5.38 Wholesale Water Provider Supply Plans

Table 5.38-1 lists each wholesale water provider that is not also a WUG in the Brazos G Area and its corresponding surplus or shortage in years 2040 and 2070. A brief summary of the wholesale water provider (WWP) and the plan for the selected WWPs are presented in the following sub chapters. For each wholesale water provider with a projected shortage, a water supply plan has been developed and is presented in the following sub chapters. **Note that shortages shown reflect full contractual commitments compared to existing supplies.**

Table 5.38-1.Wholesale Water Provider Surplus/(Shortage)

Wholesale Water Provider	Surplus/(Shortage)[1,2]		Comment
	2040 (acft/yr)	2070 (acft/yr)	
Brazos River Authority (Lake Aquilla System)	997	(503)	Projected shortage – see plan below
Brazos River Authority (Little River System)	(45,246)	(49,386)	Projected shortage – see plan below
Brazos River Authority (Main Stem System)[3]	0	0	No projected surplus or shortage – see plan below
Aquilla Water Supply District	1	(262)	Projected shortage – see plan below
Bell County WCID No. 1	6,056	(4,805)	Projected shortage – see plan below
Bluebonnet WSC	(317)	(453)	Projected shortage – see plan below
Central Texas WSC	342	144	Projected surplus – see plan below
Eastland County WSD	(955)	(1,045)	Projected shortage – see plan below
FHLM WSC	0	0	See plan below
North Central Texas MWA	(1,752)	(1,797)	Projected shortage – see plan below
Palo Pinto County MWD No. 1	(2,186)	(2,806)	Projected shortage – see plan below
Salt Fork Water Quality Corporation	0	0	See plan below
Upper Leon River MWD	708	602	Projected surplus – see plan below
West Central Texas MWD	1,823	1,523	Projected shortage – see plan below

1 - From Chapter 4.3 – Water Needs for Wholesale Water Providers
2 - Shortages shown above often include shortages from other WWPs. The shortages shown for individual WWPs should not be summed to a regional total.
3 - Includes demands from Region H.

5.38.1 Brazos River Authority (Lake Aquilla System)

Description of Supply

The Brazos River Authority (Lake Aquilla System) obtains water supply from Lake Aquilla. Based on the available surface water supply and contractual demands, the Lake Aquilla System is projected to have a surplus of 1,997 acft/yr in the year 2020 decreasing to a

shortage of 503 acft/yr by year 2070. Chapter 3 includes additional information on contracts and water supplies for the Lake Aquilla System. While the supply from Lake Aquilla is not adequate in 2060 and 2070 to meet the total contractual obligations, the supply is sufficient to meet all of the projected water demands of customers of the Lake Aquilla System and no change in water supply is recommended. Contractual demands and supplies are shown in Table 5.38-2.

Table 5.38-2. Supplies and Demands for the BRA Lake Aquilla System

	2020	2030	2040	2050	2060	2070
Existing Contractual Sales						
Cleburne	5,300	5,300	5,300	5,300	5,300	5,300
Hillco WSC	150	150	150	150	150	150
Aquilla WSD	5,953	5,953	5,953	5,953	5,953	5,953
Total Existing Demands	**11,403**	**11,403**	**11,403**	**11,403**	**11,403**	**11,403**
Total Supply	**13,400**	**12,900**	**12,400**	**11,900**	**11,400**	**10,900**
Projected Surplus/(Shortage) (acft/yr)	*1,997*	*1,497*	*997*	*497*	*(3)*	*(503)*

Water Supply Plan

Brazos G recommends that BRA pursue reallocation of a portion of the Lake Aquilla flood control storage to conservation storage. Working within the planning criteria established by the Brazos G RWPG, the following water supply plan is recommended for the Lake Aquilla System:

a. Lake Aquilla Reallocation

- Cost Source: Volume II
- Date to be Implemented: Before 2060
- Annual Cost: $2,158,000
- Unit Cost: Max of $869/acft

Table 5.38-3. Recommended Plan Costs by Decade for the BRA Lake Aquilla System

Plan Element	2020	2030	2040	2050	2060	2070
Projected Surplus/(Shortage) (acft/yr)	*1,997*	*1,497*	*997*	*497*	*(3)*	*(503*
Lake Aquilla Reallocation						
Supply From Plan Element (acft/yr)					2,483	2,483
Annual Cost ($/yr)					$2,158,000	$2,158,000
Unit Cost ($/acft)					$869	$869

5.38.2 Brazos River Authority (Little River System)

Description of Supply

The Brazos River Authority Little River System obtains its water supply from Lake Proctor, Lake Belton, Stillhouse Hollow Reservoir, Lake Georgetown, and Lake Granger. Based on the available surface water supply, existing contractual commitments and recommended water management strategies, the Brazos River Authority Little River System is projected to have a shortage of 42,486 acft/yr in the year 2040 and 49,386 acft/yr in the year 2070. Shortages for the BRA Little River System are based on a comparison of supplies and current contractual commitments, not projected demands for those entities holding contracts with the BRA. Contractual demands and supplies are shown in Table 5.38-4.

Supplies from Lake Granger are allocated to meet BRA system demands, except for 13,000 acft/yr specifically allocated to the East Williamson County Water Treatment Plant (EWCWTP), which supplies water to the City of Taylor and is intended to supply other entities in eastern Williamson County and Bell County. Currently, between 3,279 acft/yr and 4,729 acft/yr of that supply is allocated to meet the demands of the City of Taylor and its wholesale customers, 2,136 acft/yr for Jarrell-Schwertner WSC in additional to another 1,000 acft/yr contract Jarrell-Schwertner WSC holds, and 2,744 acft/yr for Sonterra MUD. The remaining supply from the EWCWTP is available for other users as a water management strategy. Chapter 3 includes additional information on contracts and water supplies for the Little River System.

Note that the shortages shown are based on full contractual commitments. Actual full use of those contracts is unlikely to occur until later years of the planning period and the shortages shown are more likely to occur later than shown here.

Table 5.38-4. Supplies and Demands for the BRA Little River System

Plan Element	2020	2030	2040	2050	2060	2070
Existing Contractual Demands	**251,643**	**251,643**	**251,643**	**251,643**	**251,643**	**251,643**
Supply Sources						
Lake Proctor	13,300	12,660	12,020	11,380	10,740	10,100
Lake Belton	100,257	100,257	100,257	100,257	100,257	100,257
Lake Stillhouse Hollow	66,400	66,120	65,840	65,560	65,280	65,000
Lake Georgetown	11,600	11,580	11,560	11,540	11,520	11,500
Lake Granger	17,600	17,160	16,720	16,280	15,840	15,400
Total Existing Supplies	**209,157**	**207,777**	**206,397**	**205,017**	**203,637**	**202,257**
Projected Surplus/(Shortage) (acft/yr)	*(42,486)*	*(43,866)*	*(45,246)*	*(46,626)*	*(48,006)*	*(49,386)*

Note: Highland Lakes supplies (25,000 acft/yr) and contracts (22,128 acft/yr) pursuant to HB 1437 are not shown.

Water Supply Plan

Working within the planning criteria established by the Brazos G RWPG, the following water supply plan is recommended to meet the projected shortages for BRA's Little River System. Needs for full contractual commitments remain unmet in 2020. These needs will only occur during a drought equivalent or worse than the drought of record. While not a strategy recommended by the Brazos G RWPG, the impacts of the unmet needs can be mitigated through demand management in the event of a serious drought prior to the recommended strategies coming online that will firm up supplies from the BRA to their contractual customers.

a. Sell Remaining Highland Lakes Supplies to County-Other entities
    - Cost Source: Volume II
    - Date to be Implemented: before 2020
    - Total Project Cost: $0
    - Unit Cost: Max of $145/acft in 2020

b. Lake Granger ASR
    - Cost Source: Volume II
    - Date to be Implemented: before 2020
    - Total Project Cost: $99,820,000 (sum of 3 phases)
    - Unit Cost: Max of $1,291/acft in 2030

c. Belton to Stillhouse Pipeline – this strategy is for operational purposes and does not provide additional supply. For planning rules purposes, it is assumed to make 5,000 acft/yr available to Georgetown's contracted supply.
    - Cost Source: Volume II
    - Date to be Implemented: Before 2030
    - Total Project Cost: $67,993,000
    - Unit Cost: not applicable

d. Lake Granger Augmentation Phase II

    This strategy would overdraft Lake Granger and supplement supplies with an annual average of 15,920 acft/yr of groundwater from Milam, Burleson and/or Lee Counties (Williamson County groundwater supply project north or south option, or Milam County GW) (57,281 acft/yr maximum groundwater in a single year).
    - Cost Source: Volume II
    - Date to be Implemented: 2030
    - Total Project Cost: $845,564,000
    - Unit Cost: Max of $1,631/ acft in 2020

e. Williamson County Groundwater Supply – South Option

- Cost Source: Volume II
- Date to be Implemented: 2030
- Total Project Cost: $415,016,000
- Unit Cost: Max of $1,631/ acft in 2030

Table 5.38-5. Recommended Plan Costs by Decade for the BRA Little River System

Plan Element	2020	2030	2040	2050	2060	2070
Projected Surplus/(Shortage) (acft/yr)	*(42,286)*	*(43,866)*	*(45,246)*	*(46,626)*	*(48,006)*	*(49,386)*
Sell Remaining Highland Lakes Supply						
Supply From Plan Element (acft/yr)	2,872	2,872	2,872	2,872	2,872	2,872
Annual Cost ($/yr)	$832,880	$832,880	$832,880	$832,880	$832,880	$832,880
Unit Cost ($/acft)	$145	$145	$145	$145	$145	$145
Lake Granger ASR						
Supply From Plan Element (acft/yr)	—	7,600	11,900	11,900	11,900	11,900
Annual Cost ($/yr)	—	$6,493,000	$14,090,000	$14,090,000	$5,898,000	$5,898,000
Unit Cost ($/acft)	—	$854	$1,184	$1,184	$496	$496
Belton to Stillhouse Pipeline						
Supply From Plan Element (acft/yr)	—	5,000	5,000	5,000	5,000	5,000
Annual Cost ($/yr)	—	$6,545,000	$6,545,000	$1,761,000	$1,761,000	$1,761,000
Unit Cost ($/acft)	—	$1,309	$1,309	$352	$352	$352
Lake Granger Augmentation – Phase II						
Supply From Plan Element (acft/yr)	—	46,265	46,265	46,265	46,265	46,265
Annual Cost ($/yr)	—	$75,462,000	$75,462,000	$24,411,000	$24,411,000	$24,411,000
Unit Cost ($/acft)	—	$1,631	$1,631	$528	$528	$528
Williamson County Groundwater Supply – South Option						
Supply From Plan Element (acft/yr)	—	46,265	46,265	46,265	46,265	46,265
Annual Cost ($/yr)	—	$75,462,000	$75,462,000	$24,411,000	$24,411,000	$24,411,000
Unit Cost ($/acft)	—	$1,631	$1,631	$528	$528	$528

5.38.3 Brazos River Authority (Main Stem/Lower Basin System)

Description of Supply

The Brazos River Authority (Main Stem/Lower Basin System) obtains water supply from Possum Kingdom Reservoir, Lake Granbury, Lake Whitney, Lake Somerville, and Lake Limestone, and the BRA's System Operations Permit. Based on the available surface water supply, the Brazos River Authority Main Stem/Lower Basin System is projected to meet the projected contractual demands on the BRA Main Stem/Lower Basin System from Region O, Region H, Region C and Brazos G. Chapter 3 includes additional information on contracts and water supplies for the Main Stem/Lower Basin System. Contractual demands and supplies are summarized in Table 5.38-6. System yield modeling indicates that the full System Operations yield exceeds the contractual demands but is constrained for regional planning to meet just the contractual demands shown in Table 5.38-6.

Actual full use of the contracts shown is unlikely to occur until later years of the planning period. In addition to the System Operations Permit, the BRA has a System Order that allows BRA to divert from each individual reservoir an annual amount greater than the reservoir's authorized diversion and assign the difference to another reservoir in the system. While this does not increase the authorized supply from the BRA system, it provides operational flexibility within the BRA's system.

Table 5.38-6. Supplies and Demands for the BRA Main Stem/Lower Basin System

Plan Element	2020	2030	2040	2050	2060	2070
Contractual Demands						
System/Lakeside – Region O	961	961	961	961	961	961
System/Lakeside – Region C	1,600	1,600	1,600	1,600	1,600	1,600
System/Lakeside – Brazos G	213,504	213,504	213,504	213,504	213,504	213,504
System/Lakeside – Region H	163.450	163.450	163.450	163.450	163.450	163.450
System Operations – Brazos G	15,211	15,211	15,211	15,211	15,211	15,211
System Operations – Region H	79,785	79,785	79,785	79,785	79,785	79,785
Total Existing Contractual Demands	**474,511**	**474,511**	**474,511**	**474,511**	**474,511**	**474,511**
Supply Sources						
Possum Kingdom Reservoir	152,100	151,220	150,340	149,460	148,580	147,700
Lake Granbury	59,400	58,380	57,360	56,340	55,320	54,300
Lake Whitney	18,336	18,336	18,336	18,336	18,336	18,336
Lake Somerville	42,200	41,540	40,880	40,220	39,560	38,900
Lake Limestone	64,000	62,440	60,880	59,320	57,760	56,200
System Operations	138,475	142,595	146,715	150,835	154,955	159,075

Table 5.38-6. Supplies and Demands for the BRA Main Stem/Lower Basin System

Plan Element	2020	2030	2040	2050	2060	2070
Total Existing Supplies	**474,511**	**474,511**	**474,511**	**474,511**	**474,511**	**474,511**
Projected Surplus/(Shortage) (acft/yr)	*0*	*0*	*0*	*0*	*0*	*0*
Additional Demands from Strategies Recommended for Others						
Supply to Williamson County-Other (acft/yr)					12,000	26,000
Total Needs Including Recommended Strategies (acft/yr)	*0*	*0*	*0*	*0*	*(12,000)*	*(26,000)*

Water Supply Plan

Working within the planning criteria established by the Brazos G RWPG, the following water supply plan is recommended to meet the projected shortages for the BRA Main Stem System:

a. Lake Whitney Reallocation
This strategy would reallocate storage in Lake Whitney from hydropower to other uses and would develop a total of 38,480 acft/yr of additional supply to the BRA. Williamson County-Other users will likely need up to 26,000 acft/yr by 2070.

- Cost Source: Volume II
- Date to be Implemented: before 2050
- Total Project Cost: $36,689,000
- Unit Cost: $70/acft
- This includes the reallocation of the power pool and unpermitted storage below elevation 520 ft-msl. Additionaly, the supply from Lake Whitney

Table 5.38-7. Recommended Plan Costs by Decade for the BRA Main Stem System

Plan Element	2020	2030	2040	2050	2060	2070
Projected Surplus/(Shortage) (acft/yr)	*0*	*0*	*0*	*0*	*(12,000)*	*(26,000)*
Lake Whitney Reallocation						
Supply From Plan Element (acft/yr)				38,480	38,480	38,480
Annual Cost ($/yr)				$2,679,000	$2,679,000	$148,000
Unit Cost ($/acft)				$70	$70	$3
Alternative: Lake Whitney Overdrafting with Off-Channel Reservoir						
Supply From Plan Element (acft/yr)				5,200	5,200	5,200
Annual Cost ($/yr)				$12,879,000	$12,879,000	$79,000
Unit Cost ($/acft)				$2,477	$2,477	$1,125

5.38.4 Aquilla Water Supply District

Description of Supply

Aquilla WSD obtains raw water from Lake Aquilla through a contract with the BRA. The district supplies treated water to five wholesale customers. Chapter 3 includes additional information on contracts and water supplies for Aquilla WSD. Based on contractual commitments, a shortage is projected in 2020 for the District due to a short-term contract with Hillsboro and in 2070 due to sedimentation reducing the yield of Lake Aquilla. However, the water demands of the five wholesale customers are substantially less than the contractual obligations of the District, and no change in water supply is recommended.

Water Supply Plan

Working within the planning criteria established by the Brazos G RWPG and TWDB, the following water management strategy is recommended to meet the projected water shortage for Aquilla WSD. Needs for full contractual commitments remain unmet in 2020, but this will not result in unmet needs for contractual customers.

a. BRA to firm up supplies through Lake Aquilla reallocation

- Cost Source: Cost borne by BRA
- Date to be Implemented: Before 2060
- Total Project Cost: Cost borne by BRA
- Unit Cost: $0/acft

Table 5.38-8. Recommended Plan Costs by Decade for Aquilla WSD

Plan Element	2020	2030	2040	2050	2060	2070
Projected Surplus/(Shortage) (acft/yr)	*(559)*	*1*	*1*	*1*	*1*	*(262)*
BRA to Firm Up Supplies through Lake Aquilla Reallocation						
Supply From Plan Element (acft/yr)						262
Annual Cost ($/yr)						$0
Unit Cost ($/acft)						$0

5.38.5 Bell County WCID No. 1

Description of Supply

Bell County WCID No. 1 obtains its water supply from Lake Belton through BRA contracts (62,509 acft/yr). The district's freshwater customers have year 2070 projected demands of 53,055 acft/yr that the District would be required to meet, compared to the district's total supply from the BRA of 50,241 acft/yr (the full 62,509 acft/yr is not currently firm, based on water availability analyses prescribed under water planning guidelines). Chapter 4 includes additional information on contracts and water supplies for Bell County WCID No.1. Therefore, the district has needs projected for its customers starting in 2060 based on

contractual commitments and in 2070 based on its customers' actual projected demands. BRA strategies for the Little River System will firm up contracts to provide the full amount of supply during drought of record conditions, therefore no change in water supply is recommended for Bell County WCID No. 1.

The District has entered into a contract to supply reuse supply to the City of Killeen. Bell County WCID is pursuing TCEQ Reclaimed Water Type I permits to utilize treated wastewater from wastewater treatment plants (WWTP) 1 and 2 and the South WWTP. The District has evaluated several wastewater reuse options as part of its Master Plan update. The reuse portion of the Master Plan identifies both near-term potential customers as well as other future customers that would utilize the total available reuse supply generated through the District's regional wastewater system.

Water Supply Plan

Working within the planning criteria established by the Brazos G RWPG and TWDB, the following water management strategy is recommended to meet the projected water shortage for Bell County WCID No.1. Needs for full contractual commitments remain unmet in 2020. These needs will only occur during a drought equivalent or worse than the drought of record. While not a strategy recommended by the Brazos G RWPG, the impacts of the unmet needs can be mitigated through demand management in the event of a serious drought prior to the recommended strategies coming online that will firm up supplies from the BRA.

a. Firm up Supplies through BRA Little River System Strategies
    - Cost Source: Volume II
    - Date to be Implemented: 2020
    - Total Project Cost: borne by BRA
    - Unit Cost: already contracted supplies
b. Water Treatment Plant Expansion (Lake Belton)
    - Cost Source: Volume II
    - Date to be Implemented: 2030
    - Total Project Cost: $28,964,000
    - Unit Cost: maximum of $1,116/acft
c. New Water Treatment Plant (Lake Stillhouse Hollow) (under construction in 2020)
    - Cost Source: Volume II
    - Date to be Implemented: before 2030
    - Total Project Cost: $93,404,000
    - Unit Cost: maximum of $1,172/acft

Table 5.38-9. Recommended Plan Costs by Decade for Bell County WCID No.1

Plan Element	2020	2030	2040	2050	2060	2070
Projected Surplus/(Shortage) (acft/yr)	*13,118*	*9,777*	*6,056*	*2,424*	*(1,197)*	*(4,805)*
Firm up Supplies through BRA Little River System Strategies						
Supply From Plan Element (acft/yr)		10,896	11,239	11,582	11,925	12,268
Annual Cost ($/yr)		$0	$0	$0	$0	$0
Unit Cost ($/acft)		$0	$0	$0	$0	$0
Water Treatment Plan Expansion (Lake Belton)						
Supply From Plan Element (acft/yr)		1,680	1,680	1,680	3,360	3,360
Annual Cost ($/yr)		$1,875,000	$1,875,000	$856,000	$2,731,000	$2,731,000
Unit Cost ($/acft)		$1,116	$1,116	$510	$813	$813
New Water Treatment Plant (Lake Stillhouse Hollow)						
Supply From Plan Element (acft/yr)		9,521	9,521	9,521	9,521	9,521
Annual Cost ($/yr)		$11,159,000	$11,159,000	$4,587,000	$4,587,000	$4,587,000
Unit Cost ($/acft)		$1,172	$1,172	$482	$482	$482

Reuse Supply Plan

Working within the planning criteria established by the Brazos G RWPG and TWDB, the following water management strategies are recommended to meet the projected reuse water demands for Bell County WCID No.1:

a. North Reuse
   - Cost Source: Volume II, Chapter 3
   - Date to be Implemented: 2020
   - Total Project Cost: $12,146,000
   - Unit Cost: Max of $765 / acft in 2020

b. South Reuse
   - Cost Source: Volume II, Chapter 3
   - Date to be Implemented: 2020
   - Total Project Cost: $6,529,000
   - Unit Cost: Max of $930 / acft in 2020

Table 5.38-10. Recommended Plan Costs by Decade for Bell County WCID No. 1 for Reuse Supplies

Plan Element	2020	2030	2040	2050	2060	2070
Projected Surplus/(Shortage) (acft/yr)	*(2,693)*	*(2,693)*	*(2,693)*	*(2,693)*	*(2,693)*	*(2,693)*
Bell County WCID #1-North Reuse (Volume II, Chapter 3)						
Supply From Plan Element (acft/yr)		1,945	1,945	1,945	1,945	1,945
Annual Cost ($/yr)		$1,472,625	$456,225	$456,225	$456,225	$456,225
Unit Cost ($/acft)		$765	$237	$237	$237	$237
Bell County WCID #1-South Reuse (Volume II, Chapter 3)						
Supply From Plan Element (acft/yr)		748	748	748	748	748
Annual Cost ($/yr)		$696,000	$150,000	$150,000	$150,000	$150,000
Unit Cost ($/acft)		$930	$201	$201	$201	$201

5.38.6 Bluebonnet Water Supply Corporation

Description of Supply

Bluebonnet Water Supply Corporation (WSC) obtains raw water from Lake Belton through contracts with the BRA totaling 8,301 acft; however, the firm supply of those contracts is 6,900 in 2020, and decreases over the planning period, based on water availability analyses prescribed under water planning guidelines. The WSC has projected shortages starting in 2020 based on contractual commitments. However, the BRA contractual amount, if firm, would be sufficient to meet all of Bluebonnet's contractual commitments. Based on actual projected customer demands, however, there is sufficient supply to meet all projected demands of Bluebonnet's customers. BRA strategies for the Little River System will firm up contracts to provide the full amount of supply during drought of record conditions and no change in water supply is recommended. Chapter 4 includes additional information on contracts and water supplies for Bluebonnet WSC.

Water Supply Plan

Working within the planning criteria established by the Brazos G RWPG and TWDB, the following water management strategy is recommended to meet the projected water shortages for Bluebonnet WSC. Needs for full contractual commitments remain unmet in 2020. These needs will only occur during a drought equivalent or worse than the drought of record. While not a strategy recommended by the Brazos G RWPG, the impacts of the unmet needs can be mitigated through demand management in the event of a serious drought prior to the recommended strategies coming online that will firm up supplies from the BRA.

a. Firm up Supplies through BRA Little River System Strategies

- Cost Source: Volume II
- Date to be Implemented: 2020
- Total Project Cost: borne by BRA
- Unit Cost: already contracted supplies

Table 5.38-11. Recommended Plan Costs by Decade for Bluebonnet WSC

Plan Element	2020	2030	2040	2050	2060	2070
Projected Surplus/(Shortage) (acft/yr)	(225)	(271)	(317)	(362)	(408)	(453)
Firm up Supplies through BRA Little River System Strategies						
Supply From Plan Element (acft/yr)		1,447	1,493	1,538	1,584	1,629
Annual Cost ($/yr)		$0	$0	$0	$0	$0
Unit Cost ($/acft)		$0	$0	$0	$0	$0

5.38.7 Central Texas Water Supply Corporation

Description of Supply

Central Texas WSC obtains its water supply from Lake Stillhouse Hollow through contracts with the BRA totaling 12,045 acft; however, the firm supply of those contracts is 10,011 in 2020, decreasing to 9,681 acft/yr in 2070, based on water availability analyses prescribed under water planning guidelines. Central Texas WSC also has recently constructed two wells in the Trinity Aquifer in Bell County that are counted as current supply as they will be online prior to 2020. Based on the available surface water and groundwater supply, currently contracted supplies, and projected demands for its current customers, Central Texas WSC is not projected to have shortages through 2070, assuming that all demands can be treated and delivered through current infrastructure. Chapter 4 includes additional information on contracts and water supplies for Central Texas WSC.

BRA strategies for the Little River System will firm up contracts to provide full amount of supply during drought of record.

Water Supply Plan

Working within the planning criteria established by the Brazos G RWPG and TWDB, the following water management strategies are recommended to meet the projected water shortage for Central Texas WSC.

a. Firm up of Supplies through BRA Little River System Strategies

- Cost Source: Volume II
- Date to be Implemented: 2020
- Total Project Cost: borne by BRA
- Unit Cost: already contracted supplies

Table 5.38-12. Recommended Plan Costs by Decade for Central Texas WSC

Plan Element	2020	2030	2040	2050	2060	2070
Projected Surplus/(Shortage) (acft/yr)	474	408	342	276	210	144
Firm up of Supplies through BRA Little River System Strategies						
Supply From Plan Element (acft/yr)		2,100	2,166	2,232	2,298	2,364
Annual Cost ($/yr)		$0	$0	$0	$0	$0
Unit Cost ($/acft)		$0	$0	$0	$0	$0

5.38.8 FHLM Water Supply Corporation

Description of Supply

Various utilities in Falls, Hill, Limestone and McLennan Counties are dealing with elevated levels of arsenic in groundwater supplies and several have been pursuing water management strategies through FHLM WSC. FHLM WSC has recently contracted with the BRA for 1,934 acft/yr that will eventually be used by member utilities to either replace or blend with existing groundwater supplies. FHLM WSC is also currently negotiating a water supply agreement with the City of Waco on behalf of EOL WSC and Axtel WSC, although the details of the potential agreement are not available. The projects to supply EOL and Axtel from the City of Waco are shown as water management strategies for those WUGs in the McLennan County section of this plan.

Water Supply Plan

Working within the planning criteria established by the Brazos G RWPG and TWDB, the following water management strategies are recommended to meet future water demands for FHLM WSC participants.

a. BRA System Operations Supply

- Cost Source: Volume II
- Date to be Implemented: 2030
- Total Project Cost: $95,792,000 (2015 FHLM Regional Water Facility Planning Study)
- Unit Cost: $4,496 acft/yr (treated water cost delivered to customers)

Table 5.38-13. Recommended Plan Costs by Decade for FHLM WSC

Plan Element	2020	2030	2040	2050	2060	2070
Projected Surplus/(Shortage) (acft/yr)	0	0	0	0	0	0
BRA System Operations Supply						
Supply From Plan Element (acft/yr)		1,934	1,934	1,934	1,934	1,934
Annual Cost ($/yr)		$8,696,000	$8,696,000	$2,688,260	$2,688,260	$2,688,260
Unit Cost ($/acft)		$4,496	$4,496	$1,390	$1,390	$1,390

5.38.9 Eastland County WSD

Eastland County WSD obtains its water supply from Lake Leon and Eastland Lake and provides water to the Cities of Eastland and Ranger, and to manufacturing interests in Eastland County. The supplies from these two sources are not sufficient to meet the District's contractual commitments but are ample to meet the projected demands for Eastland and Ranger, which are only about 20 percent of the contractual supplies. No changes in water supply are recommended. Chapter 4 includes additional information on contracts and water supplies for Eastland County WSD.

5.38.10 North Central Texas Municipal Water Authority

Description of Supply

North Central Texas MWA owns and obtains its water supply from Millers Creek Reservoir. Based on the available surface water supply, shortages are expected through 2070. Chapter 4 includes additional information on contracts and water supplies for North Central Texas Municipal Water Authority.

Water Supply Plan

Working within the planning criteria established by the Brazos G RWPG and TWDB, the following water management strategies are recommended to meet the projected water shortage for the North Central Texas MWA. Needs for full contractual commitments remain unmet in 2020. These needs will only occur during a drought equivalent or worse than the drought of record. While not a strategy recommended by the Brazos G RWPG, the impacts of the unmet needs can be mitigated through demand management in the event of a serious drought prior to the recommended strategies coming online that will firm up supplies from the BRA.

a. Lake Creek Reservoir

- Cost Source: Volume II
  - Project requires a subordination agreement with the BRA, which is dependent on the BRA obtaining the System Operations permit
- Date to be Implemented: 2030
- Total Project Cost: $259,001,000
- Unit Cost: $1,657/acft

Table 5.38-14. Recommended Plan Costs by Decade for North Central Texas MWA

Plan Element	2020	2030	2040	2050	2060	2070
Projected Surplus/(Shortage) (acft/yr)	(1,722)	(1,737)	(1,752)	(1,767)	(1,782)	(1,797)
Lake Creek Reservoir						
Supply From Plan Element (acft/yr)		12,900	12,900	12,900	12,900	12,900
Annual Cost ($/yr)		$21,377,000	$21,377,000	$9,511,000	$9,511,000	$5,280,000
Unit Cost ($/acft)		$1,657	$1,657	$737	$737	$409

5.38.11 Palo Pinto County Municipal Water District No. 1

Description of Supply

Palo Pinto County Municipal Water District owns and operates Lake Palo Pinto, which is used to supply water to entities in Palo Pinto and Parker Counties. A portion of its supply is used in Region C. The district has rights to 18,500 acft/yr for municipal and steam electric power uses. Treated water is supplied to the City of Mineral Wells (and its customers) and Lake Palo Pinto Area Water Supply Corporation. Projected demands based on contractual commitments indicate shortages through 2070. However, based on projected customer demands associated with Mineral Wels (limited to contractual maximums), there will only be a supply shortage of 310 acft/yr in 2070. Chapter 4 includes additional information on contracts and water supplies for Palo Pinto County MWD No.1.

Water Supply Plan

Working within the planning criteria established by the Brazos G RWPG and TWDB, the following water management strategies are recommended to meet the projected water shortage for the Palo Pinto County Municipal Water District No.1. Needs for full contractual commitments remain unmet in 2020. These needs will only occur during a drought equivalent or worse than the drought of record. While not a strategy recommended by the Brazos G RWPG, the impacts of the unmet needs can be mitigated through demand management in the event of a serious drought prior to the recommended strategies coming online that will firm up supplies from the BRA.

a. Lake Palo Pinto Expansion (Turkey Peak Dam)

- Cost Source: Volume II
- Date to be Implemented: 2030
- Total Project Cost: $102,530,000 (includes $8,000,000 already expended for completed studies and legal assistance)
- Unit Cost: Max of $989 / acft in 2020

Table 5.38-15. Recommended Plan Costs by Decade for Palo Pinto County Municipal Water District No.1

Plan Element	2020	2030	2040	2050	2060	2070
Projected Surplus/(Shortage) (acft/yr)	*(1,751)*	*(1,991)*	*(2,186)*	*(2,397)*	*(2,608)*	*(2,806)*
Lake Palo Pinto Expansion (Turkey Peak Dam)						
Supply From Plan Element (acft/yr)		6,000	6,000	6,000	6,000	6,000
Annual Cost ($/yr)		$5,935,000	$5,935,000	$796,000	$796,000	$796,000
Unit Cost ($/acft)		$989	$989	$133	$133	$133

5.38.12 Salt Fork Water Quality Corporation

Description of Supply

The Salt Fork Water Quality Corporation (SFWQC) was formed to develop a project to reduce salinity in the Brazos River Basin by constructing a series of wells to intercept highly saline water that emerges in a series of seeps and springs in the upper Brazos Basin. The SFWQC is pursuing a project to develop the series of wells, desalt the water captured by the wells, make commercial application of the resulting salt and sell the fresh water produced to municipal utilities in the area. This water management strategy is evaluated in Volume II as the Upper Basin Chloride Control Project. The project would develop up to 949 acft/yr of fresh water that could be used by Jayton, Aspermont and the White River Municipal Water District (at Spur in Region O).

Water Supply Plan

Working within the planning criteria established by the Brazos G RWPG, the following water supply plan is recommended to meet the projected shortages for the BRA Main Stem System:

a. Upper Basin Chloride Control Project

- Cost Source: Volume II
- Date to be Implemented: before 2030
- Total Project Cost: $106,537,000
- Unit Cost: $6,527 for fresh water supply developed. Cost benefits result from reduced treatment costs downstream. Cost benefits range from $65/acft in the upper basin to zero in the lower basin.

Table 5.38-16. Recommended Plan Costs by Decade for the Salt Fork Water Quality Corporation

Plan Element	2020	2030	2040	2050	2060	2070
Projected Surplus/(Shortage) (acft/yr)	*0*	*0*	*0*	*0*	*0*	*0*
Upper Basin Chloride Control Project						
Supply From Plan Element (acft/yr)	—	949	949	949	949	949
Annual Cost ($/yr)[1]	—	$6,194,000	$6,194,000	$0	$0	$0
Unit Cost ($/acft)	—	$6,527	$6,527	N/A	N/A	N/A

1 – Project consultants have prepared a pro forma analysis indicating that revenue from salt sales would cover all O&M costs after debt service is retired.

5.38.13 Upper Leon River Municipal Water District (MWD)

Description of Supply

Upper Leon River MWD obtains its water supply through a contract with the Brazos River Authority for 6,437 acft/yr of water from Lake Proctor; however the firm supply of those contracts is 5,350 acft/yr in 2020 and decreases to 5,174 acft/yr by 2070, based on water availability analyses prescribed under water planning guidelines. The MWD has projected surpluses throughout the planning period. BRA strategies for the Little River System will firm up contracts to provide the full amount of supply during drought of record conditions. Chapter 4 includes additional information on contracts and water supplies for Upper Leon River MWD.

Water Supply Plan

Working within the planning criteria established by the Brazos G RWPG and TWDB, the following water management strategy is recommended to meet the projected water shortage for Upper Leon River MWD.

a. Firm up Supplies through BRA Little River System Strategies
   - Cost Source: Volume II
   - Date to be Implemented: 2020
   - Total Project Cost: borne by BRA
   - Unit Cost: already contracted supplies

b. Trinity Groundwater from Pecan Orchard
   - Cost Source: Intended Use Plan Budget submitted to TWDB in support of DWSRF Application
   - Date to be Implemented: 2020
   - Total Project Cost: $5,347,000
   - Unit Cost: $319/acft

Table 5.38-17. Recommended Plan Costs by Decade for Upper Leon River MWD

Plan Element	2020	2030	2040	2050	2060	2070
Projected Surplus/(Shortage) (acft/yr)	778	743	708	672	637	602
Firm up Supplies through BRA Little River System Strategies						
Supply From Plan Element (acft/yr)		1,122	1,157	1,193	1,228	1,263
Annual Cost ($/yr)		$0	$0	$0	$0	$0
Unit Cost ($/acft)		$0	$0	$0	$0	$0
Trinity Groundwater from Pecan Orchard						
Supply From Plan Element (acft/yr)	2,040	2,040	2,040	2,040	2,040	2,040
Annual Cost ($/yr)	$447,433	$447,433	$203,327	$203,327	$203,327	$203,327
Unit Cost ($/acft)	$319	$319	$100	$100	$100	$100

5.38.14 West Central Texas Municipal Water District

Description of Supply

West Central Texas MWD owns and obtains its water supply from Hubbard Creek Reservoir. Based on the available surface water supply constrained to a 2-year safe yield estimate, West Central Texas MWD is projected to have surplus supplies throughout the planning period. Chapter 4 includes additional information on contracts and water supplies for West Central Texas MWD.

Table 5.38-18. Supplies and Demands for the West Central Texas Municipal Water District

	2020	2030	2040	2050	2060	2070
Existing Contractual Sales						
Abilene	13,077	13,077	13,077	13,077	13,077	13,077
Albany	1,400	1,400	1,400	1,400	1,400	1,400
Anson	1,600	1,600	1,600	1,600	1,600	1,600
Breckenridge	1,900	1,900	1,900	1,900	1,900	1,900
Total Existing Demands	**17,977**	**11,403**	**11,403**	**11,403**	**11,403**	**11,403**
Total Supply	**20,000**	**19,900**	**19,800**	**19,700**	**19,600**	**19,500**
Projected Surplus/(Shortage) (acft/yr)	*2,023*	*1,923*	*1,823*	*1,723*	*1,623*	*1,523*

Water Supply Plan

Working within the planning criteria established by the Brazos G RWPG and TWDB, the following water management strategy is recommended to supplement water supplies for West Central Texas MWD.

a. BRA System Operations Supply

The District is in the process of negotiating a contract to purchase 774 acft/yr from the Brazos River Authority's System Operations supply.

- Cost Source: Volume II
- Date to be Implemented: before 2020
- Total Project Cost: Infrastructure already exists
- Unit Cost: $76.50/acft

Table 5.38-19. Recommended Plan Costs by Decade for West Central Texas MWD

Plan Element	2020	2030	2040	2050	2060	2070
Projected Surplus/(Shortage) (acft/yr)	*2,023*	*1,923*	*1,823*	*1,723*	*1,623*	*1,523*
BRA System Operations Supply						
Supply From Plan Element (acft/yr)	774	774	774	774	774	774
Annual Cost ($/yr)	$59,211	$59,211	$59,211	$59,211	$59,211	$59,211
Unit Cost ($/acft)	$76.50	$76.50	$76.50	$76.50	$76.50	$76.50

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