

# PLATEAU WATER PLANNING GROUP

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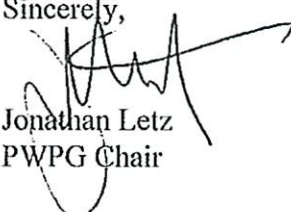
September 27, 2010

Texas Water Development  
1700 N. Congress Ave.  
P.O. Box 13231  
Austin, TX 78711-3231

To Whom It May Concern:

The Chair approves the changes to the final 2011 Plateau Region Water Plan as documented in the attached Errata Sheet and Attachment B Spreadsheet.

Sincerely,

  
Jonathan Letz  
PWPG Chair

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## Plateau Region Water Plan ERRATA SHEET

*(The following revisions are incorporated in this printed copy of the 2011 Plan)*

### Executive Summary

The second sentence of the third paragraph on page ES-2 is revised as follows:

*The greatest percentage increase in population is projected to occur in Bandera County, which is expected to grow from a projected year-2010 population of 26,373 to 60,346 by the year 2060, an increase of ~~229~~ 129 percent.*

The first sentence on page ES-6 is revised as follows:

*Bandera County, with the greatest projected percentage population increase, will likewise see the greatest percentage **municipal** water demand increase over the 50-year period, ~~213~~ 113 percent.*

In the last sentence on page ES-13, the total capital cost to implement the recommended strategies is changed from \$51,248,379 to \$54,792,390.

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### Chapter 1

The following subsection is added at the end of Section 1.5:

#### **1.5.5 Hill Country Priority Groundwater Management Area**

*A portion of the Plateau Region (Bandera and Kerr Counties) is included in the initial Hill Country Priority Groundwater Management Area. The Priority Groundwater Management Area (PGMA) process is initiated by the TCEQ, who designates a PGMA when an area is experiencing critical groundwater problems, or is expected to do so within 25 years. These problems include shortages of surface water or groundwater, land subsidence resulting from groundwater withdrawal, or contamination of groundwater supplies. Once an area is designated a PGMA, landowners have two years to create a Groundwater Conservation District (GCD). Otherwise, the TCEQ is required to create a GCD or to recommend that the area be added to an existing district. The TWDB works with the TCEQ to produce a legislative report every two years on the status of PGMA's in the state. The PGMA process is completely independent of the current Groundwater Management Area (GMA) process and each process has different goals. The goal of the PGMA process is to establish GCDs in these designated areas so that there will be a regulating entity to address the identified groundwater issues. PGMA's are still relevant as long as there remain portions within these designated areas without GCDs. The Plateau Region's portion of the Hill Country PGMA (Bandera & Kerr Counties) has GCDs established now; however, the Comal County portion of the Hill Country PGMA (located in Region L) still does not have a GCD and therefore, this PGMA is currently active and relevant. A statewide map of the declared PGMA areas is available at:*

*[http://www.tceq.state.tx.us/assets/public/permitting/watersupply/groundwater/maps/pgma\\_areas.pdf](http://www.tceq.state.tx.us/assets/public/permitting/watersupply/groundwater/maps/pgma_areas.pdf).*

**Chapter 2**

Table 2-1 Population:

Kerrville South WC is deleted from the Table and its population is added to County Other as follows:

Kerr	County Other	24,243	27,017	28,336	28,899	30,197	30,744
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Table 2-2 Water Demand:

Kerrville South WC is deleted from the Table and its water demand is added to County Other as follows:

Kerr	County Other	2,727	2,947	2,999	2,996	3,098	3,155
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Appendix Table 2A Water Demand Projections:

- Bandera County, Irrigation, Guadalupe Basin line is removed from the Table.
- The following revision is made in the distribution of water demand by basins for Edwards County irrigation:

Edwards County	Irrigation		2010	2020	2030	2040	2050	2060
		Colorado	43	44	39	38	36	34
		Nueces	87	84	81	77	74	71
		Rio Grande	23	22	21	20	19	18

- Kerr County, Kerrville South WSC is deleted from the Table and its water demand is added to County-Other, Guadalupe Basin as follows:

Kerr County	County-Other		2010	2020	2030	2040	2050	2060
		Colorado	58	62	63	60	56	52
		Guadalupe	2,651	2,866	2,917	2,918	3,025	3,087
		San Antonio	18	19	19	18	17	16

The first sentence of the fourth paragraph of Section 2.3.2 on page 2-4 is revised as follows:

*The greatest percentage increase in population is projected to occur in Bandera County, which is expected to grow from a projected year-2010 population of 26,373 to 60,346 by the year 2060, an increase of ~~229~~ 129 percent.*

The last sentence of the third paragraph of Section 2.4.1 on page 2-12 is revised as follows:

*Bandera County, with the greatest projected percentage population increase, will likewise see the greatest percentage **municipal** water demand increase over the 50-year period, ~~213~~ 113 percent.*

**Chapter 3**

The following sentence is added at the end of the first paragraph of Section 3.2.9 on page 3-19:

*Kerrville South, which appeared as a municipal water user entity in the 2006 Plateau Region Water Plan, has been purchased by Aqua Texas and is now included in the County Other group category.*

Table 3-1 Source Availability:

- Val Verde County, Devils River, Rio Grande Basin line is removed from the Table.
- Val Verde County, Pecos River, Rio Grande Basin line is removed from the Table.

Table 3-2 Existing Supplies:

- Bandera County, Irrigation, Guadalupe Basin, Upper Guadalupe River line is removed from the Table.
- "Other Aquifer (Nueces Alluvium)" with a supply of 34 acre-feet/year is added to Edwards County / County Other / Nueces Basin. This change will also be addressed in the TWDB DB12 database.
- In Val Verde County, the source of water shown to be purchased or supplied from Del Rio is from the Edwards-Trinity (Plateau) Aquifer is as follows:

Laughlin AFB	Rio Grande	<b>Edwards-Trinity (Plateau)</b> <i>(Purchased from Del Rio)</i>	2,178
County Other	Rio Grande	<b>Edwards-Trinity (Plateau)</b> <i>(Supplied from Del Rio)</i>	1,631

Table 3-3 Wholesale Water Provider Existing Supplies:

A supply source column is added to the table as follows:

City of Del Rio	<b>San Felipe Springs</b>	7,461
	<b>Edwards-Trinity (Plateau)</b>	9,116
Laughlin AFB	<b>Edwards-Trinity (Plateau)</b>	2,178
County Other	<b>Edwards-Trinity (Plateau)</b>	1,631

**Chapter 4**

Table 4-1 Needs Analysis:

- Bandera County, Irrigation, Guadalupe Basin line is removed from the Table.
- The supply and net difference by decade for Edwards County / County Other / Nueces Basin is revised as follows:

	2010	2020	2030	2040	2050	2060
S	445	445	445	445	445	445
D	118	121	116	111	108	104
	327	324	329	334	337	341

Table 4-3 List of Recommended Water Management Strategies:

- Total capital cost for the UGRA / Strategy J-12 is changed from \$393,779 to \$3,937,790.
- Strategy supply for the City of Leakey / Strategy J-15 is changed from 17 to 205 ac-ft/yr for all decades.
- Strategy supply for the City of Camp Wood / Strategy J-17 is changed from 178 to 172 ac-ft/yr for all decades.
- The following footnote is added to the table:  
*Capital costs are estimated based on September 2008 US dollars.*
- Footnote "e" is removed from the end of the strategy name for Strategies J-1, J-7 and J-10.
- Footnote "e" is revised to read "Strategy is not intended to meet a need during a drought-of-record condition as identified in Table 4-1."

Table 4-4 Recommended Water Management Strategy Costs:

- O&M cost for the City of Kerrville / Strategy J-6 is \$3,840,000 for decades 2030 through 2050 and \$5,450,000 for the 2060 decade.
- Cost per acre-foot/year for the City of Kerrville / Strategy J-6 is \$1,000 for decades 2030 through 2060.
- Total capital cost for the UGRA / Strategy J-12 is changed from \$393,779 to \$3,937,790.
- O&M cost for the UGRA / Strategy J-12 is changed from \$0 to \$150,000 per year for all decades.
- Cost per acre-foot/year for the UGRA / Strategy J-12 is changed from \$0 to \$14 for all decades.
- Cost per acre-foot/year for the City of Leakey / Strategy J-15 is changed from \$53 to \$4 for all decades.
- The last footnote is revised from 30 years to 20 years.
- The following footnote is added to the table:  
*Capital costs are estimated based on September 2008 US dollars.*

The following paragraph is added at the end of subsection 4.4.1 Bandera WMS J-1:  
*Water supply generated from this strategy will provide an additional source of supply that will hopefully allow the City to decrease its sole dependence on the Trinity Aquifer. Treated Medina River water is injected into the aquifer during non-drought conditions when surface water is plentiful and is retrieved at a later time as a supply source during drought-of-record conditions when surface water is scarce.*

The last sentence of the second paragraph of subsection 4.6.1 (UGRA WMS J-6) is revised and additional text is added as follows:

*Up to 3,840 acre-ft/yr is needed by the year 2030 and an additional 1,610 acre-ft/yr (5,450 acre-ft/yr) in 2060 for a total of 116, 810 acre-feet over the 30-year period. An estimated purchase price of \$1,000 per acre-foot is assumed for this planning process; however the City will negotiate an actual price when and if this strategy is implemented in the future.*

The following text is added to the end of the third paragraph of subsection 4.6.1 UGRA WMS J-6:

*Thus, this strategy could be of some assistance if needed in the early stages of a drought-of-record, but could not be used to meet needs in an extended drought period. However, Kerrville's future needs can be met by implementing Strategies J-7, J-8 and J-9.*

The following text is added to the end of the third paragraph of subsection 4.6.2 Kerrville WMS J-7:

*Treated Guadalupe River water is injected into the aquifer during non-drought conditions when surface water is plentiful and is retrieved at a later time as a supply source during drought-of-record conditions when surface water is scarce.*

The following text is added to the end of the fourth paragraph of subsection 4.7.1 UGRA WMS J-10:

*Treated Guadalupe River water is injected into the aquifer during non-drought conditions when surface water is plentiful and is retrieved at a later time as a supply source during drought-of-record conditions when surface water is scarce.*

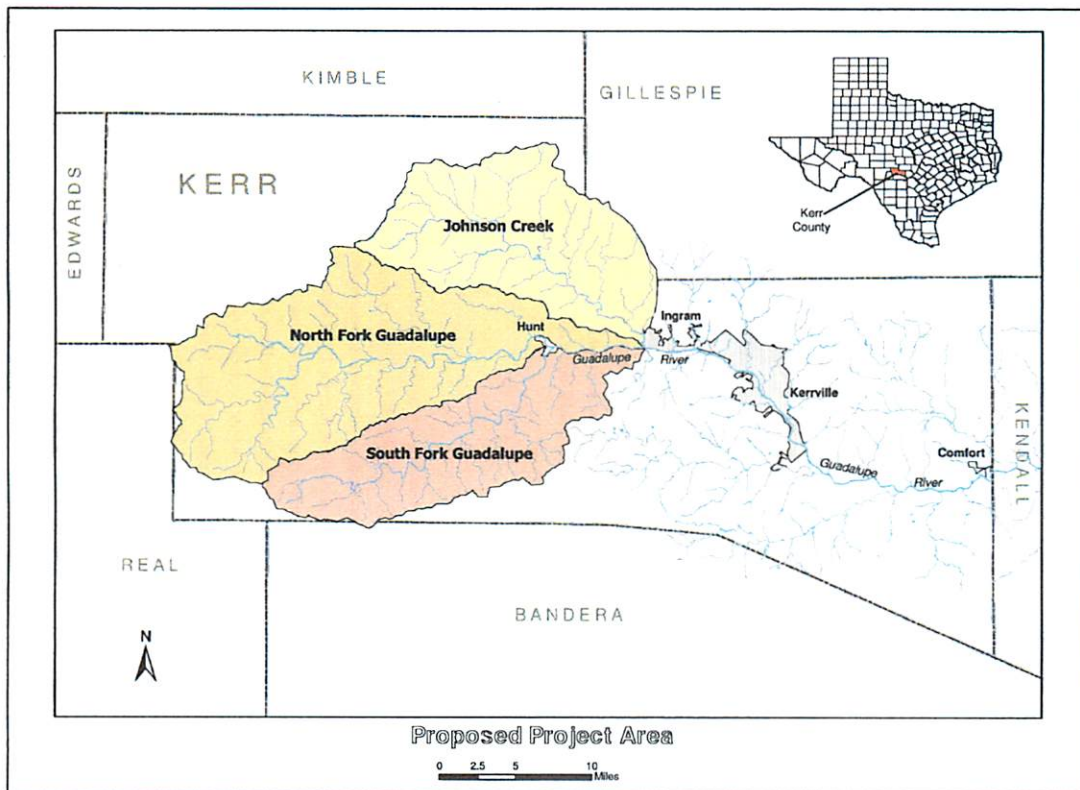
The following text is added at the end of subsection 4.7.2 UGRA WMS J-11:

*Although UGRA is not projected to have future water supply shortages, the water that is captured can be added to the ASR supply and later retrieved for use in serving unexpected peak demands and drought-of-record needs.*



The following text is added to paragraph seven in subsection 4.7.3 UGRA WMS J-12: Clearing 15,000 acres will yield approximately 10,500 acre-feet of water per year (based on results from Kerr WMA; Thurow, T.L. and J.W. Hester. 1997. *How an Increase or Reduction in Juniper Cover Alters Rangeland Hydrology. Ecology and Management Symposium 1997, Texas A&M University*) or about 3,423,000,000 gallons of water per year and can potentially increase the base flow of the river by about 14.4 cubic feet per second.

The following map is added as Figure 4-2 after the second paragraph in subsection 4.7.3 UGRA WMS J-12:



The following text is added to the last paragraph in subsection 4.7.3 UGRA WMS J-12:

*Cooperating landowners are responsible for the continued maintenance of cleared land beyond the 5-year project horizon. At \$100 per acre per decade, the estimated cost for continued maintenance of the cleared 15,000 acres is \$150,000 per year.*

The following subsection is added at the end of Section 4.11 on page 4-41:

**4.11.4 Regional Facility Planning**

*Utilizing a TWDB EDAP grant, the Upper Guadalupe River Authority (UGRA) and the Kerr County Commissioners' Court are evaluating ways in which water supply and wastewater treatment can be made available from regional facilities that will service the Community of Center Point and much of the unincorporated portion of eastern Kerr County. A surface water treatment facility will provide drinking water to customers currently served by several privately owned water systems. The construction of a new wastewater collection system will provide first-time service to many citizens and may potentially include a gravity interceptor to connect the system to the Kendall County WCID#1 wastewater treatment plant downstream in the town of Comfort.*

*Another example of regional cooperation can be seen in a March 2008 MOU executed with the UGRA, City of Kerrville, City of Ingram, Kerr County Commissioners' Court, and the Headwaters Groundwater Conservation District in which the parties agreed to cooperate in good faith for purposes of facilitating range and land management practices that will improve and maintain surface water and groundwater quality and/or availability.*

**Chapter 10**

Additional responses to TWDB IPP review comments (Attachment 10C) as they relate to the Plan's coordination with the TWDB DB12 planning database are provided in the form of a spreadsheet.

This Errata Sheet is added to the end of Attachment 10C. These revisions are incorporated in this printed copy of the 2011 Plan.



Plateau Region Water Plan ERRATA SHEET, Part 2

ATTACHMENT B: LEVEL 1 COMMENTS - INITIALLY PREPARED REGIONAL WATER PLAN VS. ONLINE PLANNING DATABASE REVIEW

Yellow-shaded values indicate the location of the correct volumes at the time of the IPP review, and these values now appear in the final Plateau Region Water Plan.

Plateau Region (J)	IPP document reference:		Non-matching numbers														Remarks	
			IPP document number							Online Planning Database (DB12) number								
			non-decadal number	2010	2020	2030	2040	2050	2060	non-decadal number	2010	2020	2030	2040	2050	2060		
Total capital cost to implement recommended WMSs (\$)	ES-12	text	44,198,379															Revised cost is \$54,792,390
Edwards Co, Colorado Basin, Irrigation Demands (acft/yr)	2A-1	App. 2A		153	147	141	135	129	123									
Edwards Co, Nueces Basin, Irrigation Demands (acft/yr)	2A-1	App. 2A		0	0	0	0	0	0									
Edwards Co, Rio Grande Basin, Irrigation Demands (acft/yr)	2A-1	App. 2A		0	0	0	0	0	0									
Bandera Co, Nueces Basin, Trinity Aq, Irrigation Supply (acft/yr)	3-4	3-2		156	156	156	156	156	156									
Bandera Co, San Antonio Basin, Trinity Aq, Irrigation Supply (acft/yr)	3-4	3-2		283	283	283	283	283	283									
Bandera Co, Guadalupe Basin, Guadalupe River, Irrigation Supply (acft/yr)	3-4	3-2		3	3	3	3	3	3									Deleted from Plan Tables 3-2 & 4-1.
Bandera Co, San Antonio Basin, Medina R-O-R, Livestock Supply (acft/yr)	3-4	3-2		NA	NA	NA	NA	NA	NA									
Bandera Co, Nueces Basin, Sabinal R-O-R, Livestock Supply (acft/yr)	3-4	3-2		NA	NA	NA	NA	NA	NA									Not listed as a source in Table 3-2. Sources are deleted from DB12.
Edwards Co, Nueces Basin, West Nueces R-O-R, Livestock Supply (acft/yr)	3-5	3-2		NA	NA	NA	NA	NA	NA									
Edwards Co, Colorado Basin, South Llano R-O-R, Livestock Supply (acft/yr)	3-5	3-2		NA	NA	NA	NA	NA	NA									
Kerr Co, Guadalupe Basin, Trinity Aq, Irrigation Supply (acft/yr)	3-6	3-2		863	863	863	863	863	863									
Kerr Co, Guadalupe Basin, Upper Guadalupe River, Kerrville Supply: Source Name	3-6	3-2		150	150	150	150	150	150									Upper Guadalupe River + ASR
Kinney Co, R-G Basin, County-Other Supply: GW Source Name	3-7	3-2		64	64	64	64	64	64									Other Aquifer - Austin Chalk
Kinney Co, R-G Basin, Irrigation Supply: GW Source Name	3-7	3-2		3,872	3,872	3,872	3,872	3,872	3,872									Other Aquifer - Austin Chalk
Kinney Co, R-G Basin, Livestock Supply: GW Source Name	3-7	3-2		92	92	92	92	92	92									Other Aquifer - Austin Chalk
Kinney Co, Nueces Basin, Other Aquifer, Irrigation Supply (acft/yr)	3-7	3-2		NA	NA	NA	NA	NA	NA									
Kinney Co, Nueces Basin, West Nueces R-O-R, Livestock Supply (acft/yr)	3-7	3-2		NA	NA	NA	NA	NA	NA									Not listed as a source in Table 3-2. Sources are deleted from DB12.
Real Co, Livestock Supply, Nueces Basin, Frio R-O-R (acft/yr)	3-8	3-2		NA	NA	NA	NA	NA	NA									
Real Co, Livestock Supply, Nueces Basin, Nueces R-O-R, (acft/yr)	3-8	3-2		NA	NA	NA	NA	NA	NA									
Val Verde Co, R-G Basin, Edwards-Trinity Aq, Del Rio Supply (acft/yr)	3-8	3-2		9,116	9,116	9,116	9,116	9,116	9,116									
WVP Supply missing breakdown by Water Source: Del Rio, Edwards-Trinity Aq (acft/yr)	3-9	3-3		16,577	16,577	16,577	16,577	16,577	16,577									Revised to 12,925 for every decade in both the Plan and DB12.
WVP Supply missing breakdown by Water Source: Del Rio, San Felipe R-O-R (acft/yr)	3-9	3-3		NA	NA	NA	NA	NA	NA									
Bandera Co, San Antonio Basin, Medina Lake Supply Source Availability (acft/yr)	1-33	text	20,000	20,000	20,000	20,000	20,000	20,000	20,000									This is not a source availability volume.
Bandera Co, San Antonio Basin, Medina Lake Supply Source Availability (acft/yr)	3-2	3-1		0	0	0	0	0	0									
Kinney Co, Nueces Basin, Other Aquifer Availability (acft/yr)	3-3	3-1		NA	NA	NA	NA	NA	NA									Not listed as a source in Table 3-1. Sources is deleted in DB12.
Real Co, Nueces Basin, "Other Aq-Nueces River Alluvium" Availability (& IPP incomplete name)	3-3	3-1		1,787	1,787	1,787	1,787	1,787	1,787									
Val Verde Co, R-G Basin, Devils River Availability (acft/yr)	3-3	3-1		0	0	0	0	0	0									
Val Verde Co, R-G Basin, Pecos River Availability (acft/yr)	3-3	3-1		0	0	0	0	0	0									These supply sources are deleted from the Plan and DB12.
Barksdale (Edwards C-O) WMS J-3 (Additional GW Wells) supply (acft/yr)	4-12	4-3		16,800	16,800	16,800	16,800	16,800	16,800									
Barksdale (Edwards C-O) WMS J-4 (Replace Pressure Tank) supply (acft/yr)	4-12	4-3		NA	NA	NA	NA	NA	NA									
Barksdale (Edwards C-O) WMS J-5 (Conserv.Pub.Info.) supply (acft/yr)	4-12	4-3		NA	NA	NA	NA	NA	NA									
Kerrville WMS J-8 (Conserv.Water Sys & Loss Audits) supply (acft/yr)	4-12	4-3		NA	NA	NA	NA	NA	NA									
Brackettville WMS J-14 (Conserv.Water Sys & Loss Audits) supply (acft/yr)	4-12	4-3		NA	NA	NA	NA	NA	NA									
Leakey (Real C-O) WMS J-16 (Conserv.Water Sys & Loss Audits) supply (acft/yr)	4-12	4-3		NA	NA	NA	NA	NA	NA									
UGRA (Kerr C-O) WMS J-10 (Surface Water Acquisition/Treatment/ASR) supply (acft/yr)	4-12	4-3		1,124	1,124	1,124	1,124	1,124	1,124									
UGRA (Kerr C-O) WMS J-13 (Conservation Public Info) supply (acft/yr)	4-12	4-3		27	29	30	30	31	32									
UGRA (Kerr C-O) WMS J-11 (Surface Water Storage) supply (acft/yr)	4-12	4-3		NA	NA	NA	NA	NA	NA									
UGRA (Kerr C-O) WMS J-11 (Surface Water Storage) Capital Cost (\$)	4-12	4-3	NA															
UGRA (Kerr C-O) WMS J-11 (Surface Water Storage) O&M Cost (\$)	4-13	4-4		NA	NA	NA	NA	NA	NA									
Leakey (Real C-O) WMS J-15 strategy supply (acft/yr)	4-32	text	205	205	205	205	205	205	205									Table 4-3
Camp Wood WMS J-17 strategy supply (acft/yr)	4-34	text	172	172	172	172	172	172	172									Table 4-3
Bandera Co, Nueces Basin, Irrigation Needs (acft/yr)	4-3	4-1		0	0	0	0	0	0									
Bandera Co, San Antonio Basin, Irrigation Needs (acft/yr)	4-3	4-1		0	0	0	0	0	0									
Kerr Co, Guadalupe Basin, Irrigation Needs (acft/yr)	4-5	4-1		0	60	115	169	222	273									This volume represents a surplus.