

#### **4C.17.5 City of Cleburne**

##### **4C.17.5.1 Description of Supply**

The City of Cleburne obtains its water supply from Lake Pat Cleburne, Lake Aquilla, and groundwater from the Trinity Aquifer. The City of Cleburne is projected to have a surplus of 1,791 acft/yr in the year 2030 and a shortage of 2,853 acft/yr in the year 2060.

##### **4C.17.5.2 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 shortage of the City of Cleburne:

- Conservation
- Reuse (The City has implemented a reuse program, which it has committed to expanding.)
- Lake Whitney Supply – The project will develop 9,700 acre-feet per year of undeveloped water supply from Lake Whitney contracted to the City through the Brazos River Authority. This project would develop part of Cleburne’s remaining contractual commitment for water from the Brazos river authority , beyond the 5,300 acre-feet per year currently available from Lake Aquilla . The project would require a deep water intake, diversion pump station to take water out of Lake Whitney , an advanced water treatment facility for the Lake Whitney water, blending tanks, a booster pump station , and a pipeline to connect the Lake Whitney supply to the existing Barkman Pipeline for delivery to Cleburne , and all associated appurtenances for a fully functional and operational water supply delivery and treatment system. This project would supply the City of Cleburne and Johnson County mining, manufacturing, steam electric , and irrigation water through Cleburne.
- Optimization of the surface water supplies from Lake Pat Cleburne , Lake Aquilla , Lake Whitney and any other future water supply through planned expansions of the City’s existing water treatment plant – The first phase project would expand the existing water treatment plant by 5 MGD to meet projected peak-day needs and to supply treated water to City customers. This project would supply the City of Cleburne and Johnson county mining, manufacturing , steam electric and irrigation water through Cleburne.

**4C.17.5.3 Costs**

Costs of the Recommended Plan for the City of Cleburne.

- a. Conservation
  - Cost Source: Volume II, Section 4B.2.1
  - Date to be Implemented: before 2010
  - Annual Cost: \$195,700 (maximum annual cost in 2020)
  
- b. Reuse Strategy 1 – Expanded Use of Existing System:
  - Cost Source: Strategy Evaluation (Section 4B.3)
  - Date to be Implemented: before 2010
  - Annual Cost: \$1,512,090 (Based on unit costs from Section 4B.3)
  
- c. Reuse Strategy 2 – New West Loop Reuse Line:
  - Cost Source: City of Cleburne
  - Date to be Implemented: before 2010
  - Total Project Cost: \$7,384,900
  - Annual Cost: \$853,900
  
- d. Phase I Lake Whitney Water Supply Project:
  - Cost Source: City of Cleburne
  - Date to be Implemented: before 2010, with future phases
  - Total Project Cost : \$42,221,700 ( Phase I )
  - Annual Cost: \$4,690,100 ( Phase I )

**Table 4C.17-6.  
Recommended Plan Costs by Decade for the City of Cleburne**

<i>Plan Element</i>	<i>2010</i>	<i>2020</i>	<i>2030</i>	<i>2040</i>	<i>2050</i>	<i>2060</i>
Projected Surplus/(Shortage) (acft/yr)	4,225	3,013	1,791	483	(1,051)	(2,853)
<b>Conservation</b>						
Supply From Plan Element (acft/yr)	229	515	454	413	416	473
Annual Cost (\$/yr)	\$87,020	\$195,700	\$172,520	\$156,940	\$158,080	\$179,740
Unit Cost (\$/acft)	\$530	\$530	\$530	\$530	\$530	\$530
<b>Reuse Strategy 1 – Expanded Use of Existing System</b>						
Supply From Plan Element (acft/yr)	351	351	351	351	1,051	2,853
Annual Cost (\$/yr)	\$186,030	\$186,030	\$186,030	\$186,030	\$557,030	\$1,512,090
Unit Cost (\$/acft)	\$530	\$530	\$530	\$530	\$530	\$530
<b>Reuse Strategy 2 – New West Loop Reuse Line</b>						
Supply From Plan Element (acft/yr) <sup>1</sup>	1,680	1,680	1,680	1,680	1,680	1,680
Annual Cost (\$/yr)	\$853,900	\$853,900	\$853,900	\$853,900	\$853,900	\$853,900
Unit Cost (\$/acft)	\$508	\$508	\$508	\$508	\$508	\$508
<b>Phase I Lake Whitney Water Supply Project</b>						
Supply From Plan Element (acft/yr) <sup>1</sup>	2,128	2,128	2,128	2,128	2,128	2,128
Annual Cost (\$/yr)	\$4,69,100	\$4,69,100	\$4,69,100	\$4,69,100	\$4,69,100	\$4,69,100
Unit Cost (\$/acft)	2,554	2,554	2,554	2,554	2,554	2,554

Note 1: 90 % Treatment Recovery Rate with blending