4B.20 BRA Reservoir Connections

4B.20.1 Lake Aquilla Augmentation

4B.20.1.1 Description of Option

Lake Aquilla is located southwest of the City of Hillsboro in Hill County. The reservoir is owned by the U.S. Army Corps of Engineers (USACE) and is part of the Brazos River Authority (BRA) System. The reservoir provides water for the cities of Hillsboro, Cleburne and Milford and for Brandon-Irene WSC, Files Valley WSC, and Lake Whitney Water Company. The yield of Lake Aquilla will not be able to completely supply the future needs of these entities. Options to supplement supplies at Lake Aquilla are being evaluated and include both reallocation of flood pool to conservation pool storage, as well as building a pipeline from Lake Whitney to Lake Aquilla. The City of Cleburne has contracts with the BRA totaling 9,700 acre-feet per year with a Lake Whitney diversion location, but does not currently have the infrastructure to access this water. The pipeline option would allow Cleburne access to its Lake Whitney water and could supplement other Lake Aquilla water users as well. The total supply for the project will be 14,700 acft/yr (9,700 acft/yr for the City of Cleburne and up to 5,000 acft/yr for others). The supplemental water for the project will come from a combination of existing BRA rights and the BRA System Operation Permit.

The main stem of the Brazos River in the vicinity of Lake Whitney has relatively high levels of total dissolved solids (TDS). From 1993 to 2006,[1] Lake Whitney averaged about 845 mg/L TDS, while water in Lake Aquilla averaged about 228 mg/L TDS. The relatively high salt concentration in the main stem water will need to be mitigated either by blending with better quality water (such as Lake Aquilla water) or have the salt load reduced by advanced treatment.

Two options have been considered for this strategy as described below.

- Option A takes water from Lake Whitney, treats the water to remove TDS, and discharges the water into Lake Aquilla.
- Option B is similar to Option A except that instead of discharging the water into Lake Aquilla the water is taken to a common delivery point where the City of Cleburne and others can access the water. For this study, this delivery point is assumed to be near the existing intake structures and pump stations owned by the City of Cleburne and the Aquilla Water Supply District.

[1] Brazos River Authority, Proposed Transportation of Raw Water from Lake Whitney to Lake Aquilla, 2009.

Both options include advanced treatment to remove dissolved solids from a portion of the water from Lake Whitney. Approximately 70 to 85 percent of the water will need to be treated to remove sufficient salt loads to maintain acceptable water quality.[2]

4B.20.1.2 Available Yield

The supply from Lake Aquilla without this strategy is estimated to be 12,528 acft/yr in 2000 and 9,713 ac-ft/yr in 2060. This project would provide 14,700 acft/yr of additional supply to the area, with 9,700 acft/yr going to the City of Cleburne and 5,000 acft/yr for others. Water would come from a combination of stored water from Lake Whitney, releases from upstream BRA reservoirs, and coordinated operation of run-of-the-river supplies authorized under the System Operation Permit.

4B.20.1.3 Environmental Issues

For Option A, the primary environmental concern with transporting water from Lake Whitney to Lake Aquilla is the high TDS content of the Brazos River main stem. In addition to the TDS content of the main stem of the Brazos River, the possibility that changes in the temperature, salinity and other factors could trigger golden algae blooms in Lake Aquilla exists. Treatment of the water may be sufficient to address these issues. Additional studies will be required to evaluate the impact of blending the treated water in Lake Aquilla. If these studies indicate that blending water in Lake Aquilla has unacceptable environmental risk, then Option B should be selected.

Another potential concern is the return of reject brine from treatment to Lake Whitney. Lake Whitney is a very large reservoir with more than 550,000 acft of storage[3] and a significant amount of flow-through due to hydropower operations. As a result, the return of reject water to the reservoir should have minimal impact on water quality. Additional studies may be required to verify this assumption. If brine reject cannot be returned to the reservoir, deep-well injection or evaporation ponds could be used to dispose of the reject. These options will add to the cost of the project.

The locations of facilities and pipeline routes have not been identified at this time. It is expected that pipelines and pump stations can be located to avoid sensitive habitats. Endangered

[2] Freese and Nichols INC. Memorandum Report on Lake Whitney Development, October 5, 2009

[3] Texas Water Development Board: *Volumetric Survey of Lake Whitney, June 2005 Survey*, September 2006.

and threatened species reported in Hill County (Federal[4] and Texas Listings[5]) include the American peregrine falcon (*Falco peregrinus anatum*), bald eagle *Haliaeetus lecocephalus*), black-capped vireo (*Vireo atricapilla*), Brazos water snake (*Nerodia harteri*), golden-cheeked warbler (*Dendroica chrysoparia*), interior least tern (*Sterna antillarum athalassos*), peregrine falcon (*Falco peregrinus*), red wolf (*Canis rufus*), Texas horned lizard (*Phrynosoma cornutum*), timber/canebrake rattlesnake (*Crotalus horridus*), smooth pimpleback (*Quadrula houstonensis*), Texas fawnsfoot (*Truncilla macrodon*), white-faced ibis (*Plegadis chihi*), whooping crane (*Grus Americana*), and wood stork (*Mycteria Americana*) . Species which are candidates for listing are the smalleye shiner (*Notropis buccula*) and sharpnose shiner (*Notropis oxyrhynchus*).

In Option A, water delivered into Lake Aquilla is expected to be withdrawn almost immediately by users. Therefore there is little expected change in Lake Aquilla elevations.

The project is expected to have low to medium impacts on environmental flows and no impacts on bays and estuaries.

4B.20.1.4 Engineering and Costing

Two strategies were evaluated for transport of water by pipeline from Lake Whitney to Lake Aquilla. Both include pretreatment of Lake Whitney water before it is discharged to Lake Aquilla. Option A calls for an intake and pump station at Lake Whitney, approximately 7 miles of 30-inch pipe, membrane treatment facilities, and a discharge structure in Lake Aquilla. Reject water from membrane treatment is returned to Lake Whitney. The total capital cost for Option A is $46.4 million with total annual costs of $9.1 million. A breakdown of the cost for Option A is provided in Table 4B.20.1.4-1.

Option B is similar to Option A, except that instead of discharging into Lake Aquilla an additional 5.6 miles of pipeline carries water to a common delivery point near the existing intake and pump stations for the City of Cleburne and the Aquilla Water Supply District. Facilities include an intake and pump station on Lake Whitney, membrane treatment facilities, 12.6 miles of 30-inch pipe, and a connection for water users. The total capital cost for Option B is $51.8 million with total annual costs of $11.1 million. A summary of the costs for Option B is provided in Table 4B.20.1.4-2.

[4] U.S. Fish and Wildlife Service (USFWS). 2009. Endangered Species List. Southwest Region Ecological Services. http://www.fws.gov/southwest/es/EndangeredSpecies/lists/ListSpecies.cfm

[5] Texas Parks and Wildlife Department (TPWD). 2009. Annotated County Lists of Rare Species. http://gis2.tpwd.state.tx.us/ReportServer$GIS_EPASDE_SQL/Pages/ReportViewer.aspx?%2fReport+Project2%2fReport5&rs:Command=Render&county=Hill

Option A is the more cost-effective of the two options. In addition, because the water will be delivered to Lake Aquilla, customers will be able to access the water anywhere a suitable intake can be located in the reservoir. Costs for Option B, which only has one location for delivery to customers, are higher. However, environmental concerns may cause Option B to be the preferred option. Additional studies will be required before finalizing the delivery option.

The existing pipeline for the City of Cleburne will not have sufficient capacity to use all of the contracted supply from the BRA. A 31-mile 24-inch pipeline paralleling the existing Barkman Pipeline will give the city sufficient capacity to access all of its water from Lakes Aquilla and Whitney. Table 4B.20.1.4-3 shows the costs for the parallel pipeline. The parallel pipeline will be required for both Options A and B.

Table 4B.20.1.4-1
Cost Estimate for Lake Aquilla Augmentation Option A

Item	Estimated Costs for Facilities
Capital Costs	
Raw Water Intake and Pump Stations (20 MGD)	$13,710,000
RO Desalination Treatment (10.97 MGD)	$20,624,000
Concentrate Disposal (4.59 MGD, 18 in. dia. 1 mile)	$2,000,000
Ground Storage Tank (2, 1.5 MGD)	$1,500,000
Transfer Pump Station (13 MGD)	$2,750,000
Transmission Pipeline (30 in. dia, 7 miles)	$5,842,000
Total Capital Cost	**$46,426,000**
Engineering, Legal Costs and Contingencies	$16,787,000
Land Acquisition and Surveying	$1,536,000
Total Project Cost	**$64,749,000**
Annual Costs	
Debt Service (6 percent, 20 years)	$5,645,000
Operation & Maintenance	
Intake, Pipeline, Pump Station	$663,000
Treatment Plant	$654,116
Pumping Energy Costs ($0.09 kwh)	$2,092,959
Total Annual Cost	**$9,055,075**
Available Project Yield (acft/yr)	14,700
Annual Cost of Water ($ per acft)	$616
Annual Cost of Water ($ per 1,000 gallons)	$1.89

Table 4B.20.1.4-2
Cost Estimate for Lake Aquilla Augmentation Option B

Item	***Estimated Costs for Facilities***
Capital Costs	
Raw Water Intake and Pump Stations (20 MGD)	$13,710,000
RO Desalination Treatment (10.97 MGD)	$20,624,000
Concentrate Disposal (4.6 MGD, 18 in. dia. 1 mile)	$2,000,000
Ground Storage Tank (2, 1.5 MGD)	$2,250,000
Transfer Pump Station (13.1 MGD)	$2,750,000
Transmission Pipeline (30 in dia, 12.6 miles)	$10,450,000
Total Capital Cost	**$51,784,000.0**
Construction Services Legal and Contingencies (35%)	$18,818,000
Land Acquisition and Surveying (20 acres)	$1,981,000
Total Project Cost	**$72,583,000**
Annual Costs	
Debt Service (6 percent, 20 years)	$6,328,000
Operation & Maintenance	
Intake, Pipeline, Pump Station	$663,025
Treatment Plant	$654,116
Pumping Energy Cost ($0.09 kwh)	$2,092,959
Total Annual Cost	**$11,055,242**
Available Project Yield (acft/yr)	14,700
Annual Cost of Water ($ per acft)	$752
Annual Cost of Water ($ per 1,000 gallons)	$2.31

Table 4B.20.1.4-3
Cost Estimate for Parallel Pipeline from Lake Aquilla to the City of Cleburne

Item	*Estimated Costs for Facilities*
Capital Costs	
New Aquilla Lake Intake and Pump Station (10 MGD)	$7,686,000
Transmission Pipeline (24 in. dia, 31.2 miles)	$20,655,000
Booster Pump Station (13.4 MGD)	$3,833,000
Total Capital Cost	**$32,174,000**
Engineering, Legal Costs and Contingencies	$11,950,000
Land Acquisition & Surveying (20 acres)	$1,970,000
Total Project Cost	**$46,094,000**
Annual Costs	
Debt Service (6 percent, 20 years)	$4,019,000
Operation & Maintenance	
Intake, Pipeline, Pump Station	$663,025
Treatment Plant	$654,116
Pumping Energy Cost ($0.09 kwh)	$826,993
Total Annual Cost	**$6,163,134**
Available Project Yield (acft/yr)	14,700
Annual Cost of Water ($ per acft)	$419
Annual Cost of Water ($ per 1,000 gallons)	$1.29

4B.20.1.5 Implementation Issues

This water supply option has been compared to the plan development criteria, as shown in Table 4B.20.1.5-1, and the option meets each criterion.

A summary of the implementation steps for the project is presented below.

- Agreement between BRA and the City of Cleburne on pipeline route, delivery point, and cost sharing.
- Pilot study to evaluate RO treatment of Lake Whitney water.
- Agreement with USACE for discharge into Lake Aquilla (Option A).
- Analysis of potential impact of blending Lake Whitney water in Lake Aquilla and disposal of brine reject.

Potential Regulatory Requirements:

- Texas Commission on Environmental Quality Water Right and Storage permits;
- U.S. Army Corps of Engineers Permits will be required for discharges of dredge or fill into wetlands and waters of the U.S. for dam construction, and other activities (Section 404 of the Clean Water Act);
- Texas Commission on Environmental Quality administered Texas Pollutant Discharge Elimination System Storm Water Pollution Prevention Plan;
- Texas General Land Office Easement if State-owned land or water is involved; and
- Texas Parks and Wildlife Department Sand, Shell, Gravel and Marl permit if state-owned streambed is involved.

State and Federal Permits may require the following studies and plans:

- Environmental impact or assessment studies;
- Wildlife habitat mitigation plan that may require acquisition and management of additional land;
- Flow releases downstream to maintain aquatic ecosystems;
- Assessment of impacts on Federal- and State-listed endangered and threatened species; and
- Cultural resources studies to determine resources impacts and appropriate mitigation plan that may include cultural resource recovery and cataloging; requires coordination with the Texas Historical Commission.

Land Acquisition Issues:

- Land acquired for reservoir and/or mitigation plans could include market transactions or other local landowner agreements;
- Additional acquisition of rights-of-way and/or easements may be required; and
- Possible relocations or removal of residences, utilities, roads, or other structures.

Table 4B.20.1.5-1
Comparison of Transportation of Raw Water from Lake Whitney to Lake Aquilla to Plan Development Criteria

Impact Category	*Comment(s)*
A. Water Supply	
1. Quantity	1. Sufficient to meet needs
2. Reliability	2. High reliability
3. Cost	3. Reasonable
B. Environmental factors	
1. Environmental Water Needs	1. Low to medium impact
2. Habitat	2. Low impact
3. Cultural Resources	3. Low impact
4. Bays and Estuaries	4. Low impact due to distance from coast
5. Threatened and Endangered Species	5. Low impact
6. Wetlands	6. Low impact
C. Impact on Other State Water Resources	• Possible negative impacts on state water resources from water quality changes; no effect on navigation
D. Threats to Agriculture and Natural Resources	• Low to none
E. Equitable Comparison of Strategies Deemed Feasible	• Option is considered to meet municipal and industrial shortages
F. Requirements for Interbasin Transfers	• None
G. Third Party Social and Economic Impacts from Voluntary Redistribution	• None

4B.20.2 Lake Belton to Lake Stillhouse Hollow Pipeline

4B.20.2.1 Description of Option

A pipeline is proposed to connect Lake Belton to Lake Stillhouse Hollow (Figure 4B.20.2.1-1). Lake Belton is on the Leon River in Bell and Coryell Counties. Lake Stillhouse Hollow is on the Lampasas River in Bell County. Both reservoirs are located near the Cities of Killeen, Belton and Temple. The Lampasas and Leon Rivers join southeast of the City of Belton to form the Little River. A small tributary of the Leon, Nolan Creek, is located between the two reservoirs. The reservoirs are owned by the U.S. Army Corps of Engineers (USACE) and are part of the Brazos River Authority (BRA) system. The reservoirs provide water for the Cities of Temple, Belton, Killeen, Gatesville, Copperas Cove, Lampasas and a number of other water supply districts and corporations in the area. In addition, Lakes Stillhouse Hollow and Georgetown are connected by the Williamson County Regional Raw Water Pipeline, which transfers water from Lake Stillhouse Hollow to Lake Georgetown to be used in the Williamson County area. Table 4B.20.2.1-1 summarizes storage and diversion information for the reservoirs.

The Lake Belton to Lake Stillhouse Hollow pipeline project is primarily designed to delay the need for development of new sources of water by utilizing currently unused Lake Belton water in the decades prior to 2060. With the implementation of this pipeline, the combined supplies from the three reservoirs can meet existing contract demands until approximately 2060. The proposed pipeline could transfer up to 30,000 acft/yr to Lake Stillhouse Hollow. From Lake Stillhouse Hollow, some of the Lake Belton water could be transferred to Lake Georgetown via the existing Williamson County Regional Raw Water Pipeline. The Lake Belton to Lake Stillhouse Hollow Pipeline will allow the BRA to operate these three lakes as a system, increasing the reliability of the supplies to the area.

At this time the location of facilities and a pipeline route for this project have not been identified. It is expected that the intake and pump station will be located in deep water near the Lake Belton Dam. The outlet structure in Lake Stillhouse Hollow would most likely be located somewhere on the north shore of the lake in the lower part of the reservoir.

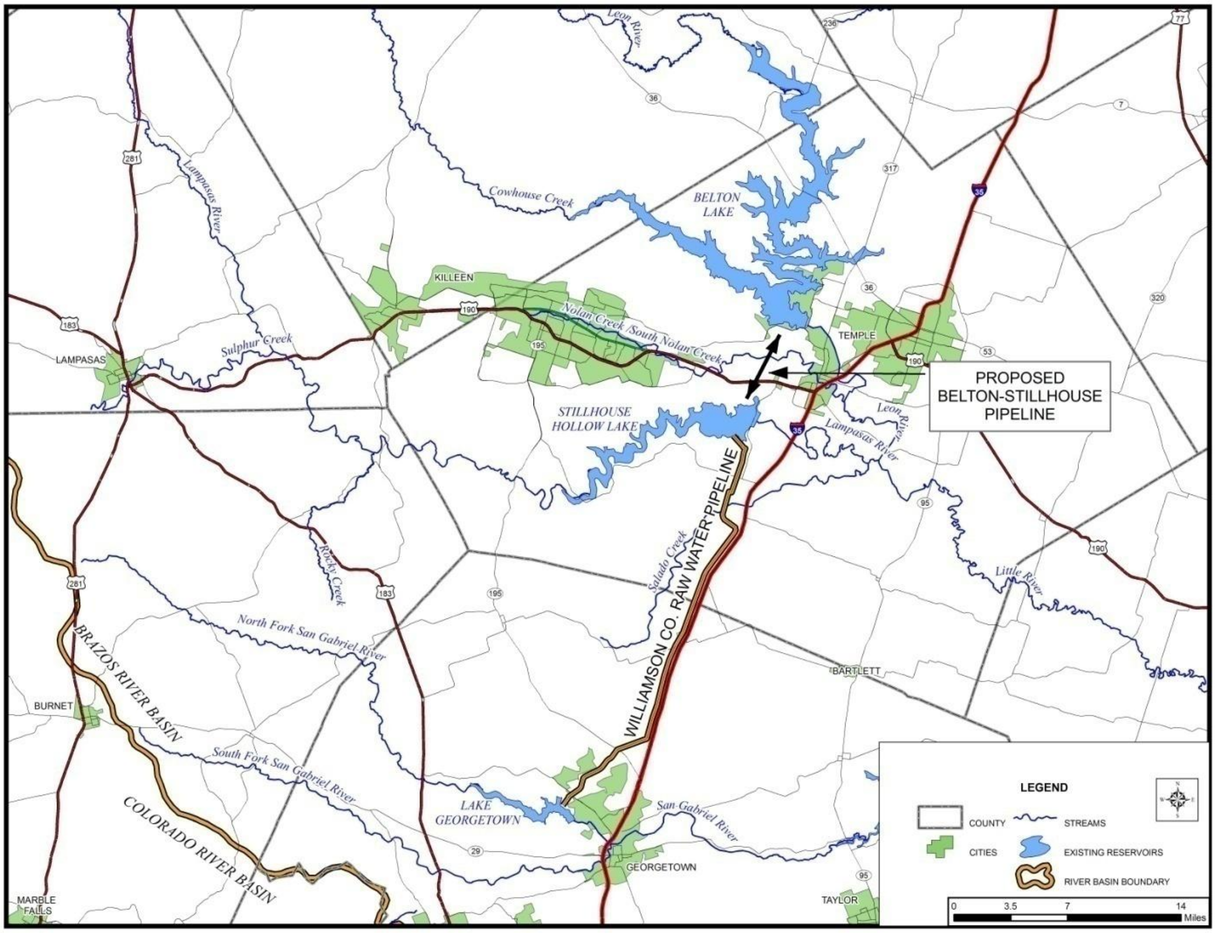

Figure 4B.20.2.1-1. Proposed connection between Lakes Belton and Stillhouse Hollow

Table 4B.20.2.1-1
Diversion and Storage Data for Lakes Belton, Stillhouse Hollow and Georgetown

Reservoir Name	***Water Right***	***Authorized Storage (acft)***	***Authorized Priority Diversion (acft/yr)***	***Priority Date***
Belton	CA 12-5160	457,600	100,257	12/16/1963
Stillhouse Hollow	CA 12-5161	235,700	67,768	12/16/1963
Georgetown	CA 12-5162	37,100	13,610	2/12/1968
CA – Certificate of Adjudication				

4B.20.2.2 Available Yield

The project is expected to deliver up to 30,000 acft/yr from Lake Belton to Lake Stillhouse Hollow. The increased efficiency of operation could increase the yield of the reservoirs by about 2,600 acft/yr, although the primary benefit of the pipeline will be the delay in developing expensive new sources of water to meet anticipated future demands. The supply for this project is authorized under the existing BRA water rights for Lakes Belton and Stillhouse Hollow and its System Order.

Figure 4B.20.2.2-1 shows simulated storage traces for Lake Stillhouse Hollow operating under 2060 conditions with and without the Lake Belton to Lake Stillhouse Hollow pipeline. Figure 4B.20.2.2-2 shows the exceedance frequency for the same data. Figures 4B.20.2.2-3 and 4B.20.2.2-4 shows simulated 2060 storage traces and exceedance frequency for Lake Georgetown, respectively. Storage traces were estimated using the Brazos G WAM. Demands are based on BRA contracts assigned to Lake Stillhouse Hollow and Lake Georgetown. Pumping is initiated from Lake Belton when Lake Stillhouse Hollow has less than 130,000 acft in storage. Note that without the proposed pipeline there would be insufficient supplies to meet demands during a repeat of the 1950s drought. Figures 4B.20.2.2-5 and 4B.20.2.2-6 show the storage traces and exceedance frequencies for Lake Belton, respectively. Without the pipeline over 50,000 acft of water is in storage at Lake Belton's lowest point in the simulation. The proposed Lake Belton to Lake Stillhouse Hollow pipeline would allow the BRA to use the water left in storage to meet demands at the other two reservoirs.

4B.20.2.3 Environmental Issues

The intake and discharge structures could have low to moderate environmental impacts depending on the final location of the structures. The pipeline route is expected to avoid sensitive areas, so the construction and operation of the pipeline is expected to have low environmental impacts.

Figures 4B.20.2.2-2, 4B.20.2.2-4, and 4B.20.2.2-6 show that the pipeline has a minimal impact on the frequency of time that these reservoirs are full and spilling. This is because pumping does not occur until Lake Stillhouse Hollow has been drawn down significantly. Because the frequency and volume of spills are about the same with and without the pipeline, the project has minimal impact on instream flows or bays and estuaries.

Lakes Belton and Stillhouse Hollow are located in adjacent watersheds on tributaries of the Little River that join a short distance below the reservoirs. Both reservoirs are expected to have similar biological communities and water quality. There are no anticipated impacts associated with blending water for the two reservoirs, although this may need to be verified by additional studies.

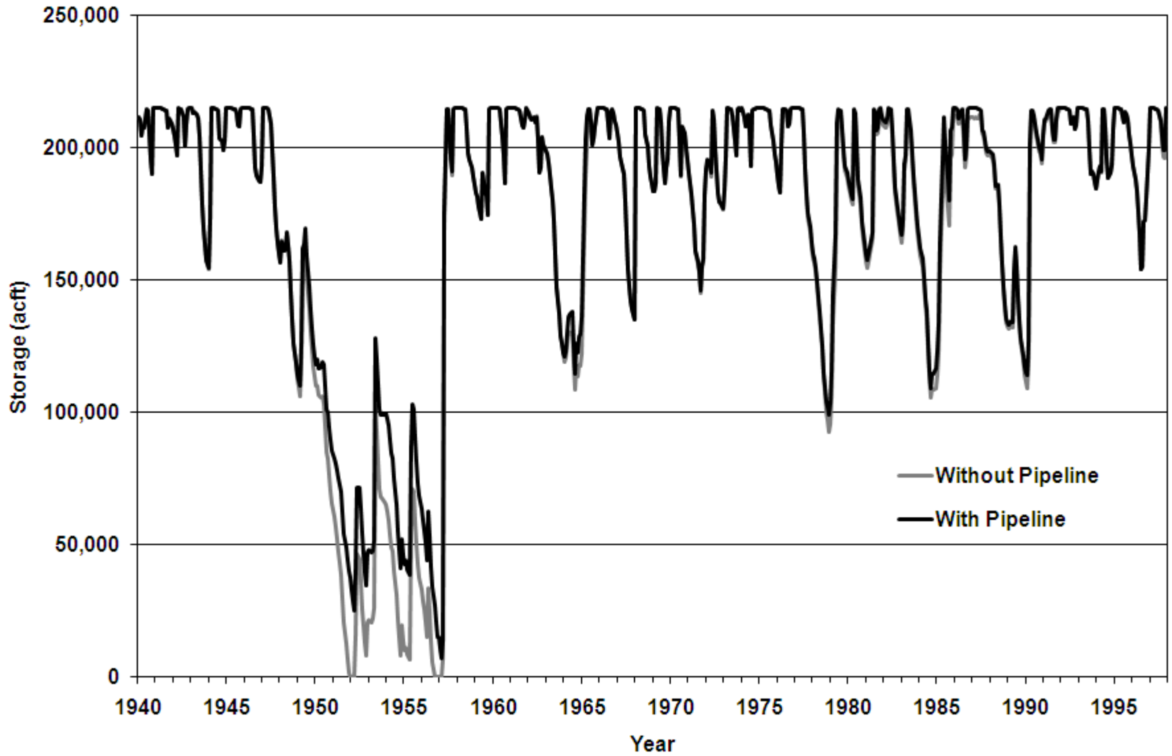

Figure 4B.20.2.2-1. 2060 Lake Stillhouse Hollow Storage With and Without Proposed Lake Belton to Lake Stillhouse Hollow Pipeline

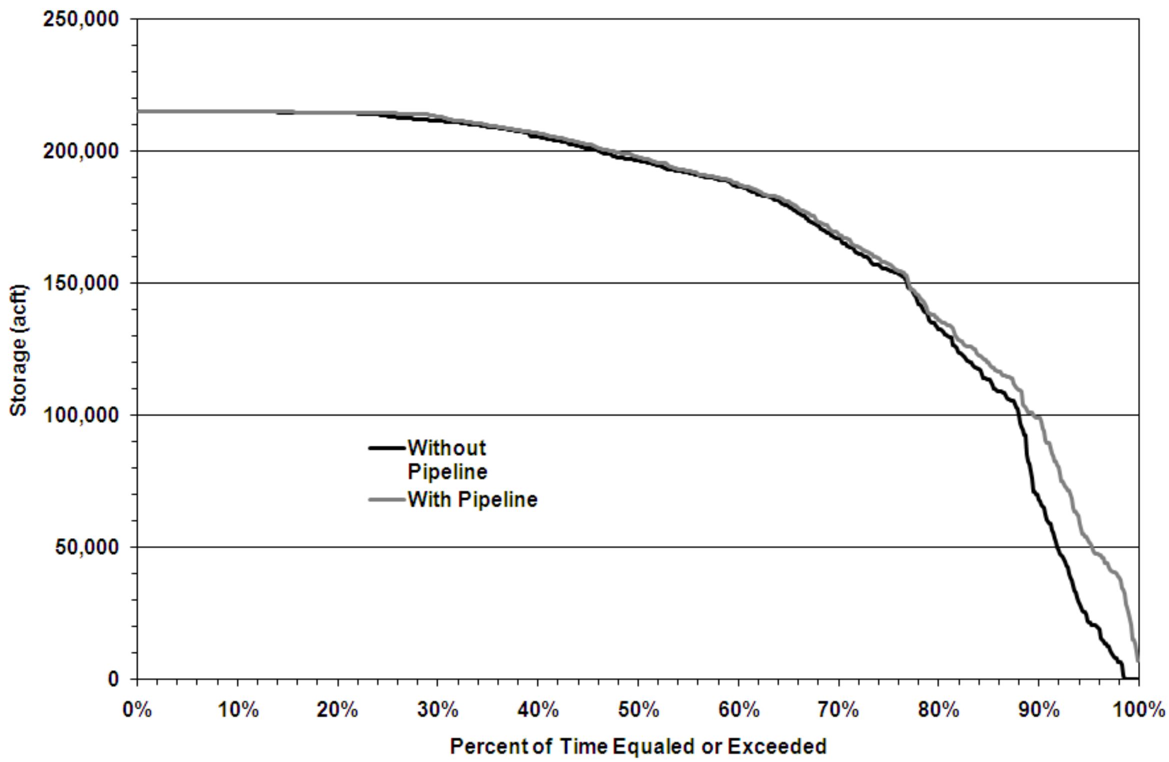

Figure 4B.20.2.2-2. 2060 Lake Stillhouse Hollow Storage Exceedance Frequency With and Without Proposed Lake Belton to Lake Stillhouse Hollow Pipeline

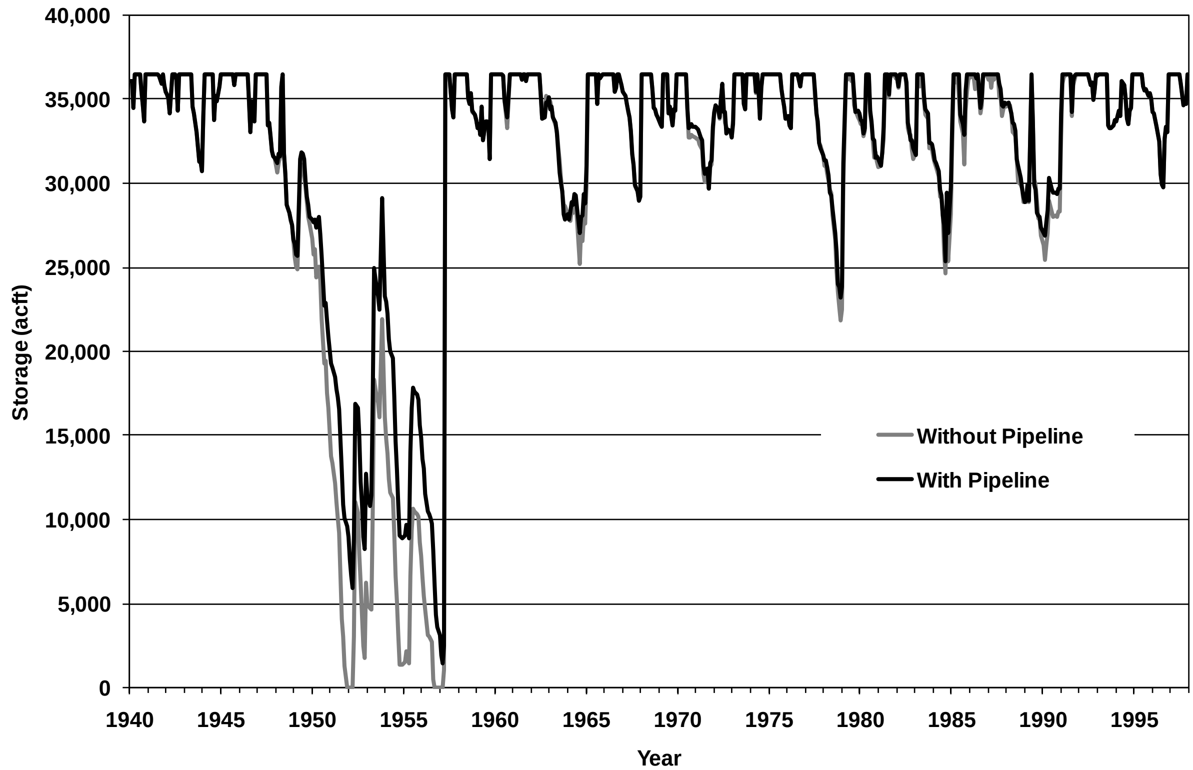

Figure 4B.20.2.2-3. 2060 Lake Georgetown Storage With and Without Proposed Lake Belton to Lake Stillhouse Hollow Pipeline

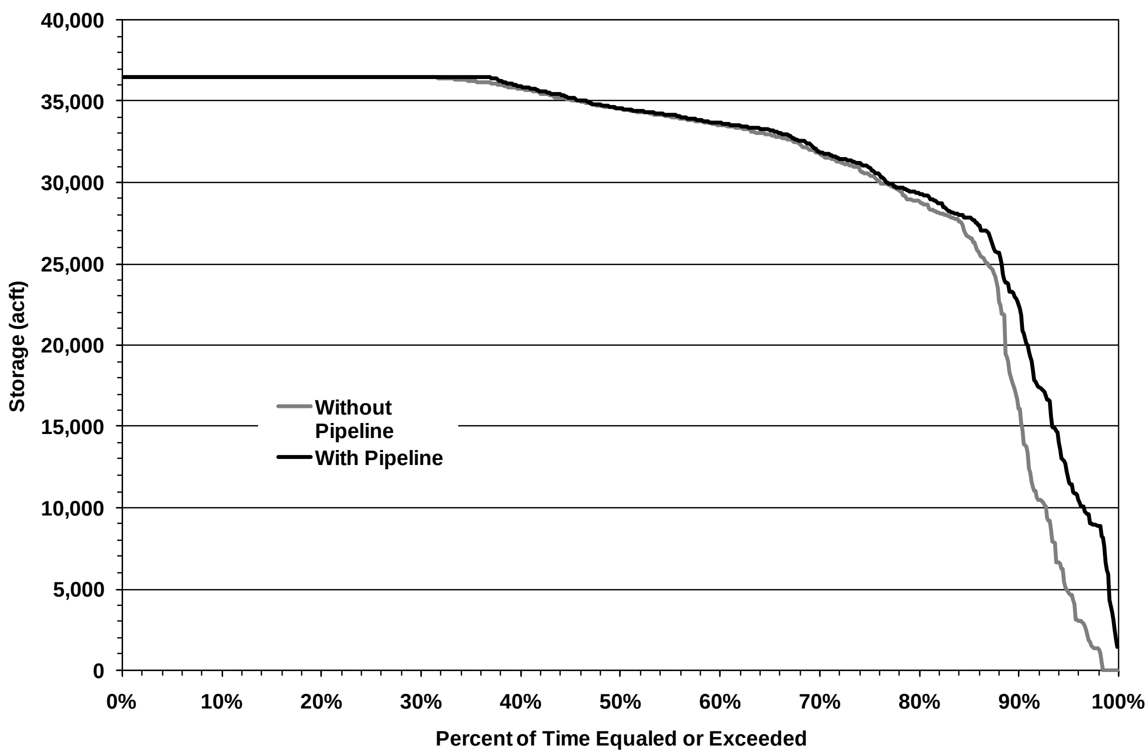

Figure 4B.20.2.2-4. 2060 Lake Georgetown Storage Exceedance Frequency With and Without Proposed Lake Belton to Lake Stillhouse Hollow Pipeline

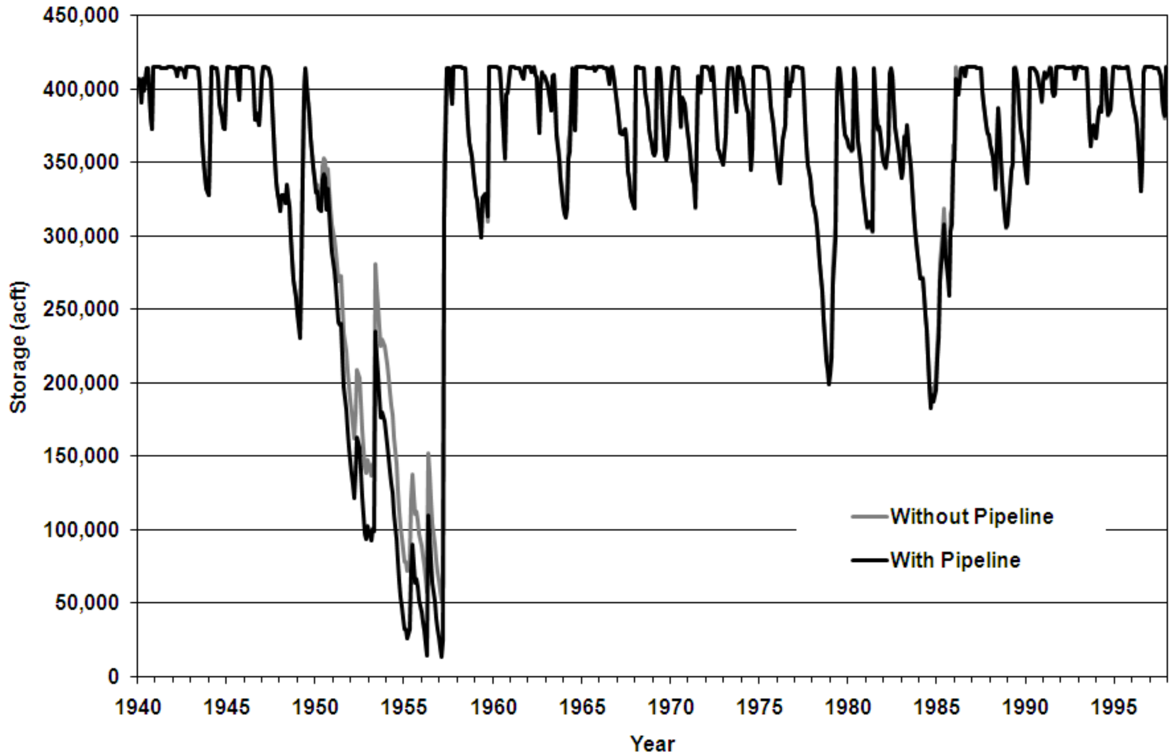

Figure 4B.20.2.2-5. 2060 Lake Belton Storage With and Without Proposed Lake Belton to Lake Stillhouse Hollow Pipeline

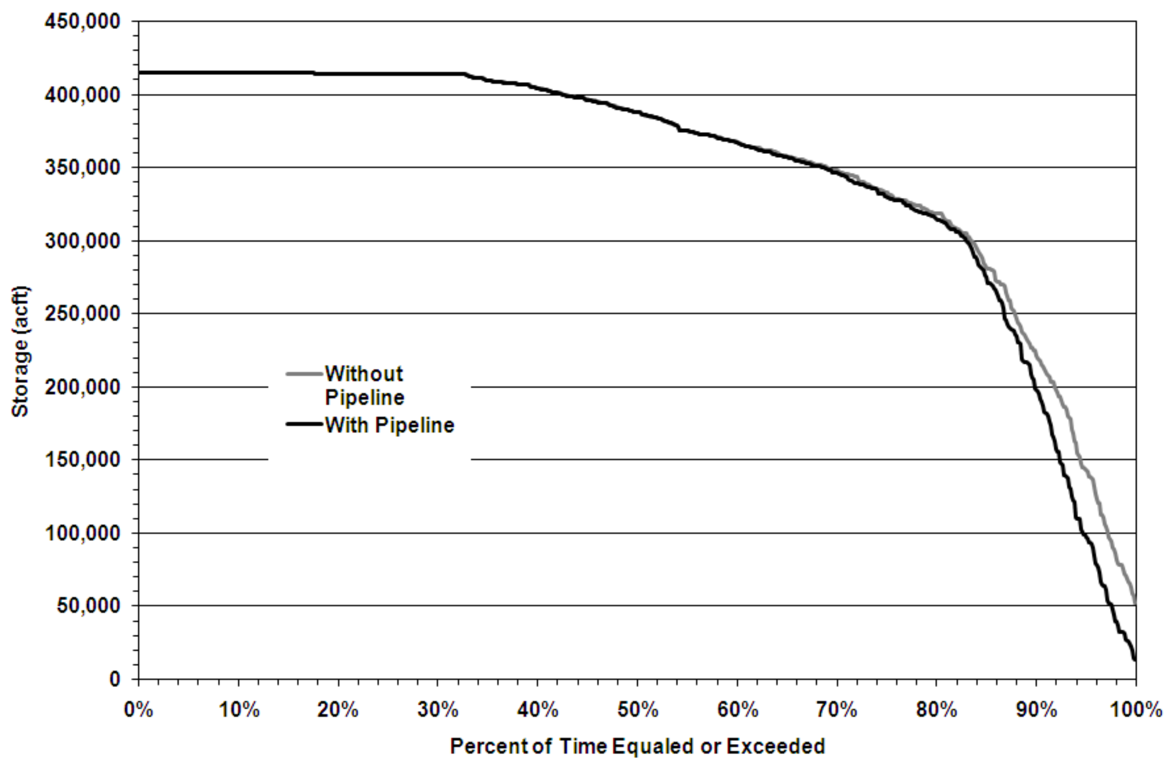

Figure 4B.20.2.2-6. 2060 Lake Belton Storage Exceedance Frequency With and Without Proposed Lake Belton to Lake Stillhouse Hollow Pipeline

4B.20.2.4 Engineering and Costing

A specific location for facilities and a pipeline route has not been determined at this time. For the purposes of this plan, it is assumed that the pipeline will be about 7 miles long with a diameter of 48 inches. Table 4B.20.2.4-1 summarizes the costs for this option. About 12 percent of the pipeline route is assumed to be in a relatively urbanized area. The intake structure and pump station are assumed to be located near the Lake Belton Dam and the discharge structure is located on the north shore of Lake Stillhouse Hollow in the lower portion of the lake. Using these assumptions, the estimated capital cost of the pipeline is about $25.9 million. Total project costs, including engineering, contingency permitting, mitigation and interest during construction are an additional $10.1 million for a total project cost of $36.0 million. Annual costs, including debt service, power cost and operation and maintenance are approximately $4.5 million per year. The resulting unit costs are $150 per acre-foot or $0.46 per thousand gallons.

4B.20.2.5 Implementation Issues

This water supply option has been compared to the plan development criteria, as shown in Table 4B.20.2.5-1, and the option meets each criterion.

A summary of the implementation steps for the project is presented below.

- Agreement with USCOE for discharge into Lake Stillhouse Hollow.
- Possible analysis of potential impact of blending Lake Belton water in Lake Stillhouse Hollow.

Potential Regulatory Requirements:

- Texas Commission on Environmental Quality Water Right and Storage permits;
- U.S. Army Corps of Engineers Permits will be required for discharges of dredge or fill into wetlands and waters of the U.S. for dam construction, and other activities (Section 404 of the Clean Water Act);
- Texas Commission on Environmental Quality administered Texas Pollutant Discharge Elimination System Storm Water Pollution Prevention Plan;
- General Land Office Easement if State-owned land or water is involved; and
- Texas Parks and Wildlife Department Sand, Shell, Gravel and Marl permit if state-owned streambed is involved.

State and Federal Permits may require the following studies and plans:

- Environmental impact or assessment studies;
- Wildlife habitat mitigation plan that may require acquisition and management of additional land;
- Flow releases downstream to maintain aquatic ecosystems;
- Assessment of impacts on Federal- and State-listed endangered and threatened species; and
- Cultural resources studies to determine resources impacts and appropriate mitigation plan that may include cultural resource recovery and cataloging; requires coordination with the Texas Historical Commission.

Land Acquisition Issues:

- Land acquired for reservoir and/or mitigation plans could include market transactions or other local landowner agreements;
- Additional acquisition of rights-of-way and/or easements may be required; and
- Possible relocations or removal of residences, utilities, roads, or other structures.

Table 4B.20.2.4-1
Cost Estimate for Lake Belton to Lake Stillhouse Hollow Pipeline

Item	*Estimated Costs for Facilities*
Capital Costs	
Intake & Pump Station (33 MGD)	$15,300,000
Transmission Pipeline (6.8 mi, 48 in. dia.)	$10,466,000
Discharge Structure	$94,000
Total Capital Cost	**$25,860,000**
Engineering, Legal Costs and Contingencies	$8,407,000
Environmental & Archeological Studies and Mitigation	$343,000
Interest During Construction	$1,428,000
Total Project Cost	**$36,038,000**
Annual Costs	
Debt Service (6 percent, 20 years)	$3,142,000
Operation & Maintenance	
Intake, Pipeline, Pump Station	$580,000
Pumping Energy Costs ($0.09 kwh)	$781,000
Total Annual Cost	**$4,503,000**
Available Project Yield (acft/yr)	30,000
Annual Cost of Water ($ per acft)	$150
Annual Cost of Water ($ per 1,000 gallons)	$0.46

Table 4B.20.2.5-1
Comparison of Lake Belton to Lake Stillhouse Hollow Pipeline to Plan Development Criteria

Impact Category	***Comment(s)***
A. Water Supply	
1. Quantity	1. Sufficient to meet needs
2. Reliability	2. High reliability
3. Cost	3. Reasonable
B. Environmental factors	
1. Environmental Water Needs	1. Low to medium impact
2. Habitat	2. Low impact
3. Cultural Resources	3. Low impact
4. Bays and Estuaries	4. Low impact due to distance from coast
5. Threatened and Endangered Species	5. Low impact
6. Wetlands	6. Low impact
C. Impact on Other State Water Resources	• Possible negative impacts on state water resources from water quality changes; no effect on navigation
D. Threats to Agriculture and Natural Resources	• Low to none
E. Equitable Comparison of Strategies Deemed Feasible	• Option is considered to meet municipal and industrial shortages
F. Requirements for Interbasin Transfers	• None
G. Third Party Social and Economic Impacts from Voluntary Redistribution	• None

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