

LOCATION: R.M. 442.4 on the Brazos River, 5.5 miles southwest of Whitney, Texas, and about 38 miles upstream from Waco, Texas

DRAINAGE AREA:

17,656 square miles contributing  
 8,950 square miles noncontributing  
 One inch of runoff 941,653 acre-feet

DAM:

Type: Concrete gravity and rolled earth fill  
 Length:  
   Concrete section: 1,674'  
   Total: 17,695' (including conc sec & 7,820' of dikes)  
 Maximum Height: 159'  
 Top Width:  
   Embankment: 34'  
   Spillway: 28'

SPILLWAY:

Crest Elev: 533.0' msl  
 Length: 680' net at crest  
 Type: Ogee  
 Control: 17 - 40'x38' tainter gates

INFLOW:

Spillway design flood peak, cfs 700,000  
 Spillway design flood volume, ac-ft 7,232,300  
 Spillway design flood runoff, inches 7.68

OUTFLOW:

Total routed peak outflow, cfs 730,400  
 Spillway, cfs 684,000  
 Outlet works, cfs 46,400

OUTLET WORKS:

Type: 16 conduits through base of concrete dam  
 Dimension: 5'x9'  
 Inverts Elev: 448.83' msl  
 Control: 16-5'x9' sluice gates

POWER FEATURES:

Units: 2-15,000 KW  
 Installed Capacity: 30,000 KW  
 Dependable Capacity: 30,000 KW

NOTE: Area-capacity data based on 1959 sedimentation resurvey of reservoir

Feature	Elev Feet (msl)	Reser- voir Area (acres)	Reservoir Capacity			Spillway Capacity*		Conduit Capacity*	
			Accumu- lative (ac-ft)	Runoff (inches)	Incre- mental (ac-ft)	(cfs)	(cfs)	1 conduit	16 conduits
Top of Concrete Dam	584.0								
Top of Earth Embankment	580.0								
Max Design Water Surface	573.0	51,190	2,100,400	2.23		40,200	684,000		
Top of Flood Control Pool	571.0	49,820	1,999,500	2.12	1,372,400	37,200	632,000	3,000	46,400
Top of Power Pool and Spillway Crest	533.0	23,560	627,100	0.67		0	0	2,600	40,500
Invert of Lowest Intake	448.83	475	4,270						
Power Head and Sediment Storage									627,100
Total Storage									1,999,500
Streambed	425.0								

\*Based on model studies

AUTHORIZATION: Flood Control Act of 18 Aug 41 (PL 77-228) (HD 390/76/1); Flood Control Act of 22 Dec 44 (PL 78-534); PL 85-230 approved 30 Aug 57.\*\*

FINAL PROJECT COST (JUL 72):

Federal:	\$46,368,000
Non-Federal:	None*
Total:	\$46,368,000

ANNUAL O&M COST (FY 81):

Federal:	\$ 1,405,400
Non-Federal:	9,800
Total:	\$ 1,415,200

COST ALLOCATION METHOD:

Separable costs - remaining benefits

LOCAL AGENCY: None

LAND ACQUISITION:

	: Guide Contour (ft msl):	Area (Acres)
Fee simple	550.0	48,106
Easement	573.0	9,127
Total		53,233

FLOOD DATA:

Date	Peak Discharge (cfs)
May 22	214,000
Sep 36	197,900
May 57	122,000
Oct 59	117,000
May 66	58,000

Bankfull capacities: Dam to mouth of Bosque River - 25,000 cfs; and mouth of Bosque River to mouth of Brazos River - 60,000 cfs.

STATUS OF PROJECT: Construction began 12 May 47. Main dam and spillway completed in Apr 51. Deliberate impoundment started 10 Dec 51. Commercial power operation began 1 Jun 55. Project is complete and operational.

\*NON-FEDERAL PARTICIPATION AND LOCAL COOPERATION:

A contract with the Brazos River Authority was approved 3 Nov 82 for 22.017 percent (50,000 ac-ft) of the conservation storage between elevations 533.0 and 520.0 ft msl. BRA will pay \$1,181,440.86, in addition to their share of the annual O&M cost, for this water supply storage space.

REMARKS: \*\*FC Act 18 Aug 41 authorized \$5 million for initiation and partial accomplishment of the project. FC Act 22 Dec 44 authorized completion of the project. PL 85-230 authorized the allocation of 50,000 ac-ft of storage in Whitney Lake for water supply and authorized negotiations with local interests for the cost of the storage, including O&M costs.

Sale of power administered by Southwestern Power Administration. Power distributed by Brazos Electric Power Cooperative, Inc., Waco, TX.

Yield: 470.3 cfs, 304.0 MGD (1), based on most critical period Oct 1951-Apr 1953.

Yield: 621.6 cfs or 401.8 MGD (1), based on second most critical period, Aug 1908-Jun 1911.

(1) Both of these have Possum Kingdom regulation and Whitney can only be credited with about 100 cfs or 64.6 MGD.

Visitation (1981): 3,093,766

Shoreline at top of interim power pool: 190 miles  
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WHITNEY LAKE