

5B.2 Bosque County Water Supply Plan

Table 5B.2-1 lists each water user group in Bosque County and their corresponding surplus or shortage in years 2030 and 2050. For each water user group with a projected shortage, a water supply plan has been developed and is presented in the following subsections. Water supply plans are also presented for some entities that need pumping/conveyance facilities to utilize their existing water resources, or to become a regional provider.

**Table 5B.2-1.
Bosque County Surplus/(Shortage)**

Water User Group	Surplus/(Shortage)¹		Comment
	2030 (acft/yr)	2050 (acft/yr)	
City of Clifton	200	76	Projected surplus; possible regional provider – see plan below
City of Meridian	(218)	(281)	Projected shortage – see plan below
City of Valley Mills	(77)	(83)	Projected shortage – see plan below
City of Walnut Springs	(41)	(43)	Projected shortage – see plan below
County-Other	(992)	(1,194)	Projected shortage – see plan below
Manufacturing	(704)	(903)	Projected shortage – see plan below
Steam-Electric	(5,600)	(5,600)	Projected shortage – see plan below
Mining	(136)	(235)	Projected shortage – see plan below
Irrigation	8,585	8,619	Projected surplus
Livestock	31	31	Projected surplus

¹ From Tables 4-3 and 4-4, Section 4 – Comparison of Water Demands with Water Supplies to Determine Needs.

5B.2.1 City of Clifton

5B.2.1.1 Description of Supply

The City of Clifton obtains its water supply from groundwater from the Trinity Aquifer and from surface water from the North Bosque River. The City owns and operates five wells that currently serve as the City’s primary water supply. The City of Clifton owns water rights on the North Bosque River and has recently completed the construction of the first phase of a new surface water supply project. This new project diverts water from the North Bosque River and impounds it for storage in an off-channel reservoir. The project was planned to provide for

additional phases to enlarge the project as demand increases. Based on the estimated availability of groundwater to the City and the firm yield of the new surface water supply project, the City of Clifton has a surplus of 200 acft/yr in the year 2030 and 76 acft/yr in the year 2050. The ability to expand the project results in the City being a potential regional provider of water to other Bosque County entities.

5B.2.2 City of Meridian

5B.2.2.1 Description of Supply

The City of Meridian obtains its water supply from groundwater from the Trinity Aquifer. The City owns and operates three wells that serve as the City’s sole source water supply. Based on the available groundwater supply, the City is projected to have a shortage of 218 acft/yr in the year 2030 and 281 acft/yr in the year 2050. Due to declining well levels, the City has been planning to implement a surface water supply project to supplement its existing groundwater supply.

5B.2.2.2 Options Considered

Table 5B.2-2 lists the water management strategies, references to the report section detailing the strategy, total project cost, and unit costs that were considered for the City of Meridian.

**Table 5B.2-2.
Water Management Strategies Considered for the City of Meridian**

Option	Yield (acft/yr)	Approximate Cost ¹	
		Total	Unit (\$/acft)
Additional Water Conservation (Section 5A.2)	17	\$22,960/year	\$574 ²
Wastewater Reuse (Section 5A.3)	42	\$170,000	\$326 ³
Meridian Off-Channel Reservoir (Section 5A.15)	574	\$7,472,000 ³	\$1,395 ⁴
Bosque County Supply From Lake Whitney (Section 5A.16)	1,475	\$25,872,000 ⁴	\$1,753 ⁵
No Action		\$9,257,000 ⁶	\$42,443 ⁶

¹ Unless otherwise noted, costs are Total Project Cost and Unit Cost (\$/acft per year) for treated water delivered to the water supply entity or entities. Unit cost is for full utilization of project capacity.
² Source of Cost Estimate: Section 5A.2.
³ Source of Cost Estimate: Section 5A.3.
⁴ Source of Cost Estimate: Section 5A.15.
⁵ Source of Cost Estimate: Section 5A.16.
⁶ Economic impact of not meeting shortage (i.e., “no action” alternative) in 2030 as estimated by TWDB.

5B.2.2.3 Water Supply Plan

In 1998, the City of Meridian performed a water supply study and the Meridian Off-Channel Reservoir Project was recommended as the most economical alternative. Working within the planning criteria established by the Brazos G RWPG and TWDB, the following water supply plan is recommended to meet the projected 2030 shortage of the City of Meridian:

- Construct Off-Channel Reservoir by year 2010 to supply an additional 574 acft/yr.

For the long-term period beyond 2030, the following additional water management strategies are recommended:

- Wastewater Reuse to supply an additional 42 acft/yr.

5B.2.2.4 Costs

Costs of the recommended plan for the City of Meridian to meet 2030 shortages are:

a. Meridian Off-Channel Reservoir:

- Cost Source: Section 5.15
- Date to be Implemented: before 2010
- Total Project Cost: \$7,472,000
- Annual Cost: \$400,000

Annual cost assumes joint participation from other water supply entities such as Mustang Valley WSC. Annual cost for Meridian is prorated share (50%) based on projected 2050 shortage.

**Table 5B.2-3.
Recommended Plan Costs by Decade for the City of Meridian**

<i>Plan Element</i>	<i>2000</i>	<i>2010</i>	<i>2020</i>	<i>2030</i>	<i>2040</i>	<i>2050</i>
Off-Channel Reservoir						
Projected Shortage (acft/yr)	(174)	(177)	(196)	(218)	(246)	(281)
Quantity Available (acft/yr)	281	281	281	281	281	281
Annual Cost (\$/yr)	\$400,000	\$400,000	\$400,000	\$129,000	\$129,000	\$129,000
Unit Cost (\$/acft)	\$1,395	\$1,395	\$1,395	\$449	\$449	\$449

5B.2.3 City of Valley Mills

5B.2.3.1 Description of Supply

The City of Valley Mills obtains its water supply from groundwater from the Trinity Aquifer. The City owns and operates two wells that serve as the sole source supply. Based on the groundwater supply available, the City of Valley Mills is projected to have a shortage of 77 acft/yr in the year 2030 and 83 acft/yr in the year 2050.

5B.2.3.2 Options Considered

Table 5B.2-4 lists the water management strategies, references to the report section detailing the strategy, total project cost, and unit costs that were considered for the City of Valley Mills.

**Table 5B.2-4.
Water Management Strategies Considered for City of Valley Mills**

Option	Yield (acft/yr)	Approximate Cost ¹	
		Total	Unit (\$/acft)
Additional Water Conservation (Section 5A.2)	8	\$8,610/year	\$574 ²
Wastewater Reuse (Section 5A.3)	17	\$69,000	\$326 ³
Clifton System to Valley Mills (Section 5A.20)	242	\$416,000 ³	\$1,558 ⁴
Bosque County Supply From Lake Whitney (Section 5A.16)	1,475	\$25,872,000 ⁴	\$1,753 ⁵
Clifton Surface Water System Expansion	400	\$1,936,000 ⁵	\$480 ⁶
No Action		\$3,268,000 ⁶	\$42,443 ⁶

¹ Unless otherwise noted, costs are Total Project Cost and Unit Cost (\$/acft per year) for treated water delivered to the water supply entity. Unit cost is for full utilization of project capacity.
² Source of Cost Estimate: Section 5A.2.
³ Source of Cost Estimate: Table 5A.20-3 (prorated for Valley Mills).
⁴ Source of Cost Estimate: Table 5A.16-3.
⁵ Source of Cost Estimate: Based on estimated costs to enlarge dam, pump station, and treatment plant.
⁶ Economic impact of not meeting shortage (i.e., "no action" alternative) in 2030 as estimated by TWDB.

5B.2.3.3 Water Supply Plan

Working within the planning criteria established by the Brazos G RWPG and TWDB, the following water supply plan is recommended to meet the projected 2030 shortage of the City of Valley Mills:

- Clifton supply to Valley Mills by year 2010 to supply an additional 100 acft/yr. The City of Clifton would have sufficient capacity to serve the City of Valley Mills through the year 2030.

For the long-term period beyond 2030, the following additional water management strategies are recommended:

- Clifton Surface Water System Expansion by the year 2040 to continue to supply 100 acft/yr. In order to maintain supply to the City of Valley Mills, the City of Clifton’s surface water supply system is projected to be required to be expanded to meet Clifton’s needs as well as the entities outside of Clifton.
- Wastewater Reuse to supply an additional 17 acft/yr.

5B.2.3.4 Costs

Costs of the Recommended Plan for the City of Valley Mills to meet 2030 shortages are:

- a. Clifton Supply to Valley Mills:
 - Cost Source: Section 5.20, Table 5.20-3
 - Date to be Implemented: before 2010
 - Total Project Cost: \$416,000 (Prorated for Valley Mills)
 - Annual Cost: \$129,000

**Table 5B.2-5.
Recommended Plan Costs by Decade for the City of Valley Mills**

<i>Plan Element</i>	<i>2000</i>	<i>2010</i>	<i>2020</i>	<i>2030</i>	<i>2040</i>	<i>2050</i>
Clifton Supply to Valley Mills						
Projected Shortage (acft/yr)	(92)	(86)	(79)	(77)	(78)	(83)
Quantity Available (acft/yr)	-	100	100	100	100	100
Annual Cost (\$/yr)	-	\$155,800	\$155,800	\$119,400	\$119,400	\$119,400
Unit Cost (\$/acft)	-	\$1,558	\$1,558	\$1,194	\$1,194	\$1,194

5B.2.4 City of Walnut Springs

5B.2.4.1 Description of Supply

The City of Walnut Springs obtains its water supply from groundwater from the Trinity Aquifer. The City owns and operates two wells that serve as its sole source supply. Based on the groundwater availability in the Trinity Aquifer, the City of Walnut Springs is projected to have a shortage of 41 acft/yr in the year 2030 and 43 acft/yr in the year 2050.

5B.2.4.2 Options Considered

The potential water supply options to meet the projected shortages for the City of Walnut Springs are not economical, relative to the costs of other alternatives in the region, due to the proximity of Walnut Springs to available supplies and other regional providers. Table 5B.2-6 lists the water management strategies, references to the report section detailing the strategy, total project cost, and unit costs that were considered for the City of Walnut Springs.

**Table 5B.2-6.
Water Management Strategies Considered for the City of Walnut Springs**

Option	Yield (acft/yr)	Approximate Cost ¹	
		Total	Unit (\$/acft)
Additional Water Conservation (Section 5A.2)	4	\$8,610/year	\$574 ²
Meridian Off-Channel Reservoir (Section 5A.20)	50	\$1,797,000	\$4,767 ³
Bosque County Supply From Lake Whitney (Section 5A.16)	43	\$2,477,000	\$6,101 ⁴
No Action	-	\$1,740,000 ⁵	\$42,443 ⁵

¹ Unless otherwise noted, costs are Total Project Cost and Unit Cost (\$/acft per year) for treated water delivered to the water supply entity. Unit cost is for full utilization of project capacity.
² Source of Cost Estimate: Section 5A.2.
³ Source of Cost Estimate: Table 5A.20-3.
⁴ Source of Cost Estimate: Table 5A.16-3, (prorated for Walnut Springs).
⁵ Economic impact of not meeting shortage (i.e., "no action" alternative) in 2030 as estimated by TWDB.

5B.2.3.3 Water Supply Plan

Working within the planning criteria established by the Brazos G RWPG and TWDB, the following water supply plan is recommended to meet the projected 2030 shortage of the City of Walnut Springs:

- Meridian Off-Channel Reservoir by year 2010 to supply an additional 50 acft/yr. The City of Walnut Springs is planned to participate with the City of Meridian in the implementation of the Meridian Off-Channel Reservoir and installation of a transmission pipeline to Meridian to serve its needs through the year 2050.

5B.2.3.4 Costs

Costs of the Recommended Plan for the City of Walnut Springs to meet 2030 and 2050 shortages are:

- a. Meridian Off-Channel Reservoir to Walnut Springs:
 - Cost Source: Section 5.15, Table 5.15-2

- Date to be Implemented: before 2010
- Total Project Cost: \$1,797,000
- Annual Cost: \$205,000

**Table 5B.2-7.
Recommended Plan Costs by Decade for the City of Walnut Springs**

<i>Plan Element</i>	<i>2000</i>	<i>2010</i>	<i>2020</i>	<i>2030</i>	<i>2040</i>	<i>2050</i>
Meridian Off-Channel Reservoir to Walnut Springs						
Projected Shortage (acft/yr)	(55)	(50)	(45)	(41)	(40)	(43)
Quantity Available (acft/yr)	-	50	50	50	50	50
Annual Cost (\$/yr)	-	\$238,350	\$238,350	\$238,350	\$155,800	\$155,800
Unit Cost (\$/acft)	-	\$4,767	\$4,767	\$4,767	\$3,116	\$3,116

5B.2.5 County-Other

5B.2.5.1 Description of Supply

Bosque County-Other obtains its water supply from groundwater from the Trinity Aquifer. None of the County-Other entities utilize surface water as a water supply. Based on the available groundwater supply in the Trinity Aquifer, County-Other is projected to have a shortage of 992 acft/yr in the year 2030 and 1,194 acft/yr in the year 2050. Some of the larger water supply entities included in County-Other are Childress Creek WSC and Mustang Valley WSC. Potential surface water supplies may be available through the City of Clifton and future development by the City of Meridian to supplement their existing groundwater supplies.

5B.2.5.2 Options Considered

The potential water supply options to meet the projected shortages for the County-Other entities include the City of Clifton providing service to Childress Creek WSC, Mustang Valley WSC, and the City of Meridian providing service to Mustang Valley WSC. Each of these entities is located relatively close in proximity to the respective cities. Table 5B.2-8 lists the water management strategies, references to the report section detailing the strategy, total project cost, and unit costs that were considered for Bosque County-Other.

**Table 5B.2-8.
Water Management Strategies Considered for Bosque County-Other**

Option	Yield (acft/yr)	Approximate Cost ¹	
		Total	Unit (\$/acft)
Additional Water Conservation (Section 5A.2)	97	\$56,000/yr	\$574 ²
Meridian Off-Channel Reservoir to Mustang Valley WSC (Section 5A.20)	250	\$1,610,000	\$2,278 ³
Clifton System to Mustang Valley WSC (Section 5A.20)	228	\$2,562,000	\$2,517 ⁴
Clifton System to Childress Creek WSC (Section 5A.20)	165	\$827,000	\$1,558 ⁵
Bosque County Supply From Lake Whitney (Section 5A.16)	1,475	\$25,782,000	\$1,753 ⁶
No Action	-	\$17,936,000 ⁷	\$18,080 ⁷
¹ Unless otherwise noted, costs are Total Project Cost and Unit Cost (\$/acft per year) for treated water delivered to the water supply entity. Unit cost is for full utilization of project capacity. ² Source of Cost Estimate: Section 5A.2. ³ Source of Cost Estimate: Table 5A.20-4 (expanded to serve County-Other and MVWSC). ⁴ Source of Cost Estimate: Table 5A.20-3 (expanded to serve County-Other and MVWSC). ⁵ Source of Cost Estimate: Table 5A.20-3. ⁶ Source of Cost Estimate: Table 5A.16-3. ⁷ Economic impact of not meeting shortage (i.e., "no action" alternative) in 2030 as estimated by TWDB.			

5B.2.5.3 Water Supply Plan

Working within the planning criteria established by the Brazos G RWPG and TWDB, the following water supply plan is recommended to meet the projected 2030 and 2050 shortage of the County-Other:

- Meridian Off-Channel Reservoir by year 2010 to supply 250 acft/yr to County-Other. The Mustang Valley WSC is planned to participate with the City of Meridian in the implementation of the Meridian Off-Channel Reservoir and install a transmission pipeline to Meridian to serve its needs through the year 2050.
- Clifton System to Childress Creek WSC by year 2010 to supply 165 acft/yr. The Childress Creek WSC is planned to purchase water from the City of Clifton for supply through the year 2030.
- Clifton System to Mustang Valley WSC by year 2010 to supply an additional 228 acft/yr to County-Other.
- Clifton Surface Water System Expansion by the year 2030 to continue to supply 393 acft/yr to County-Other. In order to maintain supply to the County-Other entities, the City of Clifton’s surface water supply system is projected to be required to be expanded to meet Clifton’s needs as well as the entities outside of Clifton.
- Bosque County Supply from Lake Whitney by the year 2010 to supply 878 acft/yr to County-Other entities through a regional system. Includes voluntary redistribution of water supply from the BRA System.

5B.2.5.4 Costs

Costs of the Recommended Plan for County-Other to meet 2030 shortages are:

- a. Meridian Off-Channel Reservoir to Mustang Valley WSC and County-Other:
 - Cost Source: Section 5A.20
 - Date to be Implemented: before 2010
 - Total Project Cost: \$1,610,000
- b. Clifton System to Childress Creek WSC:
 - Cost Source: Section 5A.20
 - Date to be Implemented: before 2010
 - Total Project Cost: \$827,000
- c. Clifton System to Mustang Valley WSC and County-Other:
 - Cost Source: Section 5A.20
 - Date to be Implemented: before 2010
 - Total Project Cost: \$2,562,000
- b. Bosque County Supply from Lake Whitney:
 - Cost Source: Section 5A.20
 - Date to be Implemented: before 2030
 - Total Project Cost: \$25,782,000

5B.2.6 Manufacturing

5B.2.6.1 Description of Supply

Water supply for manufacturing in Bosque County is obtained by purchase from a city or water supply corporation or from private wells operated by the manufacturing entity. New manufacturing facilities would be expected to locate where existing water supplies are available, such as near a City or within the service area of an existing water supply corporation. Based on the available groundwater supply, Manufacturing is projected to have a shortage of 704 acft/yr in the year 2030 and 903 acft/yr in the year 2050.

5B.2.6.2 Options Considered

Table 5B.2-10 lists the water management strategies, references to the report section detailing the strategy, total project cost, and unit costs that were considered for Bosque Manufacturing.

**Table 5B.2-9.
Recommended Plan Costs by Decade for Bosque County-Other**

Plan Element	2000	2010	2020	2030	2040	2050
Projected Shortage (acft/yr)	(1,028)	(996)	(1,001)	(992)	(998)	(1,194)
Meridian Off-Channel Reservoir MVWSC						
Quantity Available (acft/yr)	-	250	250	250	250	250
Annual Cost (\$/yr)	-	\$570,000	\$570,000	\$570,000	\$378,000	\$378,000
Unit Cost (\$/acft)	-	\$2,280	\$2,280	\$2,280	\$1,512	\$1,512
Clifton to Childress Creek WSC						
Quantity Available (acft/yr)	-	228	228	228	228	228
Annual Cost (\$/yr)	-	\$355,000	\$355,000	\$355,000	\$272,000	\$272,000
Unit Cost (\$/acft)	-	\$1,557	\$1,557	\$1,557	\$1,193	\$1,193
Clifton to MVWSC						
Quantity Available (acft/yr)	-	165	165	165	165	165
Annual Cost (\$/yr)	-	\$415,000	\$415,000	\$415,000	\$212,000	\$212,000
Unit Cost (\$/acft)	-	\$2,515	\$2,515	\$2,515	\$1,285	\$1,285
Bosque Co. Supply from Lake Whitney						
Quantity Available (acft/yr)		551	551	551	551	551
Annual Cost (\$/yr)	-	\$966,000	\$966,000	\$966,000	\$267,000	\$267,000
Unit Cost (\$/acft)	-	\$1,753	\$1,753	\$1,753	\$485	\$485
Total						
Quantity Available (acft/yr)		1194	1194	1194	1194	1194
Annual Cost (\$/yr)	-	\$2,306,000	\$2,306,000	\$2,306,000	\$1,129,000	\$1,129,000
Unit Cost (\$/acft)	-	\$1,931	\$1,931	\$1,931	\$946	\$946

**Table 5B.2-10.
Water Management Strategies Considered for Bosque Manufacturing**

Option	Yield (acft/yr)	Approximate Cost¹	
		Total	Unit (\$/acft)
Wastewater Reuse (Section 5A.3)	97	\$392,000	\$326 ²
Meridian Off-Channel Reservoir (Section 5A.15)	574	\$7,472,000	\$1,395 ³
Clifton Surface Water System Expansion	400	\$1,936,000	\$480 ⁴
Voluntary Redistribution – BRA System	903	\$21,000	\$23 ⁵
No Action	-	\$152,352,000 ⁶	\$216,409 ⁶

¹ Unless otherwise noted, costs are Total Project Cost and Unit Cost (\$/acft per year) for treated water delivered to the water supply entity. Unit cost is for full utilization of project capacity.
² Source of Cost Estimate: Section 5A.2.
³ Source of Cost Estimate: Table 5A.15.
⁴ Source of Cost Estimate: Based on estimated cost to enlarge dam, pump station, and treatment plant.
⁵ Source of Cost Estimate: Table 5A.3.
⁶ Economic impact of not meeting shortage (i.e., “no action” alternative) in 2030 as estimated by TWDB.

5B.2.6.3 Water Supply Plan

Working within the planning criteria established by the Brazos G RWPG and TWDB, the following water supply plan is recommended to meet the projected 2030 and 2050 shortage for manufacturing:

- Voluntary Redistribution of water the BRA System (Lake Whitney) to supply an additional 903 acft/yr of raw water for manufacturing use.

5B.2.6.4 Costs

Costs of the Recommended Plan for County-Other to meet 2030 shortages are:

- Voluntary Redistribution from BRA System
 - Cost Source: Section 5A.3
 - Date to be Implemented: before 2010
 - Total Project Cost: \$21,000/yr

**Table 5B.2-11.
Recommended Plan Costs by Decade for Manufacturing**

<i>Plan Element</i>	<i>2000</i>	<i>2010</i>	<i>2020</i>	<i>2030</i>	<i>2040</i>	<i>2050</i>
Voluntary Redistribution from BRA System						
Projected Shortage (acft/yr)	(424)	(514)	(607)	(704)	(803)	(903)
Quantity Available (acft/yr)	-	903	903	903	903	903
Annual Cost (\$/yr)	-	\$21,000	\$21,000	\$21,000	\$21,000	\$21,000
Unit Cost (\$/acft)	-	\$23	\$23	\$23	\$23	\$23

5B.2.7 Steam-Electric

5B.2.7.1 Description of Supply

Steam-electric demand in Bosque County is associated with the Southern Energy, Inc. power generation plant located near Lake Whitney. Southern Energy, Inc. has contracted with the Brazos River Authority for water supply from Lake Whitney. The current contract for water is a short-term contract that expires prior to the year 2010. Steam-electric is projected to have a shortage of 5,600 acft/yr in the year 2030 and 2050.

5B.2.7.2 Options Considered

Table 5B.2-12 lists the water management strategies, references to the report section detailing the strategy, total project cost, and unit costs that were considered for steam-electric.

**Table 5B.2-12.
Water Management Strategies Considered for Bosque County Steam-Electric**

Option	Yield (acft/yr)	Approximate Cost ¹	
		Total	Unit (\$/acft)
Voluntary Redistribution – BRA System	5,600	\$129,000/yr	\$23
No Action	-	\$26,328,000 ³	\$4,701 ³

¹ Unless otherwise noted, costs are Total Project Cost and Unit Cost (\$/acft per year) for treated water delivered to the water supply entity. Unit cost is for full utilization of project capacity.
² Source of Cost Estimate: Section 5A.6.
³ Economic impact of not meeting shortage (i.e., “no action” alternative) in 2030 as estimated by TWDB.

5B.2.7.3 Water Supply Plan

Working within the planning criteria established by the Brazos G RWPG and TWDB, the following water supply plan is recommended to meet the projected 2030 shortage for manufacturing:

- Voluntary Redistribution of water the BRA System (Lake Whitney) to supply an additional 5,600 acft/yr of raw water for steam-electric use.

5B.2.7.4 Costs

Costs of the Recommended Plan for County-Other to meet 2030 shortages are:

- a. Voluntary Redistribution – BRA System
 - Cost Source: Section 5A.6
 - Date to be Implemented: before 2010
 - Total Project Cost: \$129,000/yr

**Table 5B.2-13.
Recommended Plan Costs by Decade for Bosque County Steam-Electric**

<i>Plan Element</i>	<i>2000</i>	<i>2010</i>	<i>2020</i>	<i>2030</i>	<i>2040</i>	<i>2050</i>
Voluntary Redistribution – BRA System						
Projected Shortage (acft/yr)	0	(5600)	(5600)	(5600)	(5600)	(5600)
Quantity Available (acft/yr)	0	5600	5600	5600	5600	5600
Annual Cost (\$/yr)	-	\$129,000	\$129,00	\$129,000	\$129,000	\$129,000
Unit Cost (\$/acft)	-	\$23	\$23	\$23	\$23	\$23

5B.2.8 Mining

5B.2.8.1 Description of Supply

Mining is projected to have a shortage of 136 acft/yr in the year 2030.

5B.2.8.2 Options Considered

Table 5B.2-14 lists the water management strategies, references to the report section detailing the strategy, total project cost, and unit costs that were considered for mining.

**Table 5B.2-14.
Water Management Strategies Considered for Bosque County Mining**

<i>Option</i>	<i>Yield (acft/yr)</i>	<i>Approximate Cost¹</i>	
		<i>Total</i>	<i>Unit (\$/acft)</i>
Voluntary Redistribution – BRA System	136	\$5,400	\$23 ²
No Action	-	\$445,000 ³	\$3,273 ³

¹ Unless otherwise noted, costs are Total Project Cost and Unit Cost (\$/acft per year) for treated water delivered to the water supply entity. Unit cost is for full utilization of project capacity.
² Source of Cost Estimate: Section 5A.6.
³ Economic impact of not meeting shortage (i.e., "no action" alternative) in 2030 as estimated by TWDB.

5B.2.8.3 Water Supply Plan

Working within the planning criteria established by the Brazos G RWPG and TWDB, the following water supply plan is recommended to meet the projected 2030 shortage for mining:

- Voluntary Redistribution of water from the BRA System to supply an additional 136 acft/yr of raw water for mining use.

5B.2.8.4 Costs

Costs of the Recommended Plan for Mining to meet 2030 shortages are:

- a. Voluntary Redistribution – BRA System:
 - Cost Source: Section 5A.6
 - Date to be Implemented: before 2010
 - Total Project Cost: \$5,400/yr

**Table 5B.2-15.
Recommended Plan Costs by Decade for Bosque County Mining**

<i>Plan Element</i>	<i>2000</i>	<i>2010</i>	<i>2020</i>	<i>2030</i>	<i>2040</i>	<i>2050</i>
Voluntary Redistribution – BRA System						
Projected Shortage (acft/yr)	(9)	(42)	(89)	(136)	(183)	(235)
Quantity Available (acft/yr)	-	235	235	235	235	235
Annual Cost (\$/yr)	-	\$5,400	\$5,400	\$5,400	\$5,400	\$5,400
Unit Cost (\$/acft)	-	\$23	\$23	\$23	\$23	\$23

5B.2.9 Irrigation

Irrigation is projected to have a surplus of water through the year 2050 and no changes in water supply are recommended.

5B.2.10 Livestock

No shortages are projected for Livestock and no changes in water supply are recommended.