

Pertinent Data - Ray Roberts Dam and Lake
(See Exhibit A for Supplementary Data)

LOCATION: R.M. 60.0 on the Elm Fork of the Trinity River, Denton County, between Sanger and Aubrey, Texas, 30 miles upstream from Lewisville Dam.

INFLOW:
Spillway design flood peak, cfs 494,200
Spillway design flood volume, ac-ft 933,000
Spillway design flood runoff, inches 25.28

DRAINAGE AREA: 692 square miles
One inch of runoff 36,907 acre-feet

OUTFLOW:
Total peak outflow, cfs 22,100*
Spillway, cfs 14,500

DAM:
Type: Rolled earth fill
Maximum Height: 131 feet
Top Width: 44 feet
Length: 15,250 feet
(including spillway)

OUTLET WORKS:
Type: 1 conduit with 2 inlets
Size: 13 ft. diameter conduit
Invert Elevation: 551.0 ft. NGVD
Control: Two - 6 ft. x 13 ft. gates

SPILLWAY:
Crest Elev: 645.5 feet NGVD
Length: 100 feet
Type: Broadcrested
Control: None

LOW FLOW OUTLET:
Type: 1 concrete pipe
Size: 5 feet in diameter
Control: 4 selector gates
Invert Elevations: 574.5, 588.0, 603.0, 618.0

Reservoir Capacity

Feature	Elev Feet NGVD	Lake Area (acres)	Incre- mental (ac-ft)	Accumu- lative (ac-ft)	Stored Runoff (inches)	Outlet Works Capacity (cfs)
Top of Dam	665.0	68,500				
Max Design Water Surface	658.8	59,620		1,931,900	52.35	7,600**
Spillway Crest	645.5	42,000		1,261,500	34.19	7,100
Top of Flood Control Pool	640.5	36,900	260,800	1,064,600	28.85	6,900
Top of Conservation Pool	632.5	29,350	749,200	799,600	21.67	6,600
Sediment Reserve			54,600			
Total Storage			1,064,600			
Streambed	524.0					

NOTE: Area capacity data is for 1985 condition.

* Includes both flood gate and spillway flows.

** Flood gate releases only, does not include spillway releases.

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AUTHORIZATION:

River and Harbor Act approved 27 Oct 65 (PL 89-298) and (HD 276/89/1). PL 96-384 changed name from "Aubrey" to "Ray Roberts" Lake.

PROJECT COST ESTIMATE (OCT 95):

Federal: \$109,780,000
Non-Federal: \$207,670,000*
Total: \$317,450,000

ANNUAL O&M COST ESTIMATE (OCT 96):

Federal: \$ 660,180

COST ALLOCATION METHODS:

Separable costs - remaining benefits

LOCAL AGENCY: Cities of Dallas and Denton

LAND ACQUISITION:

	Guide Contour NGVD	Area (Acres)
Fee simple	645.5	47,003
Easement		2,796
Total		49,799

FLOOD DATA: Estimated for damsite

Date	Peak Discharge (cfs)
Apr 57	133,000
May 57	133,000
Oct 74	94,400
Mar 77	57,800
Oct 81	166,900
May 82	62,100
May 90	115,000

STATUS OF PROJECT:

Construction began on 31 May, 1982.
Dam completed on 30 June, 1987.
Deliberate impoundment began 30 June, 1987.

* NON-FEDERAL PARTICIPATION AND LOCAL

COOPERATION: The city of Dallas water supply storage contract with the Corps of Engineers permits the city to use 591,700 ac-ft of the conservation storage below elevation 632.5 ft NGVD at Ray Roberts Lake and 131,400 ac-ft of storage between elevations 515.0 ft NGVD and 522.0 ft NGVD at Lewisville Lake. The city of Denton water supply storage contract with the Corps of Engineers permits the city to use 207,900 ac-ft of the conservation storage below elevation 632.5 ft NGVD at Ray Roberts Lake and 46,200 ac-ft of storage between the elevations 515.0 ft NGVD and 522.0 ft NGVD at Lewisville Lake. Total estimated Non-Federal conservation storage cost is \$181,714,000. Total estimated Non-Federal recreation development cost is \$25,956,000.

HYDROPOWER FACILITIES:

The city of Denton installed a 1200 kilowatt hydropower facility at Ray Roberts Dam.

REMARKS:

Dependable yield - 275 cfs or 177.7 MGD
(Ray Roberts - Lewisville Lake System)

Net system increase: 126 cfs or 81.4 MGD
Based on critical dry period from 1950-1957
and 2020 year conditions.