water supply shortages before the year 2070. **Note that throughout this chapter, the word “need” is consistently used to indicate a water supply shortage.** The estimated water need is approximately 288,000 acre-feet per year (ac-ft/yr) in 2040 and 321,000 ac-ft/yr in 2070. This identified shortage is based on conservative water availability estimates, which assume (1) only water that is available during a repeat of the historical drought of record (DOR), (2) that all water rights in the basin are being fully and simultaneously utilized, (3) excludes both water available from the Lower Colorado River Authority (LCRA) on an interruptible basis and water projected to potentially be available, for planning purposes, as a result of return flows to the Colorado River, and (4) groundwater availability is limited to the modeled available groundwater (MAG) based on desired future conditions (DFC). Based upon the assumptions above, water needs have been identified in five of the six water use categories. *Figure 4.1* contains an illustration of the distribution, by use category, of the number of WUGs with identified water needs in the years 2040 and 2070. *Figure 4.2* contains an illustration of the magnitude of the identified needs, by use category, for the years 2040 and 2070.

**Figure 4.1: Number of WUGs With Identified Water Needs in the LCRWPA**

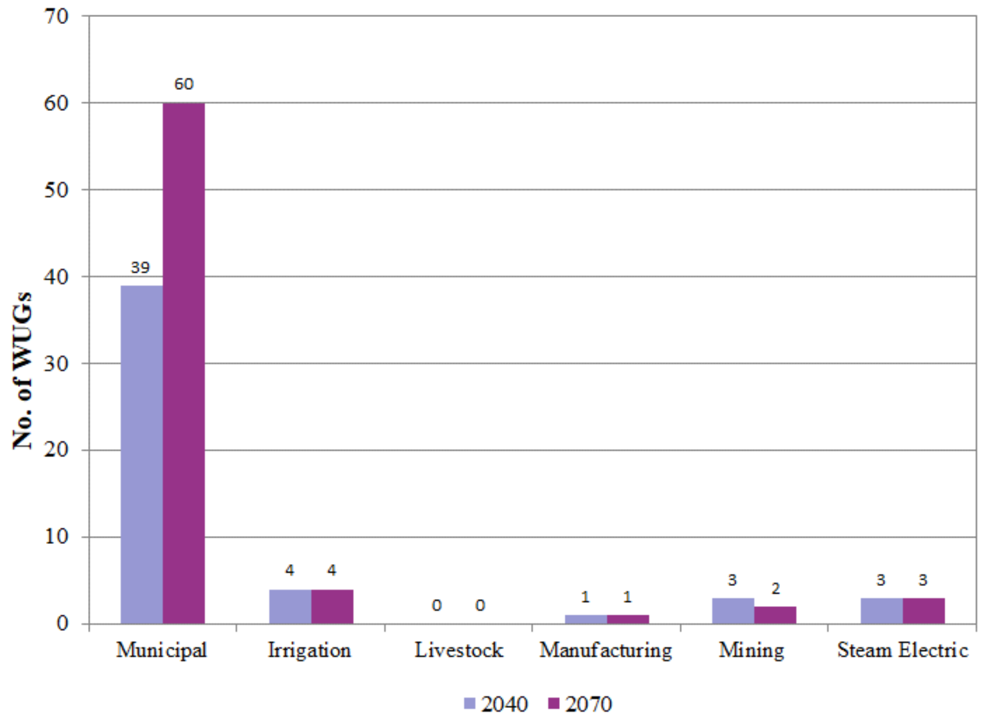
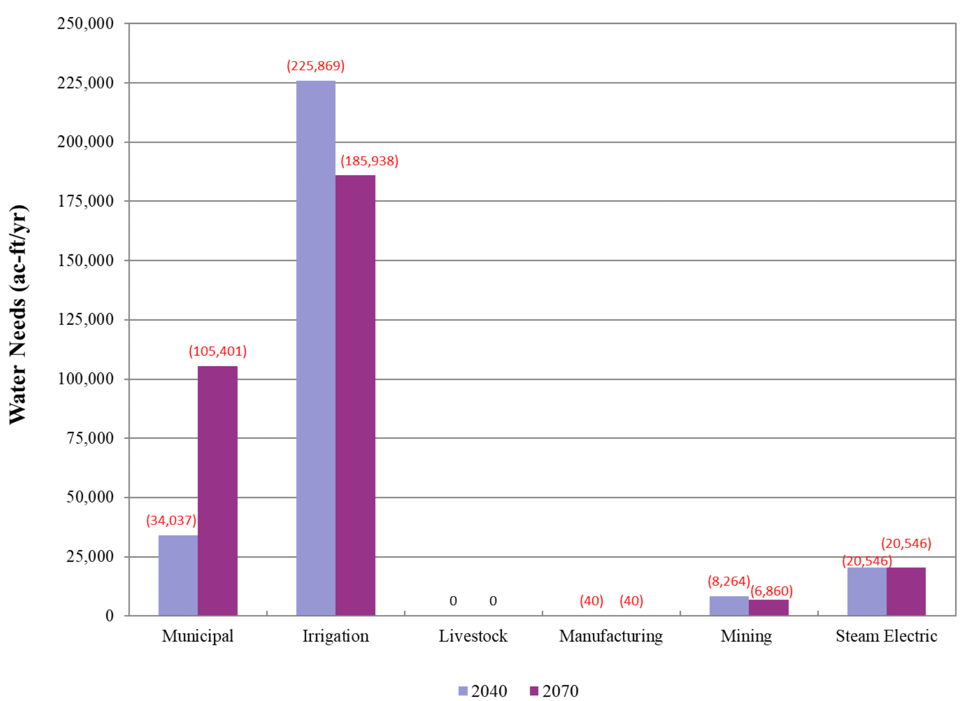



**Figure 4.2: Identified Amount of Water Needs in the LCRWPA**



The majority of the identified water supply shortages fall into two main categories. The first shortage is associated with rice irrigation demands in the lower three counties of Colorado, Matagorda, and Wharton. It is estimated that irrigators in these three counties would experience a water supply shortage of approximately 253,000 ac-ft/yr under the existing demand conditions (year 2020 scenario), should a repeat of the driest year during the DOR occur. This shortage is estimated to decrease to 224,000 ac-ft/yr in 2040 (11 percent decrease) and to 184,000 ac-ft/yr in 2070 (27 percent decrease) due to projected declining rice irrigation acreage.

These estimated shortfalls are based on the available supply determined in *Chapter 3*. In accordance with Texas Water Development Board (TWDB) rules, the available supply of water for irrigation was estimated based on the available run-of-river (ROR) water rights and groundwater supplies in the area. The interruptible supply of water provided by the LCRA and return flows were not considered in these calculations. Interruptible water and return flows are considered as water management strategies and discussed in *Chapter 5*.

The second category of major identified shortages includes municipal WUGs that purchase water from one of the three major water providers within the LCRWPA - the LCRA, Austin (Austin Water), and West Travis County Public Utility Agency (WTCPUA). The renewal of these current major water contracts is assumed and shown as a continued supply, while amendments to these contracts to increase supply will be considered as a water management strategy. However, Austin's current policy is that much of its water currently being supplied under contract to wholesale customers may need to be provided under new contracts with LCRA as Austin wholesale customer contracts, identified in *Table 3.29*, reach their expiration or renewal dates. Austin is planning to continue to treat and transport this water from the supply source to the wholesale customer.

LCRA is the largest water supplier for the Lower Colorado Region. Austin and WTCPUA also supply a major portion of the municipal needs. LCRA holds water rights to use up to about 2.1 million acre-feet per year (ac-ft/yr) of water and provides water to approximately 125 entities under long-term contracts for municipal, industrial, irrigation, recreational, and other purposes. LCRA also provides water to about 4,000 domestic lakeside contract holders and to environmental uses.

## 4.2 COUNTY SUMMARIES OF WATER NEEDS

The following sections provide summaries of the needs identified for each county within the LCRWPA. The tables presented in these sections provide a listing of individual WUGs with identified water supply needs (negative numbers in the tables indicate a water supply shortage). Following the information for the individual WUGs with water supply needs is a summation of the total needs identified within the county. This information is also included in the TWDB online database, DB22.

The TWDB DB22 report entitled *WUG Needs Report*, can be found in *Appendix 4A*.

### 4.2.1 Bastrop County

The primary sources of water for Bastrop County are the Carrizo-Wilcox and Queen City aquifers. Surface water supplies power generation and irrigation from the Highland Lakes. Local surface water supplies are available to irrigation and livestock users. In 2020, municipal water needs is about 33% of the total water needs in Bastrop County and mining accounts for approximately 67% of the total needs, while in 2070, municipal water needs accounts for 100% of water needs. A summary of the estimated water shortages identified for Bastrop County is presented in *Table 4.1*.

**Table 4.1: Bastrop County Water Supply Needs (ac-ft/yr)**

| Water User Group Name | 2020 Needs | 2030 Needs | 2040 Needs | 2050 Needs | 2060 Needs | 2070 Needs |
|---|---|---|---|---|---|---|
| AQUA WSC | (224) | (2,788) | (5,698) | (9,228) | (16,703) | (26,087) |
| BASTROP | 0 | 0 | (832) | (2,045) | (3,700) | (5,902) |
| BASTROP COUNTY WCID 2 | 0 | 0 | 0 | 0 | (442) | (1,178) |
| COUNTY-OTHER | 0 | 0 | 0 | 0 | 0 | 0 |
| CREEDMOOR-MAHA WSC | 0 | 0 | 0 | 0 | 0 | 0 |
| ELGIN | 0 | 0 | 0 | (534) | (1,545) | (2,853) |
| LEE COUNTY WSC [1] | 0 | 0 | 0 | 0 | 0 | 0 |
| POLONIA WSC [2] | 0 | 0 | 0 | 0 | 0 | 0 |
| SMITHVILLE | 0 | 0 | 0 | 0 | (503) | (1,348) |
| IRRIGATION | 0 | 0 | 0 | 0 | 0 | 0 |
| LIVESTOCK | 0 | 0 | 0 | 0 | 0 | 0 |
| MANUFACTURING | 0 | 0 | 0 | 0 | 0 | 0 |
| MINING | (451) | (4,190) | (4,865) | (3,453) | 0 | 0 |
| STEAM-ELECTRIC | 0 | 0 | 0 | 0 | 0 | 0 |
| **BASTROP COUNTY TOTAL NEEDS** | **(675)** | **(6,978)** | **(11,395)** | **(15,260)** | **(22,893)** | **(37,368)** |

[1] Primary region for this WUG is Region G. Please refer to the Region G Plan for additional information.

[2] Primary region for this WUG is Region L. Please refer to the Region L Plan for additional information.

### 4.2.2 Blanco County

Groundwater is available to users in Blanco County from the Edwards-Trinity-Plateau, Ellenburger-San Saba, Trinity, Marble Falls, and Hickory aquifers. Surface water supplies in the county are available from the City of Blanco's reservoirs and other local supplies. Municipal water needs account for all of the total water needs in Blanco County. A summary of the estimated water shortages identified for Blanco County is presented in *Table 4.2*.

**Table 4.2: Blanco County Water Supply Needs (ac-ft/yr)**

| Water User Group Name | 2020 Needs | 2030 Needs | 2040 Needs | 2050 Needs | 2060 Needs | 2070 Needs |
|---|---|---|---|---|---|---|
| BLANCO | 0 | 0 | 0 | 0 | 0 | 0 |
| CANYON LAKE WATER SERVICE [1] | 0 | 0 | 0 | 0 | 0 | (2) |
| COUNTY-OTHER | 0 | 0 | 0 | 0 | 0 | 0 |
| JOHNSON CITY | 0 | (11) | (43) | (60) | (73) | (80) |
| IRRIGATION | 0 | 0 | 0 | 0 | 0 | 0 |
| LIVESTOCK | 0 | 0 | 0 | 0 | 0 | 0 |
| MANUFACTURING | 0 | 0 | 0 | 0 | 0 | 0 |
| MINING | 0 | 0 | 0 | 0 | 0 | 0 |
| STEAM-ELECTRIC | 0 | 0 | 0 | 0 | 0 | 0 |
| **BLANCO COUNTY TOTAL NEEDS** | **0** | **(11)** | **(43)** | **(60)** | **(73)** | **(82)** |

[1] Primary region for this WUG is Region L. Please refer to the Region L Plan for additional information.

### 4.2.3 Burnet County

Groundwater is available to users in Burnet County from the Ellenburger-San Saba, Trinity, Marble Falls, and Hickory aquifers. Surface water supplies in the county are available from the Highland Lakes through contracts with the LCRA and other local supplies. Mining water needs account for 58 to 70% of total water needs in Burnet County, with municipal water needs accounting for the remaining water needs. A summary of the estimated water shortages identified for Burnet County is presented in *Table 4.3*.

**Table 4.3: Burnet County Water Supply Needs (ac-ft/yr)**

| Water User Group Name | 2020 Needs | 2030 Needs | 2040 Needs | 2050 Needs | 2060 Needs | 2070 Needs |
|---|---|---|---|---|---|---|
| BERTRAM | (60) | (141) | (211) | (279) | (340) | (394) |
| BURNET | 0 | 0 | 0 | 0 | 0 | 0 |
| CORIX UTILITIES TEXAS INC. [1] | 0 | 0 | 0 | 0 | 0 | 0 |
| COTTONWOOD SHORES | 0 | 0 | 0 | 0 | 0 | 0 |
| COUNTY-OTHER | 0 | 0 | 0 | 0 | (49) | (162) |
| GEORGETOWN [1] | 0 | 0 | 0 | 0 | 0 | 0 |
| GRANITE SHOALS | 0 | 0 | 0 | 0 | (47) | (222) |
| HORSESHOE BAY | (67) | (286) | (471) | (647) | (804) | (940) |
| KEMPNER WSC [1] | 0 | 0 | 0 | 0 | 0 | 0 |
| KINGSLAND WSC | 0 | 0 | 0 | 0 | 0 | 0 |
| MARBLE FALLS | 0 | 0 | (204) | (981) | (1,504) | (1,766) |
| MEADOWLAKES | (285) | (276) | (271) | (269) | (268) | (268) |
| IRRIGATION | 0 | 0 | 0 | 0 | 0 | 0 |
| LIVESTOCK | 0 | 0 | 0 | 0 | 0 | 0 |
| MANUFACTURING | 0 | 0 | 0 | 0 | 0 | 0 |
| MINING | (935) | (1,626) | (2,352) | (3,124) | (4,132) | (5,281) |
| STEAM-ELECTRIC | 0 | 0 | 0 | 0 | 0 | 0 |
| **BURNET COUNTY TOTAL NEEDS** | **(1,347)** | **(2,329)** | **(3,509)** | **(5,300)** | **(7,144)** | **(9,033)** |

[1] Primary region for this WUG is Region G. Please refer to the Region G Plan for additional information.

### 4.2.4 Colorado County

The primary source of groundwater in Colorado County is the Gulf Coast aquifer. Surface water supplies are available from LCRA's water rights, presently being used within LCRA's Lakeside and Garwood Irrigation Divisions, as well as surface water rights owned by others. Irrigation water needs in Colorado County represent 99% of the true water needs in the county, with the municipal needs making up the remaining water needs. For the steam electric needs shown in Colorado County, based on information provided by the Colorado County Groundwater Conservation District, the demand projections the needs are based on are not accurate. One steam electric facility has no plan for construction, and the other facility has no consumptive use. Therefore, no supplies were allocated to the demands, and the resulting needs are not a true water shortage. A summary of the estimated water shortages identified for Colorado County is presented in *Table 4.4*.

**Table 4.4: Colorado County Water Supply Needs* (ac-ft/yr)**

| Water User Group Name | 2020 Needs | 2030 Needs | 2040 Needs | 2050 Needs | 2060 Needs | 2070 Needs |
|---|---|---|---|---|---|---|
| COLUMBUS | 0 | 0 | 0 | 0 | 0 | 0 |
| CORIX UTILITIES TEXAS INC. [1] | (7) | (8) | (8) | (10) | (11) | (13) |
| COUNTY-OTHER | (92) | (98) | (100) | (128) | (161) | (195) |
| EAGLE LAKE | 0 | 0 | 0 | 0 | 0 | 0 |
| WEIMAR | 0 | 0 | 0 | 0 | 0 | 0 |
| IRRIGATION | (54,318) | (49,661) | (45,130) | (40,720) | (36,429) | (32,254) |
| LIVESTOCK | 0 | 0 | 0 | 0 | 0 | 0 |
| MANUFACTURING | 0 | 0 | 0 | 0 | 0 | 0 |
| MINING | 0 | 0 | 0 | 0 | 0 | 0 |
| STEAM-ELECTRIC | (4,971) | (4,971) | (4,971) | (4,971) | (4,971) | (4,971) |
| **COLORADO COUNTY TOTAL NEEDS** | **(59,388)** | **(54,738)** | **(50,209)** | **(45,829)** | **(41,572)** | **(37,433)** |

[1] Primary region for this WUG is Region G. Please refer to the Region G Plan for additional information.
*The steam electric water needs shown in this table are not true water needs. See *Section 4.2.4* for additional information.

### 4.2.5 Fayette County

Groundwater supplies in Fayette County are available from the Carrizo-Wilcox, Gulf Coast, Sparta, and Yegua-Jackson aquifers. Surface water is available for steam electric generation through the LCRA and Austin, and other local supply sources are available for livestock and irrigation. Currently in year 2020, mining water needs account for about 16% of total water needs in the Fayette County, but this need drops near zero by year 2040. The water needs for steam electric generation accounts for 78 to 85% of total water needs in the county. The estimated water shortages identified for Fayette are presented in *Table 4.5*.

**Table 4.5: Fayette County Water Supply Needs (ac-ft/yr)**

| Water User Group Name | 2020 Needs | 2030 Needs | 2040 Needs | 2050 Needs | 2060 Needs | 2070 Needs |
|---|---|---|---|---|---|---|
| AQUA WSC | 0 | 0 | 0 | 0 | 0 | 0 |
| COUNTY-OTHER | (435) | (562) | (633) | (696) | (750) | (789) |
| FAYETTE COUNTY WCID MONUMENT HILL | 0 | 0 | 0 | 0 | 0 | 0 |
| FAYETTE WSC | 0 | 0 | 0 | 0 | 0 | 0 |
| FLATONIA | 0 | 0 | 0 | 0 | 0 | 0 |
| LA GRANGE | 0 | 0 | 0 | 0 | 0 | 0 |
| LEE COUNTY WSC [1] | 0 | 0 | 0 | 0 | 0 | 0 |
| SCHULENBURG | 0 | 0 | 0 | (45) | (86) | (118) |
| WEST END WSC [2] | 0 | 0 | 0 | 0 | 0 | 0 |
| IRRIGATION | 0 | 0 | 0 | 0 | 0 | 0 |
| LIVESTOCK | 0 | 0 | 0 | 0 | 0 | 0 |
| MANUFACTURING | 0 | (40) | (40) | (40) | (40) | (40) |
| MINING | (760) | (360) | 0 | 0 | 0 | 0 |
| STEAM ELECTRIC POWER [3] | (4,299) | (4,299) | (4,299) | (4,299) | (4,299) | (4,299) |
| **FAYETTE COUNTY TOTAL NEEDS** | **(5,494)** | **(5,261)** | **(4,972)** | **(5,080)** | **(5,175)** | **(5,246)** |

[1] Primary region for this WUG is Region G. Please refer to the Region G Plan for additional information.
[2] Primary region for this WUG is Region H. Please refer to the Region H Plan for additional information.
[3] Steam-electric needs shown are overall for the County, which take into consideration surpluses for LCRA. Please refer to *Table 4.19* for steam-electric needs specifically related to the City of Austin.

### 4.2.6 Gillespie County

Groundwater supplies in Gillespie County are available from the Ellenburger-San Saba Aquifer, the Hickory Aquifer, and the "Edwards-Trinity Plateau, Pecos Valley, and Trinity" Aquifer, although the Pecos Valley portion is not located in Gillespie County. Surface water is supplied from LCRA and locally owned water rights. There are no water shortages expected for any of the WUGs in Gillespie County within the LCRWPA.

### 4.2.7 Hays County

Groundwater supplies in Hays County are available from the Edwards-Balcones Fault Zone (BFZ) and Trinity aquifers. Surface water is available from the Highland Lakes System, Austin ROR rights, and other local supply sources. Additionally, some WUGs use sources that are outside of the region. After 2030, municipal need represents over 68 percent of the total needs in the county and represents the majority of supply shortages identified for Hays County, as presented in *Table 4.6*.

**Table 4.6: Hays County Water Supply Needs (ac-ft/yr)**

| Water User Group Name | 2020 Needs | 2030 Needs | 2040 Needs | 2050 Needs | 2060 Needs | 2070 Needs |
|---|---|---|---|---|---|---|
| AUSTIN | 0 | 0 | 0 | 0 | 0 | 0 |
| BUDA | 0 | 0 | (440) | (1,724) | (3,180) | (4,839) |
| CIMARRON PARK WATER | 0 | 0 | 0 | 0 | 0 | 0 |
| COUNTY-OTHER | 0 | 0 | 0 | 0 | 0 | (801) |
| DEER CREEK RANCH WATER | 0 | 0 | 0 | 0 | 0 | 0 |
| DRIPPING SPRINGS WSC | 0 | (533) | (1,446) | (2,621) | (4,059) | (4,819) |
| GOFORTH SUD [1] | (60) | (113) | (168) | (232) | (308) | (393) |
| HAYS | 0 | (55) | (114) | (168) | (255) | (353) |
| HAYS COUNTY WCID 1 | 0 | 0 | 0 | 0 | (80) | (80) |
| HAYS COUNTY WCID 2 | 0 | 0 | 0 | 0 | (4) | (160) |
| WEST TRAVIS COUNTY PUBLIC UTILITY AGENCY | 0 | (963) | (1,646) | (3,084) | (4,524) | (5,966) |
| IRRIGATION | 0 | 0 | 0 | 0 | 0 | 0 |
| LIVESTOCK | 0 | 0 | 0 | 0 | 0 | 0 |
| MANUFACTURING | 0 | 0 | 0 | 0 | 0 | 0 |
| MINING | (531) | (761) | (1,047) | (1,131) | (1,340) | (1,579) |
| STEAM ELECTRIC POWER | 0 | 0 | 0 | 0 | 0 | 0 |
| **HAYS COUNTY TOTAL NEEDS** | **(591)** | **(2,425)** | **(4,861)** | **(8,960)** | **(13,750)** | **(18,990)** |

[1] Primary region for this WUG is Region L. Please refer to the Region L Plan for additional information.

### 4.2.8 Llano County

Groundwater supplies in Llano County are available from the Hickory and Ellenburger-San Saba aquifers. Surface water is available from the City of Llano Reservoir, the Highland Lakes, and local sources. Municipal needs account for all of total needs in the county and all of the identified water supply shortage. A summary of the estimated water shortages identified for Llano County is presented in *Table 4.7*.

**Table 4.7: Llano County Water Supply Needs (ac-ft/yr)**

| Water User Group Name | 2020 Needs | 2030 Needs | 2040 Needs | 2050 Needs | 2060 Needs | 2070 Needs |
|---|---|---|---|---|---|---|
| CORIX UTILITIES TEXAS INC. [1] | 0 | 0 | 0 | 0 | 0 | 0 |
| COUNTY-OTHER | 0 | 0 | 0 | 0 | 0 | 0 |
| HORSESHOE BAY | 0 | 0 | 0 | 0 | 0 | 0 |
| KINGSLAND WSC | 0 | 0 | 0 | 0 | 0 | 0 |
| LLANO | (591) | (620) | (606) | (584) | (612) | (642) |
| SUNRISE BEACH VILLAGE | 0 | 0 | 0 | 0 | 0 | 0 |
| IRRIGATION | 0 | 0 | 0 | 0 | 0 | 0 |
| LIVESTOCK | 0 | 0 | 0 | 0 | 0 | 0 |
| MANUFACTURING | 0 | 0 | 0 | 0 | 0 | 0 |
| MINING | 0 | 0 | 0 | 0 | 0 | 0 |
| STEAM ELECTRIC POWER | 0 | 0 | 0 | 0 | 0 | 0 |
| **LLANO COUNTY TOTAL NEEDS** | **(591)** | **(620)** | **(606)** | **(584)** | **(612)** | **(642)** |

[1] Primary region for this WUG is Region G. Please refer to the Region G Plan for additional information.

### 4.2.9 Matagorda County

The primary source of groundwater in Matagorda County is the Gulf Coast aquifer. Surface water supplies are available from LCRA's water rights, presently being used within LCRA's Gulf Coast Irrigation Division, the STPNOC reservoir, as well as LCRA water contracts for other industrial needs and water rights owned by others. Irrigation water needs in Matagorda County represent just over 90 percent of the water need in the county with steam electric generation accounting for most of the remainder of the water needs. A summary of the estimated water shortages identified for Matagorda County is presented in *Table 4.8*.

**Table 4.8: Matagorda County Water Supply Needs (ac-ft/yr)**

| Water User Group Name | 2020 Needs | 2030 Needs | 2040 Needs | 2050 Needs | 2060 Needs | 2070 Needs |
|---|---|---|---|---|---|---|
| BAY CITY | (4) | (57) | (73) | (119) | (162) | (198) |
| CANEY CREEK MUD OF MATAGORDA COUNTY | 0 | 0 | 0 | 0 | 0 | 0 |
| CORIX UTILITIES TEXAS INC. [1] | 0 | 0 | 0 | 0 | 0 | 0 |
| COUNTY-OTHER | 0 | 0 | 0 | 0 | 0 | 0 |
| MATAGORDA COUNTY WCID 6 | 0 | 0 | 0 | 0 | 0 | 0 |
| MATAGORDA WASTE DISPOSAL & WSC | 0 | 0 | 0 | 0 | 0 | 0 |
| PALACIOS | 0 | 0 | 0 | 0 | 0 | 0 |
| IRRIGATION | (123,222) | (118,068) | (113,053) | (108,173) | (103,424) | (98,803) |
| LIVESTOCK | 0 | 0 | 0 | 0 | 0 | 0 |
| MANUFACTURING | 0 | 0 | 0 | 0 | 0 | 0 |
| MINING | 0 | 0 | 0 | 0 | 0 | 0 |
| STEAM ELECTRIC POWER | (11,276) | (11,276) | (11,276) | (11,276) | (11,276) | (11,276) |
| **MATAGORDA COUNTY TOTAL NEEDS** | **(134,502)** | **(129,401)** | **(124,402)** | **(119,568)** | **(114,862)** | **(110,277)** |

[1] Primary region for this WUG is Region G. Please refer to the Region G Plan for additional information.

### 4.2.10 Mills County

Groundwater supplies in Mills County are available from the Ellenburger-San Saba and Trinity aquifers. The majority of surface water supplies are available through local supply sources. Irrigation needs in Mills County represent over 99 percent of the water needs in the county with the remainder of the demand being municipal need. A summary of the estimated water shortages identified for Mills County is presented in *Table 4.9*.

**Table 4.9: Mills County Water Supply Needs (ac-ft/yr)**

| Water User Group Name | 2020 Needs | 2030 Needs | 2040 Needs | 2050 Needs | 2060 Needs | 2070 Needs |
|---|---|---|---|---|---|---|
| BROOKESMITH SUD [1] | 0 | 0 | 0 | 0 | (1) | (1) |
| CORIX UTILITIES TEXAS INC [2] | 0 | 0 | 0 | 0 | 0 | 0 |
| COUNTY-OTHER | 0 | 0 | 0 | 0 | 0 | 0 |
| GOLDTHWAITE | 0 | 0 | 0 | 0 | (1) | (18) |
| ZEPHYR WSC [1] | 0 | 0 | 0 | 0 | 0 | 0 |
| IRRIGATION | (1,737) | (1,737) | (1,737) | (1,737) | (1,737) | (1,737) |
| LIVESTOCK | 0 | 0 | 0 | 0 | 0 | 0 |
| MANUFACTURING | 0 | 0 | 0 | 0 | 0 | 0 |
| MINING | 0 | 0 | 0 | 0 | 0 | 0 |
| STEAM ELECTRIC POWER | 0 | 0 | 0 | 0 | 0 | 0 |
| **MILLS COUNTY TOTAL NEEDS** | **(1,737)** | **(1,737)** | **(1,737)** | **(1,737)** | **(1,739)** | **(1,756)** |

[1] Primary region for this WUG is Region F. Please refer to the Region F Plan for additional information.

[2] Primary region for this WUG is Region G. Please refer to the Region G Plan for additional information.

### 4.2.11 San Saba County

Groundwater supplies in San Saba County are available from the Ellenburger-San Saba, Marble Falls, and Hickory aquifers. Small amounts of surface water supplies are available from the Highland Lakes and local sources. There are no water shortages expected for any of the WUGs in San Saba County.

### 4.2.12 Travis County

Groundwater supplies in Travis County are available from the Edwards-BFZ, and Trinity aquifers. Surface water is available through the LCRA and COA ROR water rights and local sources. Municipal needs account for all of total water needs in the county. A summary of the estimated water shortages identified for Travis County is presented in *Table 4.10*.

**Table 4.10: Travis County Water Supply Needs (ac-ft/yr)**

| Water User Group Name | 2020 Needs | 2030 Needs | 2040 Needs | 2050 Needs | 2060 Needs | 2070 Needs |
|---|---|---|---|---|---|---|
| AQUA WSC | 0 | 0 | 0 | 0 | 0 | 0 |
| AUSTIN | 0 | 0 | 0 | 0 | 0 | (8,770) |
| BARTON CREEK WEST WSC | 0 | 0 | 0 | 0 | 0 | 0 |
| BARTON CREEK WSC | (217) | (312) | (402) | (469) | (523) | (586) |
| BRIARCLIFF | 0 | 0 | 0 | (25) | (66) | (104) |
| CEDAR PARK [1] | (613) | (813) | (732) | (662) | (660) | (659) |
| COTTONWOOD CREEK MUD 1 | 0 | 0 | 0 | 0 | 0 | 0 |
| COUNTY-OTHER | 0 | 0 | 0 | 0 | 0 | 0 |
| COUNTY-OTHER (AQUA TEXAS - RIVERCREST) | 0 | 0 | 0 | 0 | 0 | 0 |
| CREEDMOOR-MAHA WSC | 0 | 0 | (448) | (552) | (656) | (757) |
| CYPRESS RANCH WCID 1 | 0 | 0 | 0 | 0 | 0 | 0 |
| DEER CREEK RANCH WATER | 0 | 0 | 0 | 0 | 0 | 0 |
| ELGIN | 0 | 0 | 0 | 0 | 0 | 0 |
| GARFIELD WSC | 0 | 0 | 0 | (21) | (41) | (63) |
| GOFORTH SUD [2] | (4) | (6) | (10) | (15) | (20) | (26) |
| HORNSBY BEND UTILITY | 0 | 0 | 0 | 0 | 0 | 0 |
| HURST CREEK MUD | (12) | (3) | 0 | 0 | 0 | 0 |
| JONESTOWN WSC | 0 | 0 | 0 | (37) | (78) | (116) |
| KELLY LANE WCID 1 | 0 | 0 | 0 | 0 | 0 | 0 |
| LAGO VISTA | 0 | 0 | 0 | 0 | 0 | 0 |
| LAKEWAY MUD | 0 | 0 | 0 | (97) | (143) | (142) |
| LEANDER [1] | (317) | (1,866) | (2,009) | (2,684) | (2,967) | (3,281) |
| LOOP 360 WSC | 0 | (18) | (68) | (113) | (157) | (236) |
| MANOR | 0 | 0 | 0 | 0 | 0 | 0 |
| MANVILLE WSC | 0 | 0 | 0 | 0 | (476) | (1,696) |
| NORTH AUSTIN MUD 1 | 0 | 0 | (76) | (75) | (75) | (75) |
| NORTHTOWN MUD | 0 | 0 | (947) | (1,066) | (1,171) | (1,268) |
| OAK SHORES WATER SYSTEM | 0 | 0 | 0 | 0 | 0 | 0 |
| PFLUGERVILLE | 0 | (790) | (3,589) | (6,376) | (9,203) | (9,220) |
| ROLLINGWOOD | 0 | 0 | (375) | (374) | (375) | (377) |
| ROUGH HOLLOW IN TRAVIS COUNTY | 0 | 0 | 0 | 0 | 0 | 0 |
| ROUND ROCK [1] | 0 | 0 | 0 | 0 | 0 | 0 |
| SENNA HILLS MUD | (16) | (89) | (160) | (212) | (255) | (304) |
| SHADY HOLLOW MUD | 0 | 0 | 0 | 0 | 0 | 0 |
| SUNSET VALLEY | 0 | 0 | (443) | (519) | (609) | (713) |
| SWEETWATER COMMUNITY | 0 | 0 | 0 | 0 | 0 | 0 |
| TRAVIS COUNTY MUD 10 | 0 | 0 | (3) | (12) | (19) | (28) |
| TRAVIS COUNTY MUD 14 | 0 | 0 | 0 | (14) | (30) | (49) |

[1] Primary region for this WUG is Region G. Please refer to the Region G Plan for additional information.
[2] Primary region for this WUG is Region L. Please refer to the Region L Plan for additional information.

**Table 4.10: Travis County Water Supply Needs (ac-ft/yr) (Continued)**

| Water User Group Name | 2020 Needs | 2030 Needs | 2040 Needs | 2050 Needs | 2060 Needs | 2070 Needs |
|---|---|---|---|---|---|---|
| TRAVIS COUNTY MUD 2 | 0 | 0 | 0 | 0 | 0 | 0 |
| TRAVIS COUNTY MUD 4 | 0 | 0 | 0 | 0 | 0 | 0 |
| TRAVIS COUNTY WCID 10 | (139) | (442) | (4,094) | (4,433) | (4,739) | (5,026) |
| TRAVIS COUNTY WCID 17 | 0 | (48) | (1,011) | (1,181) | (1,474) | (1,836) |
| TRAVIS COUNTY WCID 18 | 0 | 0 | 0 | (99) | (243) | (379) |
| TRAVIS COUNTY WCID 19 | 0 | 0 | 0 | 0 | 0 | 0 |
| TRAVIS COUNTY WCID 20 | 0 | 0 | 0 | 0 | 0 | 0 |
| TRAVIS COUNTY WCID POINT VENTURE | 0 | (37) | (93) | (171) | (260) | (339) |
| WELLS BRANCH MUD | 0 | 0 | (1,321) | (1,303) | (1,298) | (1,297) |
| WEST TRAVIS COUNTY PUBLIC UTILITY AGENCY | (1,784) | (2,443) | (3,011) | (3,910) | (4,484) | (5,000) |
| WILLIAMSON COUNTY WSID 3 [1] | 0 | 0 | 0 | 0 | 0 | 0 |
| WILLIAMSON TRAVIS COUNTIES MUD 1 [1] | 0 | 0 | 0 | 0 | 0 | 0 |
| WINDERMERE UTILITY | 0 | 0 | (1,462) | (1,446) | (1,441) | (1,440) |
| IRRIGATION | 0 | 0 | 0 | 0 | 0 | 0 |
| LIVESTOCK | 0 | 0 | 0 | 0 | 0 | 0 |
| MANUFACTURING | 0 | 0 | 0 | 0 | 0 | 0 |
| MINING | 0 | 0 | 0 | 0 | 0 | 0 |
| STEAM ELECTRIC POWER | 0 | 0 | 0 | 0 | 0 | 0 |
| **TRAVIS COUNTY TOTAL NEEDS** | **(3,102)** | **(6,867)** | **(20,254)** | **(25,866)** | **(31,463)** | **(43,787)** |

[1] Primary region for this WUG is Region G. Please refer to the Region G Plan for additional information.
[2] Primary region for this WUG is Region L. Please refer to the Region L Plan for additional information.

### 4.2.13 Wharton County

The primary source of groundwater in Wharton County is the Gulf Coast aquifer. Surface water supplies are available from LCRA's water rights, presently being used within LCRA's Lakeside and Garwood Irrigation Divisions and by Pierce Ranch. In addition, surface water is available from water rights owned by others. Irrigation need in Wharton County represent over 99 percent of the water needs in the county with municipal need accounting for the remaining water needs. A summary of the estimated water shortages identified for Wharton County is presented in *Table 4.11*.

**Table 4.11: Wharton County Water Supply Needs (ac-ft/yr)**

| Water User Group Name | 2020 Needs | 2030 Needs | 2040 Needs | 2050 Needs | 2060 Needs | 2070 Needs |
|---|---|---|---|---|---|---|
| BOLING MWD | 0 | 0 | 0 | 0 | 0 | 0 |
| COUNTY-OTHER | 0 | 0 | (17) | (61) | (100) | (155) |
| EL CAMPO [1] | 0 | 0 | 0 | 0 | 0 | 0 |
| WHARTON | 0 | 0 | 0 | 0 | (30) | (87) |
| WHARTON COUNTY WCID 2 | 0 | 0 | 0 | 0 | 0 | 0 |
| IRRIGATION | (75,087) | (70,456) | (65,949) | (61,563) | (57,296) | (53,144) |
| LIVESTOCK | 0 | 0 | 0 | 0 | 0 | 0 |
| MANUFACTURING | 0 | 0 | 0 | 0 | 0 | 0 |
| MINING | 0 | 0 | 0 | 0 | 0 | 0 |
| STEAM ELECTRIC POWER | 0 | 0 | 0 | 0 | 0 | 0 |
| **WHARTON COUNTY TOTAL NEEDS** | **(75,087)** | **(70,456)** | **(65,966)** | **(61,624)** | **(57,426)** | **(53,386)** |

[1] Primary region for this WUG is Region P. Please refer to the Region P Plan for additional information.

### 4.2.14 Williamson County

Groundwater supplies in Williamson County are available from the Trinity and Edwards-BFZ aquifers. Surface water is available through Austin and LCRA. Municipal needs account for all of total needs in the county and all of the identified water supply shortage. A summary of the estimated water shortages identified for Williamson County is presented in *Table 4.12*.

**Table 4.12: Williamson County Water Supply Needs (ac-ft/yr)**

| Water User Group Name | 2020 Needs | 2030 Needs | 2040 Needs | 2050 Needs | 2060 Needs | 2070 Needs |
|---|---|---|---|---|---|---|
| AUSTIN | 0 | 0 | 0 | 0 | 0 | 0 |
| COUNTY-OTHER | 0 | 0 | 0 | 0 | 0 | 0 |
| NORTH AUSTIN MUD 1 | 0 | 0 | (726) | (714) | (711) | (711) |
| WELLS BRANCH MUD | 0 | 0 | (76) | (75) | (74) | (74) |
| IRRIGATION | 0 | 0 | 0 | 0 | 0 | 0 |
| LIVESTOCK | 0 | 0 | 0 | 0 | 0 | 0 |
| MANUFACTURING | 0 | 0 | 0 | 0 | 0 | 0 |
| MINING | 0 | 0 | 0 | 0 | 0 | 0 |
| STEAM ELECTRIC POWER | 0 | 0 | 0 | 0 | 0 | 0 |
| **WILLIAMSON COUNTY TOTAL NEEDS** | **0** | **0** | **(802)** | **(789)** | **(785)** | **(785)** |

### 4.2.15 County-Wide Surpluses

As part of the 2021 regional water planning process, areas with water supply surpluses were identified as well as areas with water supply needs. This analysis was conducted by comparing the county-wide estimated water supplies with the county-wide estimated water demands. It is important to note that although a particular county may have a county-wide water supply surplus, individual WUGs within that county may have water supply needs because they do not have access to the surplus water. *Table 4.13* contains a summary of the water supply conditions within each county. It is also important to note that the regional totals shown in *Table 4.13* are less than the water supply needs identified in *Figure 4.2* due to surpluses in some counties. The fact that the regional totals show water supply needs despite considering the surpluses in some counties indicates that additional strategies must be developed to meet all of the needs in the LCRWPA. Simply moving surplus water from one area to another will not be sufficient to meet the needs of all WUGs in the LCRWPA. Additionally, movement of surplus water can be very costly and requires the consent of the entity with the surplus.

**Table 4.13: County and Regional Water Supply Condition Summary (surplus/deficit, ac-ft/yr)**

| County [1] | 2020 | 2030 | 2040 | 2050 | 2060 | 2070 |
|---|---|---|---|---|---|---|
| Bastrop | 2,382 | (5,011) | (9,892) | (14,099) | (20,275) | (34,757) |
| Blanco | 1,847 | 1,582 | 1,430 | 1,351 | 1,292 | 1,256 |
| Burnet | 9,373 | 6,221 | 3,138 | 478 | (2,032) | (4,382) |
| Colorado | (57,518) | (53,142) | (48,700) | (44,463) | (40,355) | (36,365) |
| Fayette | (3,404) | (3,495) | (3,318) | (3,065) | (2,752) | (2,947) |
| Gillespie | 2,995 | 2,714 | 2,493 | 2,187 | 1,872 | 1,559 |
| Hays | 4,944 | 1,626 | (1,993) | (6,550) | (11,710) | (17,025) |
| Llano | 3,726 | 3,581 | 3,671 | 3,719 | 3,658 | 3,603 |
| Matagorda | (117,988) | (113,625) | (108,596) | (103,757) | (99,063) | (94,491) |
| Mills | (869) | (870) | (870) | (892) | (920) | (954) |
| San Saba | 1,098 | 1,035 | 1,194 | 1,272 | 1,272 | 1,257 |
| Travis | 152,232 | 109,536 | 69,174 | 36,924 | 8,954 | (23,590) |
| Wharton | (73,553) | (68,603) | (63,731) | (59,048) | (54,495) | (50,065) |
| Williamson | 31 | 2 | (796) | (779) | (771) | (767) |
| **Regional Totals [2]** | **(74,704)** | **(118,449)** | **(156,796)** | **(186,722)** | **(215,325)** | **(257,668)** |

[1] Overall County Surplus/Deficit = Countywide Water Supply – Countywide Water Demand
[2] Overall Regional Surplus/Deficit = Summation of County Surplus/Deficit

By comparison, *Table 4.14* shows all of the water supply needs by county in Region K if the surpluses are not taken into account. Region K is tasked with developing water management strategies to meet all of these needs. One potential strategy is to identify the WUGs with surpluses and determine if it is possible for this surplus water to meet the needs of WUGs with shortages.

**Table 4.14: County and Regional Water Supply Condition Summary Excluding Surpluses (deficit, ac-ft/yr)**

| County [1] | 2020 | 2030 | 2040 | 2050 | 2060 | 2070 |
|---|---|---|---|---|---|---|
| Bastrop | (675) | (6,978) | (11,395) | (15,260) | (22,893) | (37,368) |
| Blanco | 0 | (11) | (43) | (60) | (73) | (82) |
| Burnet | (1,347) | (2,329) | (3,509) | (5,300) | (7,144) | (9,033) |
| Colorado | (59,388) | (54,738) | (50,209) | (45,829) | (41,572) | (37,433) |
| Fayette | (5,494) | (5,261) | (4,972) | (5,080) | (5,175) | (5,246) |
| Gillespie | 0 | 0 | 0 | 0 | 0 | 0 |
| Hays | (591) | (2,425) | (4,861) | (8,960) | (13,750) | (18,990) |
| Llano | (591) | (620) | (606) | (584) | (612) | (642) |
| Matagorda | (134,502) | (129,401) | (124,402) | (119,568) | (114,862) | (110,277) |
| Mills | (1,737) | (1,737) | (1,737) | (1,737) | (1,739) | (1,756) |
| San Saba | 0 | 0 | 0 | 0 | 0 | 0 |
| Travis | (3,102) | (6,867) | (20,254) | (25,866) | (31,463) | (43,787) |
| Wharton | (75,087) | (70,456) | (65,966) | (61,624) | (57,426) | (53,386) |
| Williamson | 0 | 0 | (802) | (789) | (785) | (785) |
| **Regional Totals [2]** | **(282,514)** | **(280,823)** | **(288,756)** | **(290,657)** | **(297,494)** | **(318,785)** |

[1] Overall County Deficit
[2] Overall Regional Deficit = Summation of County Deficit

## 4.3 MAJOR WATER PROVIDER NEEDS

As previously discussed, the LCRA, Austin, and WTCPUA have been identified as major water providers within the LCRWPA. The following sections present a comparison of the water supplies for these three entities and their water supply commitments.

### 4.3.1 Lower Colorado River Authority

The LCRA has three sources for its water. These sources include the Highland Lakes System and ROR water rights in the lower portion of the basin. The LCRA also has developed groundwater in Bastrop County. The LCRA has commitments to provide water to individual users and cities throughout the LCRWPA. In addition, the LCRA uses water at its electric generating facilities. LCRA also provides water for agricultural irrigation and environmental needs of the river and bay according to the LCRA Water Management Plan. *Table 4.15* contains a comparison of LCRA's firm water supplies and water commitments. Firm water is water that can be supplied readily through a repeat of the driest conditions on record. *Table 4.16* contains a comparison of LCRA's irrigation water supplies and projected irrigation demands. Irrigation supplies are considered "interruptible," rather than firm.

**Table 4.15: LCRA Firm Water Supply/Commitment Comparison (ac-ft/yr)**

| LCRA Firm Water | 2020 | 2030 | 2040 | 2050 | 2060 | 2070 |
|---|---|---|---|---|---|---|
| LCRA Firm Water Supply | 401,369 | 401,579 | 401,325 | 401,807 | 400,744 | 399,862 |
| LCRA Firm Water Commitments | 391,758 | 391,753 | 391,748 | 391,743 | 391,738 | 391,735 |
| **Water Surplus/Need** | **9,611** | **9,827** | **9,578** | **10,064** | **9,007** | **8,127** |

Note: Firm water is water that can be supplied readily through a repeat of the driest conditions on record. The water supply is based on the total in *Table 3.25* minus the portions of the irrigation division water rights that are identified as agricultural water. The firm water commitments are detailed in *Tables 2.23* and *3.26*. Commitments include the out-of-basin 25,000 ac-ft/yr demand from Region G in Williamson County under the HB 1437 program and other current, separate out-of-region commitments (Leander, Cedar Park, and others). Environmental commitments are not included in this table as part of the firm water commitments and are not one of the six water uses planned for in the regional planning process.

**Table 4.16: LCRA Irrigation Water Supply and Projected Demands[1] Comparison (ac-ft/yr)**

| LCRA Irrigation Water | 2020 | 2030 | 2040 | 2050 | 2060 | 2070 |
|---|---|---|---|---|---|---|
| LCRA Irrigation Water Supply | 137,580 | 137,580 | 137,580 | 137,580 | 137,580 | 137,580 |
| LCRA Projected Irrigation Division Demands (Region K) | 406,001 | 394,649 | 383,603 | 372,853 | 362,393 | 352,215 |
| LCRA Projected Irrigation Division Demands (Region P) | 16,000 | 16,000 | 16,000 | 16,000 | 16,000 | 16,000 |
| **Water Surplus/Need** | **(284,421)** | **(273,069)** | **(262,023)** | **(251,273)** | **(240,813)** | **(230,635)** |

Note: The water supply is based on the portions of the irrigation division water rights in *Table 3.25* that are identified as agricultural water. The irrigation water projected demands are detailed in Tables *2.24* and *3.27*.

As shown in *Table 4.15*, LCRA has sufficient water supply to meet all of its current firm water commitments under the assumptions being used in this plan through 2070. Regarding irrigation, as shown in *Table 4.16*, LCRA does not have sufficient water supply during a drought-of-record to meet all projected surface water irrigation demands. This analysis does not include interruptible water supplies projected to be available over the planning horizon through the implementation of the Water Management Plan (WMP) or projected return flows. A summary LCRA's needs by categories of use is shown in *Table 4.17*.

[1] The irrigation water commitments discussed here reflect the projected demands within LCRA's Irrigation Divisions and Pierce Ranch which are currently being met by LCRA's ROR water rights and supplemental interruptible stored water from lakes Buchanan and Travis in accordance with LCRA's Water Management Plan on an annual contract basis.

**Table 4.17: LCRA Needs by Category of Use (ac-ft/yr)**

| LCRA Customers | 2020 | 2030 | 2040 | 2050 | 2060 | 2070 |
|---|---|---|---|---|---|---|
| Livestock | 0 | 0 | 0 | 0 | 0 | 0 |
| Irrigation | (284,421) | (273,069) | (262,023) | (251,273) | (240,813) | (230,635) |
| Manufacturing | 0 | 0 | 0 | 0 | 0 | 0 |
| Mining | 0 | 0 | 0 | 0 | 0 | 0 |
| Municipal | 0 | 0 | 0 | 0 | 0 | 0 |
| Steam Electric | 0 | 0 | 0 | 0 | 0 | 0 |

Note: LCRA does not sell to Livestock or Mining WUGs.

### 4.3.2 Austin

Austin (Austin Water) currently has two major sources for its surface water. These sources include their run-of-river water rights and a contract with LCRA to receive firm water from any source under the LCRA water rights system. A minor source of water is reclaimed water from direct reuse. The Austin water rights contain separate authorizations for municipal and manufacturing uses and steam electric power generation. *Tables 4.18* and *4.19* contain comparisons of Austin's water supplies to its projected water demands and commitments for these main use types.

**Table 4.18: Austin Municipal and Manufacturing Water Supply/Projected Demand and Commitment Comparison (ac-ft/yr)**

| Austin Municipal/Manufacturing Water | 2020 | 2030 | 2040 | 2050 | 2060 | 2070 |
|---|---|---|---|---|---|---|
| Municipal and Manufacturing Water Supply | 329,571 | 329,571 | 329,571 | 329,571 | 329,571 | 329,571 |
| Municipal and Manufacturing Projected Demands and Commitments | 207,978 | 241,584 | 263,420 | 289,008 | 310,260 | 338,341 |
| **Water Surplus/Need** | **121,593** | **87,987** | **66,151** | **40,563** | **19,311** | **(8,770)** |

Note: The water supply is detailed in *Table 3.28*. The projected water demands and commitments are detailed in *Tables 2.19* and *3.29.* Note that it is anticipated that some current Austin wholesale customers will be transferring to new LCRA raw water contracts in the future. Austin will continue to treat and transport their potable water supplies.

Based on the information developed through the regional water plan analysis process, this table indicates that Austin has sufficient water to meet its municipal and manufacturing needs through the year 2060. By the year 2070, it is anticipated that Austin will have a deficit of approximately 9,000 ac-ft/yr.

**Table 4.19: Austin Steam Electric Water Supply/Projected Demand Comparison (ac-ft/yr)**

| Austin Steam Electric Water | 2020 | 2030 | 2040 | 2050 | 2060 | 2070 |
|---|---|---|---|---|---|---|
| Travis County - Steam Electric Water Supply | 20,296 | 20,296 | 20,296 | 20,296 | 20,296 | 20,296 |
| Travis County - Steam Electric Projected Water Demands | 10,253 | 10,253 | 10,253 | 10,253 | 10,253 | 10,253 |
| **Travis County Water Surplus/Need** | **10,043** | **10,043** | **10,043** | **10,043** | **10,043** | **10,043** |
| Fayette County - Steam Electric Water Supply | 7,412 | 7,412 | 7,412 | 7,412 | 7,412 | 7,412 |
| Fayette County - Steam Electric Projected Water Demands | 10,300 | 10,300 | 10,300 | 10,300 | 10,300 | 10,300 |
| **Fayette County Water Surplus/Need** | **(2,888)** | **(2,888)** | **(2,888)** | **(2,888)** | **(2,888)** | **(2,888)** |

Note: The water supply is detailed in *Table 3.28*. The Decker and Town Lake water supplies in Table 3.28 are associated with the Travis County water demands. The FPP water supplies in Table 3.28 are associated with the Fayette County water demands. The projected water demands are detailed in *Tables 2.20* and *3.29*.

This table indicates that by the year 2020, it is anticipated that Austin will have approximately a 2,900 ac-ft/yr deficit in the steam-electric category of use in Fayette County. A summary Austin's needs by categories of use is shown in *Table 4.20*.

**Table 4.20: Austin Needs by Category of Use (ac-ft/yr)**

| Austin Customers | 2020 | 2030 | 2040 | 2050 | 2060 | 2070 |
|---|---|---|---|---|---|---|
| Livestock | 0 | 0 | 0 | 0 | 0 | 0 |
| Irrigation | 0 | 0 | 0 | 0 | 0 | 0 |
| Manufacturing | 0 | 0 | 0 | 0 | 0 | 0 |
| Mining | 0 | 0 | 0 | 0 | 0 | 0 |
| Municipal | 0 | 0 | 0 | 0 | 0 | (8,770) |
| Steam Electric | (2,888) | (2,888) | (2,888) | (2,888) | (2,888) | (2,888) |

Note: Austin does not sell to Livestock, Irrigation, or Mining WUGs.

### 4.3.3 West Travis County Public Utility Agency

WTCPUA obtains its water by contract from the LCRA Highland Lakes System. A minor source of water is reclaimed water from direct reuse. *Table 4.21* compares WTCPUA's municipal water supplies to its projected water demands and commitments. The water supplies and commitments shown include wholesale customers that have contracts for water from LCRA, but that WTCPUA treats and transports to the customer.

**Table 4.21: WTCPUA Municipal Water Supply/Projected Demand and Commitment Comparison (ac-ft/yr)**

| WTCPUA Water Supply | 2020 | 2030 | 2040 | 2050 | 2060 | 2070 |
|---|---|---|---|---|---|---|
| Municipal Water Supply | 18,679 | 18,679 | 18,679 | 18,679 | 18,679 | 18,679 |
| Municipal Projected Demand and Commitments | 20,335 | 22,085 | 23,336 | 25,673 | 27,687 | 29,645 |
| **Water Surplus/Need** | **(1,656)** | **(3,406)** | **(4,657)** | **(6,994)** | **(9,008)** | **(10,966)** |

Note: The water supply is detailed in *Table 3.30*. The projected water demands are detailed in *Tables 2.22* and *3.31*.

The table shows that by 2020, WTCPUA will have a deficit of almost 1,700 ac-ft/yr, and by 2070, the deficit will be approximately 11,000 ac-ft/yr. A summary WTCPUA's needs by categories of use is shown in *Table 4.22*.

**Table 4.22: WTCPUA Needs by Category of Use (ac-ft/yr)**

| WTCPUA Customers | 2020 | 2030 | 2040 | 2050 | 2060 | 2070 |
|---|---|---|---|---|---|---|
| Livestock | 0 | 0 | 0 | 0 | 0 | 0 |
| Irrigation | 0 | 0 | 0 | 0 | 0 | 0 |
| Manufacturing | 0 | 0 | 0 | 0 | 0 | 0 |
| Mining | 0 | 0 | 0 | 0 | 0 | 0 |
| Municipal | (1,656) | (3,406) | (4,657) | (6,994) | (9,008) | (10,966) |
| Steam Electric | 0 | 0 | 0 | 0 | 0 | 0 |

Note: WTCPUA does not sell to Livestock, Manufacturing, Mining, or Steam Electric WUGs.

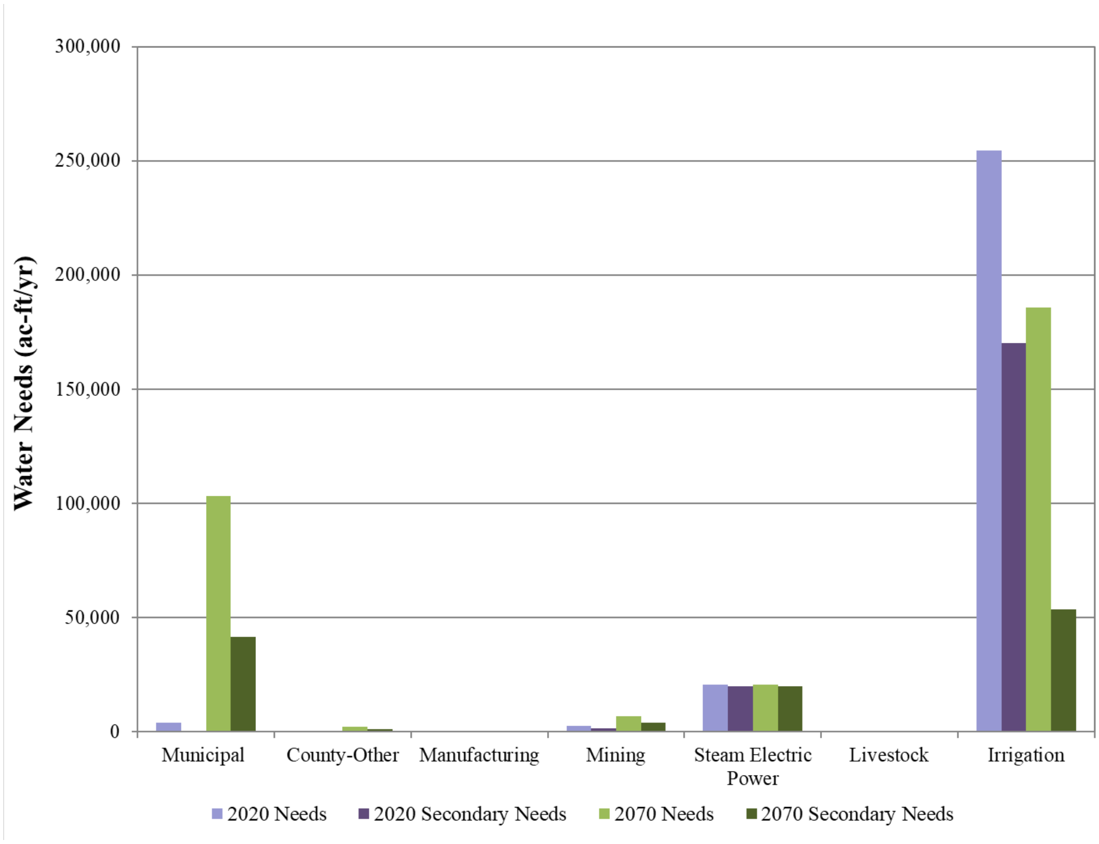
## 4.4 SECOND-TIER WATER NEEDS

Water management strategies (WMSs) to meet projected shortages are discussed in *Chapter 5*. Once demand reduction (such as conservation and drought management) and direct reuse WMSs are identified, a second-tier water needs analysis determines any water needs that would remain for each entity if all recommended conservation and direct reuse strategies were fully implemented. This second-tier needs analysis provides additional information that RWPGs may consider when subsequently identifying and recommending additional infrastructure water supply projects.

### 4.4.1 Secondary Water Needs for Water User Groups

The resulting DB22 reports of the second-tier needs analysis presents secondary water needs for water user groups (WUGs) in *Appendix 4B.* The implementation of conservation and direct reuse greatly reduces the region's need within municipal and irrigation WUGs. By the 2070 decade, demand reduction and reuse will have reduced the Lower Colorado Region's need by almost 200,000 ac-ft. *Figure 4.3* compares identified needs in 2020 and 2070 to secondary needs in the LCRWPA

**Figure 4.3: 2020/2070 Identified Needs Compared to Secondary Needs in the LCRWPA**




### 4.4.2 Secondary Water Needs for Major Water Providers

By the 2070 decade, demand reduction and reuse will have reduced MWP need by about 180,000 ac-ft/yr. After irrigation drought management, indirect reuse, and conservation strategies for Colorado, Matagorda, and Wharton Counties are applied, LCRA remaining secondary needs are shown in *Table 4.23*.

After municipal conservation, drought management, and multiple reuse projects are applied to Austin, there are no remaining municipal needs. There are, however, still 2,888 ac-ft/yr of remaining steam electric needs in every decade.

After municipal conservation, drought management, direct potable reuse, and direct non-potable reuse are applied to West Travis County PUA, there are no remaining needs.

**Table 4.23: LCRA Secondary Water Needs by Category of Use (ac-ft/yr)**

| LCRA Customers | 2020 | 2030 | 2040 | 2050 | 2060 | 2070 |
|---|---|---|---|---|---|---|
| Livestock | 0 | 0 | 0 | 0 | 0 | 0 |
| Irrigation | (183,936) | (158,569) | (132,549) | (109,065) | (88,114) | (67,408) |
| Manufacturing | 0 | 0 | 0 | 0 | 0 | 0 |
| Mining | 0 | 0 | 0 | 0 | 0 | 0 |
| Municipal | 0 | 0 | 0 | 0 | 0 | 0 |
| Steam Electric | 0 | 0 | 0 | 0 | 0 | 0 |

Note: LCRA does not sell to Livestock or Mining WUGs.

# *APPENDIX 4A*

# *DB22 WUG NEEDS/SURPLUS REPORT*

# Region K Water User Group (WUG) Needs/Surplus

WUG supplies and projected demands are entered for each of a WUG's region-county-basin divisions. The needs shown in the WUG Needs/Surplus report are calculated by first deducting the WUG split's projected demand from its total existing water supply volume. If the WUG split has a greater existing supply volume than projected demand in any given decade, this amount is considered a surplus volume. Surplus volumes are shown as positive values, and needs are shown as negative values in parentheses.

| | (NEEDS)/SURPLUS (ACRE-FEET PER YEAR) | | | | | |
|---|---|---|---|---|---|---|
| | 2020 | 2030 | 2040 | 2050 | 2060 | 2070 |
| **BASTROP COUNTY - BRAZOS BASIN** | | | | | | |
| AQUA WSC* | 0 | 0 | 0 | 0 | 0 | 0 |
| LEE COUNTY WSC* | 132 | 141 | 164 | 197 | 234 | 274 |
| COUNTY-OTHER | 12 | 11 | 10 | 7 | 4 | 0 |
| MINING | 277 | 41 | 0 | 90 | 5 | 0 |
| LIVESTOCK | 24 | 24 | 24 | 24 | 24 | 24 |
| IRRIGATION | 7 | 5 | 4 | 2 | 0 | 0 |
| **BASTROP COUNTY - COLORADO BASIN** | | | | | | |
| AQUA WSC* | (224) | (2,788) | (5,698) | (9,228) | (16,703) | (26,087) |
| BASTROP | 712 | 49 | (832) | (2,045) | (3,700) | (5,902) |
| BASTROP COUNTY WCID 2 | 759 | 636 | 416 | 141 | (442) | (1,178) |
| CREEDMOOR-MAHA WSC* | 143 | 142 | 142 | 142 | 141 | 141 |
| ELGIN | 0 | 0 | 0 | (534) | (1,545) | (2,853) |
| LEE COUNTY WSC* | 177 | 194 | 224 | 268 | 318 | 372 |
| POLONIA WSC* | 52 | 48 | 46 | 44 | 42 | 38 |
| SMITHVILLE | 643 | 584 | 398 | 187 | (503) | (1,348) |
| COUNTY-OTHER | 0 | 0 | 0 | 0 | 0 | 0 |
| MANUFACTURING | 27 | 0 | 0 | 0 | 0 | 0 |
| MINING | (449) | (3,947) | (4,557) | (3,220) | 1,764 | 1,696 |
| STEAM ELECTRIC POWER | 0 | 0 | 0 | 0 | 0 | 0 |
| LIVESTOCK | 0 | 0 | 0 | 0 | 0 | 0 |
| IRRIGATION | 74 | 69 | 47 | 24 | 0 | 0 |
| **BASTROP COUNTY - GUADALUPE BASIN** | | | | | | |
| AQUA WSC* | 0 | 0 | 0 | 0 | 0 | 0 |
| COUNTY-OTHER | 0 | 0 | 0 | 0 | 0 | 0 |
| MINING | (2) | (243) | (308) | (233) | 44 | 24 |
| LIVESTOCK | 18 | 18 | 18 | 18 | 18 | 18 |
| IRRIGATION | 0 | 5 | 10 | 17 | 24 | 24 |
| **BLANCO COUNTY - COLORADO BASIN** | | | | | | |
| JOHNSON CITY | 47 | (11) | (43) | (60) | (73) | (80) |
| COUNTY-OTHER | 263 | 186 | 151 | 141 | 138 | 143 |
| MINING | 0 | 0 | 0 | 0 | 0 | 0 |
| LIVESTOCK | 262 | 262 | 262 | 262 | 262 | 262 |
| IRRIGATION | 45 | 45 | 45 | 45 | 45 | 45 |
| **BLANCO COUNTY - GUADALUPE BASIN** | | | | | | |
| BLANCO | 747 | 698 | 670 | 656 | 645 | 638 |
| CANYON LAKE WATER SERVICE* | 142 | 119 | 89 | 58 | 28 | (2) |
| COUNTY-OTHER | 242 | 184 | 157 | 150 | 148 | 151 |
| LIVESTOCK | 73 | 73 | 73 | 73 | 73 | 73 |
| IRRIGATION | 26 | 26 | 26 | 26 | 26 | 26 |
| **BURNET COUNTY - BRAZOS BASIN** | | | | | | |
| BERTRAM | (60) | (141) | (211) | (279) | (340) | (394) |
| BURNET | 7 | 6 | 5 | 4 | 3 | 2 |
| GEORGETOWN* | 0 | 0 | 0 | 0 | 0 | 0 |

*A single asterisk next to a WUG's name denotes that the WUG is split by two or more planning regions.

## Region K Water User Group (WUG) Needs/Surplus

| | | | | | | |
|---|---|---|---|---|---|---|
| KEMPNER WSC* | 0 | 0 | 0 | 0 | 0 | 0 |
| COUNTY-OTHER | 350 | 212 | 214 | 79 | (49) | (162) |
| MINING | 576 | 345 | 104 | (116) | (368) | (655) |
| LIVESTOCK | 0 | 0 | 0 | 0 | 0 | 0 |
| IRRIGATION | 270 | 270 | 270 | 270 | 270 | 270 |
| **BURNET COUNTY - COLORADO BASIN** | | | | | | |
| BURNET | 2,979 | 2,665 | 2,398 | 2,137 | 1,902 | 1,696 |
| CORIX UTILITIES TEXAS INC* | 172 | 149 | 130 | 111 | 94 | 78 |
| COTTONWOOD SHORES | 250 | 204 | 165 | 127 | 93 | 62 |
| GRANITE SHOALS | 252 | 184 | 129 | 65 | (47) | (222) |
| HORSESHOE BAY | (67) | (286) | (471) | (647) | (804) | (940) |
| KINGSLAND WSC | 35 | 26 | 19 | 12 | 6 | 0 |
| MARBLE FALLS | 2,326 | 1,280 | (204) | (981) | (1,504) | (1,766) |
| MEADOWLAKES | (285) | (276) | (271) | (269) | (268) | (268) |
| COUNTY-OTHER | 3,179 | 2,933 | 2,937 | 2,697 | 2,468 | 2,267 |
| MANUFACTURING | 261 | 213 | 213 | 213 | 213 | 213 |
| MINING | (935) | (1,626) | (2,352) | (3,008) | (3,764) | (4,626) |
| LIVESTOCK | 0 | 0 | 0 | 0 | 0 | 0 |
| IRRIGATION | 63 | 63 | 63 | 63 | 63 | 63 |
| **COLORADO COUNTY - BRAZOS-COLORADO BASIN** | | | | | | |
| EAGLE LAKE | 17 | 16 | 16 | 11 | 6 | 0 |
| COUNTY-OTHER | 56 | 55 | 54 | 50 | 45 | 40 |
| MANUFACTURING | 2 | 0 | 0 | 0 | 0 | 0 |
| MINING | 10 | 8 | 7 | 5 | 3 | 2 |
| LIVESTOCK | 40 | 40 | 40 | 40 | 40 | 40 |
| IRRIGATION | (21,169) | (19,805) | (18,477) | (17,186) | (15,929) | (14,706) |
| **COLORADO COUNTY - COLORADO BASIN** | | | | | | |
| COLUMBUS | 586 | 556 | 535 | 491 | 449 | 407 |
| CORIX UTILITIES TEXAS INC* | (7) | (8) | (8) | (10) | (11) | (13) |
| EAGLE LAKE | 38 | 35 | 34 | 25 | 12 | 0 |
| WEIMAR | 24 | 21 | 18 | 12 | 6 | 0 |
| COUNTY-OTHER | (92) | (98) | (100) | (128) | (161) | (195) |
| MANUFACTURING | 9 | 0 | 0 | 0 | 0 | 0 |
| MINING | 307 | 259 | 207 | 158 | 108 | 57 |
| STEAM ELECTRIC POWER | (228) | (228) | (228) | (228) | (228) | (228) |
| LIVESTOCK | 385 | 385 | 385 | 385 | 385 | 385 |
| IRRIGATION | (6,578) | (5,654) | (4,755) | (3,880) | (3,029) | (2,201) |
| **COLORADO COUNTY - LAVACA BASIN** | | | | | | |
| WEIMAR | 49 | 41 | 36 | 24 | 12 | 0 |
| COUNTY-OTHER | 172 | 169 | 168 | 159 | 148 | 137 |
| MANUFACTURING | 161 | 0 | 0 | 0 | 0 | 0 |
| MINING | 14 | 11 | 9 | 6 | 3 | 0 |
| STEAM ELECTRIC POWER | (4,743) | (4,743) | (4,743) | (4,743) | (4,743) | (4,743) |
| LIVESTOCK | 0 | 0 | 0 | 0 | 0 | 0 |
| IRRIGATION | (26,571) | (24,202) | (21,898) | (19,654) | (17,471) | (15,347) |
| **FAYETTE COUNTY - COLORADO BASIN** | | | | | | |
| AQUA WSC* | 0 | 0 | 0 | 0 | 0 | 0 |
| FAYETTE COUNTY WCID MONUMENT HILL | 51 | 43 | 30 | 18 | 8 | 0 |
| FAYETTE WSC | 290 | 221 | 175 | 135 | 101 | 73 |
| LA GRANGE | 337 | 231 | 162 | 100 | 46 | 2 |

*A single asterisk next to a WUG's name denotes that the WUG is split by two or more planning regions.

## Region K Water User Group (WUG) Needs/Surplus

| | | | | | | |
|---|---|---|---|---|---|---|
| LEE COUNTY WSC* | 441 | 420 | 401 | 385 | 361 | 329 |
| WEST END WSC* | 0 | 0 | 0 | 0 | 0 | 0 |
| COUNTY-OTHER | (69) | (156) | (204) | (247) | (284) | (311) |
| MANUFACTURING | 1 | 0 | 0 | 0 | 0 | 0 |
| MINING | (760) | (360) | 99 | 543 | 995 | 1,002 |
| STEAM ELECTRIC POWER | (4,299) | (4,299) | (4,299) | (4,299) | (4,299) | (4,299) |
| LIVESTOCK | 185 | 185 | 185 | 185 | 185 | 185 |
| IRRIGATION | 90 | 90 | 90 | 90 | 90 | 90 |
| **FAYETTE COUNTY - GUADALUPE BASIN** | | | | | | |
| FAYETTE WSC | 110 | 106 | 103 | 100 | 98 | 96 |
| FLATONIA | 24 | 16 | 11 | 7 | 3 | 0 |
| COUNTY-OTHER | 75 | 70 | 67 | 65 | 62 | 61 |
| MINING | 33 | 58 | 86 | 113 | 141 | 142 |
| LIVESTOCK | 64 | 64 | 64 | 64 | 64 | 64 |
| IRRIGATION | 26 | 26 | 26 | 26 | 26 | 26 |
| **FAYETTE COUNTY - LAVACA BASIN** | | | | | | |
| FAYETTE WSC | 29 | 21 | 16 | 11 | 7 | 4 |
| FLATONIA | 105 | 73 | 52 | 33 | 17 | 5 |
| SCHULENBURG | 139 | 57 | 2 | (45) | (86) | (118) |
| COUNTY-OTHER | (366) | (406) | (429) | (449) | (466) | (478) |
| MANUFACTURING | 5 | (40) | (40) | (40) | (40) | (40) |
| MINING | 0 | 0 | 0 | 55 | 134 | 135 |
| LIVESTOCK | 7 | 7 | 7 | 7 | 7 | 7 |
| IRRIGATION | 78 | 78 | 78 | 78 | 78 | 78 |
| **GILLESPIE COUNTY - COLORADO BASIN** | | | | | | |
| FREDERICKSBURG | 1,092 | 900 | 740 | 532 | 325 | 121 |
| COUNTY-OTHER | 647 | 577 | 518 | 424 | 320 | 215 |
| MANUFACTURING | 663 | 647 | 647 | 647 | 647 | 647 |
| MINING | 51 | 51 | 51 | 51 | 51 | 51 |
| LIVESTOCK | 383 | 383 | 383 | 383 | 383 | 383 |
| IRRIGATION | 119 | 119 | 119 | 119 | 119 | 119 |
| **GILLESPIE COUNTY - GUADALUPE BASIN** | | | | | | |
| COUNTY-OTHER | 23 | 20 | 18 | 14 | 10 | 6 |
| LIVESTOCK | 17 | 17 | 17 | 17 | 17 | 17 |
| **HAYS COUNTY - COLORADO BASIN** | | | | | | |
| AUSTIN | 0 | 0 | 0 | 0 | 0 | 0 |
| BUDA* | 1,411 | 582 | (440) | (1,724) | (3,180) | (4,839) |
| CIMARRON PARK WATER | 47 | 55 | 61 | 65 | 66 | 66 |
| DEER CREEK RANCH WATER | 99 | 96 | 92 | 90 | 87 | 84 |
| DRIPPING SPRINGS WSC | 727 | (533) | (1,446) | (2,621) | (4,059) | (4,819) |
| GOFORTH SUD* | (60) | (113) | (168) | (232) | (308) | (393) |
| HAYS | 0 | (55) | (114) | (168) | (255) | (353) |
| HAYS COUNTY WCID 1 | 0 | 0 | 0 | 0 | (80) | (80) |
| HAYS COUNTY WCID 2 | 295 | 224 | 136 | 52 | (4) | (160) |
| WEST TRAVIS COUNTY PUBLIC UTILITY AGENCY | 128 | (963) | (1,646) | (3,084) | (4,524) | (5,966) |
| COUNTY-OTHER* | 966 | 1,279 | 764 | 388 | 72 | (801) |
| MANUFACTURING* | 191 | 144 | 144 | 144 | 144 | 144 |
| MINING | (531) | (761) | (1,047) | (1,131) | (1,340) | (1,579) |
| STEAM ELECTRIC POWER | 511 | 511 | 511 | 511 | 511 | 511 |
| LIVESTOCK* | 903 | 903 | 903 | 903 | 903 | 903 |

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# Region K Water User Group (WUG) Needs/Surplus

| | | | | | | |
|---|---|---|---|---|---|---|
| IRRIGATION* | 257 | 257 | 257 | 257 | 257 | 257 |
| **LLANO COUNTY - COLORADO BASIN** | | | | | | |
| CORIX UTILITIES TEXAS INC* | 75 | 78 | 79 | 78 | 77 | 75 |
| HORSESHOE BAY | 65 | 0 | 69 | 44 | 78 | 130 |
| KINGSLAND WSC | 221 | 107 | 124 | 177 | 94 | 6 |
| LLANO | (591) | (620) | (606) | (584) | (612) | (642) |
| SUNRISE BEACH VILLAGE | 186 | 189 | 191 | 192 | 192 | 192 |
| COUNTY-OTHER | 2,682 | 2,740 | 2,727 | 2,725 | 2,742 | 2,755 |
| MANUFACTURING | 1 | 0 | 0 | 0 | 0 | 0 |
| MINING | 0 | 0 | 0 | 0 | 0 | 0 |
| STEAM ELECTRIC POWER | 0 | 0 | 0 | 0 | 0 | 0 |
| LIVESTOCK | 171 | 171 | 171 | 171 | 171 | 171 |
| IRRIGATION | 916 | 916 | 916 | 916 | 916 | 916 |
| **MATAGORDA COUNTY - BRAZOS-COLORADO BASIN** | | | | | | |
| BAY CITY | (4) | (57) | (73) | (119) | (162) | (198) |
| CANEY CREEK MUD OF MATAGORDA COUNTY | 974 | 971 | 971 | 968 | 965 | 962 |
| CORIX UTILITIES TEXAS INC* | 64 | 64 | 64 | 64 | 64 | 64 |
| MATAGORDA COUNTY WCID 6 | 3 | 3 | 4 | 3 | 1 | 0 |
| MATAGORDA WASTE DISPOSAL & WSC | 4 | 3 | 3 | 2 | 1 | 0 |
| COUNTY-OTHER | 95 | 93 | 96 | 94 | 88 | 83 |
| MINING | 3 | 0 | 14 | 26 | 37 | 44 |
| LIVESTOCK | 134 | 134 | 134 | 134 | 134 | 134 |
| IRRIGATION | (61,932) | (59,441) | (57,018) | (54,659) | (52,364) | (50,131) |
| **MATAGORDA COUNTY - COLORADO BASIN** | | | | | | |
| BAY CITY | 0 | 0 | 0 | 0 | 0 | 0 |
| CORIX UTILITIES TEXAS INC* | 13 | 13 | 13 | 13 | 13 | 13 |
| MATAGORDA WASTE DISPOSAL & WSC | 254 | 252 | 251 | 250 | 249 | 248 |
| COUNTY-OTHER | 79 | 78 | 79 | 78 | 77 | 76 |
| MANUFACTURING | 14,332 | 13,615 | 13,615 | 13,615 | 13,615 | 13,615 |
| MINING | 0 | 0 | 2 | 3 | 5 | 6 |
| STEAM ELECTRIC POWER | (11,276) | (11,276) | (11,276) | (11,276) | (11,276) | (11,276) |
| LIVESTOCK | 0 | 0 | 0 | 0 | 0 | 0 |
| IRRIGATION | (510) | (463) | (418) | (375) | (332) | (291) |
| **MATAGORDA COUNTY - COLORADO-LAVACA BASIN** | | | | | | |
| MARKHAM MUD | 19 | 20 | 20 | 20 | 18 | 17 |
| PALACIOS | 449 | 441 | 440 | 435 | 426 | 419 |
| COUNTY-OTHER | 82 | 81 | 83 | 82 | 75 | 69 |
| MINING | 1 | 0 | 9 | 16 | 23 | 28 |
| LIVESTOCK | 8 | 8 | 8 | 8 | 8 | 8 |
| IRRIGATION | (60,780) | (58,164) | (55,617) | (53,139) | (50,728) | (48,381) |
| **MILLS COUNTY - BRAZOS BASIN** | | | | | | |
| GOLDTHWAITE | 2 | 2 | 1 | 1 | 1 | 0 |
| COUNTY-OTHER | 13 | 14 | 15 | 11 | 6 | 0 |
| MINING | 0 | 0 | 0 | 0 | 0 | 0 |
| LIVESTOCK | 28 | 28 | 28 | 28 | 28 | 28 |
| IRRIGATION | (1,737) | (1,737) | (1,737) | (1,737) | (1,737) | (1,737) |
| **MILLS COUNTY - COLORADO BASIN** | | | | | | |
| BROOKESMITH SUD* | 0 | 0 | 0 | 0 | (1) | (1) |
| CORIX UTILITIES TEXAS INC* | 1 | 1 | 1 | 1 | 1 | 0 |
| GOLDTHWAITE | 31 | 28 | 26 | 14 | (1) | (18) |

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## Region K Water User Group (WUG) Needs/Surplus

| | | | | | | |
|---|---|---|---|---|---|---|
| ZEPHYR WSC* | 0 | 0 | 0 | 0 | 0 | 0 |
| COUNTY-OTHER | 130 | 131 | 133 | 127 | 120 | 111 |
| MANUFACTURING | 0 | 0 | 0 | 0 | 0 | 0 |
| MINING | 0 | 0 | 0 | 0 | 0 | 0 |
| LIVESTOCK | 40 | 40 | 40 | 40 | 40 | 40 |
| IRRIGATION | 623 | 623 | 623 | 623 | 623 | 623 |
| **SAN SABA COUNTY - COLORADO BASIN** | | | | | | |
| CORIX UTILITIES TEXAS INC* | 0 | 0 | 0 | 0 | 0 | 0 |
| NORTH SAN SABA WSC | 10 | 4 | 5 | 8 | 4 | 0 |
| RICHLAND SUD* | 76 | 69 | 71 | 72 | 71 | 67 |
| SAN SABA | 71 | 30 | 34 | 60 | 33 | 5 |
| COUNTY-OTHER | 26 | 24 | 27 | 31 | 27 | 22 |
| MANUFACTURING | 2 | 0 | 0 | 0 | 0 | 0 |
| MINING | 451 | 446 | 595 | 639 | 675 | 701 |
| LIVESTOCK | 439 | 439 | 439 | 439 | 439 | 439 |
| IRRIGATION | 23 | 23 | 23 | 23 | 23 | 23 |
| **TRAVIS COUNTY - COLORADO BASIN** | | | | | | |
| AQUA WSC* | 0 | 0 | 0 | 0 | 0 | 0 |
| AUSTIN | 121,593 | 87,987 | 66,151 | 40,563 | 19,311 | (8,770) |
| BARTON CREEK WEST WSC | 4 | 7 | 10 | 12 | 13 | 13 |
| BARTON CREEK WSC | (217) | (312) | (402) | (469) | (523) | (586) |
| BRIARCLIFF | 100 | 60 | 20 | (25) | (66) | (104) |
| CEDAR PARK* | (613) | (813) | (732) | (662) | (660) | (659) |
| COTTONWOOD CREEK MUD 1 | 0 | 0 | 0 | 0 | 0 | 0 |
| CREEDMOOR-MAHA WSC* | 555 | 473 | (448) | (552) | (656) | (757) |
| CYPRESS RANCH WCID 1 | 102 | 89 | 79 | 70 | 59 | 60 |
| DEER CREEK RANCH WATER | 82 | 76 | 70 | 66 | 62 | 57 |
| ELGIN | 0 | 0 | 0 | 0 | 0 | 0 |
| GARFIELD WSC | 61 | 30 | 1 | (21) | (41) | (63) |
| HORNSBY BEND UTILITY | 350 | 266 | 183 | 121 | 65 | 0 |
| HURST CREEK MUD | (12) | (3) | 3 | 6 | 7 | 7 |
| JONESTOWN WSC | 75 | 41 | 6 | (37) | (78) | (116) |
| KELLY LANE WCID 1 | 66 | 71 | 75 | 76 | 77 | 77 |
| LAGO VISTA | 1,998 | 1,682 | 1,379 | 1,034 | 726 | 438 |
| LAKEWAY MUD | 312 | 187 | 50 | (97) | (143) | (142) |
| LEANDER* | (317) | (1,866) | (2,009) | (2,684) | (2,967) | (3,281) |
| LOOP 360 WSC | 25 | (18) | (68) | (113) | (157) | (236) |
| MANOR | 2,210 | 1,903 | 325 | 219 | 310 | 10 |
| MANVILLE WSC* | 2,033 | 1,608 | 1,135 | 577 | (476) | (1,696) |
| NORTH AUSTIN MUD 1 | 0 | 0 | (76) | (75) | (75) | (75) |
| NORTHTOWN MUD | 0 | 0 | (947) | (1,066) | (1,171) | (1,268) |
| OAK SHORES WATER SYSTEM | 135 | 114 | 115 | 116 | 116 | 116 |
| PFLUGERVILLE* | 1,641 | (790) | (3,589) | (6,376) | (9,203) | (9,220) |
| ROLLINGWOOD | 737 | 741 | (375) | (374) | (375) | (377) |
| ROUGH HOLLOW IN TRAVIS COUNTY | 1,206 | 582 | 582 | 582 | 582 | 582 |
| ROUND ROCK* | 0 | 0 | 0 | 0 | 0 | 0 |
| SENNA HILLS MUD | (16) | (89) | (160) | (212) | (255) | (304) |
| SHADY HOLLOW MUD | 0 | 0 | 0 | 0 | 0 | 0 |
| SUNSET VALLEY | 388 | 339 | (443) | (519) | (609) | (713) |
| SWEETWATER COMMUNITY | 1,106 | 652 | 652 | 652 | 652 | 652 |

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## Region K Water User Group (WUG) Needs/Surplus

| | | | | | | |
|---|---|---|---|---|---|---|
| TRAVIS COUNTY MUD 10 | 22 | 9 | (3) | (12) | (19) | (28) |
| TRAVIS COUNTY MUD 14 | 52 | 28 | 4 | (14) | (30) | (49) |
| TRAVIS COUNTY MUD 2 | 218 | 168 | 119 | 83 | 51 | 15 |
| TRAVIS COUNTY MUD 4 | 2,060 | 1,834 | 1,619 | 1,377 | 1,163 | 962 |
| TRAVIS COUNTY WCID 10 | (139) | (442) | (4,094) | (4,433) | (4,739) | (5,026) |
| TRAVIS COUNTY WCID 17 | 635 | (48) | (1,011) | (1,181) | (1,474) | (1,836) |
| TRAVIS COUNTY WCID 18 | 330 | 193 | 59 | (99) | (243) | (379) |
| TRAVIS COUNTY WCID 19 | 0 | 0 | 0 | 0 | 0 | 0 |
| TRAVIS COUNTY WCID 20 | 551 | 554 | 556 | 558 | 558 | 558 |
| TRAVIS COUNTY WCID POINT VENTURE | 30 | (37) | (93) | (171) | (260) | (339) |
| WELLS BRANCH MUD | 0 | 0 | (1,321) | (1,303) | (1,298) | (1,297) |
| WEST TRAVIS COUNTY PUBLIC UTILITY AGENCY | (1,784) | (2,443) | (3,011) | (3,910) | (4,484) | (5,000) |
| WILLIAMSON COUNTY WSID 3* | 20 | 18 | 13 | 9 | 4 | 0 |
| WILLIAMSON TRAVIS COUNTIES MUD 1* | 56 | 60 | 62 | 63 | 63 | 64 |
| WINDERMERE UTILITY | 689 | 745 | (1,462) | (1,446) | (1,441) | (1,440) |
| COUNTY-OTHER \| AQUA TEXAS - RIVERCREST | 150 | 152 | 154 | 155 | 155 | 155 |
| COUNTY-OTHER | 10,572 | 10,567 | 10,556 | 10,550 | 10,547 | 10,539 |
| MANUFACTURING | 0 | 0 | 286 | 742 | 742 | 742 |
| MINING | 0 | 0 | 0 | 0 | 0 | 0 |
| STEAM ELECTRIC POWER | 4,140 | 4,140 | 4,140 | 4,140 | 4,140 | 4,140 |
| LIVESTOCK | 0 | 0 | 0 | 0 | 0 | 0 |
| IRRIGATION | 908 | 908 | 908 | 908 | 908 | 908 |
| **TRAVIS COUNTY - GUADALUPE BASIN** | | | | | | |
| CREEDMOOR-MAHA WSC* | 21 | 18 | 14 | 9 | 4 | 0 |
| GOFORTH SUD* | (4) | (6) | (10) | (15) | (20) | (26) |
| COUNTY-OTHER | 101 | 101 | 102 | 102 | 102 | 102 |
| MINING | 0 | 0 | 0 | 0 | 0 | 0 |
| LIVESTOCK | 0 | 0 | 0 | 0 | 0 | 0 |
| **WHARTON COUNTY - BRAZOS-COLORADO BASIN** | | | | | | |
| BOLING MWD | 51 | 49 | 47 | 44 | 41 | 37 |
| WHARTON | 188 | 130 | 86 | 31 | (30) | (87) |
| WHARTON COUNTY WCID 2 | 762 | 744 | 730 | 715 | 698 | 683 |
| COUNTY-OTHER* | 28 | 4 | (17) | (61) | (100) | (139) |
| MANUFACTURING* | 6 | 0 | 0 | 0 | 0 | 0 |
| MINING* | 2 | 0 | 11 | 18 | 27 | 31 |
| STEAM ELECTRIC POWER* | 0 | 0 | 0 | 0 | 0 | 0 |
| LIVESTOCK* | 47 | 47 | 47 | 47 | 47 | 47 |
| IRRIGATION* | (51,578) | (48,719) | (45,936) | (43,227) | (40,592) | (38,028) |
| **WHARTON COUNTY - COLORADO BASIN** | | | | | | |
| EL CAMPO* | 1 | 1 | 1 | 0 | 0 | 0 |
| WHARTON | 0 | 0 | 0 | 0 | 0 | 0 |
| COUNTY-OTHER* | 70 | 58 | 46 | 24 | 3 | (16) |
| MANUFACTURING* | 9 | 0 | 0 | 0 | 0 | 0 |
| MINING* | 1 | 0 | 7 | 12 | 17 | 21 |
| STEAM ELECTRIC POWER* | 0 | 0 | 0 | 0 | 0 | 0 |
| LIVESTOCK* | 20 | 20 | 20 | 20 | 20 | 20 |
| IRRIGATION* | (23,509) | (21,737) | (20,013) | (18,336) | (16,704) | (15,116) |
| **WHARTON COUNTY - COLORADO-LAVACA BASIN** | | | | | | |
| COUNTY-OTHER* | 42 | 38 | 34 | 27 | 20 | 14 |
| MINING* | 0 | 0 | 1 | 3 | 4 | 5 |

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## Region K Water User Group (WUG) Needs/Surplus

| | | | | | | |
|---|---|---|---|---|---|---|
| LIVESTOCK* | 94 | 94 | 94 | 94 | 94 | 94 |
| IRRIGATION* | 0 | 456 | 899 | 1,330 | 1,750 | 2,159 |
| **WHARTON COUNTY - LAVACA BASIN** | | | | | | |
| COUNTY-OTHER* | 213 | 212 | 212 | 211 | 210 | 210 |
| **WILLIAMSON COUNTY - BRAZOS BASIN** | | | | | | |
| AUSTIN | 0 | 0 | 0 | 0 | 0 | 0 |
| NORTH AUSTIN MUD 1 | 0 | 0 | (726) | (714) | (711) | (711) |
| WELLS BRANCH MUD | 0 | 0 | (76) | (75) | (74) | (74) |
| COUNTY-OTHER* | 26 | 0 | 4 | 8 | 12 | 16 |
| MANUFACTURING* | 5 | 0 | 0 | 0 | 0 | 0 |
| MINING* | 0 | 2 | 2 | 2 | 2 | 2 |

*A single asterisk next to a WUG's name denotes that the WUG is split by two or more planning regions.

# *APPENDIX 4B*

# *DB22 WUG SECOND-TIER IDENTIFIED WATER NEEDS AND SUMMARY REPORT*

# Region K Water User Group (WUG) Second-Tier Identified Water Needs

Second-tier needs are WUG split needs adjusted to include the implementation of recommended demand reduction and direct reuse water management strategies.

| | WUG SECOND-TIER NEEDS (ACRE-FEET PER YEAR) | | | | | |
|---|---|---|---|---|---|---|
| | 2020 | 2030 | 2040 | 2050 | 2060 | 2070 |
| **BASTROP COUNTY - BRAZOS BASIN** | | | | | | |
| AQUA WSC* | 0 | 0 | 0 | 0 | 0 | 0 |
| LEE COUNTY WSC* | 0 | 0 | 0 | 0 | 0 | 0 |
| COUNTY-OTHER | 0 | 0 | 0 | 0 | 0 | 0 |
| MINING | 0 | 0 | 0 | 0 | 0 | 0 |
| LIVESTOCK | 0 | 0 | 0 | 0 | 0 | 0 |
| IRRIGATION | 0 | 0 | 0 | 0 | 0 | 0 |
| **BASTROP COUNTY - COLORADO BASIN** | | | | | | |
| AQUA WSC* | 0 | 254 | 2,506 | 5,218 | 11,415 | 19,062 |
| BASTROP | 0 | 0 | 0 | 638 | 1,813 | 3,376 |
| BASTROP COUNTY WCID 2 | 0 | 0 | 0 | 0 | 255 | 924 |
| CREEDMOOR-MAHA WSC* | 0 | 0 | 0 | 0 | 0 | 0 |
| ELGIN | 0 | 0 | 0 | 0 | 804 | 1,874 |
| LEE COUNTY WSC* | 0 | 0 | 0 | 0 | 0 | 0 |
| POLONIA WSC* | 0 | 0 | 0 | 0 | 0 | 0 |
| SMITHVILLE | 0 | 0 | 0 | 0 | 0 | 645 |
| COUNTY-OTHER | 0 | 0 | 0 | 0 | 0 | 0 |
| MANUFACTURING | 0 | 0 | 0 | 0 | 0 | 0 |
| MINING | 449 | 3,947 | 4,557 | 3,220 | 0 | 0 |
| STEAM ELECTRIC POWER | 0 | 0 | 0 | 0 | 0 | 0 |
| LIVESTOCK | 0 | 0 | 0 | 0 | 0 | 0 |
| IRRIGATION | 0 | 0 | 0 | 0 | 0 | 0 |
| **BASTROP COUNTY - GUADALUPE BASIN** | | | | | | |
| AQUA WSC* | 0 | 0 | 0 | 0 | 0 | 0 |
| COUNTY-OTHER | 0 | 0 | 0 | 0 | 0 | 0 |
| MINING | 0 | 0 | 0 | 0 | 0 | 0 |
| LIVESTOCK | 0 | 0 | 0 | 0 | 0 | 0 |
| IRRIGATION | 0 | 0 | 0 | 0 | 0 | 0 |
| **BLANCO COUNTY - COLORADO BASIN** | | | | | | |
| JOHNSON CITY | 0 | 0 | 0 | 0 | 0 | 0 |
| COUNTY-OTHER | 0 | 0 | 0 | 0 | 0 | 0 |
| MINING | 0 | 0 | 0 | 0 | 0 | 0 |
| LIVESTOCK | 0 | 0 | 0 | 0 | 0 | 0 |
| IRRIGATION | 0 | 0 | 0 | 0 | 0 | 0 |
| **BLANCO COUNTY - GUADALUPE BASIN** | | | | | | |
| BLANCO | 0 | 0 | 0 | 0 | 0 | 0 |
| CANYON LAKE WATER SERVICE* | 0 | 0 | 0 | 0 | 0 | 0 |
| COUNTY-OTHER | 0 | 0 | 0 | 0 | 0 | 0 |
| LIVESTOCK | 0 | 0 | 0 | 0 | 0 | 0 |
| IRRIGATION | 0 | 0 | 0 | 0 | 0 | 0 |
| **BURNET COUNTY - BRAZOS BASIN** | | | | | | |
| BERTRAM | 0 | 0 | 0 | 0 | 8 | 36 |
| BURNET | 0 | 0 | 0 | 0 | 0 | 0 |
| GEORGETOWN* | 0 | 0 | 0 | 0 | 0 | 0 |
| KEMPNER WSC* | 0 | 0 | 0 | 0 | 0 | 0 |

*A single asterisk next to a WUG's name denotes that the WUG is split by two or more planning regions.

# Region K Water User Group (WUG) Second-Tier Identified Water Needs

| | WUG SECOND-TIER NEEDS (ACRE-FEET PER YEAR) | | | | | |
|---|---|---|---|---|---|---|
| | 2020 | 2030 | 2040 | 2050 | 2060 | 2070 |
| **BURNET COUNTY - BRAZOS BASIN** | | | | | | |
| COUNTY-OTHER | 0 | 0 | 0 | 0 | 0 | 0 |
| MINING | 0 | 0 | 0 | 116 | 368 | 655 |
| LIVESTOCK | 0 | 0 | 0 | 0 | 0 | 0 |
| IRRIGATION | 0 | 0 | 0 | 0 | 0 | 0 |
| **BURNET COUNTY - COLORADO BASIN** | | | | | | |
| BURNET | 0 | 0 | 0 | 0 | 0 | 0 |
| CORIX UTILITIES TEXAS INC* | 0 | 0 | 0 | 0 | 0 | 0 |
| COTTONWOOD SHORES | 0 | 0 | 0 | 0 | 0 | 0 |
| GRANITE SHOALS | 0 | 0 | 0 | 0 | 3 | 169 |
| HORSESHOE BAY | 0 | 0 | 0 | 0 | 0 | 0 |
| KINGSLAND WSC | 0 | 0 | 0 | 0 | 0 | 0 |
| MARBLE FALLS | 0 | 0 | 0 | 0 | 0 | 0 |
| MEADOWLAKES | 0 | 0 | 0 | 0 | 0 | 0 |
| COUNTY-OTHER | 0 | 0 | 0 | 0 | 0 | 0 |
| MANUFACTURING | 0 | 0 | 0 | 0 | 0 | 0 |
| MINING | 0 | 326 | 1,052 | 1,708 | 2,464 | 2,826 |
| LIVESTOCK | 0 | 0 | 0 | 0 | 0 | 0 |
| IRRIGATION | 0 | 0 | 0 | 0 | 0 | 0 |
| **COLORADO COUNTY - BRAZOS-COLORADO BASIN** | | | | | | |
| EAGLE LAKE | 0 | 0 | 0 | 0 | 0 | 0 |
| COUNTY-OTHER | 0 | 0 | 0 | 0 | 0 | 0 |
| MANUFACTURING | 0 | 0 | 0 | 0 | 0 | 0 |
| MINING | 0 | 0 | 0 | 0 | 0 | 0 |
| LIVESTOCK | 0 | 0 | 0 | 0 | 0 | 0 |
| IRRIGATION | 11,896 | 9,061 | 6,115 | 3,554 | 1,371 | 0 |
| **COLORADO COUNTY - COLORADO BASIN** | | | | | | |
| COLUMBUS | 0 | 0 | 0 | 0 | 0 | 0 |
| CORIX UTILITIES TEXAS INC* | 0 | 0 | 0 | 1 | 2 | 3 |
| EAGLE LAKE | 0 | 0 | 0 | 0 | 0 | 0 |
| WEIMAR | 0 | 0 | 0 | 0 | 0 | 0 |
| COUNTY-OTHER | 0 | 8 | 29 | 67 | 100 | 133 |
| MANUFACTURING | 0 | 0 | 0 | 0 | 0 | 0 |
| MINING | 0 | 0 | 0 | 0 | 0 | 0 |
| STEAM ELECTRIC POWER | 228 | 228 | 228 | 228 | 228 | 228 |
| LIVESTOCK | 0 | 0 | 0 | 0 | 0 | 0 |
| IRRIGATION | 3,697 | 2,315 | 912 | 0 | 0 | 0 |
| **COLORADO COUNTY - LAVACA BASIN** | | | | | | |
| WEIMAR | 0 | 0 | 0 | 0 | 0 | 0 |
| COUNTY-OTHER | 0 | 0 | 0 | 0 | 0 | 0 |
| MANUFACTURING | 0 | 0 | 0 | 0 | 0 | 0 |
| MINING | 0 | 0 | 0 | 0 | 0 | 0 |
| STEAM ELECTRIC POWER | 4,743 | 4,743 | 4,743 | 4,743 | 4,743 | 4,743 |
| LIVESTOCK | 0 | 0 | 0 | 0 | 0 | 0 |
| IRRIGATION | 14,932 | 10,716 | 6,381 | 2,542 | 0 | 0 |
| **FAYETTE COUNTY - COLORADO BASIN** | | | | | | |
| AQUA WSC* | 0 | 0 | 0 | 0 | 0 | 0 |
| FAYETTE COUNTY WCID MONUMENT HILL | 0 | 0 | 0 | 0 | 0 | 0 |

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## Region K Water User Group (WUG) Second-Tier Identified Water Needs

| | WUG SECOND-TIER NEEDS (ACRE-FEET PER YEAR) | | | | | |
|---|---|---|---|---|---|---|
| | 2020 | 2030 | 2040 | 2050 | 2060 | 2070 |
| **FAYETTE COUNTY - COLORADO BASIN** | | | | | | |
| FAYETTE WSC | 0 | 0 | 0 | 0 | 0 | 0 |
| LA GRANGE | 0 | 0 | 0 | 0 | 0 | 0 |
| LEE COUNTY WSC* | 0 | 0 | 0 | 0 | 0 | 0 |
| WEST END WSC* | 0 | 0 | 0 | 0 | 0 | 0 |
| COUNTY-OTHER | 0 | 40 | 98 | 145 | 180 | 204 |
| MANUFACTURING | 0 | 0 | 0 | 0 | 0 | 0 |
| MINING | 760 | 360 | 0 | 0 | 0 | 0 |
| STEAM ELECTRIC POWER | 3,819 | 3,739 | 3,659 | 3,579 | 3,579 | 3,579 |
| LIVESTOCK | 0 | 0 | 0 | 0 | 0 | 0 |
| IRRIGATION | 0 | 0 | 0 | 0 | 0 | 0 |
| **FAYETTE COUNTY - GUADALUPE BASIN** | | | | | | |
| FAYETTE WSC | 0 | 0 | 0 | 0 | 0 | 0 |
| FLATONIA | 0 | 0 | 0 | 0 | 0 | 0 |
| COUNTY-OTHER | 0 | 0 | 0 | 0 | 0 | 0 |
| MINING | 0 | 0 | 0 | 0 | 0 | 0 |
| LIVESTOCK | 0 | 0 | 0 | 0 | 0 | 0 |
| IRRIGATION | 0 | 0 | 0 | 0 | 0 | 0 |
| **FAYETTE COUNTY - LAVACA BASIN** | | | | | | |
| FAYETTE WSC | 0 | 0 | 0 | 0 | 0 | 0 |
| FLATONIA | 0 | 0 | 0 | 0 | 0 | 0 |
| SCHULENBURG | 0 | 0 | 0 | 0 | 0 | 0 |
| COUNTY-OTHER | 308 | 352 | 380 | 401 | 417 | 428 |
| MANUFACTURING | 0 | 40 | 40 | 40 | 40 | 40 |
| MINING | 0 | 0 | 0 | 0 | 0 | 0 |
| LIVESTOCK | 0 | 0 | 0 | 0 | 0 | 0 |
| IRRIGATION | 0 | 0 | 0 | 0 | 0 | 0 |
| **GILLESPIE COUNTY - COLORADO BASIN** | | | | | | |
| FREDERICKSBURG | 0 | 0 | 0 | 0 | 0 | 0 |
| COUNTY-OTHER | 0 | 0 | 0 | 0 | 0 | 0 |
| MANUFACTURING | 0 | 0 | 0 | 0 | 0 | 0 |
| MINING | 0 | 0 | 0 | 0 | 0 | 0 |
| LIVESTOCK | 0 | 0 | 0 | 0 | 0 | 0 |
| IRRIGATION | 0 | 0 | 0 | 0 | 0 | 0 |
| **GILLESPIE COUNTY - GUADALUPE BASIN** | | | | | | |
| COUNTY-OTHER | 0 | 0 | 0 | 0 | 0 | 0 |
| LIVESTOCK | 0 | 0 | 0 | 0 | 0 | 0 |
| **HAYS COUNTY - COLORADO BASIN** | | | | | | |
| AUSTIN | 0 | 0 | 0 | 0 | 0 | 0 |
| BUDA* | 0 | 0 | 0 | 0 | 0 | 0 |
| CIMARRON PARK WATER | 0 | 0 | 0 | 0 | 0 | 0 |
| DEER CREEK RANCH WATER | 0 | 0 | 0 | 0 | 0 | 0 |
| DRIPPING SPRINGS WSC | 0 | 0 | 0 | 141 | 1,137 | 1,631 |
| GOFORTH SUD* | 46 | 103 | 156 | 216 | 288 | 366 |
| HAYS | 0 | 8 | 55 | 98 | 168 | 246 |
| HAYS COUNTY WCID 1 | 0 | 0 | 0 | 0 | 0 | 0 |
| HAYS COUNTY WCID 2 | 0 | 0 | 0 | 0 | 0 | 0 |
| WEST TRAVIS COUNTY PUBLIC UTILITY AGENCY | 0 | 0 | 0 | 0 | 0 | 0 |

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# Region K Water User Group (WUG) Second-Tier Identified Water Needs

| | WUG SECOND-TIER NEEDS (ACRE-FEET PER YEAR) | | | | | |
|---|---|---|---|---|---|---|
| | 2020 | 2030 | 2040 | 2050 | 2060 | 2070 |
| **HAYS COUNTY - COLORADO BASIN** | | | | | | |
| COUNTY-OTHER* | 0 | 0 | 0 | 0 | 0 | 558 |
| MANUFACTURING* | 0 | 0 | 0 | 0 | 0 | 0 |
| MINING | 531 | 561 | 447 | 531 | 540 | 579 |
| STEAM ELECTRIC POWER | 0 | 0 | 0 | 0 | 0 | 0 |
| LIVESTOCK* | 0 | 0 | 0 | 0 | 0 | 0 |
| IRRIGATION* | 0 | 0 | 0 | 0 | 0 | 0 |
| **LLANO COUNTY - COLORADO BASIN** | | | | | | |
| CORIX UTILITIES TEXAS INC* | 0 | 0 | 0 | 0 | 0 | 0 |
| HORSESHOE BAY | 0 | 0 | 0 | 0 | 0 | 0 |
| KINGSLAND WSC | 0 | 0 | 0 | 0 | 0 | 0 |
| LLANO | 176 | 0 | 0 | 0 | 0 | 0 |
| SUNRISE BEACH VILLAGE | 0 | 0 | 0 | 0 | 0 | 0 |
| COUNTY-OTHER | 0 | 0 | 0 | 0 | 0 | 0 |
| MANUFACTURING | 0 | 0 | 0 | 0 | 0 | 0 |
| MINING | 0 | 0 | 0 | 0 | 0 | 0 |
| STEAM ELECTRIC POWER | 0 | 0 | 0 | 0 | 0 | 0 |
| LIVESTOCK | 0 | 0 | 0 | 0 | 0 | 0 |
| IRRIGATION | 0 | 0 | 0 | 0 | 0 | 0 |
| **MATAGORDA COUNTY - BRAZOS-COLORADO BASIN** | | | | | | |
| BAY CITY | 0 | 0 | 0 | 0 | 0 | 0 |
| CANEY CREEK MUD OF MATAGORDA COUNTY | 0 | 0 | 0 | 0 | 0 | 0 |
| CORIX UTILITIES TEXAS INC* | 0 | 0 | 0 | 0 | 0 | 0 |
| MATAGORDA COUNTY WCID 6 | 0 | 0 | 0 | 0 | 0 | 0 |
| MATAGORDA WASTE DISPOSAL & WSC | 0 | 0 | 0 | 0 | 0 | 0 |
| COUNTY-OTHER | 0 | 0 | 0 | 0 | 0 | 0 |
| MINING | 0 | 0 | 0 | 0 | 0 | 0 |
| LIVESTOCK | 0 | 0 | 0 | 0 | 0 | 0 |
| IRRIGATION | 51,009 | 45,863 | 40,665 | 35,809 | 31,295 | 26,839 |
| **MATAGORDA COUNTY - COLORADO BASIN** | | | | | | |
| BAY CITY | 0 | 0 | 0 | 0 | 0 | 0 |
| CORIX UTILITIES TEXAS INC* | 0 | 0 | 0 | 0 | 0 | 0 |
| MATAGORDA WASTE DISPOSAL & WSC | 0 | 0 | 0 | 0 | 0 | 0 |
| COUNTY-OTHER | 0 | 0 | 0 | 0 | 0 | 0 |
| MANUFACTURING | 0 | 0 | 0 | 0 | 0 | 0 |
| MINING | 0 | 0 | 0 | 0 | 0 | 0 |
| STEAM ELECTRIC POWER | 11,276 | 11,276 | 11,276 | 11,276 | 11,276 | 11,276 |
| LIVESTOCK | 0 | 0 | 0 | 0 | 0 | 0 |
| IRRIGATION | 420 | 351 | 284 | 220 | 158 | 98 |
| **MATAGORDA COUNTY - COLORADO-LAVACA BASIN** | | | | | | |
| MARKHAM MUD | 0 | 0 | 0 | 0 | 0 | 0 |
| PALACIOS | 0 | 0 | 0 | 0 | 0 | 0 |
| COUNTY-OTHER | 0 | 0 | 0 | 0 | 0 | 0 |
| MINING | 0 | 0 | 0 | 0 | 0 | 0 |
| LIVESTOCK | 0 | 0 | 0 | 0 | 0 | 0 |
| IRRIGATION | 50,059 | 44,838 | 39,569 | 34,640 | 30,052 | 25,522 |
| **MILLS COUNTY - BRAZOS BASIN** | | | | | | |
| GOLDTHWAITE | 0 | 0 | 0 | 0 | 0 | 0 |

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## Region K Water User Group (WUG) Second-Tier Identified Water Needs

| | WUG SECOND-TIER NEEDS (ACRE-FEET PER YEAR) | | | | | |
|---|---|---|---|---|---|---|
| | 2020 | 2030 | 2040 | 2050 | 2060 | 2070 |
| **MILLS COUNTY - BRAZOS BASIN** | | | | | | |
| COUNTY-OTHER | 0 | 0 | 0 | 0 | 0 | 0 |
| MINING | 0 | 0 | 0 | 0 | 0 | 0 |
| LIVESTOCK | 0 | 0 | 0 | 0 | 0 | 0 |
| IRRIGATION | 1,129 | 1,133 | 1,137 | 1,141 | 1,144 | 1,148 |
| **MILLS COUNTY - COLORADO BASIN** | | | | | | |
| BROOKESMITH SUD* | 0 | 0 | 0 | 0 | 0 | 0 |
| CORIX UTILITIES TEXAS INC* | 0 | 0 | 0 | 0 | 0 | 0 |
| GOLDTHWAITE | 0 | 0 | 0 | 0 | 0 | 0 |
| ZEPHYR WSC* | 0 | 0 | 0 | 0 | 0 | 0 |
| COUNTY-OTHER | 0 | 0 | 0 | 0 | 0 | 0 |
| MANUFACTURING | 0 | 0 | 0 | 0 | 0 | 0 |
| MINING | 0 | 0 | 0 | 0 | 0 | 0 |
| LIVESTOCK | 0 | 0 | 0 | 0 | 0 | 0 |
| IRRIGATION | 0 | 0 | 0 | 0 | 0 | 0 |
| **SAN SABA COUNTY - COLORADO BASIN** | | | | | | |
| CORIX UTILITIES TEXAS INC* | 0 | 0 | 0 | 0 | 0 | 0 |
| NORTH SAN SABA WSC | 0 | 0 | 0 | 0 | 0 | 0 |
| RICHLAND SUD* | 0 | 0 | 0 | 0 | 0 | 0 |
| SAN SABA | 0 | 0 | 0 | 0 | 0 | 0 |
| COUNTY-OTHER | 0 | 0 | 0 | 0 | 0 | 0 |
| MANUFACTURING | 0 | 0 | 0 | 0 | 0 | 0 |
| MINING | 0 | 0 | 0 | 0 | 0 | 0 |
| LIVESTOCK | 0 | 0 | 0 | 0 | 0 | 0 |
| IRRIGATION | 0 | 0 | 0 | 0 | 0 | 0 |
| **TRAVIS COUNTY - COLORADO BASIN** | | | | | | |
| AQUA WSC* | 0 | 0 | 0 | 0 | 0 | 0 |
| AUSTIN | 0 | 0 | 0 | 0 | 0 | 0 |
| BARTON CREEK WEST WSC | 0 | 0 | 0 | 0 | 0 | 0 |
| BARTON CREEK WSC | 51 | 75 | 88 | 81 | 68 | 56 |
| BRIARCLIFF | 0 | 0 | 0 | 0 | 0 | 0 |
| CEDAR PARK* | 0 | 0 | 0 | 0 | 0 | 0 |
| COTTONWOOD CREEK MUD 1 | 0 | 0 | 0 | 0 | 0 | 0 |
| CREEDMOOR-MAHA WSC* | 0 | 0 | 360 | 430 | 524 | 615 |
| CYPRESS RANCH WCID 1 | 0 | 0 | 0 | 0 | 0 | 0 |
| DEER CREEK RANCH WATER | 0 | 0 | 0 | 0 | 0 | 0 |
| ELGIN | 0 | 0 | 0 | 0 | 0 | 0 |
| GARFIELD WSC | 0 | 0 | 0 | 7 | 26 | 47 |
| HORNSBY BEND UTILITY | 0 | 0 | 0 | 0 | 0 | 0 |
| HURST CREEK MUD | 0 | 0 | 0 | 0 | 0 | 0 |
| JONESTOWN WSC | 0 | 0 | 0 | 0 | 0 | 0 |
| KELLY LANE WCID 1 | 0 | 0 | 0 | 0 | 0 | 0 |
| LAGO VISTA | 0 | 0 | 0 | 0 | 0 | 0 |
| LAKEWAY MUD | 0 | 0 | 0 | 0 | 0 | 0 |
| LEANDER* | 0 | 1,272 | 1,393 | 2,039 | 2,308 | 2,595 |
| LOOP 360 WSC | 0 | 0 | 0 | 0 | 0 | 0 |
| MANOR | 0 | 0 | 0 | 0 | 0 | 0 |
| MANVILLE WSC* | 0 | 0 | 0 | 0 | 0 | 703 |

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# Region K Water User Group (WUG) Second-Tier Identified Water Needs

| | WUG SECOND-TIER NEEDS (ACRE-FEET PER YEAR) | | | | | |
|---|---|---|---|---|---|---|
| | 2020 | 2030 | 2040 | 2050 | 2060 | 2070 |
| **TRAVIS COUNTY - COLORADO BASIN** | | | | | | |
| NORTH AUSTIN MUD 1 | 0 | 0 | 72 | 71 | 71 | 71 |
| NORTHTOWN MUD | 0 | 0 | 900 | 1,013 | 1,112 | 1,205 |
| OAK SHORES WATER SYSTEM | 0 | 0 | 0 | 0 | 0 | 0 |
| PFLUGERVILLE* | 0 | 0 | 0 | 490 | 2,458 | 2,385 |
| ROLLINGWOOD | 0 | 0 | 228 | 206 | 186 | 183 |
| ROUGH HOLLOW IN TRAVIS COUNTY | 0 | 0 | 0 | 0 | 0 | 0 |
| ROUND ROCK* | 0 | 0 | 0 | 0 | 0 | 0 |
| SENNA HILLS MUD | 0 | 0 | 0 | 0 | 0 | 0 |
| SHADY HOLLOW MUD | 0 | 0 | 0 | 0 | 0 | 0 |
| SUNSET VALLEY | 0 | 0 | 248 | 261 | 274 | 288 |
| SWEETWATER COMMUNITY | 0 | 0 | 0 | 0 | 0 | 0 |
| TRAVIS COUNTY MUD 10 | 0 | 0 | 0 | 0 | 0 | 0 |
| TRAVIS COUNTY MUD 14 | 0 | 0 | 0 | 2 | 17 | 35 |
| TRAVIS COUNTY MUD 2 | 0 | 0 | 0 | 0 | 0 | 0 |
| TRAVIS COUNTY MUD 4 | 0 | 0 | 0 | 0 | 0 | 0 |
| TRAVIS COUNTY WCID 10 | 0 | 0 | 2,297 | 2,245 | 2,161 | 2,063 |
| TRAVIS COUNTY WCID 17 | 0 | 0 | 0 | 0 | 0 | 0 |
| TRAVIS COUNTY WCID 18 | 0 | 0 | 0 | 0 | 0 | 0 |
| TRAVIS COUNTY WCID 19 | 0 | 0 | 0 | 0 | 0 | 0 |
| TRAVIS COUNTY WCID 20 | 0 | 0 | 0 | 0 | 0 | 0 |
| TRAVIS COUNTY WCID POINT VENTURE | 0 | 0 | 0 | 0 | 0 | 41 |
| WELLS BRANCH MUD | 0 | 0 | 1,255 | 1,238 | 1,233 | 1,232 |
| WEST TRAVIS COUNTY PUBLIC UTILITY AGENCY | 0 | 0 | 0 | 0 | 0 | 0 |
| WILLIAMSON COUNTY WSID 3* | 0 | 0 | 0 | 0 | 0 | 0 |
| WILLIAMSON TRAVIS COUNTIES MUD 1* | 0 | 0 | 0 | 0 | 0 | 0 |
| WINDERMERE UTILITY | 0 | 0 | 873 | 873 | 873 | 873 |
| COUNTY-OTHER | 0 | 0 | 0 | 0 | 0 | 0 |
| COUNTY-OTHER \| AQUA TEXAS - RIVERCREST | 0 | 0 | 0 | 0 | 0 | 0 |
| MANUFACTURING | 0 | 0 | 0 | 0 | 0 | 0 |
| MINING | 0 | 0 | 0 | 0 | 0 | 0 |
| STEAM ELECTRIC POWER | 0 | 0 | 0 | 0 | 0 | 0 |
| LIVESTOCK | 0 | 0 | 0 | 0 | 0 | 0 |
| IRRIGATION | 0 | 0 | 0 | 0 | 0 | 0 |
| **TRAVIS COUNTY - GUADALUPE BASIN** | | | | | | |
| CREEDMOOR-MAHA WSC* | 0 | 0 | 0 | 0 | 0 | 0 |
| GOFORTH SUD* | 4 | 5 | 9 | 14 | 19 | 24 |
| COUNTY-OTHER | 0 | 0 | 0 | 0 | 0 | 0 |
| MINING | 0 | 0 | 0 | 0 | 0 | 0 |
| LIVESTOCK | 0 | 0 | 0 | 0 | 0 | 0 |
| **WHARTON COUNTY - BRAZOS-COLORADO BASIN** | | | | | | |
| BOLING MWD | 0 | 0 | 0 | 0 | 0 | 0 |
| WHARTON | 0 | 0 | 0 | 0 | 0 | 0 |
| WHARTON COUNTY WCID 2 | 0 | 0 | 0 | 0 | 0 | 0 |
| COUNTY-OTHER* | 0 | 0 | 0 | 0 | 0 | 0 |
| MANUFACTURING* | 0 | 0 | 0 | 0 | 0 | 0 |
| MINING* | 0 | 0 | 0 | 0 | 0 | 0 |
| STEAM ELECTRIC POWER* | 0 | 0 | 0 | 0 | 0 | 0 |

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## Region K Water User Group (WUG) Second-Tier Identified Water Needs

| | WUG SECOND-TIER NEEDS (ACRE-FEET PER YEAR) | | | | | |
|---|---|---|---|---|---|---|
| | **2020** | **2030** | **2040** | **2050** | **2060** | **2070** |
| **WHARTON COUNTY - BRAZOS-COLORADO BASIN** | | | | | | |
| LIVESTOCK* | 0 | 0 | 0 | 0 | 0 | 0 |
| IRRIGATION* | 25,508 | 19,079 | 12,489 | 6,522 | 1,178 | 0 |
| **WHARTON COUNTY - COLORADO BASIN** | | | | | | |
| EL CAMPO* | 0 | 0 | 0 | 0 | 0 | 0 |
| WHARTON | 0 | 0 | 0 | 0 | 0 | 0 |
| COUNTY-OTHER* | 0 | 0 | 0 | 0 | 0 | 0 |
| MANUFACTURING* | 0 | 0 | 0 | 0 | 0 | 0 |
| MINING* | 0 | 0 | 0 | 0 | 0 | 0 |
| STEAM ELECTRIC POWER* | 0 | 0 | 0 | 0 | 0 | 0 |
| LIVESTOCK* | 0 | 0 | 0 | 0 | 0 | 0 |
| IRRIGATION* | 11,627 | 8,227 | 4,769 | 1,605 | 0 | 0 |
| **WHARTON COUNTY - COLORADO-LAVACA BASIN** | | | | | | |
| COUNTY-OTHER* | 0 | 0 | 0 | 0 | 0 | 0 |
| MINING* | 0 | 0 | 0 | 0 | 0 | 0 |
| LIVESTOCK* | 0 | 0 | 0 | 0 | 0 | 0 |
| IRRIGATION* | 0 | 0 | 0 | 0 | 0 | 0 |
| **WHARTON COUNTY - LAVACA BASIN** | | | | | | |
| COUNTY-OTHER* | 0 | 0 | 0 | 0 | 0 | 0 |
| **WILLIAMSON COUNTY - BRAZOS BASIN** | | | | | | |
| AUSTIN | 0 | 0 | 0 | 0 | 0 | 0 |
| NORTH AUSTIN MUD 1 | 0 | 0 | 690 | 678 | 675 | 675 |
| WELLS BRANCH MUD | 0 | 0 | 72 | 71 | 70 | 70 |
| COUNTY-OTHER* | 0 | 0 | 0 | 0 | 0 | 0 |
| MANUFACTURING* | 0 | 0 | 0 | 0 | 0 | 0 |
| MINING* | 0 | 0 | 0 | 0 | 0 | 0 |

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# Region K Water User Group (WUG) Second-Tier Identified Water Needs Summary

Second-tier needs are WUG split needs adjusted to include the implementation of recommended demand reduction and direct reuse water management strategies.

| WUG CATEGORY | NEEDS (ACRE-FEET PER YEAR) | | | | | |
|---|---|---|---|---|---|---|
| | 2020 | 2030 | 2040 | 2050 | 2060 | 2070 |
| MUNICIPAL | 277 | 1,717 | 11,202 | 16,031 | 27,968 | 41,493 |
| COUNTY-OTHER | 308 | 400 | 507 | 613 | 697 | 1,323 |
| MANUFACTURING | 0 | 40 | 40 | 40 | 40 | 40 |
| MINING | 1,740 | 5,194 | 6,056 | 5,575 | 3,372 | 4,060 |
| STEAM ELECTRIC POWER | 20,066 | 19,986 | 19,906 | 19,826 | 19,826 | 19,826 |
| LIVESTOCK | 0 | 0 | 0 | 0 | 0 | 0 |
| IRRIGATION | 170,277 | 141,583 | 112,321 | 86,033 | 65,198 | 53,607 |