

City of Cleburne

Water Supply Projects

- TWDB Infrastructure Water Fund (WIF) requires projects to be identified in the Regional Water Plan
- The City has three projects:
 - New West Loop Reclaimed Water Line (Wastewater Reuse)
 - 5 MGD Expansion of the existing water treatment plant
 - Lake Whitney Water Supply Project – Phase I

City of Cleburne

Water Supply Projects

- The City has projected significant increases in Industrial water demand over the next few years
 - Brazos Electric Power will add a 2nd unit requiring 1.1 to 2.2 MGD
 - Natural Gas Companies are seeking an additional 1.5 MGD
 - Other industries served by the City have advised that they expect significant increases

City of Cleburne

Water Supply Projects

- Municipal demands are also increasing
- City completed a Long-Range Water Supply Study in January 2008
- Available Water Supply
 - Lake Pat Cleburne
 - Lake Aquilla (BRA Contract)
 - Groundwater
 - Direct Reuse of treated wastewater

City of Cleburne

Water Supply Projects

- Current existing supply is 11.0 MGD
- Current projected drought demand is 11.4 MGD
- City has 9,700 acre-ft/yr (8.66 MGD) undeveloped water supply from Lake Whitney through contract with BRA
- The Lake Whitney Water Supply Project would develop the 9,700 acre-ft/yr in phases

City of Cleburne Water Supply Projects

- Eligible for Minor Amendment
 - No over allocation (Existing BRA contract)
 - No new reservoir
 - No significant impact on flows
 - No significant impact on water planning or strategies
 - No change to legal requirements
- If Planning Group or TWDB Disagrees, Seek Major Amendment

City Of Cleburne Water Supply Project

■ Description of Strategy

– Reuse

- The City has implemented a reuse program which it has committed to expanding
- The West Loop Reclaimed Water line and Pump station will form a reuse loop around the City serving Steam Electric (Power Plant), Mining (Natural Gas) , Irrigation , and manufacturing

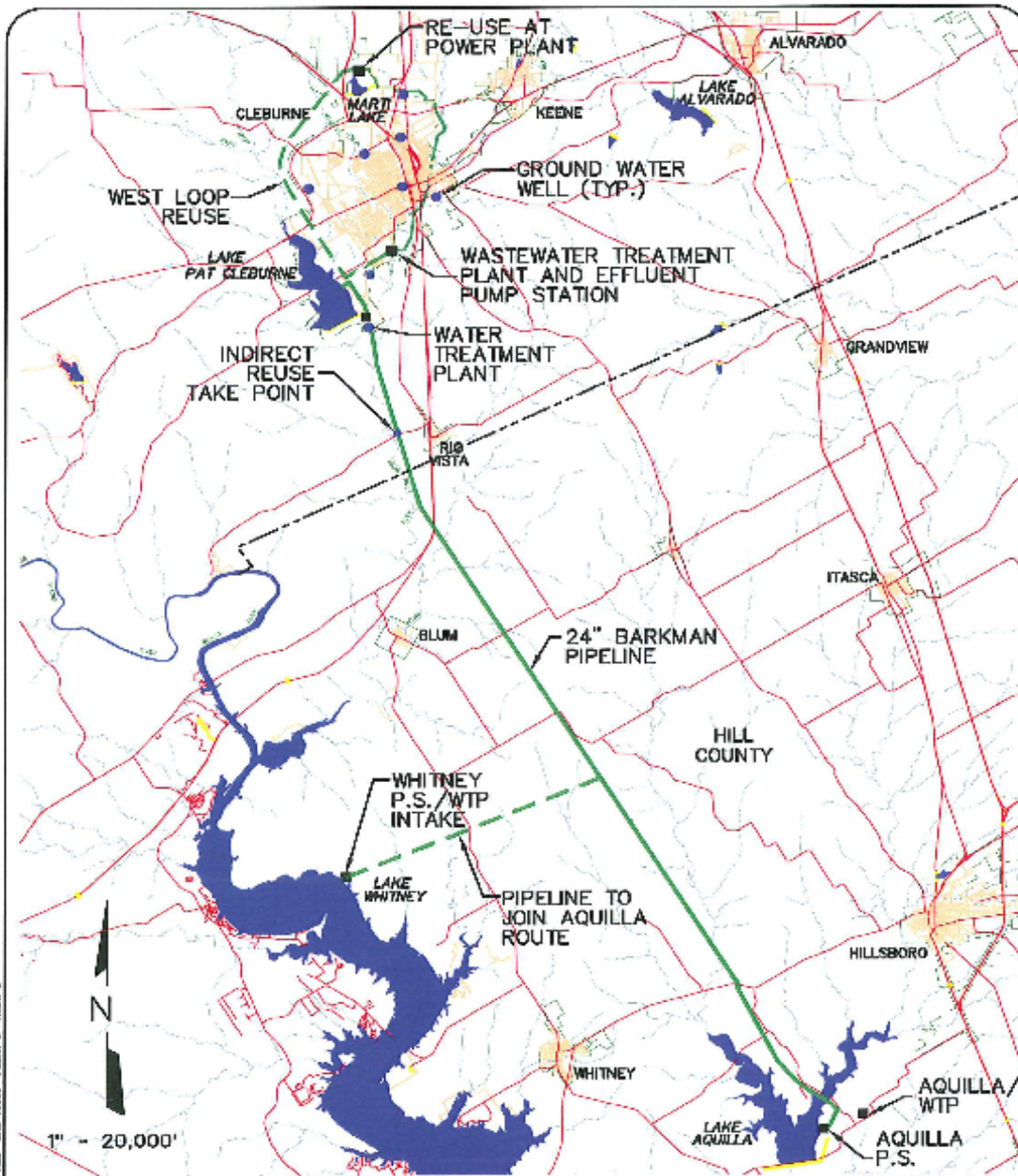
– Optimization of surface water supplies

- 5.0 mgd plant expansion followed by 5 MGD expansions in 2024,2034,2043 and 2050

City of Cleburne

Water Supply Projects

- Lake Whitney Water Supply Project
 - Develop 9,700 ac.-ft/yr of Lake Whitney contracted water for the City
 - Phase I – 2,128 ac.-ft/yr
 - Phase II – 4,256 ac.-ft/yr (Year 2021)
 - Phase III – 8,756 ac.-ft/yr (Year 2031)
- (Max. 90 % treatment recovery rate with blending and secondary recovery)



PREPARED BY: F. J. G. (JMS) CONSULTANTS, INC. 1990, LUGOBE, MISSOURI
 PROJECT NO. 98-001, WATER SUPPLY AND WASTEWATER TREATMENT PROJECT



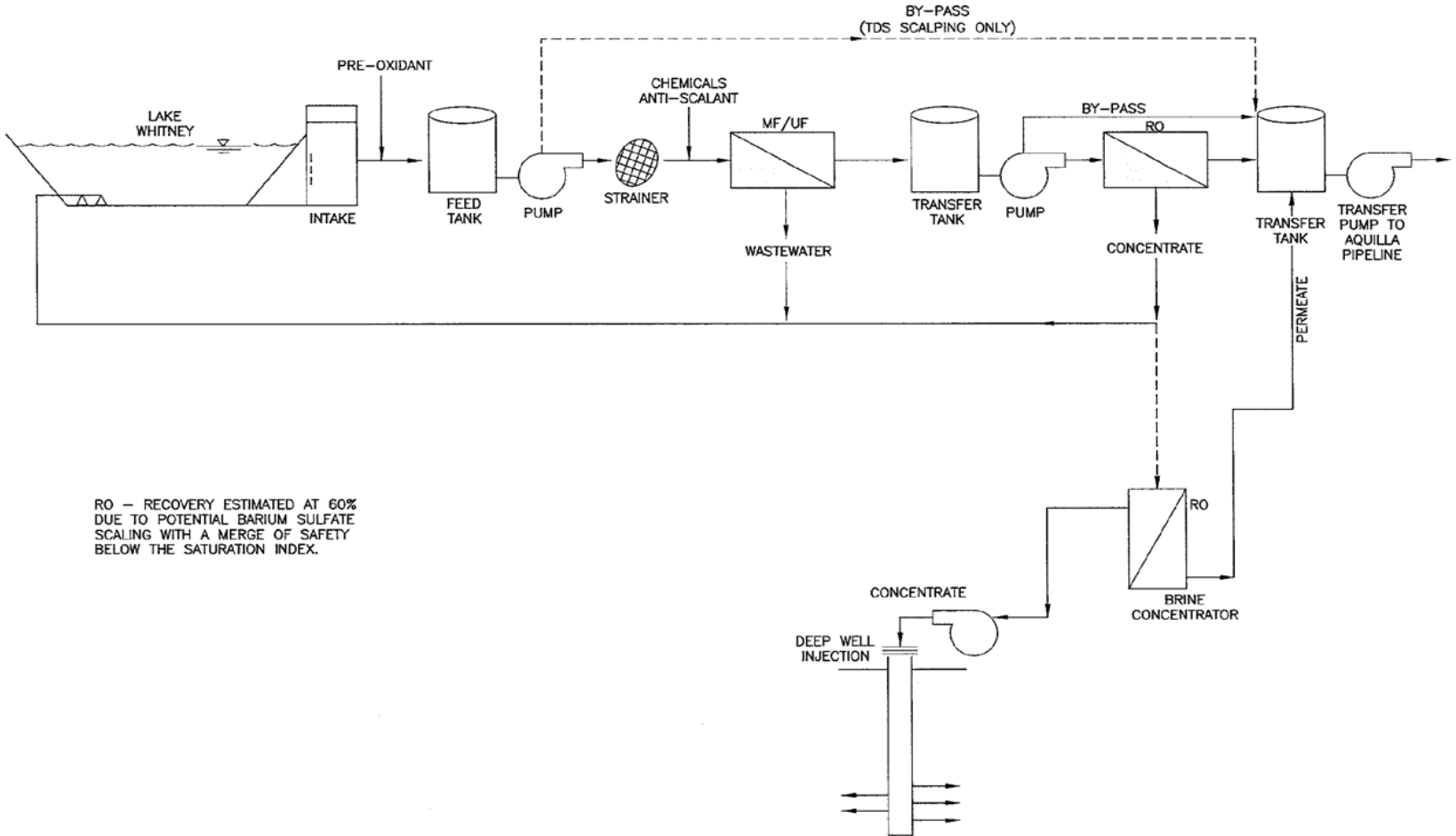
CITY OF CLEBURNE, TEXAS
WATER SUPPLY PROJECT

Figure
 1



CITY OF CLEBURNE, TEXAS
 LAKE WHITNEY ADVANCED TREATMENT OPTIONS
 PROCESS SCHEMATIC

FIGURE
 2



RO - RECOVERY ESTIMATED AT 60%
 DUE TO POTENTIAL BARIUM SULFATE
 SCALING WITH A MARGE OF SAFETY
 BELOW THE SATURATION INDEX.

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Environmental Issues – City of Cleburne Water Supply Projects

Water Management Option	City of Cleburne Water Supply Project
Implementation Measures	Expand the existing water treatment plant by 5 MGD, construction of a Lake Whitney Intake , Pump Station , Advanced Treatment Plant and pipeline. Construct West Loop Reclaimed line (Reuse)
Environmental Water Needs/Instream Flows	Negligible impact.
Bays and Estuaries	Negligible impact.
Fish and Wildlife Habitat	Possible minor impacts on riparian corridors, depending on specific location of pipelines. , possible minor impact on aquatic life from Whitney intake.
Cultural Resources	Possible low impact.
Threatened and Endangered Species	Possible low impact.

City of Cleburne Water Supply Project

Cost for Projects 2002 Prices

- **Lake Whitney Water Supply Project – Phase I**
 - \$ 31,846,400 (\$ 36,909,958 Dollars 2007)
 - \$ 4,690,100 annual cost (\$ 5,435,826 Dollars 2007)
 - \$ 2,204 / ac.-ft. (\$ 2,554 / ac.-ft./yr Dollars 2007)
 - \$ 6.76 /1000 gallons (\$ 7.84 /1000 gallons Dollars 2007)

- **5.0 MGD Water Treatment Plant Expansion**
 - \$ 10,375,300 (\$ 12,025,000 Dollars 2007)
 - \$ 1.71 / 1000 gallons (\$ 1.98 /1000 gallons Dollars 2007)

- **West Loop Reuse Pipeline**
 - \$ 7,384,900 (\$ 8,559,107 Dollars 2007)
 - \$ 1.56 /1000 gallons (\$ 1.81 /1000 gallons Dollars 2007)

Comparison to Plan Development Criteria – City of Cleburne Water Supply Project

<i>Impact category</i>	<i>Comment(s)</i>
<p>A. Water Supply</p> <p>1. Quantity</p> <p>2. Reliability</p> <p>3. Cost</p>	<p>1. Sufficient for local needs.</p> <p>2. High.</p> <p>3. Relatively high, but reasonable for a county-wide system.</p>
<p>B. Environmental Factors</p> <p>1. Environmental Water Needs</p> <p>2. Habitat</p> <p>3. Cultural Resources</p> <p>4. Bays and Estuaries</p> <p>5. Threatened and Endangered Species</p> <p>6. Wetlands</p>	<p>1. Low impact.</p> <p>2. Low impact.</p> <p>3. Low impact.</p> <p>4. Low impact.</p> <p>5. Low impact.</p> <p>6. Low impact.</p>
<p>C. Impact on Other State Water Resources</p> <p>D. Threats to Agriculture and Natural Resources</p> <p>E. Equitable Comparison of Strategies Deemed Feasible</p> <p>F. Requirements for Interbasin Transfers</p> <p>G. Third Party Social and Economic Impacts from Voluntary Redistribution</p>	<p>No apparent negative impacts on state water resources. No effect on navigation.</p> <p>None.</p> <p>Done.</p> <p>Not applicable.</p> <p>None.</p>