

Final Summary Report on regional and state water plans and their potential conflicts with Carrizo-Wilcox Groundwater Conservation District (GCD) management plans

1.0 Introduction and Background

Task 3 of the Carrizo-Wilcox Aquifer Study (the Study) directs the Bureau of Economic Geology (BEG) to *“Evaluate current regional and state water plans and all Carrizo-Wilcox aquifer related strategies for conflicts with GCD (Groundwater Conservation District) plans; conduct stakeholder meetings to present the goals and results of the Study, and to identify, tabulate and describe every existing and projected water user group strategy or alternative strategy that is presently or is likely to impact groundwater use from the Carrizo-Wilcox Aquifer including but not limited to strategies for the use of brackish groundwater.”*

In the scope of work for the Study, the use of the phrase *“...Evaluate current regional and state water plans and all Carrizo-Wilcox aquifer related strategies for conflicts with GCD plans”* resulted in some unique challenges with respect to the timing of the plans in question. The following are provided to illustrate these challenges:

- The Study was initiated by the Texas Commission on Environmental Quality (TCEQ) with an original deadline for Task 3 of September 1, 2010
- Groundwater conservation districts, through their participation in the joint planning process, were statutorily required (TWC §36.108(d) to adopt Desired Future Conditions (DFCs) and submit them to the Texas Water Development Board (TWDB) by September 1, 2010
- Regional water planning groups were required by rule (31 TAC §357.5(b)(2)) to submit updated regional water plans to the TWDB for approval by September 1, 2010 (note that a few regions were granted time extensions of approximately one month), and finally,
- The TWDB is statutorily required to submit an updated state water plan reflecting the 2011 regional water plans (that were submitted on September 1, 2010) to the Governor, Lieutenant Governor, Speaker of the House, and to the Chairs of the Natural Resource Committees by January 5, 2012 (TWC §16.051(a)).

Task 3 was designed to evaluate regional and state water plans and GCD management plans in order to identify conflicts that may exist between the two planning processes. Ideally, this evaluation would occur after the 2011 regional water plans were adopted and all Carrizo-Wilcox GCDs had amended their respective management plans to reflect adopted DFCs and estimates of Managed Available Groundwater (MAG). Due to the very recent submission of DFCs at the time of this writing, all estimates of MAG are still in draft form and the Carrizo-Wilcox GCDs have not had sufficient time to amend their management plans to integrate the adopted DFC.

In order to provide a meaningful evaluation that generally reflects the intent and goal of Task 3, accommodations were made for the following realities of the various timelines. These include:

- Delivery of this report was delayed by approximately two months in order to allow the TWDB to process applicable data in the 2011 regional water plans pertaining to currently available supplies and water management strategies that utilize the Carrizo-Wilcox Aquifer.
- It is understood that the data provided by the TWDB are provisional in nature, in that TWDB staff are currently engaged in the final review and approval of regional water plans, and as such, certain water management strategies may need to be revised prior to final approval of the regional water plans by the TWDB.
- It is also understood that the MAGs provided by the TWDB to the BEG for the Study are currently in draft form, pending review and comment from the Carrizo-Wilcox GCDs regarding quantification of exempt use. After exempt use has been established for each county and aquifer, that amount will be deducted from the MAGs utilized in this report. The sum of exempt use and MAG estimates will then represent the total amount of pumping consistent with the adopted DFC. While the MAG estimates may change due to comments from the GCDs, the estimates of total amount of pumping consistent with the DFCs (referred to as MAGs in this report) are not expected to change. This total amount of pumping is what is directly analogous to groundwater availability in the regional water plans. It is expected that the 2016 regional water plans will include this total amount of pumping (which includes exempt use + the MAG). Until exempt use has been quantified, for the purposes of this report only, MAG equals the total amount of pumping consistent with the DFC.
- With respect to a review of the regional and state water plans, it is recognized that we are currently in the interval between adoption of regional water plans and adoption of a state water plan. As such, the current state water plan is now four years old, and in many cases, inconsistent with recently adopted regional water plans. For the purposes of this report, in order to utilize the most current information and to avoid unnecessary confusion, information regarding currently available supplies and water management strategies from the recently adopted regional water plans was utilized for this analysis. Information from the 2007 State Water Plan was reviewed, but will not be presented in this report.
- In the 2016 regional water plans and the 2017 State Water Plan, the total amount of groundwater available to meet current and future needs can be no more than the MAG for the most recently adopted DFC. This task (Task 3) asks the BEG to “*Evaluate current regional and state water plans and all Carrizo-Wilcox aquifer related strategies for conflicts with GCD plans*”. What is not defined explicitly during this transitional stage of planning (both regional water planning and joint planning for GCDs) is what constitutes a conflict. For reference, 31 TAC §356.2(a)(6) states a conflict is “*A situation where the managed available groundwater identified in a management plan or the adopted state water plan is not the managed available groundwater based on the desired future conditions set by the groundwater conservation districts in the groundwater management area.*” This definition will be universally applicable during the 2016 regional water plans and 2017 State Water Plan. However, due to the timing of submission of DFCs and calculation of MAGs by the TWDB, none of the Carrizo-Wilcox GCDs were able to provide official MAGs in time for inclusion in the 2011 regional water plans. Therefore, technically, no conflict can exist at this time. For the purposes of Task 3, we did compare, on a county by county basis, the sum of Carrizo-Wilcox Aquifer availability and water management strategies that rely on the Carrizo-Wilcox Aquifer to the draft estimates of MAG for the Carrizo-Wilcox Aquifer from the initial round of joint planning that just concluded on September 1, 2010. Therefore, solely for the purposes of this evaluation, a “potential conflict” is defined as “where, on a county-level evaluation, the sum of current water supplies available from the Carrizo-Wilcox Aquifer and water management

strategies that rely on groundwater from the Carrizo-Wilcox Aquifer in a county are greater than or exceed the MAG for the same county.”

2.0 Methodology

This Summary Report was prepared using three different types of data; (1) amount of water supplies currently available from the Carrizo-Wilcox Aquifer based on information contained in the recently adopted 2011 regional water plans, (2) amount of additional water to be obtained from the Carrizo-Wilcox Aquifer recommended as water management strategies in the recently adopted regional water plans, and (3) draft estimates of MAG from the recently completed joint planning process. Information for (1) and (2) were provided by TWDB Water Resources Planning and Information staff (email dated October 7, 2010) and MAG estimates were provide by TWDB Water Science and Conservation staff (email dated October 5, 2010).

In order to compare the relevant data, an examination of the different data sources is appropriate. Water supplies available from the Carrizo-Wilcox Aquifer, as reported in the regional water plans on a decadal basis, are defined, in part, in 31TAC §357.7(a)(3) as the “...existing water supplies legally and physically available to the regional water planning area for use during drought of record....” In other words, the water supply has to be legally available (i.e., permits obtained) and infrastructure to transport the water to the current or future users has to be in place in order for the water to be counted as a current water supply. If the groundwater cannot be legally produced at this time or the infrastructure is not in place at the time of the plan development, then the groundwater may not be counted as a currently available supply. Any incremental increase in water to meet future water supply needs over what is currently available must be included as a recommended water management strategy in the applicable regional water plan. To include a future supply as a recommended water management strategy, the amount of water must be quantified on a decadal basis in the regional water plan. For the purposes of this evaluation, it is assumed that all water management strategies will be implemented in the amount and time prescribed in the 2011 regional water plans.

3.0 Results

For the purposes of this analysis, 64 counties were included in data provided by the TWDB containing information from the 2011 regional water plans and/or estimates of MAG. Table 1 contains information on the 64 counties, including the regional water planning area, groundwater management area, and on a decadal basis, (1) the sum of currently available water supplies and water management strategies, (2) the MAG, and (3) the difference between (1) and (2) which is referred to as “*Difference*”. Figures 1 – 3 illustrate the decadal values for (1) and (2) for the years 2010 and 2060, for all counties within the jurisdictional boundaries of a Carrizo-Wilcox GCD.

“*Difference*” values noted in Table 1 with parentheses (xxx) documents that the sum of currently available supplies and water management strategies for the Carrizo-Wilcox Aquifer in the county and decade referenced in the 2011 regional water plans is greater than the total amount of pumping consistent with the DFC (or for the purposes of this report as discussed earlier, the MAG). In these cases where the *Difference* value is negative for the decade referenced, a potential conflict exists. It is important to note that when the *Difference* is a negative number, which means for that county in that decade, there is insufficient managed available groundwater to implement all water management strategies based on the use of the Carrizo-Wilcox Aquifer in the 2011 regional water plans, while achieving the desired future condition.

Included in Table 1 are six counties, Bee, DeWitt, Graves, Live Oak McLennan and Travis, that included either currently available supplies or water management strategies from the Carrizo-Wilcox Aquifer, but for which there is no MAG. This situation may occur under multiple situations. For example, water supplies from the Carrizo-Wilcox Aquifer may be either currently or being planned for importation into a county, which is most often the case. Alternatively, as is the case in Travis County (which does not have any Carrizo-Wilcox Aquifer present in the county, a political subdivision, such as the City of Elgin, may be located in two or more counties (In the case of the City of Elgin, Bastrop and Travis counties) . For regional water planning purposes, the source of water supplies or water management strategies is identified on a county by county basis. Therefore, Carrizo-Wilcox Aquifer water supplies for the City of Elgin, In the case of Elgin will be included for both counties.

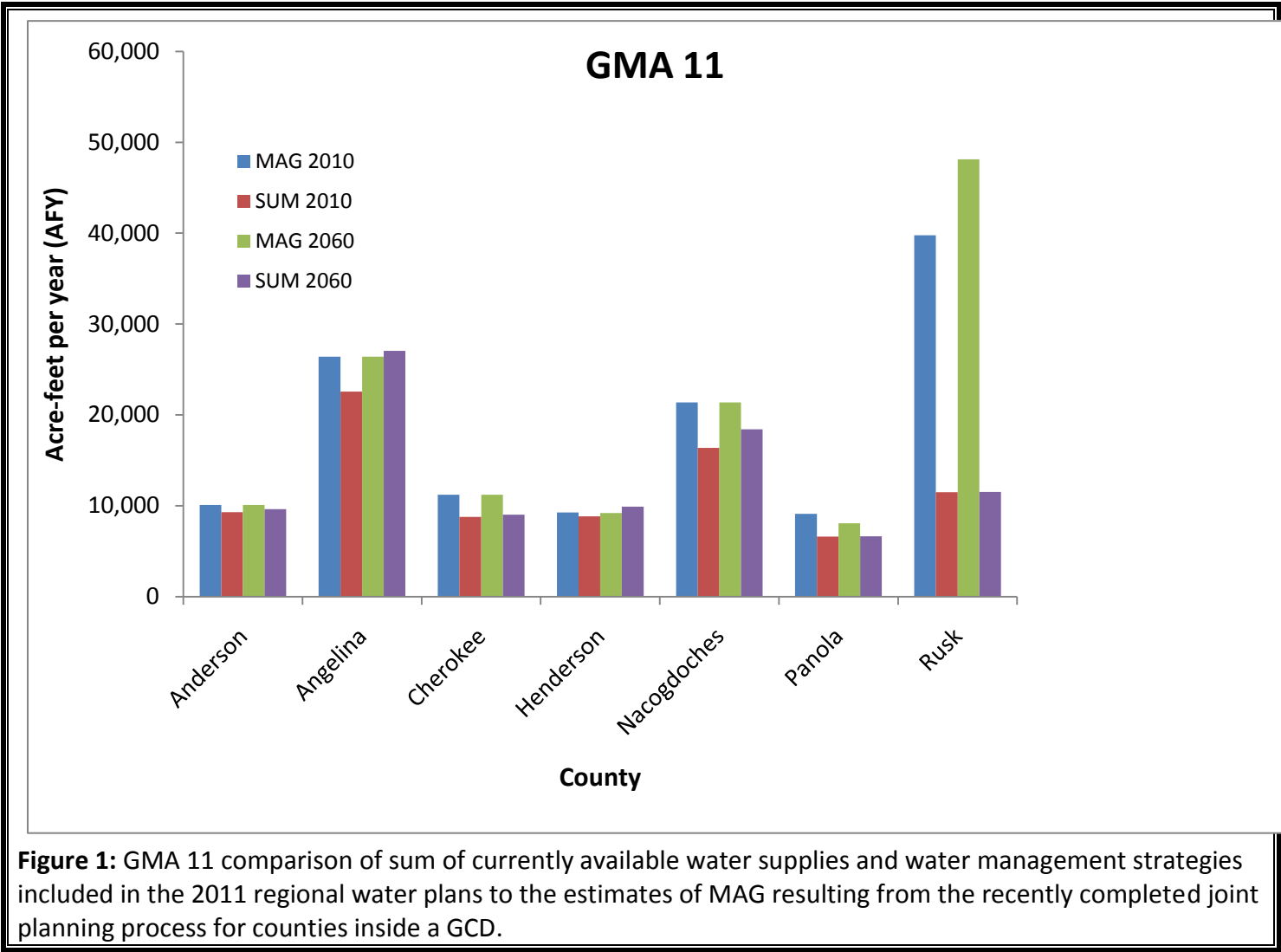
Alternatively, there are two counties within GMA 11; Red River County with a MAG of 0 and Trinity County with a MAG of 2,215 acre-feet per year, but neither have any currently available supplies or water management strategies from the Carrizo Wilcox Aquifer in the 2011 regional water plans. This situation is typically results when an aquifer is overlain by another aquifer that is shallower and of superior water quality and quantity such that there is no planned or current use of the aquifer. This is especially true in areas where the freshwater portion of the Carrizo-Wilcox Aquifer is at its most downdip limits. For example, Bee County GCD and Live Oak Underground Water Conservation District both have jurisdictional boundaries that include at least some area within the boundaries of the Carrizo-Wilcox Aquifer, however these GCDs were included in other GMAs, due primarily to the relatively minor amount of Carrizo-Wilcox Aquifer resources within the GCDs as compared to the primary aquifer for those GCDs, which in this case is the Gulf Coast Aquifer.

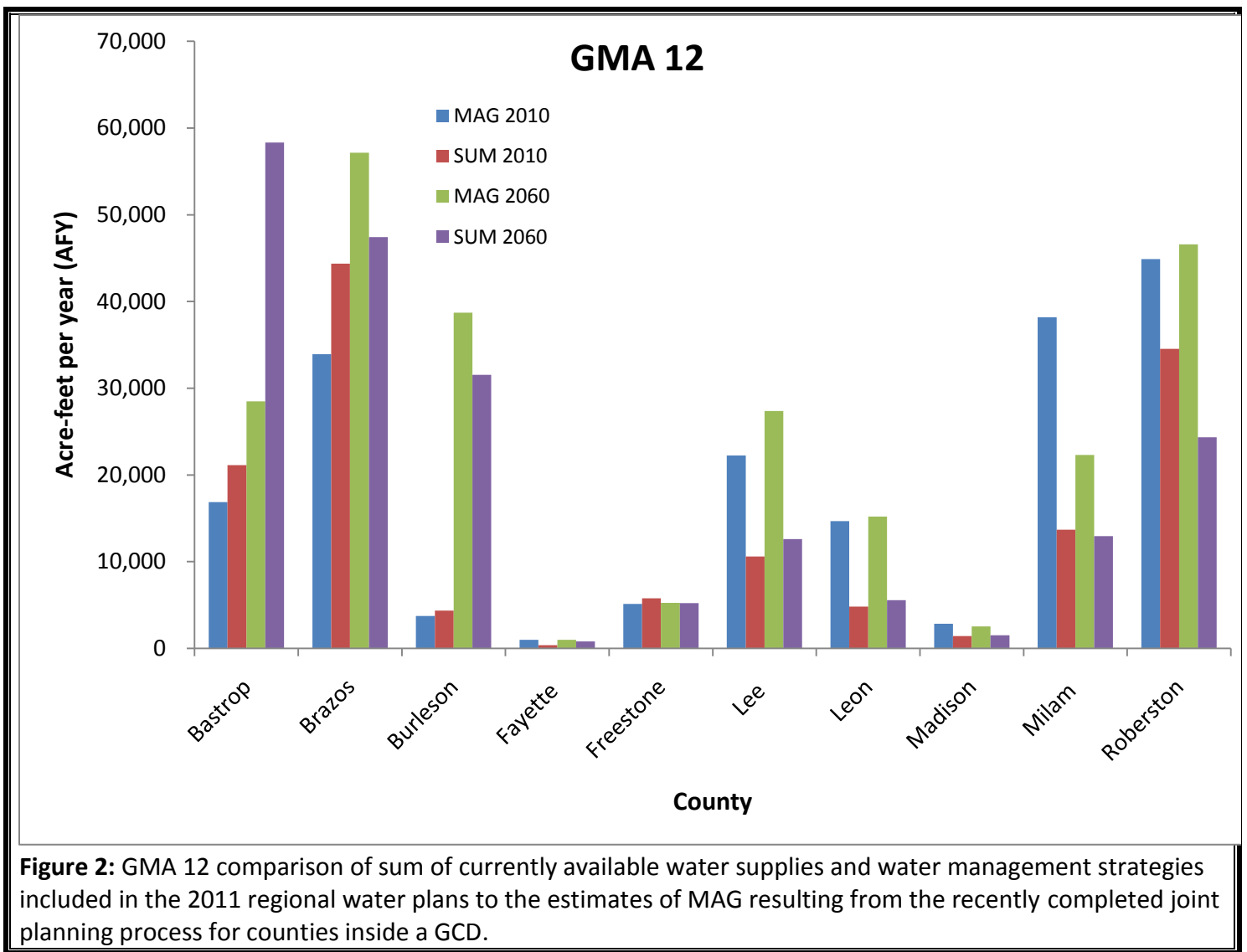
There are 3 counties in GMA 11 - Angelina, Henderson and Van Zandt; 7 counties in GMA 12 – Bastrop, Brazos, Burleson, Freestone, Navarro, Uvalde and Williamson; and 10 counties in GMA 13 – Atascosa, Dimmitt, Frio, Gonzales, Guadalupe, Karnes, LaSalle, Maverick, Medina and Webb; with potential conflicts for at least one decade during the 50 – year planning horizon from 2010 – 2060. Bastrop, Dimmitt, Frio, Guadalupe, LaSalle, Navarro, Webb and Williamson have potential conflicts for all of the decades during the 50-year planning horizon. These potential conflicts range in magnitude from 13 acre-feet per year in Maverick County to 176,615 acre-feet per year in Frio County.

Of the 56 counties analyzed that are included as a current supply or water management strategy in the 2011 regional water plans and have an estimate of MAG from the recently completed joint planning process, 20 have potential conflicts, representing 35 percent of the total. Of these 20 counties with potential conflicts, five are not within the jurisdictional boundaries of a GCD - Van Zandt County has a potential conflict in 2060; Maverick County has potential conflicts in four decades, 2020-2060; Navarro, Webb and Williamson counties are among the counties with potential conflicts in all decades of the 50-year planning horizon. Absent a groundwater conservation district, there is no mechanism to implement management activities to achieve the DFC.

Strictly for the counties within the jurisdictional boundaries of a GCD in GMAs 11, 12, and 13, an evaluation was conducted to quantify, on a GMA basis, the sum of the negative, positive, and net values presented in Table 1. These values are presented for 2010 and 2060 in Table 2. While the net values for GMA 11 and 12 have a net positive value for both 2010 and 2060, it is interesting to note that the net value for GMA 13 is negative, (84,793) acre-feet per year in 2010 and negative (158,902) in 2060. Based on this analysis, if the estimates of MAG (the total amount of pumping consistent with the DFC) remain the same in the 2016 regional water plans as it is today, then the volume of water from Carrizo-Wilcox Aquifer recommended to meet future water supply needs will have to be reduced significantly.

Task 3 also directed the BEG to evaluate the water management strategies in the regional water plans “that is presently or is likely to impact groundwater use from the Carrizo-Wilcox Aquifer including but not limited to strategies for the use of brackish groundwater.” Table 3 provides summary information on all Carrizo-Wilcox Aquifer water management strategies in the 2011 regional water plans and the counties receiving the supplies. It is important to note that the amount of water represented in Table 3 is a subset of the sum of currently available supplies and water management strategies reported in Table 1. No water management strategies are planned for implementation prior to 2020. The volume of brackish groundwater recommended as water management strategies in the 2011 regional water plans begins at 12,260 acre-feet per year in 2020 and increases to 37,357 acre-feet per year in 2060. Six counties are scheduled to receive brackish groundwater supplies based on recommended water management strategies in the 2011 regional water plans. These are Bexar, Comal, Guadalupe, Hays, Maverick, and Wilson counties, with the majority going to Bexar County.





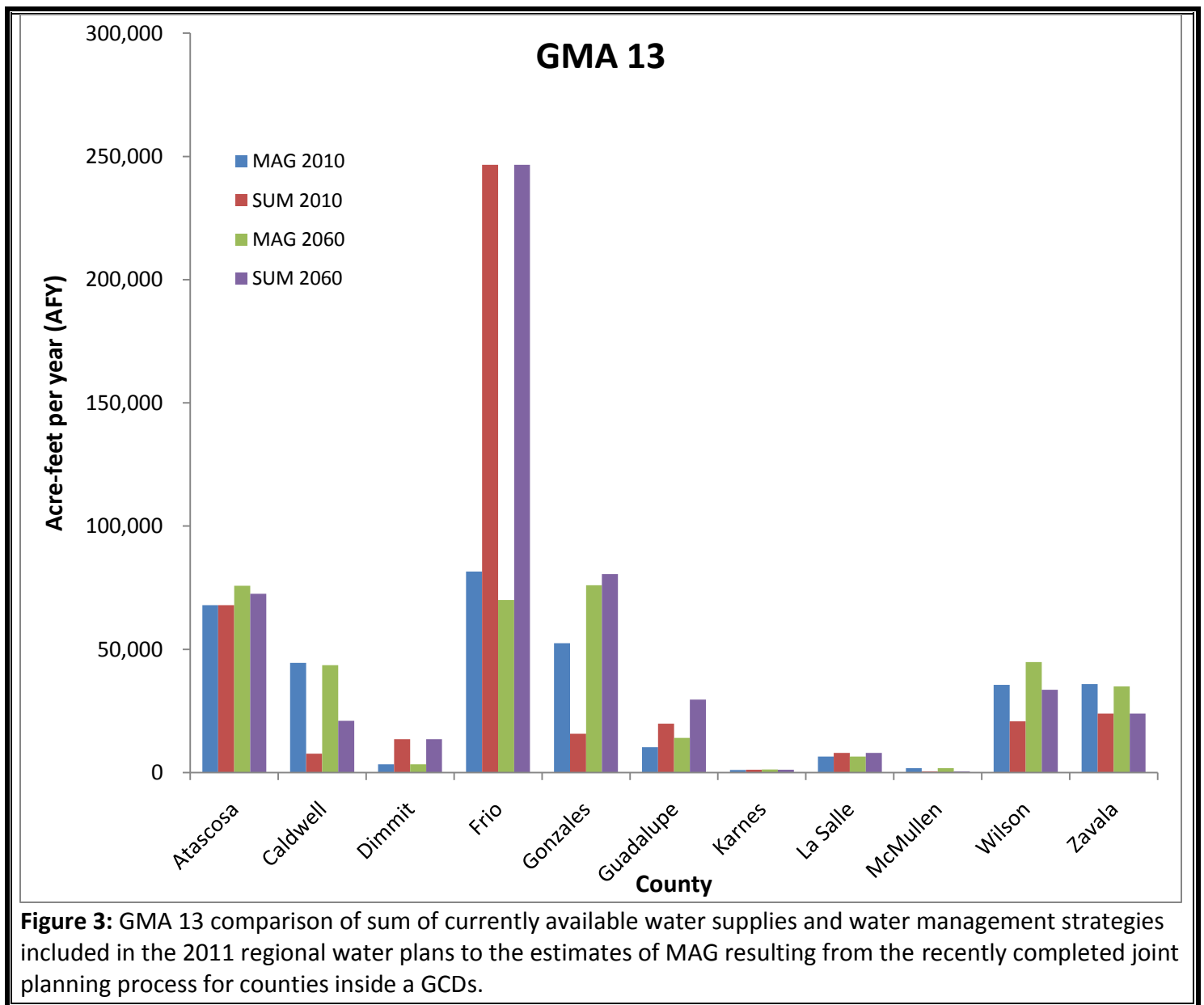


Table 1: Comparison of draft estimates of MAG from first round of joint planning with sum of currently available supplies and water management strategies recommended in recently adopted 2011 regional water plans. Due to the absence of quantified values for exempt use at this time, for the purposes of this report only, the values for MAG equal the total amount of pumping consistent with the adopted DFC. A potential conflict, as defined in the Study, exists when the sum of currently available supplies and water management strategies is greater than the MAG for any decade during the 50-year planning horizon. These instances are illustrated in this table in parentheses (xxxx), i.e. negative numbers. All values are in acre-feet per year.

| <u>Regional</u> <u>Water</u> <u>Planning</u> <u>Area</u> <u>(RWPA)</u> | <u>Groundwater</u> <u>Management</u> <u>Area (GMA)</u> | <u>County</u> | <u>Calculations</u> | <u>2010</u> | <u>2020</u> | <u>2030</u> | <u>2040</u> | <u>2050</u> | <u>2060</u> |
|--|--|---------------|--------------------------|--------------|--------------|--------------|--------------|--------------|--------------|
| I | 11 | Anderson | MAG | 10,077 | 10,077 | 10,077 | 10,077 | 10,077 | 10,077 |
| | | Anderson | Supplies + Strategies | 9,291 | 9,393 | 9,514 | 9,614 | 9,614 | 9,614 |
| | | | <u>Difference</u> | 786 | 684 | 563 | 463 | 463 | 463 |
| I | 11 | Angelina | MAG | 26,414 | 26,414 | 26,414 | 26,414 | 26,414 | 26,414 |
| | | Angelina | Supplies + Strategies | 22,569 | 22,533 | 24,339 | 24,599 | 26,679 | 27,051 |
| | | | <u>Difference</u> | 3,845 | 3,881 | 2,075 | 1,815 | (265) | (637) |
| L | 13 | Atascosa | MAG | 67,949 | 68,776 | 70,369 | 71,947 | 73,786 | 75,808 |

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|--|--|-----------------|--------------------------|----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| | | Atascosa | Supplies + Strategies | 67,872 | 69,043 | 69,921 | 69,987 | 70,051 | 72,526 |
| | | | <u>Difference</u> | 77 | (267) | 448 | 1,960 | 3,735 | 3,282 |
| K | 12 | Bastrop | MAG | 16,866 | 19,979 | 20,666 | 24,833 | 28,018 | 28,498 |
| | | Bastrop | Supplies + Strategies | 21,129 | 31,489 | 38,622 | 46,388 | 54,275 | 58,321 |
| | | | <u>Difference</u> | (4,263) | (11,510) | (17,956) | (21,555) | (26,257) | (29,823) |
| N | 15&16 | Bee | Supplies + Strategies | 380 | 394 | 394 | 394 | 394 | 394 |
| L | 13 | Bexar | MAG | 26,278 | 26,278 | 26,278 | 26,278 | 26,278 | 26,107 |

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|--|--|---------------|--------------------------|-----------------|----------------|---------------|---------------|---------------|---------------|
| | | Bexar | Supplies + Strategies | 15,916 | 16,264 | 12,987 | 12,993 | 13,000 | 13,006 |
| | | | <u>Difference</u> | 10,362 | 10,014 | 13,291 | 13,285 | 13,278 | 13,101 |
| D | 11 | Bowie | MAG | 11,126 | 8,216 | 7,976 | 7,533 | 7,533 | 7,083 |
| | | Bowie | Supplies + Strategies | 4,153 | 4,296 | 4,365 | 4,365 | 4,194 | 4,053 |
| | | | <u>Difference</u> | 6,973 | 3,920 | 3,611 | 3,168 | 3,339 | 3,030 |
| G | 12 | Brazos | MAG | 33,925 | 38,835 | 44,847 | 49,421 | 53,970 | 57,169 |
| | | Brazos | Supplies + Strategies | 44,380 | 44,502 | 44,386 | 47,432 | 47,439 | 47,434 |
| | | | <u>Difference</u> | (10,455) | (5,667) | 461 | 1,989 | 6,531 | 9,735 |

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|--|--|-----------------|--------------------------|---------------|---------------|---------------|---------------|---------------|---------------|
| G | 12 | Burleson | MAG | 3,750 | 23,249 | 28,047 | 32,518 | 36,492 | 38,701 |
| | | Burleson | Supplies + Strategies | 4,369 | 4,369 | 4,669 | 27,433 | 30,053 | 31,557 |
| | | | <u>Difference</u> | (619) | 18,880 | 23,378 | 5,085 | 6,439 | 7,144 |
| L | 13 | Caldwell | MAG | 44,546 | 44,546 | 44,137 | 44,137 | 43,561 | 43,561 |
| | | Caldwell | Supplies + Strategies | 7,706 | 11,718 | 18,676 | 16,902 | 18,108 | 20,997 |
| | | | <u>Difference</u> | 36,840 | 32,828 | 25,461 | 27,235 | 25,453 | 22,564 |

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|--|--|---------------|--------------------------|--------------|--------------|--------------|--------------|--------------|--------------|
| D | 11 | Camp | MAG | 4,041 | 4,041 | 4,041 | 4,041 | 4,041 | 4,041 |
| | | Camp | Supplies + Strategies | 2,071 | 2,077 | 2,083 | 2,088 | 2,093 | 2,098 |
| | | | <u>Difference</u> | 1,970 | 1,964 | 1,958 | 1,953 | 1,948 | 1,943 |
| D | 11 | Cass | MAG | 3,533 | 3,533 | 3,533 | 3,533 | 3,533 | 3,533 |
| | | Cass | Supplies + Strategies | 3,258 | 3,294 | 3,375 | 3,457 | 3,527 | 3,527 |
| | | | <u>Difference</u> | 275 | 239 | 158 | 76 | 6 | 6 |
| I | 11 | Cherokee | MAG | 11,222 | 11,222 | 11,222 | 11,222 | 11,222 | 11,222 |

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|--|--|---------------|-----------------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| | | Cherokee | Supplies + Strategies | 8,774 | 8,821 | 8,872 | 8,927 | 8,973 | 9,016 |
| | | | <u>Difference</u> | 2,448 | 2,401 | 2,350 | 2,295 | 2,249 | 2,206 |
| L | 15 | Dewitt | Supplies + Strategies | 71 | 71 | 71 | 71 | 71 | 71 |
| L | 13 | Dimmit | MAG | 3,359 | 3,359 | 3,359 | 3,359 | 3,359 | 3,359 |
| | | Dimmit | Supplies + Strategies | 13,536 | 13,536 | 13,536 | 13,536 | 13,536 | 13,536 |
| | | | <u>Difference</u> | (10,177) | (10,177) | (10,177) | (10,177) | (10,177) | (10,177) |

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|--|--|---------------|--------------------------|-------------|-------------|-------------|-------------|-------------|-------------|
| L | 12 | Falls | MAG | 865 | 867 | 875 | 884 | 895 | 895 |
| | | Falls | Supplies + Strategies | 667 | 667 | 667 | 667 | 667 | 667 |
| | | | <u>Difference</u> | 198 | 200 | 208 | 217 | 228 | 228 |
| K | 12 | Fayette | MAG | 1,000 | 1,000 | 1,000 | 1,000 | 1,000 | 1,000 |
| | | Fayette | Supplies + Strategies | 380 | 453 | 542 | 611 | 690 | 803 |
| | | | <u>Difference</u> | 620 | 547 | 458 | 389 | 310 | 197 |

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|--|--|---------------|--------------------------|--------------|--------------|--------------|--------------|--------------|--------------|
| 11 | D | Franklin | MAG | 9,746 | 9,484 | 9,484 | 9,484 | 9,484 | 9,484 |
| | | Franklin | Supplies + Strategies | 1,677 | 1,651 | 1,644 | 1,637 | 1,617 | 1,597 |
| | | | <u>Difference</u> | 8,069 | 7,833 | 7,840 | 7,847 | 7,867 | 7,887 |
| 12 | C | Freestone | MAG | 5,138 | 5,305 | 5,317 | 5,315 | 5,262 | 5,259 |
| | | Freestone | Supplies + Strategies | 5,783 | 5,223 | 5,223 | 5,223 | 5,223 | 5,223 |
| | | | <u>Difference</u> | (645) | 82 | 94 | 92 | 39 | 36 |
| 13 | L | Frio | MAG | 81,551 | 79,089 | 76,734 | 74,439 | 72,222 | 70,030 |

Table 1: Comparison of draft estimates of MAG from first round of joint planning with sum of currently available supplies and water management strategies recommended in recently adopted 2011 regional water plans. Due to the absence of quantified values for exempt use at this time, for the purposes of this report only, the values for MAG equal the total amount of pumping consistent with the adopted DFC. A potential conflict, as defined in the Study, exists when the sum of currently available supplies and water management strategies is greater than the MAG for any decade during the 50-year planning horizon. These instances are illustrated in this table in parentheses (xxxx), i.e. negative numbers. All values are in acre-feet per year.

| <u>Regional</u> <u>Water</u> <u>Planning</u> <u>Area</u> <u>(RWPA)</u> | <u>Groundwater</u> <u>Management</u> <u>Area (GMA)</u> | <u>County</u> | <u>Calculations</u> | <u>2010</u> | <u>2020</u> | <u>2030</u> | <u>2040</u> | <u>2050</u> | <u>2060</u> |
|--|--|-----------------|--------------------------|------------------|------------------|------------------|------------------|------------------|------------------|
| | | Frio | Supplies + Strategies | 246,645 | 246,645 | 246,645 | 246,645 | 246,645 | 246,645 |
| | | | <u>Difference</u> | (165,094) | (167,556) | (169,911) | (172,206) | (174,423) | (176,615) |
| 13 | L | Gonzales | MAG | 52,483 | 62,316 | 70,317 | 75,791 | 75,970 | 75,970 |
| | | Gonzales | Supplies + Strategies | 15,740 | 35,648 | 44,928 | 55,561 | 67,821 | 80,540 |
| | | | <u>Difference</u> | 36,743 | 26,668 | 25,389 | 20,230 | 8,149 | (4,570) |
| 11 | D | Gregg | MAG | 7,649 | 7,649 | 7,649 | 7,649 | 7,649 | 7,649 |
| | | Gregg | Supplies + Strategies | 5,621 | 5,707 | 5,847 | 6,281 | 6,560 | 7,038 |

Table 1: Comparison of draft estimates of MAG from first round of joint planning with sum of currently available supplies and water management strategies recommended in recently adopted 2011 regional water plans. Due to the absence of quantified values for exempt use at this time, for the purposes of this report only, the values for MAG equal the total amount of pumping consistent with the adopted DFC. A potential conflict, as defined in the Study, exists when the sum of currently available supplies and water management strategies is greater than the MAG for any decade during the 50-year planning horizon. These instances are illustrated in this table in parentheses (xxxx), i.e. negative numbers. All values are in acre-feet per year.

| <u>Regional</u> <u>Water</u> <u>Planning</u> <u>Area</u> <u>(RWPA)</u> | <u>Groundwater</u> <u>Management</u> <u>Area (GMA)</u> | <u>County</u> | <u>Calculations</u> | <u>2010</u> | <u>2020</u> | <u>2030</u> | <u>2040</u> | <u>2050</u> | <u>2060</u> |
|--|--|------------------|--------------------------|----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| | | | <u><i>Difference</i></u> | 2,028 | 1,942 | 1,802 | 1,368 | 1,089 | 611 |
| 14 | G | Grimes | Supplies + Strategies | 236 | 226 | 221 | 217 | 217 | 217 |
| 13 | L | Guadalupe | MAG | 10,241 | 10,833 | 11,283 | 13,021 | 13,541 | 14,041 |
| | | Guadalupe | Supplies + Strategies | 19,832 | 23,162 | 25,779 | 26,384 | 28,029 | 29,570 |
| | | | <u><i>Difference</i></u> | (9,591) | (12,329) | (14,496) | (13,363) | (14,488) | (15,529) |
| 11 | D | Harrison | MAG | 8,911 | 8,837 | 8,786 | 8,698 | 8,683 | 8,639 |

Table 1: Comparison of draft estimates of MAG from first round of joint planning with sum of currently available supplies and water management strategies recommended in recently adopted 2011 regional water plans. Due to the absence of quantified values for exempt use at this time, for the purposes of this report only, the values for MAG equal the total amount of pumping consistent with the adopted DFC. A potential conflict, as defined in the Study, exists when the sum of currently available supplies and water management strategies is greater than the MAG for any decade during the 50-year planning horizon. These instances are illustrated in this table in parentheses (xxxx), i.e. negative numbers. All values are in acre-feet per year.

| <u>Regional</u> <u>Water</u> <u>Planning</u> <u>Area</u> <u>(RWPA)</u> | <u>Groundwater</u> <u>Management</u> <u>Area (GMA)</u> | <u>County</u> | <u>Calculations</u> | <u>2010</u> | <u>2020</u> | <u>2030</u> | <u>2040</u> | <u>2050</u> | <u>2060</u> |
|--|--|---------------|-----------------------|--------------|--------------|--------------|--------------|--------------|--------------|
| | | Harrison | Supplies + Strategies | 5,332 | 5,786 | 6,042 | 6,258 | 6,601 | 6,959 |
| | | | <u>Difference</u> | 3,579 | 3,051 | 2,744 | 2,440 | 2,082 | 1,680 |
| 11 | C&I | Henderson | MAG | 9,253 | 9,186 | 9,186 | 9,186 | 9,186 | 9,186 |
| | | Henderson | Supplies + Strategies | 8,833 | 9,565 | 9,567 | 9,851 | 9,853 | 9,895 |
| | | | <u>Difference</u> | 420 | (379) | (381) | (665) | (667) | (709) |
| 11 | D | Hopkins | MAG | 3,433 | 3,391 | 3,391 | 3,391 | 3,391 | 3,391 |
| | | Hopkins | Supplies + Strategies | 2,227 | 2,234 | 2,237 | 2,238 | 2,232 | 2,226 |

Table 1: Comparison of draft estimates of MAG from first round of joint planning with sum of currently available supplies and water management strategies recommended in recently adopted 2011 regional water plans. Due to the absence of quantified values for exempt use at this time, for the purposes of this report only, the values for MAG equal the total amount of pumping consistent with the adopted DFC. A potential conflict, as defined in the Study, exists when the sum of currently available supplies and water management strategies is greater than the MAG for any decade during the 50-year planning horizon. These instances are illustrated in this table in parentheses (xxxx), i.e. negative numbers. All values are in acre-feet per year.

| <u>Regional</u> <u>Water</u> <u>Planning</u> <u>Area</u> <u>(RWPA)</u> | <u>Groundwater</u> <u>Management</u> <u>Area (GMA)</u> | <u>County</u> | <u>Calculations</u> | <u>2010</u> | <u>2020</u> | <u>2030</u> | <u>2040</u> | <u>2050</u> | <u>2060</u> |
|--|--|----------------|--------------------------|--------------|--------------|--------------|--------------|--------------|--------------|
| | | | <u><i>Difference</i></u> | 1,206 | 1,157 | 1,154 | 1,153 | 1,159 | 1,165 |
| I | 11 | Houston | MAG | 5,356 | 5,356 | 5,356 | 5,356 | 5,356 | 5,356 |
| | | Houston | Supplies + Strategies | 2,272 | 2,655 | 2,765 | 3,397 | 3,852 | 4,358 |
| | | | <u><i>Difference</i></u> | 3,084 | 2,701 | 2,591 | 1,959 | 1,504 | 998 |
| L | 13 | Karnes | MAG | 1,059 | 1,117 | 1,182 | 1,231 | 1,259 | 1,280 |
| | | Karnes | Supplies + Strategies | 1,141 | 1,141 | 1,141 | 1,141 | 1,141 | 1,141 |
| | | | <u><i>Difference</i></u> | (82) | (24) | 41 | 90 | 118 | 139 |

Table 1: Comparison of draft estimates of MAG from first round of joint planning with sum of currently available supplies and water management strategies recommended in recently adopted 2011 regional water plans. Due to the absence of quantified values for exempt use at this time, for the purposes of this report only, the values for MAG equal the total amount of pumping consistent with the adopted DFC. A potential conflict, as defined in the Study, exists when the sum of currently available supplies and water management strategies is greater than the MAG for any decade during the 50-year planning horizon. These instances are illustrated in this table in parentheses (xxxx), i.e. negative numbers. All values are in acre-feet per year.

| <u>Regional</u> <u>Water</u> <u>Planning</u> <u>Area</u> <u>(RWPA)</u> | <u>Groundwater</u> <u>Management</u> <u>Area (GMA)</u> | <u>County</u> | <u>Calculations</u> | <u>2010</u> | <u>2020</u> | <u>2030</u> | <u>2040</u> | <u>2050</u> | <u>2060</u> |
|--|--|---------------|-----------------------|-------------|-------------|-------------|-------------|-------------|-------------|
| L | 13 | La Salle | MAG | 6,454 | 6,454 | 6,454 | 6,454 | 6,454 | 6,454 |
| | | La Salle | Supplies + Strategies | 8,013 | 8,013 | 8,013 | 8,013 | 8,013 | 8,013 |
| | | | <u>Difference</u> | (1,559) | (1,559) | (1,559) | (1,559) | (1,559) | (1,559) |
| G | 12 | Lee | MAG | 22,259 | 24,023 | 23,402 | 24,624 | 26,827 | 27,380 |
| | | Lee | Supplies + Strategies | 10,584 | 10,987 | 10,987 | 10,988 | 8,913 | 12,619 |
| | | | <u>Difference</u> | 11,675 | 13,036 | 12,415 | 13,636 | 17,914 | 14,761 |
| H | 12 | Leon | MAG | 14,682 | 14,475 | 14,647 | 14,892 | 15,172 | 15,196 |

Table 1: Comparison of draft estimates of MAG from first round of joint planning with sum of currently available supplies and water management strategies recommended in recently adopted 2011 regional water plans. Due to the absence of quantified values for exempt use at this time, for the purposes of this report only, the values for MAG equal the total amount of pumping consistent with the adopted DFC. A potential conflict, as defined in the Study, exists when the sum of currently available supplies and water management strategies is greater than the MAG for any decade during the 50-year planning horizon. These instances are illustrated in this table in parentheses (xxxx), i.e. negative numbers. All values are in acre-feet per year.

| <u>Regional</u> <u>Water</u> <u>Planning</u> <u>Area</u> <u>(RWPA)</u> | <u>Groundwater</u> <u>Management</u> <u>Area (GMA)</u> | <u>County</u> | <u>Calculations</u> | <u>2010</u> | <u>2020</u> | <u>2030</u> | <u>2040</u> | <u>2050</u> | <u>2060</u> |
|--|--|---------------|--------------------------|--------------|--------------|--------------|--------------|--------------|--------------|
| | | Leon | Supplies + Strategies | 4,818 | 5,128 | 5,334 | 5,407 | 5,459 | 5,558 |
| | | | <u>Difference</u> | 9,864 | 9,347 | 9,313 | 9,485 | 9,713 | 9,638 |
| G | 8&12 | Limestone | MAG | 11,321 | 11,306 | 11,436 | 11,616 | 11,918 | 11,918 |
| | | Limestone | Supplies + Strategies | 7,403 | 7,591 | 7,780 | 7,968 | 8,157 | 8,347 |
| | | | <u>Difference</u> | 3,918 | 3,715 | 3,656 | 3,648 | 3,761 | 3,571 |
| N | 16 | Live Oak | Supplies + Strategies | 60 | 60 | 60 | 60 | 60 | 60 |

Table 1: Comparison of draft estimates of MAG from first round of joint planning with sum of currently available supplies and water management strategies recommended in recently adopted 2011 regional water plans. Due to the absence of quantified values for exempt use at this time, for the purposes of this report only, the values for MAG equal the total amount of pumping consistent with the adopted DFC. A potential conflict, as defined in the Study, exists when the sum of currently available supplies and water management strategies is greater than the MAG for any decade during the 50-year planning horizon. These instances are illustrated in this table in parentheses (xxxx), i.e. negative numbers. All values are in acre-feet per year.

| <u>Regional</u> <u>Water</u> <u>Planning</u> <u>Area</u> <u>(RWPA)</u> | <u>Groundwater</u> <u>Management</u> <u>Area (GMA)</u> | <u>County</u> | <u>Calculations</u> | <u>2010</u> | <u>2020</u> | <u>2030</u> | <u>2040</u> | <u>2050</u> | <u>2060</u> |
|--|--|---------------|--------------------------|--------------|--------------|--------------|--------------|--------------|--------------|
| H | 12 | Madison | MAG | 2,838 | 2,859 | 2,768 | 2,654 | 2,552 | 2,542 |
| | | Madison | Supplies + Strategies | 1,409 | 1,493 | 1,571 | 1,551 | 1,518 | 1,518 |
| | | | <u>Difference</u> | 1,429 | 1,366 | 1,197 | 1,103 | 1,034 | 1,024 |
| D | 11 | Marion | MAG | 2,077 | 2,077 | 2,077 | 2,077 | 2,077 | 2,077 |
| | | Marion | Supplies + Strategies | 1,981 | 2,001 | 2,008 | 2,014 | 2,020 | 2,028 |
| | | | <u>Difference</u> | 96 | 76 | 69 | 63 | 57 | 49 |

Table 1: Comparison of draft estimates of MAG from first round of joint planning with sum of currently available supplies and water management strategies recommended in recently adopted 2011 regional water plans. Due to the absence of quantified values for exempt use at this time, for the purposes of this report only, the values for MAG equal the total amount of pumping consistent with the adopted DFC. A potential conflict, as defined in the Study, exists when the sum of currently available supplies and water management strategies is greater than the MAG for any decade during the 50-year planning horizon. These instances are illustrated in this table in parentheses (xxxx), i.e. negative numbers. All values are in acre-feet per year.

| <u>Regional</u> <u>Water</u> <u>Planning</u> <u>Area</u> <u>(RWPA)</u> | <u>Groundwater</u> <u>Management</u> <u>Area (GMA)</u> | <u>County</u> | <u>Calculations</u> | <u>2010</u> | <u>2020</u> | <u>2030</u> | <u>2040</u> | <u>2050</u> | <u>2060</u> |
|--|--|---------------|-----------------------|-------------|-------------|-------------|--------------|--------------|--------------|
| M | 13 | Maverick | MAG | 2,043 | 2,043 | 2,024 | 1,677 | 1,570 | 1,532 |
| | | Maverick | Supplies + Strategies | 1,792 | 2,056 | 2,058 | 2,060 | 2,073 | 2,444 |
| | | | <u>Difference</u> | 251 | (13) | (34) | (383) | (503) | (912) |
| G | 8 | McLennan | Supplies + Strategies | 29 | 29 | 29 | 29 | 29 | 29 |
| N | 13 | McMullen | MAG | 1,819 | 1,819 | 1,819 | 1,819 | 1,819 | 1,819 |
| | | McMullen | Supplies + Strategies | 430 | 438 | 442 | 446 | 450 | 453 |

Table 1: Comparison of draft estimates of MAG from first round of joint planning with sum of currently available supplies and water management strategies recommended in recently adopted 2011 regional water plans. Due to the absence of quantified values for exempt use at this time, for the purposes of this report only, the values for MAG equal the total amount of pumping consistent with the adopted DFC. A potential conflict, as defined in the Study, exists when the sum of currently available supplies and water management strategies is greater than the MAG for any decade during the 50-year planning horizon. These instances are illustrated in this table in parentheses (xxxx), i.e. negative numbers. All values are in acre-feet per year.

| <u>Regional</u> <u>Water</u> <u>Planning</u> <u>Area</u> <u>(RWPA)</u> | <u>Groundwater</u> <u>Management</u> <u>Area (GMA)</u> | <u>County</u> | <u>Calculations</u> | <u>2010</u> | <u>2020</u> | <u>2030</u> | <u>2040</u> | <u>2050</u> | <u>2060</u> |
|--|--|---------------|--------------------------|----------------|----------------|----------------|----------------|----------------|----------------|
| | | | <u><i>Difference</i></u> | <i>1,389</i> | <i>1,381</i> | <i>1,377</i> | <i>1,373</i> | <i>1,369</i> | <i>1,366</i> |
| L | 13 | Medina | MAG | 2,568 | 2,545 | 2,533 | 2,533 | 2,533 | 2,533 |
| | | Medina | Supplies + Strategies | 7,597 | 7,597 | 7,597 | 7,597 | 7,597 | 7,597 |
| | | | <u><i>Difference</i></u> | <i>(5,029)</i> | <i>(5,052)</i> | <i>(5,064)</i> | <i>(5,064)</i> | <i>(5,064)</i> | <i>(5,064)</i> |
| G | 12 | Milam | MAG | 38,183 | 23,923 | 20,206 | 19,112 | 21,359 | 22,319 |
| | | Milam | Supplies + Strategies | 13,686 | 13,686 | 13,686 | 12,828 | 12,941 | 12,941 |
| | | | <u><i>Difference</i></u> | <i>24,497</i> | <i>10,237</i> | <i>6,520</i> | <i>6,284</i> | <i>8,418</i> | <i>9,378</i> |

Table 1: Comparison of draft estimates of MAG from first round of joint planning with sum of currently available supplies and water management strategies recommended in recently adopted 2011 regional water plans. Due to the absence of quantified values for exempt use at this time, for the purposes of this report only, the values for MAG equal the total amount of pumping consistent with the adopted DFC. A potential conflict, as defined in the Study, exists when the sum of currently available supplies and water management strategies is greater than the MAG for any decade during the 50-year planning horizon. These instances are illustrated in this table in parentheses (xxxx), i.e. negative numbers. All values are in acre-feet per year.

| <u>Regional</u> <u>Water</u> <u>Planning</u> <u>Area</u> <u>(RWPA)</u> | <u>Groundwater</u> <u>Management</u> <u>Area (GMA)</u> | <u>County</u> | <u>Calculations</u> | <u>2010</u> | <u>2020</u> | <u>2030</u> | <u>2040</u> | <u>2050</u> | <u>2060</u> |
|--|--|--------------------|--------------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|
| D | 11 | Morris | MAG | 2,616 | 2,616 | 2,558 | 2,558 | 2,558 | 2,558 |
| | | Morris | Supplies + Strategies | 1,381 | 1,381 | 1,381 | 1,381 | 1,381 | 1,381 |
| | | | <u>Difference</u> | <i>1,235</i> | <i>1,235</i> | <i>1,177</i> | <i>1,177</i> | <i>1,177</i> | <i>1,177</i> |
| I | 11 | Nacogdoches | MAG | 21,385 | 21,385 | 21,385 | 21,385 | 21,385 | 21,385 |
| | | Nacogdoches | Supplies + Strategies | 16,375 | 16,375 | 16,986 | 17,258 | 18,043 | 18,402 |
| | | | <u>Difference</u> | <i>5,010</i> | <i>5,010</i> | <i>4,399</i> | <i>4,127</i> | <i>3,342</i> | <i>2,983</i> |

Table 1: Comparison of draft estimates of MAG from first round of joint planning with sum of currently available supplies and water management strategies recommended in recently adopted 2011 regional water plans. Due to the absence of quantified values for exempt use at this time, for the purposes of this report only, the values for MAG equal the total amount of pumping consistent with the adopted DFC. A potential conflict, as defined in the Study, exists when the sum of currently available supplies and water management strategies is greater than the MAG for any decade during the 50-year planning horizon. These instances are illustrated in this table in parentheses (xxxx), i.e. negative numbers. All values are in acre-feet per year.

| <u>Regional</u> <u>Water</u> <u>Planning</u> <u>Area</u> <u>(RWPA)</u> | <u>Groundwater</u> <u>Management</u> <u>Area (GMA)</u> | <u>County</u> | <u>Calculations</u> | <u>2010</u> | <u>2020</u> | <u>2030</u> | <u>2040</u> | <u>2050</u> | <u>2060</u> |
|--|--|---------------|-----------------------|-------------|-------------|-------------|-------------|-------------|-------------|
| C | 12 | Navarro | MAG | 15 | 15 | 15 | 15 | 15 | 15 |
| | | Navarro | Supplies + Strategies | 88 | 88 | 88 | 88 | 88 | 88 |
| | | | <u>Difference</u> | (73) | (73) | (73) | (73) | (73) | (73) |
| I | 11 | Panola | MAG | 9,097 | 8,227 | 8,227 | 8,069 | 8,069 | 8,069 |
| | | Panola | Supplies + Strategies | 6,609 | 6,615 | 6,623 | 6,631 | 6,639 | 6,649 |
| | | | <u>Difference</u> | 2,488 | 1,612 | 1,604 | 1,438 | 1,430 | 1,420 |
| D | 11 | Rains | MAG | 1,703 | 1,703 | 1,620 | 1,620 | 1,620 | 1,583 |

Table 1: Comparison of draft estimates of MAG from first round of joint planning with sum of currently available supplies and water management strategies recommended in recently adopted 2011 regional water plans. Due to the absence of quantified values for exempt use at this time, for the purposes of this report only, the values for MAG equal the total amount of pumping consistent with the adopted DFC. A potential conflict, as defined in the Study, exists when the sum of currently available supplies and water management strategies is greater than the MAG for any decade during the 50-year planning horizon. These instances are illustrated in this table in parentheses (xxxx), i.e. negative numbers. All values are in acre-feet per year.

| <u>Regional</u> <u>Water</u> <u>Planning</u> <u>Area</u> <u>(RWPA)</u> | <u>Groundwater</u> <u>Management</u> <u>Area (GMA)</u> | <u>County</u> | <u>Calculations</u> | <u>2010</u> | <u>2020</u> | <u>2030</u> | <u>2040</u> | <u>2050</u> | <u>2060</u> |
|--|--|---------------|-----------------------|---------------|---------------|---------------|---------------|---------------|---------------|
| | | Rains | Supplies + Strategies | 785 | 809 | 822 | 825 | 823 | 820 |
| | | | <u>Difference</u> | 918 | 894 | 798 | 795 | 797 | 763 |
| D | 11 | Red River | MAG | 0 | 0 | 0 | 0 | 0 | 0 |
| G | 12 | Robertson | MAG | 44,886 | 45,435 | 45,814 | 46,238 | 46,582 | 46,583 |
| | | Robertson | Supplies + Strategies | 34,552 | 34,562 | 34,567 | 24,349 | 24,348 | 24,347 |
| | | | <u>Difference</u> | 10,334 | 10,873 | 11,247 | 21,889 | 22,234 | 22,236 |

Table 1: Comparison of draft estimates of MAG from first round of joint planning with sum of currently available supplies and water management strategies recommended in recently adopted 2011 regional water plans. Due to the absence of quantified values for exempt use at this time, for the purposes of this report only, the values for MAG equal the total amount of pumping consistent with the adopted DFC. A potential conflict, as defined in the Study, exists when the sum of currently available supplies and water management strategies is greater than the MAG for any decade during the 50-year planning horizon. These instances are illustrated in this table in parentheses (xxxx), i.e. negative numbers. All values are in acre-feet per year.

| <u>Regional</u> <u>Water</u> <u>Planning</u> <u>Area</u> <u>(RWPA)</u> | <u>Groundwater</u> <u>Management</u> <u>Area (GMA)</u> | <u>County</u> | <u>Calculations</u> | <u>2010</u> | <u>2020</u> | <u>2030</u> | <u>2040</u> | <u>2050</u> | <u>2060</u> |
|--|--|---------------|--------------------------|---------------|---------------|---------------|---------------|---------------|---------------|
| I | 11 | Rusk | MAG | 39,772 | 42,188 | 50,336 | 46,940 | 48,128 | 48,119 |
| | | Rusk | Supplies + Strategies | 11,478 | 11,459 | 11,441 | 11,578 | 11,555 | 11,526 |
| | | | <u>Difference</u> | 28,294 | 30,729 | 38,895 | 35,362 | 36,573 | 36,593 |
| I | 11 | Sabine | MAG | 6,866 | 6,858 | 6,858 | 6,858 | 6,858 | 6,858 |
| | | Sabine | Supplies + Strategies | 358 | 358 | 358 | 440 | 440 | 440 |
| | | | <u>Difference</u> | 6,508 | 6,500 | 6,500 | 6,418 | 6,418 | 6,418 |
| I | 11 | San Augustine | MAG | 1,781 | 1,781 | 1,781 | 1,781 | 1,781 | 1,781 |

Table 1: Comparison of draft estimates of MAG from first round of joint planning with sum of currently available supplies and water management strategies recommended in recently adopted 2011 regional water plans. Due to the absence of quantified values for exempt use at this time, for the purposes of this report only, the values for MAG equal the total amount of pumping consistent with the adopted DFC. A potential conflict, as defined in the Study, exists when the sum of currently available supplies and water management strategies is greater than the MAG for any decade during the 50-year planning horizon. These instances are illustrated in this table in parentheses (xxxx), i.e. negative numbers. All values are in acre-feet per year.

| <u>Regional</u> <u>Water</u> <u>Planning</u> <u>Area</u> <u>(RWPA)</u> | <u>Groundwater</u> <u>Management</u> <u>Area (GMA)</u> | <u>County</u> | <u>Calculations</u> | <u>2010</u> | <u>2020</u> | <u>2030</u> | <u>2040</u> | <u>2050</u> | <u>2060</u> |
|--|--|---------------|--------------------------|--------------|--------------|--------------|--------------|--------------|--------------|
| | | San Augustine | Supplies + Strategies | 677 | 677 | 777 | 827 | 927 | 927 |
| | | | <u>Difference</u> | 1,104 | 1,104 | 1,004 | 954 | 854 | 854 |
| I | 11 | Shelby | MAG | 12,044 | 11,217 | 10,901 | 10,447 | 10,311 | 9,729 |
| | | Shelby | Supplies + Strategies | 5,304 | 6,404 | 7,004 | 7,004 | 7,559 | 7,566 |
| | | | <u>Difference</u> | 6,740 | 4,813 | 3,897 | 3,443 | 2,752 | 2,163 |
| D&I | 11 | Smith | MAG | 33,249 | 33,249 | 33,249 | 33,239 | 33,225 | 33,225 |
| | | Smith | Supplies + Strategies | 26,916 | 27,212 | 27,597 | 28,468 | 29,910 | 31,244 |

Table 1: Comparison of draft estimates of MAG from first round of joint planning with sum of currently available supplies and water management strategies recommended in recently adopted 2011 regional water plans. Due to the absence of quantified values for exempt use at this time, for the purposes of this report only, the values for MAG equal the total amount of pumping consistent with the adopted DFC. A potential conflict, as defined in the Study, exists when the sum of currently available supplies and water management strategies is greater than the MAG for any decade during the 50-year planning horizon. These instances are illustrated in this table in parentheses (xxxx), i.e. negative numbers. All values are in acre-feet per year.

| <u>Regional</u> <u>Water</u> <u>Planning</u> <u>Area</u> <u>(RWPA)</u> | <u>Groundwater</u> <u>Management</u> <u>Area (GMA)</u> | <u>County</u> | <u>Calculations</u> | <u>2010</u> | <u>2020</u> | <u>2030</u> | <u>2040</u> | <u>2050</u> | <u>2060</u> |
|--|--|----------------|--------------------------|--------------|--------------|--------------|--------------|--------------|--------------|
| | | | <u><i>Difference</i></u> | 6,333 | 6,037 | 5,652 | 4,771 | 3,315 | 1,981 |
| D | 11 | Titus | MAG | 10,856 | 10,321 | 10,019 | 9,868 | 9,638 | 9,638 |
| | | Titus | Supplies + Strategies | 5,214 | 6,379 | 6,959 | 7,391 | 7,628 | 8,503 |
| | | | <u><i>Difference</i></u> | 5,642 | 3,942 | 3,060 | 2,477 | 2,010 | 1,135 |
| K | 8,9, &10 | Travis | Supplies + Strategies | 1,499 | 1,718 | 1,901 | 2,025 | 2,153 | 2,300 |
| H&I | 11 | Trinity | MAG | 2,215 | 2,215 | 2,215 | 2,215 | 2,215 | 2,215 |

Table 1: Comparison of draft estimates of MAG from first round of joint planning with sum of currently available supplies and water management strategies recommended in recently adopted 2011 regional water plans. Due to the absence of quantified values for exempt use at this time, for the purposes of this report only, the values for MAG equal the total amount of pumping consistent with the adopted DFC. A potential conflict, as defined in the Study, exists when the sum of currently available supplies and water management strategies is greater than the MAG for any decade during the 50-year planning horizon. These instances are illustrated in this table in parentheses (xxxx), i.e. negative numbers. All values are in acre-feet per year.

| <u>Regional</u> <u>Water</u> <u>Planning</u> <u>Area</u> <u>(RWPA)</u> | <u>Groundwater</u> <u>Management</u> <u>Area (GMA)</u> | <u>County</u> | <u>Calculations</u> | <u>2010</u> | <u>2020</u> | <u>2030</u> | <u>2040</u> | <u>2050</u> | <u>2060</u> |
|--|--|---------------|--------------------------|-------------|----------------|----------------|----------------|----------------|----------------|
| D | 11 | Upshur | MAG | 7,115 | 7,115 | 7,115 | 7,115 | 7,115 | 7,115 |
| | | Upshur | Supplies + Strategies | 6,610 | 6,697 | 6,756 | 6,799 | 6,835 | 6,885 |
| | | | <u>Difference</u> | 505 | 418 | 359 | 316 | 280 | 230 |
| L | 12 | Uvalde | MAG | 2,971 | 1,230 | 828 | 828 | 828 | 828 |
| | | Uvalde | Supplies + Strategies | 2,846 | 2,846 | 2,846 | 2,846 | 2,846 | 2,846 |
| | | | <u>Difference</u> | 125 | (1,616) | (2,018) | (2,018) | (2,018) | (2,018) |
| D | 11 | Van Zandt | MAG | 10,614 | 10,283 | 10,283 | 10,283 | 10,283 | 10,051 |

Table 1: Comparison of draft estimates of MAG from first round of joint planning with sum of currently available supplies and water management strategies recommended in recently adopted 2011 regional water plans. Due to the absence of quantified values for exempt use at this time, for the purposes of this report only, the values for MAG equal the total amount of pumping consistent with the adopted DFC. A potential conflict, as defined in the Study, exists when the sum of currently available supplies and water management strategies is greater than the MAG for any decade during the 50-year planning horizon. These instances are illustrated in this table in parentheses (xxxx), i.e. negative numbers. All values are in acre-feet per year.

| <u>Regional</u> <u>Water</u> <u>Planning</u> <u>Area</u> <u>(RWPA)</u> | <u>Groundwater</u> <u>Management</u> <u>Area (GMA)</u> | <u>County</u> | <u>Calculations</u> | <u>2010</u> | <u>2020</u> | <u>2030</u> | <u>2040</u> | <u>2050</u> | <u>2060</u> |
|--|--|---------------|--------------------------|----------------|----------------|----------------|----------------|----------------|----------------|
| | | Van Zandt | Supplies + Strategies | 7,499 | 8,170 | 8,645 | 8,982 | 9,645 | 10,292 |
| | | | <u>Difference</u> | 3,115 | 2,113 | 1,638 | 1,301 | 638 | (241) |
| M | 13 | Webb | MAG | 916 | 916 | 916 | 916 | 916 | 916 |
| | | Webb | Supplies + Strategies | 3,882 | 6,824 | 9,138 | 9,712 | 9,711 | 9,710 |
| | | | <u>Difference</u> | (2,966) | (5,908) | (8,222) | (8,796) | (8,795) | (8,794) |
| G | 12 | Williamson | MAG | 7 | 7 | 7 | 7 | 7 | 7 |
| | | Williamson | Supplies + Strategies | 8,412 | 8,412 | 8,412 | 8,522 | 8,522 | 8,522 |

Table 1: Comparison of draft estimates of MAG from first round of joint planning with sum of currently available supplies and water management strategies recommended in recently adopted 2011 regional water plans. Due to the absence of quantified values for exempt use at this time, for the purposes of this report only, the values for MAG equal the total amount of pumping consistent with the adopted DFC. A potential conflict, as defined in the Study, exists when the sum of currently available supplies and water management strategies is greater than the MAG for any decade during the 50-year planning horizon. These instances are illustrated in this table in parentheses (xxxx), i.e. negative numbers. All values are in acre-feet per year.

| <u>Regional</u> <u>Water</u> <u>Planning</u> <u>Area</u> <u>(RWPA)</u> | <u>Groundwater</u> <u>Management</u> <u>Area (GMA)</u> | <u>County</u> | <u>Calculations</u> | <u>2010</u> | <u>2020</u> | <u>2030</u> | <u>2040</u> | <u>2050</u> | <u>2060</u> |
|--|--|---------------|--------------------------|----------------|----------------|----------------|----------------|----------------|----------------|
| | | | <u><i>Difference</i></u> | <i>(8,405)</i> | <i>(8,405)</i> | <i>(8,405)</i> | <i>(8,515)</i> | <i>(8,515)</i> | <i>(8,515)</i> |
| L | 13 | Wilson | MAG | 35,560 | 36,986 | 38,717 | 40,486 | 42,531 | 44,794 |
| | | Wilson | Supplies + Strategies | 20,823 | 21,621 | 24,374 | 26,297 | 32,343 | 33,631 |
| | | | <u><i>Difference</i></u> | <i>14,737</i> | <i>15,365</i> | <i>14,343</i> | <i>14,189</i> | <i>10,188</i> | <i>11,163</i> |
| D | 11 | Wood | MAG | 21,716 | 21,539 | 21,451 | 21,408 | 21,333 | 21,311 |
| | | Wood | Supplies + Strategies | 8,930 | 9,021 | 9,074 | 9,083 | 9,087 | 9,098 |
| | | | <u><i>Difference</i></u> | <i>12,786</i> | <i>12,518</i> | <i>12,377</i> | <i>12,325</i> | <i>12,246</i> | <i>12,213</i> |

Table 1: Comparison of draft estimates of MAG from first round of joint planning with sum of currently available supplies and water management strategies recommended in recently adopted 2011 regional water plans. Due to the absence of quantified values for exempt use at this time, for the purposes of this report only, the values for MAG equal the total amount of pumping consistent with the adopted DFC. A potential conflict, as defined in the Study, exists when the sum of currently available supplies and water management strategies is greater than the MAG for any decade during the 50-year planning horizon. These instances are illustrated in this table in parentheses (xxxx), i.e. negative numbers. All values are in acre-feet per year.

| <u>Regional</u> <u>Water</u> <u>Planning</u> <u>Area</u> <u>(RWPA)</u> | <u>Groundwater</u> <u>Management</u> <u>Area (GMA)</u> | <u>County</u> | <u>Calculations</u> | <u>2010</u> | <u>2020</u> | <u>2030</u> | <u>2040</u> | <u>2050</u> | <u>2060</u> |
|--|--|---------------|-----------------------|---------------|---------------|---------------|---------------|---------------|---------------|
| L | 13 | Zavala | MAG | 35,859 | 35,859 | 35,521 | 35,388 | 35,288 | 34,969 |
| | | Zavala | Supplies + Strategies | 23,935 | 23,935 | 23,935 | 23,935 | 23,935 | 23,935 |
| | | | <u>Difference</u> | 11,924 | 11,924 | 11,586 | 11,453 | 11,353 | 11,034 |

Table 2: Summation of differences between the sum of currently available supplies and water management strategies for the Carrizo-Wilcox Aquifer in the county and decade referenced in the 2011 regional water plans compared to the total amount of pumping consistent with the DFC (or for the purposes of this report as discussed earlier, the MAG). In these cases where the *Difference* value is negative (xxx), for the decade referenced, a potential conflict exists. This comparison is only for counties in GMA 11, 12, and 13 that are within the jurisdictional boundaries of a GCD. All values are in acre-feet per year.

| GMA | Difference is (+) 2010 | Difference is (-) 2010 | Net 2010 | Difference is (+) 2060 | Difference is (-) 2060 | Net 2060 |
|-------|---------------------------|---------------------------|-------------|---------------------------|---------------------------|-------------|
| 11 | 43,291 | 0 | 43,291 | 43,665 | 1,346 | 42,319 |
| 12 | 58,419 | 15,982 | 42,437 | 74,149 | 29,823 | 88,652 |
| 13 | 101,710 | 186,503 | (84,793) | 49,548 | 208,450 | (158,902) |
| Total | 203,420 | 202,485 | 935 | 167,362 | 239,619 | (27,931) |

Table 3: County-level sum of water management strategies in the 2011 regional water plans that are based on the use of brackish groundwater from the Carrizo-Wilcox Aquifer. All values are in acre-feet per year.

| County | 2010 | 2020 | 2030 | 2040 | 2050 | 2060 |
|-----------|------|--------|--------|--------|--------|--------|
| Bexar | 0 | 12,000 | 21,750 | 27,150 | 27,903 | 27,903 |
| Comal | 0 | 0 | 880 | 880 | 1,762 | 1,762 |
| Guadalupe | 0 | 0 | 1,630 | 1,630 | 4,203 | 4,203 |
| Hays | 0 | 0 | 336 | 336 | 1,728 | 1,728 |
| Maverick | 0 | 260 | 260 | 260 | 272 | 641 |
| Wilson | 0 | 0 | 0 | 1,120 | 1,120 | 1,120 |
| Total | 0 | 12,260 | 24,856 | 31,376 | 36,988 | 37,357 |