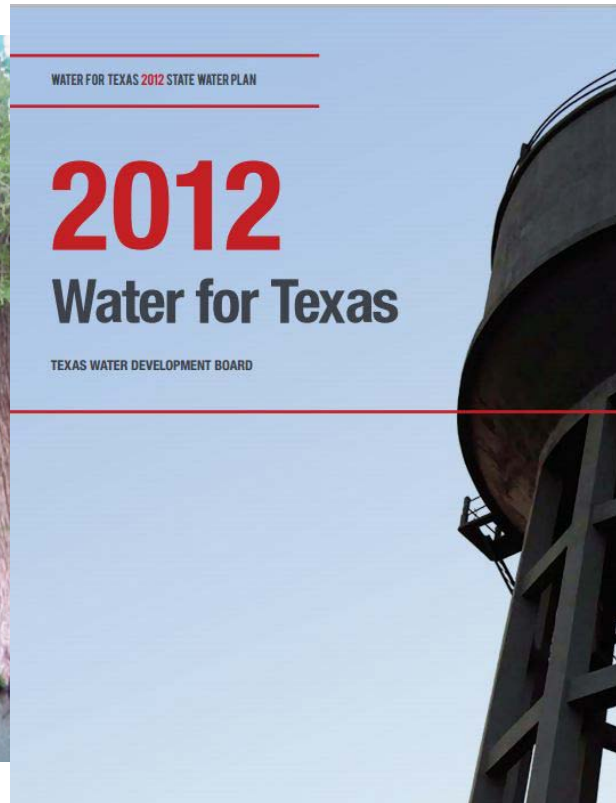
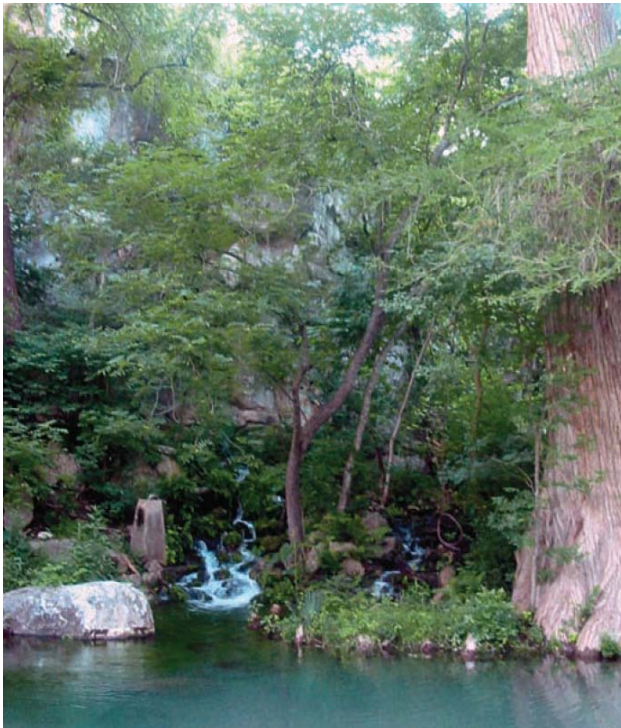


# Current and future water demands and water needs during severe drought, Texas Hill Country

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# Introduction

## Texas Water Development Board - Texas Water Plan 2012

### Major Purpose of Plan

Estimate current and future water needs (shortages) and identify water management strategies and associated costs to meet future needs.

### Based on

- Analyses of historic and current data for population and water use volumes
- Projections for water supply and water use based on population and growth projections
- 6 years – 2010, 2020, 2030, 2040, 2050, and 2060
- Severe drought conditions (when demand highest & supply lowest)
- Data values for water management categories (i.e., demand, supply, need)
- 6 water use types--municipal (**urban & rural**), irrigation, livestock, manufacturing, mining, & steam electric

Data available by individual water user groups (i.e., city water utilities, water districts) and stream basin within counties but aggregated in Plan by 16 Regional Water Management Groups

The Plan online at <http://www.twdb.state.tx.us/wrpi/swp/swp.asp>  
Plans for each Region at <http://www.twdb.state.tx.us/wrpi/rwp/3rdround/2011RWP.asp>

# Definitions for water management categories

- **Water demand:** amount of water needed for given year, considering all conservation and reuse measures are applied.
- **Existing water supply:** amount of water that can be produced during severe drought, based on current permits and contracts, and existing infrastructure.
- **Water need:** amount by which the water demand exceeds the existing supply.
- **Water management strategy supply:** amount of additional water that could be added to supply, if all feasible water management strategies are funded, built, and maintained.



# Purpose of presentation

**Present, for 17 county Hill Country area, water management data and identify **counties**, **water-use types**, and **years** for which the water demand exceeds the supply. Such areas and years would experience needs (shortages) during severe drought.**

**Note: The values for water needs and existing supplies herein are calculated based on data for individual water user groups, some of which provide water to users in more than one county. To simplify this presentation, the data values are aggregated and presented by county. However, some of the need and supply water volumes appropriated to a county will also be applicable to another (usually adjacent) county.**

# **Included in the Water Plan but not in this presentation**

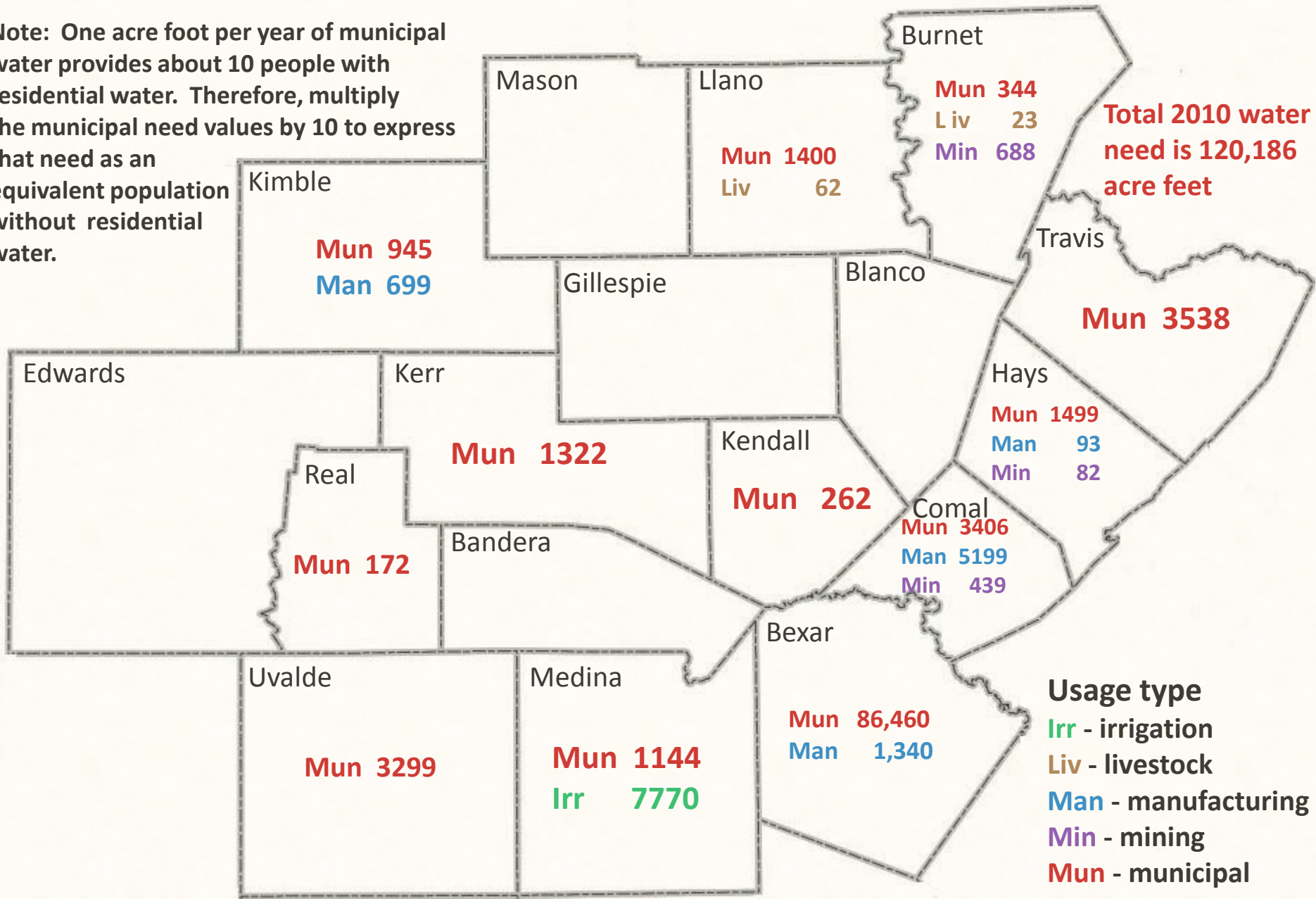
- **impacts of Water Management Strategies on water quality, agriculture, and natural resources**
- **summary of the economic impacts of not developing water management strategies— (i.e., increased unemployment & lost revenue resulting from decreased tourism)**

**A table documenting current (2010) municipal (urban and rural) water demand, supply, and need values for individual water user groups provided at the end of the presentation.**

# Amount of water needs during severe drought conditions, 2010

Data values represent acre feet per year.

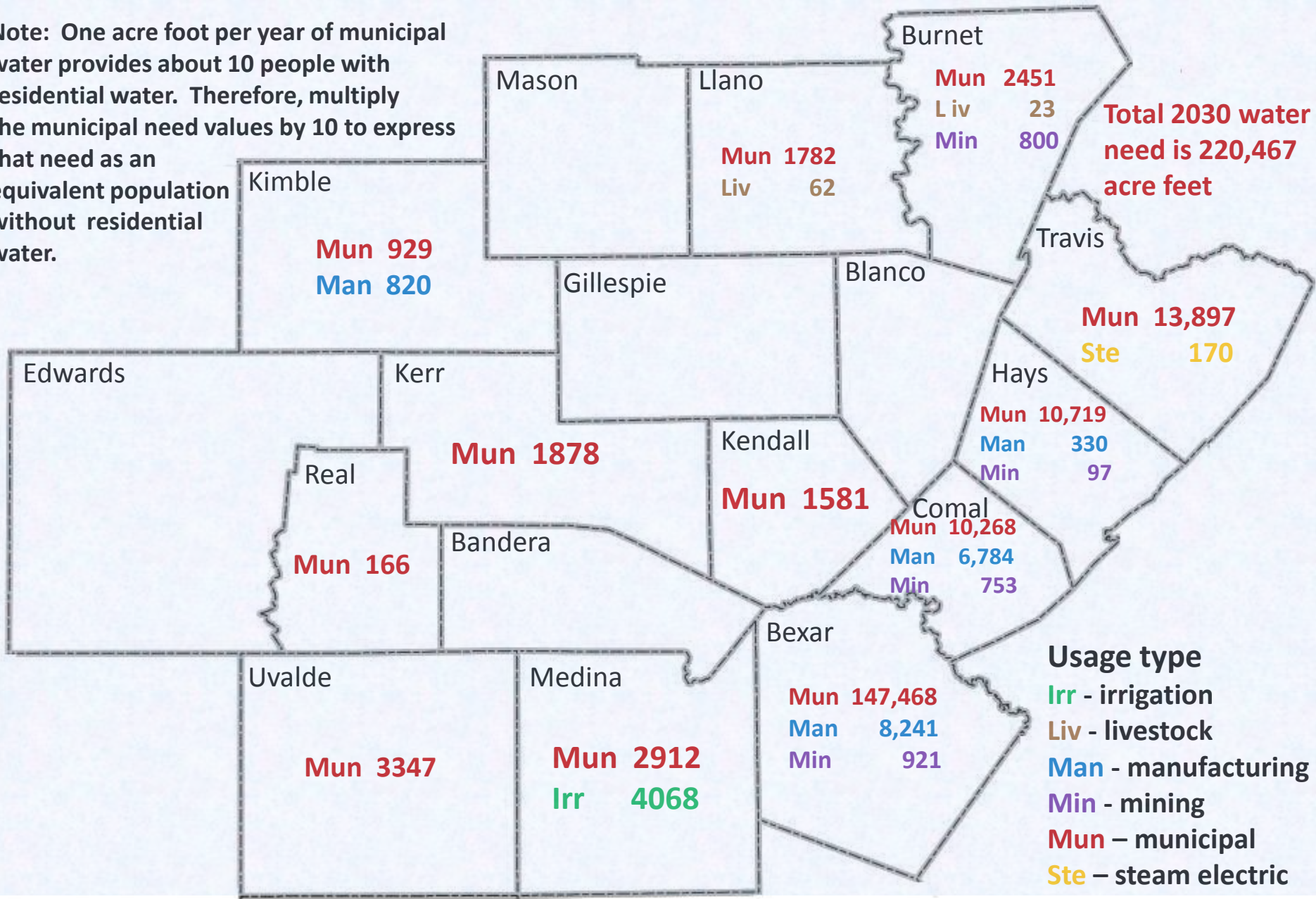
Note: One acre foot per year of municipal water provides about 10 people with residential water. Therefore, multiply the municipal need values by 10 to express that need as an equivalent population without residential water.



# Amount of water needs during severe drought conditions, 2030

Data values represent acre feet per year.

Note: One acre foot per year of municipal water provides about 10 people with residential water. Therefore, multiply the municipal need values by 10 to express that need as an equivalent population without residential water.

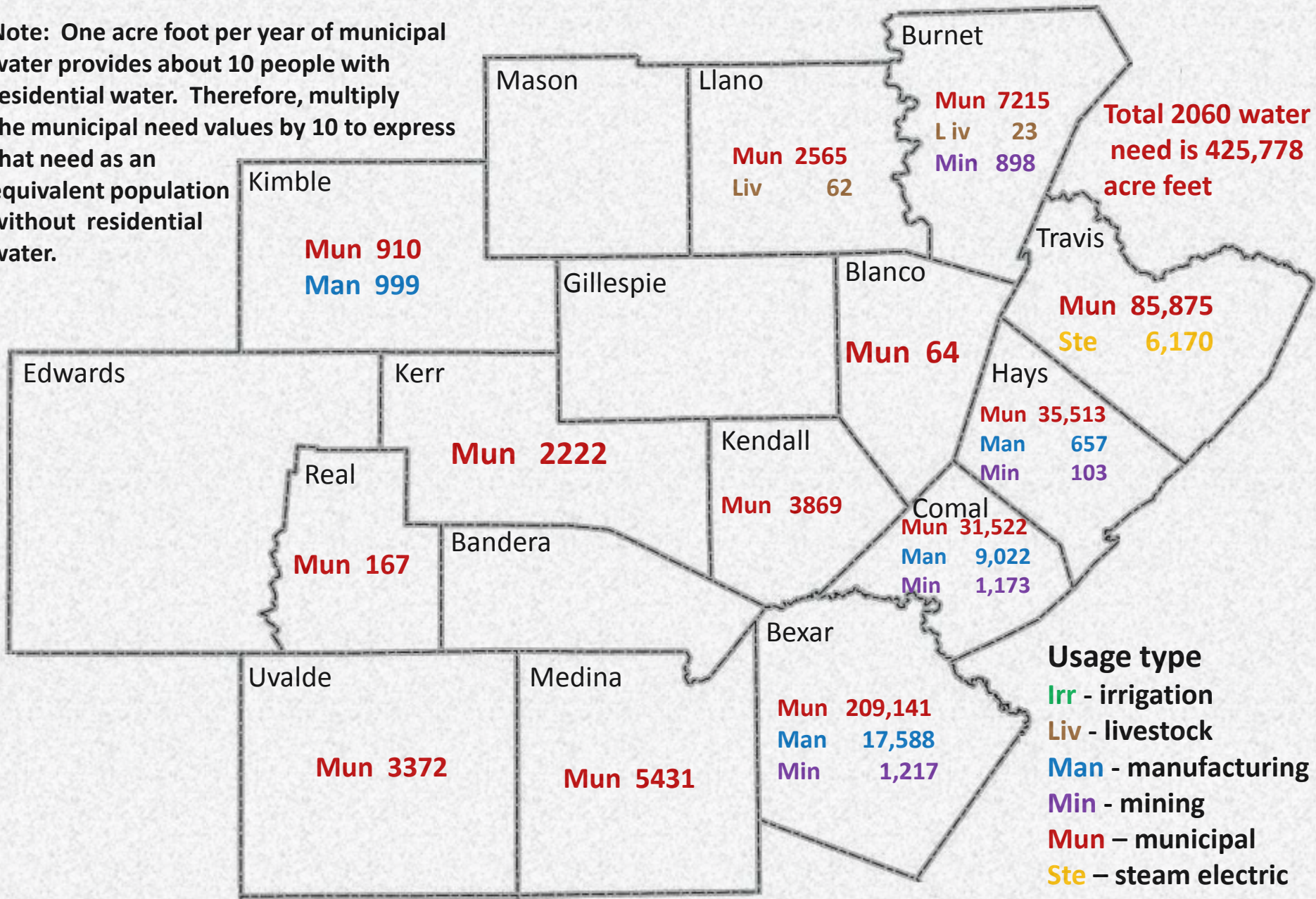




# Amount of water needs during severe drought conditions, 2060

Data values represent acre feet per year.

Note: One acre foot per year of municipal water provides about 10 people with residential water. Therefore, multiply the municipal need values by 10 to express that need as an equivalent population without residential water.

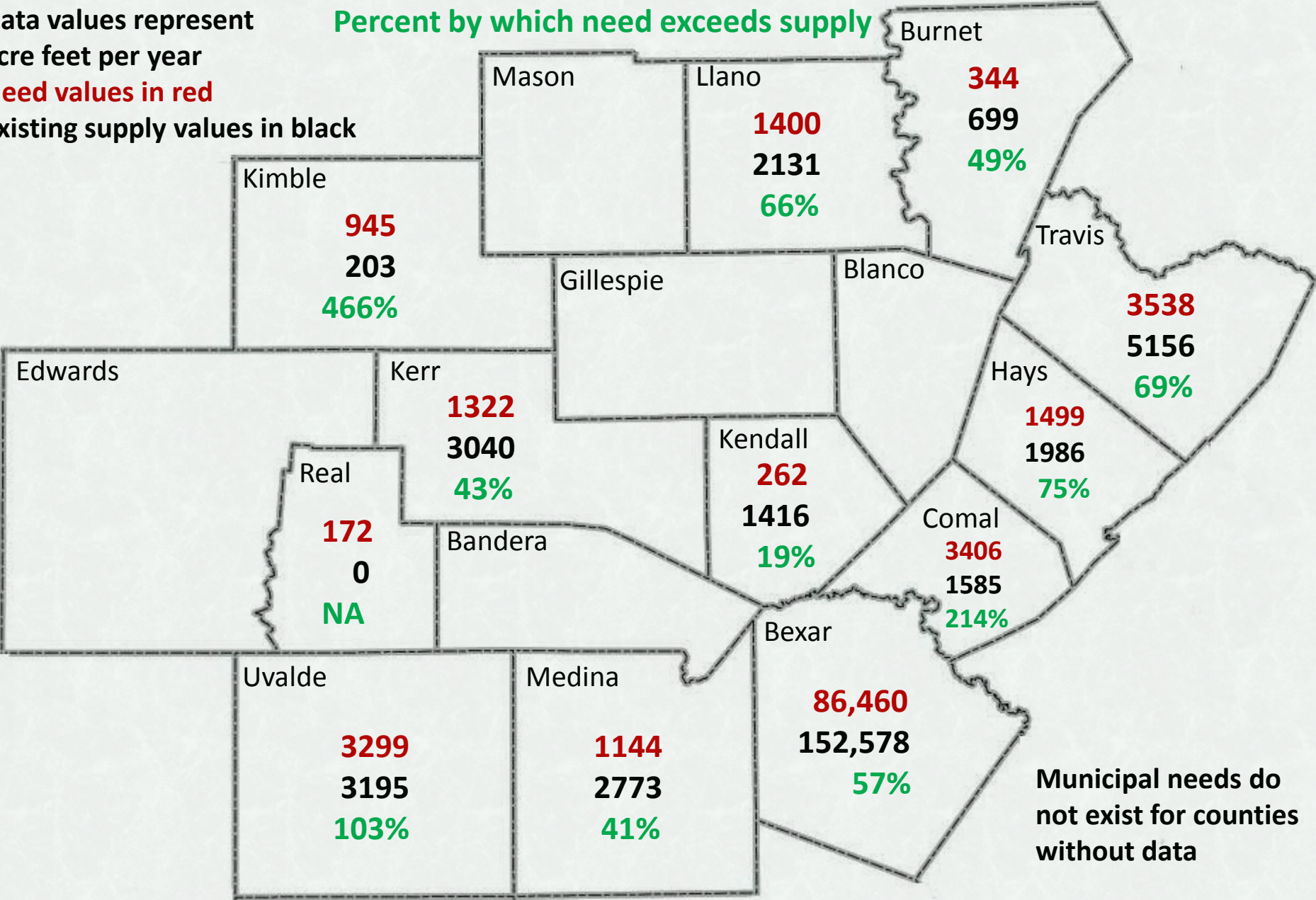




# Comparison of data values for water needs and existing supplies for municipal (urban & rural) water use, 2010

Data values represent  
acre feet per year  
**Need values in red**  
Existing supply values in black

Percent by which need exceeds supply

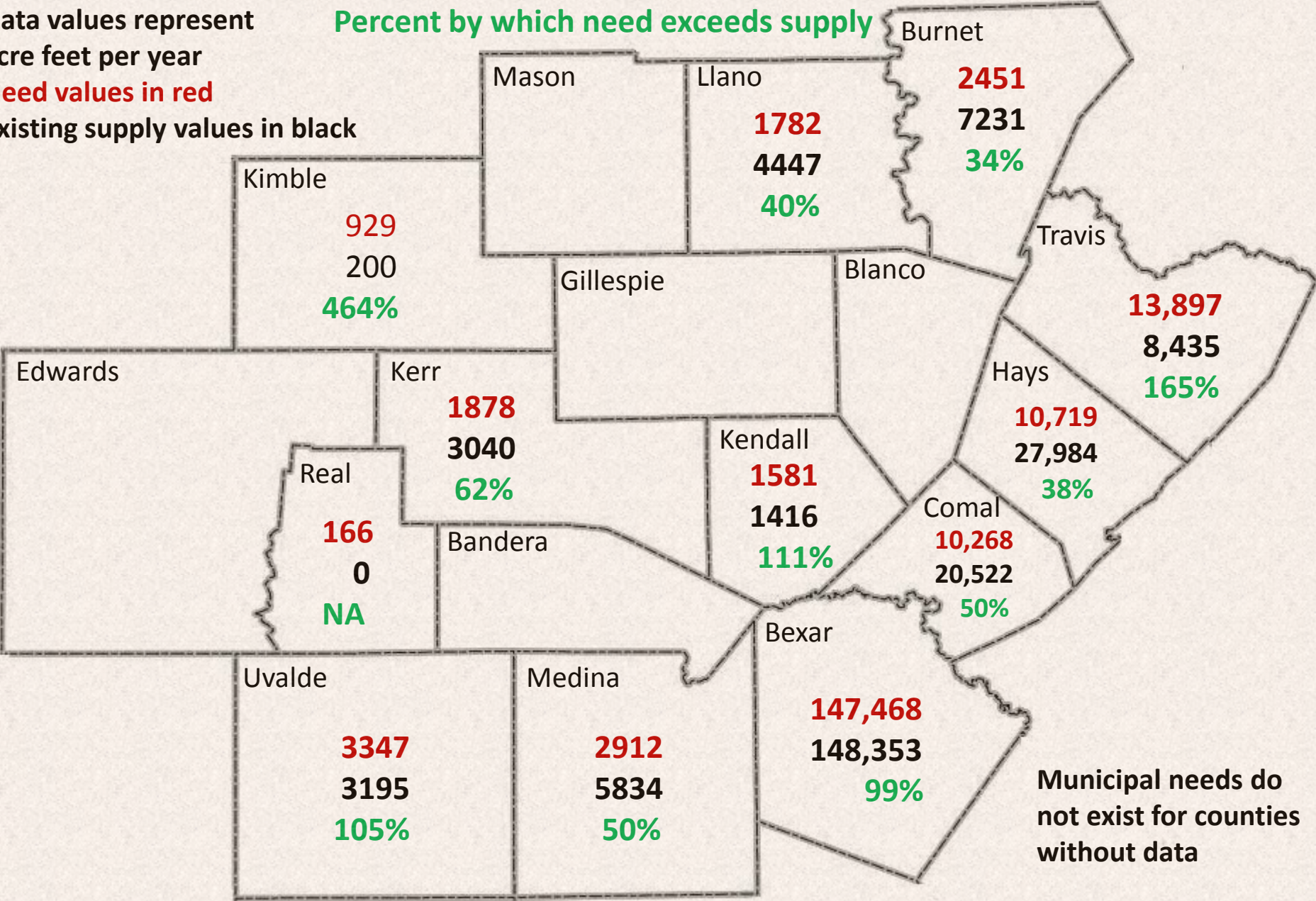


Municipal needs do  
not exist for counties  
without data

# Comparison of data values for water needs and existing supplies for municipal (urban & rural) water use, 2030

Data values represent  
acre feet per year  
**Need values in red**  
Existing supply values in black

Percent by which need exceeds supply



## Hill Country Water Management Strategies

- Supply from strategies would **negate all water needs through 2060**
- Capital cost - **\$7.6 billion**
- Average annual cost - **\$500 million**

## Statewide Water Management Strategies

- Supply from strategies do not negate all needs
- Capital cost **\$53 billion**
- Water providers need about **\$26.9 billion** in state financial assistance to implement the recommended strategies for municipal water user groups.

## State Legislature funding for strategies

- 2007, 2009, and 2011: appropriated **\$1.47** billion in bonds
- 2011: \$100 million (**less than 0.2 % of capital cost**) appropriated

**If strategies not funded, Hill Country water needs (shortages) would exist**



# Water need (shortages) Summary

2010

Note: 1 acre foot of water per year provides about 10 people with residential needs

- Total need 120, 186 acre feet
- 12 counties with municipal needs--**103,791 acre feet**
- Municipal needs equivalent to that for **1.0 million people**

2030

- Total need 220, 467 acre feet
- 12 counties with municipal needs—**197,398 acre feet**
- Municipal needs equivalent to that for **2.0 million people**

2060

- Total need 425,778 acre feet
- 13 counties have municipal needs – **387,866 acre feet**
- Municipal needs equivalent to that for **3.9 million people**

The current (2010) municipal (urban and rural) water needs (shortages) greatly exceed existing supplies for 12 of the 17 Hill Country counties. The amount by which the need exceeds the supply substantially increases in the future.

A table presenting current (2010) municipal (urban and rural) water demand, supply, and need values for individual water user groups follows.

# Tables presenting water management data by water user groups

## Sorted by water user group name within counties

| Hill County Municipal water demand, supply, and need,                             |        |             |         |         |          |
|-----------------------------------------------------------------------------------|--------|-------------|---------|---------|----------|
| Bexar and Burnet Counties, 2010                                                   |        |             |         |         |          |
| Only users with needs (shortages) presented. Values represent acre feet per year. |        |             |         |         |          |
| Water User Group (WUG) Name                                                       | County | WUG Basin   | Demand  | Supply  | Need     |
| ALAMO HEIGHTS                                                                     | BEXAR  | SAN ANTONIO | 2,071   | 1,479   | (592)    |
| ATASCOSA RURAL WSC                                                                | BEXAR  | NUECES      | 38      | 16      | (22)     |
| ATASCOSA RURAL WSC                                                                | BEXAR  | SAN ANTONIO | 903     | 379     | (524)    |
| BEXAR MET WATER DISTRICT                                                          | BEXAR  | NUECES      | 161     | 76      | (85)     |
| BEXAR MET WATER DISTRICT                                                          | BEXAR  | SAN ANTONIO | 8,736   | 5,630   | (3,106)  |
| CASTLE HILLS                                                                      | BEXAR  | SAN ANTONIO | 820     | 724     | (96)     |
| HILL COUNTRY VILLAGE                                                              | BEXAR  | SAN ANTONIO | 838     | 108     | (730)    |
| HOLLYWOOD PARK                                                                    | BEXAR  | SAN ANTONIO | 2,314   | 345     | (1,969)  |
| KIRBY                                                                             | BEXAR  | SAN ANTONIO | 1,005   | 670     | (335)    |
| LYTLE                                                                             | BEXAR  | NUECES      | 5       | 2       | (3)      |
| SAN ANTONIO                                                                       | BEXAR  | SAN ANTONIO | 192,008 | 123,531 | (68,477) |
| SAN ANTONIO                                                                       | BEXAR  | SAN ANTONIO | 24,654  | 15,631  | (9,023)  |
| SAN ANTONIO                                                                       | BEXAR  | SAN ANTONIO | 284     | -       | (284)    |
| SHAVANO PARK                                                                      | BEXAR  | SAN ANTONIO | 819     | 499     | (320)    |
| UNIVERSAL CITY                                                                    | BEXAR  | SAN ANTONIO | 2,608   | 2,495   | (113)    |
| WATER SERVICES INC                                                                | BEXAR  | SAN ANTONIO | 570     | 24      | (546)    |
| WINDCREST                                                                         | BEXAR  | SAN ANTONIO | 1,204   | 969     | (235)    |
|                                                                                   |        | Totals      | 239,038 | 152,578 | (86,460) |
|                                                                                   |        |             |         |         |          |
| COTTONWOOD SHORES                                                                 | BURNET | COLORADO    | 164     | 138     | (26)     |
| MEADOWLAKES                                                                       | BURNET | COLORADO    | 879     | 561     | (318)    |
|                                                                                   |        | Totals      | 1,043   | 699     | (344)    |

## Hill County Municipal water demand, supply, and need,

### Comal, Hays, Kendall, Kerr, and Kimble Counties, 2010

Only users with needs (shortages) presented. Values represent acre feet per year.

| Water User Group (WUG) Name | County  | WUG Basin   | Demand | Supply | Need    |
|-----------------------------|---------|-------------|--------|--------|---------|
| BEXAR MET WATER DISTRICT    | COMAL   | GUADALUPE   | 33     | -      | (33)    |
| BEXAR MET WATER DISTRICT    | COMAL   | SAN ANTONIO | 429    | 43     | (386)   |
| BULVERDE CITY               | COMAL   | GUADALUPE   | 9      | 4      | (5)     |
| BULVERDE CITY               | COMAL   | SAN ANTONIO | 1,044  | 396    | (648)   |
| COUNTY-OTHER                | COMAL   | GUADALUPE   | 2,603  | 821    | (1,782) |
| GARDEN RIDGE                | COMAL   | GUADALUPE   | 337    | 202    | (135)   |
| GARDEN RIDGE                | COMAL   | SAN ANTONIO | 228    | 106    | (122)   |
| WATER SERVICES INC          | COMAL   | SAN ANTONIO | 308    | 13     | (295)   |
|                             |         | Totals      | 4,991  | 1,585  | (3,406) |
|                             |         |             |        |        |         |
| CIMARRON PARK WATER COMPANY | HAYS    | COLORADO    | 403    | 253    | (150)   |
| CREEDMOOR-MAHA WSC          | HAYS    | GUADALUPE   | 10     | 7      | (3)     |
| DRIPPING SPRINGS            | HAYS    | COLORADO    | 1,080  | 506    | (574)   |
| MOUNTAIN CITY               | HAYS    | COLORADO    | 118    | 93     | (25)    |
| NIEDERWALD                  | HAYS    | GUADALUPE   | 104    | 54     | (50)    |
| WIMBERLEY WSC               | HAYS    | GUADALUPE   | 776    | 557    | (219)   |
| WOODCREEK                   | HAYS    | GUADALUPE   | 246    | 223    | (23)    |
| WOODCREEK UTILITIES INC     | HAYS    | GUADALUPE   | 748    | 293    | (455)   |
|                             |         | Totals      | 3,485  | 1,986  | (1,499) |
|                             |         |             |        |        |         |
| COUNTY-OTHER                | KENDALL | GUADALUPE   | 1,635  | 1,414  | (221)   |
| WATER SERVICES INC          | KENDALL | SAN ANTONIO | 43     | 2      | (41)    |
|                             |         | Totals      | 1,678  | 1,416  | (262)   |
|                             |         |             |        |        |         |
| KERRVILLE                   | KERR    | GUADALUPE   | 4,362  | 3,040  | (1,322) |
|                             |         |             |        |        |         |
| COUNTY-OTHER                | KIMBLE  | COLORADO    | 212    | 203    | (9)     |
| JUNCTION                    | KIMBLE  | COLORADO    | 936    | -      | (936)   |
|                             |         | Totals      | 1,148  | 203    | (945)   |



**Hill County Municipal water demand, supply, and need,  
Llano, Medina, Real, Travis, and Uvalde Counties, 2010**

Only users with needs (shortages) presented. Values represent acre feet per year.

| <b>Water User Group (WUG) Name</b> | <b>County</b> | <b>WUG Basin</b> | <b>Demand</b> | <b>Supply</b> | <b>Need</b> |
|------------------------------------|---------------|------------------|---------------|---------------|-------------|
| KINGSLAND WSC                      | LLANO         | COLORADO         | 689           | 514           | (175)       |
| LAKE LBJ MUD                       | LLANO         | COLORADO         | 1,665         | 1,530         | (135)       |
| LLANO                              | LLANO         | COLORADO         | 1,177         | 87            | (1,090)     |
|                                    |               | Totals           | 3,531         | 2,131         | (1,400)     |
|                                    |               |                  |               |               |             |
| BEXAR MET WATER DISTRICT           | MEDINA        | SAN ANTONIO      | 24            | 9             | (15)        |
| CASTROVILLE                        | MEDINA        | SAN ANTONIO      | 680           | 386           | (294)       |
| HONDO                              | MEDINA        | NUECES           | 1,784         | 1,465         | (319)       |
| LACOSTE                            | MEDINA        | SAN ANTONIO      | 205           | 113           | (92)        |
| LYTLE                              | MEDINA        | NUECES           | 62            | 46            | (16)        |
| NATALIA                            | MEDINA        | NUECES           | 330           | 136           | (194)       |
| YANCEY WSC                         | MEDINA        | SAN ANTONIO      | 832           | 618           | (214)       |
|                                    |               | Totals           | 3,917         | 2,773         | (1,144)     |
|                                    |               |                  |               |               |             |
| CAMP WOOD                          | REAL          | NUECES           | 172           | -             | (172)       |
|                                    |               |                  |               |               |             |
| BARTON CREEK WEST WSC              | TRAVIS        | COLORADO         | 401           | 348           | (53)        |
| BEE CAVE VILLAGE                   | TRAVIS        | COLORADO         | 1,177         | 241           | (936)       |
| GOFORTH WSC                        | TRAVIS        | COLORADO         | 30            | 19            | (11)        |
| JONESTOWN                          | TRAVIS        | COLORADO         | 467           | 338           | (129)       |
| LAKEWAY                            | TRAVIS        | COLORADO         | 4,750         | 3,069         | (1,681)     |
| RIVER PLACE ON LAKE AUSTIN         | TRAVIS        | COLORADO         | 1,470         | 900           | (570)       |
| ROUND ROCK                         | TRAVIS        | COLORADO         | 399           | 241           | (158)       |
|                                    |               | Totals           | 8,694         | 5,156         | (3,538)     |
|                                    |               |                  |               |               |             |
| SABINAL                            | UVALDE        | NUECES           | 407           | 280           | (127)       |
| UVALDE                             | UVALDE        | NUECES           | 6,087         | 2,915         | (3,172)     |
|                                    |               | Totals           | 6,494         | 3,195         | (3,299)     |