



US Army Corps
of Engineers ®

Fort Worth District

**BELTON DAM AND LAKE
LEON RIVER
BRAZOS RIVER BASIN, TEXAS**

**WATER CONTROL MANUAL
APPENDIX 3
MASTER RESERVOIR REGULATION MANUAL**

**DEPARTMENT OF THE ARMY
CORPS OF ENGINEERS
FORT WORTH DISTRICT**

SEPTEMBER 2015

**ORIGINAL JULY 1973
REVISED MARCH 1976**



BELTON DAM AND LAKE

NOTICE TO USERS OF THIS MANUAL

Regulations specify that this Water Control Manual be used in loose-leaf form, and only those sections or parts thereof requiring changes will be revised and printed. Therefore, this copy should be preserved in good condition so that inserts can be made to keep the manual current. All elevations referred to in this Water Control Manual, unless noted otherwise, are in feet, National Geodetic Vertical Datum of 1929 (NGVD29). The elevation difference of +0.2 feet is the difference between NGVD29 and NAVD88 for Belton Dam and Lake.

EMERGENCY REGULATION ASSISTANCE PROCEDURES

Assistance with the flood control regulations of Belton Dam will be provided during duty hours by the Fort Worth District Water Management Branch 817-886-1551. During non-duty hours, assistance can be obtained by contacting the Primary Regulator (817) 791-0973 cell number and in the order listed, one of the following persons:

EMERGENCY PERSONNEL ROSTER

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Chief, Water Management Section Redacted PII	817-886-1682
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Manager, Belton Lake Redacted PII	Redacted PII
Water Management, Southwestern Division–Dallas CESWD-RBT-W (Water Management and Infrastructure Safety)	
Redacted PII, Ph. D. P.E.	Redacted PII
Hydraulic Engineer, Redacted PII	Redacted PII

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Pertinent Data – Belton Dam and Lake
(See Exhibit A for Supplementary Pertinent Data)

LOCATION: In Bell County, R.M 16.7 on Leon River, Brazos River Basin, 3 miles north of Belton, Texas.

DRAINAGE AREA:

3,570 square miles
One inch of runoff 189,867 acre-feet

DAM:

Type: Rolled earth fill
Length (including spillway and dike): 5,524 feet
Maximum Height 192 feet
Top Width: 30 feet

SPILLWAY:

Crest Elev.: 631.0 feet NGVD29
Length: 1,300 feet
Type: Broad-crested Weir

POWER FEATURES: FC Act of 1954 authorized modification for hydropower at Belton upon impoundment of Proctor Lake. Previous studies determined hydropower to be infeasible, however, the Belton Recon Report dated Oct 1981 has indicated feasibility. The Belton Dam Feasibility Report Addition of Hydropower, dated January 1983, indicated that the provision of hydroelectric generating facilities at Belton Dam is feasible.

INFLOW:

Spillway Design Flood peak, cfs (1951 Study) 608,400
Spillway Design Flood volume, ac-ft (1951 Study) 3,910,000
Spillway Design Flood runoff, inches (1951 Study) 21.40

Probable Maximum Flood peak, cfs (1983 Study) 779,833
Probable Maximum Flood volume, ac-ft (1983 Study) 2,824,800
Probable Maximum Flood runoff, inches (1983 Study) 15.00

OUTFLOW:

Total routed peak outflow spillway, cfs (1949 Study) 482,800
Probable Maximum Flood total, cfs (1983 Study) 513,238

OUTLET WORKS:

Type: One conduit with 3 gated inlets
Dimensions: 22 feet diameter
Invert Elev.: 483.0 feet NGVD29
Control: 3 broome-type gates, 7 feet x 22 feet

LOW-FLOW OUTLETS:

Type: One 3 feet by 3 feet gated outlet discharging into flood control conduit
Invert Elev: 540.0 feet NGVD29 (at intake to wet well)

Feature	Elev Feet** (NGVD 29)	Reser- voir Area (acres)	Reservoir Capacity			Total Spillway Capacity (cfs)	Outlet Works			Low Flow Outlet Capacity (cfs)
			Accumu- Lative (ac-ft)	Runoff (inches)	Incre- mental (ac-ft)		1 gate	2 gates	3 gates	
Top of Dam	662.0									
PMF Design Water Surface (1983 Study)	658.02	38,000	1,918,100	10.20		513,238				
Design Water Surface (1951 Study)*	656.9	37,340	1,858,433	9.79		472,500				
Top of Flood Control Pool and Spillway Crest (1983 Study)	631.0	23,620	1,097,600	5.78	640,000		12,300	24,600	27,900	590
Top of Conservation Pool (2003 Survey)	594.0	12,135	435,225	2.41	372,700		10,300	20,800	23,600	510
Invert at Lowest Intake (2003 Survey)	483.0	0	0							
Sediment Reserve					84,900***					
Total Storage					1,097,600					
Streambed (2003 Survey)	470.0									

* All outlets gates are assumed closed.

** The elevations listed on the pertinent data sheet is based on the datum of NGVD29 and the NAVD88 datum shift is +0.2 feet in elevation

*** Estimated 50 years of sediment storage below elevation 547.0 feet NGVD29.

AUTHORIZATION: Flood Control Act approved 24 Jul 46 (PL 79-526) (HD 88/81/1). Modified by Flood Control Act approved 3 Sep 54 (PL 83-780) (HD 535/81/2).

FINAL PROJECT COST (OCT 80):

Federal:	\$17,191,734.04
Non-Federal	<u>None*</u>
Total:	\$17,191,734.04

ANNUAL O&M COST (FY 14):

Federal:	\$3,003,200
Non-Federal:	<u>0</u>
Total:	\$3,003,200

COST ALLOCATION METHOD: Use of Facilities (pro rata)

LOCAL AGENCY: Brazos River Authority and Fort Hood

LAND ACQUISITION:

	: Guide Contour (NGVD29)	: Area (Acres)
Fee Simple	605.0	24,241
Easement	642.0	6,574
Permit		<u>1,430</u>
Total		32,245

FLOOD DATA:

Date	Peak Discharge*** (cfs)
Dec 1913 (Estimated)	76,000
Apr 1945	70,600
May 1957	112,000
Oct 1959	83,500
May 1965	147,000

Bankfull channel capacities: Leon River to junction with Lampasas River (beginning of Little River): 10,000 cfs; Little River from junction with Leon River to Cameron, TX (junction of San Gabriel and Little River): 10,000 cfs near Rogers (1).

(1) The Leon River channel capacities of 10,000 cfs were from Design Memorandums documentation. During the flood of 2007, a 5,800 cfs release was made combined with 4,200 cfs local flow for a total of 10,000 cfs bank full capacity downstream of the dam.

***Gaging Stations: Cowhouse Creek near Pidcoke, Leon River at Gatesville,

Leon River near Belton, and Little River at Cameron.

STATUS OF PROJECT: Construction began June 1949. Deliberate impoundment began 8 Mar 1954. Ultimate project conservation pool of elev. 594.3 deliberate impoundment began 1 May 1972. Project is complete and operational.

*NON-FEDERAL PARTICIPATION AND LOCAL COOPERATION:

Water supply storage contracts with the Brazos River Authority were approved on 15 Jan 58 and 13 Dec 60 for 96.78 percent (360,700 ac-ft) of the conservation storage space between elevations 540.0 and 594.0 feet NGVD29. BRA will pay \$5,124,999.77, in addition to their share of annual O&M cost, for this water supply storage space. Fort Hood Military Reservation is utilizing the remaining 3.22 percent (12,000 ac-ft) of the conservation storage space between the same elevations.

REMARKS:

After impoundment of Proctor Lake, the conservation pool elevation at Belton Lake was raised on 1 May 1972 from 569.0 to 594.0 feet NGVD29 which increased the total conservation storage from 125,700 ac-ft to 372,700 ac-ft and the dependable yield from 75.0 MGD to 104.7 MGD.

Dependable yield (w/ Proctor Lake)**: 162.0 cfs or 104.7 MGD

**Based on critical dry period from 1949-1956 and 50 years of sedimentation

Annual Visitation (10-year average, 2004-2014): 1,947,151

Shoreline at top of conservation pool: 136 miles

**BELTON DAM AND LAKE
LEON RIVER, TEXAS
WATER CONTROL MANUAL**

CHAPTER I – INTRODUCTION

1-01. Authorization. This manual is submitted as required by Engineering Regulation (ER) 1110-2-240, Water Control Management, dated 30 May 2016, and is prepared in accordance with ER 1110-2-8156, Engineering and Design, Preparation of Water Control Manuals, dated 31 August 1995.

1-02. Purpose and Scope. The purpose of this manual is to document the Belton Dam and Lake Regulation plan. This manual also provides a concise reference source for higher authority personnel who will be concerned with or responsible for reservoir regulations during the life of the project. This manual also includes the regulation plan for Belton Dam and Lake and the background material necessary to understand the purpose and application of the plan.

1-03. Related Manuals and Reports. This manual is Appendix 3 to the Brazos River Basin Master Reservoir Regulation Manual. The Belton Dam and Lake project was originally recommended in the Interim Report on Brazos River covering the Leon River, Texas, dated 15 December 1945 by the District Engineer, Galveston District, in the “Report on Survey of Brazos River and Tributaries, Texas, Oyster Creek, Texas, and Jones Creek, Texas,” dated 15 August 1947. Authority for the preparation of a definite project report on Belton Dam and Lake was contained in a letter dated 18 August 1947, from the Office, Chief of Engineers, subject: “Allotment of Flood Control, General, Funds for Fiscal Year 1948 for advance Planning, Maintenance, and preliminary Examinations, Survey and Contingencies,” and advice of allotment No. C-3323, dated 18 August 1947. The Definite Project Report on Belton Reservoir, Brazos River Basin, Texas, was submitted to the Chief of Engineers on May 1949. The report provided for the ultimate development of flood control as proposed in the project document. In July 1973, the Fort Worth District (SWF) of the United States Army Corps of Engineers (USACE) published a reservoir regulation manual for Belton Dam and Lake. The manual contains plans and procedures for regulation of the reservoir during both normal and flood conditions. In addition, portions of the July 1973 Belton Water Control Manual were revised in March 1976.

The reports and design memorandums important to the regulation of Belton Dam and Lake are listed in Table 1-1.

1-04. Project Owner. USACE – SWF owns and operates Belton Dam and Lake.

TABLE 1-1

Related Manuals and Reports for Belton Dam and Lake

Title	Date
1. Interim Report on Brazos River	December 1945
2. Report on Survey of Brazos River and Tributaries, Texas, - Oyster Creek, Texas, and Jones Creek, Texas	August 1947
3. Allotment of Flood Control, General, Funds for Fiscal Year - Fiscal Year 1948 for Advance Planning, Maintenance, and - Preliminary Examinations, Survey and Contingencies	August 1947
4. Submission of Definite Project Report on Belton Reservoir, - Leon River, Texas	June 1949
5. Relocation of County Roads, Roads No. 2, 5, and 6	February 1954
6. Design Memorandum No. 3, Reservoir Clearing	March 1969
7. Design Memorandum No. 2, Relocation of East Range Road	May 1969
8. Design Memorandum No. 3, Reservoir Clearing	October 1970
9. Design Memorandum No. 1C, Master Plan Belton Reservoir, - Leon River, Texas	November 1970
10. Reservoir Regulation Manual - Belton Lake, Leon River, Texas	July 1973
11. Reservoir Regulation Manual - Belton Lake, Leon River, Texas, - Revised	March 1976
12. Reconnaissance Report, Adding Hydropower to Belton Dam	September 1981
13. National Dam Safety Assurance Study, Brazos River, Texas	September 1982
14. Intermediate Report, Adding Hydropower to Belton Dam, - Analysis of Alternate Plans	June 1982
15. National Dam Safety Assurance Study, Belton Lake, Hydrology	September 1982
16. Belton Dam Feasibility Report, Addition of Hydropower	January 1983
17. Periodic Inspection No. 10	April 2014

1-05. Operating Agency. USACE-SWF is the operating agency for Belton Dam and Lake. The Lake Manager at Belton Dam has the responsibility for its operations and management of the lake. The Fort Worth District Engineer, through the Water Resources Branch of the Engineering and Construction Division, directs water control activities.

The project is staffed during normal working hours throughout the year. The Lake Manager at Belton Dam has the responsibility for its operation. Lake rangers are also available on holidays

and weekends to provide assistance with the lake operations. The project will be staffed 24 hours a day when the lake level is, or is forecast to rise above elevation 626.0 feet.

The Lake Manager will have a current list of the Water Resources Branch personnel including home telephone numbers to contact when necessary. The Lake Manager will furnish the Water Resources Branch a list of project personnel, giving their office and home telephone numbers. The Lake Manager resides as close to the project as is considered prudent to carry out his official duties.

1-06. Regulating Agencies. USACE-SWF is the regulatory agency for Belton Dam and Lake. The regulation of the dam is the responsibility of the Water Resources Branch of the Engineering and Construction Division, Fort Worth District.

CHAPTER II – DESCRIPTION OF PROJECT

2-01. Location. Belton Dam and Lake are located on the Leon River at river mile 16.7 upstream of the confluence of the Leon River and the Little River, in Bell County, Texas, about three miles north of the city of Belton and approximately eight miles west of the city of Temple, Texas. The lake straddles Bell and Coryell Counties. The total drainage area above Belton Dam is 3,570 square miles. The location of the dam and lake are shown on Plate 2-1a, Plate 2-1b and Plate 2-1c, respectively.

2-02. Purpose. Belton Dam and Lake is a multi-purpose project used for flood control, water supply, fish and wildlife, and recreation. The project is a unit of the Brazos River Basin System, which consists of nine USACE dams and lakes and various channel improvements and levees operated to provide flood protection along the Brazos River. Belton Dam and Lake operates in conjunction with four other USACE dams (Proctor Dam, Stillhouse Hollow Dam, Granger Dam, and North San Gabriel Dam) on the Little River System and San Gabriel River to provide flood control to the Little River at Cameron, Texas, and to supply water to the Brazos River Authority (BRA) and the Fort Hood and Temple, Texas areas. An aerial view of Belton Dam is shown in Figure 2-1.



Figure 2-1. Aerial View of Belton Dam

2-03. Physical Components. Belton Dam consists of a rolled earthfill embankment, an uncontrolled broad-crested spillway, and controlled outlet works. The total length of the dam is 5,524 feet. The general plan of the embankment and spillway is shown on Plate 2-2. Additional

information on Belton Dam and Lake is provided in Exhibit A, Supplementary Pertinent Data.

a. **Embankment.** The embankment is a rolled, earthfill type structure with upstream rock fill and downstream rock fill toe. The embankment is approximately 3,806 feet long excluding the spillway and reservoir dikes, with a crown width of 30 feet. The maximum height of embankment is about 192 feet and the top of embankment is at elevation 662.0 feet. The embankment sections are shown on Plate 2-3. The upstream and downstream views of embankment are shown in Figures 2-2 and 2-3.



Figure 2-2. Upstream View of Embankment



Figure 2-3. Downstream View of Embankment

b. **Spillway.** The spillway is a 1,300 feet long uncontrolled broad-crested weir with a crest elevation of 631.0 feet. The discharge capacity of the spillway is 513,238 cubic feet per second (cfs) when the water surface elevation is at 658.02 feet as shown on Plate 8-3. The spillway plan and structure are shown on Plate 2-4 and Plate 2-5. The top of spillway is shown in Figure 2-4. The spillway sill and training wall are shown in Figure 2-5.



Figure 2-4. Top of Spillway



Figure 2-5. Spillway Sill and Training Wall

c. Outlet Works. The outlet works consist of one 22-foot diameter conduit controlled by three 7 feet by 22 feet broome-type gates with invert at elevation 483.0 feet. The dam also has one 36-inch by 36-inch gated outlet near the right bank discharging into the flood control conduit with an invert elevation of 540.0 feet. The outlet conduit is shown in Figure 2-6.

d. Stilling Basin. The stilling basin is 200 feet long and 53 feet wide. The elevation of the conduit invert at the exit portal is 477.0 feet and floor of the stilling basin is 462.0 feet. The basin has two rows of baffle blocks and an end sill to assist in the dissipation of kinetic energy and reduce erosion velocities in the existing downstream channel.

e. Hydropower Facilities. No hydropower facilities have been built at Belton Dam.

f. Water Supply Facilities. The water supply intake consists of a 12-foot inside diameter wet well provided with three 4-foot 6-inch diameter intakes controlled by slide gates. Inverts of intakes to the wet well are set at elevations 537.75 feet, 557.75 feet, and 577.75 feet. The wet well is connected to the pumping plant by a 5-foot 9-inch, modified horseshoe shaped, concrete-lined tunnel. The intake structure was completed on 20 March 1954. Fort Hood started using water from Belton Lake through this structure on 22 July 1955. Previously, Fort Hood made emergency connections and pumped water from the stilling basin during 1954 and 1955. The intake tower is shown in Figure 2-7.



Figure 2-6. Outlet Conduit



Figure 2-7. Intake Tower

2-04. Related Control Facilities. The Belton Dam and Lake is part of the USACE plan for flood control on the Brazos River and its tributaries. The plan presently consists of nine USACE dam and lake projects. Belton Dam operates with four other dams, Proctor Dam, Stillhouse Hollow Dam, Granger Dam, and North San Gabriel Dam on the Little River System and San Gabriel River to control floods at the Little River Gage at Cameron, Texas. Belton Dam initially operates with Proctor Dam for flood control on the Leon River, and then operates with Stillhouse Hollow Dam for flood control at downstream of the confluence of the Lampasas and Leon River (Little River headwaters) on the Little River down to Cameron, Texas. At 8 miles upstream of the Little River at Cameron Gage, the San Gabriel River joins the Little River with flows from

Granger and Georgetown Lakes. All five of these dams provide for flood damage reduction in the Little River System. These five and other four USACE dam projects in the Brazos River system control 36,830 square miles of drainage area of which 8,950 square miles are non-contributing.

Temple City Lake Dam is located in the upper reaches of a small water-supply reservoir on the Leon River and is owned by the city of Temple. The channel dam forming this reservoir is located about 4.1 miles downstream from Belton Dam. The controlling elevation of Temple City Lake Dam was originally at the crest of a small notch in the spillway, however, after the beginning of impoundment of Belton Lake, this notch was blocked, and the present controlling level is the uncontrolled spillway crest elevation 479.21. The city of Temple and the Brazos River Electric Cooperative use this reservoir for power generation and municipal purposes.

2-05. Real Estate Acquisition. A total of 24,241 acres for fee simple, 6,574 acres for flood flowage easement, and 1,430 acres for permit were acquired for the operation of Belton Dam and Lake. The real estate fee take line is based on a guide contour elevation of 605.0 feet, while the flood flowage easement was based on a guide contour elevation of 642.0 feet. This level was determined by routing the standard project flood through the reservoir starting at Top of Conservation Pool elevation of 594.0 feet.

2-06. Public Facilities. Five recreation areas around the lake are operated by USACE for public use. The areas are listed in Table 2-1 and shown on Plate 2-6. Facilities provided at these parks consist of roads, parking areas, boat ramps, camping and picnicking facilities, walkways, sanitation facilities, potable water, and swimming areas.

TABLE 2-1

Recreation Areas at Belton Dam and Lake

1. Cedar Ridge Park
2. Live Oak Ridge Park
3. Westcliff Park
4. White Flint Park
5. Winkler Park

CHAPTER III – HISTORY OF PROJECT

3-01. Authorization. Congressional authorization for the construction of Belton Dam and Lake on the Leon River was contained in the Flood Control Act approved 24 July 1946 (Public Law 526, 79th Congress, 2nd Session) in accordance with the recommendations made by the Chief of Engineers contained in House Document No. 88 (81st Congress, 1st Session). Authority for the preparation of a definite project report on Belton Dam and Lake is contained in a letter, dated 18 August 1947, from the Office, Chief of Engineers, subject: “Allotment of Flood Control, General, Funds for Fiscal Year 1948 for Advance Planning, Maintenance, and Preliminary Examinations, Survey and Contingencies,” and advice of allotment No. C-3323, dated 18 August 1947.

Modification of Belton Dam was authorized by the Flood Control Act approved 3 September 1954 (Public Law 780, 83rd Congress, 2nd Session) in accordance with the Chief of Engineers report dated 9 August 1949 (House Document No. 535, 81st Congress, 2nd Session). The project for the Belton Dam and Lake was modified to provide for the reservation, without reimbursement, of twelve thousand acre-feet of conservation storage to be used as permanent sources of water supply for Fort Hood an adjacent military installation.

Authority for the preparation of plans and specifications for Belton Dam and Lake is contained in the 1st endorsement by the Division Engineer, Southwestern Division (SWD), to the letter of transmittal from the District Engineer dated 20 June 1949, subject "Submission of Definite Project Report on Belton Reservoir, Leon River, Texas.”

According to the “Belton Dam Feasibility Report Addition of Hydropower”, the authorization for Belton Dam project included hydropower as a purpose for future installation, therefore, documentation for authorization by Congress is not necessary.

3-02. Planning and Design. Public hearings were held at Hamilton, Texas on 25 August 1937 and at Belton, Texas on 19 November 1945, to ascertain the desires of local interests with respect to improvements for flood control, water supply, fish and wildlife, and recreation purposes on the Leon River watershed. A public hearing was also held at Waco, Texas on 16 November 1937 for the purpose of affording all interested parties an opportunity to present their views concerning improvement of the Brazos River and its tributaries, in connection with the preliminary examination and review of reports on the Brazos River, Texas. It was at this public hearing that the Brazos River Conservation and Reclamation District, a state authorized agency which is now known as the BRA, requested improvements for flood control and water conservation on the Brazos River and its tributaries.

According to the Flood Control Act approved 24 July 1946, Belton Dam was recommended for flood control, water supply, fish and wildlife, and recreation. The reports recommending the adoption of the Belton Dam and Lake as a Federal project are being published as House Document No. 88, 81st Congress, 1st session. The construction of Belton Dam and Lake was estimated to cost the United States \$15,500,000 for construction and \$35,000 annually for

maintenance and operation in substantial accordance with the plans (Plan I). Plan I, as described in the report of the district engineer, provides for the construction of a reservoir with a dam located at river mile 15.5 on the Leon River. The proposed reservoir would have a total effective storage of 722,000 acre-feet, of which 509,700 acre-feet would be for flood control, 126,400 acre-feet for conservation purposes, and 85,900 acre-feet for silt deposition. Construction cost of the project was estimated to be \$11,733,000.

In considering the degree of control to be provided by Plan I, the Office, Chief of Engineers, requested additional studies of Belton Dam and Lake to determine the economic feasibility of providing a higher degree of flood control. One of the studies considered a reservoir having a total effective storage of 1,094,400 acre-feet, of which 882,100 acre-feet would be for flood control, 126,400 acre-feet for construction, and 85,900 acre-feet for silt disposition. Construction cost of such a project was estimated to be \$15,500,000 and the project was found to be economically justified.

The portion of the Chief of Engineers report regarding the degree of flood control to be provided in the Belton Dam and Lake is as follow: “After due consideration of these reports, I am of the opinion that the Belton Dam and Lake as proposed in Plan I, should be built as an integral part of the ultimate comprehensive plan of improvement for the Brazos River watershed. Supplement studies of the flood protection provided by the Belton Dam and Lake indicates that additional; flood-control storage is desirable and economically justified in the Leon River Basin. The first cost if the larger dam and reservoir is estimated at \$15,500,000. The annual charges and annual benefit for the larger projects are estimated at \$667,200 and \$694,800, respectively. I believe that when construction is undertaken, the storage capacity of the reservoir should be increased to the extent found economically justified at that time.”

The interim report recommended a gated, ogee shaped concrete gravity overflow spillway section with crest at elevation 580.0 feet, with earthen embankments constructed at both ends. The spillway would be controlled by 18 individually operated tainter gates, each 40 feet by 30 feet. The outlet works would consist of six gate controlled conduits, each 5 feet by 9 feet. The earth embankment would have a crown width of 20 feet, and top of dam would be at elevation 623.0 feet. However, the Definite Project Plan presented material changes from the Interim and Survey Reports. To reduce the cost of the dam project, the spillway was changed to an uncontrolled broad-crested weir 1,300 feet long with crest elevation at 631.0. The top of dam was set at elevation 662.0, with a top width of 30 feet. The outlet works have been changed to one 22-foot conduit controlled by three 7 feet by 22 feet broome type gates with invert at elevation 483.0. The dam was also provided with one 36-inch by 36-inch gated outlet discharging into the flood-control conduit with invert at elevation 540.0 to release low flows. The actual design description can be found in Chapter 2.

The Flood Control Act (Public Law 780, 83rd Congress, 2nd Session) approved in 1954 authorized modification of hydropower at Belton Dam upon impoundment of Proctor Dam. The report of “Reconnaissance Report, Adding Hydropower to Belton Dam,” dated October 1981, stated the feasibility of hydropower at Belton Dam. A subsequent feasibility study was published

in 1983; a report of “Feasibility Report Addition of Hydropower” indicated that the provision of hydroelectric generating facilities at Belton Dam was feasible. According to the report, a plant size of 1.4 megawatts providing an average annual energy production of 8,165,000 kw/year was shown to be the best suited for site conditions. No significant adverse impacts were expected from the construction and operation of the proposed hydropower plant. No public opposition to the project was expected. However, the proposed hydroelectric generating facilities were not built.

3-03. Construction. The construction of Belton Dam began on January 1949 and was completed in March 1954 with an initial conservation pool elevation of 569.0. Deliberate impoundment began on 8 March 1954. The construction cost of the dam was \$17,191,734. After the construction of Proctor Lake, the conservation pool was raised at Belton Lake. The ultimate project conservation pool elevation was raised to 594.0 feet with deliberate impoundment beginning on 1 May 1972. The conservation pool at Belton Lake remains at elevation 594.0 feet to this day. Table 3-1 outlines the important dates in the construction of Belton Dam. Figures 3-1 through 3-4 show some of the construction phases.



Figure 3-1. Dam Construction, 1952



Figure 3-2. Dam Construction, 1952



Figure 3-3. Construction of Floodgates on Spillway Side, 1952

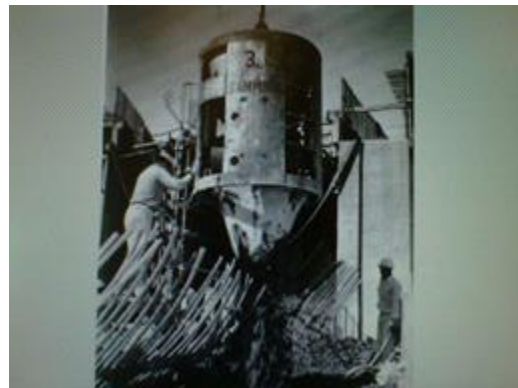


Figure 3-4. Concrete Pouring, 1952

TABLE 3-1**Resume of Construction Activities**

Activity	Date
Construction began	July 1949
Diversion through outlet works	6 January 1953
Deliberate impoundment began	8 March 1954
Conservation pool filled to elevation 569.0	3 May 1956
Project modified to allow top of conservation pool raise to elevation 594.0	1 May 1972
Conservation pool filled to elevation 594.0	11 May 1973

3-04. Related Projects. The Belton Dam and Lake Project is an integral part of USACE plan for flood control on the Lower Brazos River and its tributaries. The plan presently consists of nine USACE flood control projects, known as Whitney Dam, Aquilla Dam, Waco Dam, Proctor Dam, Belton Dam, Stillhouse Hollow Dam, and North San Gabriel Dam (Lake Georgetown), Granger Dam, and Somerville Dam. The BRA also owns and operates three dams in the Brazos River Basin for purposes of water conservation: Possum Kingdom Dam, DeCordova Bend Dam (Lake Granbury), and Sterling C. Robertson Dam (Lake Limestone). Belton Dam operates with four other USACE Dams: Proctor Dam, Stillhouse Hollow Dam, Granger Dam, and North San Gabriel Dam (Lake Georgetown) on the Little River System and San Gabriel River, to control floods at the Little River Gage at Cameron, Texas. The nine USACE dam projects in the Brazos River system control 36,830 square miles of drainage area of which 8,950 square miles are non-contributing.² Belton Dam controls 3,560 square miles of drainage area. The Brazos River Master Reservoir Regulation Manual presents the proposed plan and individual projects in more detail. The dam and lake projects of Brazos River Basin are listed in Table 3-2.

² "Reservoir Regulation Manual, Whitney Lake, Brazos River Basin, Texas", USACE, Feb. 1975.

TABLE 3-2**Brazos River Basin Projects**

Project	Stream	Year of Completion
Morris Sheppard Dam, BRA Project - Possum Kingdom Lake	Brazos River	1941
DeCordova Bend Dam, BRA Project - Lake Granbury	Brazos River	1969
Whitney Dam	Brazos River	1951
Aquilla Dam	Brazos River	1983
Waco Dam	Bosque River	1965
Sterling C. Robertson Dam, BRA Project - Lake Limestone	Navasota River	1978
Proctor Dam	Leon River	1963
Belton Dam	Leon River	1954
Stillhouse Hollow Dam	Lampasas River	1968
North San Gabriel Dam	San Gabriel River	1980
Granger Dam	San Gabriel River	1980
Somerville Dam	Yegua Creek	1967

3-05. Modification to Regulations. The conservation pool elevation at Belton Lake was raised on 1 May 1972 from 569.0 feet to 594.0 feet, which increased the total conservation storage from 125,000 acre-feet to 372,000 acre-feet and dependable yield from 75.0 million gallons per day (MGD) to 104.7 MGD.

3-06. Principle Regulation Problems. The releases have been adjusted at times due to erosion issues in the downstream channel. Refer to Chapter 7-05.g for detailed information.

CHAPTER IV – WATERSHED CHARACTERISTICS

4-01. General Characteristics. The Leon River originates in Eastland County approximately 2 miles southeast of the town of Eastland, Texas, and flows in a southeasterly direction for approximately 299 miles to a point about 6 miles southeast of the city of Belton, Texas, where it joins the Lampasas River to form the Little River. The watershed lies in the central portion of Texas, between north latitudes 31°00' and 32°31' and west longitudes 97°21' and 99°10'. The watershed of the Leon River has a total drainage area of 3,570 square miles.

Belton Dam is located on the Leon River at river mile 16.7. The lake is formed by flows from the mainstem Leon River and right bank tributary of Cowhouse Creek. The slope of the Leon River in the vicinity of Belton Dam is about 4.5 feet per mile.

The Leon River has three fairly large tributaries that flow into its river system. Cowhouse Creek, the largest tributary, has a drainage area of 692 square miles and enters the Leon River at river mile 20.8 (within Belton Lake).

Sabana River and Copperas Creek, which are the next two largest tributaries of the Leon River, enter the Leon River above Proctor Dam. Sabana River enters the Leon River at river mile 247.5 and has a drainage area of 299 square miles. Copperas Creek enters Leon River at river mile 239.5, and has a drainage area of 284 square miles. The watershed and the location of the dam are shown on Plate 4-1.

The Leon River was authorized by Congress for navigation as far as the City of Belton. However, a navigation system was never built due to it not being economically feasible. The basin is crossed by a network of highways and railroads. The watershed area includes portions of the Blackland Prairies, Oak Woods and Prairies, Edwards Plateau, and Rolling Plains natural ecoregions. About two-thirds of the watershed is either in pasture or rangeland, with a considerable number of concentrated animal feeding operations. Agricultural cropland makes up about 10% of watershed and forestland makes up about 15%. Manufacturing, trade, healthcare, and education are the major industries in the area. The population of the basin was approximately 190,000 in 2010.

4-02. Topography. The Leon River, the principal tributary of the Little River and a secondary tributary of the Brazos River, rises from an elevation at about 1,800 feet. Its source begins in a moderately cultivated narrow valley in Eastland County. The watershed lies within the Palo Pinto Section, West Cross Timbers, and Lampasas Cut Plain physiographic ecoregions.³ The watershed consists mainly of rolling ground and has a regional slope toward the southeast. About three-quarters of the watershed area is classified as range land and one-sixth is forest. The remaining area is a combination of residential, industrial, and transportation land.

³ www.epa.gov/wed/pages/ecoregions/tx_eco.htm

4-03. Geology and Soils. The Belton Lake sits in the undivided parts of the Early Cretaceous Washita and Fredericksburg Groups, which are primarily composed of calcareous clay, argillaceous limestone, marl and shale. These groups are approximately 100-140 feet deep in this area. Just east of the Lake are Late Cretaceous bands of the Eagle Ford and Woodbine Formations and the Austin Chalk. The Eagle Ford and Woodbine Formations are marine shale and sand. The Austin Chalk is limestone with some interbeds of clay, marl and mudstone.⁴

A number of soil groups lay within the Leon River watershed. Belton Lake lies on the intersection of three soil ecoregions: Blackland Prairie to the north and east, Edwards Plateau to the south and west, and Grand Prairie to the northeast. In the Blackland Prairie, both upland and bottomland soils are deep, dark-gray to black alkaline clays. Some soils in the western part of the watershed are shallow to moderately deep overlying a chalk foundation. Blackland soils are known as “cracking clays” because of the large, deep cracks that form in dry weather. This high shrink-swell property can cause serious damage to foundations, highways, and other structures and is a safety hazard in pits and trenches. In the Edwards Plateau area, Upland soils are mostly shallow, stony, or gravelly, dark alkaline clays, and clay loams underlain by limestone. Lighter-colored soils are on steep side slopes and deep, less-stony soils are in the valleys. Bottomland soils are mostly deep, dark-gray or brown, alkaline loams and clays. In the Grand Prairie area, Upland soils are mostly dark-gray, alkaline clays; some are shallow over limestone and some are stony. Some areas have light-colored loamy soils over chalky limestone. Bottomland soils along the Red and Brazos Rivers are reddish silt loams and clays. Other bottomlands have dark-gray loams and clays.⁵

4-04. Sediment. A system of 68 sedimentation ranges and 12 degradation ranges were established, surveyed, and monuments placed within the reservoir area and below the dam during the design of the dam. This methodology was similarly used for the 1948 and 1961 surveys. A schedule prepared in the Office of the Division Engineer, SWD indicates that surveys were planned for about 5-year intervals. However, currently sediment surveys are done periodically depending on need and available funding. The locations of the ranges are shown on Plate 4-2.

In 1991, the Texas Legislature authorized the Texas Water Development Board (TWDB) to develop a non-profit, self-supporting, reservoir volumetric survey program, which is named the Hydrographic Survey Program. The program includes a standard volumetric survey and a sedimentation survey. Since 1992, TWDB's Hydrographic Survey Program has completed 147 hydrographic surveys on 104 unique reservoirs. This includes 81 of the 109 water supply reservoirs monitored for inclusion in TWDB's monthly Water Conditions Report. The TWDB web site is: (<https://www.twdb.state.tx.us/surfacewater/conditions/report/index.asp>).

⁴ <http://mrddata.usgs.gov/sgmc/tx.html>

⁵ www.epa.gov/wed/pages/ecoregions/tx_eco.htm

The TWDB last performed a standard volumetric survey for Belton Lake in 2003.⁶ Results from the survey indicate Belton Lake encompasses 12,135 surface acres and contains a total volume of 435,225 acre-feet at conservation pool elevation 594.0 feet.

Original design information was based on a 1948 USACE survey. Records indicate that Belton Lake had a total surface area of 12,300 acres and a volume of 457,600 acre-feet of water at the top of conservation pool elevation 594.0 feet. In 1961 and 1966 USACE performed surveys for Belton Lake. The results of those surveys show that the surface area had increased to 12,420 acres and 12,423 acres, respectively. However the volume had reduced to 447,500 acre-feet in 1961 and 441,984 acre-feet in 1966 at top of conservation pool elevation, respectively. This may have occurred due to use of an improved calculation methodology. The 1994 and 2003 TWDB survey results indicate that the total volumes at top of conservation pool elevation are 434,500 acre-feet and 435,225 acre-feet, respectively. Comparisons show that 1994 and 2003 volumetric surveys are within the margin of error and are essentially identical. Belton Lake lost 6,759 acre-feet of water or 1.5 percent in conservation storage compared to the 1966 USACE survey. The difference in storage indicated the sediment sill during the fiscal years from 1966 to 2003. Comparisons between the historical USACE 1948 original design, the USACE 1961 survey, the USACE 1966 survey, the 1994 TWDB volumetric survey and the 2003 TWDB volumetric survey are presented in Table 4-1.

TABLE 4-1
Area and Capacity Comparisons of Belton Lake

Feature	USACE Original Design	USACE Survey	USACE Survey	TWDB Survey	TWDB Latest Survey
Year	1948	1961	1966	1994	2003
Surface Area at Conservation Pool Elevation 594.0 feet NGVD29 (acres)	12,300	12,420	12,423	12,385	12,135
Volume at Conservation Pool Elevation 594.0 feet NGVD29 (acre-feet)	457,600	447,500	441,984	434,500	435,225

NOTE: Data is obtained from “Volumetric Survey Report of Belton Lake, TWDB May 2003.”

4-05. Climate. The Leon River watershed is in the central part of the state of Texas. The climate over the entire basin is sub-humid resulting in persistent hot weather from late May through

⁶ www.twdb.texas.gov/hydro_survey/belton/2003-05/Belton2003_FinalReport.pdf

September. In summer, the days are hot and the nights moderately warm. The winter temperatures are generally mild and dry, but occasional cold periods of short duration are experienced. Freezing temperatures are experienced occasionally but subzero temperatures are rare. Snowfall is light and has little effect on the runoff characteristics of the watershed.

a. Temperature. The mean annual temperature over the basin is about 65 degrees Fahrenheit. January, the coldest month, has an average minimum daily temperature of about 32 degrees, August, the warmest month, has an average maximum daily temperature of about 95 degrees. Temperatures in the watershed have ranged from a maximum of 119 degrees recorded at Weatherford to a minimum of minus 11 degrees recorded at Hico.⁷ The average length of the growing season between killing frosts varies from 221 days at Eastland in the upper part of the watershed to 264 days at Temple near the lower watershed boundary.⁸ Table 4-2 gives temperature data for several National Weather Service (NWS) stations in or near the Leon River Basin.

⁷ www.ncdc.noaa.gov/cdo-web/datasets

⁸ texasalmanac.com/sites/default/files/images/almanac-feature/countyweatherA.pdf

TABLE 4-2
Temperatures in/near the Leon River Basin

Station	Period of Record	Temperatures (°F)				
		Mean Annual	Average January Minimum	Average August Maximum	Minimum Recorded	Maximum Recorded
Abilene Regional Airport	1948-2014	64.6	32.1	94.4	-7	110
Albany	1902-2014	64.4	31.2	97.1	-8	114
Ballinger 2 NW	1897-2014	65.2	31.4	96.0	-6	116
Belton Dam	1953-1992*	66.0	34.1	95.5	-1	109
Breckenridge	1923-2014	64.9	31.3	96.0	-7	114
Brownwood 2 ENE	1893-2014	65.5	32.0	97.3	-6	113
Coleman	1898-2014	65.4	33.6	95.5	-5	114
Dublin 2 SE	1897-2011*	64.3	32.3	95.8	-7	114
Eastland	1911-2010*	63.6	29.9	96.0	-6	115
Gatesville 4 SSE	1900-2014	66.7	35.1	97.0	-6	112
Graham	1897-2014	64.2	28.9	97.4	-8	117
Haskell	1893-2014	64.0	29.6	96.2	-6	115
Hico	1916-2009*	65.6	32.5	96.6	-11	113
Killeen	1957-2014	66.4	38.5	93.1	-2	112
McGregor	1961-2012*	65.7	33.1	95.7	-1	109
Stillhouse Hollow Dam	1963-2014	64.5	34.6	96.1	-5	110
Temple	1893-2003*	66.6	36.0	96.2	-4	112
Weatherford	1902-2014	63.7	31.0	95.6	-10	119

NOTE: *Period of available NOAA data ends in year indicated.

b. Precipitation. The normal annual precipitation over the Belton Dam drainage area varies from 27.33 inches at Eastland, near the headwaters, to 34.28 inches at Belton, in the southern part of the drainage area.⁹ The monthly distribution of the average annual precipitation at the fourteen NWS stations in the watershed area is shown in Table 4-3.

⁹ www.ncdc.noaa.gov/cdo-web/datasets

TABLE 4-3**Average Monthly and Annual Rainfall in/near the Little River Basin**

Month	Precipitation (Inches)						
	Belton Dam 1954-1992	Temple 1893-2015*	Graham 1904-2015*	Breckenridge 1898-2015*	Abilene 1948-2015*	Weatherford 1902-2015*	Dublin 1901-2010
January	1.94	2.17	1.25	1.32	1.00	1.88	1.70
February	2.68	2.39	1.54	1.47	1.12	2.17	2.21
March	2.24	2.51	1.91	1.80	1.33	2.48	2.22
April	2.96	3.46	2.76	2.38	1.96	3.26	3.48
May	4.55	4.62	4.03	3.66	3.16	4.74	4.74
June	3.56	3.13	3.45	2.88	2.98	3.29	3.19
July	2.27	2.05	2.15	2.14	2.10	2.14	2.12
August	2.10	2.09	2.21	2.03	2.48	2.21	2.36
September	3.57	3.40	3.19	2.83	2.62	2.98	3.17
October	3.55	3.18	2.87	2.81	2.57	3.28	3.11
November	2.67	2.95	1.78	1.55	1.28	2.15	2.28
December	2.19	2.66	1.55	1.43	1.01	2.03	1.93
Total	34.28	34.61	28.69	26.30	23.61	32.61	32.51
Precipitation	13.65	13.89	12.06	13.01	9.78	16.66	16.91
Minimum Yearly	(1954)	(1954)	(2011)	(1958)	(1956)	(1954)	(1910)
Precipitation	55.75	56.54	50.44	47.27	37.37	55.88	52.26
Maximum Yearly	(1971)	(1902)	(1990)	(2007)	(2004)	(1957)	(1991)

NOTES: 1. The total annual precipitation is computed by summation of the monthly averages.

2. Data reflect "Climatological Data" from the NWS. *Data as of 2015.

TABLE 4-3 (CONTINUED)**Average Monthly and Annual Rainfall in/near the Little River Basin**

Month	Precipitation (Inches)						
	Hico 1909-2009	Brownwood 1896-2015*	Eastland 1893-2010	Albany 1893-2015*	Haskell 1893-2015*	Ballinger 1897-2015*	Coleman 1894-2015*
January	1.86	1.54	1.35	1.15	0.93	1.01	1.33
February	2.13	1.69	1.61	1.39	1.24	1.17	1.44
March	2.31	1.86	1.80	1.63	1.63	1.29	1.61
April	3.14	2.69	2.60	2.55	2.55	2.04	2.57
May	4.20	4.01	3.85	3.78	3.78	3.50	4.08
June	3.14	3.15	2.99	3.00	3.00	2.47	3.23
July	2.15	1.91	1.88	2.27	2.27	1.58	2.23
August	2.33	2.01	2.29	2.42	2.42	2.20	2.42
September	3.06	2.94	2.67	2.88	2.88	2.89	3.15
October	3.02	2.74	2.92	2.56	2.56	2.45	2.71
November	2.25	1.72	1.77	1.56	1.56	1.35	1.65
December	1.87	1.54	1.60	1.40	1.40	1.08	1.29
Total	31.46	27.80	27.33	26.59	26.22	23.03	27.71
Precipitation	16.94	11.57	13.29	11.07	9.46	11.54	15.12
Minimum Yearly	(1954)	(1921)	(1943)	(1956)	(1910)	(2011)	(2011)
Precipitation	54.86	45.97	43.67	48.60	48.20	50.55	52.05
Maximum Yearly	(2011)	(1990)	(1957)	(1978)	(1941)	(1935)	(1991)

NOTES: 1. The total annual precipitation is computed by summation of the monthly averages.

2. Data reflect "Climatological Data" from the NWS. *Data as of 2015.

c. Snowfall. Minor accumulations of snowfall occur periodically during the winter months, however, snowfall does not contribute significantly to area precipitation or runoff.

d. Evaporation. There is no evaporation pan currently at Belton Lake. However, an evaporation pan was used at Belton Lake from 1953 through 1969. See Table 4-4C for further details. A NWS “Class A” evaporation pan at Stillhouse Hollow Lake is used to estimate evaporation at Belton Lake since the two dams are close to each other. The evaporation pan at Stillhouse Hollow Lake is 10-inch deep with 47.5-inch diameter (Figure 4-1). From measurements collected between February 1964 and December 2014, the estimated average annual evaporation from the lake is about 53 inches. The average monthly and annual evaporation from Belton Lake are given in Table 4-4A. The highest recorded annual evaporation was 93.91 inches in 1972, while the lowest was 65.97 in 2007. The highest evaporation during a single month was 13.86 inches in July 2011. The 4-foot diameter by 16-inch deep pan heats up much faster than the lake, thus pan evaporation is much higher than the actual evaporation, and a coefficient must be used to estimate actual lake evaporation.



Figure 4-1. Evaporation Pan at Stillhouse Hollow Lake

A longer period of record, however, is desirable for estimating average evaporation rates. The State of Texas maintained a Bureau of Plant Industry, sunken-type evaporation station at the Agricultural Experiment Station at Temple, Texas, about 9 miles north of Belton Dam. Table 4-4B lists the Temple Experiment Station average monthly and average annual evaporation derived from 1915 through 1969. Table 4-4C lists the Belton Dam average monthly and average annual evaporation derived from 1953 through 1969.

The TWDB has also collected lake evaporation data from 1954 through 2014 from the National Oceanic and Atmospheric Administration (NOAA) and the National Climatic Data Center (NCDC).¹⁰ The average monthly and annual evaporation from TWDB data are given in Table 4-4D. The evaporation rates for the Leon River Watershed are computed using the pan coefficients in the ThEvap program for quadrangle 610.

¹⁰ www.twdb.texas.gov/surfacewater/conditions/evaporation/

TABLE 4-4A**Belton Lake Average Monthly and Annual Evaporation (Feb 1964-Dec 2013)**

Month	Reservoir Evaporation (Inches)		
	Measured Pan Evaporation	Monthly Pan Coefficient	Calculated Reservoir Evaporation
January	2.86	0.73	2.09
February	3.63	0.70	2.54
March	5.53	0.69	3.82
April	6.77	0.67	4.54
May	7.71	0.60	4.63
June	9.30	0.67	6.23
July	10.74	0.69	7.41
August	10.07	0.70	7.05
September	7.43	0.73	5.42
October	5.59	0.77	4.30
November	3.64	0.80	2.91
<u>December</u>	<u>2.79</u>	<u>0.77</u>	<u>2.15</u>
Annual	76.06	0.71	53.09

NOTES: The Pan coefficients were developed by the USACE. The calculation was based on Stillhouse Hollow Lake measured pan evaporation data, which is recorded approximately 6 miles to the south from Belton Dam.

TABLE 4-4B**The State of Texas - Bureau of Plant Industry, Temple, Texas****Average Monthly Evaporation Data, 1915-1969**

Pan coefficient = 0.94

Month	Observed pan evaporation (inches)	Evaporation from reservoir surface (inches)	Observed precipitation (inches)
January	2.29	2.15	2.45
February	2.69	2.53	2.42
March	4.21	3.96	2.09
April	4.94	4.64	3.93
May	5.71	5.37	4.40
June	7.08	6.66	2.93
July	8.26	7.76	1.80
August	8.16	7.67	2.04
September	6.15	5.78	3.21
October	4.95	4.65	2.90
November	3.32	3.12	2.67
<u>December</u>	<u>2.42</u>	<u>2.28</u>	<u>2.61</u>
Annual	60.18	56.57	33.45

NOTE: Corresponding to period for which evaporation records are available.

TABLE 4-4C**NWS Class A Pan, Belton Dam, Texas****Average Monthly Evaporation Data, 1953-1969**

Pan coefficient = 0.69

Month	Observed pan evaporation (inches)	Evaporation from reservoir surface (inches)	Observed precipitation (inches)
January	2.70	1.86	2.13
February	3.34	2.31	2.58
March	5.46	3.77	1.64
April	6.38	4.40	3.52
May	7.55	5.21	4.01
June	9.59	6.62	2.97
July	11.35	7.83	1.51
August	10.91	7.46	1.84
September	7.62	5.26	3.41
October	6.05	4.17	4.12
November	3.67	2.53	2.55
<u>December</u>	<u>2.72</u>	<u>1.88</u>	<u>2.04</u>
Annual	77.34	53.30	32.32

NOTE: Corresponding to period for which evaporation records are available.

TABLE 4-4D

TWDB Average Monthly and Annual Evaporation, Belton Lake, 1954-2014

Month	Quadrangular pan Evaporation rate (inches)	Monthly Pan Coefficients for quadrangle 610 of ThEvap Program
January	2.14	0.73
February	2.48	0.70
March	3.92	0.69
April	4.67	0.67
May	4.87	0.60
June	6.61	0.67
July	8.00	0.69
August	7.67	0.70
September	5.85	0.73
October	4.64	0.77
November	3.23	0.80
<u>December</u>	<u>2.28</u>	<u>0.77</u>
Annual	56.36	0.71

e. Wind. The prevailing winds over the watershed are from the south. However, during the winter months, the influence of high-pressure systems moving from the northwest causes the wind to shift from the north. Severe winds have been experienced near Belton Lake. The fastest recorded peak gust velocity at Burnet Airport was 67 miles per hour, reached in June 2009.¹¹ (Data provided by NOAA NCDC for the period 1950-2013.)

From available wind records, a sustained wind velocity of 58 miles per hour was used to calculate the freeboard requirement for the dam. At water surface elevation of 655.65 feet, the design fetch was 5.9 miles. The computed required freeboard to protect the dam from wave overtopping based on this design wind speed, fetch, and elevation was 4.7 feet and then rounded up to 5.1 feet to have the top of dam elevation set at 662.0 feet.. At this elevation, the dam will provide adequate freeboard for a wind velocity of 58 miles per hour over land. The average annual wind movement at Waco, Texas, 40 miles northeast of the Belton Dam, is 96,360 miles, which is an average wind speed of 11 miles per hour for an entire year.¹²

¹¹ texasalmanac.com/topics/environment/significant-weather-2000s

¹² www.ncdc.noaa.gov/sites/default/files/attachments/wind1996.pdf

4-06. Storms and Floods. The Leon River Watershed is subject to three general types of flood-producing rainfall: thunderstorms, frontal rainfall, and tropical cyclones. Generally, the highest 24-hour and monthly precipitation periods have occurred during major thunderstorms. However, there are some instances of heavy precipitation resulting from local thunderstorms. The maximum 24-hour rainfall reported in or adjacent to the basin was 9.62 inches, which occurred at Temple, Texas on 17 Oct 1998. The maximum monthly rainfall reported was 14.76 inches, which occurred at the Lampasas River near Belton gage in September 1936. Stillhouse Hollow Dam in August 2001.¹³ The major storms experienced over the watershed for which rainfall data are available, together with the average rainfall depths produced on the watershed above the dam, are listed in Table 4-5.

¹³ www.ncdc.noaa.gov/cdo-web/datasets

TABLE 4-5**Major Storms on the Leon River Watershed, 1913-2015**

Storm Date	Precipitation in Inches					
	Belton Dam Gage	Stillhouse Hollow Dam Gage	Temple Gage	Gatesville 4 SSE Gage	Killeen Gage	Flat Gage
1913, Nov 29 - Dec 5	—	—	11.17	9.00	—	—
1920, Aug 6-14	—	—	6.40	11.30	—	—
1921, Sep 9-10	—	—	9.35	1.00	—	—
1922, Apr 25 - May 4	—	—	10.34	6.90	—	—
1929, May 13-28	—	—	13.51	—	—	—
1936, Sep 15-28	—	—	7.43	10.50	7.23	—
1940, Nov 21-25	—	—	6.58	10.81	—	—
1944, May 1-6	—	—	6.47	4.08	—	—
1944, May 21-27	—	—	3.14	6.90	—	—
1955, May 18-26	1.41	—	1.34	6.47	1.84	—
1957, Apr 19-29	11.69	—	8.27	9.14	12.82	—
1959, Sep 29-Oct 05	—	—	8.81	8.57	12.40	—
1965, May 11-20	10.63	9.39	7.94	9.88	9.92	—
1981, Jun 3-6	6.28	7.64	4.84	2.98	4.87	—
1991, Dec 18-27	8.03	8.41	7.30	6.58	7.55	—
1996, Aug 23-31	—	5.50	5.01	10.42	4.17	6.62
1998, Oct 18-21	—	6.73	0.77	4.15	6.16	5.89
2001, Aug 27-31	—	12.15	9.96	2.60	5.27	3.85
2004, Nov 16-24	—	5.43	—	8.35	—	7.33
2009, Sep 12-13	7.80*	6.12	6.27	—	—	—
2010, Sep 1-9	9.00*	10.74	5.05	11.01	12.66	—
2015, May 10-29	8.92*	8.11	11.91	7.89	12.33	—

NOTES: 1. The rainfall data were tabulated from published precipitation records from the NWS.
 2. *This record was retrieved from the Belton 1.2N Gage.

Table 4-6 lists the pertinent data for gages in the Leon River Basin.

TABLE 4-6

Pertinent Data for Major Lakes and Dams and Gages in the Little River Basin

Station	Stream	Period of Record	Miles Above Mouth	Datum (ft)	Drainage Area (Sq. Mi.)	Maximum Floods of Record		
						Date	Gage Height (ft)	Peak Discharge (cfs)
near Hamilton	Leon River	1908-2015	172.9	955.38	1,891	20 Dec 1991	35.02	32,100
						20 Feb 1997	33.42	27,200
						04 May 1990	33.26	24,000
near Gatesville	Leon River	1908-2015	99.0	723.85	2,342	May 1908	35.00	70,000
						21 Dec 1991	35.00	68,000
						04 Oct 1959	34.14	51,200
near Pidcoke	Cowhouse Creek	1900-2015	34.6	736.71	455	20 Dec 1991	44.30	110,000
						04 Oct 1959	40.10	66,200
						16 May 1965	39.85	63,800
near Hasse	Leon River	1939-2015	236.0	1,115.0	1,261	May 1908	27.00	60,000
						04 Oct 1959	21.72	36,100
						01 May 1956	20.18	30,700
near Belton	Leon River	1913-2015	13.1	476.68	3,582	22 Apr 1945	24.41	70,600
						Dec 1913	25.00	76,000
						26 May 1944	22.22	53,000

TABLE 4-6 (CONTINUED)**Pertinent Data for Major Lakes and Dams and Gages in the Little River Basin**

Lake	Stream	Period of Record	Miles Above Mouth	Datum (ft)	Drainage Area (Sq. Mi.)	Maximum Lake Elevation		
						Date	Elev. (ft)	Volume (ac-ft)
Proctor Lake	Leon River	1963-2015	238.9	—	1,265	2 May 1990	1,197.62	383,100
Stillhouse Hollow Lake	Lampasas River	1955-2015	16.0	—	1,318	4 March 1992	667.97	654,000

NOTE: 1. The information is derived from the United States Geological Survey (USGS) Annual Water-Data Reports.

Table 4-7 gives stages and discharges for top 16 major floods recorded at gages on the Leon River and Cowhouse Creek.

TABLE 4-7**Top 16 Recorded Major Floods in the Leon River Watershed, 1908-2015**

Date	Leon River near Hasse		Leon River at Gatesville		Cowhouse Creek at Pidcoke		Leon River near Belton*	
	Gage Height (ft)	Peak Discharge (cfs)	Gage Height (ft)	Peak Discharge (cfs)	Gage Height (ft)	Peak Discharge (cfs)	Gage Height (ft)	Peak Discharge (cfs)
1908, May	27.00	60,000	35.00	70,000	—	—	—	—
1940, Nov	14.73	6,250	—	—	23.94	26,200	14.16	26,400
1944, May	16.34	12,100	—	—	—	—	22.22	53,000
1945, Apr	17.23	16,900	—	—	—	—	24.41	70,600
1952, May	21.49	38,500	24.79	7,230	18.72	9,900	—	4,620
1955, May	16.77	13,400	28.18	10,600	29.70	23,000	3.01	267
1956, May	20.18	30,700	31.06	25,300	38.76	55,800	8.39	9,030
1957, May	16.20	10,800	31.60	27,100	37.93	49,400	—	4,880
1959, Oct	21.72	36,100	34.14	51,200	40.10	66,200	9.42	8,820
1965, May	—	346	31.02	23,500	39.85	63,800	5.00	819
1990, Apr	18.19	21,900	28.63	17,900	29.15	22,200	7.78	5,290
1991, Dec	—	—	35.00	68,000	44.30	110,000	—	—
1997, Feb	—	—	31.04	31,000	31.16	25,200	8.65	7,160
2007, May-Jun	—	—	33.20	40,700	36.71	47,600	—	—
2010, Jan-Mar	—	—	28.42	15,100	32.87	33,200	7.86	5,250
2015, May-Jul	12.55	2,350	28.57	11,700	22.98	14,700	8.50	6,490

NOTES: Data retrieved from USGS Peak Streamflow for Texas database. *Deliberate impoundment for Belton Lake began on 8 March 1954. Therefore, peak flood flows at this gage after this impoundment date are captured by Belton Dam.

Historical descriptions of the major floods that have been experienced in the Leon River Watershed are as follows:

a. Storm of May 1908. The storm of May 1908 had a record stage of 27 feet on the Leon River near Hasse. A historical peak stage was also reached on the Leon River at Gatesville, Texas, where the stage reached 35 feet. The peak discharges for this flood on the Leon River near Hasse gage and Leon River at Gatesville gage were 60,000 and 70,000 cfs, respectively.

b. Storm of December 1913. The Great Flood of 1913 occurred in the Brazos River Valley. The Leon River near Belton, Texas reached a historical record stage of 25 feet and peak discharge 76,000 cfs. Information is unavailable for the other stations.

c. Storm of October 1930. The October 1930 storm produced a rainfall of 7 inches at Temple, Texas. The flood produced by this storm reached a stage of 15.35 feet near Belton. The peak discharge for this flood on the Leon River near Belton was 30,500 cfs.

d. Storm of May 1935. Steady rains occurred at stations in the Leon River Basin during the period 15-20 May 1935. The storm had centers at Temple and Gatesville, where 5.6 and 4.9 inches, respectively, were recorded. The flood produced by this storm reached a stage of 17.08 feet near Belton on the Leon River. The peak discharge at Belton was 35,700 cfs.

e. Storm of September - October 1936. The September 1936 storm produced an average depth of rainfall at stations in the Leon River Basin of about 9 inches. The storm center received 10.5 inches of rain at Gatesville. The flood produced by this storm reached a stage of 20.00 feet near Belton. The peak discharge for this flood on the Leon River near Belton was 51,100 cfs.

f. Storm of June 1939. The June 1939 storm produced an average depth of rainfall at stations in the Leon River Basin of about 2.5 inches. The flood produced by this storm reached a stage of 17.04 feet near Hasse. The peak discharges for this flood on the Leon River near Hasse, Belton, and Cowhouse Creek near Pidcoke were 15,900, 3,880, and 101 cfs, respectively.

g. Storm of November 1940. Heavy rains occurred over the Leon River Basin during the period 21-25 November 1940. The rainfall for this period exceeded 6 inches at many stations in the basin and at the center received 10.8 inches at Gatesville. The flood resulting from this storm reached stages of 14.73 feet near Hasse, 23.94 feet at Pidcoke on Cowhouse Creek, and 14.16 feet at Belton on the Leon River. The peak discharges for this flood at Hasse, Pidcoke, and Belton were 6,250, 26,200, and 26,400 cfs, respectively.

h. Storm of May 1941. The May 1941 storm produced an average depth of rainfall at stations in the Leon River Basin of about 3 inches. The flood resulting from this storm reached stages of 16.92 feet near Hasse, 16.27 feet at Pidcoke on Cowhouse Creek, and 10.20 feet at Belton on the Leon River. The peak discharges for this flood at Hasse, Pidcoke, and Belton were 15,400, 12,800, and 14,000 cfs, respectively.

i. Storm of April 1942. The April 1942 storm produced an average depth of rainfall at stations in the Leon River Basin of about 0.5 inches, after a wet March. The flood resulting from this storm reached stages of 16.31 feet near Hasse, 30.50 feet at Pidcoke on Cowhouse Creek, and 16.58 feet at Belton on the Leon River. The peak discharges for this flood at Hasse, Pidcoke, and Belton were 13,000, 42,600, and 35,300 cfs, respectively.

j. Storm of May 1944. The May 1944 storm produced an average depth of rainfall at stations in the Leon River Basin of about 7.5 inches. The storm center received 8 inches of rain at Temple. The flood resulting from this storm reached stages of 16.34 feet near Hasse, and 22.22 feet at Belton on the Leon River. The peak discharges for this flood at Hasse and Belton were 12,100 and 53,000 cfs, respectively.

k. Storm of April 1945. The April 1945 storm produced an average depth of rainfall at stations in the Leon River Basin of about 6 inches. The storm center received 6.9 inches of rain at Temple. The flood resulting from this storm reached stages of 17.23 feet at Hasse and 24.41 feet at Belton on the Leon River. The peak discharges for this flood at Hasse and Belton were 16,900 and 70,600 cfs, respectively.

l. Storm of March 1949. The March 1949 storm produced an average depth of rainfall at stations in the Leon River Basin of about 3 inches. The flood resulting from this storm reached a stage of 19.20 feet at Belton on the Leon River. The peak discharges for this flood at Belton and Hasse were 36,400 and 920 cfs, respectively.

m. Storm of May 1949. The May 1949 storm produced an average depth of rainfall at stations in the Leon River Basin of about 0.5 inches. The flood resulting from this storm reached a stage of 17.29 feet at Hasse. The peak discharges for this flood at Hasse and Belton were 16,700 and 3,240 cfs, respectively.

n. Storm of May 1952. Heavy rains in the upper portion of the watershed triggered record flows in the Leon River at Hasse, which reached stage 21.49 feet and discharge 38,500 cfs. The Leon River at Gatesville reached a stage of 24.79 feet and a discharge of 7,230 cfs and reached an undetermined stage and a discharge of 4,620 cfs at Belton. Cowhouse Creek at Pidcoke recorded a stage of 18.72 feet and a discharge of 9,900 cfs.

o. Storm of May 1953. The May 1953 storm produced an average depth of rainfall at stations in the Leon River Basin of about 7 inches. The storm center received 7.4 inches of rainfall at Temple. The flood resulting from this storm reached stages of 11.36 feet near Hasse, 24.60 feet at Gatesville, 26.97 feet at Pidcoke on Cowhouse Creek, and 10.49 feet at Belton on the Leon River. The peak discharges for this flood at Hasse, Gatesville, Pidcoke, and Belton were 1,610, 7,030, 19,000, and 14,500 cfs, respectively.

p. Storm of May 1955. The May 1955 storm produced an average depth of rainfall at stations in the Leon River Basin of about 5 inches. The storm center received 6.5 inches of rainfall at Gatesville. The flood resulting from this storm reached stages of 16.77 feet near

Hasse, 28.18 feet at Gatesville, 29.70 feet at Pidcoke on Cowhouse Creek, and 3.01 feet at Belton on the Leon River. The peak discharges for this flood at Hasse, Gatesville, Pidcoke, and Belton were 13,400, 10,600, 23,000, and 267 cfs, respectively. Belton Dam deliberate impoundment began on 8 March 1954, therefore, the peak flood flows at this gage after the impoundment date are captured by Belton Dam.

q. Storm of May 1956. Heavy rains in the northern region of the basin at the beginning of May led to high flows on the Leon River at Gatesville (which experienced over 7 inches of rain on 1 May 1956) and on Cowhouse Creek near Pidcoke. Leon River reached a stage of 20.18 feet with discharge of 30,700 cfs at Hasse, 31.06 feet and 25,300 cfs at Gatesville, 8.39 feet and 9,030 cfs at Belton, and 38.76 feet and 55,800 cfs at Cowhouse Creek.

r. Storm of April 1957. The flood event occurred during the period of April 1957. The storm produced an average depth of rainfall at stations in the Leon River Basin of about 10.5 inches. The storm center received 12.8 inches of rainfall at Killeen. The flood resulting from this storm reached stages of 18.38 feet near Hasse, 29.42 feet at Gatesville, and 35.80 feet at Pidcoke on Cowhouse Creek. The peak discharges for this flood at Hasse, Gatesville, Pidcoke, and Belton were 21,200, 14,700, 39,200, and 4,390 cfs, respectively.

s. Storm of May 1957. The storms of May 1957 actually began in April and were characterized by extreme large volumes of flood runoff. In relatively few cases did peak flow exceed those of record, however on a volume bases, the floods of April-June 1957 constituted one of the worst flood periods ever experienced. The heavy rainfall brought an end to a record breaking drought which began during the fall of 1950 and had effected most of Texas for about seven years. Most of the USACE reservoirs were at an all-time lows. Up and to this time, a number of reservoirs built during the drought had never reached their respective top of conservation pools, including Belton Lake.

On April 18, 1957, Belton Lake was at elevation 559.03 feet (about 10 feet below the top of conservation pool). From the 19th-23rd of April, the watershed above Belton Lake received 8.2 inches of rainfall and filled the lake to elevation 569.0 feet (top of conservation pool) on April 23rd and by May 4th the lake reached an elevation of 596.8 feet. The peak inflow during this time period was 111,000 cfs on April 24th. From April 29th-May 4th, Belton began releasing flood waters with a peak release of 4,000 cfs.

Heavy rainfall again occurred over the Belton watershed of about 8.8 inches from May 9th-June 6th, and Belton Lake rose to a peak elevation 620.45 feet on June 6th. The peak inflow was 112,000 cfs on May 11th and 100,000 cfs on May 13th with a peak discharge of 6,800 cfs on May 30th-June 1st. On June 18th and 19th, a peak discharge of 8,300 cfs was released out of Belton Lake. The lake continued to make flood releases until August 4th, when the lake elevation reached elevation 569.0 feet.

After about six weeks of flood producing rainfall, 5,300,000 acre- feet, or about 91% of the available storage in USACE reservoirs had been utilized. The flood resulting from these storms

reached stages of 16.20 feet near Hasse, 31.30 feet at Gatesville, and 37.93 feet at Pidcoke on Cowhouse Creek. The peak discharges for this flood at Hasse, Gatesville, and Pidcoke were 10,800, 27,100, and 49,400, respectively. Peak discharges on the Brazos River near Hempstead were 143,000 cfs and the Brazos River at Richmond were 119,000 cfs.

t. Storm of October 1957. The October 1957 storm produced an average depth of rainfall at stations in the Leon River Basin of about 8 inches. The storm center received 9.5 inches of rainfall at Temple. The flood resulting from this storm reached stages of 14.04 feet near Hasse, 19.40 feet at Pidcoke on Cowhouse Creek, and 8.15 feet at Belton on the Leon River. The peak discharges for this flood at Hasse, Gatesville, Pidcoke, and Belton were 3,940, 4,670, 10,600, and 6,470 cfs, respectively.

u. Storm of May 1958. The May 1958 storm produced an average depth of rainfall at stations in the Leon River Basin of about 3.5 inches. The storm had a center of 5 inches at Gatesville. The flood resulting from this storm reached stages of 13.83 feet near Hasse, 26.03 feet at Gatesville, and 20.21 feet at Pidcoke on Cowhouse Creek. The peak discharges for this flood at Hasse, Gatesville, Pidcoke, and Belton were 3,590, 7,680, 11,400, and 5,100 cfs, respectively.

v. Storm of June 1959. The June 1959 storm produced an average depth of rainfall at stations in the Leon River Basin of about 2.5 inches. The flood produced by this storm reached a stage of 11.75 feet at Pidcoke on Cowhouse Creek. The peak discharges for this flood at Hasse, Gatesville, Pidcoke, and Belton were 1,340, 1,580, 4,160, and 1,780 cfs, respectively.

w. Storm of October 1959. Heavy rains occurred over the Leon River Basin during late-September and early-October 1959. The storm produced an average depth of rainfall at stations in the Leon River Basin of about 8.5 inches. The storm center received 12.4 inches of rainfall at Killeen. The flood resulting from this storm reached stages of 21.72 feet near Hasse, 34.14 feet at Gatesville, 40.10 feet at Pidcoke on Cowhouse Creek, and 9.42 feet at Belton. The peak discharges for this flood at Hasse, Gatesville, Pidcoke, and Belton were 36,100, 51,200, 66,200, and 8,820 cfs, respectively.

x. Storm of January 1960. The January 1960 storm produced an average depth of rainfall at stations in the Leon River Basin of about 2 inches. The flood resulting from this storm reached a stage of 14.93 feet at Pidcoke on Cowhouse Creek. The peak discharges for this flood at Hasse, Gatesville, Pidcoke, and Belton were 1,930, 3,480, 6,520, and 3,520 cfs, respectively.

y. Storm of January 1961. The January 1961 storm produced an average depth of rainfall at stations in the Leon River Basin of about 4 inches. The storm center received 5 inches of rainfall at Gatesville. The flood resulting from this storm reached stages of 13.69 feet near Hasse, 23.34 feet at Gatesville, and 15.23 feet at Pidcoke on Cowhouse Creek. The peak discharges for this flood at Hasse, Gatesville, Pidcoke, and Belton were 3,820, 5,980, 6,760, and 5,670 cfs, respectively.

z. Storm of June 1961. The June 1961 storm produced an average depth of rainfall at stations in the Leon River Basin of about 6 inches. The storm center received 10.2 inches of rainfall at Gatesville. The flood resulting from this storm reached stages of 13.11 feet near Hasse, 24.10 feet at Gatesville, and 18.02 feet at Pidcoke on Cowhouse Creek. The peak discharges for this flood at Hasse, Gatesville, Pidcoke, and Belton were 2,920, 6,470, 9,250, and 2,960 cfs, respectively.

aa. Storm of October 1961. The October 1961 storm produced an average depth of rainfall at stations in the Leon River Basin of about 1.5 inches. The flood resulting from this storm reached stages of 32.63 feet at Gatesville and 33.20 feet at Pidcoke on Cowhouse Creek. The peak discharges for this flood at Hasse, Gatesville, Pidcoke, and Belton were 186, 35,000, 30,600, and 3,120 cfs, respectively.

bb. Storm of November 1961. The November 1961 storm produced an average depth of rainfall at stations in the Leon River Basin of about 1 inch. The flood resulting from this storm reached stages of 20.96 feet at Gatesville and 12.44 feet at Pidcoke on Cowhouse Creek. The peak discharges for this flood at Hasse, Gatesville, Pidcoke, and Belton were 29, 4,750, 4,580, and 1,370 cfs, respectively.

cc. Storm of September 1962. The September 1962 storm produced an average depth of rainfall at stations in the Leon River Basin of about 3 inches. The storm center received 3.5 inches of rainfall at Killeen and Belton. The flood resulting from this storm reached stages of 19.01 feet at Hasse and 26.57 feet at Gatesville. The peak discharges for this flood at Hasse, Gatesville, and Belton were 24,000, 8,670, and 3,040 cfs, respectively.

dd. Storm of June 1964. The June 1964 storm produced an average depth of rainfall at stations in the Leon River Basin of about 8.5 inches. The storm had a center of 10 inches at Gatesville and Belton. The flood resulting from this storm reached stages of 24.37 feet at Gatesville, 14.65 feet at Pidcoke on Cowhouse Creek, and 7.8 feet at Belton. The peak discharges for this flood at Gatesville, Pidcoke, and Belton were 6,680, 6,280, and 5,290 cfs, respectively.

ee. Storm of May 1965. The rainfall from the storm of May 1965 took place on May 16th and 17th on the middle Brazos River, with a 2-day total exceeding 10 inches in the area of heaviest rainfall. Cowhouse Creek near Pidcoke had a peak discharge 63,800 cfs on May 16th, the second highest reading since 1882. Lampasas River at Youngsfort peaked at 87,900 cfs on May 17th, which was the highest discharge in 41 years of record. Little River near Little River had a peak discharge of 79,600 cfs on May 17th. Many low-lying areas near the Little River were inundated, and in an area near Cameron the river was 8 feet above flood stage.

ff. Storm of November 1965. The November 1965 storm produced an average depth of rainfall at stations in the Leon River Basin of about 4 inches. The flood resulting from this storm reached stages of 30.50 feet at Gatesville, and 37.07 feet at Pidcoke on Cowhouse Creek. The

peak discharges for this flood at Gatesville, Belton and Pidcoke were 20,500, 117, and 45,000 cfs, respectively.

gg. Storm of January 1968. The January 1968 storm produced an average depth of rainfall at stations in the Leon River Basin of about 4.5 inches. The storm center received 5 inches of rainfall at Temple. The flood resulting from this storm reached stages of 25.42 feet at Gatesville and 22.45 feet at Pidcoke on Cowhouse Creek. The peak discharges for this flood at Hasse, Gatesville and Pidcoke were 106, 6,960 and 13,700 cfs, respectively.

hh. Storm of December 1991-March 1992. The rainfall from the storm of December 1991 began on December 18th, with a 6-day total exceeding 10 inches in the area of heaviest rainfall. A maximum 24-hour rainfall total of 8.60 inches and a maximum 12-hour total of 7.30 inches were observed at Evant, about 60 miles west of Waco (According to NOAA, 1991b). For the period of December 1991 through March 1992, the rainfall was sustained over an extended period of time, and the floods that occurred broke numerous records. At the Leon River near Gatesville, river levels reached stage and discharge records of 35 feet and 68,000 cfs, respectively. Cowhouse Creek also reached stage and discharge records of 44.3 feet and 110,000 cfs which set the all-time record. Continuous winter storms contributed to the storage at Belton Lake which resulted in the peak lake elevation of 634.36 feet on March 6, 1992, which was 3.36 feet above the spillway crest with a corresponding estimated flow of 20,000 cfs.

ii. Storm of February 1997. The February 1997 storm produced an average depth of rainfall at stations in the Leon River Basin of about 4 inches. The storm center received 4.5 inches of rainfall at Gatesville. The flood resulting from this storm reached stages of 31.04 feet at Gatesville, 31.16 feet at Pidcoke on Cowhouse Creek, and 8.65 feet at Belton. The peak discharges for this flood at Gatesville, Pidcoke, and Belton were 31,000, 25,200 and 7,160 cfs, respectively.

jj. Storm of March 1998. The March 1998 storm produced an average depth of rainfall in southeast Texas of about 8.6 inches. The center of the storm was not in the Leon River watershed, but significant rains did fall in the basin, producing heavy flows in the Leon River. The flood produced by this storm reached stages of 39.70 feet at Pidcoke on Cowhouse Creek, 7.42 feet at Belton and 29.14 feet near Gatesville. The peak discharges for this flood near Pidcoke, Belton, and Gatesville were 60,500, 4,570, and 22,800 cfs, respectively.

kk. Storm of October 2003. Heavy rains occurred over the Leon River Basin during the summer and early fall of 2003. The October 2003 storm center received 8.9 inches of rainfall at Gatesville. The flood resulting from this storm reached stages of 27.28 feet at Gatesville. The peak discharge for this flood at Gatesville was 14,800 cfs.

ll. Storm of November 2004. Sustained rains in the basin during November and December 2004 reached 9.6 inches at Gatesville during the third week of November. The flood resulting from this storm reached stages of 27.36 feet at Gatesville, 30.20 feet at Pidcoke on

Cowhouse Creek, and 8.17 feet at Belton. The peak discharges for this flood at Gatesville, Pidcoke, and Belton were 15,000, 23,100, and 5,940 cfs, respectively.

mm. Storm of March-June 2007. In early March, most the lakes in the Brazos River Basin were below their respective conservation pools. The rains in mid-March saturated the soil over a wide region around the Waco area. Many streams and creeks that had been dry for over a year began to flow. The heavy rain that fell on 29 March was centered over Aquilla Lake where over 7 inches fell. The heavy rainfall pattern crossed the main stem of the Brazos River and extended across the Bosque River and over into the Leon River. Aquilla, Whitney, Waco, Belton, and Stillhouse Hollow Lakes all had high inflows and filled into their respective flood pools as a result of this storm event. As the flood wave traveled down the Brazos River, the observed peak flow at Hempstead was 69,100 cfs, where the controlled flow is 60,000 cfs. Had it not been for the nine Corps lakes in the Brazos River, the flow at Hempstead would have been over 187,000 cfs.

On the Little River system, a tributary of the Brazos River, the intense rains of 26-27 June sent a flood wave down the Leon River and into Proctor and Belton Lakes. Proctor Lake was about six feet above the top of the conservation pool before this event. The resulting flood wave had a peak inflow of 34,000 cfs into Proctor Lake, which raised it another 25 feet to a peak elevation of 1192.24 feet, which is the second highest recorded level since impoundment. Due to the resulting high volume of seepage through the embankment at Proctor Dam, a deviation was requested and approved to increase the release from the allowable 2,000 cfs to 4,000 cfs from the dam. The increased discharge did not cause significant damages or generate complaints from downstream property owners. Belton Lake was at about 13 feet above the top of the conservation pool before the intense rains fell. The ensuing flood wave resulted in a peak inflow into Belton Lake of approximately 43,000 cfs that raised the lake another 27 feet to a peak elevation of 629.64 feet, (2nd highest peak since impoundment) just 1.36 feet short of going over the uncontrolled spillway.

Heavy rains continued in the Leon River basin in the following months of May through June, with total rainfall of 22.53 inches at Stillhouse Hollow Lake. The Leon River near Gatesville reached a stage of 33.2 feet and a discharge of 40,700 cfs. On Cowhouse Creek, the river stage reached 36.71 feet and discharge 47,600 cfs. Figures 4-1 through 4-7 show the inundation of Corps property at Belton Lake during the 2007 flood. The observed peak flow at the USGS gauge on the Little River at Cameron was 35,900 cfs. If not for the five Corps lakes within the Little River Basin, the peak flow at the gage would have been approximately 102,600 cfs.

This 2007 flood caused Belton Lake to remain in the flood pool well into October 2007. The total inflow volume into Belton Lake from March through July was almost 1.5 million acre-feet, enough to fill the flood pool two and a half times.

nn. Storm of January 2010. Steady rains occurred over the Leon River Basin during the first three months of 2010. The January 2010 storm center received 3 inches at Gatesville. The flood resulting from this storm reached stages of 28.42 feet at Gatesville, 32.87 feet at Pidcoke

on Cowhouse Creek, and 7.86 feet at Belton. The peak discharges for this flood at Gatesville, Pidcoke, and Belton were 15,100, 33,200, and 5,250 cfs, respectively.

oo. Storm of May-July 2015. Consistent rain in Central Texas during one of the wettest months on record led to widespread flooding in the Dallas-Fort Worth and Houston areas, killing total 31 people in Texas and Oklahoma, and ending a four year-long drought. The May statewide average monthly rainfall was a record 8.81 inches, and multiple local rainfall records were also set during the month. Stations in the Belton Basin received 8-14 inches of precipitation. The flood resulting from this storm reached stages of 11.35 feet at Hasse, 28.57 feet at Gatesville, 22.98 feet on Cowhouse Creek at Pidcoke, and 8.50 feet at Belton. The peak discharges for this flood at Hasse, Gatesville, Pidcoke, and Belton were 1,680, 11,700, 14,700, and 6,490 cfs, respectively.

The USGS historical information of all the major floods is listed in Table 4-8 (pg. T4.8-1). The data shown in the table covers the period 1900 to 2015.

Figures 4-2 through 4-8 are the scenes of the May to June 2007 flood at Belton Lake.



Figure 4-2. High Water Level



Figure 4-3. Lake Elevation near Embankment



Figure 4-4. Park Pavilion



Figure 4-5. Access Road



Figure 4-6. Access Road



Figure 4-7. Access Road



Figure 4-8. Lake Beach

4-07. Runoff Characteristics. Floods may occur at almost any time of year in the Leon River watershed. The watershed consists mainly of rolling ground with scattered wooded areas that are mostly in the bottomlands, and surface drainage is moderate to rapid. Practically the entire flow of the Leon River results from surface runoff, there being little contribution from seepage or springs. Topography of the watershed and character of the soils favor a rapid runoff. Systematic river stage and runoff observations were made and recorded in the Leon River watershed from 1923 to 1968, where runoff was calculated on six reaches of the Leon River and Cowhouse Creek. Average annual runoff from those six sites was 2.3 inches, ranging from 1.25 inches for the 1,914 square mile subbasin on the Leon River near Hamilton, Texas to 3.43 inches on the 643 square mile subbasin on Cowhouse Creek near Killeen.

The computed monthly and annual inflow volumes, based on change in lake storage, are shown in Table 4-9 (pg. T4.9-1). The monthly inflow volume exceedence frequency curves, based on data from 1953 to 2015 are shown on Plates 4-3 through 4-14. Table 4-10 shows the monthly inflow volume frequency for the 5-, 10-, 25-, and 50-year events.

TABLE 4-10

Belton Lake Monthly Inflow Volume Frequency

MONTH	Inflow Volume in Acre-Feet Frequency of Occurrence in Years			
	5	10	25	50
January	46,362	97,181	211,590	288,537
February	76,108	156,550	323,851	447,500
March	104,217	156,712	226,106	278,601
April	81,184	148,360	239,535	311,788
May	118,331	231,143	436,432	541,693
June	107,142	160,524	231,092	284,474
July	34,606	66,406	164,946	339,647
August	28,781	56,774	100,411	130,212
September	34,022	67,697	112,802	105,042
October	35,345	73,749	178,943	320,874
November	24,947	49,784	122,350	236,813
December	28,930	56,672	152,171	352,249

NOTE: Based on computed inflows for period May 1953 to July 2015.

4-08. Water Quality. Texas Commission on Environmental Quality (TCEQ) publishes the assessment reports for the quality of surface waters for the Brazos River Basin. The available data indicate that there are no water quality concerns in Belton Lake. All monitored parameters were classified as either “Fully Supporting” their designated uses of public water supply and fish consumption, “No Concern”, or “Not Assessed”. However, a number of river segments adjacent to Belton Lake are included on the 303(d) list for not meeting water quality standards for bacteria.¹⁴

The United States Environmental Protection Agency (EPA) also released the water body reports and water quality assessment for Belton Lake for period 2002 to 2010. The designated uses of the lake that were assessed were general use to be “good” and fish consumption use to be “not assessed” in the reports. In 1998, the entire Leon River below Proctor Lake was listed as “impaired” on the State of Texas Clean Water Act Section 303(d) List for having fecal coliform bacteria concentrations that exceeded the state's water quality standards. In 2002, as a result of more focused water quality monitoring, that listing was limited to the portions of the Leon River north of Gustine and west of US Hwy 281. In 2002, the TCEQ initiated a Total Maximum Daily Load (TMDL) assessment of the Leon River in order to understand the degradation and plan strategies for remediation. In 2006, as a result of the 2002 TMDL project, local stakeholders led by the BRA were given an EPA grant to develop a Watershed Protection Plan. The final report on this project, “Watershed Protection Plan for the Leon River below Proctor Lake and Above Belton Dam” was issued in October 2011. The report was produced with participation from local stakeholders with the proposed goal of an approximately 20% reduction in fecal coliform bacteria levels to meet state water quality standards. The proposed management strategies will involve participation from water treatment facilities, municipal water collection agencies, wildlife management, and agriculture and livestock owners.

The USGS sampled eight sites for Belton Lake on three different occasions in 1998 (12 February 1998, 5 May 1998, 17 August 1998) and one occasion in 1994 (19 January 1994) for various biological and chemical parameters.¹⁵ The mean concentrations of the various parameters are shown in Table 4-11. The sampling results indicate that the levels of the various biological and chemical constituents monitored are generally within the criteria set by the Texas Department of Water Resources. Samples taken during the summer months, when the lake becomes thermally stratified, were found to have levels of some parameters that were outside the normal standards.

¹⁴ www.tceq.state.tx.us/waterquality/assessment/12twqi/twqi12

¹⁵ nwis.waterdata.usgs.gov/usa/nwis/qwdata/?huc_cd=12070201&format=station_list&sort_key=site_no&index_pmcode_00065=3&index_pmcode_00060=4&index_pmcode_00062=5&index_pmcode_72020=6&sort_key=site_no&group_key=county_cd&sitefile_output_format=station_list

TABLE 4-11
USGS Water Quality Sampling, 1994-1998

Major Constituents	Mean Concentrations (1)						
	Station AC	Station BC	Station EC	Station FC	Station GC	Station HC	Station IC
Dissolved Oxygen @ 1.0 ft depth	7.9	8.0	8.3	8.4	8.3	7.9	8.5
Dissolved Oxygen @ 10.0 ft depth	7.8	7.7	8.3	8.3	7.9	7.4	7.7
Specific Conductance, mho/cm	428.3	431.0	429.3	433.0	435.7	470.0	502.3
Total Dissolved Solids	229.0	—	—	—	291*	—	270.3
pH (Standard Units)	8.3	8.3	8.4	8.4	8.3	8.3	8.4
Temperature, F	68.9	69.5	70.4	71.6	71.3	70.7	71.6
Alkalinity (mg/l as CaCO ₃)	130.0	—	—	—	140*	—	143.0
Hardness, non-carbonate (mg/L as CaCO ₃)	34.0	—	—	—	46*	—	38.0
Transparency (M)	1.8	—	—	—	1.4	—	0.7
Ammonia Nitrogen (mg/l as N)	0.0	—	—	—	0.1	—	0.0
Nitrate + Nitrite Nitrogen (NO ₂ + NO ₃) (mg/l as N)	0.3	—	—	—	0.4	—	0.5
Sodium (dissolved) mg/l as Na	21.7	—	—	—	34*	—	27.1
Potassium (dissolved) K	4.1	—	—	—	4.4*	—	4.4
Chloride (CL)	32.4	—	—	—	57*	—	43.1
Sulfate (SO ₄)	26.9	—	—	—	40*	—	34.0
Calcium (Ca)	46.9	—	—	—	49*	—	53.1
Magnesium (Mg)	11.4	—	—	—	15*	—	12.4
Silica (SiO ₂)	6.2	—	—	—	7.5*	—	6.3
Fluoride (F)	0.3	—	—	—	0.3*	—	0.3
Manganese (Mn)	<4.0	—	—	—	<4.0	—	<4.0

TABLE 4-11 (CONTINUED)**USGS Water Quality Sampling, 1994-1998**

Major Constituents	Mean Concentrations (1)						
	Station AC	Station BC	Station EC	Station FC	Station GC	Station HC	Station IC
Fecal Coliform	(colony count/100 ml)						
Winter	2.0	—	—	—	—	—	6.0
Spring	0.0	—	—	—	—	—	1.0
Summer	0.0	—	—	—	—	—	0.0

(1) Measurements are in mg/L unless otherwise stated. Mean averages are taken at a 1.0-foot depth unless otherwise stated.

NOTES: 1. The water quality sampling for all parameters was conducted on the following dates:

Winter: 1 Feb 98; Spring: 5 May 98; and Summer: 17 Aug 98.

2. *Indicates concentration recorded 19 January 1994.

4-09. Channel and Floodway Characteristics. The Little River from the mouth of the Leon River to the mouth of the Brazos River has a capacity of 10,000 cfs. The existing channel capacities are shown in Table 4-12.

The estimated travel time for flood flows from Belton Lake (river mile 16.7) to the Leon River gage near Belton (river mile 13.1) is about 1-3 hours, to Little River gage near Little River (river mile 95.8) is about 9-17 hours, and to Little River at Cameron gage (river mile 33.2) is about 43-57 hours. The flood peak travel times in the Leon River basin are shown in Table 4-13.

The locations of the USGS stream gages in the Leon River Basin are shown on Plates 5-1a and 5-1b, respectively. Discharge rating curves for the key control points are shown on Plates 4-15 through 4-20. These curves are only valid for rough use. The rating curves used by the Water Resources Branch are adjusted by the USGS for changing conditions and reflect the current stage-flow relationships at the gages.

TABLE 4-12

Channel Capacities on Leon and Little Rivers

Reach	Channel Capacity (cfs)
Leon River to mouth	10,000
Little River to mouth	10,000
Brazos River to mouth	60,000

Table 4-13 and Plate 4-21 show flood peak travel times between upstream gages and Belton Lake and between Belton Lake and the downstream gages on the Little River and Brazos River.

TABLE 4-13

**Flood Peak Travel Time between Belton Lake and the Gage at Hempstead
on the Brazos River**

Stream Gaging Station and Stream	Travel Time in Hours From:		
	Belton Lake	Stillhouse Hollow Lake	Proctor Lake
<u>Leon River:</u>			
Hasse	—	—	1 to 2
Hamilton	—	—	23 to 28
Gatesville	—	—	77 to 104
<u>Little River:</u>			
Belton	—	—	101 to 152
Belton (Leon River)	1 to 3	—	—
Belton (Lampasas River)	—	1 to 3	—
Little River	9 to 17	9 to 15	—
Cameron	43 to 57	43 to 57	—
<u>Brazos River:</u>			
Valley Junction	67 to 89	67 to 89	—
Bryan	77 to 103	77 to 103	—
Hempstead	95 to 127	95 to 127	—

NOTE: Based on “Belton Lake Regulation Manual” revised in April 1976 and “Whitney Reservoir Regulation Manual” revised in February 1975.

4-10. Upstream Structures. The USACE Fort Worth District operates Proctor Lake, which is located on the Leon River, approximately 90 miles upstream from Belton Lake. Proctor Lake has a conservation pool capacity of 310,100 acre-feet and is used for flood control, water supply, and recreation.

Lake Leon, with a capacity of 27,290 acre-feet, is owned and operated by the Eastland County Water Supply District for municipal and industrial water supply purposes. It sits on the Leon River five miles southeast of Eastland, Texas, at river mile 274.1.

4-11. Downstream Structures. The Leon River meets the Lampasas River just downstream of Belton Lake to form the Little River, which eventually empties into the Brazos River. Belton Lake is part of the Brazos River basin system, which is comprised of nine USACE flood control

projects: Whitney Dam, Aquilla Dam, Waco Dam, Proctor Dam, Belton Dam, Stillhouse Hollow Dam, North San Gabriel Dam (Lake Georgetown), Granger Dam, and Somerville Dam. None of these dams are directly downstream of Belton Lake on the Leon River. Stillhouse Hollow Dam, North San Gabriel Dam (Lake Georgetown), Granger Dam, and Somerville Dam are on tributaries of the Brazos River or on tributaries of the Brazos River that are confluent downstream of Belton Lake.

4-12. Economic Data. The Leon River Watershed is rural, with an economy based on agriculture and manufacturing. The Belton Lake drainage area comprises parts of 7 counties in south central Texas.

Based on the information published by U.S. Census Bureau Texas State Data Center, the population within the Leon River basin has continually increased over the last 50 years. Population projections indicate that growth is anticipated to continue. County Business Patterns (CBP), a database published by the U.S. Census Bureau, provides valuable information on the number of industrial and business establishments within a particular county.¹⁶ Sectors that are typically heavy consumers of water include: agriculture and livestock, steam-electric, mining, manufacturing, professional, scientific and technical services, health care and social assistance, and accommodation and food services, and military installations. For some of the major counties in the basin, CBP data was reviewed for a 12-year period from 2000 to 2012. Water use in the watershed area is approximately 40 percent municipal, 40 percent agricultural, and 20 percent mining, manufacturing and steam-electric.¹⁷ The most concentrated water uses in the area are municipal use in Bell County and agricultural use in Comanche County. In counties adjacent to the watershed area there are also concentrated water users - municipal use in McLennan County, industrial use in Somervell County and agricultural use in Haskell and Knox Counties.

The following sections provide information on population, agricultural production, and industries in the counties in the Leon River Basin and surrounding area.

a. Population. Belton Lake lies within Bell and Coryell counties. Based on the 2013 U.S. Census Bureau data, Bell County has a population of 326,843, of which 42 percent, or 137,147 people, is in Killeen and 5.5 percent, or 18,216 people, and is in Belton, the county seat. Coryell County has a population of 75,388 of which 20 percent, or 15,399, is in Gatesville. Killeen is 10 miles west of the lake, Belton is 4 miles south of the lake, and Gatesville is 20 miles northwest of the lake.

The population growth of the 7 counties within the Leon River Basin since the construction of Belton Dam is shown in Table 4-14. Although varying proportions of the total population of the counties listed lie within the watershed boundaries, the entire population of each county is provided.

¹⁶ www.census.gov/econ/cbp/

¹⁷ www.twdb.texas.gov/waterplanning/rwp/regions/g/

TABLE 4-14**Population Growth of Counties within the Leon River Basin**

County	1960	1970	1980	1990	2000	2010
Bell	94,097	124,483	157,889	191,088	237,974	310,235
Comanche	11,865	11,898	12,617	13,381	14,026	13,974
Coryell	23,961	35,311	56,767	64,213	74,978	75,388
Erath	16,236	18,141	22,560	27,991	33,001	37,890
Hamilton	8,488	7,198	8,297	7,733	8,229	8,517
Lampasas	9,418	9,323	12,005	13,521	17,762	19,677
Mills	4,467	4,212	4,477	4,531	5,151	4,936

NOTE: Source: Census.gov

b. Agriculture. Almost 90 percent of the Brazos River Basin was classified farmland. About one-third of that farmland is cropland with the remaining area dedicated to livestock. According to the 2011 Brazos G Regional Water Plan, irrigation and livestock comprises about 40 percent of the region's water use.¹⁸ This amount of water use is projected to hold constant in coming decades. Table 4-15 lists the acreage of cropland planted in each major crop, the total agricultural acreage, the quantity of livestock, and the agricultural income for each county during the year 2007.

¹⁸ www.twdb.texas.gov/waterplanning/rwp/regions/g/

TABLE 4-15**Agricultural Production for Major Counties in Leon River Basin, 2007**

Product	Bell County	Comanche County	Coryell County	Erath County	Hamilton County	Lampasas County	Mills County
Corn (acres)	61,766	813	8,139	465	D	D	—
Cotton (acres)	2,889	—	338	—	—	D	D
Oats (acres)	2,502	554	5,274	661	6,275	752	1,248
Sorghum (acres)	13,096	3,992	3,894	5,598	2,132	—	158
Wheat (acres)	15,683	1,754	8,907	1,433	2,583	399	841
Cropland Planted (acres)	183,837	170,318	120,881	165,049	97,603	70,636	74,638
Land in Farms and Ranches (acres)	431,945	578,943	488,358	622,923	470,850	416,018	474,226
Cattle (1000 head)	52	122	66	165	61	33	42
Crop Market Value*	31,955	21,569	6,763	12,882	4,390	2,122	5,301
Livestock Market Value*	29,792	123,358	33,386	237,310	46,986	11,850	32,343
All Agriculture Market Value*	61,748	144,928	40,148	250,192	51,375	13,972	37,644

- NOTES: 1. (D) Withheld to avoid disclosing data for individual farms.
2. Data from 2007 Census of Agriculture, prepared by National Agricultural Statistics Service, U.S. Department of Agriculture.
3. * Quantity given in \$1,000s.

c. **Industry.** Due to the size of the Leon River Basin, a large variety of industries are represented in the area. According to the 2011 Region G Water Plan, Municipal and Industrial uses comprise about 40% of the region's total water use, and is projected to increase to 50% by 2060.¹⁹ Table 4-16 gives the estimated number of people employed in various industries in each county, as compiled by the 2012 United States Census.

¹⁹ www.twdb.texas.gov/waterplanning/rwp/regions/g/

TABLE 4-16**Employment in Counties within the Leon River Basin, 2012**

Industry	Number Employed						
	Bell County	Comanche County	Coryell County	Erath County	Hamilton County	Lampasas County	Mills County
Agriculture, Forestry, Fishing & Hunting	7	175	—	108	60	—	10
Construction, Mining, Oil & Gas	3,583	20	691	688	380	572	28
Manufacturing	5,666	112	288	2,614	208	500	60
Trade, Transportation & Utilities	19,118	769	2,671	2,920	523	732	241
Finance, Insurance, & Real Estate	4,073	202	512	434	71	160	70
Professional, Scientific & Business Services	4,312	104	739	353	20	105	10
Education & Healthcare	23,174	622	1,184	1,598	543	697	171
Arts, Leisure & Hospitality	12,437	184	1,329	1,688	169	471	114
Communication & Information	2,962	67	175	122	10	32	60
Public Administration	3,300	10	1,365	515	10	24	10
Other Services	4,537	114	640	687	96	252	72
Total	83,169	2,379	9,594	11,727	2,090	3,545	846

NOTE: Data from the United States Census, 2012.

d. Flood Damages. The flood damages prevented in the Leon River Basin by Belton Dam during fiscal year 2015 was estimated to be \$22,728,800. The cumulative damages prevented since the completion of the projects in 1965 through 2015 are \$289,876,584 and the average is \$5.7 million per year. Table 4-17 and Table 4-18 show discharge versus damages incurred for agricultural and non-agricultural on the Little River at both Cameron and Little River.

TABLE 4-17

Discharge versus Damages on Little River at Cameron, 2014

Discharge (cfs)	Damages (X\$1,000)						
	Crops (1)	Crops (2)	Crops (3)	Crops (4)	Crops (C)	Other ag.	Non-ag.
3,500	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0
30,000	\$393.4	\$265.6	\$130.4	\$56.0	\$145.6	\$150.1	\$145.1
50,000	\$987.2	\$666.3	\$372.2	\$140.6	\$366.0	\$554.7	\$331.1
100,000	\$1,172.3	\$791.3	\$388.6	\$166.9	\$433.8	\$726.2	\$445.2
200,000	\$1,349.5	\$911.0	\$447.4	\$191.1	\$499.2	\$879.1	\$544.2
300,000	\$1,468.6	\$991.3	\$486.8	\$209.1	\$543.4	\$989.8	\$612.3
400,000	\$1,567.3	\$1,057.9	\$519.5	\$223.2	\$579.9	\$1,080.4	\$653.0
500,000	\$1,642.9	\$1,109.0	\$544.6	\$233.9	\$607.8	\$1,163.2	\$680.2
650,000	\$1,746.3	\$1,178.8	\$578.9	\$248.0	\$646.0	\$1,376.3	\$701.8

Crops (1) = Jun, Jul, Aug

Crops (2) = Sep

Crops (3) = Apr, May, Oct

Crops (4) = Jan, Feb, Mar, Nov, Dec

NOTES: 1. This table is estimated on roughly available data.

2. Price levels are for September 2014. To convert the prices to a different year, average annual cost indexes must be applied.

TABLE 4-18**Discharge versus Damages on Little River at Little River, 2014**

Discharge (cfs)	Damages (X\$1,000)						
	Crops (1)	Crops (2)	Crops (3)	Crops (4)	Crops (C)	Other ag.	Non-ag.
3,500	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0
20,000	\$40.0	\$95.1	\$142.5	\$368.1	\$182.4	\$89.1	\$105.9
50,000	\$114.5	\$272.4	\$407.9	\$1,053.2	\$522.0	\$670.3	\$257.0
75,000	\$122.4	\$291.6	\$436.7	\$1,127.5	\$558.7	\$740.6	\$286.8
100,000	\$129.4	\$308.1	\$461.4	\$1,191.5	\$590.5	\$802.1	\$313.4
150,000	\$140.5	\$334.4	\$501.0	\$1,293.4	\$640.9	\$901.9	\$363.8
200,000	\$148.3	\$352.9	\$528.5	\$1,364.6	\$676.2	\$985.8	\$411.2
300,000	\$158.0	\$376.2	\$563.5	\$1,454.8	\$720.9	\$1,134.1	\$508.0
400,000	\$163.8	\$390.2	\$584.5	\$1,508.9	\$747.7	\$1,223.1	\$566.1

Crops (1) = Dec, Jan, Feb

Crops (2) = Nov, Mar, Apr

Crops (3) = May, Oct

Crops (4) = Jun, Jul, Aug, Sep

NOTES: 1. This table is estimated on roughly available data.

2. Price levels are for September 2014. To convert the prices to a different year, average annual cost indexes must be applied.

CHAPTER V - DATA COLLECTION AND COMMUNICATION NETWORKS

5-01. Hydrometeorological Stations.

a. Facilities. The Water Resources Branch of the USACE, Fort Worth District, the NWS, and the USGS cooperate to collect hydrometeorological data and maintain a reliable communication network. Plate 5-1a shows the locations of USGS stream gages in the Brazos River Basin. Commercial television weather services provide current radar and forecasted weather conditions to assist the Water Resource Branch in monitoring storm events.

1. Precipitation Gages. The NWS and USGS maintain a network of rain gages and observers throughout the Leon River basin. The NWS precipitation gages used to forecast runoff in the Leon River Watershed are listed in Table 5-1 and are shown on Plate 5-3, respectively.

TABLE 5-1
Upstream NWS Precipitation Gages

Name of Station	Description
Belton Dam	Recording
Gatesville 4 SSE	Recording
Temple	Recording
Stillhouse Hollow Dam	Recording
McGregor	Recording
Killeen	Recording
Graham	Recording
Breckenridge	Recording
Abilene	Recording
Weatherford	Recording
Dublin	Recording
Hico	Recording
Brownwood	Recording
Eastland	Recording
Albany	Recording
Haskell	Recording
Ballinger	Recording
Coleman	Recording

2. Weather Radar Sites. The NWS maintains 12 Doppler radar sites across Texas for surveillance of immediate weather conditions. The NWS also cooperates with the Department of Defense to obtain radar information from four military sites in Texas.

3. Stream Gages. The USGS maintains 14 stream gages in the Leon River Basin. The gages are listed in Table 5-2A. The stream gages designated as key stations for forecasting and regulating Belton Dam are listed in Table 5-2B. A hydrologic gage network was established for use in connection with the operation of the Belton Dam. The hydrologic gage network for the Leon River Basin is shown on Plate 5-1b. The travel times for flows from Proctor Dam to Belton Dam is shown on Plate 5-2.

TABLE 5-2A**USGS Stream Gages in Little River Basin**

Station Number	Name of Station	Description
08099100	Leon River near De Leon	Recording
08099300	Sabana River near De Leon	Recording
08099400	Proctor Lake near Proctor	Recording
08099500	Leon River near Hasse	Recording
08100000	Leon River near Hamilton	Recording
08100500	Leon River at Gatesville	Recording
08101000	Cowhouse Creek at Pidcoke	Recording
08102000	Belton Lake near Belton	Recording
08102500	Leon River near Belton	Recording
08103800	Lampasas River near Kempner	Recording
08104000	Lampasas River near Youngsport	Recording
08104050	Stillhouse Hollow Dam	Recording
08104100	Lampasas River near Belton	Recording
08104500	Little River near Little River	Recording
08104900	South Fork San Gabriel River at Georgetown	Recording
08105700	San Gabriel River at Laneport	Recording
08106500	Little River near Cameron	Recording

TABLE 5-2B

Key Regulating Stations for Belton Dam

Station Number	USGS Gage Station	Method of Reporting
08099500	Leon River near Hasse	Satellite Telemeter
08100000	Leon River near Hamilton	Satellite Telemeter
08100500	Leon River at Gatesville	Satellite Telemeter
08101000	Cowhouse Creek at Pidcoke	Satellite Telemeter

b. Reporting. Data Collection Platforms (DCPs) have been installed at all USACE, Fort Worth District, lakes, and at numerous stream gages and precipitation stations. The DCPs transmit hydrometeorological data using the Geostationary Operational Environmental Satellite (GOES) to the NOAA Center in Wallops Island, Virginia. The data are then decoded and re-transmitted using Domestic Satellites (DOMSATs), making the data available for nationwide reception. The Water Management Office captures, processes, and stores the data in the Fort Worth District’s Water Control Data System (WCDS).

The Water Management Office collects and stores the majority of hydrometeorological data in the WCDS. Thus, hourly lake elevations and stream gage stages are stored in the WCDS network. Some meteorological and hydropower data are collected by telephone. Project personnel collect precipitation, evaporation, and, maximum and minimum air temperature data from weather stations. The information is reported to the Water Management Office by e-mail or sometimes by facsimile and telephone.

The Water Management Office personnel use the data in the WCDS to operate the 27 lakes that the Fort Worth District manages. All the data entered into the WCDS is stored in a database and used for water management decisions, to generate reports, and to conduct hydrologic studies. The Water Management Office also serves as a source of hydrologic data for state and local government agencies and the general public.

c. Maintenance. Maintenance costs are shared among the USGS, NWS, USACE, TWDB, and various river authorities. Maintenance and repair of the weather station instrumentation are the responsibilities of the NWS. Maintenance and repair of stream gaging stations are the responsibility of the USGS. Assistance in gage repair can be obtained by contacting the USGS in Fort Worth, Texas, at (817) 263-9545.

5-02. Water Quality Stations. The USGS collects data and monitors the water quality in Belton Lake at eight stations near the dam. In addition, TCEQ and BRA monitor water quality using 124 active monitoring stations through Brazos River Basin.

a. Facilities. The eight designated sites where USGS water quality samples are taken for Belton Lake are stations AC, BC, CC, EC, FC, GC, HC, and IC. The chemical, biological, and field parameters are measured in these eight sites. Table 4-11 shows the most recent data for constituents sampled on Belton Lake.

The Brazos River Basin is divided into 124 segmented water bodies by TCEQ to report water quality information. The Segment 1220, “Belton Lake”, is designated to provide the water quality data for the reservoir.

b. Reporting. The USGS summarizes and publishes its collected water quality data annually in the “Water Resources Data: Texas” book for its current sampling locations. However, Belton Lake is not sampled yearly and only years for which it was sampled are published in the yearly data book.

The “Texas Integrated Report of Surface Water Quality,” formerly called the “Texas Water Quality Inventory and 303(d) List,” evaluates the quality of surface waters in Texas, and provides resource managers with a tool for making informed decisions when directing agency programs. The TCEQ publishes the report every 2 years (in even-numbered years). The water quality assessment results for Belton Lake are included in the report.

c. Maintenance. Maintenance and calibration of the equipment related to water quality are conducted or monitored by USGS and TCEQ.

5-03. Sedimentation and Degradation Ranges.

a. Facilities. The sedimentation ranges, which are needed to determine the rate of sedimentation and the location of sediment deposits, were established as directed in Engineer Regulation (ER) 1100-2-240 and Engineer Manual (EM) 1100-2-4000.

1. Sedimentation Ranges. There are 68 sedimentation ranges in the Belton Lake area (Plate 4-2). The ranges cross the lake normal to the original stream flow as practical. The elevations and locations of the monuments are referenced to appropriate datum systems established by other Federal agencies. Monuments are used at multiple locations for future survey at common reference points. Sedimentation ranges have not been utilized at Belton Lake since the 1961 survey. The TWDB uses bathymetric survey independent of the USACE established sedimentation ranges.

2. Degradation Ranges. There are twelve degradation ranges downstream Belton Lake and Dam (Plate 4-2). Each range consists of two or more permanent monuments placed at selected locations along the discharge channel downstream of the dam.

b. Reporting. The frequency of sedimentation surveys will depend on hydrologic conditions and the need for determining sediment deposition and storage depletion. Normally, a period of no more than 20 years would elapse between sedimentation surveys. However, sedimentation surveys are currently done periodically depending on need and funding availability. Complete or partial surveys will be made of degradation ranges, as found necessary on the basis of reconnaissance.

For Belton Lake, five surveys have been performed since 1948, including the historical 1948 USACE original design, the 1961 survey, the 1966 survey, the 1994 TWDB volumetric survey, and the 2003 TWDB volumetric survey. The 2003 TWDB survey results indicated that the surface area had reduced from 12,300 acres in the original design to 12,135 acres and the volume reduced from 457,600 acre-feet of water in the original design to 435,225 acre-feet of water at top of the conservation pool elevation 594.0 feet.

c. Maintenance. Project personnel will inspect the survey monuments to determine their respective conditions. A report will be forwarded to the Water Management Office following the inspection that describes the condition of the monuments not found, destroyed, or otherwise disturbed. Monuments and witness points that have been damaged or are missing will be replaced and reset. Completion of monument surveys is dependent on funds and personnel availability.

5-04. Recording Hydrologic Data. Hydrologic information is recorded as the Water Management Office receives it. The recording procedures for each type of data are as follows:

a. Stages and Lake Elevations. Stream stage and lake stage data are recorded every 15 minutes and transmitted every hour by the DCPs through a GOES Satellite to Wallops Island, VA, then retransmitted to a DOMSAT. The District's WCDS accesses the data by a downlink. The recorded data and monthly data summaries are kept in the reservoir logbooks and in other Water Management Office files. Additional data sets from non-Corps reservoirs are received from the Internet, by facsimile, and/or by telephone.

b. Precipitation. Hourly precipitation data from numerous DCPs across the state are transmitted to the Water Management Office in the manner described in paragraph 5-04.a. The Water Management Office also receives precipitation data from the NWS and other precipitation observers through the Automated Field Observations and Services (AFOS) system and stores the data in the WCDS. The NWS daily state precipitation summary is filed and retained for approximately 1 year. The Water Management Office receives daily rainfall and weather reports from 22 of the 25 District lakes, including Belton Lake.

c. Temperature Data. The lake personnel record the daily maximum and minimum air temperatures at the lake.

d. Radar Reports. The Water Management Office receives radar images and weather information from commercial weather services by cable TV. This information is used primarily

for short-term decision making. The weather reports are updated throughout the day by the NWS.

5-05. Communication Network. Belton Lake is served by telephone, facsimile, email, and cell phone. The telephone number for the Belton Lake project office is (254) 939-2461.

The National Telecommunications and Information Administration (NTIA) and the Department of Commerce, assign radio frequencies exclusively to the USACE. The assigned VHF FM frequencies are 163.5125 and 163.4375 MHz. Both of the VHF FM frequencies are maintained at most project offices and in some vehicles assigned to the Fort Worth District. The radio equipment using the VHF FM frequencies will only transmit about 20 miles. Therefore, radio communications cannot be made between the Belton Dam project office and the Fort Worth District Office, or between other district lakes.

If necessary, the Fort Worth District Emergency Operation Center (EOC) can contact other districts in the SWD by HF side-band radio during an emergency. This radio frequency is good for communications between the EOCs in Fort Worth, Texas, Galveston, Texas, Little Rock, Arkansas, and Tulsa, Oklahoma.

5-06. Communication with the Project.

a. Water Resources Branch with Project Office. The primary mode of communication between the Belton Lake project office and the Water Resources Branch is by telephone. In addition, communication is made by fax, email, and cell phones as backups to the Lake office telephone. Should communication between the project and the District be disrupted, the Lake Manager would direct regulation of the lake on his or her own initiative in accordance with the Emergency Rules and Regulations listed in Section 7-05 and Exhibit C of this manual.

b. Between Project Office and Others. The Lake Manager will maintain a current list of the residents and/or property endangered or inconvenienced by large and/or prolonged releases in order to give adequate warning before such releases. Warning of possible flood conditions can be conveyed by telephone, radio, television, citizens-band radio, use of law enforcement personnel, and civil defense agencies and their communications systems. National Guard, Reserve Military Units, and citizen volunteers may also be needed to convey warning messages. Plate 5-4 shows a schematic of the lines of communication for use in routine communications and in case of an emergency.

5-07. Project Reporting Instructions. Both daily lake operation information and emergency lake operation information will be submitted to the Water Management Office of the Fort Worth District.

a. Daily Operations. Daily reservoir data will be submitted to the Water Management Office on regular working days by facsimile or electronic mailing between 0800 and 0845 hours each morning for transmission of hydrologic data. For electronic mailing, the Internet Web site

is: (<http://www.swf-wc.usace.army.mil>). Project personnel will confirm gate changes and promptly report all scheduled or unscheduled equipment outages affecting water control by telephone at (817) 886-1551 or by facsimile at (817) 886-6472 or by email at CESWF-OD-L@usace.army.mil. The Water Resources Branch may request additional information as needed.

Daily data reported to the District Office include the following: (1) As of 0800 hours – Reservoir elevation: number of gates open and increments of opening, precipitation and evaporation for the preceding 24 hours, weather conditions and maximum and minimum temperatures, if required. (2) Each gate operation – All changes in gate operation, including time of gate operation, increments of opening, and reservoir elevation at time of each gate operation for the preceding 24 hours. (3) Stage report – During flood periods, besides the regular 0800-hour reading from the reservoir and reporting gages (Gatesville, Hamilton, Hasse, Little River, Cameron, and Belton Lake), include the 0000-hour (midnight) reading, which may be read from the recorder charts.

b. Emergency Operations. In the event of an emergency or flood situation, the Lake Manager will notify key personnel in the Fort Worth District Water Management Office. A list of these names will be posted on the project bulletin board. These names are shown on page iii, Notice to Users of This Manual. If unusual conditions arise during non-working hours, one of the persons listed on page iii should be contacted.

5-08. Warnings. Before any major increase in discharge due to operation of the gates, warning of such operation shall be given to parties in the immediate area downstream of the dam. A warning horn will be sounded for 10 seconds to alert people downstream at least 2 minutes before any appreciable increase or decrease in the release rate from the dam. After the horn sounds, the operator will observe the downstream area to ensure that no one remains there. Signs in the discharge area shall state the meaning of the warning signal. A warning horn will be sounded from the dam only during the initial releases. The law enforcement agencies shown in Table 5-3 may also be contacted to assist in warning the public and evacuating downstream areas.

TABLE 5-3

Law Enforcement and Key Belton Project Telephone Numbers

Agency	Telephone Number
Texas Department of Public Safety, Temple, Texas	(254) 770-6734
City of Belton Police Dispatch	(254) 933-5840
Belton Lake Manager	(254) 913-2839
Belton Lake Rangers	(254) 939-2461
BRA Office Dispatch	(254) 939-2461
Sheriff, Bell County	(254) 933-5412

CHAPTER VI – HYDROLOGIC FORECASTS

6-01. General. Hydrologic forecasts of stream flow amounts are made daily to maintain the current status of the Brazos River Basin for flood control and water supply.

a. Role of Corps of Engineers. Hydrologic forecasts are made by the Water Management Office for use in the regulation of lakes to maximize flood control, water supply, and other authorized purposes. The forecasts are furnished to project personnel and other USACE personnel with a need for this information. Planned changes in the release rates are furnished to the National Weather Service River Forecast Center (NWS-RFC) in Fort Worth, Texas. The Public Affairs Office, which is kept informed of the lake conditions, makes news releases.

b. Role of Other Agencies. The NWS-RFC provides information about river flow and flood forecasts to USACE and the general public. The NWS Weather Wire circuit disseminates this information to subscribing government agencies and news media. The National Weather Service Weather Service Forecast Offices (NWS-WSFO) issues routine reports containing the following information:

1. Weather forecasts (daily forecasts, severe weather forecasts, and 5-day extended forecasts).
2. Quantitative precipitation forecasts: Four successive 6-hour precipitation forecasts are updated every 12 hours. Three successive 24-hour precipitation forecasts are updated every 12 hours.
3. Three-day river stage forecasts, when conditions warrant, from the NWS-RFC.
4. Urgent priority messages such as severe weather warnings, severe weather watches and statements, and instructions from civil defense centers during emergency situations.
5. Other information reports, on a periodic basis:
 - (a). Winter weather and road conditions
 - (b). River and flood warning bulletins
 - (c). Damage reports
 - (d). Thirty-day weather forecasts

6-02. Flood Control Forecasts.

a. Requirements. Flood forecasts are required whenever substantial rainfall has fallen above or below Belton Dam or during the evacuation of the flood pool from Belton Lake.

b. Methods. Water Managers continually monitor and adjust water releases at USACE projects based on ever-changing hydrometeorological conditions. The Corps Water Management System (CWMS) is the automated decision support tool developed for USACE Water Managers. CWMS tracks the hydrologic cycle and performs scenario-based forecasts that can include stage and flow forecasts, project release scheduling and release review, emergency activation alerts, inundation mapping and economic damage reporting. The CWMS Automated Information System was developed by the USACE Hydrologic Engineering Center (HEC) under funding from the Water Management Community of Practice and has been implemented to varying degrees at various USACE Water Management Offices. A CWMS forecasting model has been developed for the Leon River Basin by the Fort Worth District, HEC, and the USACE MMC (Modeling, Mapping, and Consequences) Production Center. The USACE makes the following forecasts with assistance from the NWS.

1. Predicting Inflow into Belton Lake. A rainfall-runoff HEC-HMS model was developed within CWMS by the Fort Worth District for the Leon River Basin above the Belton gage. This model is used to predict the inflow into Belton Lake. The inflow forecasting model consists of HEC-METVUE and HEC-HMS models that are linked to real-time data with CWMS. Both models use a 1-hour time interval.

Precipitation estimates are available from two main sources: precipitation gages and radar. The NWS uses the data from these sources to produce a suite of hydrologic forecasts. Weather Surveillance Radar-1988 Doppler (WSR-88D), also known as Next Generation Weather Radar (NEXRAD), observes the presence of severe weather and calculates the speed and direction of the weather. The WSR-88D also provides estimated quantitative area precipitation amounts.

The NWS adds to the accuracy of the WSR-88D quantitative precipitation estimates (QPE) through a procedure for improving the radar estimates of rainfall that is referred to as “ground truthing.” The precipitation data set produced from the ground truthing is known as the Multi-sensor Precipitation Estimate (MPE). The NWS and other agencies may poll some automated gages on a 4-hour basis, and the poll results may also be used for ground truthing.

Hourly NWS gridded rainfall data is downloaded from the NWS West Gulf Forecasting Center in real-time and processed into HEC-DSS format using HEC-METVUE. The HEC-HMS model is then used to compute runoff from the gridded precipitation. Initial and uniform losses are adjusted to real-time basin conditions within CWMS. These losses are subtracted from the precipitation hyetograph at each subbasin grid cell to obtain the rainfall runoff hyetograph.

Each grid cell hyetograph is then routed and combined by the HEC-HMS model to obtain the total inflow hydrograph for Belton Lake. The Leon River Model subbasins is shown on the Watershed Map, Plate 4-1.

There is a DCP at Belton Lake which records the lake elevation. An inflow hydrograph can be computed using observed lake elevations, an elevation-capacity table, and hourly lake releases.

The HEC-HMS model is executed with forecast time and an initial estimate of loss rates as determined by the user. The computed hydrographs at Belton Lake are compared with observed runoff volume, shape, and time of peak. If the comparison is not favorable, then subbasin loss rates are adjusted accordingly and the HEC-HMS model is re-executed. This calibration process is repeated until the comparisons are favorable. This process ultimately results in a forecasted inflow into Belton Lake.

2. Predicting Lake Levels. The forecasted inflows as computed by the HEC-HMS model are routed into Belton Lake. The model will add the routed inflows to the storage in the lake and subtract the releases to forecast the lake elevations.

3. Predicting Flow at Downstream Control Points. The flood forecasting system is used to predict flows in the Little River above the Cameron Gage. The predicted flows for the control points located downstream of the project are computed by combining the estimated local flow in the river channel and the potential routed releases from Belton Lake. If the predicted flows exceed the downstream channel capacity no releases will be made.

(a). Estimating Local Flow. Local flow forecasts can be obtained from two sources: the NWS-RFC's river forecast model or the Leon River HEC-HMS model. If the latter method is used, the subbasin hydrographs for the uncontrolled areas below Belton Lake are computed using the same procedure discussed in paragraph 6-02.b.(1).

(b). Routing Reservoir Releases to Downstream Control Points. The HEC-HMS model is used to route releases from Belton Lake to downstream points by using the Modified Puls and Muskingum flow routing methods. The releases are determined based on the predicted available channel capacity at the downstream control points. The determined releases are then incorporated into the HEC-HMS model. The observed flows at the downstream control points on the Leon River are provided by stream gages. The downstream control points are located on the Little River near Cameron gage and at the Little River near Little River gage. Plate 4-19 shows flood crest travel times in the Brazos River Basin from Belton Dam to the Brazos River at Hempstead gage.

(c). Regulated Flow. The releases from Belton Lake combine with uncontrolled flows from the Leon River are measured by gages on the Little River near Little River and the Little River near Cameron. These downstream gages are utilized to regulate outflows from Stillhouse Hollow and Belton Lakes.

6-03. Conservation Purpose Forecast. The BRA has contracted for conservation storage in Belton Lake. The conservation water is used for water supply, irrigation, fish and wildlife, and general recreation. Conservation storage forecasts are made when needed based on forecasted inflow, historical average evaporation, and estimated demand. The maximum authorized rate of withdrawal from Belton Lake by the BRA and their customers, when combined with local runoff below the dam, is designed not to exceed 3,000 cfs at the Leon River near Belton gage, and 10,000 cfs at the Little River near Little River gage. Releases from the reservoir for conservation purposes will be made on receipt of written daily requests from the BRA. In the event the BRA finds it necessary to modify its schedules for releases because of varied demands during any period, then its designated representative will contact the Water Management Office and indicate the revised demands, a confirmation of which will be furnished in writing to the Water Management Office.

6-04. Long-Range Forecast. Long-range weather forecasts are made by the NWS Climate Prediction Center, and available at the “Outlooks Index” in the website http://www.cpc.ncep.noaa.gov/products/OUTLOOKS_index.shtml. The outlooks website contains both temperature and precipitation forecast for “Monthly to Seasonal” and “Extended Range” categories. Special products, such as current UV index forecast and soil moisture outlooks are also available on this website.

6-05. Drought Forecast. Appendix X, Drought Contingency Plan, for the Brazos River Basin Master Manual provides information on historical droughts in the basin and methods to determine the severity of a drought. In general, the three factors used to determine the severity of a drought are the lake content, lake inflow, and the Palmer Drought Severity Index (PDSI). The PDSI reflects the cumulative excess or deficiency in moisture relative to seasonal norms and typically ranges from +4 to -4 but may exceed these values. A PDSI of -4 number indicates that abnormally dry conditions have prevailed. The NWS publishes the PDSI about once a week. Drought conditions can be accessed at this website:
http://www.cpc.ncep.noaa.gov/products/monitoring_and_data/drought.shtml

CHAPTER VII – WATER CONTROL PLAN

7-01. General Objectives. Belton Lake and Dam was authorized for flood control, hydropower, and water conservation storage for water supply on the Leon River and further flood control on the Little River downstream. Incidental purposes are to protect and enhance fish and wildlife habitat, and provide general recreation. Flood control releases from Belton Dam require coordination from the other flood control projects within the Brazos River Basin to optimize maximum basin wide benefits. Emergency regulations must be coordinated with the Fort Worth District Water Management Office as discussed in paragraph 7-04. All elevations referred to in Chapter 7, unless noted otherwise, are in feet, National Geodetic Vertical Datum of 1929 (NGVD29). The elevation difference of + 0.2 feet is the difference between NGVD29 and NAVD88 for Belton Dam and Lake.

7-02. Project Constraints.

a. Outlet Works.

1. Low-Flow Outlets. Belton Dam is equipped with a 3.0' x 3.0' low flow outlet at an invert elevation of 540.0. However, due to scouring within the outlet works, the low flow maximum opening is 1.0 foot with a corresponding discharge of 180 cfs at elevation 594.0 feet. A low flow outlet rating curve is available on Plate 7-2.

2. Spillway. The top of the conservation pool is at elevation 594.0 feet. The top of the flood control pool and the spillway crest is at elevation 631.0 feet. At elevation 658.02 feet, the PMF Design Water Surface, spillway capacity is 513,238 cfs. A spillway rating curve is available on Plate 7-3. At elevation 594.0 with all 7' x 22' gates open, discharge is 23,600 cfs. At elevation 631.0 with all 7' x 22' gates open, discharge is 27,900 cfs.

3. Outlet Works. The outlet works consist of a 22-foot diameter conduit with an invert elevation of 483.0 feet. The outflow is controlled by three 7.0 x 22.0 foot Broome-type gates. Gated release rates will be changed (increased or decreased) no more than 500 cfs in a 30-minute time period.

The maximum available gated discharge rates reflect the upper physical limit of how much water can be discharged through the gated outlets. When the low-flow conduit gates are operational, with both conduit gates 1.0 foot open, and the outlet works gates are fully open, a combined maximum release rate of 180 cfs could be made through the low-flow outlet conduits at top of conservation pool elevation 594.0 feet. Outlet works rating curves are shown on Plate 7-4. An outlet works rating curves showing partial gate openings is available on Plate 7-5.

4. Rate of Change in Release. Gated release rates will be changed (increased or decreased) no more than 500 cfs in a 30-minute time period. Rate of release as controlled will not produce sudden changes in downstream stage due to reservoir operation. Stages as controlled

will give ample warning of change in stage to downstream interests, and will reduce the potential for bank sloughing when the stage height is receding.

The normal rates of change in release may be exceeded at the discretion of the Chief, Water Management Office. Additionally, the Fort Worth District Water Management Office, or the Lake Manager, at their discretion, may exceed the normal rates of change in release in the event of drowning, accidents, failure of operational facilities, severe weather, or other emergencies deemed to require a more rapid rate of increase or decrease in the rate of release. Should the Fort Worth District Water Management Office need to deviate from the reservoir regulation release plan, then the Southwestern Division Water Management Office will need to be contacted for a deviation approval. Refer to Section 7-15 (Deviation from Normal Regulation) for more details regarding deviations.

b. Downstream Condition. Flood control is one of the objectives of the water control plan. Consequently, maximum allowable release rates from the dam are a function of downstream channel capacities and releases from other dams in the Brazos River system.

When available channel capacity is a factor on the lower Brazos River near Bryon, near Hempstead, and at Richmond, Somerville Lake will be given priority because of limited capacity of Yegua Creek. The lakes in the Little River system will be given second priority for available channel capacity because of the constraints in the Little River. All efforts will be made to not exceed 6,000 cfs on the Lampasas River near Belton, 10,000 cfs on the Little River near Little River gage and 10,000 cfs on the Little River near Cameron gage, as well as 60,000 cfs at the Brazos River near Bryan gage and/or Brazos River near Hempstead gage and/or Brazos River near Richmond gage.

7-03. Overall Plan for Water Control. Within the Brazos River basin, there are nine multi-purpose projects operated by the Corps of Engineers. These nine projects are: Whitney, Aquilla, Waco, Proctor, Belton, Stillhouse Hollow, Georgetown, Granger, and Somerville Lakes. Belton Dam is an integral part of the Corps of Engineers plan for flood control on the Lower Brazos River and its tributaries. Belton Dam operates with Proctor and Stillhouse Hollow Dams for flood control and channel capacity of the Little River at the Little River gage near Little River (River Mile 98.5). Also, these three projects regulate flows in the Little River in conjunction with other flood control projects located in the Brazos River drainage system at the pertinent downstream gages of Brazos River near Bryan, Hempstead and Brazos River at Richmond. See Table 7-1 for more details on channel capacities pertinent to Belton Dam.

TABLE 7-1**Key Downstream Control Points**

River Channel and USGS Gaging Station	Channel Capacity (cfs)
Little River near Little River	10,000
Little River near Cameron	10,000
Brazos River near Bryan	60,000
Brazos River near Hempstead	60,000
Brazos River at Richmond	60,000

TABLE 7-2**Travel Times**

River Channel and USGS Gaging Station	Estimate Travel Time	Distance below Dam (river miles)
Lampasas River near Belton, TX	1-3 hours	3.5
Little River near Little River, TX	6-10 hours	21.2
Little River near Cameron, TX	24-30 hours	83.8
Brazos River at SH 21 near Bryan, TX	48-54 hours	143.1
Brazos River near Hempstead, TX	84-90 hours	235.2
Brazos River at Richmond, TX	132-138 hours	337.0

7-04. Standing Instructions to Project Personnel. The Fort Worth District Water Management Office will give instructions for making releases from Belton Dam to project personnel, as applicable. For gated releases, project personnel will make gate changes as necessary to provide the required rate of release. The lake will normally be regulated in accordance with the plan of regulation presented in paragraph 7-05 of this chapter. Should an emergency situation occur, such as a power outage, inoperable gates, unexpected powerhouse

shutdown, or a drowning accident, the Fort Worth District Water Management Office will be notified immediately. In the event communications with the Fort Worth District Water Management Office are disrupted, the lake regulation will become the responsibility of the Lake Manager, in accordance with Exhibit C - Standing Instructions to Lake Manager, of this water control manual. The Lake Manager will immediately make every effort to re-establish communications with the Fort Worth District Water Management Office.

7-05. Flood Control.

a. General. Flood control releases from Belton Lake are coordinated with releases from existing lakes within the Brazos River basin for maximum flood protection. Flood control releases from the nine flood control projects operated by the Fort Worth District Water Management Office in the Brazos River System are prioritized based on available flood storage in each lake and downstream channel capacity. The lake levels will be lowered to their respective conservation pools at the earliest practical date in order to provide flood protection against potential subsequent storms using “Brazos River System Balancing”.

Releases from Belton Lake will generally be made at a rate, so that when combined with the runoff from downstream areas, the flow will not exceed the channel capacities at the gage locations shown in Table 7-1, “Key Downstream Control Points”. Channel capacities will not be modified for minor stage shifts, however, channel capacities will be reassessed for significant stage changes that impact structures and/or property.

The Little River joins the Brazos River downstream from the Brazos River near Bryan Gage. The Brazos River above that point is regulated by Whitney, Aquilla, and Waco Lakes. The farthest downstream lake in the system is Somerville Lake on Yegua Creek, which joins the Brazos River upstream from the Brazos River near Hempstead Gage.

b. Conservation Regulation.

Lake elevation at or below 594.0. No flood control releases will be made when the lake elevation is at or below the top of conservation pool (elevation 594.0). Releases from the conservation storage will be made as instructed from the Fort Worth District Water Management Office at the request of the Brazos River Authority, as long as it does not exceed a flow of 10,000 cfs on the Little River.

c. Normal Regulation for Flood Control. Belton Lake is primarily regulated to reduce flooding on the Leon River, Little River, and Brazos River as described on Plate 7-1. No flood control releases will be made when the lake level is at or below the top of the conservation pool, elevation 594.0 feet. When the lake level is above the top of conservation pool, flood control releases will be made as soon as downstream conditions will permit in order to evacuate floodwater as quickly as practical.

The conduit outlet and stilling basin must be visually monitored very closely during all high releases and during high tailwater events. If unusual conditions occur (such as riprap displacement, surging, submerged outlet, or the hydraulic jump moving out of the stilling basin), notify the Fort Worth District Water Management Office. The Normal Regulation for flood control releases are listed below and shown on Plate 7-1.

1. **Lake elevations between 594.0 and 596.5 feet (5% of flood pool)**. When the lake elevation is between elevations 594.0 and 596.5, releases will be made according to the maximum allowable releases and control point discharges shown in Table 7-1. All releases will be coordinated with releases from other dams in the Brazos River System as not to exceed the control flows shown in Table 7-1. The combination of runoff and release should not exceed a flow of 3,000 cfs at Little River gage on the Little River, nor exceed 10,000 cfs at the Cameron gage on the Little River or 60,000 cfs on the Brazos River at the Hempstead or Richmond gages.

2. **Lake elevations between 596.5 and 610.0 feet (between 5% and 35% of flood pool)**. When the lake elevation is between elevations 596.5 and 610.0, releases will be made according to the maximum allowable releases and control point discharges shown in Table 7-1. All releases will be coordinated with releases from other dams in the Brazos River System as not to exceed the control flows shown in Table 7-1. The combination of runoff and release should not exceed a flow of 6,000 cfs at Little River gage on the Little River, nor exceed 10,000 cfs at the Cameron gage on the Little River or 60,000 cfs on the Brazos River at the Hempstead or Richmond gages.

3. **Lake elevations between or projected to rise to 610.0 and 631.0 feet (between 35% and 100% of flood pool)**. When the lake elevation is between elevations 610.0 and 631.0, releases will be made according to the maximum allowable releases and control point discharges shown in Table 7-1. All releases will be coordinated with releases from other dams in the Brazos River System as not to exceed the control flows shown in Table 7-1. The combination of runoff and release should not exceed a flow of 10,000 cfs at Little River gage on the Little River, nor exceed 10,000 cfs at the Cameron gage on the Little River or 60,000 cfs on the Brazos River at the Hempstead or Richmond gages.

4. **Lake elevation is above or is projected to rise above elevation 631.0 (above 100% of flood pool)**. Make releases not to exceed a flow of 10,000 cfs at Little River gage near Little River, with a gated and spillway release until the spillway releases equals allowable release or hydraulic conditions at the project gates are impacted by backwater conditions, at which time the gates will be closed. Gated release rates will be changed (increased or decreased) no more than 500 cfs in a 30-minute time period.

5. **Lake elevation above 631.0 feet with lake elevation falling or projected to fall (above 100% of flood pool)**. Maintain the operation in (e) above, until the lake recedes to elevation 631.0 feet, then change to conditions (d), (c),(b) and (a) as the lake level continues to fall. For conditions (a) through (e), gated release rates will be changed (increased or decreased) no more than 500 cfs in a 30-minute time period. When practical, gated release rates will be

made in accordance with 7-05g, at a slower rate than 500 cfs per 30-minute period in an attempt to minimize potential bank caving and sloughing downstream.

The Fort Worth District Water Management Office can modify the tapered release schedule in the event of drowning, accidents, the failure of operation facilities, severe weather, and other emergencies.

d. Emergency Reservoir Regulation. If communications between the Fort Worth District Water Management Office and the Belton Dam Project Office are disrupted, the Lake Manager, on his own initiative, will direct regulation of the reservoir as described in Exhibit C - Standing Instructions to Lake Manager until communication is restored.

The conduit outlet and stilling basin must be visually monitored very closely during all high releases and during high tailwater events. If unusual conditions occur (such as riprap displacement, surging, submerged outlet, or the hydraulic jump moving out of the stilling basin), close all conduit gates immediately and continue efforts to re-establish communications with the Fort Worth District Water Management Office. The Emergency Regulation Plan is shown on Plate 7-2.

e. Brazos River System Balancing.

1. Unbalanced System. In general, the Brazos River projects will be operated to approximately balance the percent flood pool utilized at each project. Somerville will be given priority for releases when flows downstream of Bryan are near channel capacity. This is due to the low channel capacity on the Yegua Creek below Somerville. During the time that Brazos River projects are not balanced, priority of releases will be given to the project with the least amount of storage capacity left in percent of storage space. Next priority goes to the project having the second least amount of capacity in percent of storage space and so forth, until all lakes are balanced or all channel capacity in the Brazos River is used. For tandem projects or projects which have significantly greater flood storage capacity, additional weighting may be given. These releases when combined with flows downstream will not exceed discharge as shown in Table 7-1.

2. Balanced System. Lakes in the system will be regulated insofar as practical, to maintain approximately the same available storage space in their flood control pools as measured in terms of percent storage.

f. Upstream Constraints. There are no upstream constraints associated with operation of Belton Lake.

g. Downstream Constraints. Flood control releases from Stillhouse Hollow Lake are coordinated with releases from downstream projects such as Georgetown, Granger and Somerville along the Brazos River System.

h. Tapered Release System. In an effort to prevent unnecessary erosion and bank sloughing in the Leon River, Lampasas River, and Little River, a tapered release schedule will be implemented for Belton and Stillhouse Hollow Lakes, as directed from the Fort Worth District Water Management Office.

Releases from Belton and Stillhouse Hollow Lakes will be coordinated so that at the downstream gage (Little River near Little River) the stage will be lowered at a rate not to exceed 2.0 feet per day and in conjunction will decrease the flow by a maximum rate of approximately 1,000 cfs every 24 hours.

The Water Management Office can modify the tapered release schedule in the event of drowning, accidents, failure of operation facilities, severe weather, and emergencies.

7-06. Recreation.

a. Upstream Recreation. All recreation area access roads for both USACE-managed and out-granted areas are constructed above the top of conservation pool elevation 594.0. Access roads may be inundated as the lake level rises into the flood pool above elevation 594.0. This may cause some or all parks and recreation facilities to be temporarily closed.

b. Downstream Recreation. Requests for special releases will be considered as planned deviations in accordance with Section 7-15.d. The project office receives periodic inquiries concerning projected downstream flows by recreational users, but to date no requests have been made to adjust flows to accommodate recreation activities at this project.

7-07. Water Quality. Water quality is not an authorized project purpose. Belton Lake was constructed with a 3-foot diameter low flow gate (invert elevation of 540.0 feet) that can make a release of 15-180 cfs between elevations 540.0 feet and 594.0 feet. The water released from the low flow gate is usually of a higher quality than releases made from the flood gates. Although water quality is not an authorized purpose for Belton Dam, compliance with Public Law 92-500 requires that all federal facilities be managed, operated, and maintained to protect and enhance the quality of water and land resources through conformance with applicable federal, state, interstate, and local substantive standards.

7-08. Fish and Wildlife. Flood releases will be tapered down as Belton Lake approaches the conservation pool in order to prevent the unnecessary death of fish within the stilling basin. Fish and wildlife resources are managed by the State of Texas Parks and Wildlife Department. USACE support activities with regard to fish and wildlife include active management of invasive aquatic vegetation in cooperation with Texas Parks and Wildlife. USACE also is responsible as the primary manager for all fee lands (including leases, licenses and easements), and provides timber management/oversight for timber stand improvement and salvage harvests, as well as the fire management program, both of which enhance the wildlife value of federal lands.

7-09. Water Supply. Brazos River Authority has contracted 96.78 percent (360,700 acre-feet) of the conservation storage space between elevation 540.0 and 594.0 feet. Fort Hood Military Reservation is utilizing the remaining 3.22 percent (12,000 acre-feet) of conservation storage space between elevation 540.0 and 594.0 feet. The authorizing legislation for Belton Lake allows Fort Hood and adjacent military installations the 12,000 acre-feet of water supply storage in Belton Lake.

7-10. Hydroelectric Power. Hydropower, although authorized, was never constructed as part of the current flood control project at Belton Dam and Lake.

7-11. Navigation. Navigation is not a project purpose.

7-12. Drought Contingency Plans. When the drainage basin is in a drought condition and the lake levels are lower than normal, refer to the Drought Contingency Plan for the Leon River Basin, Texas, Appendix X of the Brazos River Master Manual. The plan presents a broad outline of actions necessary to manage the water resources of the Brazos River Basin during a drought.

7-13. Flood Emergency Action Plans. The Flood Emergency Plan (FEP) contains detailed instructions and procedures to be followed by USACE personnel at the Belton Dam Project Office to properly handle any event at the project that could develop into an emergency condition. The most current edition of the FEP is located in the Geotechnical Office – Fort Worth District and is dated November 2010. Copies of this FEP are also available in the Fort Worth District Water Management Office and at the Belton Lake Project Office.

7-14. Other. There are no other issues associated with this project.

7-15. Deviation from Normal Regulation. There are occasions when it is necessary or desirable to deviate from the water control plan for short periods of time. Prior approval for a deviation is obtained from the Southwestern Division Water Management Office (CESWD-RBT-W). The requirement for prior approval of action from CESWD may be suspended in extreme emergencies. All deviations will be recorded and will be stored in electronic format. Analysis of the expected impacts of a proposed deviation will include consideration of its effect on dam safety. Deviation requests usually fall into the following categories:

a. Emergencies. Emergencies that can occur are drowning(s), failure of the operation facilities, and flushing of pollutants. Under emergency conditions necessary action is taken immediately by the Lake Manager, unless such an action creates an equal or worse condition. For emergencies, the Fort Worth District Water Management Office will be informed as soon as practicable as to the nature of the emergency and the subsequent response by telephone, email, or fax. A follow-up written documentation explaining the deviation will be furnished to the Southwestern Division Water Management Office as soon as practical.

b. Unplanned Minor Deviations. There are unplanned instances that create a temporary need for minor deviations from the normal regulation of the lake. These unplanned

instances are not considered emergencies and require prior approval for deviations. Construction accounts for the majority of unplanned deviations. Possible reasons for unplanned deviations include stream crossings of pipelines, bridge work, embankment repair, utility placement, and other major construction contracts. Requests for changing release rates can vary from a few hours to a few days.

Each request is analyzed on its own merit. Consideration is given to upstream and downstream watershed conditions, potential flood threats, conditions of the lake, and possible alternative measures. In the interest of maintaining good public relations, the requests for deviation are usually approved, provided that there are no adverse effects on the overall operation of the project, or other projects. Approval of these minor deviations will be obtained from the Southwestern Division Water Management Office.

c. Unplanned Major Deviations. There are unplanned instances that may be considered for major deviations from the normal regulation plan, but are not emergencies. Requests for changes in release rates generally involve short time periods ranging from a few hours to a few days in an effort to minimize damages or optimize benefits. Flood control releases account for the major portion of these incidents and typical examples include project pre-releases or flows exceeding downstream channel capacity.

Each request is analyzed on its own merit. In evaluating the proposed deviation, consideration must be given to the upstream and downstream watershed conditions, potential flood threats, condition of the lakes, and possible alternative measures that can be taken. Approval of these major deviations will be obtained from the Southwestern Division Water Management Office.

d. Planned Deviations. Each planned deviation is analyzed on its own merit. Sufficient data on flood potential, lake and watershed conditions, possible alternate measures, benefits to be expected and possible effects on other authorized and useful purposes will be presented with each deviation. Each recommended deviation is submitted in writing to the Southwestern Division Water Management Office for review and approval. An example of a planned deviation is a need to maintain or inspect an aspect of the project. Approval of such deviations will only be granted when the evaluations have been fully reviewed and verified to be necessary. Any concerns with “Dam Safety” will be taken into consideration as well with deviation approvals.

7-16. Rates of Change in Release. When practical, the change in opening of the flood gates will be limited to opening of the flood gates no more than 0.5 feet each half hour until half open. Once a gate is half open and it is necessary to open it further, open the gate as quickly as possible to full open. The gates should be operated either fully open or at one-half or less of their full opening. All gate operations should be as symmetrical as practicable with an allowable difference in gate openings not to exceed one foot. Decreasing changes in release rates shall be accomplished in a manner that minimizes damage to the downstream channel, in accordance with subsection 7-05h. If flood releases are in process and flow from the downstream area increases rapidly, it may be necessary to close the gates at a faster rate than defined in this paragraph.

7-17. Operation Curves and Tables. Lake Evaporation Curves for Belton Lake are shown on Plate 7-6. The spillway and outlet works tailwater rating curves are shown on Plate 7-7. Area and Capacity Curves are shown on Plate 7-8. The tabulated Area and Capacity values are shown on pages T7.2-1 through T7.2-38 of this water control manual.

CHAPTER VIII – EFFECT OF WATER CONTROL PLAN

8-01. General. Belton Lake is a multiple-purpose project that is designed for surge regulation and is operated in conjunction with four other USACE dams (Proctor Dam, Stillhouse Hollow Dam, Granger Dam, and North San Gabriel Dam) on the Little River and San Gabriel River systems, to provide flood control at the Cameron, Texas gage and supply water to the BRA, Fort Hood, and the Temple, Texas areas. The lake is also used for conservation storage and recreation and wildlife management.

8-02. Flood Control.

a. **Spillway Design Flood.** A Spillway Design Flood study was performed for Belton Dam at the time it was initially designed. A Definite Project Report on “Belton Reservoir, Leon River, Texas” was prepared by USACE, Galveston District in May 1949. The spillway design flood hydrographs for Belton Dam and Lake were discussed in Appendix I, Hydrology of the Report.

1. **Spillway Design Storm.** The selection of the Spillway Design Storm was based on a study of the major storms which occurred on September 8 to 10, 1921, June 27 to July 1, 1899, and June 30 to July 1, 1932 in the region of the Leon River Basin above Belton Lake. This study was made in accordance and recommended procedure given in the report “Preliminary Estimate HMS 4712A, Maximum Possible Precipitation, Leon River Basin above Belton Dam site, Texas” and was prepared by the Hydrometeorological Section of the River and Flood Division, United States Weather Bureau and revised by the Office of the Chief of Engineers. From their analysis, the Hydrometeorological Section submitted their preliminary estimate of the spillway design storm over the watershed above Belton Dam site based on the most critical storm (June 27 to July 01, 1899) in the Leon River watershed above the dam. The result of the design storm was a total average depth of 29.4 inches in 90 hours. The depth-duration relation as recommended by the Hydrometeorological Section has been adopted as a basis for the Spillway Design Storm.

2. **Minimum Infiltration Rates.** The computed infiltration rates for the Leon River Basin above the principal gaging stations vary from a minimum of 0.07 to a maximum of 0.47 inch per hour. In estimating the run-off from the Spillway Design Storm, a uniform infiltration rate of 0.10 inch per hour has been assumed. The assumption gave an estimated run-off of 21.4 inches or 72.8 percent of the rainfall for the Spillway Design Storm. The rainfall-excess for the Spillway Design Flood is shown on Plate 8-1.

3. **Unit Hydrographs.** A study was made of all isolated storms for the run-off at the gaging stations available in the Leon River Basin in order to determine unit hydrographs. Synthetic unit hydrographs were computed for Hasse and Belton stream gaging stations and for the watershed above the Belton Dam site by use of Snyder Unit Hydrograph method. The

watershed was considered in three parts each of which has different run-off characteristics, watershed constants and areas as follows:

- (a). The area above the Proctor Dam site
- (b). The area between the Proctor Dam site and river mile 50.0 on the Leon River
- (c). The area on the Leon River between river mile 50.0 and the Belton Dam site plus the Cowhouse Creek watershed.

Values of coefficients (C_t and C_p) in Snyder's equation were derived by a trial and error procedure at the Hasse and Belton gaging stations in the Leon River Basin. The values of C_t and C_p were varied within reasonable limits until the synthetic unit hydrographs would reproduce the hydrographs for some of the larger floods at the above gaging stations. A synthetic unit hydrograph for each of three areas for uniform rainfall over the entire watershed above the Belton Dam site under conditions for natural flow at the Belton Dam site was developed. The composite 3-hour unit hydrograph for the Belton Dam site was derived by the summation of the three individual unit hydrographs properly lagged. Another synthetic unit hydrograph for full reservoir conditions was developed for the three areas with an assumption of the head of the reservoir assumed to be at about river mile 50 on the Leon River and at about river mile 13 on Cowhouse Creek. The drainage area to the assumed full reservoir conditions is 3,204 square miles, in which 671 square miles are on the Cowhouse Creek watershed. The composite 3-hour unit hydrograph was derived in a manner similar to that for natural flow at the dam site, and by use of the same C_t and C_p . The coefficients used in Snyder's Equations for the three drainage areas under the two conditions were developed in the "Definite Project Report on Belton Reservoir, Brazos River Basin, Texas," dated May 1949.

4. Spillway Design Flood Hydrographs. In order to determine the critical conditions of Spillway Design Flood at the Belton Dam site, the Spillway Design Storm was distributed uniformly over the watershed above Belton Dam and two flood hydrographs were computed. The first hydrograph was determined for natural flow at the dam site based on the synthetic unit hydrograph discussed in Section 8-02, a.3. The computed hydrograph has a peak discharge of 561,300 cfs and volume of 3,894,200 acre-feet. The second hydrograph representing flow into full reservoir was computed using the unit hydrograph derived for flow into full reservoir plus the run off from the 37 square miles reservoir surface at a rate equal to the rate of rainfall. The computed hydrograph with a peak inflow of 608,400 cfs and volume of 3,910,000 acre-feet was recommended and adapted for the Spillway Design Flood.

The routing computations showed that the lake would reach a maximum elevation of 656.9 feet and the peak outflow was 472,500 cfs which were different from the maximum elevation of 655.9 feet and the peak outflow of 482,800 cfs computed in the 1949 study. Plate 8-1 shows the lake elevation and Spillway Design Flood hydrographs in the 1951 study.

b. Standard Project Flood. In September 1983, a Spillway Design Flood study for Belton Lake was prepared under the Dam Safety Assurance Program outlined in Draft ER 1130-2-417. The purpose of the study was to review the adequacy of Belton Dam with respect to the

hydrologic criteria provided in Hydrometeorological Report No. 51 (HMR-51), June 1978, subject: “Probable Maximum Precipitation Estimates, United States East of the 105th Meridian”. The study consisted of hydrologic analysis for Belton Dam Probable Maximum Flood (PMF) and Standard Project Flood (SPF), as discussed in the following sections. For the SPF study, it was assumed that a Standard Project Storm would occur 5 days prior to the Probable Maximum Storm (discussed in Section 8-02, c.1). The antecedent Standard Project Storm was assumed to have a total rainfall amount equal to 50 percent of the full Probable Maximum Storm rainfall amount. The Standard Project Storm rainfall was 14.4 inches or 64 percent of the full Probable Maximum Storm rainfall of 22.67 inches. It was assumed the Standard Project Storm was centered in the same location as the Probable Maximum Storm and possessed the same ellipse characteristics as the Probable Maximum Storm. The details of Probable Maximum Storm are discussed in Section 8-02, c.1.

The SPF hydrograph representing flow into full pool was computed using the same parameters as in the PMF analysis discussed in Section 8-02, c.4 except rainfall was one-half of the Probable Maximum Storm rainfall distributed according to the SWD distribution. The computed SPF hydrograph has a peak discharge of 410,238 cfs and a volume of 1,506,560 acre-feet. The SPF was routed through Belton Lake through a series of flood control outlets. The reservoir level of Belton Lake continued to rise during passage of the SPF and had reached elevation 648.91 feet by the beginning of the Probable Maximum Storm.

c. Probable Maximum Flood. The following paragraphs describe the details of PMF analysis in the 1983 study.

1. Probable Maximum Storm. The Spillway Design Storm rainfall above the Belton Dam Site was determined in accordance with the method described in HMR-51. A hypothetical elliptical transposition of the PMF was used in the study. The resulting average over the area for a 96 hour rainfall total is based on critical centering of the hypothetical elliptical Probable Maximum Precipitation (PMP) at a location approximately 15 miles northeast of the city of Evant, Texas. The storm pattern is shown on Plate 8-2.

2. Minimum Infiltration Rates. The adopted infiltration rates were taken from “Design Memorandum No. 1 on Belton Lake, Leon Rivers, Texas, Hydrology,” dated May 1949. The adopted rates include an initial loss of 1.0 inch and a uniform loss rate of 0.10 inch per hour. Application of these assumed losses to the Spillway Design Storm rainfall produced an estimated runoff of 15.00 inches, or 66.2 percent of the total rainfall for the Spillway Design Storm. The 1983 PMF study rainfall, losses and rainfall excess are shown on Plate 8-3.

3. Unit Hydrographs. Unit hydrograph determinations were made for three drainage areas in the Leon River Basin. These unit hydrograph determinations were used as the basis for the adoption of C_t and C_p640 values for 0.7 and 500 for the drainage area of Cowhouse Creek, C_t of 1.0 and C_p640 of 400 for the area above Proctor Dam, and C_t of 2.5 and C_p640 of 400 for the area between Proctor and Belton dams. These values, as well as the rainfall losses, were substantiated by calibrating the hydrological model and comparing the computed historical flood

hydrographs with observed hydrographs. The USGS stream gaging station near Pidcoke (08101000) on Cowhouse Creek, was selected as a typical point in the watershed representative of the area contributing flow to Belton Lake. Two observed flood hydrographs selected for the calibration studies were the floods of October 4, 1958 and September 1, 1970. The results of the hydrologic model calibration lie within the range of values reported in the May 1949 Design Memorandum for Belton Lake. Therefore, values from the 1949 Design Memorandum were adopted for this study.

4. Unit Hydrograph for Flow into Full Lake. The total drainage area of 3,531 square miles above the Belton Dam site was divided into 20 sub-basins. The sub-basins layout is shown on Plate 8-2. Unit hydrographs for the sub-areas were determined using the method mentioned in Section 8-02, c.3.

5. Routing Reach Parameters. Sixteen routing reaches were used in the development of Belton Lake hydrologic model. Reach routings were performed using a modified puls method based upon storage-discharge relationships for each reach. The storage-discharge relationships were developed using a typical valley cross section for each reach and applying Manning's equation. Routing through the remaining reaches (except through the reservoirs) was assumed to be instantaneous, i.e., the hydrographs were translated to the next control point with no attenuation of the flood.

6. Probable Maximum Flood Hydrographs. The PMF hydrographs representing flow into full pool was computed using the unit hydrograph developed for each sub-area, the routing reach parameters discussed above, the rainfall from HMR-51 distributed according to the SWD distribution, the infiltration rates discussed above, and the runoff equal to the rate of rainfall from the lake surfaces. The routing computations for flow into a full reservoir indicated that the lake would rise to a maximum level of 658.02 feet and the peak inflow would be 779,833 cfs with a volume 2,824,800 acre-feet. Plate 8-3 shows the PMF inflow-outflow hydrographs and the reservoir surface elevations.

d. Other Floods. Based on historical data, the maximum known flood in the vicinity of the dam on the Leon River occurred March 1992. The peak discharge during the period of record is 10,200 cfs and highest record lake elevation is 634.36 feet on 6 March 1992. Additional information on historical floods can be found in Section 4-06 of this manual.

8-03. Recreation. Facilities such as public boat ramps, docks, restrooms, picnic shelters, fishing piers, and campsites have been provided. Public use of USACE lakes is governed by Title 36 of the Code of Federal Regulations. The 10-year average annual visitation to Belton Lake is 1,947,151.

A rise or fall in the lake elevation at Belton Lake has some effect on the lands surrounding the lake, recreational facilities, and project visitation. A rise above elevation 631.0 temporarily restricts the use of many recreational facilities due to inundation or loss of access. Other effects associated with high water levels include the accumulation of driftwood, the degradation of

surrounding vegetation, and increased shoreline erosion.

A substantial lowering of the lake elevation, due to water supply requirements or drought, exposes aesthetically unpleasing banks and mud flats, and creates a boating hazard due to increased shallow areas. Boat ramps and beaches may also become unusable during drawdown periods. Although fluctuation of the pool level is unavoidable, the effects on recreational opportunities can be reduced by placing roads, utilities, and recreational facilities in locations less prone to flooding.

The invasive species classified as the zebra mussel was discovered in Belton Lake in September 2013. The zebra mussel has been a nuisance in Texas, infesting many major reservoirs in North and Central Texas, including Lake Texoma, Lake Lavon, Lake Ray Roberts, and Lake Lewisville, among others. The zebra mussel poses a threat to recreation, industrial activity, and municipal water supply as it frequently anchors itself to boats, docks, and intake pipes, causing structural damage and restricting flows. The Texas Parks and Wildlife Commission has approved regulations for boat owners to combat the further spread of the zebra mussel and other invasive species throughout the state.

8-04. Water Quality. Water Quality is not an authorized purpose at Belton Lake. However, available data indicates that generally good water quality conditions exist. Additional water quality data can be found in Section 4-08.

8-05. Fish and Wildlife. The management of fish and wildlife resources is conducted in cooperation with the Texas Parks and Wildlife Department and U.S. Fish and Wildlife. The species of fish that the Texas Parks and Wildlife Department has stocked the lake with are: largemouth bass, smallmouth bass, catfish, crappie, white bass, hybrid striped bass, and sunfish. There are a number of small wildlife management areas surrounding the lake, within which hunting dove, waterfowl, quail, rabbit, and squirrel are permitted. Other species of wildlife found in the area include white-tailed deer, gray and red foxes, coyotes, fox squirrels, armadillos, wild turkeys, owls, and more than a hundred bird species.

8-06. Water Supply. The BRA, an agency of the State of Texas is authorized to use 96.78 percent (360,700 acre-feet) of the conservation storage space between elevations 540.0 and 594.0 feet. BRA will pay \$5,124,999.77, in addition to their share of annual operations and maintenance O&M cost, for this water supply storage space. Fort Hood Military Reservation is utilizing the remaining 3.22 percent (12,000 acre-feet) of the conservation storage space between the same elevations.

8-07. Hydroelectric Power. Flood Control Act of 1954 authorized modification for hydropower at Belton Lake upon impoundment of Proctor Lake. Previous studies determined hydropower at Belton Lake to be infeasible, however, the Belton Reconciliation Report dated October 1981 and the Belton Dam Feasibility Report Addition of Hydropower dated January 1983 indicated that the provision of hydroelectric generating facilities at Belton Lake is feasible. As of 2015, no hydropower facilities have been built at Belton Dam and Lake.

8-08. Navigation. Navigation is not a project purpose.

8-09. Drought Contingency Plans. The purpose of the Drought Contingency Plan is to provide a basic reference for water management decisions and responses to a water shortage in the Leon River Basin due to a drought. The Drought Contingency Plan provides a plan for implementing actions necessary for conservation of water supply depending on the severity of the drought and the reservoir level. This plan enables the Water Resources Branch to effectively coordinate with the public and other district elements during drought conditions. The latest Drought Contingency Plan for Belton Lake is dated August 1991.

8-10. Flood Emergency Action Plan. The FEP contains detailed instructions and procedures to be followed by USACE personnel at the Belton Dam Project Office to properly handle any event at the project that could develop into an emergency condition. The most current edition of the FEP is located at the Geotechnical Office - Fort Worth District and is dated December 1985 and updated in November 2010. Copies of this FEP are also available in the Fort Worth District Water Management Office and at the Belton Lake Project Office.

8-11. Frequencies. Belton Lake levels for the period of record, since deliberate impoundment began on 8 March 1954, are displayed on Plate 8-4.

a. Annual Peak Elevation Frequency. The annual peak lake levels for the period 1954 through 2014 were tabulated. The annual peak elevations were arranged in descending order and assigned median plotting positions. The elevation probability was derived from studies based on methods discussed in "Statistical Methods in Hydrology," by Leo R. Beard, dated January 1962. The annual peak elevation frequency curve is shown on Plate 8-5. Data from this analysis indicated the fifty-year and the hundred-year flood frequency pool level to be 630.5 feet and 633.0 feet, respectively.

b. Lake Elevation Duration. The lake-elevation-duration curve shown on Plate 8-6 is based on the midnight lake elevations for the period 11 May 1973 to 30 June 2014. The conservation pool was raised on 1 August 1971 from elevation 569.0 feet to 594.0 feet. Belton Lake reached the top of the conservation pool for the first time on 11 May 1973. The lake-elevation-duration curve shows the percent of time that the lake level equals or exceeds a given elevation.

c. Key Control Points. Key control points are located on Leon River near Belton, Little River near Little River, and Little River near Cameron. Rating curves for the key control points are shown on Plate 4-15 through Plate 4-20, respectively.

8-12. Other Studies. The vision for the CWMS National Implementation Effort is to have all USACE watersheds fully modeled within CWMS. These models will be operated daily to provide decision support to local Water Managers and to have results automatically consolidated into standardized briefing tools within a CorpsMap for executive and public use. CorpsMap

viewer supports visualization and analysis of USACE infrastructure, and real-time display of atmospheric, coastal, critical infrastructure, and watershed data.

The CWMS Automated Information System was developed by the HEC under funding from the Water Management Community of Practice and has been implemented to varying degrees at USACE Water Management Offices. USACE offices apply CWMS data flow elements (data acquisition, verification, validation, transformation, storage, visualization, dissemination elements). For this effort, USACE Leadership, the Critical Infrastructure Protection and Resilience (CIPR) Program, and the Dam Safety Program have recognized the value of these watershed models to the Nation and have committed funding for watershed model development to support the needs of multiple programs.

CHAPTER IX - WATER CONTROL MANAGEMENT

9-01. Responsibilities and Organizations.

a. Corps of Engineers. Belton Lake is owned by the USACE. As the owner of the project, the Corps of Engineers is responsible for the overall operation and maintenance of the lake. The Lake Manager, operating through the Belton Lake Office, Belton, Texas, and the Engineering and Construction Division, is directly responsible for the Lake's maintenance and operation. Project reporting instructions are presented in Chapter V, and project operating instructions are presented in Chapter VII of this manual.

1. Responsibilities and Duties during Normal Operations. The Water Resources Branch, Engineering and Construction Division, Fort Worth District is charged with the following responsibilities and duties under the general supervision of the SWD Office in Dallas, Texas.

- (a). Regulation of lakes and dissemination of data.
- (b). Investigations and refinement of regulation procedures, including the following:
 - (1). Analysis of past floods.
 - (2). Reconnaissance to determine channel capacities.
 - (3). Improvement of forecasting techniques.
 - (4). Plan and coordinate the hydrometeorologic reporting network with the NWS and the USGS.
- (c). Train personnel in flood control duties, including the following:
 - (1). Periodic visits to projects by the branch personnel to familiarize themselves with regulation facilities and become acquainted with the operating personnel.
 - (2). Instruct personnel of other branches in flood control procedures to supplement the Water Resources Branch during flood emergencies, when necessary.
- (d). Prepare reports on lake regulation.
 - (1). Recurring reports.

(2). Water Control Manuals.

(3). Post Flood reports.

2. Responsibilities and Duties during Flood Emergencies. During flood emergency, the Water Resources Branch is responsible for the following:

(a). Evaluation of current meteorologic, hydrologic, and hydraulic data.

(b). Provide analysis of the storm and effects of the flooding to the District Engineer and other District personnel.

(c). When necessary, furnish personnel to assist lake personnel in flood regulations.

(d). Regulation of lakes in accordance with flood control schedules.

(e). Furnish information to higher authority, which will include:

(1). Initial reports to the SWD and Office of the Chief of Engineers by telephone or E-mail.

(2). Provide information for situation reports.

3. Assignment of Personnel. During non-flood periods, personnel of the Water Resources Branch issue instructions for the routine regulation of the lake. However, during flood periods, assistance from other personnel may be required to maintain effective regulation of the lakes. The area and magnitude of the flood will determine the number of people engaged in each particular activity. Plate 9-1 shows the organization during flood control regulation.

4. Provision for 24-Hour Alert. The NWS and Lake Manager have been provided with a list of names and telephone numbers of key personnel of the Engineering and Construction Division with instruction to provide warning if unusual conditions occur. Responsible personnel are on duty at the Fort Worth District Office 24 hours a day during flood emergencies and/or whenever project conditions warrant. Responsible personnel will be on duty or on call at the lake at all times.

5. Role of the Lake Manager. The Lake Manager will regulate the lake according to instructions issued by personnel of the Water Resources Branch. The instructions will follow the "Normal Regulations for Flood Control" and "Emergency Regulations for Flood Control" contained in Chapter VII and Exhibit C of this manual. If the Lake Manager loses communication with the District Office, he will immediately make every effort to reestablish communication while initiating emergency regulations for flood control. The Lake Manager will

make daily observations at the lake project's weather station and report those observations as directed in paragraph 5-07.

b. Other Federal Agencies. The NWS is officially responsible for issuing flood warnings to the public. The NWS provides weather and river forecast information, which is used to make real time operation decisions for Belton Lake. The USGS develops and maintains stage versus discharge curves for each stream gage. The USGS also collects and maintains reservoir elevation and water quality data for the USACE lakes in the Fort Worth District.

9-02. Interagency Coordination. The USACE, NWS, and the USGS cooperate to accumulate rainfall and streamflow data used in forecasting river stages, stream flows and lake levels. The Fort Worth District's Supplement A to ER 500-1-1 gives a list of Federal Agencies with which the District will coordinate in emergencies.

a. Local Press and Corps Bulletins. USACE, through their Public Affairs Office, makes press releases to the news media of flood situations in the area of concern. The Water Resources Branch may supplement this information with observed conditions and technical advice to enable local interests to obtain optimum flood protection and to perform rescue and relief functions. USACE further assists in flood fighting, through the office of the Emergency Operations, who furnishes sandbags and other necessary equipment based on equipment on hand and need.

b. National Weather Service. The NWS and USACE exchange hydrometeorologic data and reports in obtaining and disseminating data. This exchange of data is discussed in great detail in Chapter VI of this manual.

c. United States Geological Survey. The USGS and USACE cooperate in a program for the operation and maintenance of stream gages throughout the Fort Worth District. During floods, the USGS and USACE coordinate field activities to maximize the number of stream discharge measurements.

d. Other Federal, State, or Local Agencies. The Fort Worth District exchanges information with State government officials, Texas Department of Public Safety (TxDPS) Highway Patrol Division, and others during flood emergencies. The Fort Worth District also coordinates with State agencies concerning fish and wildlife throughout normal operation.

Releases from Belton Lake are coordinated with the releases from other reservoirs in the Brazos River Basin system. These reservoirs are listed in Table 3-2.

9-03. Interagency Agreements. The BRA, an agency of the State of Texas, has contracted with USACE for 96.78 percent (360,700 acre-feet) of the conservation storage space between elevations 540.0 and 594.0 feet. In return, the BRA paid \$5,124,999.77, in addition to their share of annual O&M costs for this water supply storage space. Fort Hood Military Reservation utilized the remaining 3.22 percent (12,000 acre-feet) of the conservation storage space between the same elevations.

9-04. Commissions, River Authority, Compacts, and Committees. The TCEQ issues and regulates permits for water use in the State of Texas. The BRA is informed of the lake regulations at Belton Lake.

9-05. Non-Federal Hydropower. There are no non-federal hydropower facilities at Belton Lake.

9-06. Reports. Table 9-1 lists reports prepared by the Water Resources Branch. The tabulation also describes when each report is required and the regulation requiring the report.

TABLE 9-1

Tabulation of Reports

Name of Report	When Required	Regulation Requiring Report
Daily Report	Daily	—
Monthly Reservoir Report	Monthly	ER 1110-2-240
Flood Situation Reports	During Floods	ER 500-1-1
Post Flood Reports	Following a Flood Causing Major Damage	ER 500-1-1
Annual Reports	Annually	ER 1110-2-240

a. Daily Report. The daily report is prepared by the Water Resources Branch. It contains water control information on most of the major lakes in the Fort Worth District. An example of a daily report is shown on Plate 9-2. Copies of the report are sent to all subscribing offices and agencies. The daily report is also posted on the Internet at the following URL address: <http://www.swf-wc.usace.army.mil/>.

b. Monthly Reports. The Water Resources Branch prepares monthly reservoir reports in accordance with ER 1110-2-240. The monthly report, shown on Plate 9-3, is a tabular record of

lake operations. It is prepared for all lakes under the supervision or of direct interest to the Fort Worth District.

c. Flood Situation Reports. The Water Resources Branch supplies the Emergency Operations Center (EOC) in the Fort Worth District with information in accordance with ER 500-1-1. This report contains hydrometeorological conditions for the area, the name of the lake, pertinent lake data, and lake elevation, predicted maximum elevation and anticipated data, inflow and outflow rates in cfs, percent of flood control storage utilized to date, and any other data relevant to the flood situation. The EOC then provides the information to the appropriate government officials and community organizations concerned or effected by the flooding.

d. Post Flood Reports. The post flood reports are prepared in accordance with ER 500-1-1, when a flood has resulted in major damage. The report describes flood emergency operations performed by the USACE. Included are available hydrologic information, damage estimates, and other engineering data considered essential for flood control and flood plain studies performed to review possible damage claims against the United States. The report is prepared using information compiled by the Water Resources Branch and when completed, includes a paragraph on the final damage costs from the flood event, including damages to USACE Property, Parks, and other structures.

e. Annual Report. The Water Resources Branch prepares an annual report for the SWD Reservoir Control Center. The report summarizes general river basin conditions and the activities and accomplishments of the Water Resources Branch during the preceding year.

EXHIBIT A

SUPPLEMENTARY PERTINENT DATA

BELTON DAM AND LAKE

EXHIBIT A

SUPPLEMENTARY PERTINENT DATA

BELTON DAM AND LAKE

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1. GENERAL INFORMATION

Item	Description
Other Name for Project	None
Location	Brazos River Basin, Texas Leon River, at river mile 16.7
Type of Project	Dam and Lake
Objective of Regulations	Multipurpose project for Flood Control, Water Supply, and Fish and Wildlife
Project Owner	USACE
Operating Agency	USACE The working hours of operation for weekdays are 0800 to 1645; Working hours for weekends and holiday vary. During flood emergency conditions 24-hour per day duty is the general procedure.
Regulating Agency	USACE
Water Supply Contracts	The BRA has contracted with USACE for drawing from the lake 96.78 percent (360,700 ac-ft) of the conservation storage space between elevation 540.0 and 594.0 feet NGVD29. The BRA will pay \$5,124,999.77, in addition to their share of annual O&M cost for this water supply storage space. (Contract No. DA-41-443-CIVENG-58-120 dated 15 January 1958). Fort Hood Military Reservation uses the remaining 3.22 percent (12,000 ac-ft) of water supply.
Project Cost	\$17,191,734
Deliberate Impoundment Date	8 March 1954
Federal Power Marketing Administration	None

2. LAKE INFORMATION

Feature	Elevation (Feet NGVD29)	Lake Area (Acres)	Storage (Acre-Feet)	Runoff (Inches)
Top of Dam	662.0	—	—	—
PMF Design Water Surface Elevation (1983 Study)	658.02	38,000	1,918,100	10.20
Maximum Design Water Surface Elevation (1951 Study NGVD29)	656.9	37,340	1,858,433	9.79
Top of Flood Control and Spillway Crest (1983 Study)	631.0	23,620	1,097,600	5.78
Top of Conservation Storage (2003 Survey)	594.0	12,135	435,225	2.41
Invert of Service outlet (2003 Survey)	540.0	2,987	52,618	—
Invert of Lowest Intake (2003 Survey)	483.0	—	—	—
Streambed (2003 Survey)	470.0	—	—	—

Item	Description
Real Estate (Fee Title)	Upper guide contour of elevation 605.0 feet. Fee simple title includes 24,241 acres
Real Estate (Flowage Easement)	Upper guide contour of elevation 642.0 feet. Flowage easement includes 6,574 acres
Range of Clearing	Below elevation 631.0 feet
Lake length at top of conservation pool	25.0 river miles from the dam to the most upstream shoreline

2. LAKE INFORMATION (Continued)

Item	Description
Shoreline length at top of conservation pool	136 miles
Safety aspects	A warning horn will sound for 10 seconds to alert those downstream at least 2 minutes before significant changes in discharge.

3. HYDROLOGY

Item	Description
Drainage Area	3,570 square miles
Volume from One-Inch Runoff	189,867 ac-ft
Probable Maximum Flood (1983 Study)	
Maximum Water Design Surface elev.	658.02 feet
Duration of Storm	96 hours
Average Infiltration Rate	0.10 inches/hour
Total Volume of Rainfall	22.67 inches
Total Volume of Runoff	15.00 inches
Volume into full pool	2,824,800 ac-ft
Peak Inflow to full pool	779,833 cfs
Peak Outflow (reservoir level 658.02 feet)	
Total	513,238 cfs
Storm Type	Probable Maximum Storm determined from HMR 51 guidelines
Spillway Design Flood (1951 Study)	
Design water surface elev. (NGVD29)	656.9 feet
Duration of Storm	96 hours
Average Infiltration Rate	0.10 inches/hour
Total Volume of Rainfall	29.4 inches
Total Volume of Runoff	21.4 inches
Peak Inflow	608,400 cfs
Storm Type	Spillway Design Storm
Standard Project Flood (1983 Study)	
Maximum Design Water Surface elev.	639.48 feet
Duration of Storm	96 hours
Total Volume of Rainfall	14.4 inches
Flood Volume Stored	1,506,560 ac-ft
Peak Inflow	410,238 cfs
Climate	Moderate, with hot summers, and cool winters

3. HYDROLOGY (Continued)

Item	Description
Average Precipitation (Gages listed in Table 4-3)	29 inches per year (1931-2015)
Average Evaporation from lake	53 inches per year (1964-2015)
Storm Type	Primarily local thunderstorms, frontal storms, and tropical cyclones
Flood Seasons	Primarily November through June, but floods can occur at any time of year
Low Flood Seasons	July through October
Minimum Monthly Inflow and Date of Occurrence	0 ac-ft (in CY 1954, CY 1956, CY 1982, CY 1983, CY 1989, CY 1999, CY 2006, CY 2012, CY 2013)
Minimum Annual Inflow and Date of Occurrence	37,465 ac-ft (in CY 1954)
Mean Annual Inflow	499,671 ac-ft (May 1953-Dec 2013 records)
Maximum Annual Inflow and Date of Occurrence	1,829,984 ac-ft (CY 1992)
Maximum Monthly Inflow and Date of Occurrence	591,757 ac-ft (May 1957)
Maximum Average Daily Inflow and Date of Occurrence	89,480 cfs (16 May 1965)
Maximum Instantaneous Inflow and Date of Occurrence	147,300 cfs (16 May 1965)
Maximum Flood Volume and Date of Occurrence	2,157,000 ac-ft (16 May 1965)

3. HYDROLOGY (Continued)

Item	Description
Names and Locations of Key Stream Flow Stations	<p>Upstream</p> <p>Leon River near Hasse Leon River near Hamilton Leon River at Gatesville Cowhouse Creek at Pidcoke</p> <p>Downstream</p> <p>Leon River near Belton Belton Lake near Belton Little River near Little River Little River near Cameron</p>
Type of Hydrometeorologic Data Recorded at Damsite	<p>Automatic water stage recorders to furnish continuous records of lake levels and river stage below the dam.</p> <p>Tile staff gages provide lake level and tailwater elevations.</p> <p>NWS station at the dam consists of: a rain gage, recording rain gage, Type A evaporation pan, anemometer and maximum-minimum thermometer.</p>
Precipitation Stations Used in Hydrologic Forecasting (NWS)	<p>Belton Dam - Recording gage Gatesville 4 SSE - Recording gage Temple - Recording gage Stillhouse Hollow Dam - Recording gage Killeen - Recording gage Dublin - Recording gage Eastland - Recording gage</p>
Number of Sediment Ranges	68 (Periodic Surveys)
Number of Degradation Ranges	12 (Periodic Surveys)

4. EMBANKMENTS

Item	Description
Location	Brazos River Basin of the Leon River at river mile 16.7
Purpose	Impoundment
Type	Rolled earth fill
Type of Fill	Rock fill
Slope Protection	Rock fill
Height	192 feet above streambed
Length	3,806 feet excluding spillway
Top Elevation	662.0 feet
Freeboard	4.71 feet
Used for Roadway	Yes
Elevation of Streambed	470.0 feet
Closure date	8 March 1954

5. SPILLWAY

Item	Description
Location	Left abutment in the river channel
Uncontrolled Spillway	
Crest Elevation	631.0 feet
Length	1,300 feet
Type	Uncontrolled broad-crested weir
Total Maximum outflow (1983 Study, Lake elev. 658.02 feet)	513,238 cfs
Type of Energy Dissipator	None

6. OUTLET FACILITIES

Item	Description
A. <u>Control Gates</u>	
Location	On embankment
Purpose	Regulation of outflow
Type	Broome-type gates
Number and Size of Gates	One 22-foot diameter conduit with three 7 feet by 22 feet gates
Entrance Invert Elevation	483.0 feet
B. <u>Low Flow Outlet Works</u>	
Location	On embankment
Purpose	Discharge into flood control conduit
Type	Slide gate
Number and Size of Gates	One 3 feet by 3 feet
Invert Elevation	540.0 feet

7. CONTROL POINTS

Item	Description
A. <u>Leon River near Belton Gage, No. 08102500</u>	
Location	River mile 13.1 of the Leon River downstream of Belton Lake
Purpose of control	To indicate the total flow at the gage, including releases from upstream reservoirs and local flow
Channel description	The channel is characterized by steep slope and a rocky stream bed and follows a tortuous courses. The channel meanders within the valley and contains many sharp bend and loops.
Drainage area	3,582 square miles
Treatment of uncontrolled runoff.	Contributes to target flow at gage
Target Flow Rate	3,000-10,000 cfs at Belton Gage
Time of Water Travel from Belton Lake	1-3 hours to the Leon River at Belton Gage
Monitoring provisions	Recording river gage with DCP
Dikes or levees downstream	None

7. CONTROL POINTS (continued)

Item	Description
B. <u>Little River near Little River Gage, No. 08104500</u>	
Location	River mile 95.8 of the Little River
Purpose of control	To indicate the total flow at the gage, including releases from upstream reservoirs and local flow
Channel description	The channel is characterized by steep slope and a rocky stream bed and follows a tortuous course. The channel meanders within the valley and contains many sharp bend and loops. The channel shifts badly.
Drainage area	5,228 square miles
Treatment of uncontrolled runoff	Contributes to target flow at gage
Target Flow Rate	3,000-10,000 cfs at Little River near Little Gage
Time of Water Travel from Belton Lake	9-17 hours to the Little River near Little Gage
Monitoring provisions	Recording river gage with DCP
Dikes or levees downstream	None

7. CONTROL POINTS (continued)

Item	Description
C. <u>Little River near Cameron Gage, No. 08106500</u>	
Location	River mile 33.2 of the Little River
Purpose of control	To indicate the total flow at the gage, including releases from upstream reservoirs and local flow
Channel description	The channel is characterized by steep slope and a rocky stream bed and follows a tortuous course. The channel meanders within the valley and contains many sharp bend and loops. The channel shifts badly.
Drainage area	7,065 square miles
Treatment of uncontrolled runoff.	Contributes to target flow at gage
Target Flow Rate	10,000 cfs at Cameron Gage
Time of Water Travel from Belton Lake	43-57 hours to Little River near Cameron Gage
Monitoring provisions	Recording river gage with DCP
Dikes or levees downstream	None

7. CONTROL POINTS (continued)

Item	Description
D. <u>Brazos River near Hempstead Gage, No. 08111500</u>	
Location	River mile 193.8 of the Brazos River
Purpose of control	To indicate the total flow at the gage, including releases from upstream reservoirs and local flow
Channel description	Coastal plains channel with tree-lined, steep banks and a very flat gradient. Bedding is sandy, with frequent sandbars. Overbank is predominantly farmland.
Drainage area	43,880 square miles
Treatment of uncontrolled runoff	Contributes to target flow at gage
Target Flow Rate	60,000 cfs at Hempstead Gage
Time of Water Travel From Belton Lake	95-127 hours to the Brazos River at Hempstead Gage
Monitoring provisions	Recording river gage with DCP
Dikes or levees downstream	None

7. CONTROL POINTS (continued)

Item	Description
E. <u>Brazos River at Richmond Gage, No. 08114000</u>	
Location	River mile 92.0 of the Brazos River
Purpose of control	To indicate the total flow at the gage, including releases from upstream reservoirs and local flow
Channel description	Coastal plains channel with tree-lined, steep banks and a very flat gradient. Bedding is sandy, with frequent sandbars. Overbank is predominantly farmland. Closer to Houston the channel is controlled by levees.
Drainage area	45,107 square miles
Treatment of uncontrolled runoff	Contributes to target flow at gage
Target Flow Rate	60,000 cfs at Richmond Gage
Time of Water Travel From Belton Lake	120-162 hours to the Brazos River at Richmond Gage
Monitoring provisions	Recording river gage with DCP
Dikes or levees downstream	None

EXHIBIT B

**CONTRACT BETWEEN THE BRAZOS RIVER AUTHORITY OF TEXAS AND THE
UNITED STATES OF AMERICA**

FOR

WATER STORAGE SPACE IN BELTON LAKE, TEXAS

ORIGINAL

OFFICIAL RECORD COPY

Contract No. D-41-443-CIVENG-58-120

CONTRACT
CONSERVATION STORAGE
BELTON DAM AND RESERVOIR

This contract, entered into this 31st day of October, 1957, by and between the United States of America (hereinafter called the Government) represented by the Contracting Officer executing this contract, and the Brazos River Authority, an agency of the State of Texas in the City of Mineral Wells, Texas (hereinafter called the Authority), WITNESSETH THAT:

WHEREAS, the Government is constructing the Belton Dam and Reservoir on the Leon River in Bell County, Texas (hereinafter called the Project) pursuant to the authority contained in the Flood Control Act approved July 24, 1946 (Public Law 526, 79th Congress, 2d Session); and,

WHEREAS, storage space surplus to the requirements of the Government for the operation of the Project for flood control exists in the reservoir between elevation 540.0 feet above mean sea level and elevation 569.0 feet above mean sea level; and,

WHEREAS, the Authority desires to store in the reservoir such water as may be surplus to the needs of the Government between aforementioned elevations and to use such water, if any is impounded, as is required for its needs; and,

WHEREAS, the Authority is a duly authorized State Agency with powers to control, store, preserve, use, distribute and sell the waters of the Brazos River and its tributaries, including the aforementioned Leon River, for such uses and purposes as set forth in the Act of the Texas Legislature creating said Authority and acts amendatory thereto; and,

WHEREAS, the Government is authorized by the Act approved May 23, 1952 (Public Law 360, 82nd Congress, 2nd Session), which revived and re-enacted Section 6 of the Flood Control Act approved December 22, 1944, (Public Law 534, 78th Congress, 2nd Session), to make contracts with States, municipalities, private concerns, or individuals, at such prices and on such terms as are deemed reasonable, for uses authorized by said acts for surplus water that may be available at any reservoir under the control of the Department of the Army.

NOW, THEREFORE, the parties do mutually agree as follows:

ARTICLE 1. WATER STORAGE SPACE.- The Authority shall have the right to utilize an undivided 90.453 percent of the storage space in the Project between elevation 540.0 feet above mean sea level and elevation 569.0 feet above mean sea level as deemed necessary by the Authority to impound water in the Project and make such diversions as granted to the Authority by the Board of Water Engineers for the State of Texas, or by law and approved by such Board, or

RETURN TO ~~FILE~~
CENTRAL FILES

its successors, to the extent that such storage will provide, subject to the availability of not to exceed forty-five thousand acre-feet of such storage space as set forth in Article 2, and subject to the retention by the Government and others of the remaining undivided 9.547 percent of the storage space for such purposes as the Government may deem advisable. The Government shall not be responsible for diversion by others, nor will it become a party to any controversies between users of the aforesaid 90.453 percent storage space, except as such controversies may affect storage space retained by the Government.

The Authority shall have the right to order releases from the aforesaid storage space to be made by the Government, and to take the water downstream from the Project, or as specifically authorized by the Secretary of the Army, at any time so long as the elevation of the water is above elevation 540 feet above mean sea level, provided that such releases when combined with local runoff below the dam will not cause flooding.

It is understood and agreed by both parties hereto that the City of Temple is entitled to a release from the aforesaid storage space of such part of the natural flow of the stream as the City could capture from its municipal reservoir in the absence of the Belton Reservoir, all in accordance with the rights of the City of Temple as granted by the State Board of Water Engineers in Certified Filing No. 852. It is further understood and agreed that the Authority shall cause releases to be made from the said storage space in full recognition of such rights but that this does not grant the City of Temple any right in excess of those contained in the aforesaid Certified Filing.

The Government reserves the right to take such measures as may be necessary in the operation of the Project to preserve life and/or property.

ARTICLE 2. FEDERAL LAW AND STATE LAWS. The Authority shall utilize such storage space in a manner consistent with Federal and State Laws. The rights granted the Authority herein are subject to the following provision contained in the Flood Control Act of 1946, Public Law 526, 79th Congress, 2nd Session: "Of the conservation storage capacity provided by such reservoir, not to exceed forty-five thousand acre-feet of such capacity shall be available for irrigation purposes in the Leon, Lampasas, and Little River Valleys."

ARTICLE 3. REGULATION OF THE USE OF WATER.- The regulation of the use of water stored in the aforesaid storage space shall be the responsibility of the Authority and shall not be considered a part of this contract.

ARTICLE 4. CONSIDERATION AND PAYMENT.- In consideration of the payments provided in this contract to be paid by the Authority to the Government, it is agreed that the Government will provide the Authority storage space in the Project as provided in Article 1. In consideration of the Government's providing the aforesaid storage space to the Authority, it is agreed that the Authority shall pay the following sums to the Government:

(1) \$40,070.55 on 1 July 1957 and \$40,070.55 on 1 July 1958, these amounts being simple interest at the rate of two and one-half percent (2½%) per annum from 1 July 1956 on the capital amount of \$1,602,822.00, the estimated cost of providing the said storage space.

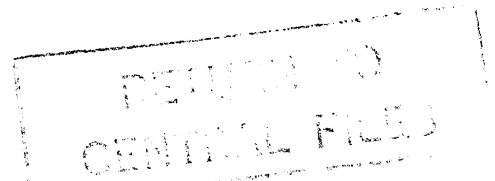
(2) ^{REVISED} \$1,642,892.55 which includes the cost of providing the said storage space to be utilized by the Authority as stated in Article 1, and interest on \$1,602,822.00 for the period 1 July 1958 through 30 June 1959. The sum of \$1,642,892.55 shall be paid in 48 consecutive annual installments in the amount of \$57,711.20 each, beginning on 15 August 1959. Annual payments thereafter will be due and payable on 15 August of each year up to and including 15 August 2006. Except for the first installment, which shall be applied solely to reduction of the principal, all installments shall include accrued interest at the rate of two and one-half percent (2½%) per annum on the unpaid balance.

It is understood and agreed that payments made under the terms of the Interim Conservation Storage Contract No. DA-41-443-CIVENG-57-26 shall be credited against the interest on the capital cost of the storage space for the period 1 July 1956 through 30 June 1959. The amount of the payments in excess of the interest on the capital cost for said period, shall be credited to the capital cost of the storage space after appropriate allowances in accordance with the interim contract have been made for operation and maintenance for the entire period of the interim contract.

In the event the actual first cost of the project should cause the allocated cost of providing the storage space set out herein to exceed the estimated cost of \$1,602,822.00 as determined by the pro rata method of cost allocation, the aforesaid annual payments shall be increased to reflect the actual pro rata cost, including interest during construction, as determined by the Contracting Officer. If such actual first cost of the project should cause the allocated cost to be less than the estimated cost of \$1,602,822.00, the aforesaid annual payments shall be decreased to reflect the actual pro rata cost, including interest during construction, as determined by the Contracting Officer.

In the event the annual payments are increased or decreased, as provided above, an adjustment, as determined by the Contracting Officer, of payments made prior to the determination of the final project cost shall be made in the first payment due after such costs are determined.

(3) 11.214 percent of the annual experienced cost of operation and maintenance of the Project, exclusive of the operation and maintenance cost for land management and public utilization. The first payment will be due and payable on 15 August 1958; will be for the period beginning with the expiration date of Interim Conservation Storage Contract No. DA-41-443-CIVENG-57-26 and ending with 30 June 1958; and, will be 11.214 percent of the experienced cost of operation and maintenance for that period, exclusive of the operation and maintenance



cost for land management and public utilization. In addition an advance payment in the amount of \$6,045.00 shall be made on the 15th day of August 1958, and annually thereafter an amount equal to 11.214 percent of the said annual experienced cost of operation and maintenance for the preceding Government fiscal year shall be paid by the 15th day of August following the end of said fiscal year for each succeeding year during the contract period. The advance payment made on 15 August 1959 shall be increased or decreased in an amount to reflect the difference between the payment of \$6,045.00 paid on 15 August 1958 and 11.214 percent of the annual experienced cost of operation and maintenance for the fiscal year ending 30 June 1959. It is further provided that additional contributions shall be made by the Authority for maintenance cost not annually recurring, at the same rate of 11.214 percent of actual cost. Such nonrecurring items shall include but not be restricted to sedimentation resurvey costs and major replacement costs on the outlet structure.

Records of cost of operation and maintenance of the Project shall be available for inspection and examination by the Authority.

The extent of operation and maintenance of the Project shall be determined by the Contracting Officer and all records and accounting shall be maintained by the Contracting Officer. In the event the Authority should require additional operation and maintenance for the conservation storage over and above that deemed necessary by the Contracting Officer, the Authority shall bear the entire cost of such additional expense.

(4) In the event of default in the payment of the costs contained in Articles 4(1), (2) and (3) the Authority shall pay interest on such overdue payments at the rate of two and one-half percent (2½%) per annum thereon; compounded annually, and such interest shall be charged from the date such payments are due until paid.

(5) In the event that any part of the aforesaid 45,000 acre-feet of capacity available for irrigation purposes should be required for such use under authority of the provisions of law cited in Article 2, this contract shall be renegotiated as to the amount of storage thus to be used so that a proportionate reduction shall be made in the contract consideration, including operation and maintenance.

ARTICLE 5. PERIOD OF CONTRACT.- This contract shall become effective as of the date of approval by the Secretary of the Army, or his duly authorized representative, and shall continue in full force and effect thereafter for a term of fifty (50) years, or until such time as power facilities are installed at the Project, or until such time as a reallocation of storage is made as a result of the construction of Proctor Reservoir, whichever first occurs. At the time power facilities are installed or at such time as any portion of the aforesaid forty-five

thousand acre-feet of capacity is to be utilized for irrigation purposes, in accordance with the proviso contained in the authorizing act referred to in Article 2, this contract shall be subject to renegotiation.

In the event this contract should require renegotiation as the result of utilization of any part of the aforesaid 45,000 acre-feet of capacity available for irrigation purposes, it is agreed that the Authority shall be given an advance notice of not less than two years prior to the effective date of such renegotiated contract. If the contract is renegotiated for such reason, only the provisions thereof in reference to the aforesaid 45,000 acre-feet of capacity shall be involved in the renegotiation.

ARTICLE 6. RENEWALS.- It is the understanding and expectation of the parties hereto that upon expiration of this contract the Authority shall have the right, subject to any required approval of appropriate State authorities, to negotiate for further use of storage space then available for water supply purposes. The terms of the new contract shall be subject to mutual agreement at the time, it being the further expectation of the parties that in determining the properly allocable charges to be specified in such new contract due consideration will be given to the fact that the original investment of the Government may have been reimbursed. Consideration will also be given to any extraordinary expenditures made or expected to be made by the Government and which are not recovered during the original contract period. *renegotiation*

ARTICLE 7. DEFAULT.- In the event the Authority refuses or fails to comply with any and all of the terms of this contract including the foregoing provisions with respect to payments, the Government reserves the right to terminate this contract.

ARTICLE 8. OPERATION AND MAINTENANCE.- The Government shall operate and maintain the Project owned by the Government. The Authority shall have the right to make withdrawals of water for its purposes as needed in accordance with Article 1. The Authority shall be responsible for operation and maintenance of all features and appurtenances which may be provided and owned by the Authority.

ARTICLE 9. RIGHTS-OF-WAY.- The grant of an easement for right-of-way over, across, in and upon Government-owned lands, under the control of the Secretary of the Army, required for transmission of water from point of withdrawal, shall be by separate instrument without additional cost to the Authority, under the authority, and in accordance with, the provisions of the Act of Congress, approved 10 August 1956, Ch. 1041, Sec. 53, 70A Stat. 641 (10 U. S. C. 2668 and 2669).

ARTICLE 10. RELEASE OF CLAIMS.- The Authority shall hold and save the Government including its officers, agents and employees, harmless from liability of any nature or kind for or on account of any claim for damages which may be filed or asserted as a result of withdrawal or release of water from the Project, made or ordered by the Authority, or as a result of the construction, operation, or maintenance of the features or appurtenances owned and operated by the Authority.

ARTICLE 11. TRANSFER OR ASSIGNMENT.- The Authority shall not transfer or assign this contract nor any rights acquired thereunder, nor suballot said conservation storage space or any part thereof, nor grant any interest, privilege or license whatsoever in connection with this contract, without permission in writing from the Secretary of the Army; provided, that this restriction shall not be construed to apply to any water which may be obtained from the conservation storage space by the Authority and furnished to any third party or parties nor any method of allocation thereof.

ARTICLE 12. OFFICIALS NOT TO BENEFIT.- No member of or delegate to Congress, or resident commissioner, shall be admitted to any share or part of this contract, or to any benefit that may arise therefrom; but this provision shall not be construed to extend to this contract if made with a corporation for its general benefit.

ARTICLE 13. COVENANT AGAINST CONTINGENT FEES.- The Authority warrants that no person or selling agency has been employed or retained to solicit or secure this contract upon an agreement or understanding for a commission, percentage, brokerage, or contingent fee, excepting bona fide employees or bona fide established commercial or selling agencies maintained by the Authority for the purpose of securing business. For breach or violation of this warranty the Government shall have the right to annul this contract without liability or in its discretion to add to the contract price or consideration the full amount of such commission, percentage, brokerage, or contingent fee.

ARTICLE 14. DISPUTES.- Except as otherwise provided in this contract, any dispute concerning a question of fact arising under this contract which is not disposed of by agreement shall be decided by the Contracting Officer, who shall reduce his decision to writing and mail or otherwise furnish a copy thereof to the Authority. Within 30 days from the date of receipt of such copy, the Authority may appeal by mailing or otherwise furnishing to the Contracting Officer a written appeal addressed to the Secretary, and the decision of the Secretary or his duly authorized representative for the hearing of such appeals shall, unless determined by a court of competent jurisdiction to have been fraudulent or capricious or arbitrary or so grossly erroneous as necessarily to imply bad faith, or not supported by substantial evidence, be final and conclusive; provided that, if no such appeal

is taken, the decision of the Contracting Officer shall be final and conclusive. In connection with any appeal proceeding under this clause, the Authority shall be afforded an opportunity to be heard and to offer evidence in support of its appeal. Pending final decision of a dispute hereunder, the Authority shall proceed diligently with the performance of the contract and in accordance with the Contracting Officer's decision.

ARTICLE 15. APPROVAL OF CONTRACT.- This contract shall be subject to the written approval of the Secretary of the Army or his duly authorized representative and shall not be binding until so approved.

ARTICLE 16. DEFINITIONS.- (a) The term "Secretary" means the Secretary of the Army; the terms "Secretary of the Army" or "Head of the Department" as used herein shall have one and the same meaning; and the term "his duly authorized representative" means the Chief of Engineers, Department of the Army, or an individual or board designated by him.

(b) The term "Contracting Officer" means the person executing this contract on behalf of the Government, and any other officer or civilian employee who is a properly designated contracting officer; and the term includes, except as otherwise provided in this contract, the authorized representative of a Contracting Officer acting within the limits of his authority.

ARTICLE 17. ALTERATIONS.- The following alterations have been made in the provisions of this contract: None

TO
CENTRAL FILES

IN WITNESS WHEREOF, the parties hereto have executed this agreement as of the day and year first above written.

APPROVED JAN 15 1958

Wilber M. Brucker

Wilber M. Brucker
Secretary of the Army

THE UNITED STATES OF AMERICA

By

Walter Wells

(Contracting Officer)

WALTER J. WELLS
Colonel, CE

BRAZOS RIVER AUTHORITY

By

H. H. Kilburn

(President)

707 West 11th St.
Plainview, Texas

(Post Office Address)

ATTEST:

[Signature]

Secretary, Brazos River Authority

APPROVED AS TO FORM:

Roger Dyer

Attorney, Brazos River Authority

BELTON RESERVOIR
Storage Space No. 2

Contract No: Modification No. 1 to contract No. DA-41-443-CIVENG-58-120
dated ~~31 October 19~~
13 DEC 1960
With: Brazos River Authority
For: 100% of the Storage Space No. 2 which is between elevations
569 & 594.

OPERATION AND MAINTENANCE PAYMENTS

Due: (See note below)

Annually Recurring O&M Costs.- 25.088% of actual O&M costs exclusive of
O&M costs for land management and public utilization.

NOT Annually Recurring O&M Costs.- 24.391% of the actual cost of sedimentation
resurveys and major capital replacements when incurred.

NOTE: Payments commence on the 15th anniversary of initiation of deliberate
impoundment and are due on each anniversary thereafter OR they commence on
date of first use of water from Storage Space No. 2 and are due on that date
each year thereafter. (Estimated annual payments, \$13,800)

SWFDC-F

28 June 1979

Walter J. Wells, USA Retired
General Manager
Brazos River Authority
4400 Cobbs Drive
P.O. Box 7555
Waco, Texas 76710

Dear Colonel Wells:

Reference Belton Lake Water Supply Contract No. DA-41-443-CIVENG-58-120, dated 31 October 1957 and Supplement Agreement, Modification No. 1, dated 18 January 1960.

The amortization payment schedule for Space #2 based on the final cost allocation completed on June 1978 (reference our 22 June 1978 transmittal letter) has been changed due to an error in calculation. Page 7 of the Final Cost Allocation Report has been superseded by the attached statement.

The revised total due by you on Space #2 effective 30 September 1979, to be amortized over the remaining 45 years is \$3,366,328.97.

→ MOD I

Sincerely,

2 Incl

1. Revised page 7 of Space #2 Final Cost Allocation
2. Revised Payment Schedule

R. T. GEIGER
Finance and Accounting Officer

Copy furnished:
Ops (John Nelson)
Planning (Harold Newman)

EXHIBIT C
STANDING INSTRUCTIONS TO LAKE MANAGER

EXHIBIT C
STANDING INSTRUCTIONS TO LAKE MANAGER
BELTON DAM AND LAKE

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**STANDING INSTRUCTIONS TO LAKE MANAGER
BELTON DAM AND LAKE**

I. GENERAL

1. Instructions. Detailed instructions to the project personnel at Belton Dam and Lake are presented below.

a. Regulation. The Fort Worth District Water Management Office will normally issue instructions for the storage and discharge of water. In the event communications with the Fort Worth District Water Management Office are disrupted, the Lake Manager will direct regulation in accordance with the Emergency Regulation guidance provided in Section II of this exhibit.

b. Data Reporting. The Water Management Office is staffed from 0700 hours to 1600 hours daily, and 0700 hours to 1100 hours on weekends and holidays (except Christmas Day). During these hours reservoir regulators may be reached via telephone at 817-886-1551, via e-mail at ceswf-od-1@usace.army.mil, or (as a backup) via FAX at 817-886-6472. Outside of these hours the Water Management Office Duty Regulator may be reached via mobile telephone at 817-791-0973, or, as a backup, via the above e-mail address.

(1). Daily Report. Each day lake and hydrometeorological data will be submitted to the Fort Worth District Water Management Office between 0800 and 0830 hours. The primary means of submission will be the Internet at <http://www.swf-wc.usace.army.mil>. The secondary means of submission will be via telephone, and FAX may be used as a backup. The following data should be included in the daily report.

(a). Weather. For the 24-hour period preceding 0800 hours each day, report cumulative precipitation and evaporation values, in inches, and the maximum and minimum experienced temperature readings.

(b). Gate Settings. Gate number of each open gate, with the height of opening in feet as of 0800 hours on the date of report.

(c). Spillway Discharge. In the event discharge occurs over the uncontrolled spillway, report the respective dates and times discharge begins and ends.

(2). Reporting Severe Weather. During normal project duty hours, including weekends as applicable, severe weather will be reported as it develops, to include information and data that may be requested by the Water Management Office. Severe weather conditions outside of normal project duty hours will be reported when and as requested by the Water Management Office.

(3). Reporting Gate Operations. Upon completion of any change in gate settings, details of the gate operations will be reported to the Water Management Office via telephone, e-mail, or FAX (as backup). The report shall include the gate settings prior to change, the date and time of beginning of change, the date and time of completion of change, and the gate settings upon completion of change.

c. Reporting Unusual Events. Events or conditions not normally encountered in the routine operation of the dam and lake that might endanger the integrity of the dam or necessitate temporary or permanent revision of the operating procedures shall be promptly reported to the Operations Division and the Water Management Office. Settlement, movement, or cracking of the earth embankment or abutments, unusual change in seepage rates or development of new seepage areas, landslides, rockslides, displacement of riprap, or indication of an impending movement should be reported to the Dam Safety Program Manager in the Geotechnical Office. Any changes to the outlet works or spillway including structural settlement or movement, cracking, or vibrations, mechanical malfunction or failure shall be reported immediately to the Water Management Office and the Dam Safety Coordinator. Reference the Belton Dam **Flood Emergency Plan** should an event occur indicating any degree of jeopardy to the safety of the dam or to the safety of the public. The stilling basin and protected/armored downstream areas must be visually monitored closely during all high releases. Outside of normal duty hours one of the persons listed on the Fort Worth District Notification List for Belton Lake will be notified, and the Duty Regulator of the Water Management Office will be notified via mobile phone 817-791-0973.

d. Warnings. It is the responsibility of the Lake Manager to maintain a list in current status of residents, and/or property, which would be endangered or inconvenienced by large and/or prolonged releases, and to give adequate warning of such impending releases. Notification will be made by whatever means are available, in accordance with current Fort Worth District emergency notifications protocol. In every case, before an increase in release rate is made, a warning horn shall be sounded and the area immediately below the stilling basin visually checked for person(s) in a dangerous area.

e. Gate Changes. Gate changes will normally be directed by the Water Management Office. In the event communications with the Fort Worth District Office are disrupted, the Lake Manager will direct gate changes. During flood periods, gate changes may be required as often as every half hour. Only under unusual circumstances will gate changes be required more frequently than every half hour. Examples of such unusual circumstances include unexpectedly high rates of change in inflow to the reservoir, or a required response to a dam safety issue. The gates will be operated in a manner prescribed by the manufacturer. A complete log of all gate operations will be kept for each gate.

II. REGULATION PROCEDURES

1. Normal Regulation. Normally, instructions for storage and release of water for conservation and flood control purposes will be issued by the Water Management Office in accordance with the

plan of regulation prescribed in Chapter 7 of this water control manual.

2. Emergency Regulation. In the event of disruption of communications with the Fort Worth District Water Management Office, the Lake Manager will, on their own initiative, direct operation of the reservoir in accordance with the rules outlined below:

a. Make conservation releases in accordance with the current request by the BRA as last related by the Water Management Office prior to loss of communications.

b. Take immediate steps to re-establish communication with the Fort Worth District Water Management Office.

c. Until communications are restored, regulate the reservoir in accordance with Chapter 7, Belton Dam Reservoir Regulation Schedule.

3. Temporary Deviations. During the course of normal or emergency regulation of the reservoir, the Lake Manager may temporarily deviate from the current release rates in the event an immediate short-term departure is deemed necessary to protect the safety of the dam, or to avoid serious hazards to life. As soon as practicable, the Fort Worth District Water Management Office will be informed via telephone, e-mail, or FAX, as to the nature of the emergency and the subsequent response. If the deviation is conducted in the interest of dam safety, the Dam Safety Coordinator will also be notified as soon as practicable. Such actions shall be confirmed in writing, as soon as practicable, to the Fort Worth District Water Management Office and the Southwest Division Water Management Office, and shall include justification for the action.

EXHIBIT D

URS-FNI-HZ TEAM

QUALITY MANAGEMENT SYSTEM (QMS) FORMS

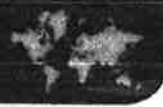
EXHIBIT D

URS-FNI-HZ TEAM

QUALITY MANAGEMENT SYSTEM (QMS) FORMS

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IE QMS - Americas

Independent Technical Review

Project Name	Update Water Control Manual for Belton Dam	Client	USACE Fort Worth District
Project Location	Bell County, Texas	PM	Jinwei Qiu, PE
Project Number	25336613	PIC	Thandav Murphy, PE

(This section is to be completed by the Project Manager or the PM's Designee.)

Identifying Information

Assigned Reviewer: Anand Prakash, PE
Comments Required by: January 21, 2015

Work Product Originator: Jinwei Qiu, Preston Kutney and Evelyn Eng-Nol

Work Product to be Reviewed: Belton Dam Water Control Manual 30% Review

Review Scope: Review for correctness, completeness and technical accuracy

Specific Instructions: Enter specific instructions for the work product.

Submitted by: Jinwei Qiu 01/20/2015
Project Manager Signature Date

(This Section is to be completed by the Reviewer.)

Comments

Select:

A. Reviewer has no comments.

or

B. Comments have been provided on:

Marked directly on work product

Comment and Disposition Form 3-5

Other, Specify: Click to enter text.

Anand Prakash 01/23/2015
Reviewer Signature Date

(This section is to be completed by the Reviewer after verification of comment incorporation, if box B is checked off above.)

Verification

Select:

C. Verification of comment incorporation has been performed by Reviewer. There are no outstanding issues.

or

D. Verification of comment incorporation has been performed by Reviewer. Unresolved issues have been submitted to the Project Manager or Designee for resolution.

and

E. Reviewer asserts that the work product ITR is complete.

Anand Prakash 08/7/2015
Reviewer Signature Date

APPROVAL and DISTRIBUTION

ITR is complete.

Jinwei Qiu 08/07/2015
Project Manager or Designee Signature Date

Distribution:

Project Central File - Quality File Folder

Other - Specify: Enter names here.



IE QMS - Americas

Detail Check

Project Name	Update Water Control Manual for Belton Dam	Client	USACE Fort Worth District
Project Location	Bell County, Texas	PM	Jinwei Qiu, PE
Project Number	25336613	PIC	Thandav Murphy, PE

(This section is to be completed by the Project Manager or the PM's Designee.)

Assigned Checker: Janis Murphy, PE Comments Required by: May 12, 2015

Work Product Originator: Jinwei Qiu, Preston Kutney and Melissa Perette

Work Product to be Checked: Belton Dam Water Control Manual 60% Review

This Detail Check is a check for correctness, completeness and technical accuracy.
 This Detail Check is only a technical edit for format, spelling, grammar, pagination and readability.

Specific Instructions: Enter specific instructions for the work product.

Submitted by: *Jinwei Qiu* 05-11-2015
Project Manager Signature **Date**

(This Section is to be completed by the Checker.)

Select:

A. Checker has no comments.

or

B. Comments have been provided on:

Marked directly on work product
 Comment and Disposition Form 3-5
 Other; Specify: Click here to enter text.

Janis C. Murphy 5/12/15
Checker Signature **Date**

(This section is to be completed by the Checker after verification of comment incorporation, if box B is checked off above.)

Select:

C. Verification of comment incorporation has been performed by Checker. There are no outstanding issues.

or

D. Verification of comment Incorporation has been performed by Checker. Unresolved Issues have been submitted to the Project Manager or Designee for final resolution.

and

E. Checker asserts that the work product review is complete.

Janis C. Murphy 5/13/15
Checker Signature **Date**

APPROVAL and DISTRIBUTION

Detail Check is complete.

Jinwei Qiu 05/15/2015
Project Manager or Designee Signature **Date**

Distribution:
 Project Central File - Quality File Folder
 Other - Specify: Enter names here.



IE QMS - Americas

Independent Technical Review

Project Name Update Water Control Manual for Belton Dam **Client** USACE Fort Worth District

Project Location Bell County, Texas **PM** Jinwei Qiu, PE

Project Number 25336613 **PIC** Thandav Murphy, PE

Identifying Information

(This section is to be completed by the Project Manager or the PM's Designee.)

Assigned Reviewer: Anand Prakash, PE **Comments Required by:** May 12, 2015
Work Product Originator: Jinwei Qiu, Preston Kutney and Melissa Perette
Work Product to be Reviewed: Belton Dam Water Control Manual 60% Review
Review Scope: Review for correctness, completeness and technical accuracy
Specific Instructions: Enter specific instructions for the work product.

Submitted by: Jinwei Qiu 05-11-2015
Project Manager Signature **Date**

Comments

(This Section is to be completed by the Reviewer.)

Select:
A. Reviewer has no comments.
or
B. Comments have been provided on:
 Marked directly on work product
 Comment and Disposition Form 3-5
 Other; Specify: Click to enter text.

Anand Prakash 05/13/2015
Reviewer Signature **Date**

Verification

(This section is to be completed by the Reviewer after verification of comment incorporation, if box B is checked off above.)

Select:
C. Verification of comment incorporation has been performed by Reviewer. There are no outstanding issues.
or
D. Verification of comment incorporation has been performed by Reviewer. Unresolved issues have been submitted to the Project Manager or Designee for resolution.
and
E. Reviewer asserts that the work product ITR is complete.

Anand Prakash 08/7/2015
Reviewer Signature **Date**

APPROVAL and DISTRIBUTION

ITR is complete.

Jinwei Qiu 08/07/2015
Project Manager or Designee Signature **Date**

Distribution:

Project Central File - Quality File Folder
Other - Specify: Enter names here.



IE QMS - Americas

Detail Check

Project Name	Update Water Control Manual for Belton Dam	Client	USACE Fort Worth District
Project Location	Bell County, Texas	PM	Jinwei Qiu, PE
Project Number	25336613	PIC	Juan Vargas, PE

(This section is to be completed by the Project Manager or the PM's Designee.)

Assigned Checker: Janis Murphy, PE
Comments Required by: June 2, 2015

Work Product Originator: Jinwei Qiu, Preston Kutney and Melissa Perette

Work Product to be Checked: Belton Dam Water Control Manual 90% Review

This Detail Check is a check for correctness, completeness and technical accuracy.
 This Detail Check is only a technical edit for format, spelling, grammar, pagination and readability.

Specific Instructions: Enter specific instructions for the work product.

Submitted by: Jinwei Qiu 06/01/2015
Project Manager Signature **Date**

(This Section is to be completed by the Checker.)

Select:
A. Checker has no comments.
or
B. Comments have been provided on:
 Marked directly on work product
 Comment and Disposition Form 3-5
 Other; Specify: Click here to enter text.

Janis C. Murphy 6/3/15
Checker Signature **Date**

(This section is to be completed by the Checker after verification of comment incorporation, if box B is checked off above.)

Select:
C. Verification of comment incorporation has been performed by Checker. There are no outstanding issues.
or
D. Verification of comment incorporation has been performed by Checker. Unresolved issues have been submitted to the Project Manager or Designee for final resolution.
and
E. Checker asserts that the work product review is complete.

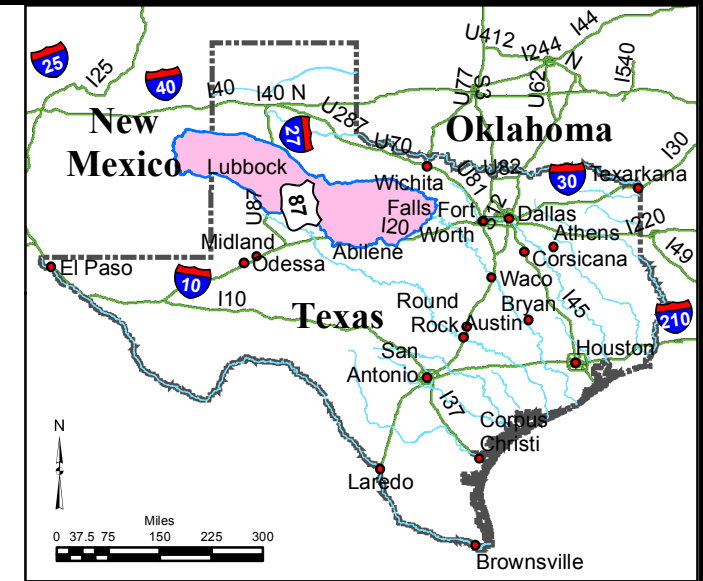
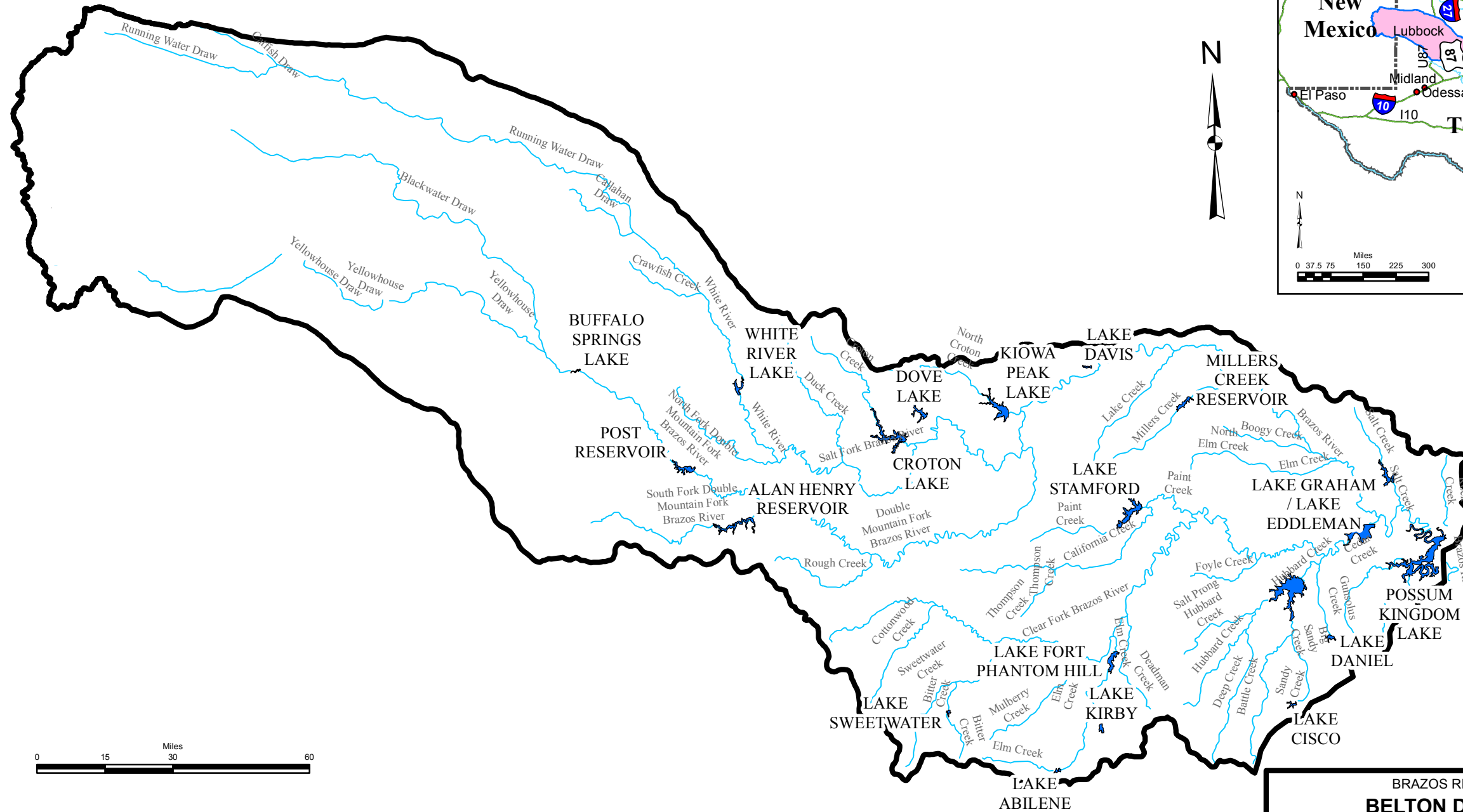
Janis C. Murphy 6/20/15
Checker Signature **Date**

APPROVAL and DISTRIBUTION




Detail Check is complete.

Jinwei Qiu 08/13/2015
Project Manager or Designee Signature **Date**

Distribution:
Project Central File - Quality File Folder
Other - Specify: Enter names here.



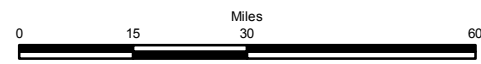
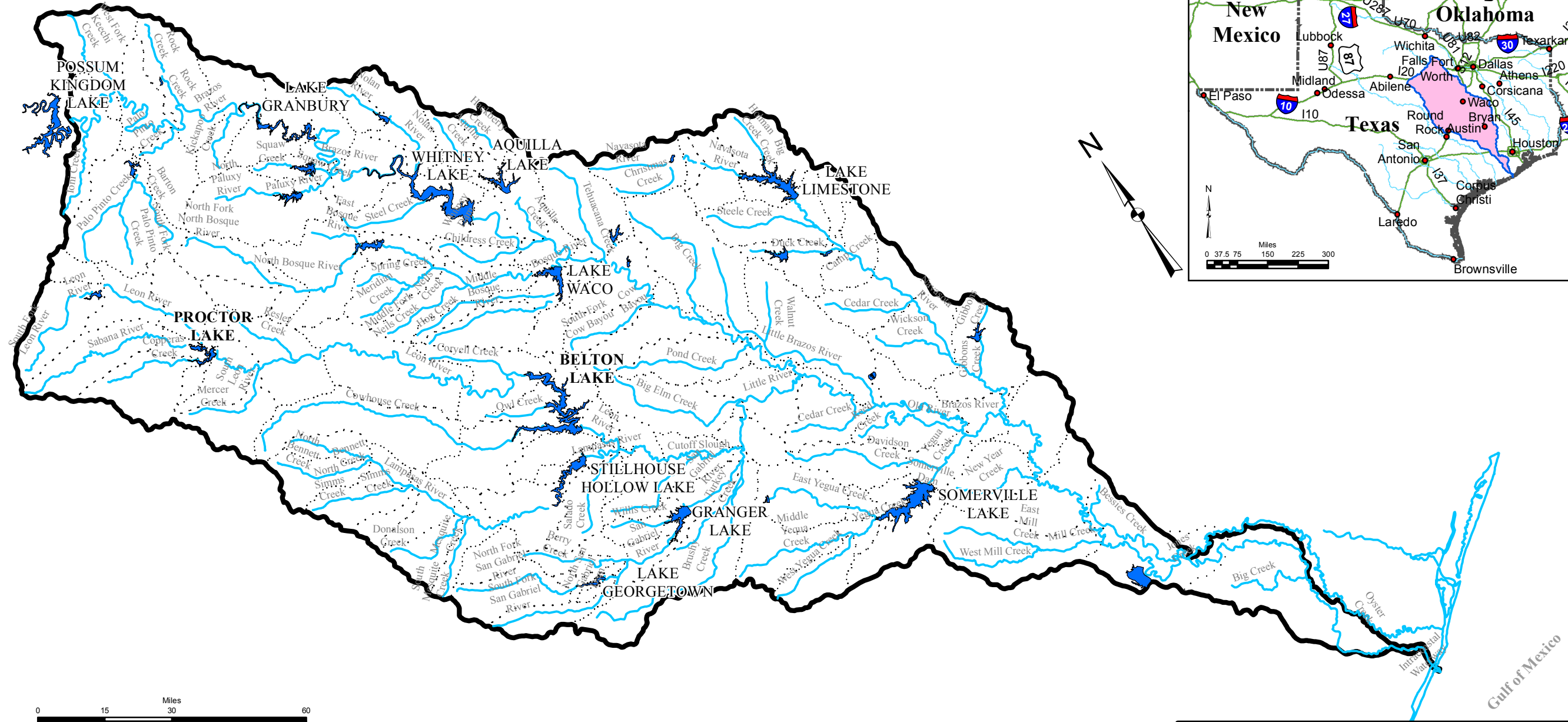
LEGEND

-  RIVER BASIN BOUNDARY
-  RIVERS
-  LAKE BOUNDARY





BRAZOS RIVER BASIN, TEXAS
BELTON DAM AND LAKE
 LEON RIVER, TEXAS

WATERSHED MAP
UPPER-BRAZOS RIVER BASIN

U.S. ARMY ENGINEER DISTRICT, FORT WORTH September 2015



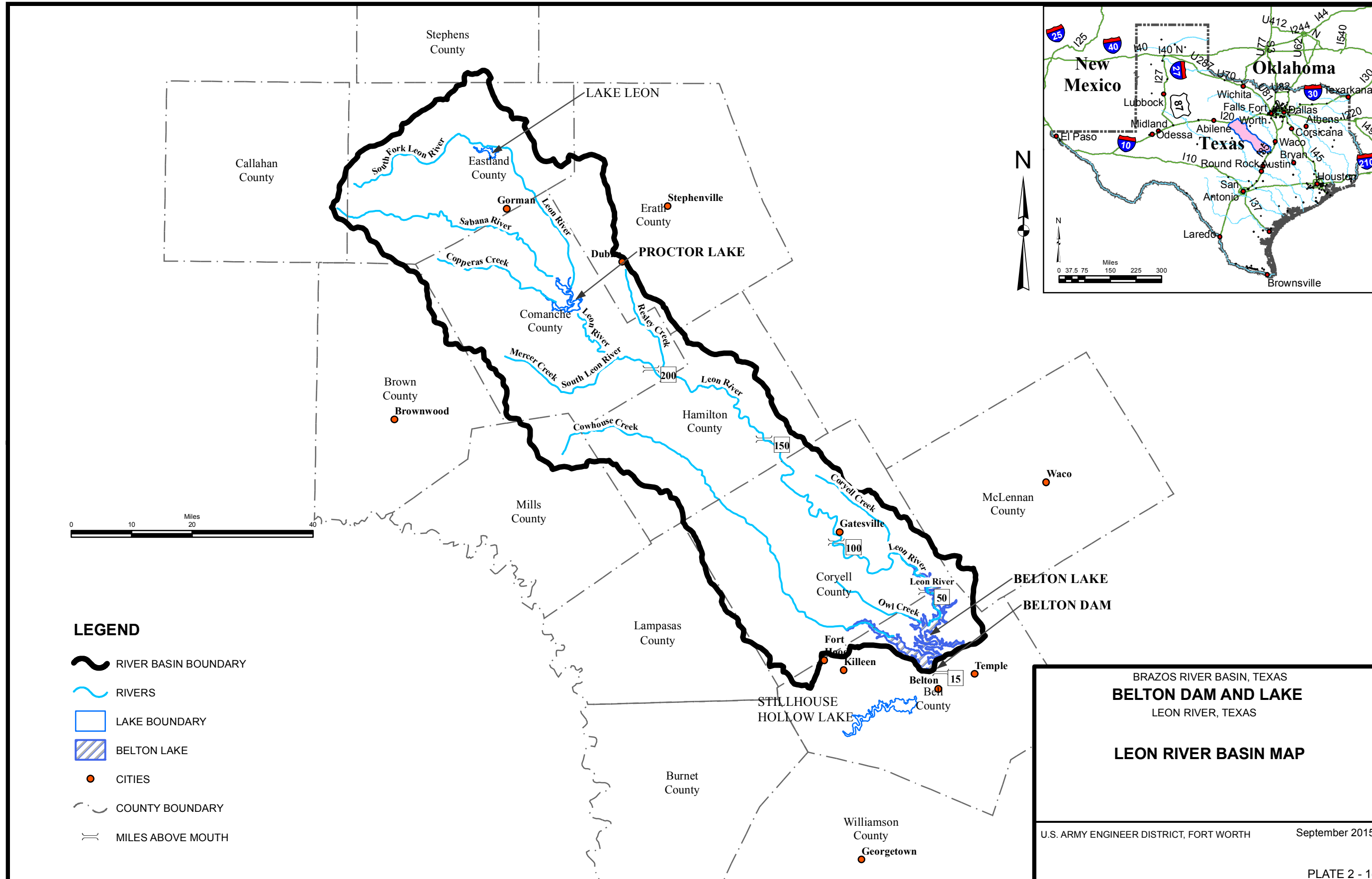
LEGEND

-  RIVER BASIN BOUNDARY
-  RIVER SUBBASIN BOUNDARY
-  RIVERS
-  LAKE BOUNDARY

BRAZOS RIVER BASIN, TEXAS
BELTON DAM AND LAKE
 LEON RIVER, TEXAS

WATERSHED MAP
MID AND LOWER BRAZOS RIVER BASIN

U.S. ARMY ENGINEER DISTRICT, FORT WORTH September 2015

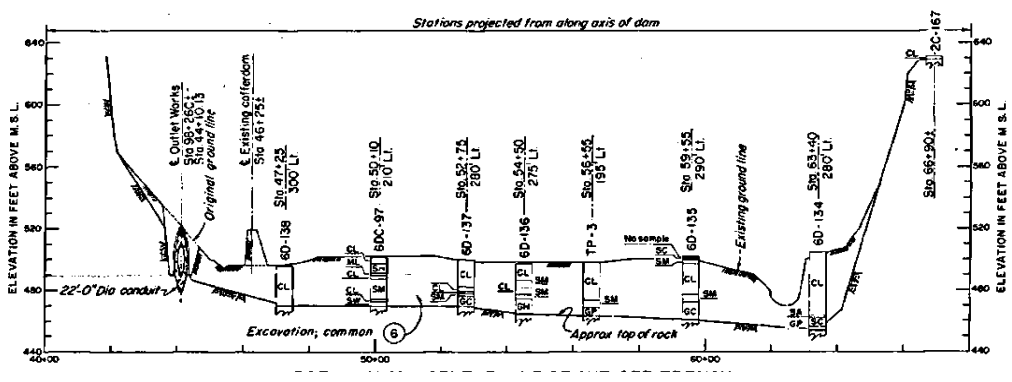
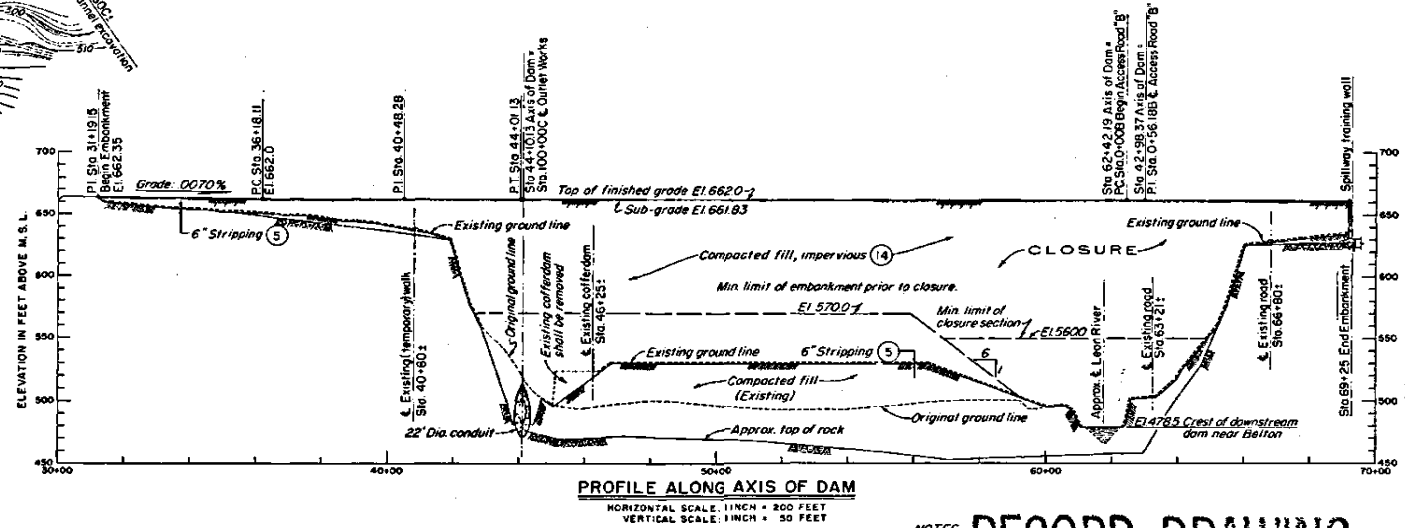
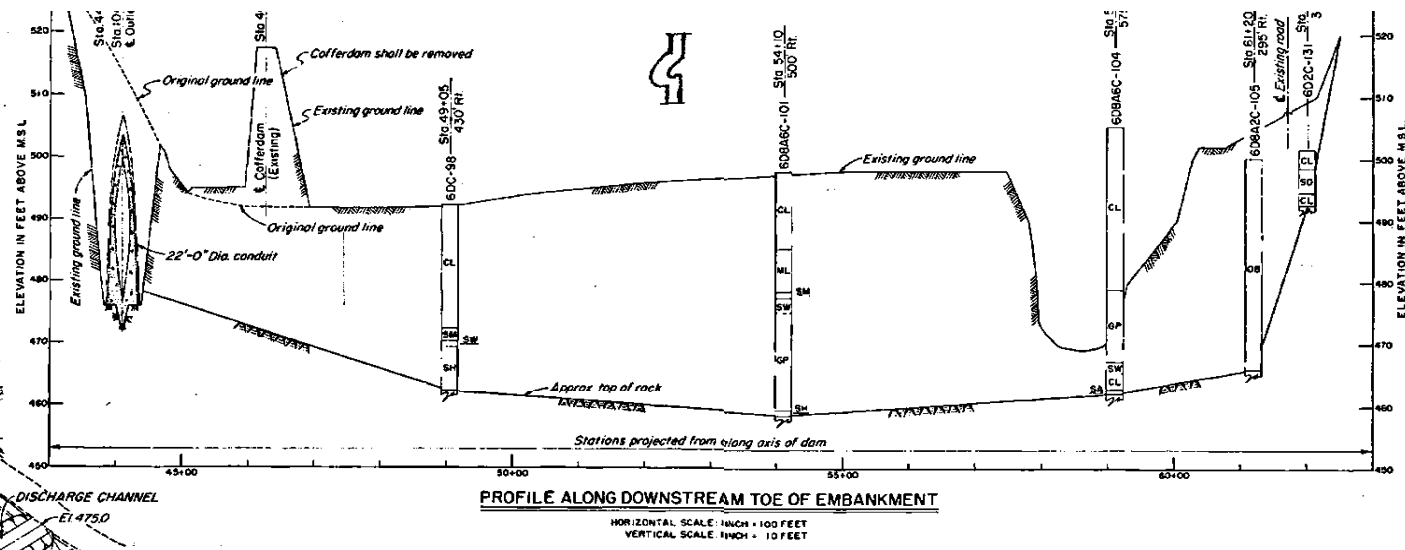
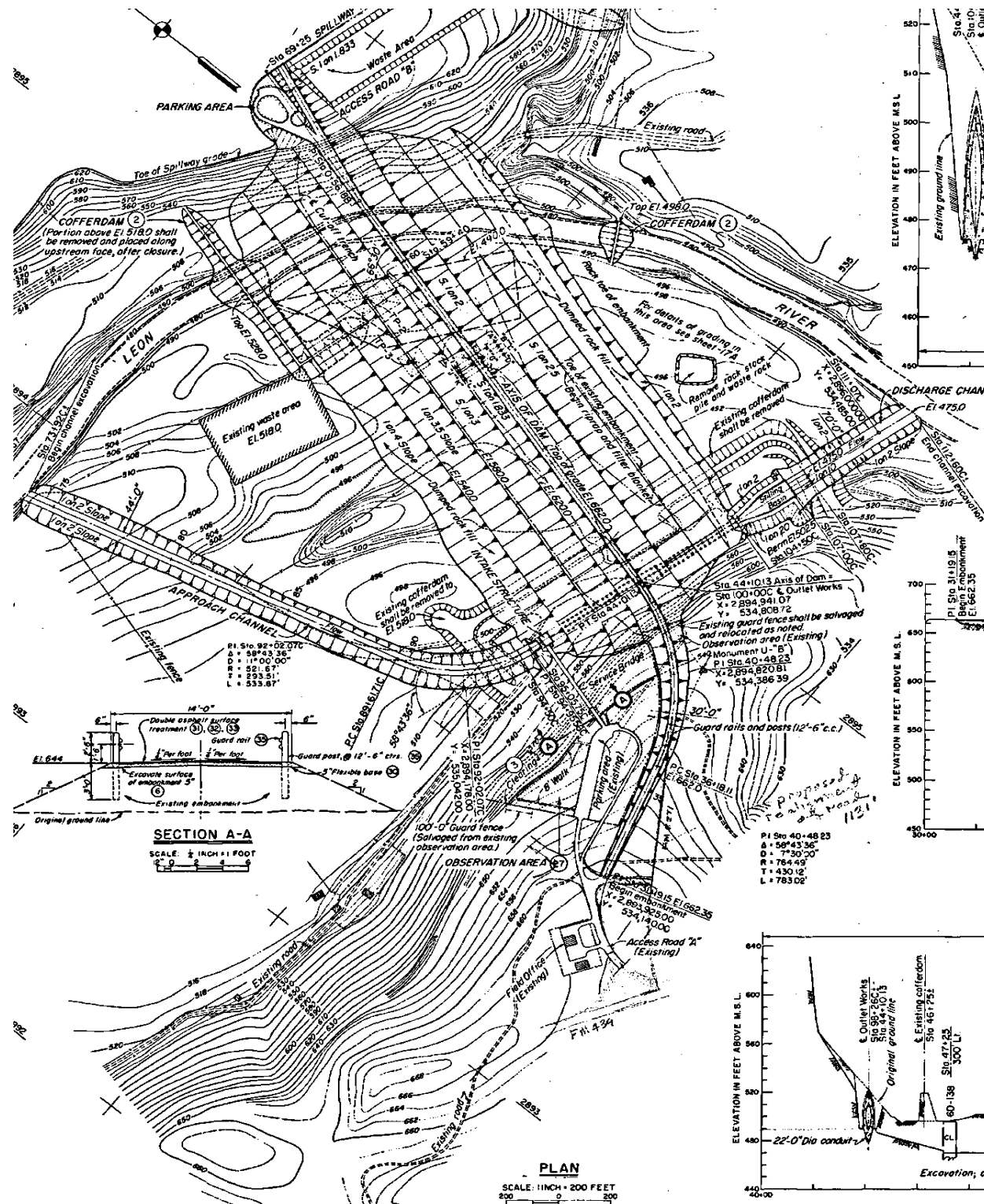


BRAZOS RIVER BASIN, TEXAS
BELTON DAM AND LAKE
 LEON RIVER, TEXAS

LEON RIVER BASIN MAP

U.S. ARMY ENGINEER DISTRICT, FORT WORTH September 2015

PLATE 2 - 1c



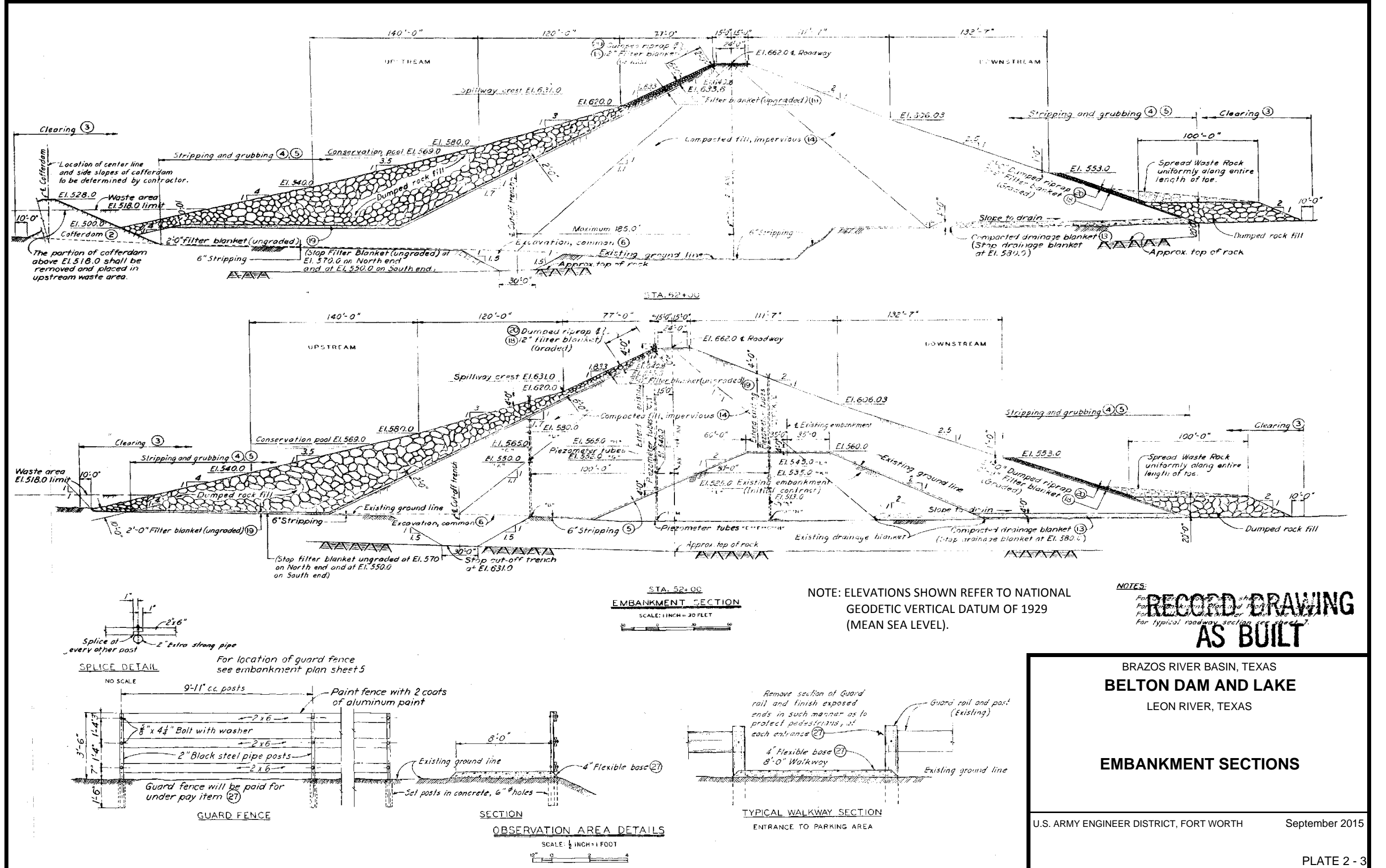
RECORD DRAWING AS BUILT

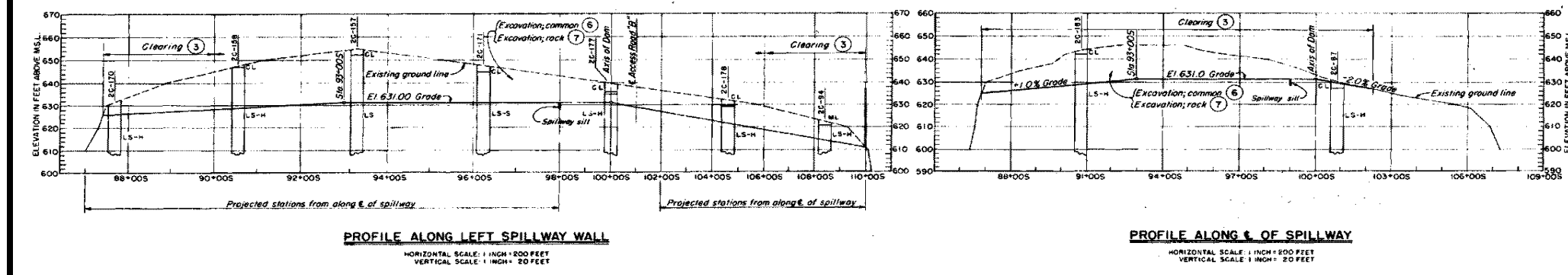
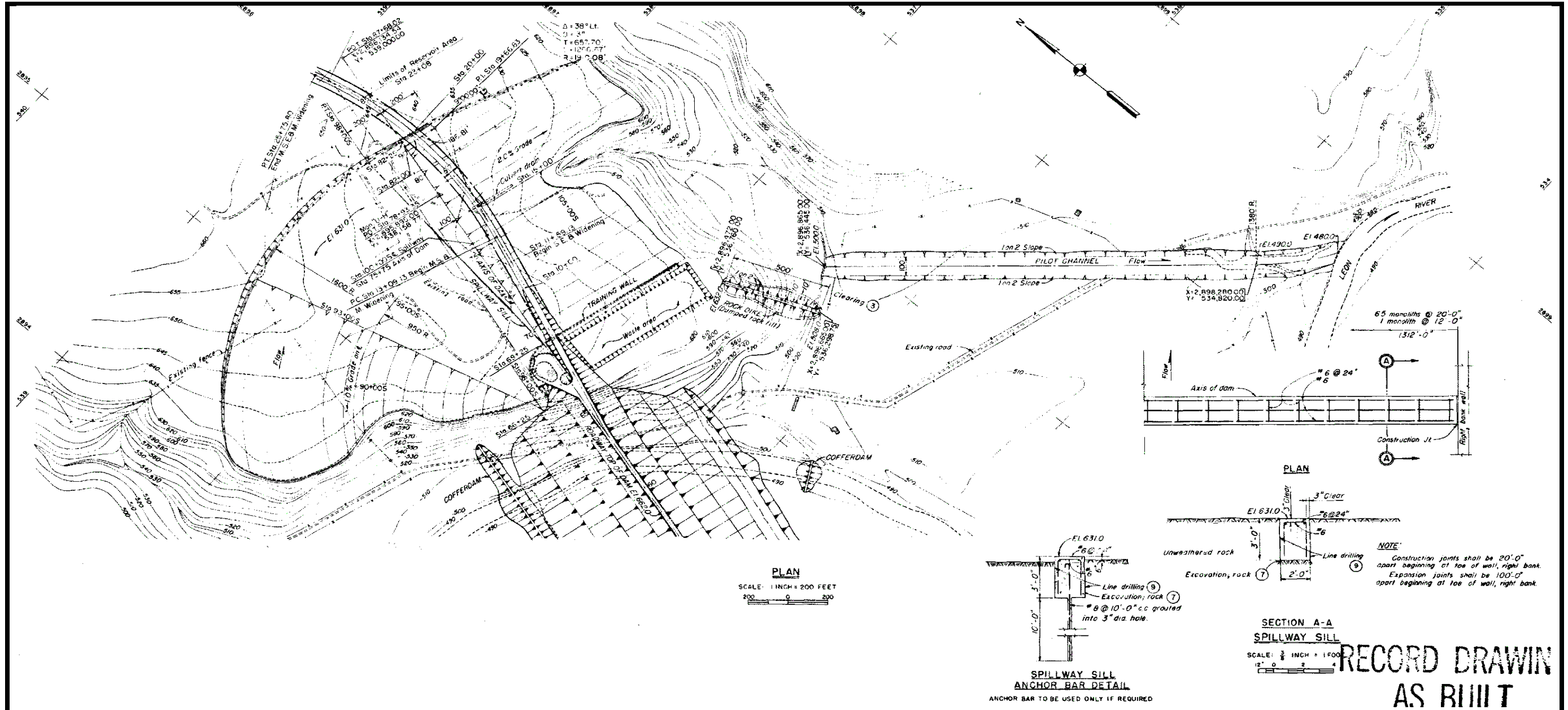
THIS DRAWING HAS BEEN REDUCED TO ONE-HALF THE ORIGINAL SIZE

BRAZOS RIVER BASIN, TEXAS
BELTON DAM AND LAKE
 LEON RIVER, TEXAS

EMBANKMENT PLAN AND SECTIONS

U.S. ARMY ENGINEER DISTRICT, FORT WORTH September 2015



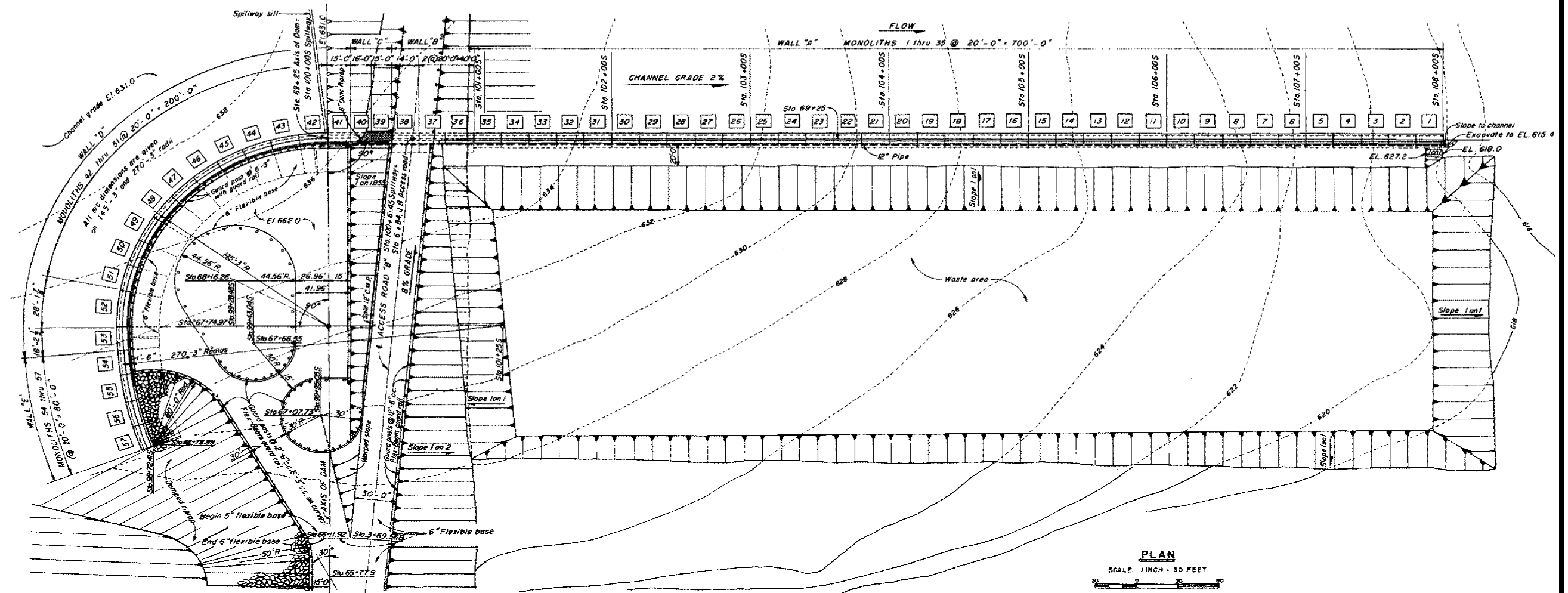


BRAZOS RIVER BASIN, TEXAS
BELTON DAM AND LAKE
 LEON RIVER, TEXAS

**SPILLWAY
 PLAN AND PROFILE**

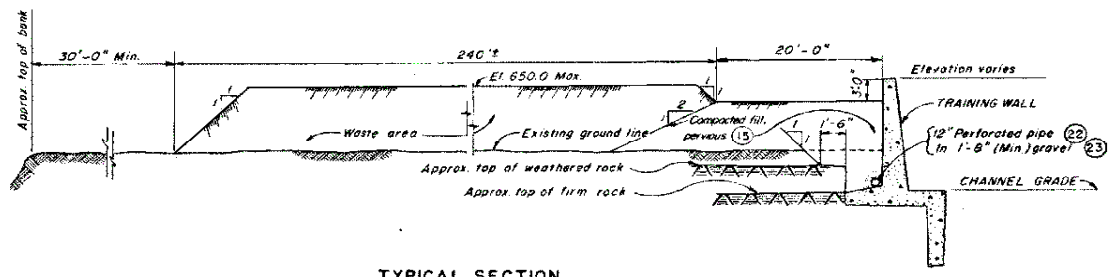
NOTE: ELEVATIONS SHOWN REFER TO NATIONAL GEODETIC VERTICAL DATUM OF 1929 (MEAN SEA LEVEL).

U.S. ARMY ENGINEER DISTRICT, FORT WORTH September 2015

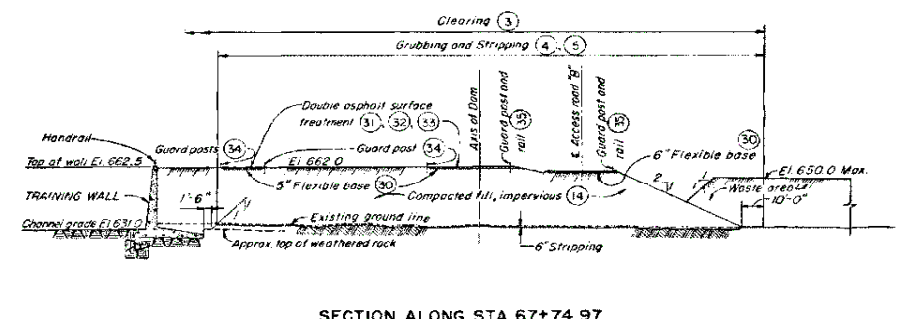


PLAN
SCALE: 1 INCH = 30 FEET

**RECORD DRAWING
AS BUILT**



**TYPICAL SECTION
WASTE AREA**
SCALE: 1/4 INCH = 1 FOOT



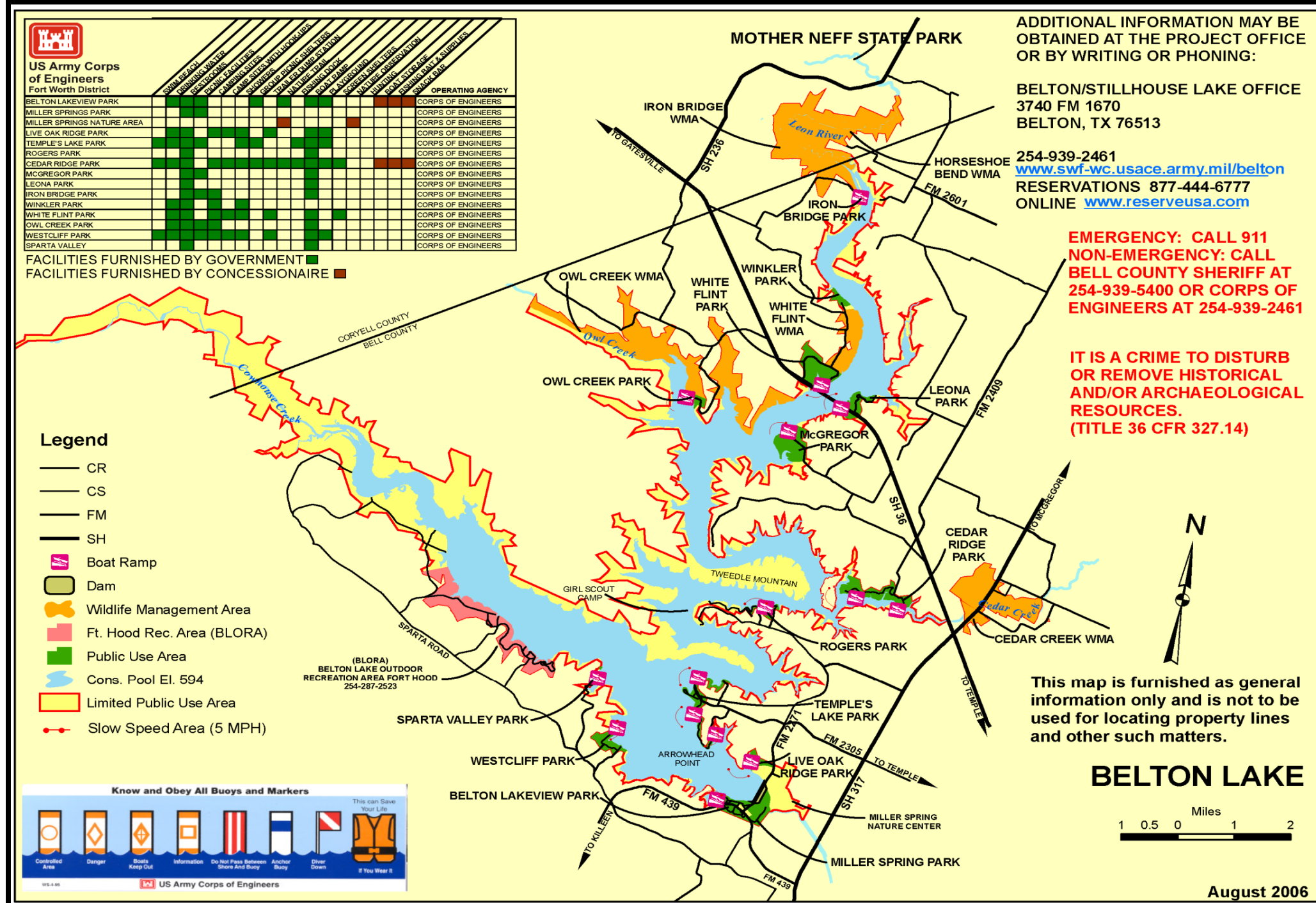
SECTION ALONG STA. 67+74.97
SCALE: 1 INCH = 30 FEET

BRAZOS RIVER BASIN, TEXAS
BELTON DAM AND LAKE
LEON RIVER, TEXAS

**SPILLWAY
TRAINING WALL
GENERAL PLAN AND SECTIONS**

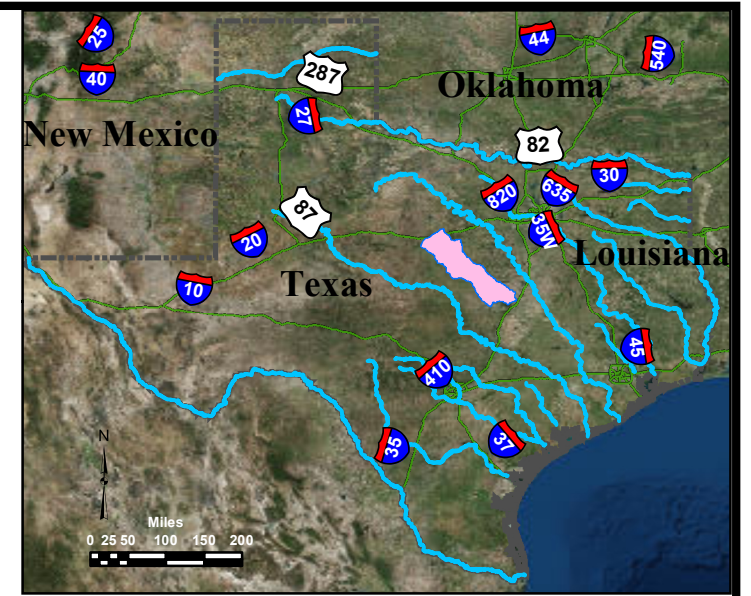
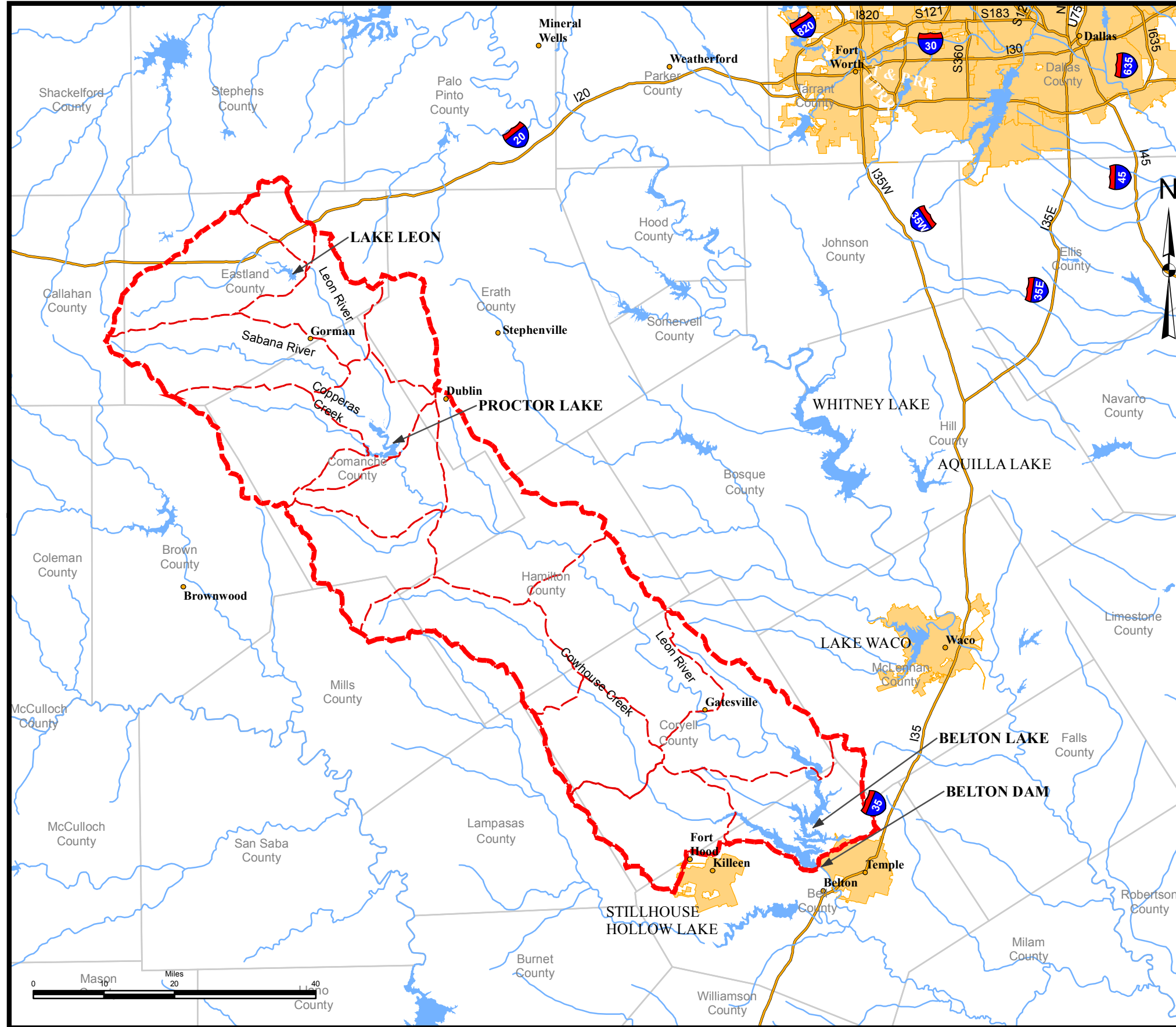
NOTE: ELEVATIONS SHOWN REFER TO NATIONAL GEODETIC VERTICAL DATUM OF 1929 (MEAN SEA LEVEL).

U.S. ARMY ENGINEER DISTRICT, FORT WORTH September 2015










BRAZOS RIVER BASIN, TEXAS
BELTON DAM AND LAKE
 LEON RIVER, TEXAS

PUBLIC USE AREAS



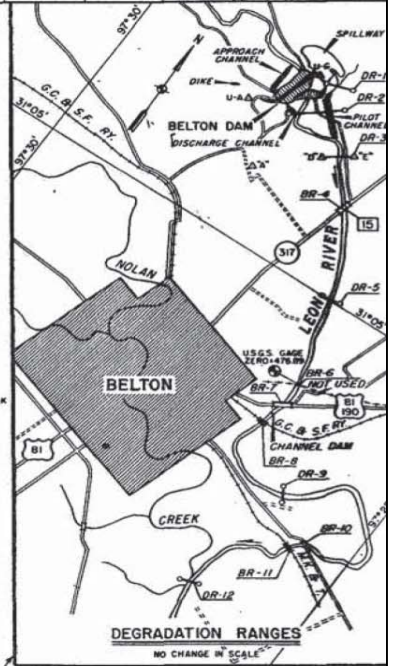
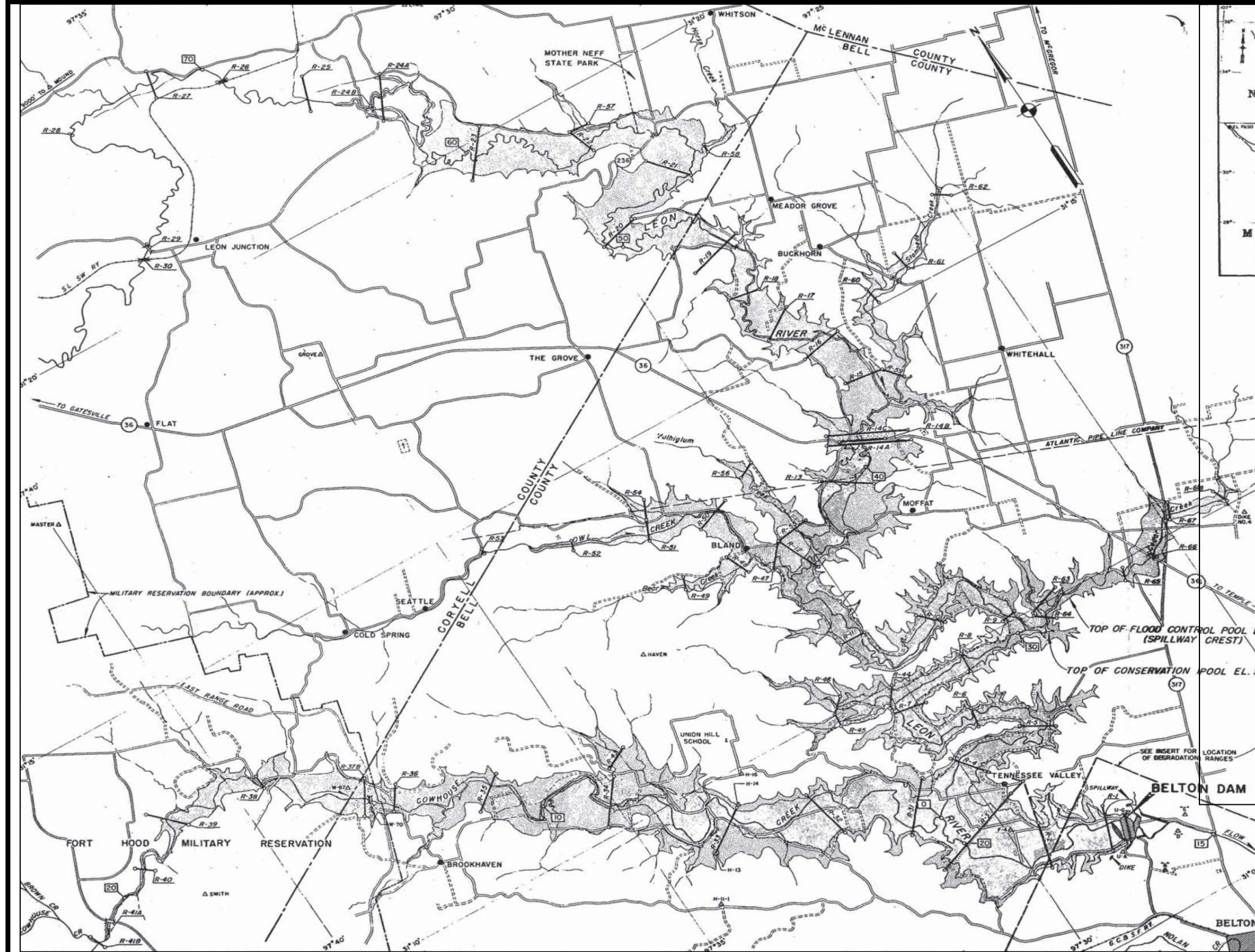
LEGEND

-  RIVER BASIN BOUNDARY
-  SUB BASIN BOUNDARY
-  RIVERS
-  LAKES
-  CITIES
-  INTERSTATE
-  METRO AREAS

BRAZOS RIVER BASIN, TEXAS
BELTON DAM AND LAKE
 LEON RIVER, TEXAS

LOCAL WATERSHED MAP

U.S. ARMY ENGINEER DISTRICT, FORT WORTH September 2015



LEGEND

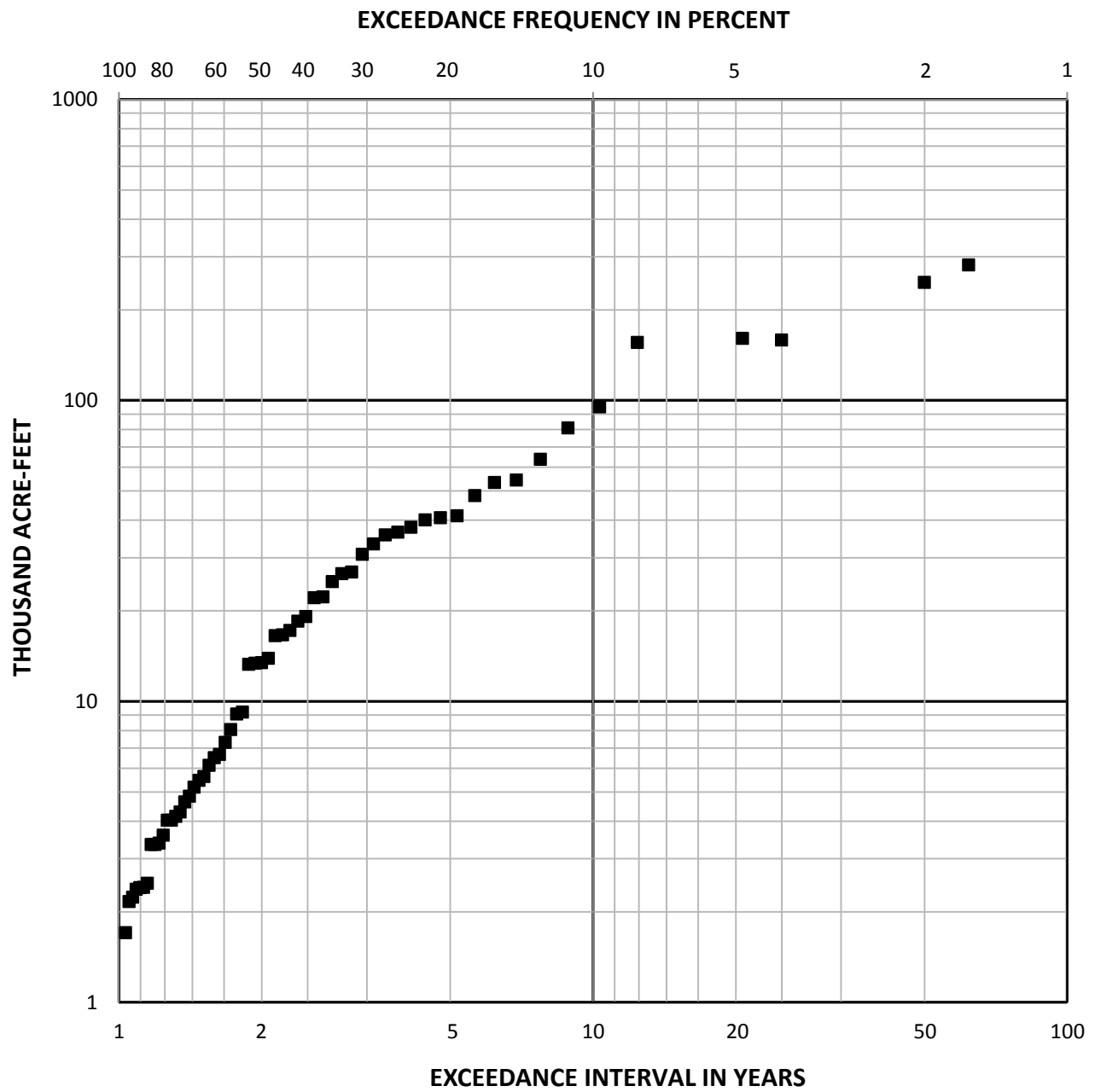
- 36 STATE HIGHWAY
- COUNTY ROAD
- UNIMPROVED ROAD
- △ TRIANGULATION OR TRAVERSE STATION
- ⊙ U.S.G.S. GAGE AND RECORDER
- R-2 SEDIMENTATION RANGE AND MONUMENTS
- DR-5 DEGRADATION RANGE AND MONUMENTS
- 15 RIVER MILE, ABOVE MOUTH

NOTE: Ranges 37A and 42 not installed.

BRAZOS RIVER BASIN, TEXAS
BELTON DAM AND LAKE
 LEON RIVER, TEXAS

SEDIMENTATION AND DEGRADATION RANGES

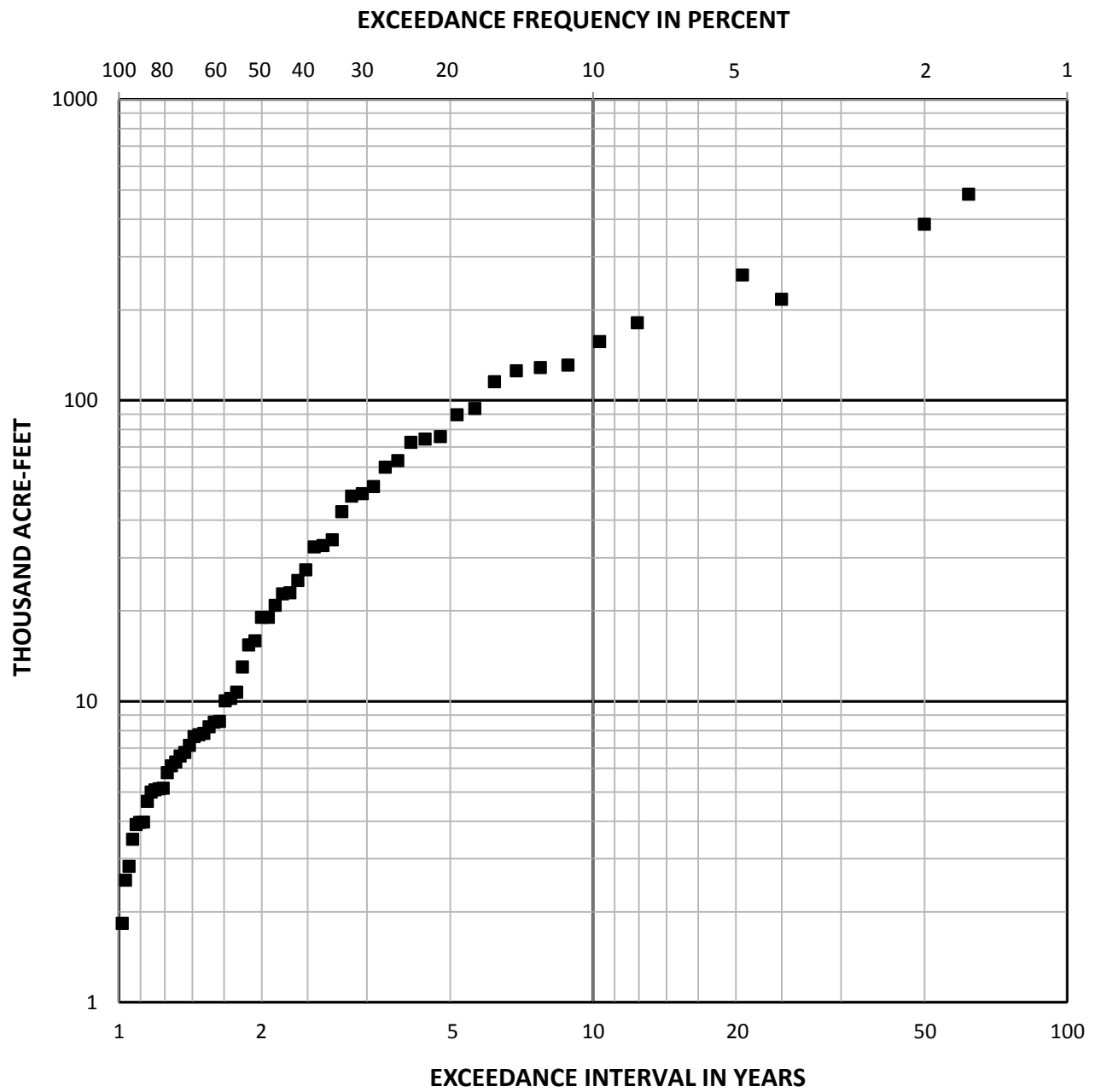
U.S. ARMY ENGINEER DISTRICT, FORT WORTH September 2015



BRAZOS RIVER BASIN, TEXAS
BELTON DAM AND LAKE
LEON RIVER, TEXAS

**JANUARY INFLOW FREQUENCY
1952-2015**

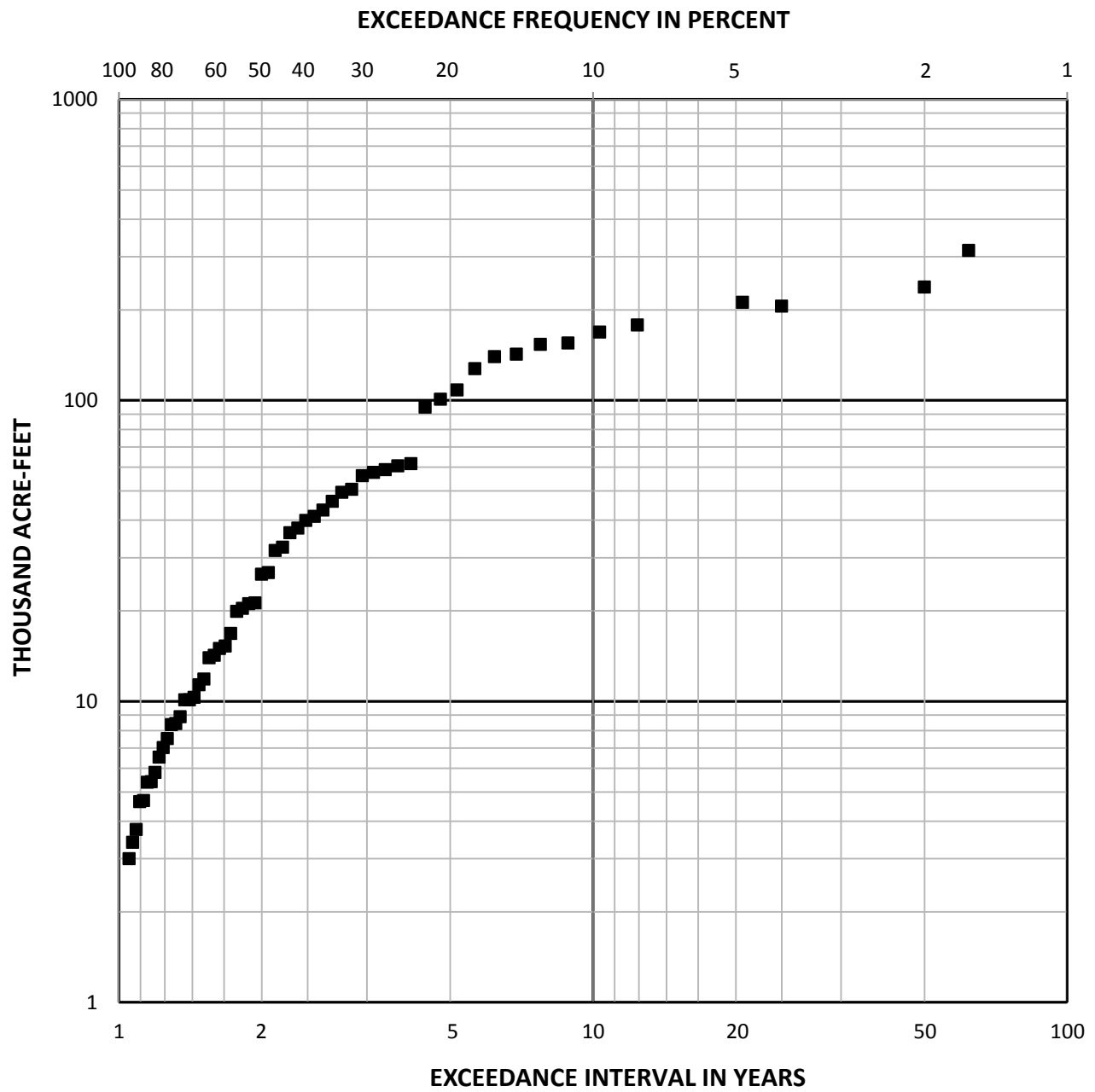
U.S. ARMY ENGINEER DISTRICT, FORT WORTH September 2015



BRAZOS RIVER BASIN, TEXAS
BELTON DAM AND LAKE
LEON RIVER, TEXAS

**FEBRUARY INFLOW FREQUENCY
1952-2015**

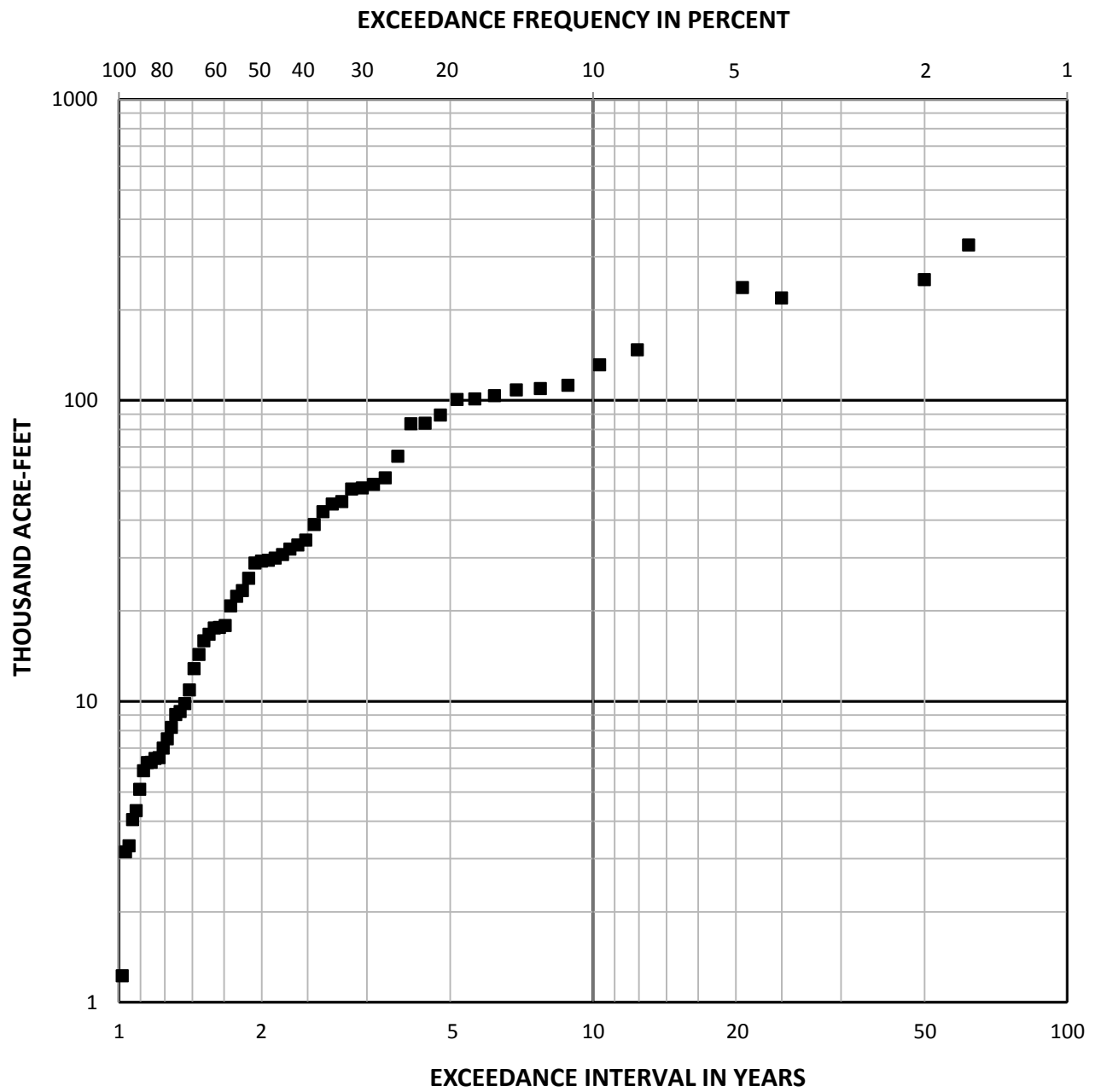
U.S. ARMY ENGINEER DISTRICT, FORT WORTH September 2015



BRAZOS RIVER BASIN, TEXAS
BELTON DAM AND LAKE
LEON RIVER, TEXAS

MARCH INFLOW FREQUENCY
1952-2015

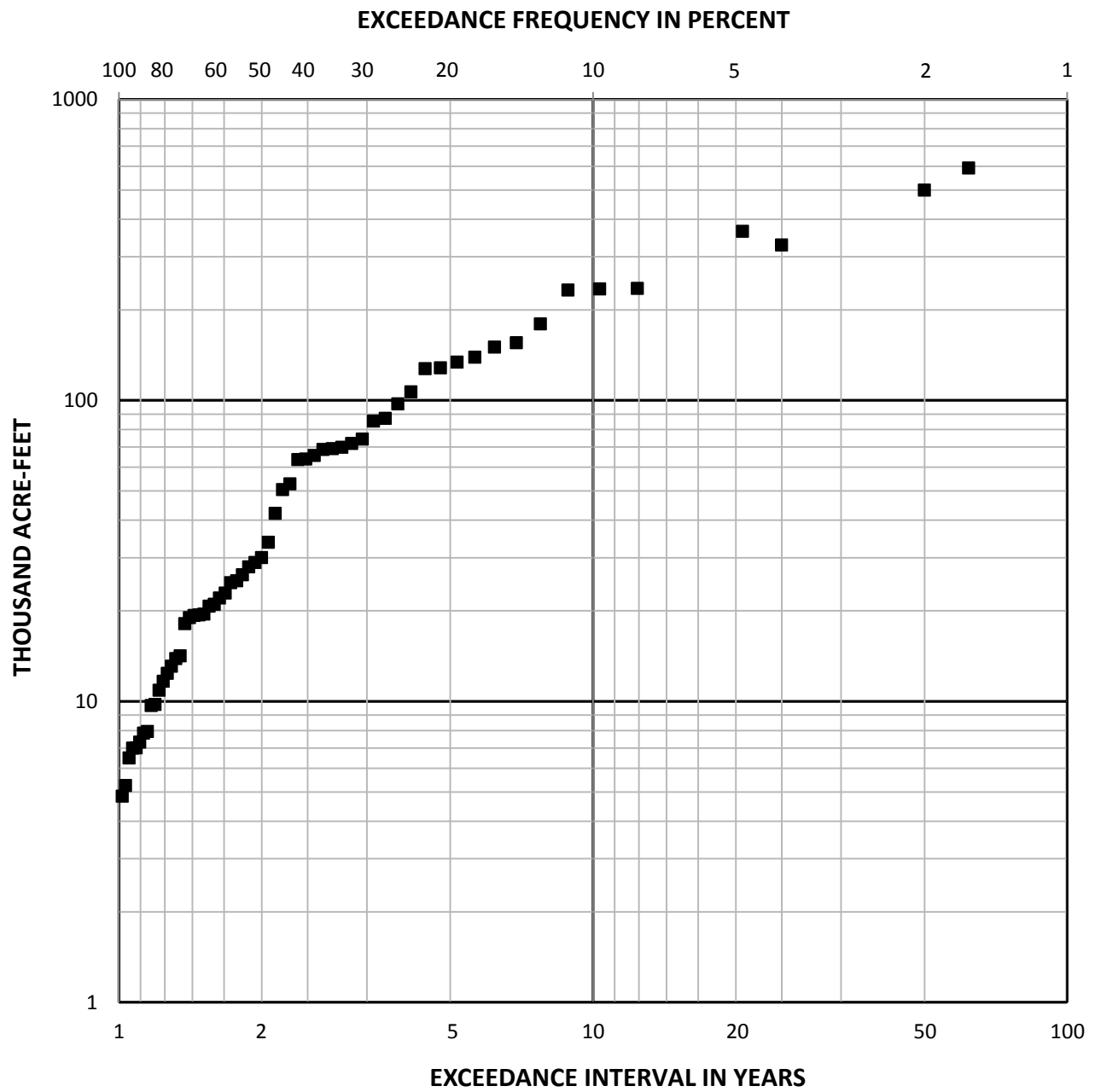
U.S. ARMY ENGINEER DISTRICT, FORT WORTH September 2015



BRAZOS RIVER BASIN, TEXAS
BELTON DAM AND LAKE
LEON RIVER, TEXAS

APRIL INFLOW FREQUENCY
1952-2015

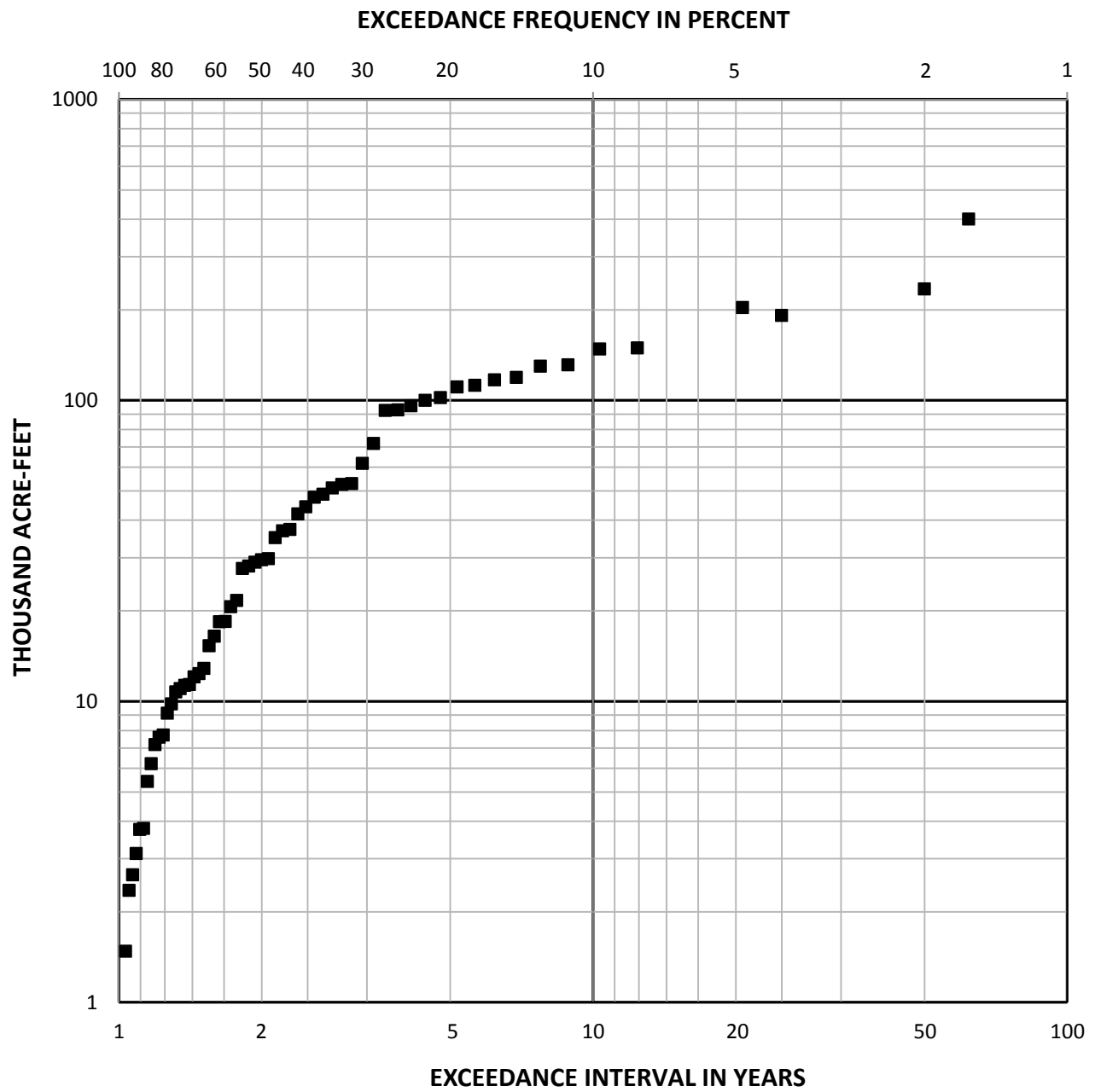
U.S. ARMY ENGINEER DISTRICT, FORT WORTH September 2015



BRAZOS RIVER BASIN, TEXAS
BELTON DAM AND LAKE
LEON RIVER, TEXAS

MAY INFLOW FREQUENCY
1952-2015

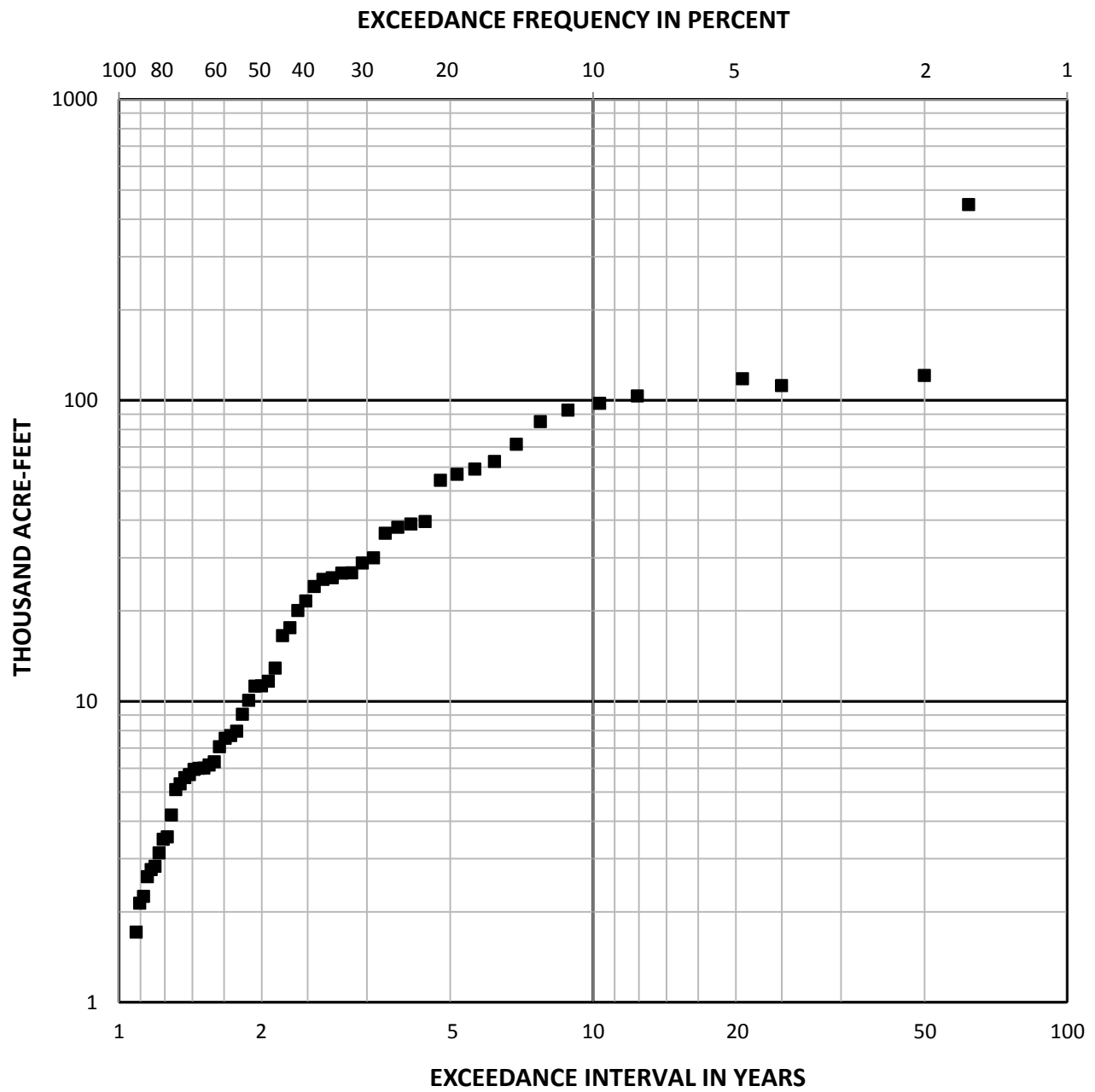
U.S. ARMY ENGINEER DISTRICT, FORT WORTH September 2015



BRAZOS RIVER BASIN, TEXAS
BELTON DAM AND LAKE
LEON RIVER, TEXAS

JUNE INFLOW FREQUENCY
1952-2015

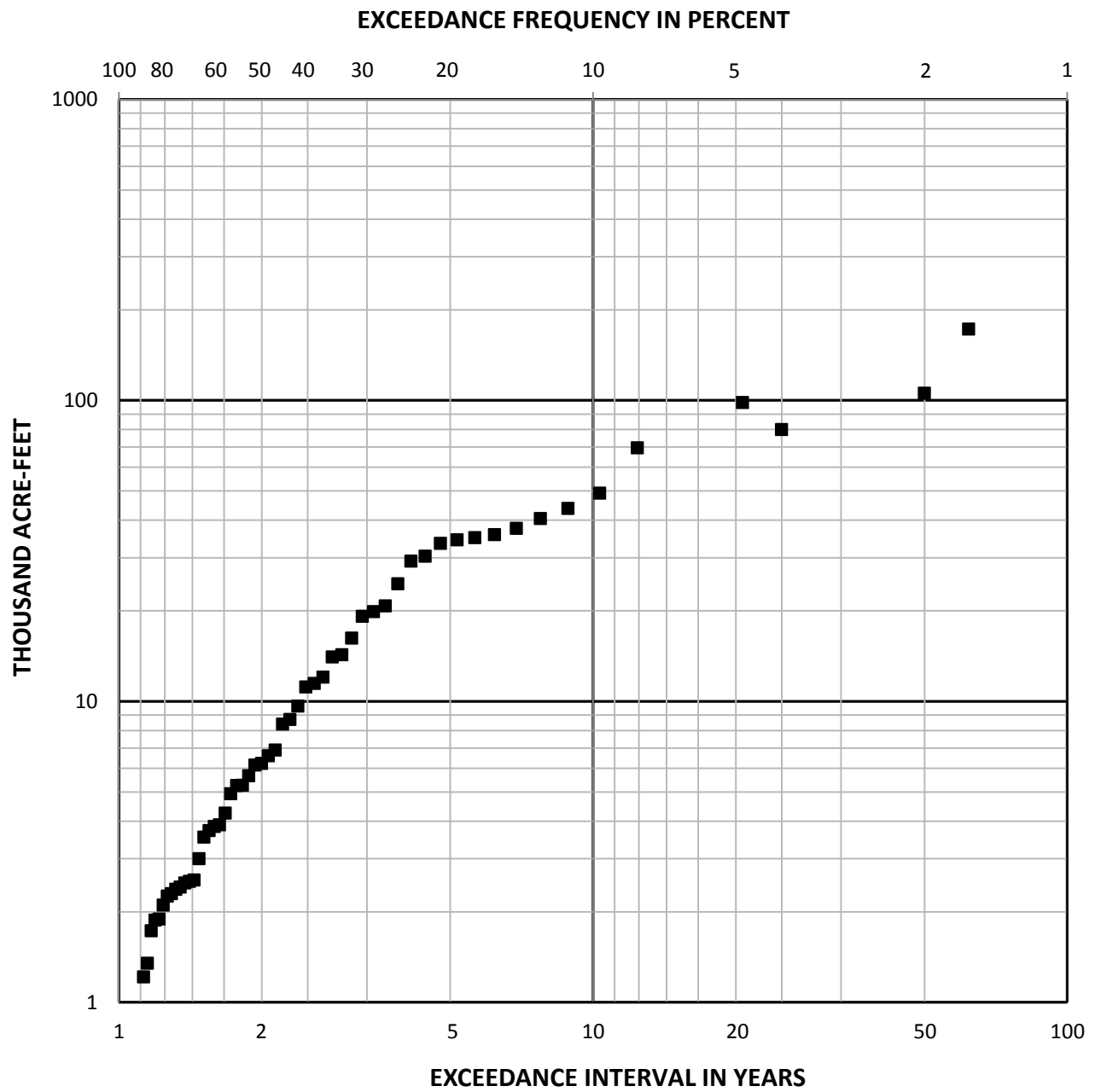
U.S. ARMY ENGINEER DISTRICT, FORT WORTH September 2015



BRAZOS RIVER BASIN, TEXAS
BELTON DAM AND LAKE
LEON RIVER, TEXAS

JULY INFLOW FREQUENCY
1952-2015

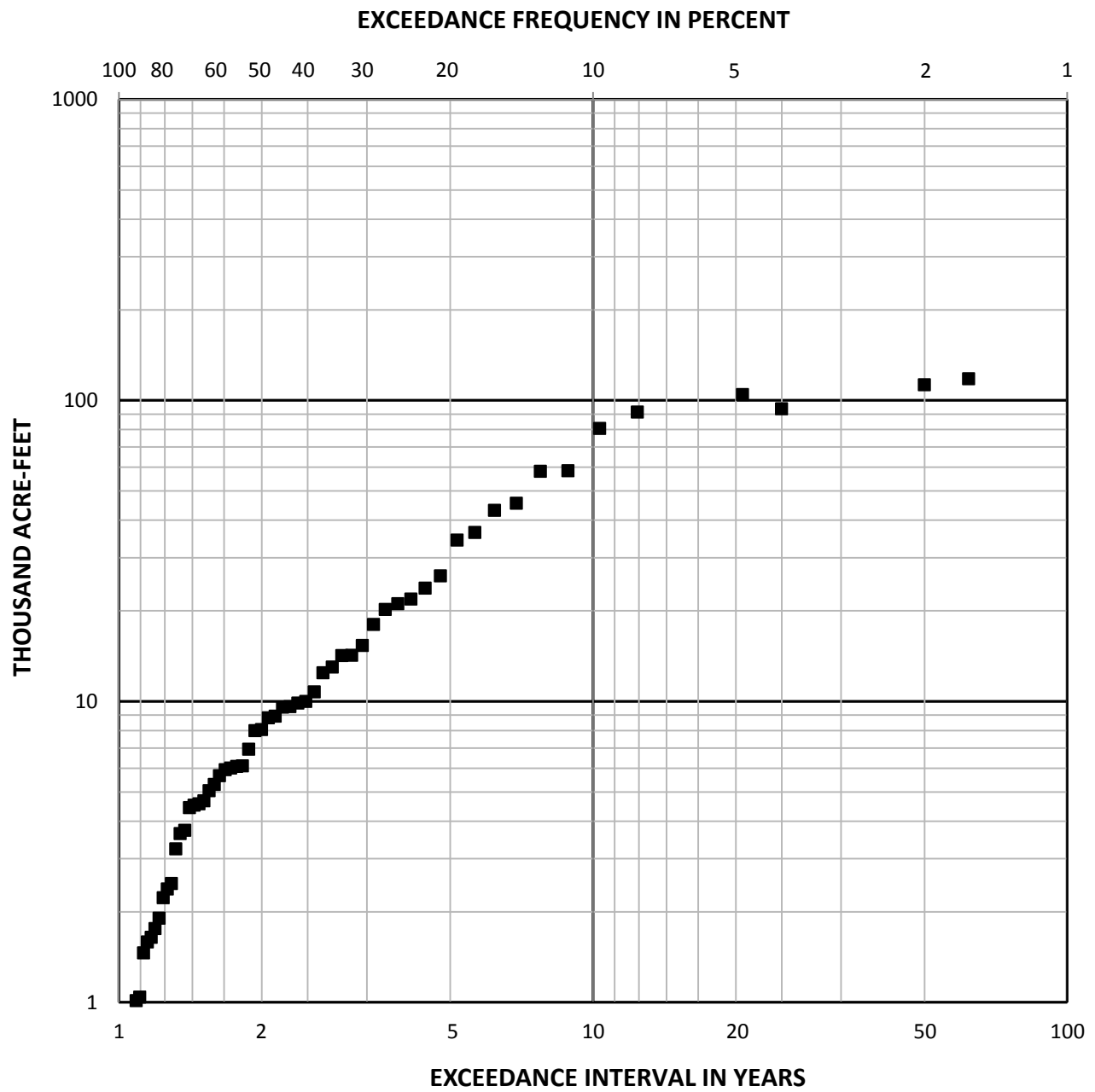
U.S. ARMY ENGINEER DISTRICT, FORT WORTH September 2015



BRAZOS RIVER BASIN, TEXAS
BELTON DAM AND LAKE
LEON RIVER, TEXAS

AUGUST INFLOW FREQUENCY
1952-2015

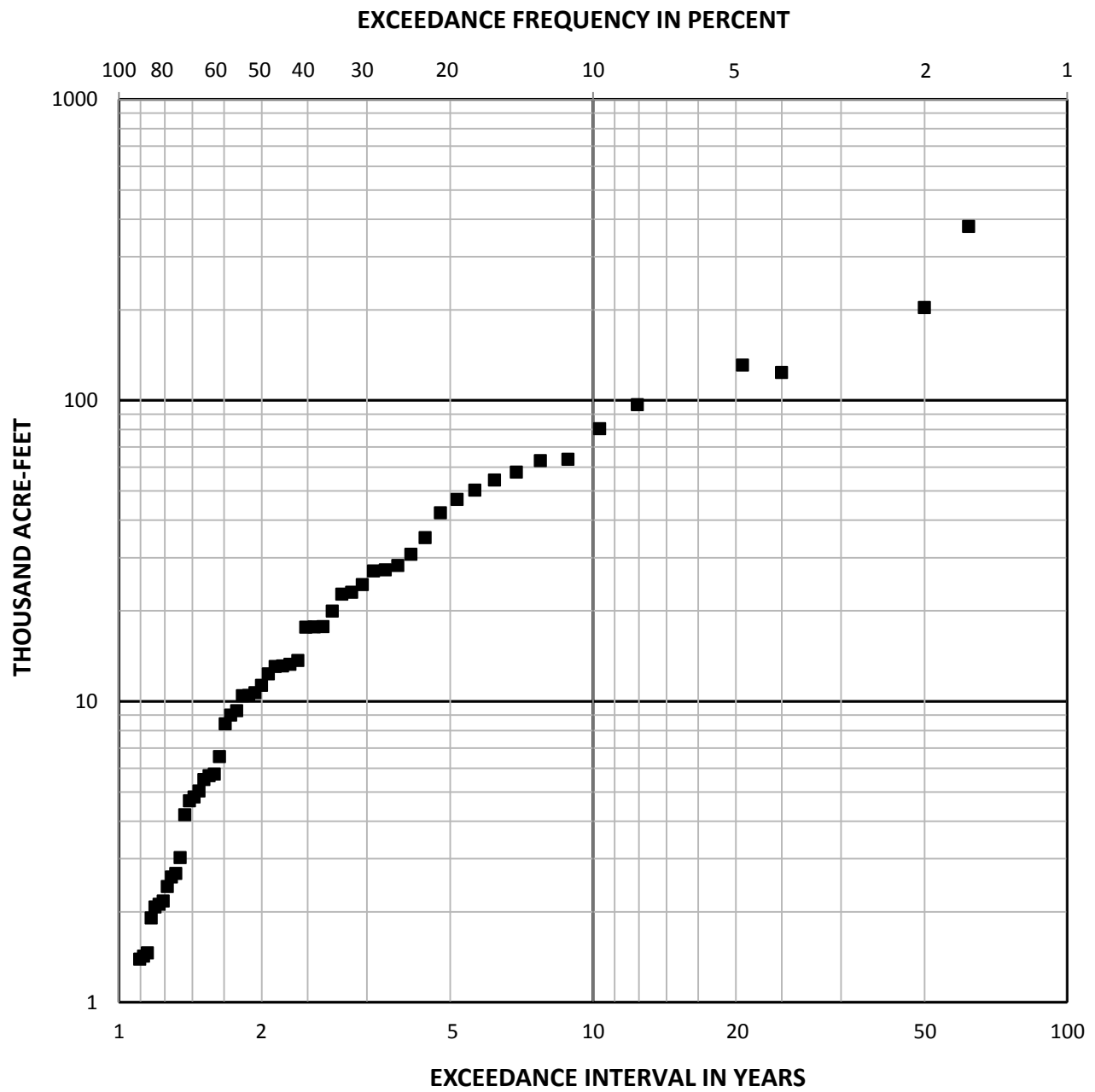
U.S. ARMY ENGINEER DISTRICT, FORT WORTH September 2015



BRAZOS RIVER BASIN, TEXAS
BELTON DAM AND LAKE
LEON RIVER, TEXAS

**SEPTEMBER INFLOW FREQUENCY
1952-2015**

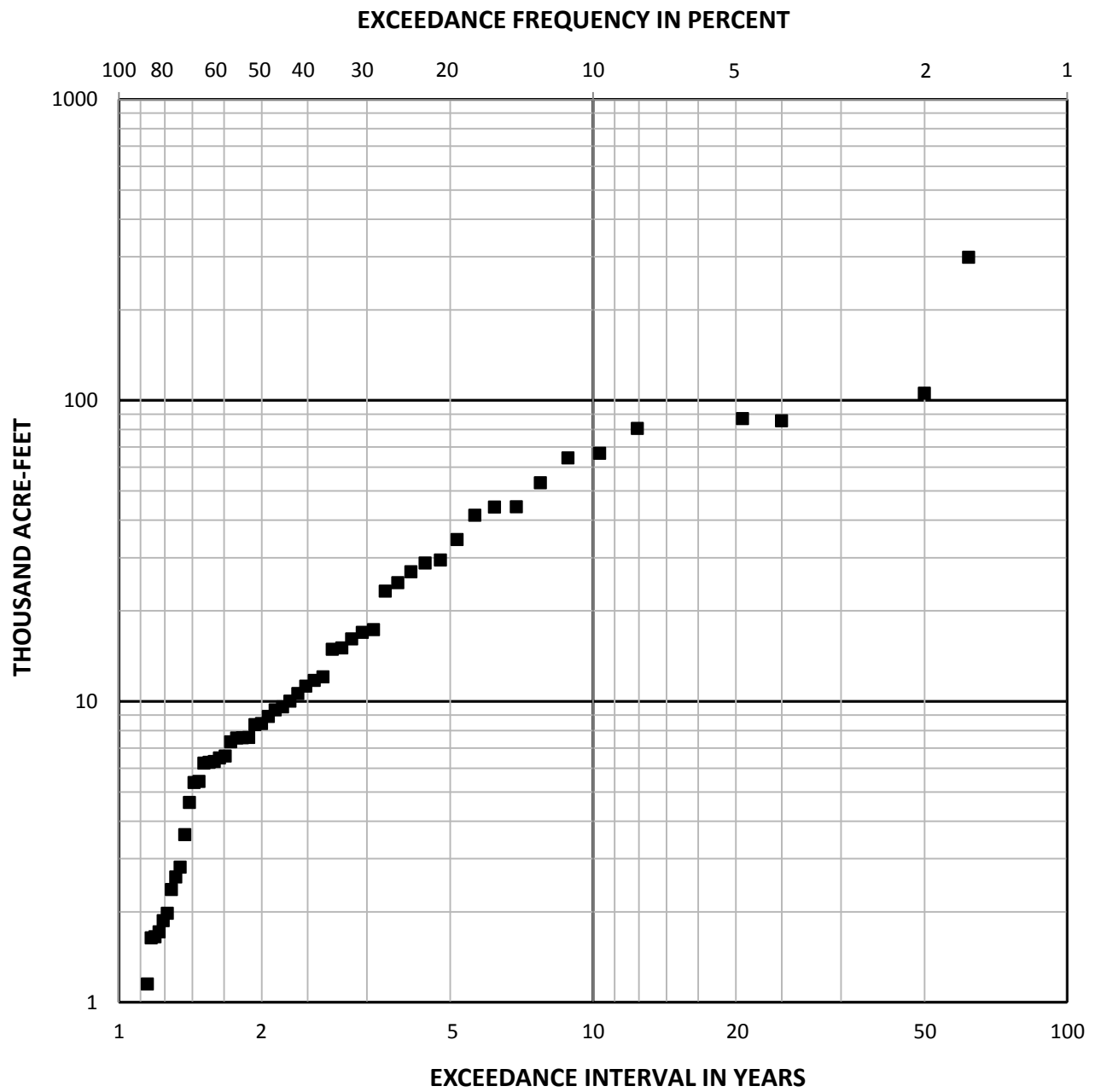
U.S. ARMY ENGINEER DISTRICT, FORT WORTH September 2015



BRAZOS RIVER BASIN, TEXAS
BELTON DAM AND LAKE
LEON RIVER, TEXAS

OCTOBER INFLOW FREQUENCY
1952-2015

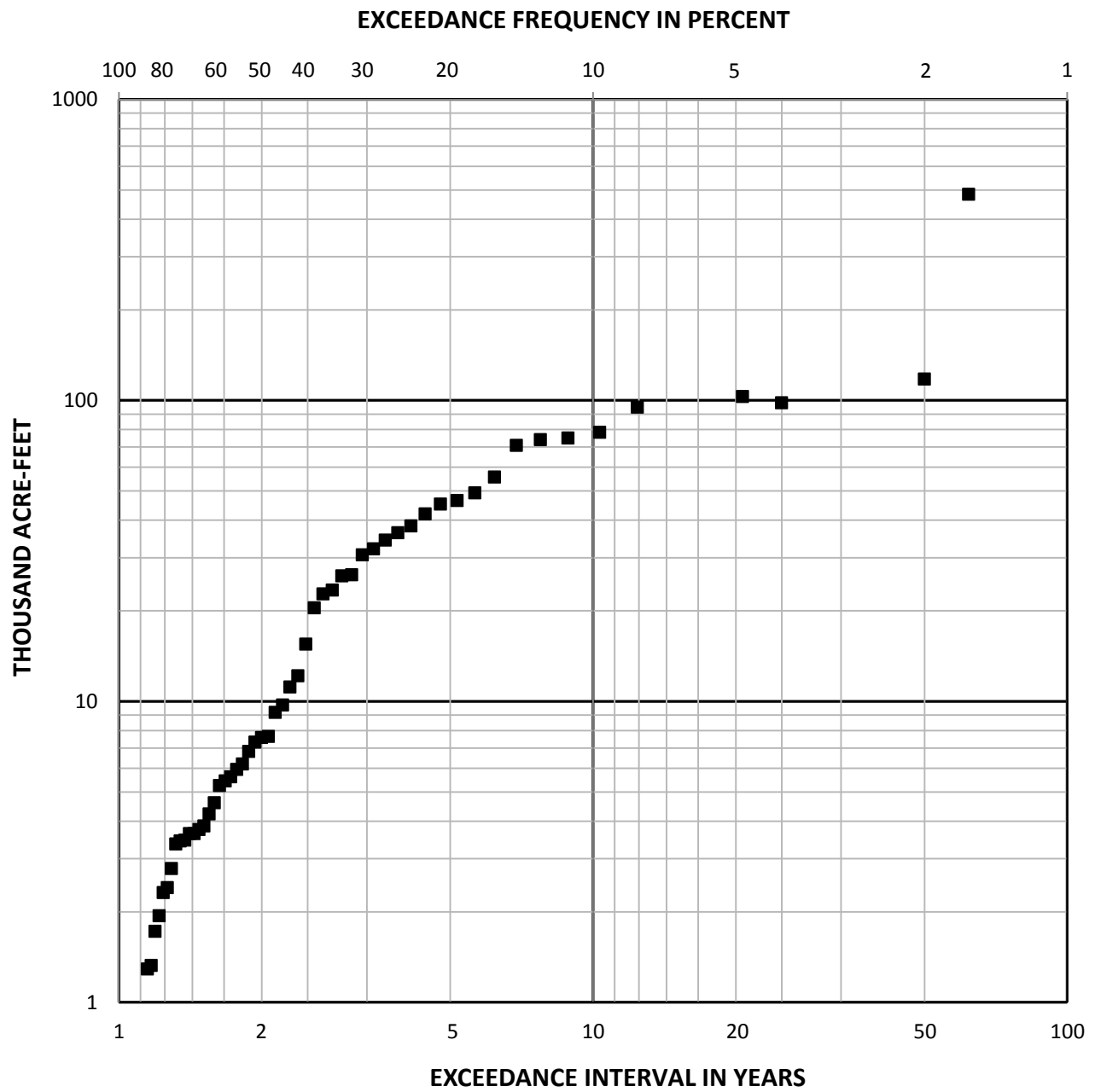
U.S. ARMY ENGINEER DISTRICT, FORT WORTH September 2015



BRAZOS RIVER BASIN, TEXAS
BELTON DAM AND LAKE
LEON RIVER, TEXAS

**NOVEMBER INFLOW FREQUENCY
1952-2015**

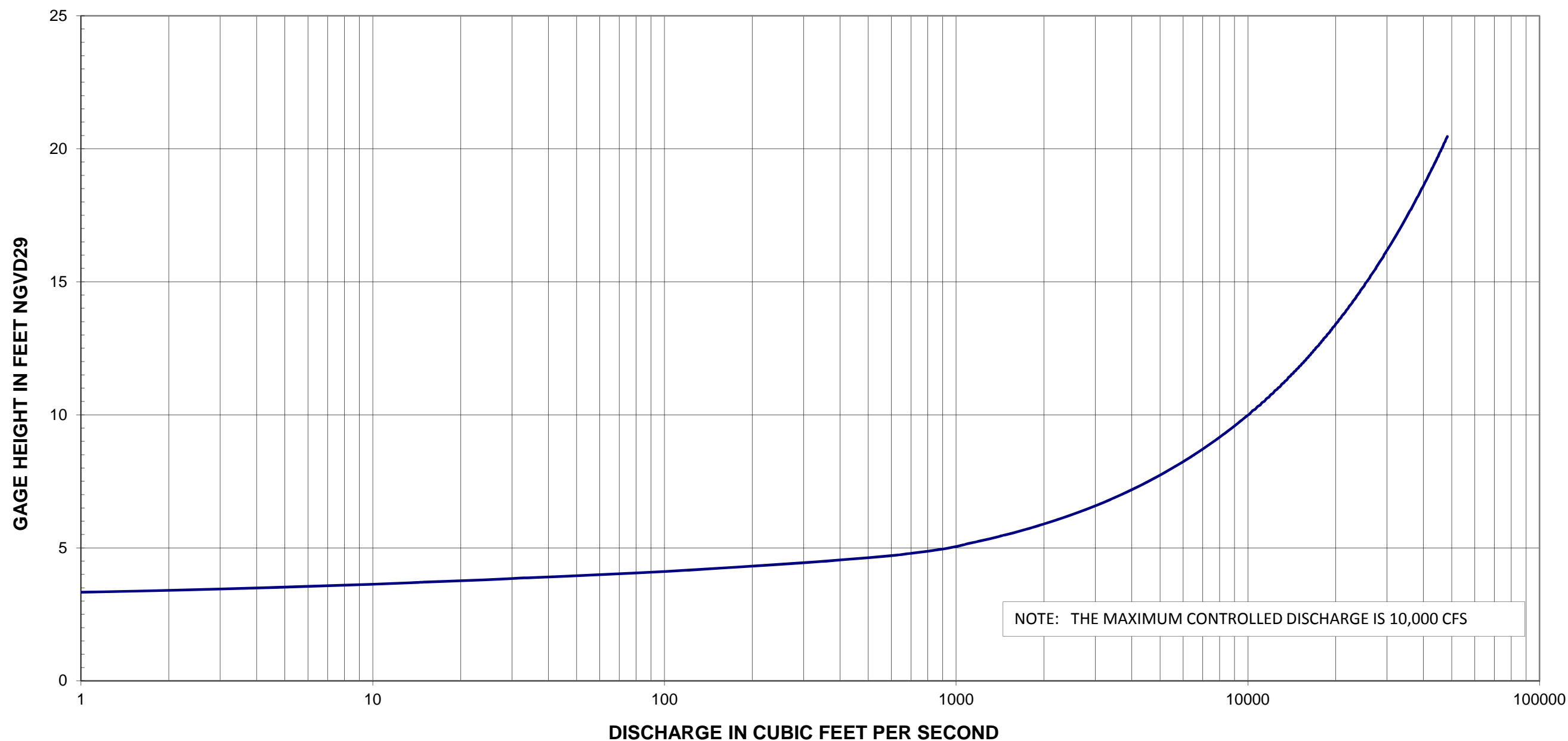
U.S. ARMY ENGINEER DISTRICT, FORT WORTH September 2015



BRAZOS RIVER BASIN, TEXAS
BELTON DAM AND LAKE
LEON RIVER, TEXAS

**DECEMBER INFLOW FREQUENCY
1952-2015**

U.S. ARMY ENGINEER DISTRICT, FORT WORTH September 2015



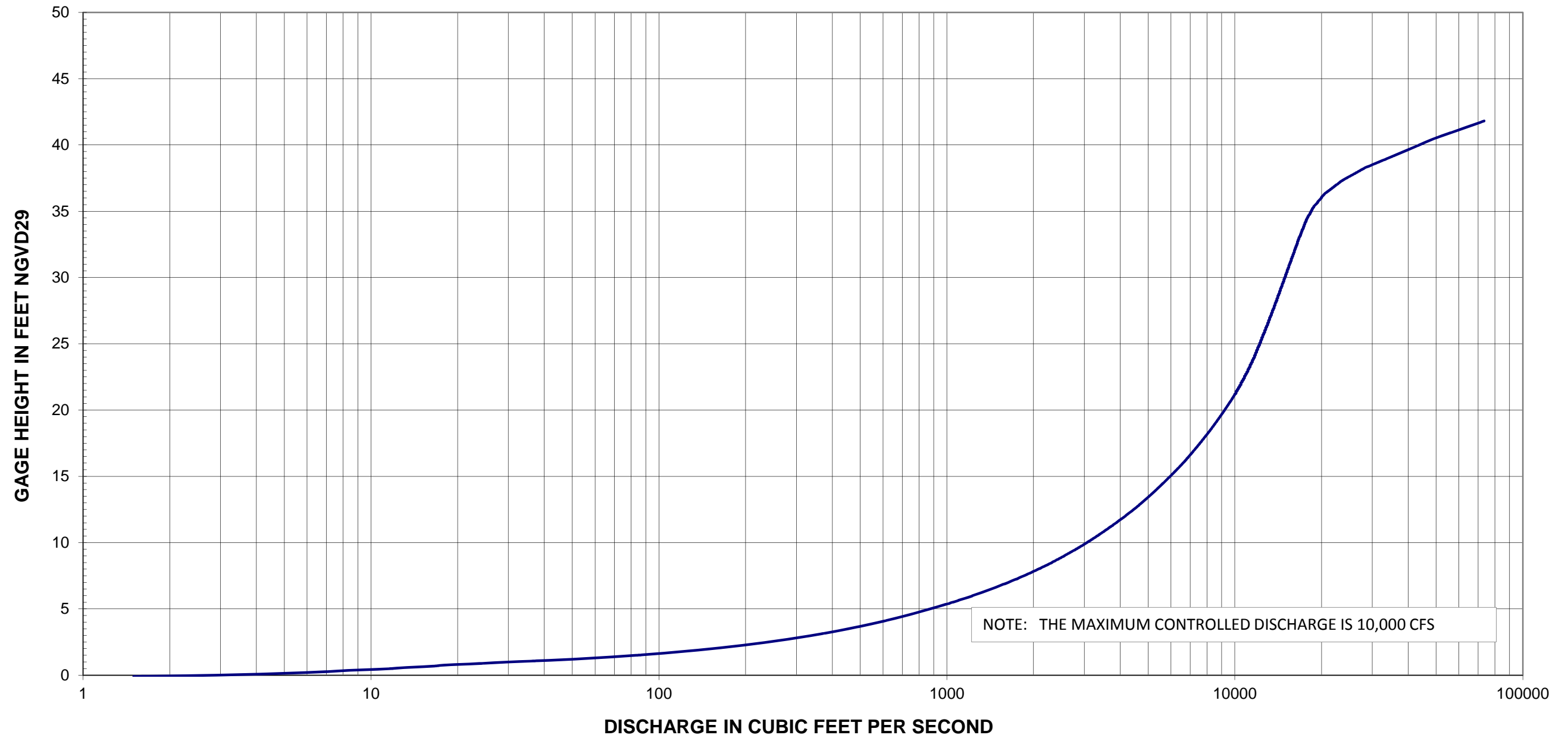
ALL ELEVATIONS REFERRED TO ON THIS PLATE, UNLESS NOTED OTHERWISE, ARE IN FEET, NATIONAL GEODETIC VERTICAL DATUM OF 1929 (NGVD29). THE ELEVATION DIFFERENCE OF +0.2 FEET IS THE DIFFERENCE BETWEEN NGVD29 AND NAVD88 FOR BELTON DAM AND LAKE.

BRAZOS RIVER BASIN, TEXAS
BELTON DAM AND LAKE
LEON RIVER, TEXAS

RATING CURVE
LEON RIVER NEAR BELTON
USGS GAGE NO. 08102500

U.S. ARMY ENGINEER DISTRICT, FORT WORTH September 2015

PLATE 4 - 15



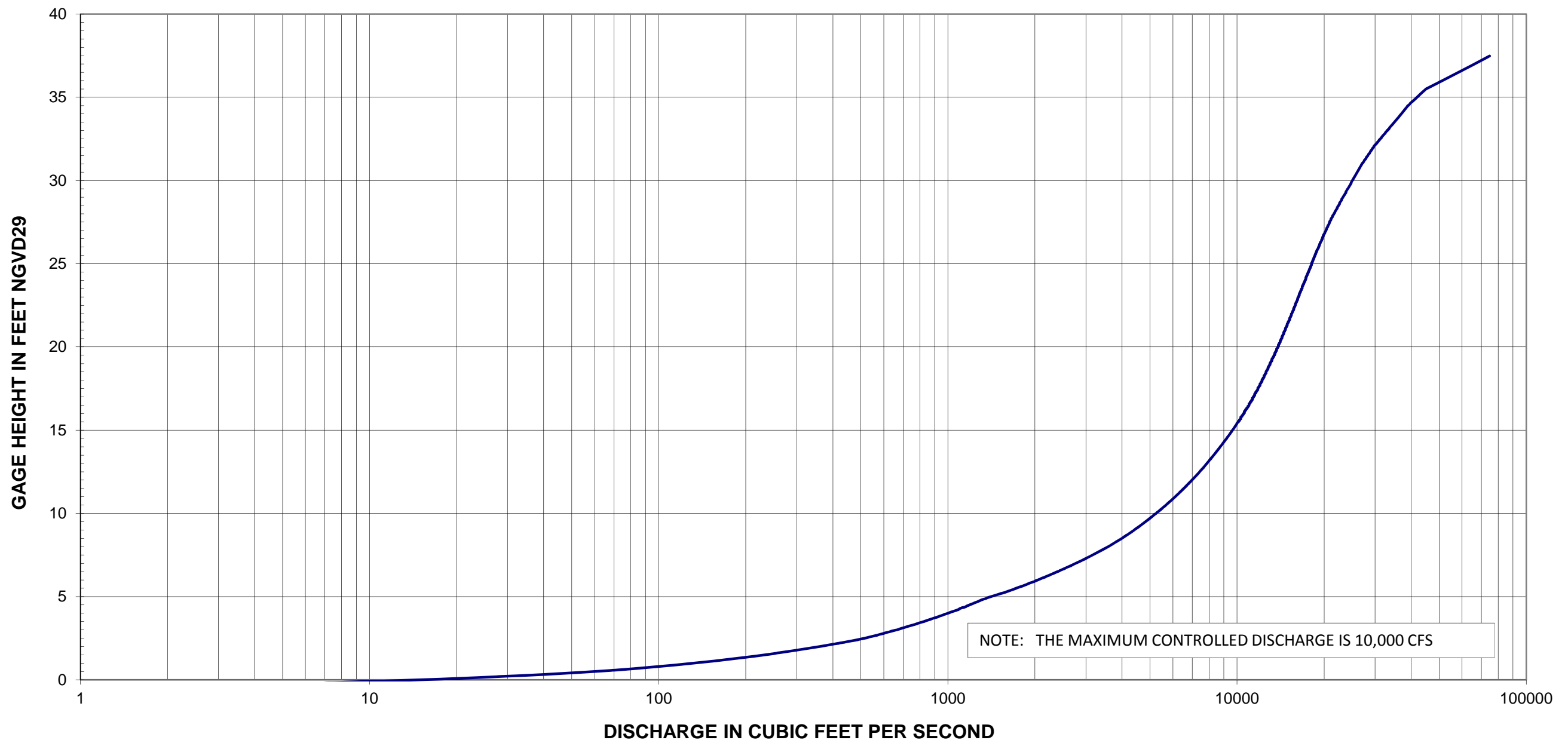
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BRAZOS RIVER BASIN, TEXAS
BELTON DAM AND LAKE
LEON RIVER, TEXAS

RATING CURVE
LITTLE RIVER NEAR LITTLE RIVER
USGS GAGE NO. 08104500

U.S. ARMY ENGINEER DISTRICT, FORT WORTH September 2015

PLATE 4 - 16



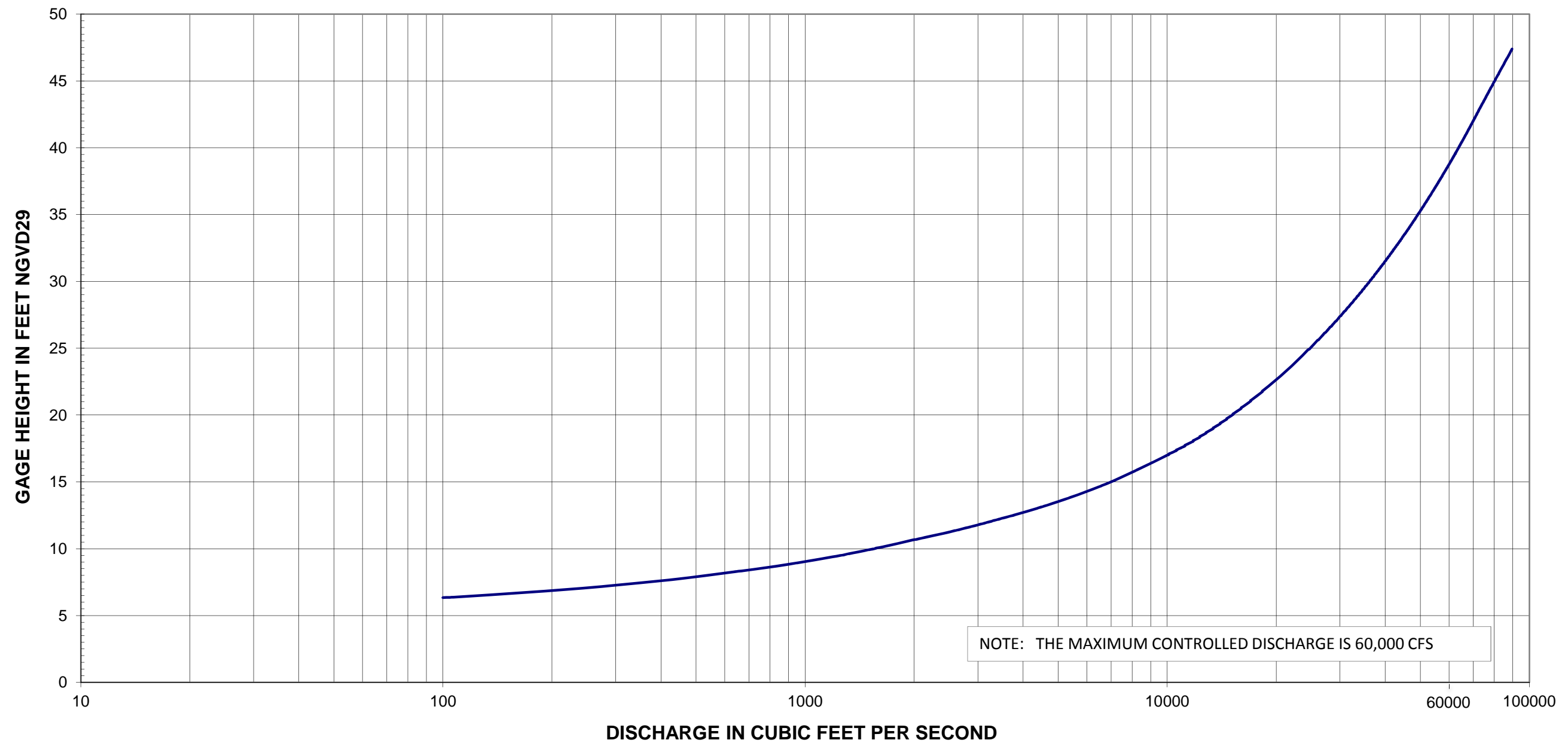
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BRAZOS RIVER BASIN, TEXAS
BELTON DAM AND LAKE
LEON RIVER, TEXAS

RATING CURVE
LITTLE RIVER NEAR CAMERON
USGS GAGE NO. 08106500

U.S. ARMY ENGINEER DISTRICT, FORT WORTH September 2015

PLATE 4 - 17



NOTE: THE MAXIMUM CONTROLLED DISCHARGE IS 60,000 CFS

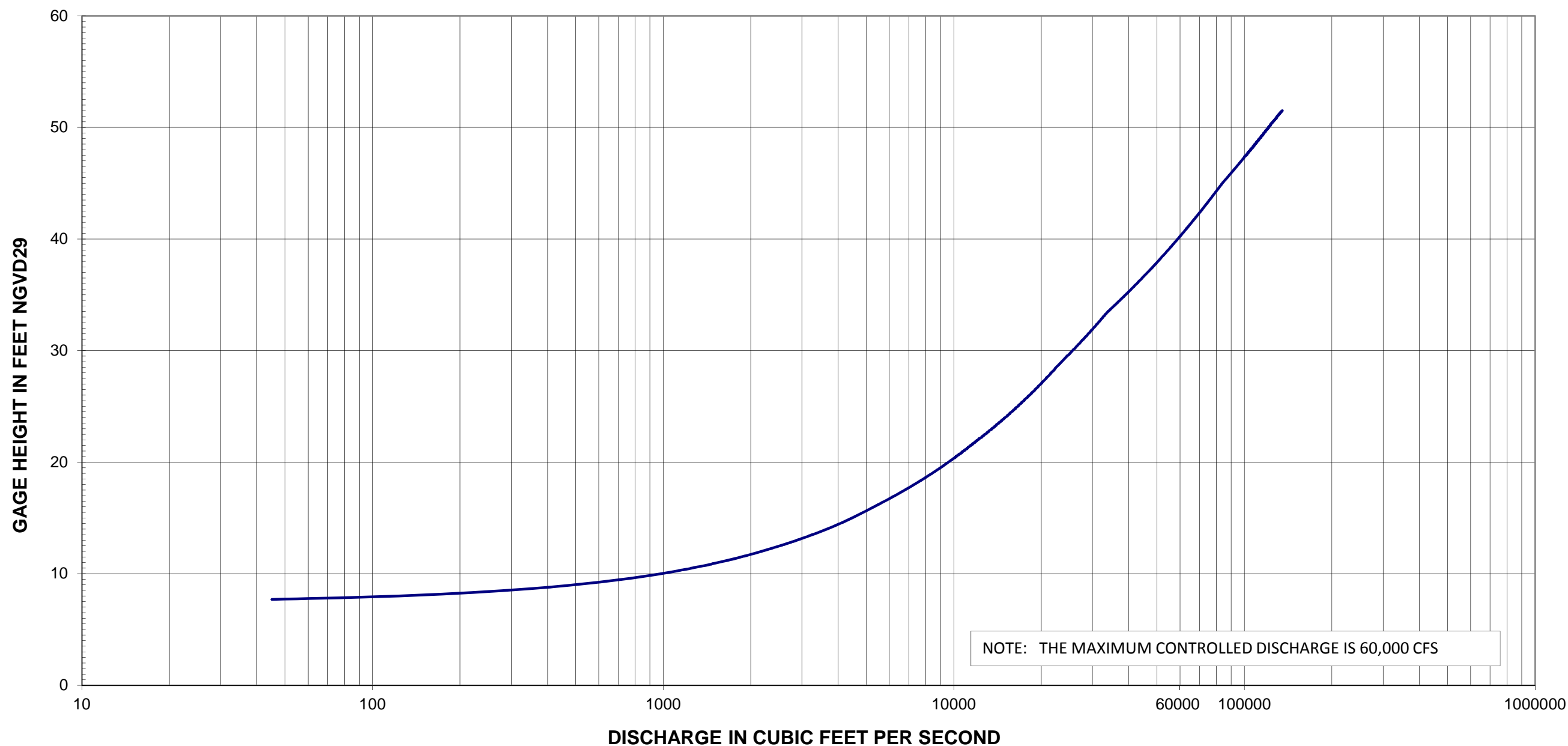
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BRAZOS RIVER BASIN, TEXAS
BELTON DAM AND LAKE
LEON RIVER, TEXAS

RATING CURVE
BRAZOS RIVER AT SH21 NEAR BRYAN
USGS GAGE NO. 08108700

U.S. ARMY ENGINEER DISTRICT, FORT WORTH September 2015

PLATE 4 - 18



NOTE: THE MAXIMUM CONTROLLED DISCHARGE IS 60,000 CFS

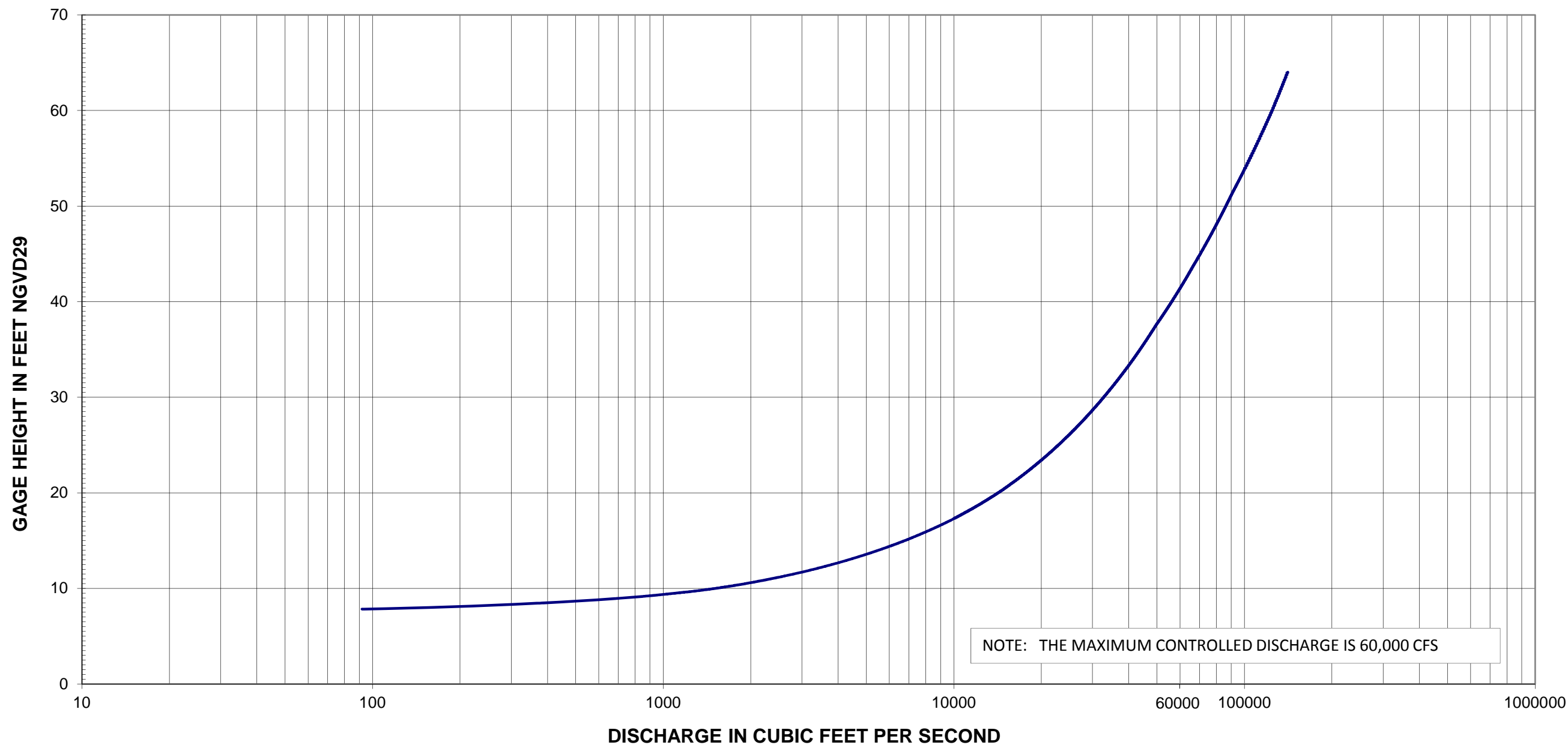
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BRAZOS RIVER BASIN, TEXAS
BELTON DAM AND LAKE
LEON RIVER, TEXAS

RATING CURVE
BRAZOS RIVER NEAR HEMPSTEAD
USGS GAGE NO. 08111500

U.S. ARMY ENGINEER DISTRICT, FORT WORTH September 2015

PLATE 4 - 19



NOTE: THE MAXIMUM CONTROLLED DISCHARGE IS 60,000 CFS

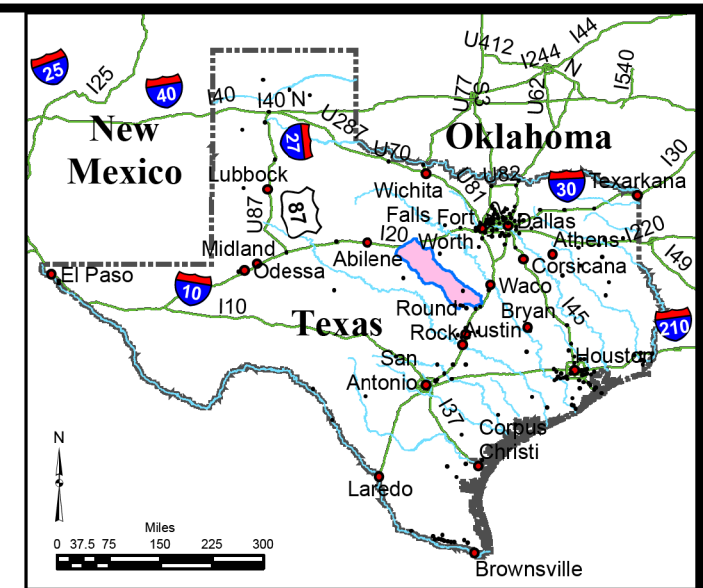
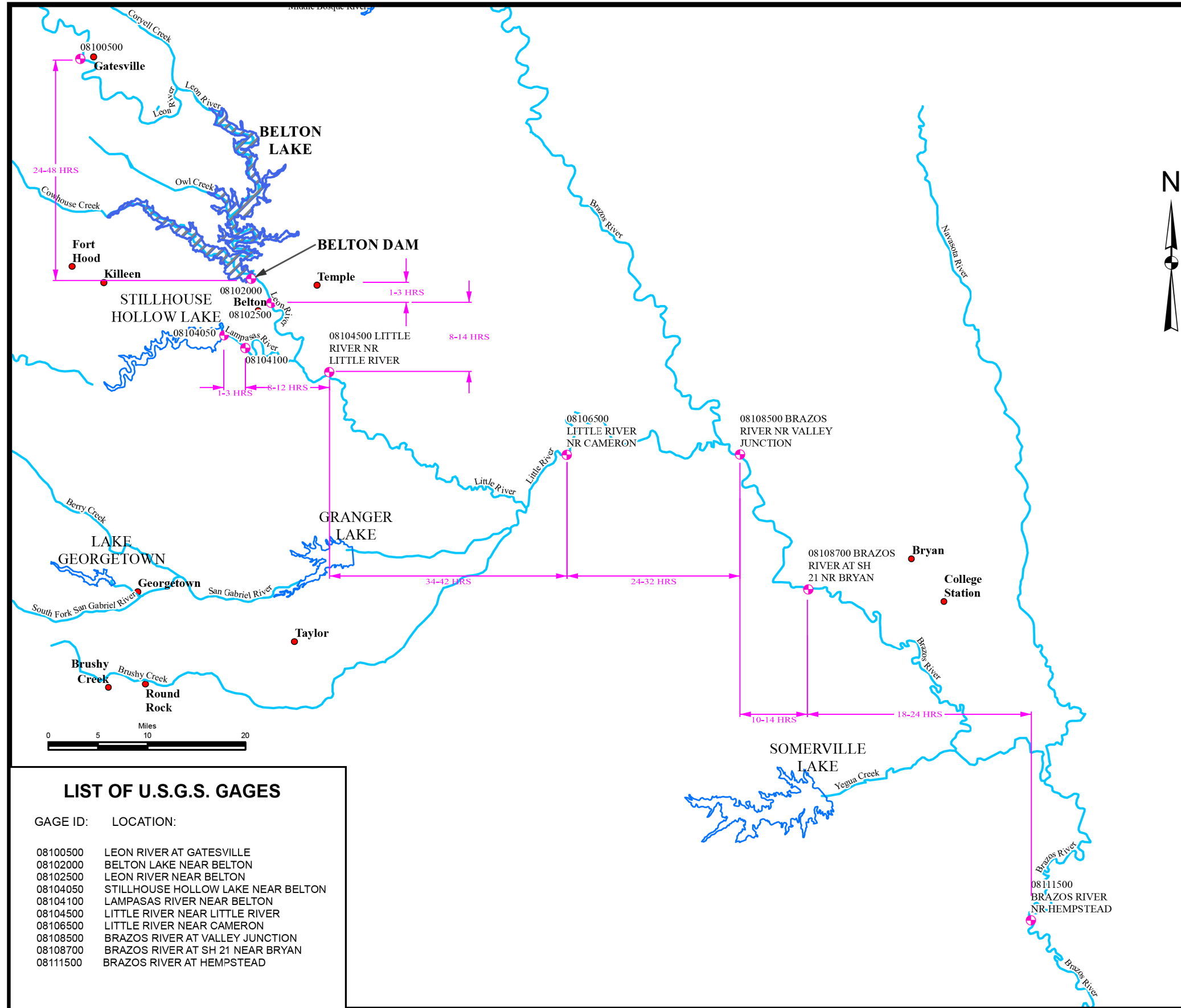
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BRAZOS RIVER BASIN, TEXAS
BELTON DAM AND LAKE
LEON RIVER, TEXAS

RATING CURVE
BRAZOS RIVER NEAR RICHMOND
USGS GAGE NO. 08114000

U.S. ARMY ENGINEER DISTRICT, FORT WORTH September 2015

PLATE 4 - 20



LEGEND

- USGS GAGES
- ~ RIVERS
- LAKE BOUNDARY
- BELTON LAKE
- CITIES

LIST OF U.S.G.S. GAGES

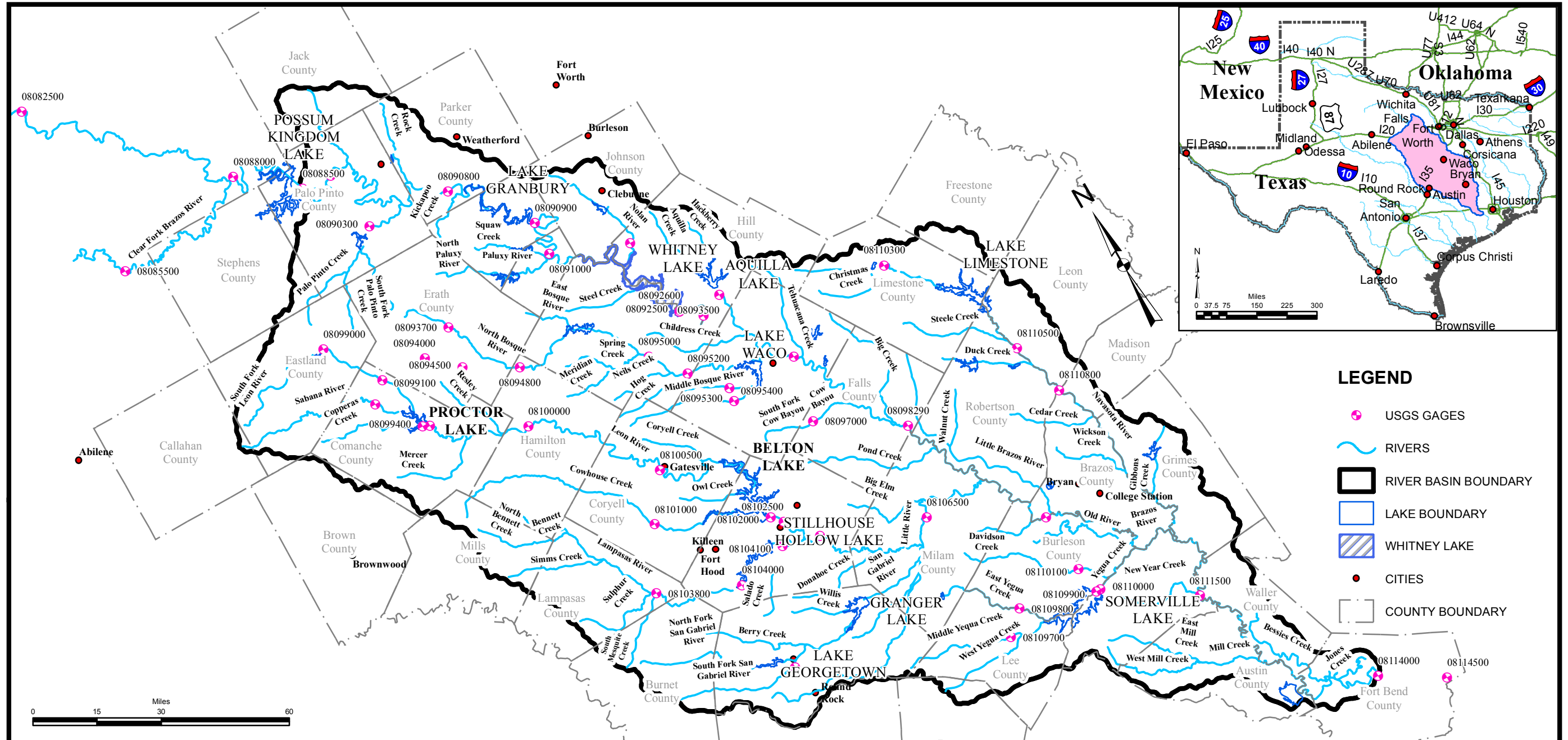
GAGE ID:	LOCATION:
08100500	LEON RIVER AT GATESVILLE
08102000	BELTON LAKE NEAR BELTON
08102500	LEON RIVER NEAR BELTON
08104050	STILLHOUSE HOLLOW LAKE NEAR BELTON
08104100	LAMPASAS RIVER NEAR BELTON
08104500	LITTLE RIVER NEAR LITTLE RIVER
08106500	LITTLE RIVER NEAR CAMERON
08108500	BRAZOS RIVER AT VALLEY JUNCTION
08108700	BRAZOS RIVER AT SH 21 NEAR BRYAN
08111500	BRAZOS RIVER AT HEMPSTEAD

BRAZOS RIVER BASIN, TEXAS
BELTON DAM AND LAKE
 LEON RIVER, TEXAS

**TRAVEL TIMES FROM
 BELTON DAM TO THE BRAZOS
 RIVER AT HEMPSTEAD GAGE**

U.S. ARMY ENGINEER DISTRICT, FORT WORTH September 2015

PLATE 4 - 21



LIST OF U.S.G.S. GAGES

GAGE ID:	LOCATION:	GAGE ID:	LOCATION:
08082500	BRAZOS RIVER NEAR SEYMOUR, TX	08095000	NORTH BOSQUE RIVER NEAR CLIFTON, TX
08085500	CLEAR FORK BRAZOS RIVER AT FORT GRIFFIN, TX	08095200	NORTH BOSQUE RIVER AT VALLEY MILLS, TX
08088000	BRAZOS RIVER NEAR SOUTH BEND, TX	08095300	MIDDLE BOSQUE RIVER NEAR MCGREGOR, TX
08088500	POSSUM KINGDOM RESERVOIR NEAR GRAFORD, TX	08095400	HOG CREEK NEAR CRAWFORD, TX
08089000	BRAZOS RIVER NEAR PALO PINTO, TX	08096500	BRAZOS RIVER NEAR WACO, TX
08090300	LAKE PALO PINTO CREEK NEAR SANTO, TX	08097000	COW BAYOU AT MOOREVILLE, TX
08090800	BRAZOS RIVER NEAR DENNIS, TX	08098290	BRAZOS RIVER NEAR HIGHBANK, TX
08090900	LAKE GRANBURY NEAR GRANBURY, TX	08099000	LEON RESERVOIR NEAR RANGER, TX
08091000	BRAZOS RIVER NR GLEN ROSE, TX	08099100	LEON RIVER NEAR DE LEON, TX
08092000	NOLAN RIVER AT BLUM, TX	08099300	SABANA RIVER NEAR DE LEON, TX
08092500	WHITNEY LAKE NR WHITNEY, TX	08099400	PROCTOR LAKE NEAR PROCTOR, TX
08092600	BRAZOS RIVER AT WHITNEY DAM NEAR WHITNEY, TX	08099500	LEON RIVER NEAR HASSE, TX
08093100	BRAZOS RIVER NEAR AQUILLA, TX	08100000	LEON RIVER NEAR HAMILTON, TX
08093500	AQUILLA CREEK NEAR AQUILLA, TX	08100500	LEON RIVER AT GATESVILLE, TX
08093700	NORTH BOSQUE RIVER AT STEPHENVILLE, TX	08101000	COWHOUSE CREEK AT PIDCOKE, TX
08094000	GREEN CREEK SUBWATERSHED NEAR DUBLIN, TX	08102000	BELTON LAKE NEAR BELTON, TX
08094500	GREEN CREEK NEAR ALEXANDER, TX	08102500	LEON RIVER NEAR BELTON, TX
08094800	NORTH BOSQUE RIVER AT HICO, TX		

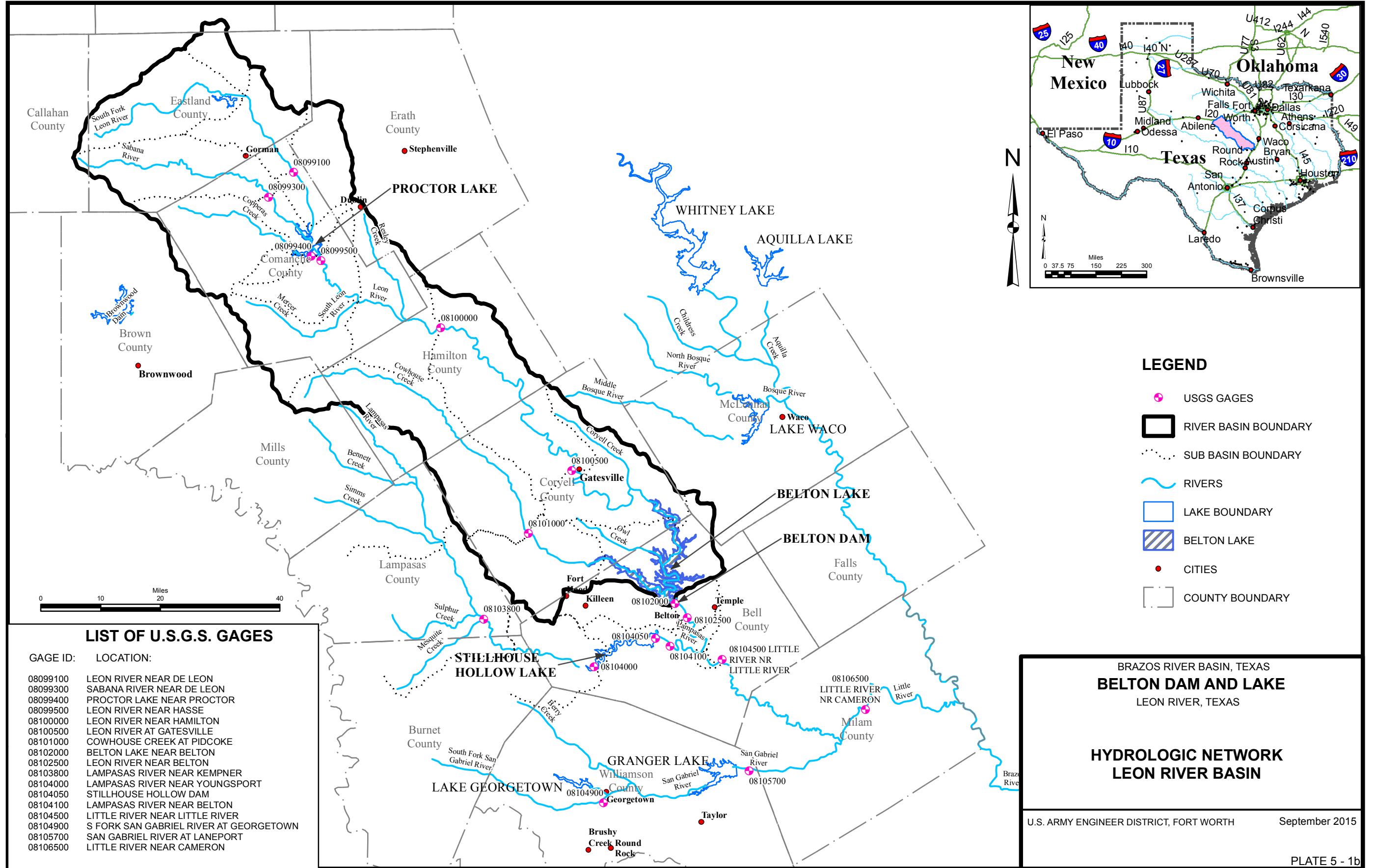
GAGE ID:	LOCATION:
08103800	LAMPASAS RIVER NEAR KEMPNER, TX
08104000	LAMPASAS RIVER NEAR YOUNGSPORT, TX
08104100	LAMPASAS RIVER NEAR BELTON, TX
08104500	LITTLE RIVER NEAR LITTLE RIVER, TX
08104900	S FORK SAN GABRIEL RIVER AT GEORGETOWN, TX
08106500	LITTLE RIVER NEAR CAMERON, TX
08108700	BRAZOS RIVER AT SH 21 NEAR BRYAN, TX
08109700	MIDDLE YEGUA CREEK NEAR DIME BOX, TX
08109800	EAST YEGUA CREEK NEAR DIME BOX, TX
08109900	SOMERVILLE RESERVOIR NEAR SOMERVILLE, TX
08110000	YEGUA CREEK NEAR SOMERVILLE, TX
08110100	DAVIDSON CREEK NEAR LYONS, TX
08110300	LAKE MEXIA NEAR MEXIA, TX
08110500	NAVASOTA RIVER NEAR EASTERLY, TX
08110800	NAVASOTA RIVER NEAR BRYAN, TX
08111500	BRAZOS RIVER NEAR HEMPSTEAD, TX
08114000	BRAZOS RIVER AT RICHMOND, TX
08114500	BRAZOS RIVER NEAR JULIFF, TX

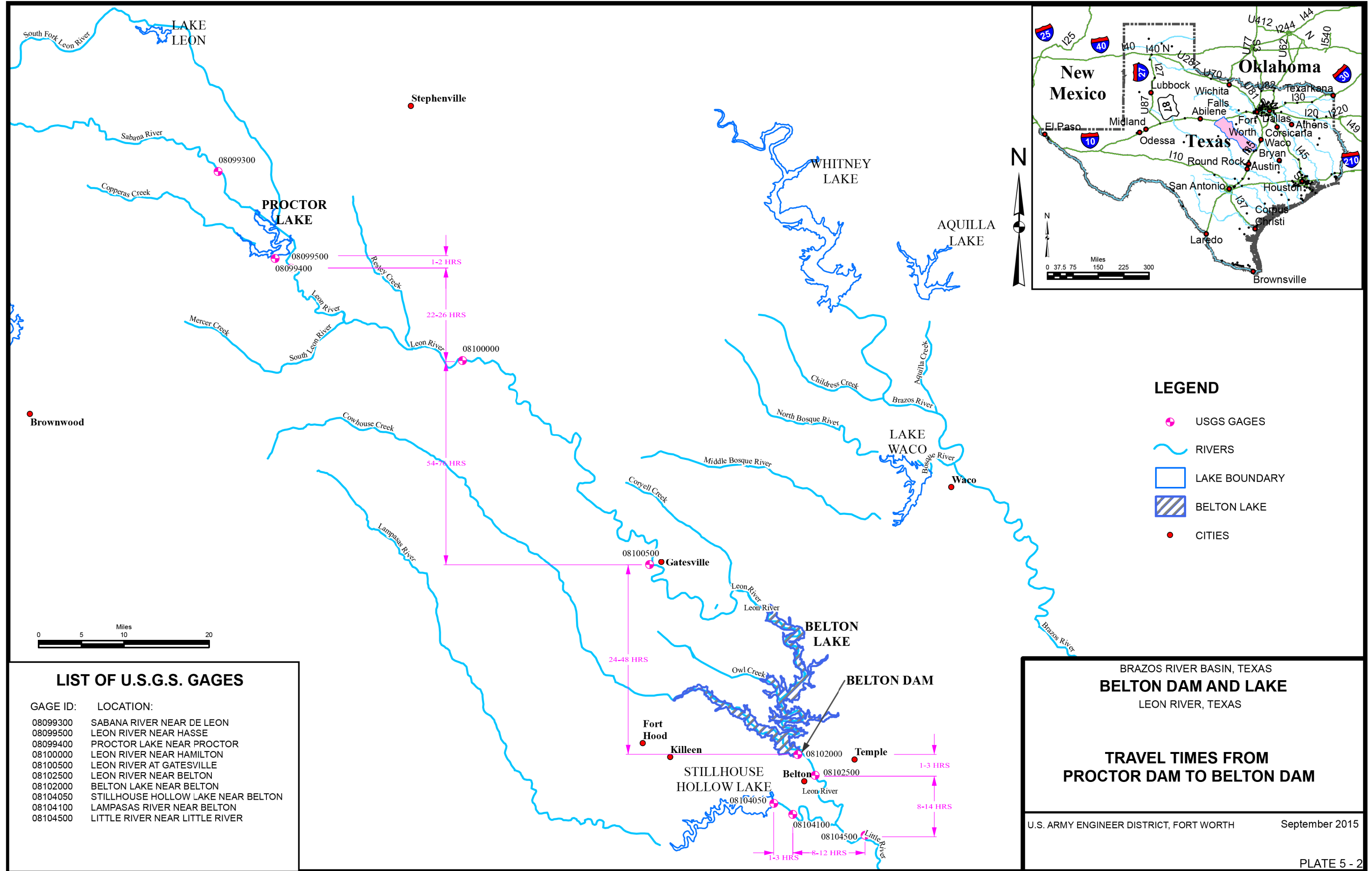
BRAZOS RIVER BASIN, TEXAS
BELTON DAM AND LAKE
LEON RIVER, TEXAS

**HYDROLOGIC NETWORK LOWER
BRAZOS RIVER BASIN**

U.S. ARMY ENGINEER DISTRICT, FORT WORTH September 2015

PLATE 5 - 1a





LEGEND

- USGS GAGES
- ~ RIVERS
- LAKE BOUNDARY
- BELTON LAKE
- CITIES

LIST OF U.S.G.S. GAGES

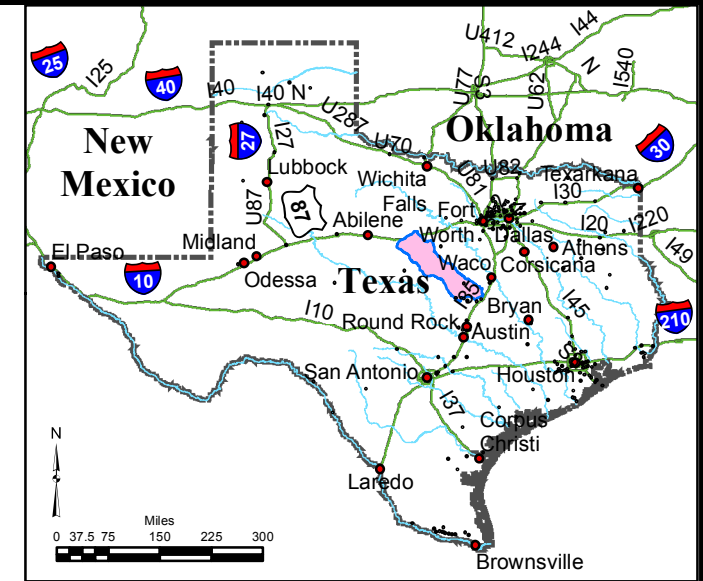
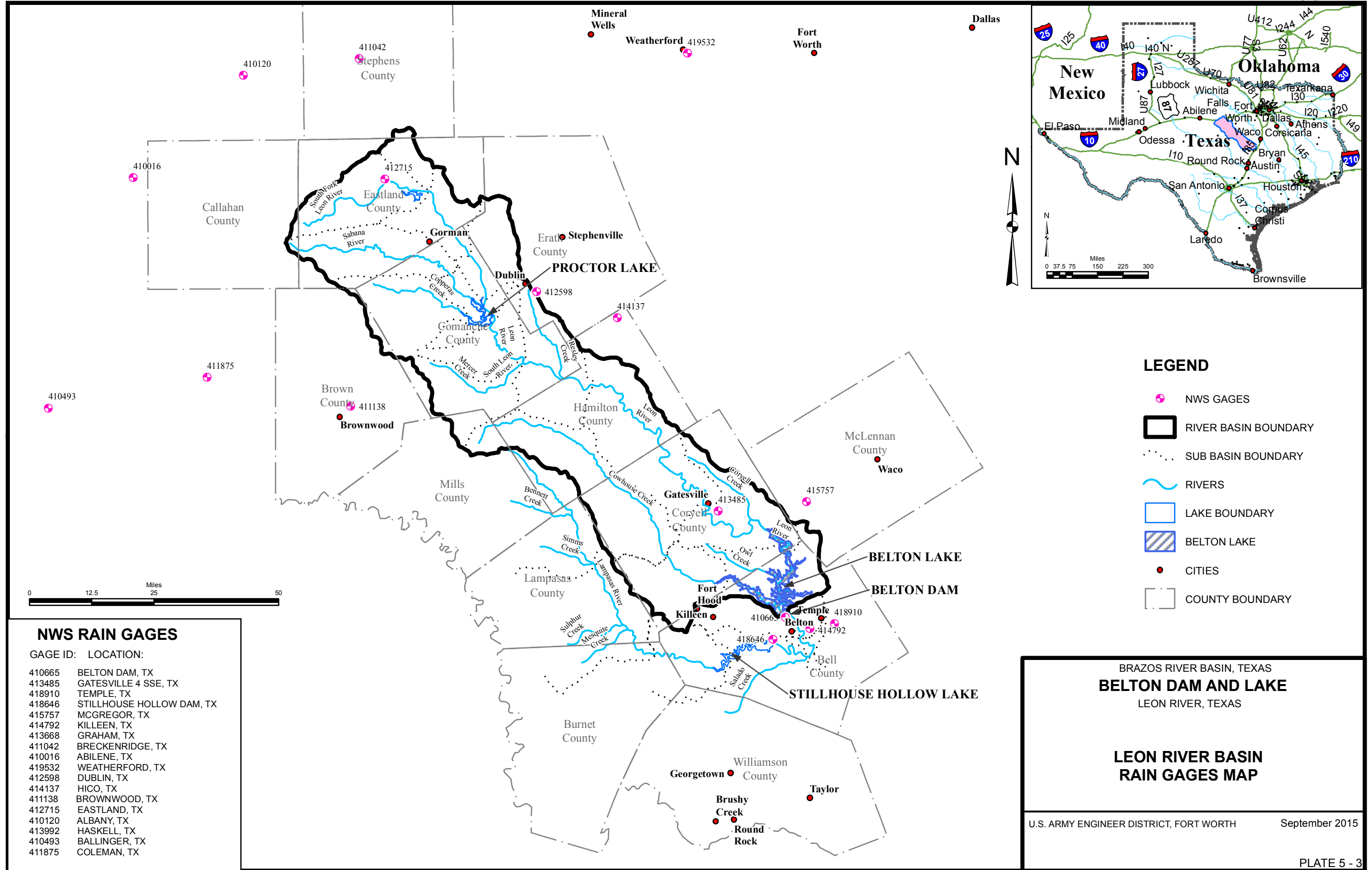
GAGE ID:	LOCATION:
08099300	SABANA RIVER NEAR DE LEON
08099500	LEON RIVER NEAR HASSE
08099400	PROCTOR LAKE NEAR PROCTOR
08100000	LEON RIVER NEAR HAMILTON
08100500	LEON RIVER AT GATESVILLE
08102500	LEON RIVER NEAR BELTON
08102000	BELTON LAKE NEAR BELTON
08104050	STILLHOUSE HOLLOW LAKE NEAR BELTON
08104100	LAMPASAS RIVER NEAR BELTON
08104500	LITTLE RIVER NEAR LITTLE RIVER

BRAZOS RIVER BASIN, TEXAS
BELTON DAM AND LAKE
 LEON RIVER, TEXAS

**TRAVEL TIMES FROM
 PROCTOR DAM TO BELTON DAM**

U.S. ARMY ENGINEER DISTRICT, FORT WORTH September 2015

PLATE 5 - 2



LEGEND

- + NWS GAGES
- RIVER BASIN BOUNDARY
- SUB BASIN BOUNDARY
- ~ RIVERS
- LAKE BOUNDARY
- BELTON LAKE
- CITIES
- COUNTY BOUNDARY

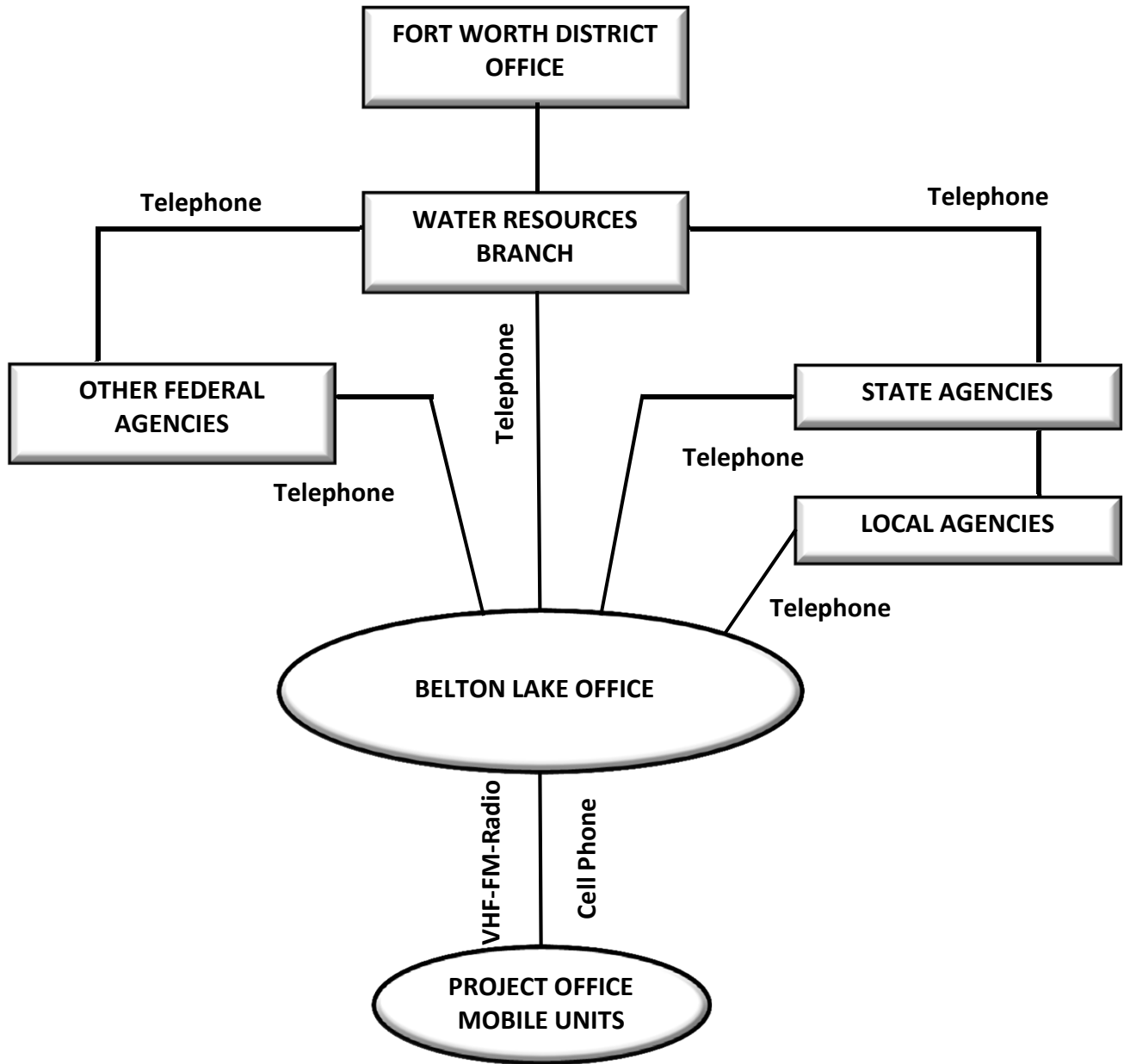
NWS RAIN GAGES

GAGE ID:	LOCATION:
410665	BELTON DAM, TX
413485	GATESVILLE 4 SSE, TX
418910	TEMPLE, TX
418646	STILLHOUSE HOLLOW DAM, TX
415757	MCGREGOR, TX
414792	KILLEEN, TX
413668	GRAHAM, TX
411042	BRECKENRIDGE, TX
410016	ABILENE, TX
419532	WEATHERFORD, TX
412598	DUBLIN, TX
414137	HICO, TX
411138	BROWNWOOD, TX
412715	EASTLAND, TX
410120	ALBANY, TX
413992	HASKELL, TX
410493	BALLINGER, TX
411875	COLEMAN, TX

BRAZOS RIVER BASIN, TEXAS
BELTON DAM AND LAKE
 LEON RIVER, TEXAS

**LEON RIVER BASIN
 RAIN GAGES MAP**

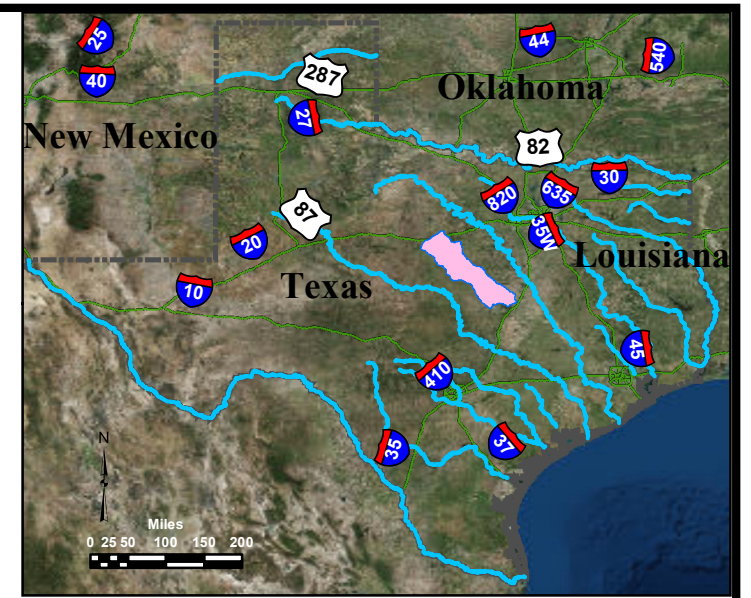
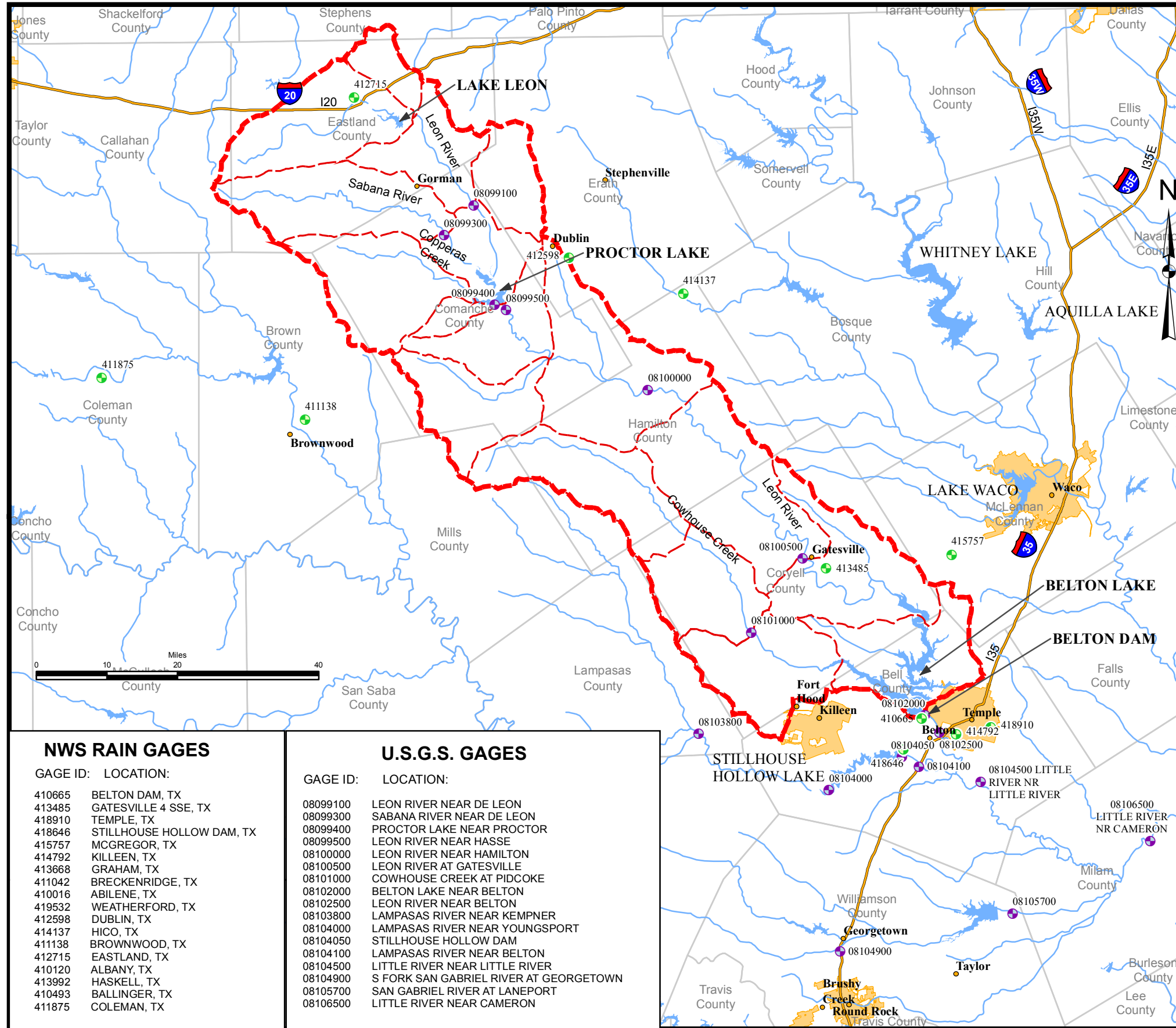
U.S. ARMY ENGINEER DISTRICT, FORT WORTH September 2015



BRAZOS RIVER BASIN, TEXAS
BELTON DAM AND LAKE
LEON RIVER, TEXAS

LINES OF COMMUNICATION

U.S. ARMY ENGINEER DISTRICT, FORT WORTH September 2015



LEGEND

- RIVER BASIN BOUNDARY
- SUB BASIN BOUNDARY
- LAKES
- RIVERS
- CITIES
- NWS GAGES
- USGS GAGES
- INTERSTATE
- METRO AREAS

NWS RAIN GAGES

GAGE ID:	LOCATION:
410665	BELTON DAM, TX
413485	GATESVILLE 4 SSE, TX
418910	TEMPLE, TX
418646	STILLHOUSE HOLLOW DAM, TX
415757	MCGREGOR, TX
414792	KILLEEN, TX
413668	GRAHAM, TX
411042	BRECKENRIDGE, TX
410016	ABILENE, TX
419532	WEATHERFORD, TX
412598	DUBLIN, TX
414137	HICO, TX
411138	BROWNWOOD, TX
412715	EASTLAND, TX
410120	ALBANY, TX
413992	HASKELL, TX
410493	BALLINGER, TX
411875	COLEMAN, TX

U.S.G.S. GAGES

GAGE ID:	LOCATION:
08099100	LEON RIVER NEAR DE LEON
08099300	SABANA RIVER NEAR DE LEON
08099400	PROCTOR LAKE NEAR PROCTOR
08099500	LEON RIVER NEAR HASSE
08100000	LEON RIVER NEAR HAMILTON
08100500	LEON RIVER AT GATESVILLE
08101000	COWHOUSE CREEK AT PIDCOKE
08102000	BELTON LAKE NEAR BELTON
08102500	LEON RIVER NEAR BELTON
08103800	LAMPASAS RIVER NEAR KEMPNER
08104000	LAMPASAS RIVER NEAR YOUNGSPORT
08104050	STILLHOUSE HOLLOW DAM
08104100	LAMPASAS RIVER NEAR BELTON
08104500	LITTLE RIVER NEAR LITTLE RIVER
08104900	S FORK SAN GABRIEL RIVER AT GEORGETOWN
08105700	SAN GABRIEL RIVER AT LANEPOR
08106500	LITTLE RIVER NEAR CAMERON

BRAZOS RIVER BASIN, TEXAS
BELTON DAM AND LAKE
 LEON RIVER, TEXAS

**REAL TIME WATER CONTROL
 BASE MAP**

U.S. ARMY ENGINEER DISTRICT, FORT WORTH September 2015

BELTON DAM AND LAKE

1. CONSERVATION WATER CONTROL

<u>FORECASTED LAKE ELEVATION</u>	<u>DOWNSTREAM CONTROL DISCHARGES</u>	<u>SCHEDULE OF CONTROL OPERATION</u>	<u>LAKE STATUS</u>
A. At 594.0 feet or below	3,000 cfs in the Little River near Little River	Conservation Releases: As instructed from CESWF Water Management office, at the request of the Brazos River Authority.	Rising/Standing/Falling

2. FLOODWATER CONTROL CONDITIONS

<u>FORECASTED LAKE ELEVATION</u>	<u>DOWNSTREAM CONTROL DISCHARGES</u>	<u>SCHEDULE OF CONTROL OPERATIONS</u>	<u>LAKE STATUS</u>
A. Above 594.0 feet below 596.5 feet	3,000 cfs in the Little River near Little River or 10,000 cfs in the Little River at Cameron or 60,000 cfs in the Brazos River at Hempstead	Flood Water Evacuation: Initiate releases in amount not to exceed flows stated and return to elevation 594.0 feet.	Rising/Standing/Falling
B. Above 596.5 feet below 610.0 feet	6,000 cfs in the Little River near Little River or 10,000 cfs in the Little River at Cameron or 60,000 cfs in the Brazos River at Hempstead	Flood Water Evacuation: Initiate releases in amount not to exceed flows stated - maintain until lake stage returns to elevation 596.5 feet, then adjust release to Schedule A.	Rising/Standing/Falling
C. Above 610.0 feet below 631.0 feet	10,000 cfs in the Little River near Little River or 10,000 cfs in the Little River at Cameron or 60,000 cfs in the Brazos River at Hempstead	Flood Water Evacuation: Initiate releases in amount not to exceed flows stated - maintain until lake stage returns to elevation 610.0 feet, then adjust release to Schedule B.	Rising/Standing/Falling
D. At 631.0 feet or above	10,000 cfs in the Little River near Little River or 10,000 cfs in the Little River at Cameron or 60,000 cfs in the Brazos River at Hempstead	Floodwater Evacuation and Uncontrolled Discharge: Initiate releases in amount, when combined with spillway discharge, does not exceed flows stated and return lake stage to elevation 631.0 feet then adjust release to Schedule C.	Standing/Falling
E. At 631.0 feet or above	No downstream control.	Uncontrolled Discharge. No gated releases, discharge is limited to only spillway overflow, until lake stage recedes to elevation 631.0 feet.	Rising

Note: All elevations referred to on this plate, unless noted otherwise, are in feet, National Geodetic Vertical Datum of 1929 (NGVD29). The elevation difference of +0.2 feet is the difference between NGVD29 and NAVD88 for Belton Dam and Lake.

BRAZOS RIVER BASIN, TEXAS
BELTON DAM AND LAKE
 LEON RIVER

**NORMAL REGULATION PLAN
 FOR CONSERVATION RELEASES
 AND FLOOD CONTROL**

U.S. ARMY ENGINEER DISTRICT, FORT WORTH September 2015

PLATE 7 - 1

**BELTON LAKE
EMERGENCY REGULATION PLAN FOR FLOOD CONTROL**

EMERGENCY INSTRUCTIONS TO LAKE MANAGER FOR USE WHEN COMMUNICATIONS WITH THE WATER MANAGEMENT OFFICE FAIL

<u>LAKE STATUS</u>	CONDITION	OPERATION
Rising, Standing, or Falling	I - Lake elevation at or below 594.0	Continue releases from the conservation storage as last instructed by the Fort Worth District Water Management Office.
Rising, Standing, or Falling	II - Lake elevation above 594.0 and below elevation 631.0.	If flood releases are in progress when communications with the Fort Worth District Water Management Office fail, close the gates should one of the following situations below occur; otherwise, leave gate settings and releases as is until communications are restored. (1) One inch of rain or more is experienced at or below the dam in 6 hours or less; or there is knowledge of downstream flooding, close the gates at up to twice the normal rate of closure. Leave gates closed until communications are restored. (2) If no flood releases are in progress, continue conservation releases but do not start any flood releases. Under any condition, do not reduce releases below amount required by Condition I for conservation purposes.
Rising	III - Lake elevation above 631.0.	Close the outlet works at up to twice the normal rate of closure.
Standing or Falling	IV - Lake elevation above 631.0.	Leave outlet works unchanged until communication is restored.

Note: All elevations referred to on this plate, unless noted otherwise, are in feet, National Geodetic Vertical Datum of 1929 (NGVD29). The elevation difference of +0.2 feet is the difference between NGVD29 and NAVD88 for Belton Dam and Lake.

BRAZOS RIVER BASIN, TEXAS

BELTON LAKE

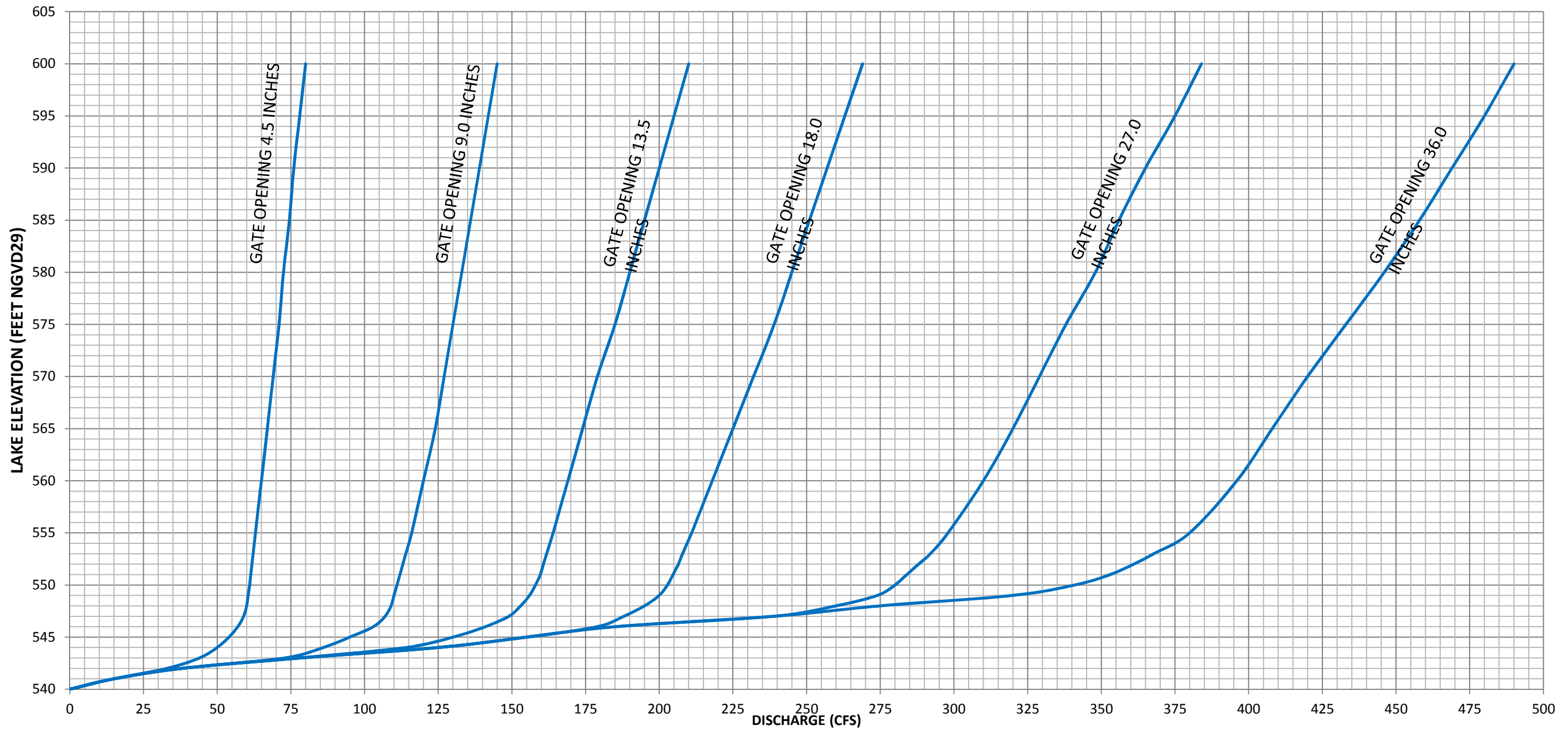
LEON RIVER, TEXAS

**EMERGENCY REGULATION PLAN
FOR FLOOD CONTROL**

U.S. ENGINEER DISTRICT, FORT WORTH

September 2015

PLATE 7 - 1b



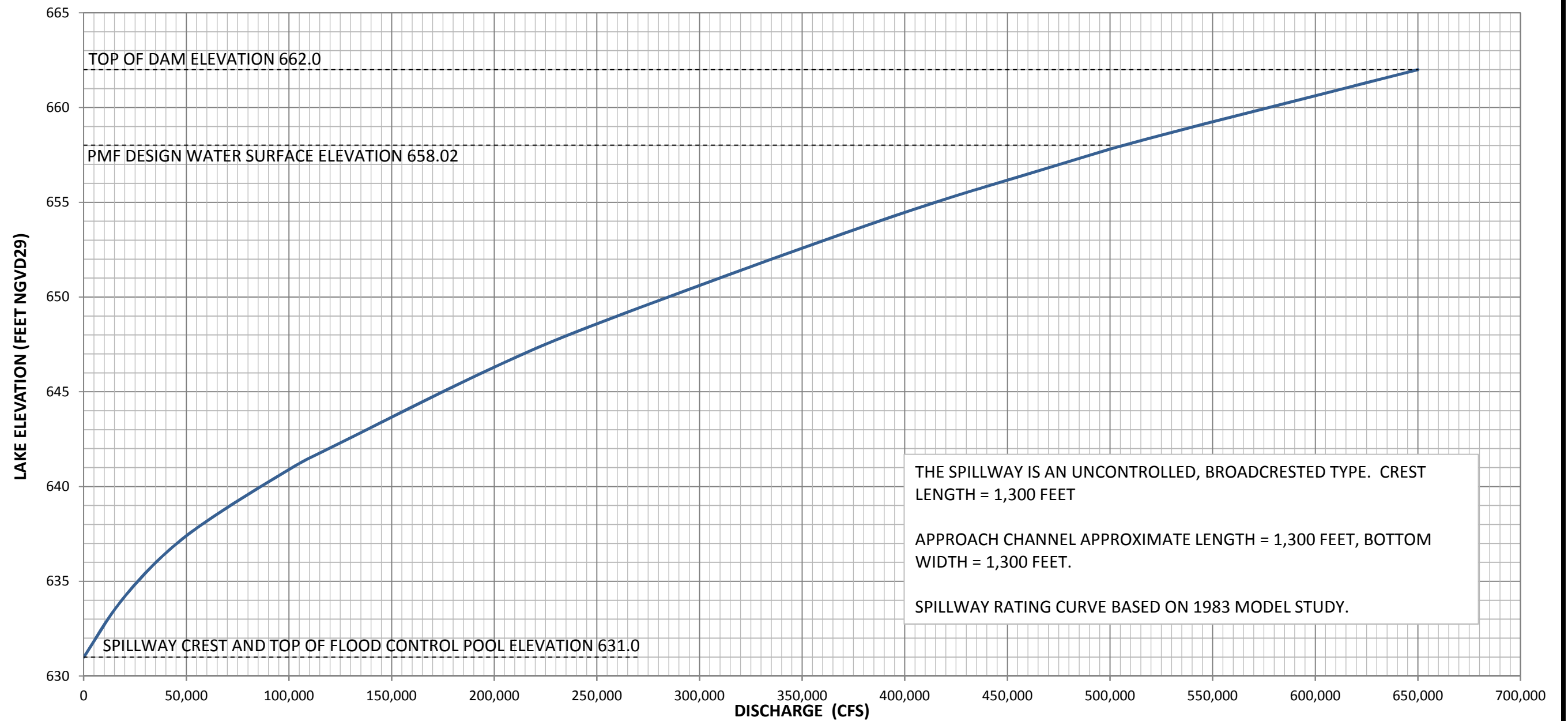
1. THE 3' X 3' SERVICE GATE IS LOCATED IN THE WET WELL. SILL ELEVATION IS 483.0 .
2. THE 5' X 5' GATE IS LOCATED AT INTAKE TO WET WELL.
3. ALL ELEVATIONS REFERRED TO ON THIS PLATE, UNLESS NOTED OTHERWISE, ARE IN FEET, NATIONAL GEODETIC VERTICAL DATUM OF 1929 (NGVD29). THE ELEVATION DIFFERENCE OF +0.2 FEET IS THE DIFFERENCE BETWEEN NGVD29 AND NAVD88 FOR BELTON DAM AND LAKE.

BRAZOS RIVER BASIN, TEXAS
BELTON DAM AND LAKE
 LEON RIVER

**LOW FLOW OUTLET
 RATING CURVES**

U.S. ARMY ENGINEER DISTRICT, FORT WORTH September 2015

PLATE 7 - 2



THE SPILLWAY IS AN UNCONTROLLED, BROADCRESTED TYPE. CREST LENGTH = 1,300 FEET

APPROACH CHANNEL APPROXIMATE LENGTH = 1,300 FEET, BOTTOM WIDTH = 1,300 FEET.

SPILLWAY RATING CURVE BASED ON 1983 MODEL STUDY.

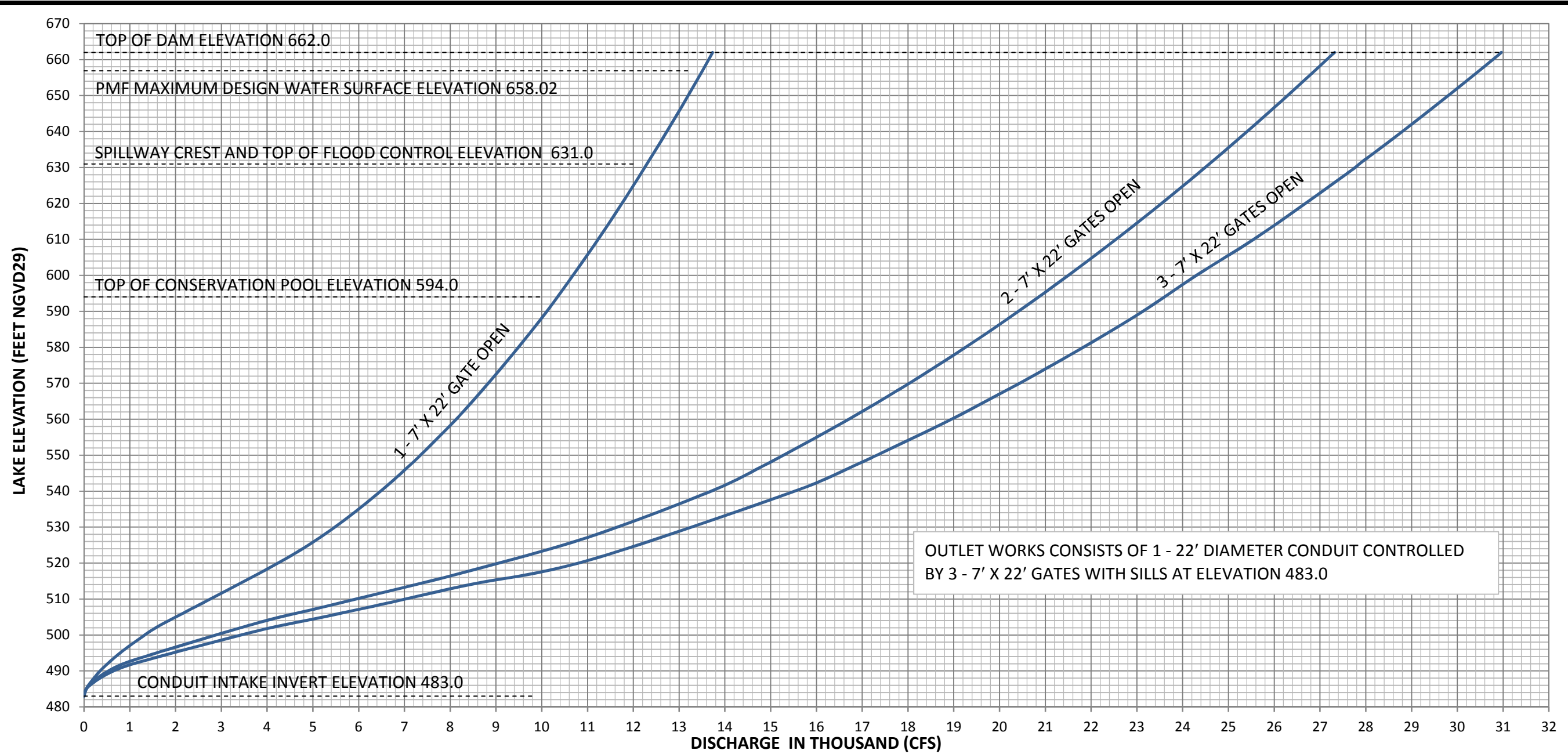
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BRAZOS RIVER BASIN, TEXAS
BELTON DAM AND LAKE
 LEON RIVER

SPILLWAY RATING CURVE

U.S. ARMY ENGINEER DISTRICT, FORT WORTH September 2015

PLATE 7 - 3



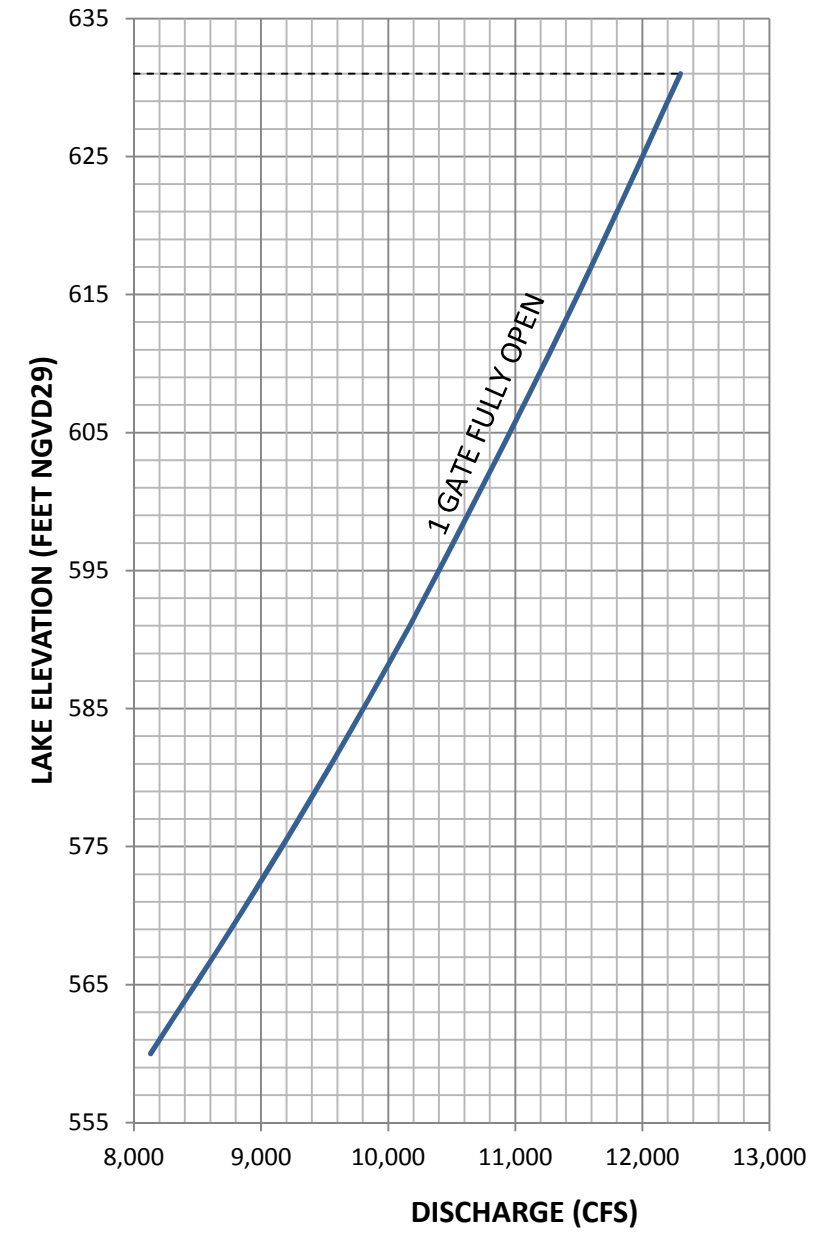
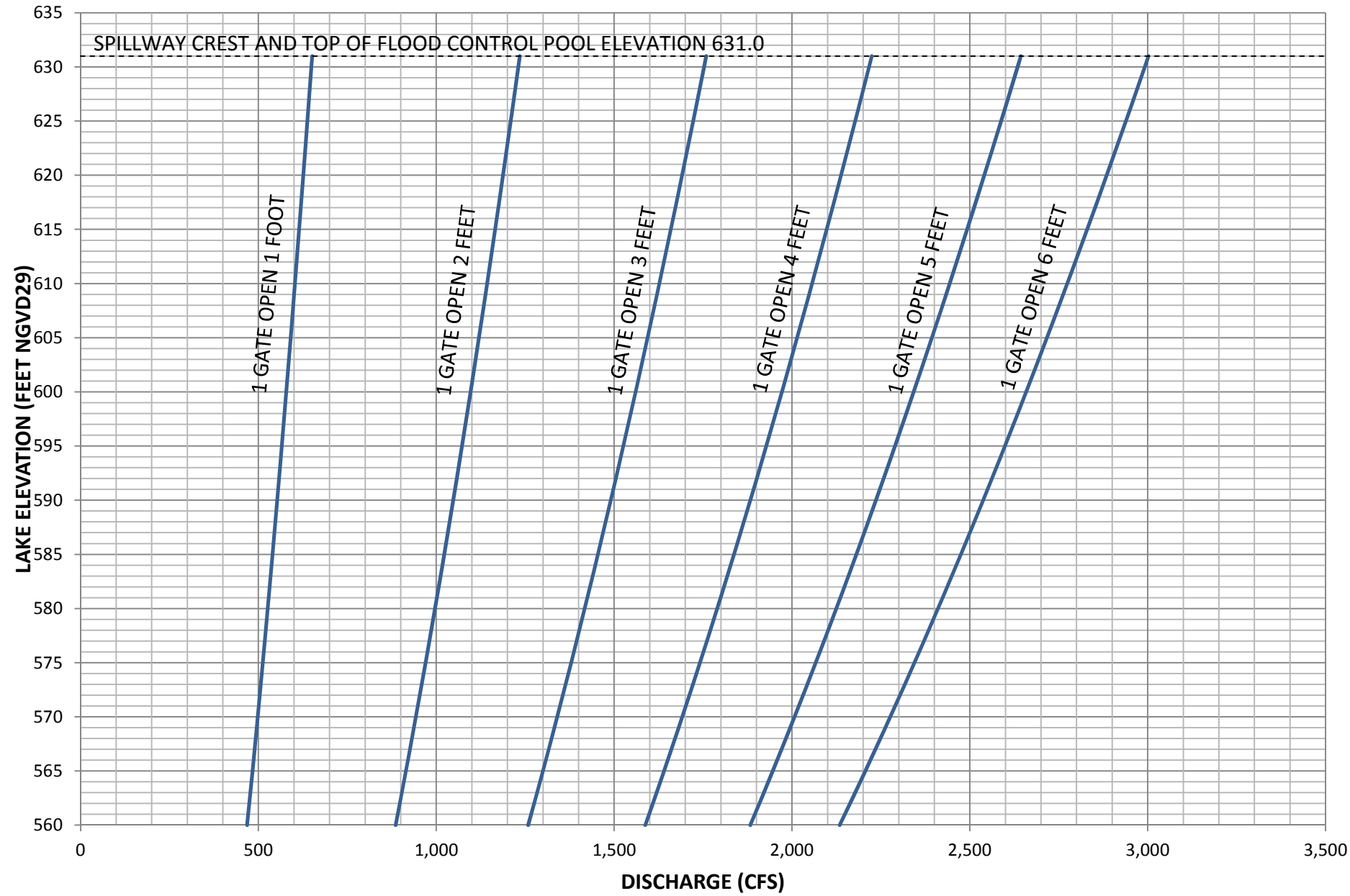
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BRAZOS RIVER BASIN, TEXAS
BELTON DAM AND LAKE
 LEON RIVER

OUTLET WORKS RATING CURVES

U.S. ARMY ENGINEER DISTRICT, FORT WORTH September 2015

PLATE 7 - 4



THE OUTLET WORKS CONSISTS OF ONE 22-FOOT DIAMETER CONDUIT CONTROLLED BY 3 - 7' X 22' GATES. THE CONDUIT LENGTH IS 790 FEET. THE CONDUIT INVERT ELEVATION IS 483.0.

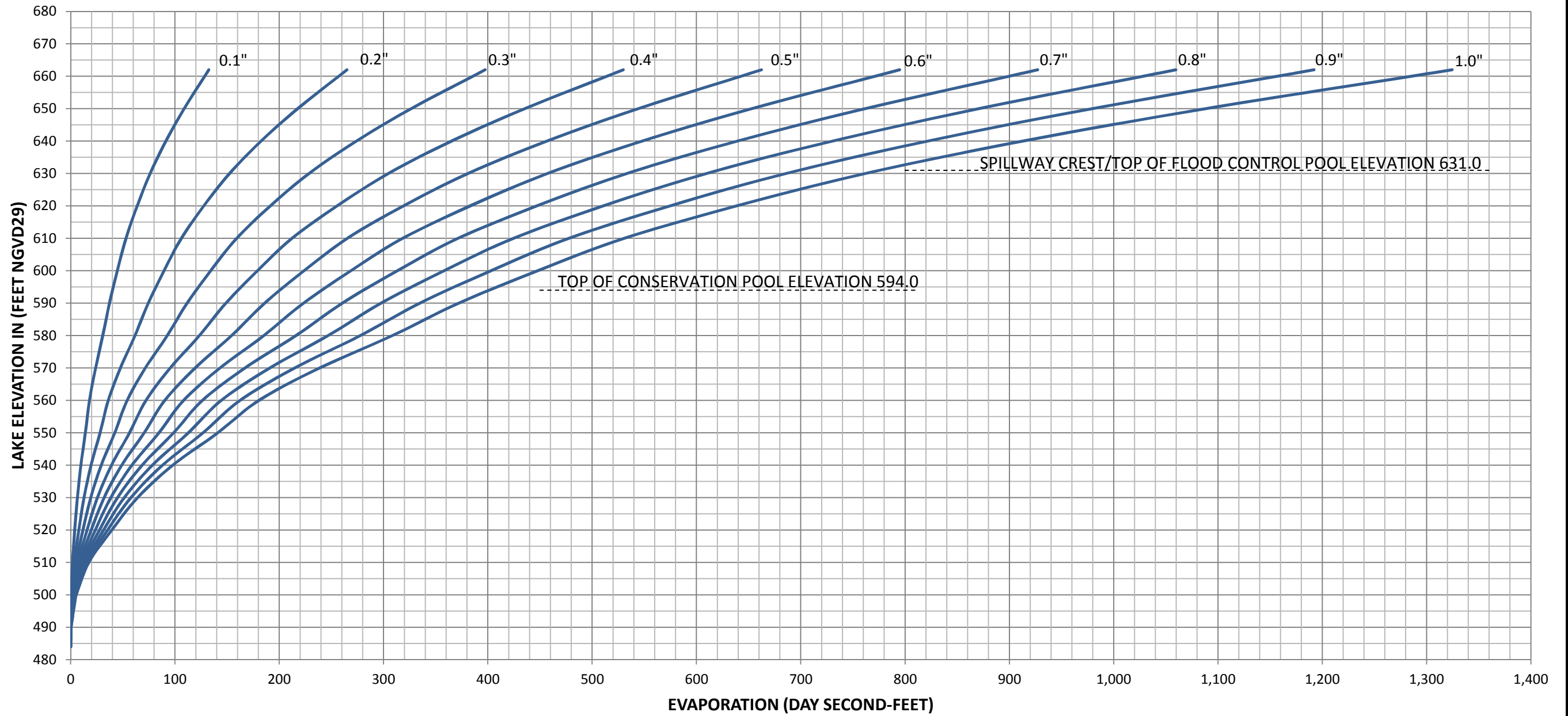
ALL ELEVATIONS REFERRED TO ON THIS PLATE, UNLESS NOTED OTHERWISE, ARE IN FEET, NATIONAL GEODETIC VERTICAL DATUM OF 1929 (NGVD29). THE ELEVATION DIFFERENCE OF +0.2 FEET IS THE DIFFERENCE BETWEEN NGVD29 AND

BRAZOS RIVER BASIN, TEXAS
BELTON DAM AND LAKE
 LEON RIVER

**CONDUIT RATING CURVES
 PARTIAL GATE OPENINGS
 ONE 7' X 22' GATE**

U.S. ARMY ENGINEER DISTRICT, FORT WORTH September 2015

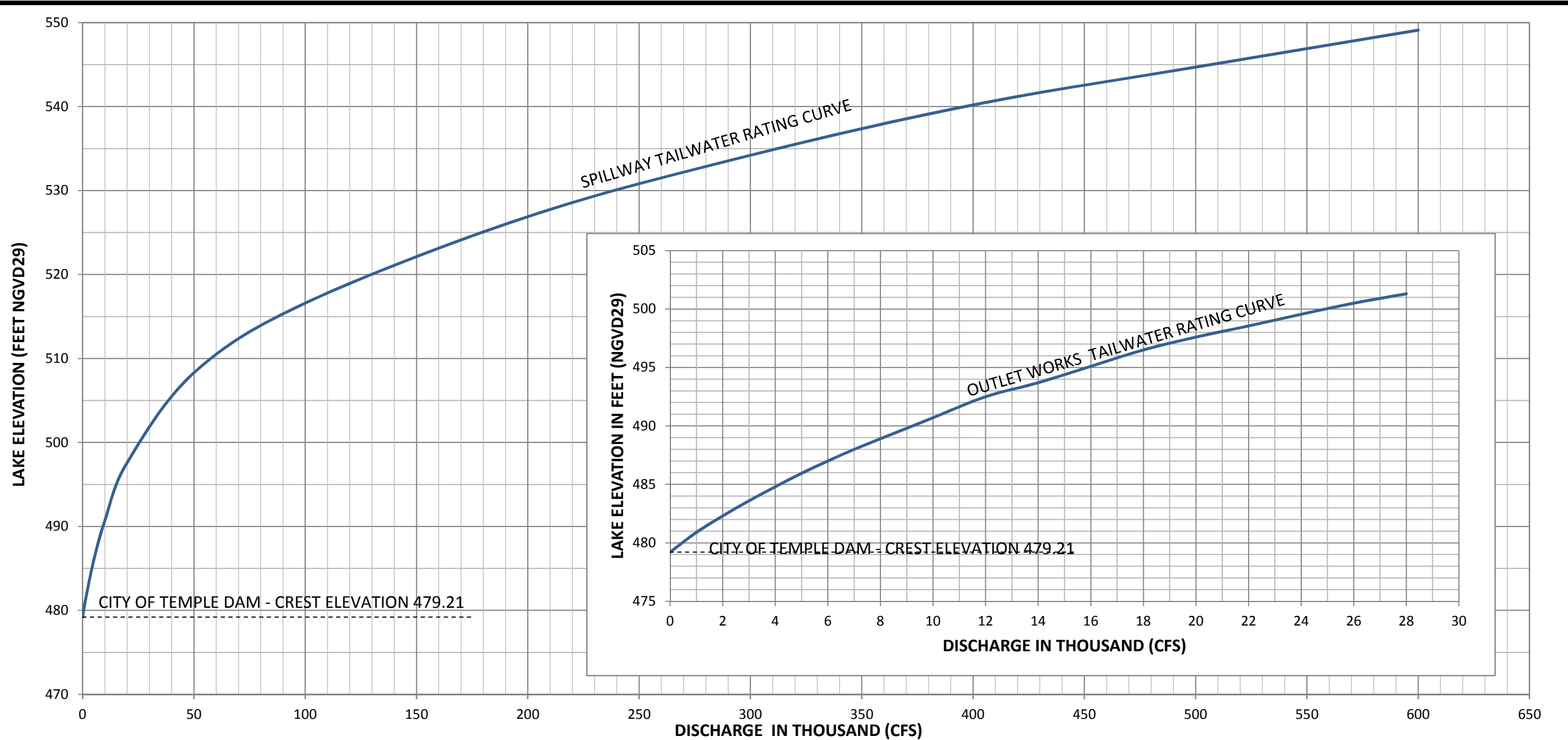
PLATE 7 - 5



ALL ELEVATIONS REFERRED TO ON THIS PLATE, UNLESS NOTED OTHERWISE, ARE IN FEET, NATIONAL GEODETIC VERTICAL DATUM OF 1929 (NGVD29). THE ELEVATION DIFFERENCE OF +0.2 FEET IS THE DIFFERENCE BETWEEN NGVD29 AND NAVD88 FOR BELTON DAM AND LAKE.

BRAZOS RIVER BASIN, TEXAS
BELTON DAM AND LAKE
LEON RIVER
LAKE EVAPORATION CURVES

U.S. ARMY ENGINEER DISTRICT, FORT WORTH September 2015



TAILWATER CURVE FOR NATURAL CONDITIONS AT BELTON DAM SITE DEVELOPED BY BACKWATER COMPUTATIONS FROM USGS GAGING STATION NEAR BELTON, TEXAS, 3.7 MILES DOWNSTREAM FROM DAM SITE.

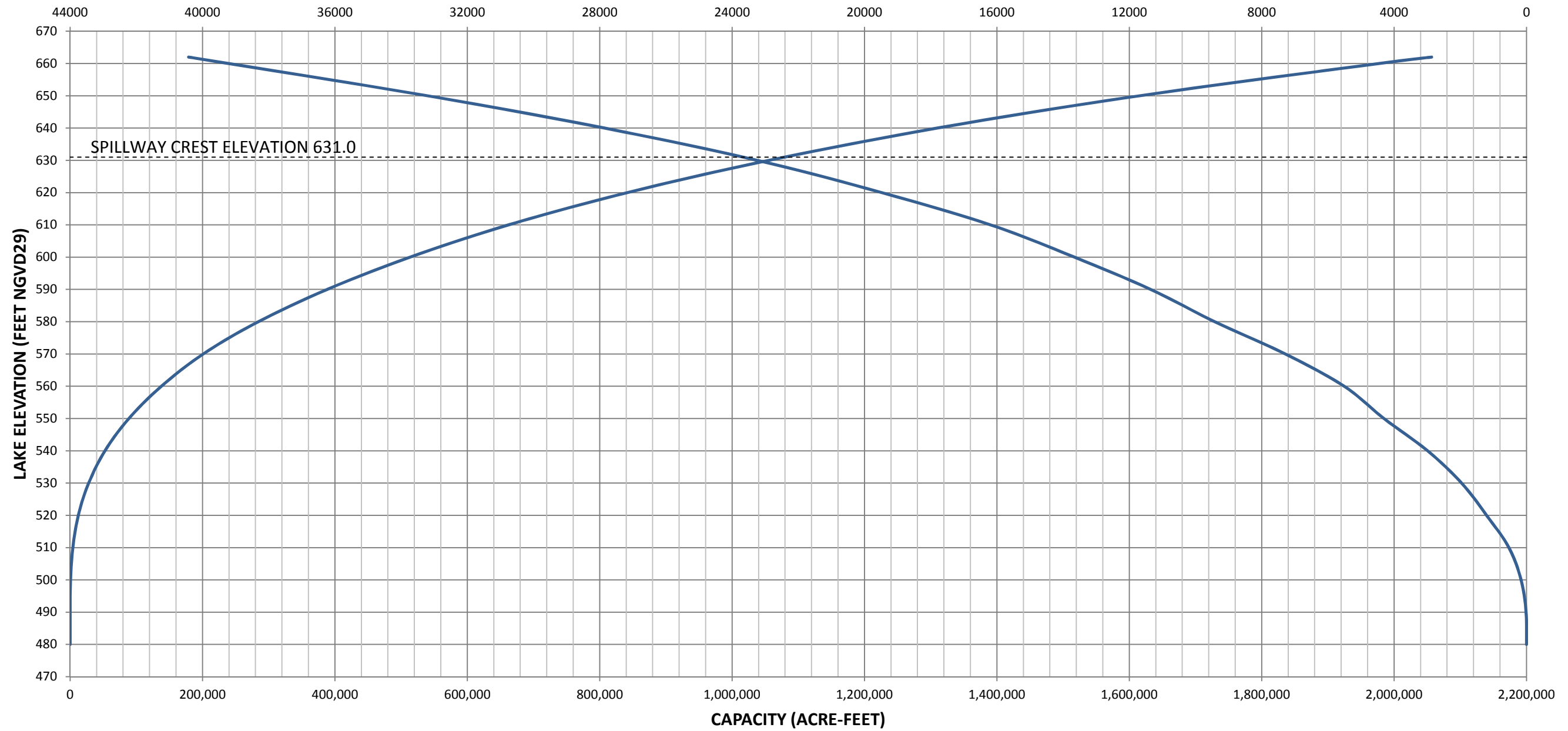
NOTE: ALL ELEVATIONS REFERRED TO ON THIS PLATE, UNLESS NOTED OTHERWISE, ARE IN FEET, NATIONAL GEODETIC VERTICAL DATUM OF 1929 (NGVD29). THE ELEVATION DIFFERENCE OF +0.2 FEET IS THE DIFFERENCE BETWEEN NGVD29 AND NAVD88 FOR BELTON DAM AND LAKE.

BRAZOS RIVER BASIN, TEXAS
BELTON DAM AND LAKE
 LEON RIVER

TAILWATER RATING CURVES

U.S. ARMY ENGINEER DISTRICT, FORT WORTH September 2015

PLATE 7 - 7



BELTON LAKE VOLUMETRIC AND SEDIMENT SURVEY PERFORMED BY THE TEXAS WATER DEVELOPMENT BOARD IN 2008.

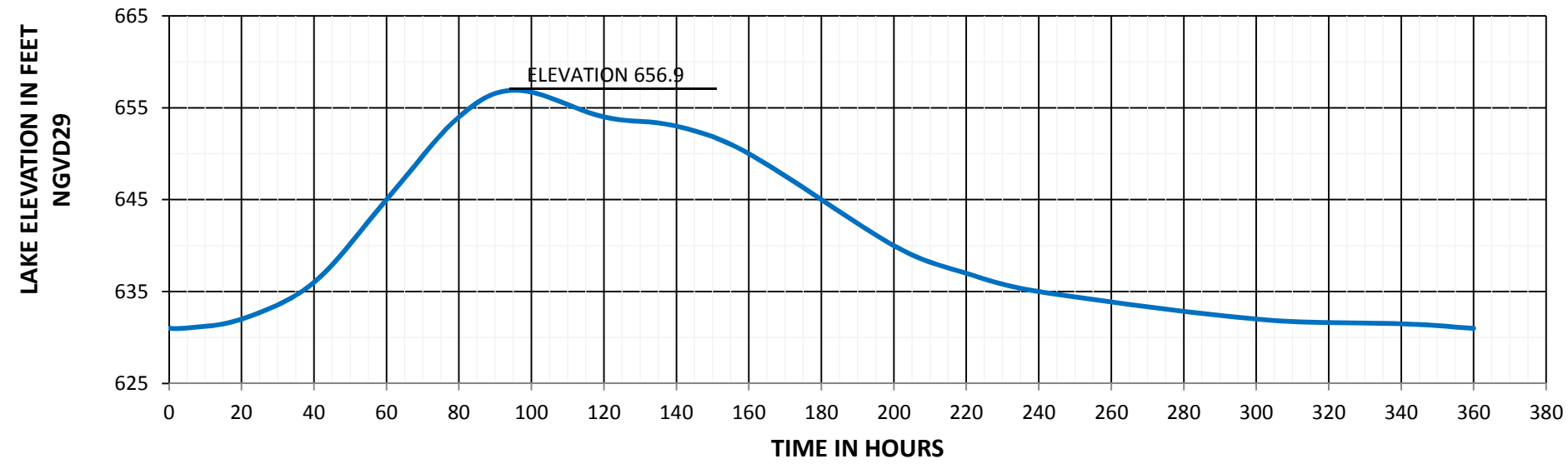
NOTE: ALL ELEVATIONS REFERRED TO ON THIS PLATE, UNLESS NOTED OTHERWISE, ARE IN FEET, NATIONAL GEODETIC VERTICAL DATUM OF 1929 (NGVD29). THE ELEVATION DIFFERENCE OF +0.2 FEET IS THE DIFFERENCE BETWEEN NGVD29 AND NAVD88 FOR BELTON DAM AND LAKE.

BRAZOS RIVER BASIN, TEXAS
BELTON DAM AND LAKE
LEON RIVER

AREA - CAPACITY CURVES

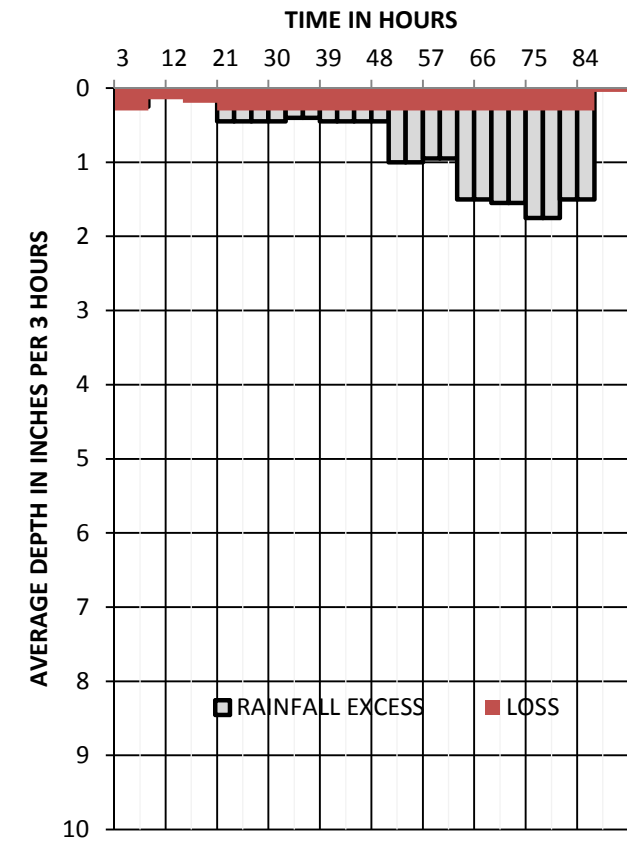
U.S. ARMY ENGINEER DISTRICT, FORT WORTH September 2015

PLATE 7 - 8

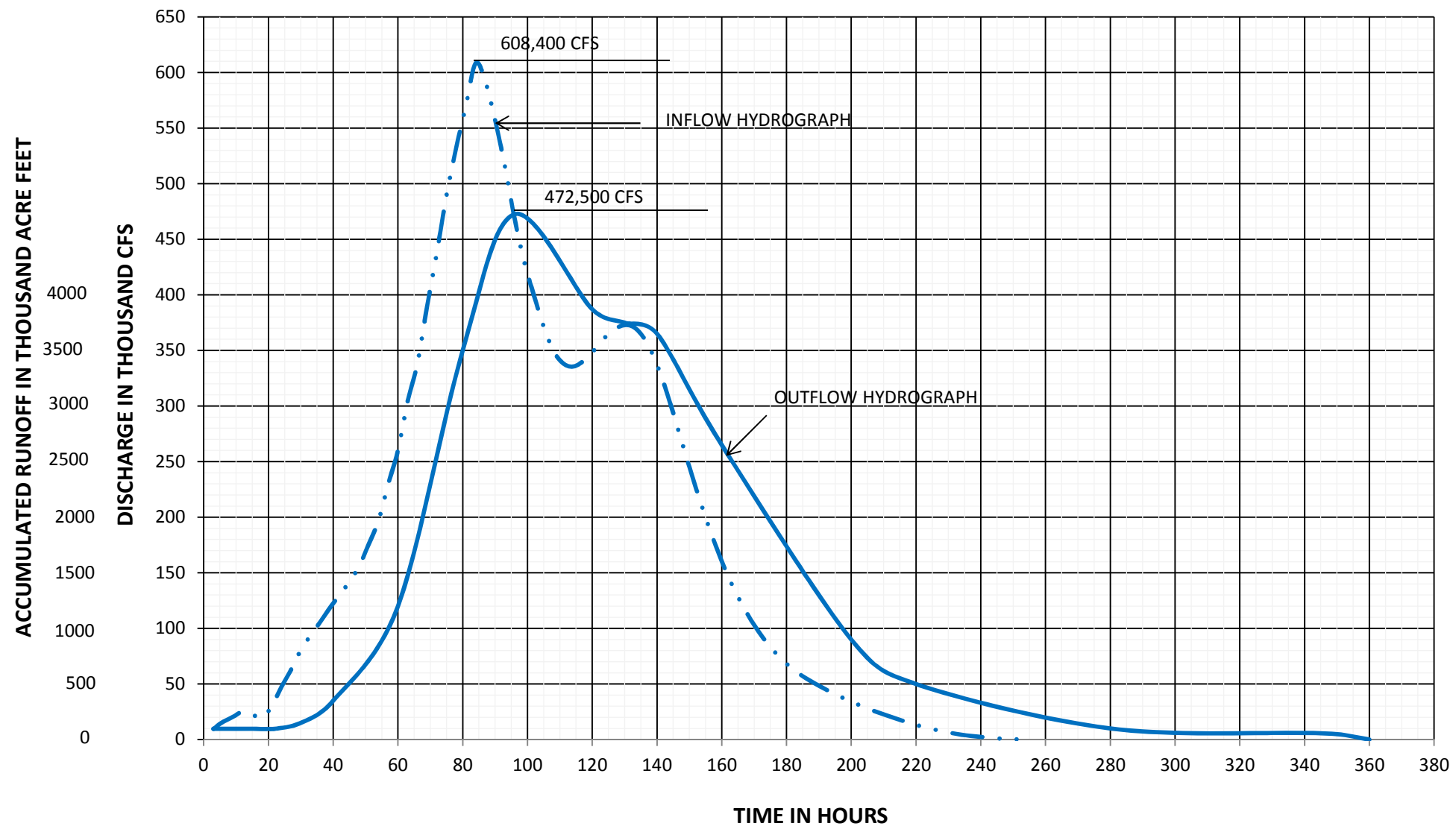


HYETOGRAPH (INCHES)

RAINFALL TOTAL	29.40
LOSS TOTAL	8.00
RAINFALL - EXCESS TOTAL	21.40
INFILTRATION INDEX (F. A. V. G)	0.10

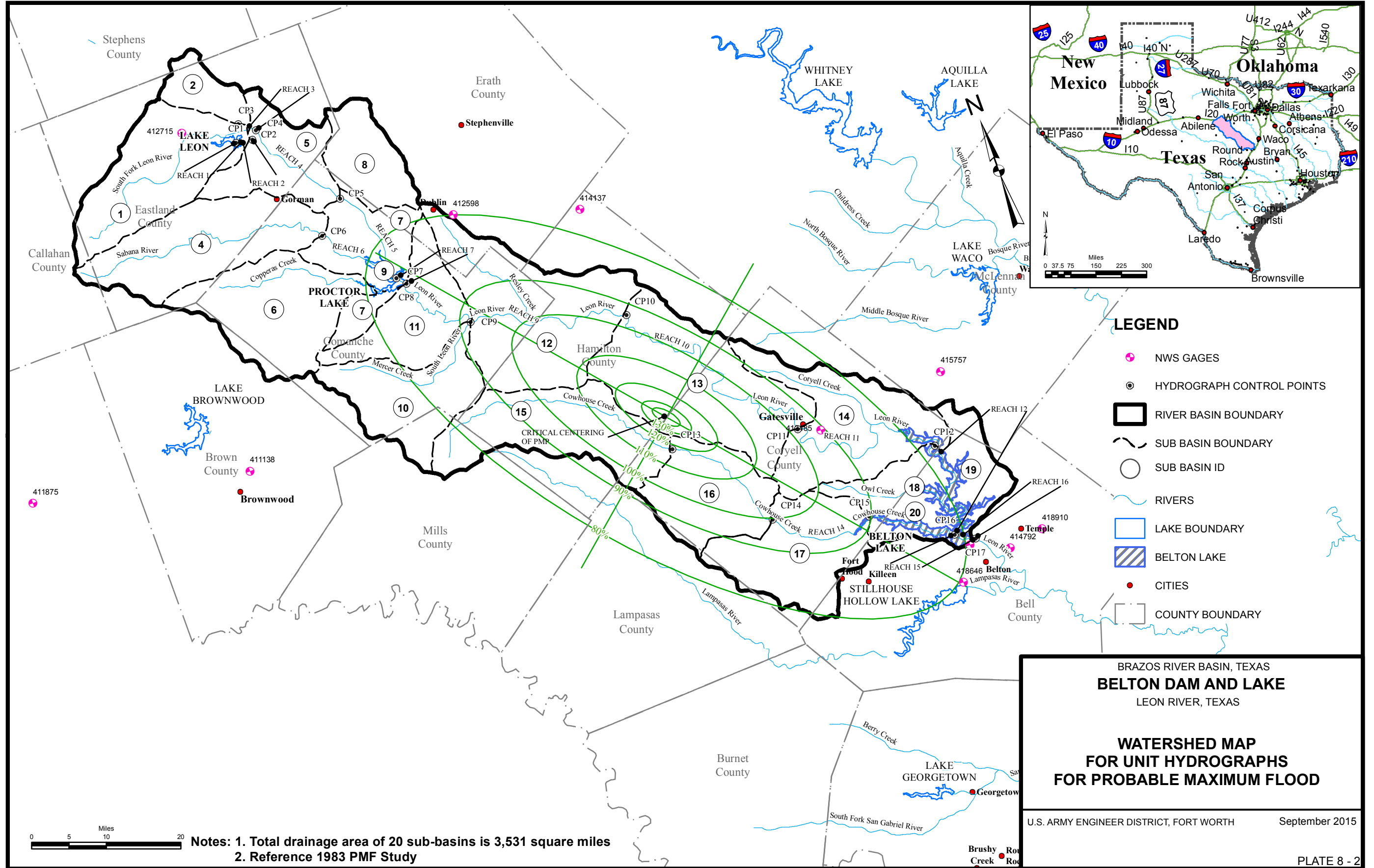


NOTE: DATA IS OBTAINED FROM 1951 "BELTON DAM DEFINITE PROJECT REPORT".



BRAZOS RIVER BASIN, TEXAS
BELTON DAM AND LAKE
 LEON RIVER, TEXAS

SPILLWAY DESIGN FLOOD



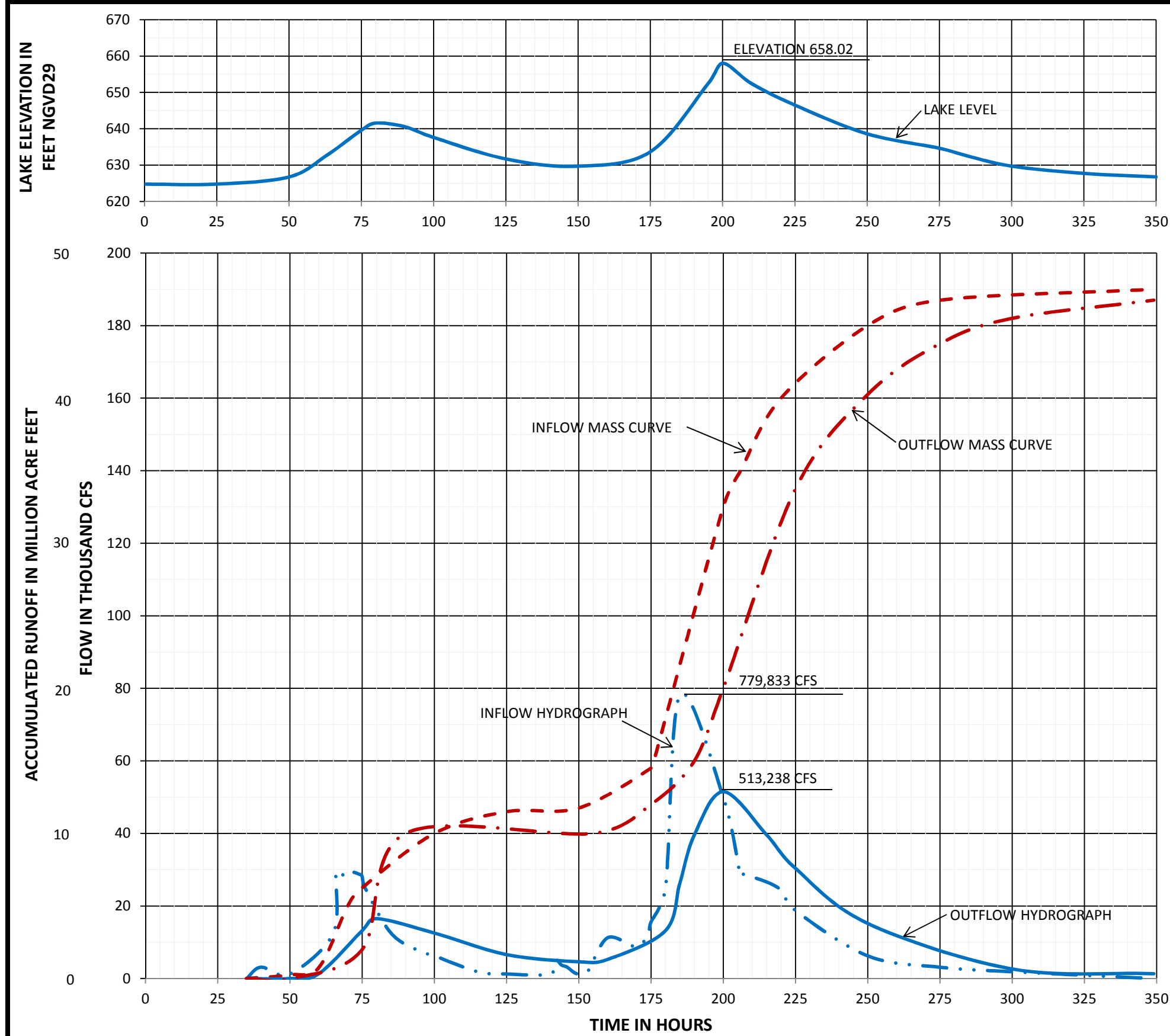
Notes: 1. Total drainage area of 20 sub-basins is 3,531 square miles
 2. Reference 1983 PMF Study

BRAZOS RIVER BASIN, TEXAS
BELTON DAM AND LAKE
 LEON RIVER, TEXAS

WATERSHED MAP
FOR UNIT HYDROGRAPHS
FOR PROBABLE MAXIMUM FLOOD

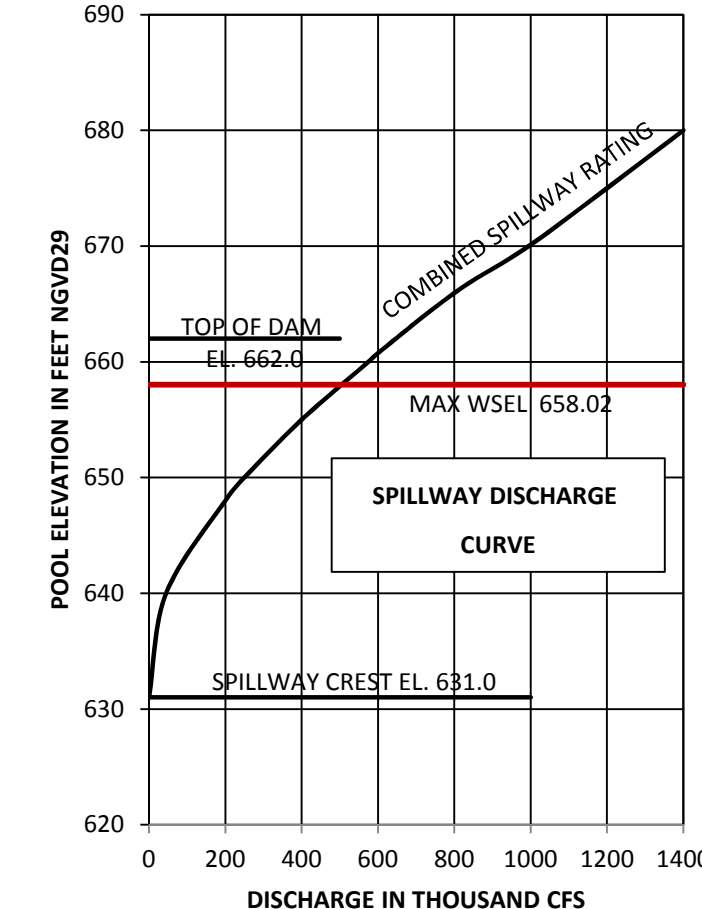
U.S. ARMY ENGINEER DISTRICT, FORT WORTH September 2015

PLATE 8 - 2



HYETOGRAPH (INCHES)

RAINFALL	22.67
LOSS	7.67
RAINFALL - EXCESS	15.00
INITIAL LOSS	1.00
INFILTRATION INDEX (F. A. V. G.)	0.10

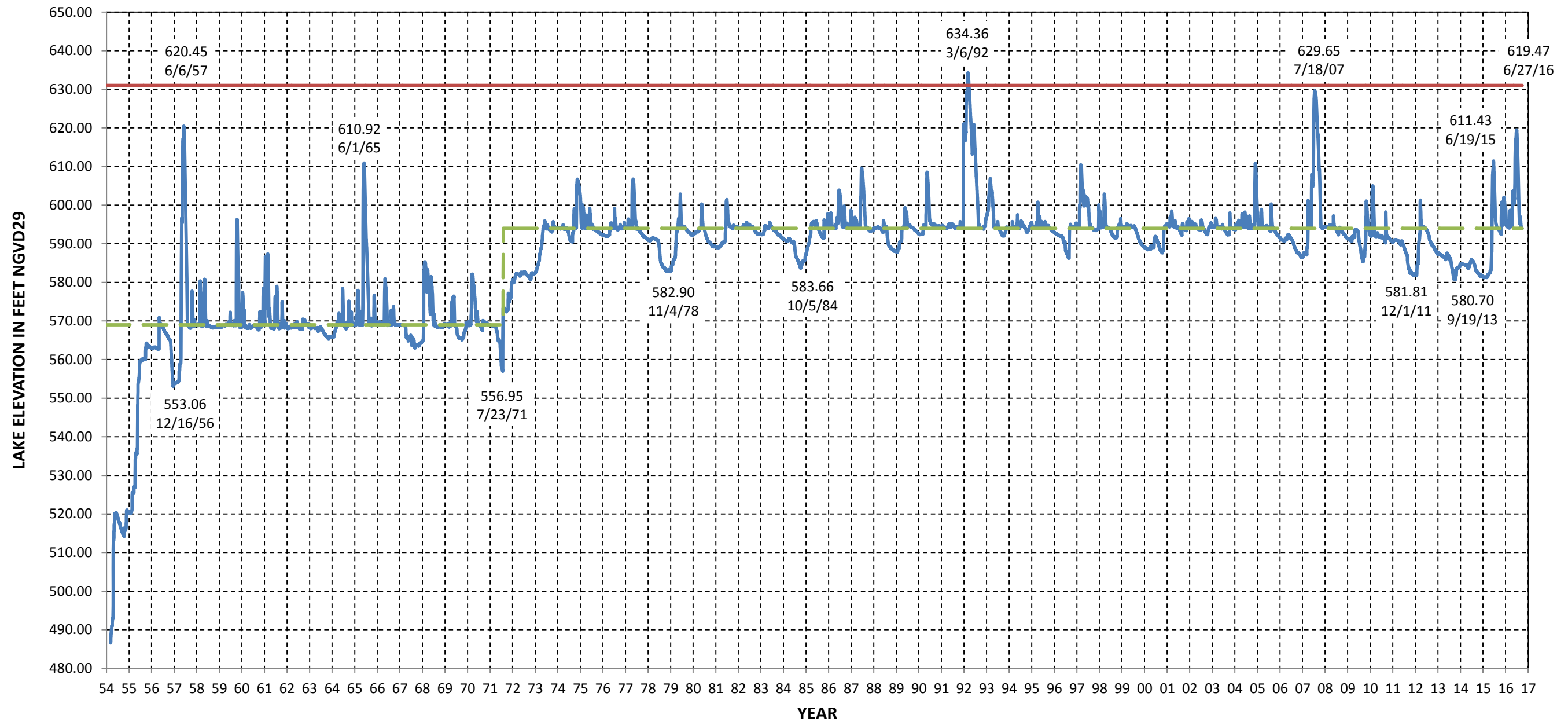


NOTE: DATA IS OBTAINED FROM BELTON LAKE 1983 HYDROLOGY STUDY. NO OVERTOPPING OR BREACH OF DAM ASSUMED.

BRAZOS RIVER BASIN, TEXAS
BELTON DAM AND LAKE
 LEON RIVER, TEXAS

**PROBABLE MAXIMUM FLOOD
 INFLOW-OUTFLOW HYDROGRAPHS**

U.S. ARMY ENGINEER DISTRICT, FORT WORTH September 2015



- LAKE ELEVATION
- SPILLWAY CREST ELEVATION 631.0
- TOP OF CONSERVATION POOL ELEVATION:
BEFORE AUGUST 1971 = 569.0; AFTER AUGUST 1971 = 594.0

DELIBERATE IMPOUNDMENT BEGAN: 03/08/1954

RECORD LAKE ELEVATION AND DATE: 634.36 NGVD29, 03/06/1992

THE CONSERVATION POOL WAS RAISED IN AUGUST 1971 FROM ELEVATION 569.0 TO ELEVATION 594.0 FEET NGVD29.

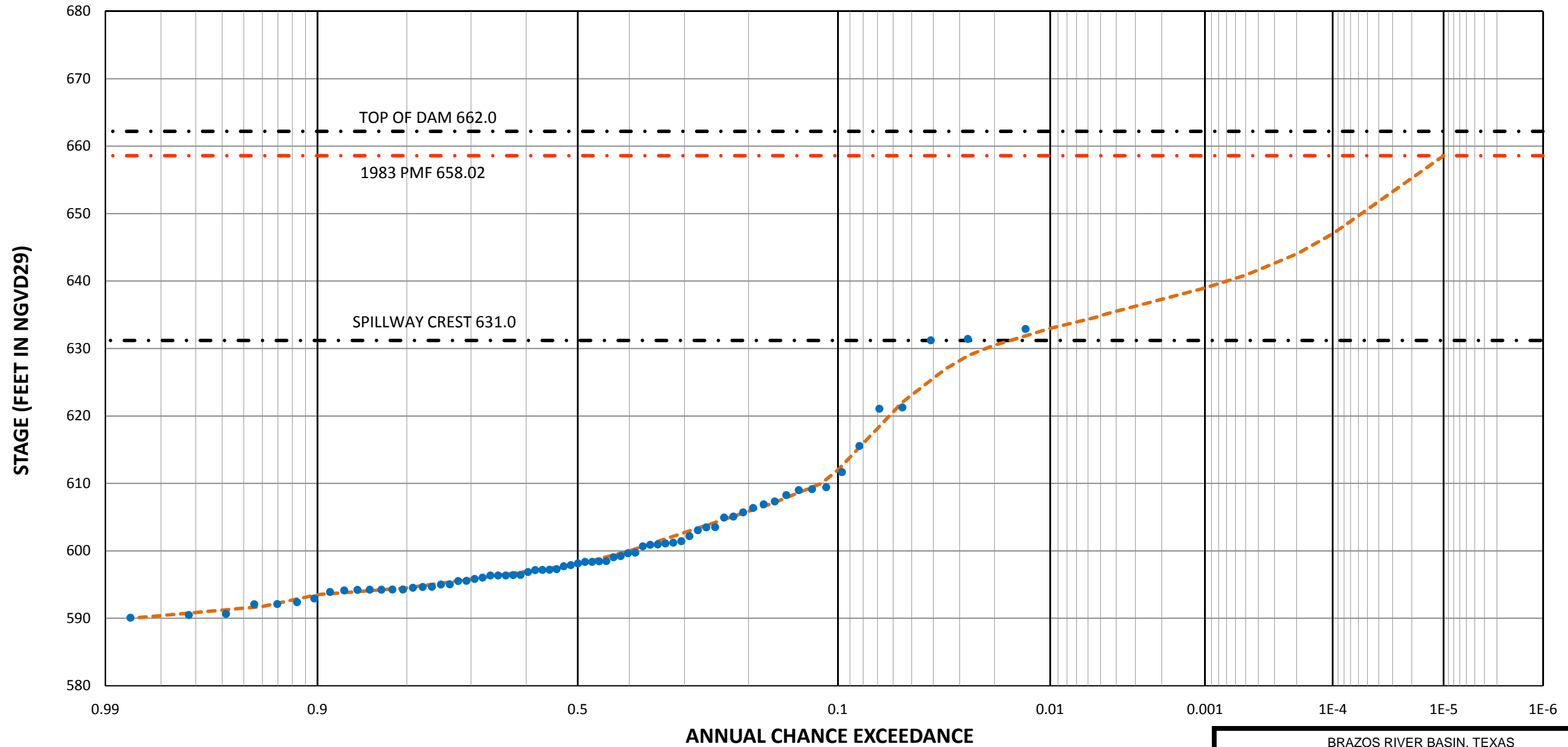
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BRAZOS RIVER BASIN, TEXAS
BELTON DAM AND LAKE
 LEON RIVER, TEXAS

PERIOD OF RECORD LAKE LEVEL

U.S. ARMY ENGINEER DISTRICT, FORT WORTH September 2015

BELTON DAM STAGE FREQUENCY



BRAZOS RIVER BASIN, TEXAS
BELTON DAM AND LAKE
 LEON RIVER, TEXAS

**ANNUAL PEAK
 ELEVATION FREQUENCY**

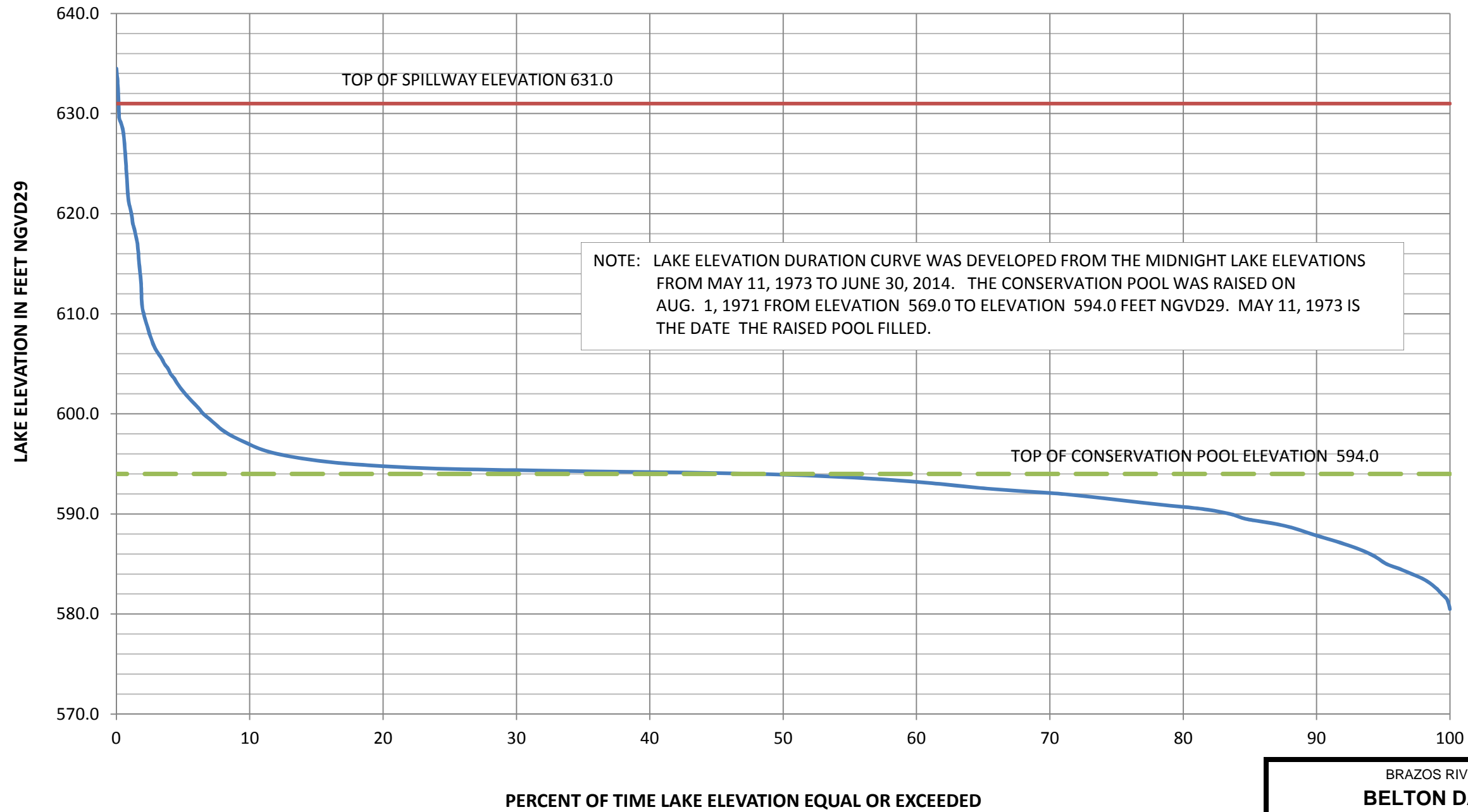
U.S. ARMY ENGINEER DISTRICT, FORT WORTH September 2015

PLATE 8 - 5

ALL ELEVATIONS REFERRED TO ON THIS PLATE, UNLESS NOTED OTHERWISE, ARE IN FEET, NATIONAL GEODETIC VERTICAL DATUM OF 1929 (NGVD29). THE ELEVATION DIFFERENCE OF +0.2 FEET IS THE DIFFERENCE BETWEEN NGVD29 AND NAVD88 FOR BELTON DAM AND LAKE.

- . - CREST / SPILLWAY
- . - PMF ELEVATION
- EVENTS
- - - GRAPHICAL FIT CURVE

BELTON LAKE



ALL ELEVATIONS REFERRED TO ON THIS PLATE, UNLESS NOTED OTHERWISE, ARE IN FEET, NATIONAL GEODETIC VERTICAL DATUM OF 1929 (NGVD29). THE ELEVATION DIFFERENCE OF +0.2 FEET IS THE DIFFERENCE BETWEEN NGVD29 AND NAVD88 FOR BELTON DAM AND LAKE.

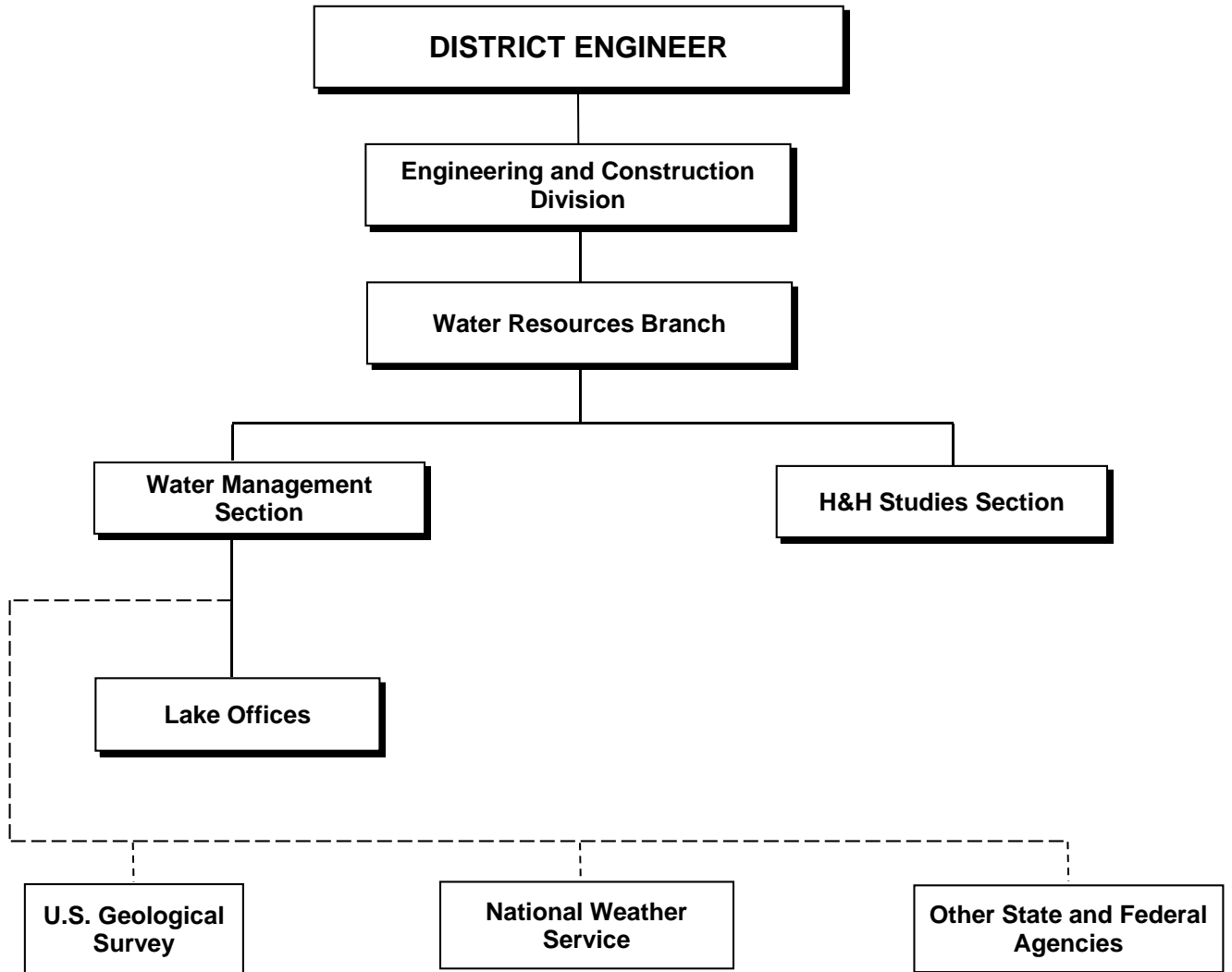
BRAZOS RIVER BASIN, TEXAS
BELTON DAM AND LAKE
 LEON RIVER, TEXAS

LAKE ELEVATION DURATION

U.S. ARMY ENGINEER DISTRICT, FORT WORTH September 2015

PLATE 8 - 6

FORT WORTH DISTRICT ORGANIZATION FOR LAKE REGULATION



——— LINES OF COMMAND AUTHORITY

----- LINES OF DIRECT COMMUNICATION

BRAZOS RIVER BASIN, TEXAS
BELTON DAM AND LAKE
 LEON RIVER, TEXAS

**ORGANIZATION FOR
 FLOOD CONTROL REGULATION**

U.S. ARMY ENGINEER DISTRICT, FORT WORTH September 2015

FORT WORTH DISTRICT CORPS OF ENGINEERS
RESERVOIR REPORT FOR SATURDAY 01AUG2015

RESERVOIR	ELEVATION 0800 FT-NGVD	TOP CONS POOL	MEAN INFLOW DSF	MEAN TURBINE DSF	DAILY PUMP MGD	RELEASES OTHER DSF	RAIN INCHES	EVAP CFS	0800 RELEASE CFS	POOL OCCUPIED %	A-F
RED RIVER BASIN											
Cooper	439.78	440.0	-162	--	18.618	5	0.00	.31	5	98 C	256411
Wright Patm	235.53	226.3	9205	--	49.706	9907	0.00	.16	10352	16 F	367034
Bob Sandlin	337.08	337.5	-239	--	--	0	--	--	0	98 C	198196
Lake O Pine	230.81	230.0	-221	--	--	301	0.00	--	301	3 F	16271
Caddo	169.30	168.5	1962	--	--	3141	0.00	--	2918	8 S	22059
NECHES RIVER BASIN											
Sam Rayburn	166.72	164.4	3597	1671	--	9487	0.00	.23	12744	25 F	251677
B.A. Steinh	82.06	83.0	9841	872	--	10477	0.32	.49	10886	86 C	57375
TRINITY RIVER BASIN											
Bridgeport	835.67	836.0	-494	--	--	0	0.02	--	0	99 C	356972
Eagle Mount	648.96	649.0	168	--	61.781	169	0.00	--	169	100 C	181265
Lake Worth	593.14	594.0	106	--	82.316	0	0.00	--	0	92 C	33791
Benbrook	695.18	694.0	-21	--	167.659	0	0.00	.64	0	6 F	4443
Joe Pool	532.15	522.0	23	--	9.236	358	0.00	.34	358	69 F	87158
Mountain Ck	458.14	457.0	307	--	--	0	--	--	794	-- S	3312
Ray Roberts	637.82	632.5	-273	--	11.629	1939	--	--	1938	64 F	169234
Lewisville	528.47	522.0	2092	0	76.759	4844	0.00	--	4839	61 F	207643
Grapevine	553.33	535.0	-927	--	--	1898	0.00	.37	1894	68 F	164553
Layon	492.66	492.0	-123	--	410.157	394	0.00	.25	393	5 F	13893
Ray Hubbard	435.45	435.5	153	--	212.700	0	0.00	--	0	100 C	488563
Cedar Creek	321.39	322.0	50	--	28.040	0	0.00	--	0	97 C	648093
Navarro Mil	429.39	424.5	-294	--	9.420	1484	0.00	.52	1464	19 F	28189
Bardwell	421.51	421.0	-4	--	6.470	173	0.00	.40	91	2 F	1674
Richland Cr	315.32	315.0	2191	--	63.240	1870	0.00	--	1864	-- S	13463
BRAZOS RIVER BASIN											
Fossum King	999.34	999.0	422	--	--	201	0.00	.29	201	-- C	5522
Granbury	692.64	692.7	-161	--	72.250	2	0.00	.34	2	100 C	126327
Whitney	532.96	533.0	277	846	--	25	0.00	.34	25	100 P	232827
Aquilla	537.22	537.5	-14	--	--	1	--	--	1	97 C	30412
Waco	461.92	462.0	81	--	46.791	60	0.00	.30	60	100 C	180188
Proctor	1168.98	1162.0	111	--	3.176	1456	0.00	.41	1410	12 F	37753
Belton	594.92	594.0	1089	--	58.305	1293	--	--	1031	2 F	11271
Stillhouse	622.11	622.0	-19	--	0.000	1	0.00	.41	1	0 F	714
Georgetown	790.27	791.0	6	--	51.045	0	0.00	.27	0	97 C	35900
Granger	504.48	504.0	56	--	4.408	121	0.00	.47	91	1 F	2054
Somerville	247.68	238.0	122	--	4.377	2166	0.00	.34	2159	39 F	136049
Limestone	362.08	363.0	-137	--	--	29	0.00	.05	28	94 C	192490
COLORADO RIVER BASIN											
Twin Buttes	1900.36	1940.2	-9	--	--	0	0.00	--	0	9 C	15073
O.C. Fisher	1873.74	1908.0	-9	--	0.000	0	0.00	.45	0	39 D	14239
O.H. Ivie	1510.48	1551.5	--	--	--	--	--	--	--	16 C	90730
Hords Creek	1886.20	1900.0	1	--	0.000	1	0.00	.44	1	27 C	1820
Buchanan	1007.43	1020.5	--	--	--	--	--	--	--	68 C	571665
Marshall Fo	670.40	681.0	-216	202	--	0	0.00	.34	0	83 C	927623
GUADALUPE RIVER BASIN											
Canyon	909.27	909.0	176	260	--	0	0.17	.17	256	1 F	2246

Pumpage below dam (MGD): Grapevine 7.515, and Belton 24.453.
Total outflow includes this and pumpage tabulated.
Preliminary data--Inflow not adjusted for wind effect, etc.

- D = Sediment Pool
- C = Conservation Pool
- P = Power Pool
- F = Flood Pool
- S = Surcharge Pool
- nr = Not reported today

BRAZOS RIVER BASIN, TEXAS
BELTON DAM AND LAKE
LEON RIVER, TEXAS

DAILY REPORT

Belton
Monthly Report
JUN2014

DAY:	ELEVATIONS		STORAGE:	EVAP:	PUMP:		RELEASES		INFLOW:	RAIN
:	0800	2400	2400	:	:	TURBINE:	OTHER	COM.	:	:
:	FEET-NGVD		A-F	DSF:	DSF:	DSF	DSF	DSF	DSF	INCH
1	584.90	584.90	332809	95	59.6	0	28	235	0.00	
2	584.92	584.92	333016	82	59.3	0	24	270	0.00	
3	584.93	584.93	333120	98	67.3	0	25	243	0.00	
4	584.93	584.93	333224	76	63.5	0	25	217	0.00	
5	584.93	584.92	333120	82	73.1	0	26	129	0.00	
6	584.92	584.92	333120	53	71.1	0	27	152	0.00	
7	584.89	584.90	332809	95	74.8	0	31	44	0.00	
8	584.87	584.86	332499	57	67.3	0	33	1	0.00	
9	584.93	584.93	333120	111	65.3	0	35	525	0.00	
10	585.14	585.06	334468	79	65.4	0	40	865	0.00	
11	585.13	585.13	335299	95	50.0	0	44	609	0.00	
12	585.13	585.13	335299	137	68.1	0	36	241	0.00	
13	585.19	585.11	335091	86	60.0	0	32	73	0.00	
14	585.28	585.25	336547	82	57.6	0	31	906	0.00	
15	585.43	585.38	337903	54	60.9	0	30	829	0.00	
16	585.47	585.46	338634	48	63.7	0	31	511	0.00	
17	585.50	585.49	339052	115	69.1	0	31	426	0.00	
18	585.49	585.49	339052	115	65.1	0	30	211	0.00	
19	585.47	585.49	339052	96	78.8	0	29	204	0.00	
20	585.47	585.47	338843	76	72.2	0	29	73	0.00	
21	585.44	585.45	338530	83	76.8	0	32	34	0.00	
22	585.44	585.42	338321	54	68.8	0	44	62	0.00	
23	585.43	585.43	338425	57	65.6	0	45	221	0.00	
24	585.52	585.52	339262	44	65.7	0	42	575	0.00	
25	585.68	585.67	340938	96	63.5	0	40	1045	0.00	
26	585.73	585.71	341253	51	58.1	0	40	308	0.00	
27	585.80	585.78	341988	67	59.8	0	40	538	0.00	
28	585.83	585.81	342409	64	62.3	0	40	379	0.00	
29	585.83	585.83	342619	132	64.3	0	40	343	0.00	
30	585.82	585.83	342619	51	69.4	0	40	161	0.00	
MONTHLY TOTAL	(DSF)			2444	1966	0.	1020.	10430.	0.00	
	(A-F)	9913	4848	3901	0	2023	20687			

BRAZOS RIVER BASIN, TEXAS
BELTON DAM AND LAKE
LEON RIVER, TEXAS

MONTHLY RESERVOIR REPORT

U.S. ARMY ENGINEER DISTRICT, FORT WORTH September 2015

TABLE 4-8

All Major Floods in the Leon River Watershed, 1900-2015

Table 4-8 All Major Floods In The Leon River Watershed, 1900-2015

Date	Leon River Near Hasse (1908-2015)		Leon River Near Gatesville (1908-2015)		Cowhouse Creek near Pidcoke (1900-2015)	
	Gage Height (ft)	Peak Discharge (cfs)	Gage Height (ft)	Peak Discharge (cfs)	Gage Height (ft)	Peak Discharge (cfs)
1900	—	—	—	—	37.50	47,000
1908, May	27.00	60,000	35.00	70,000	—	—
1930, Oct	—	—	—	—	—	—
1935, May	—	—	—	—	—	—
1936, Sep	—	—	—	—	—	—
1939, June 20	17.04	15,900	—	—	—	—
1940, June 16	13.75	3,500	—	—	—	—
1940, Nov	14.73	6,250	—	—	23.94	26,200
1941, May 12	16.92	15,400	—	—	16.27	12,800
1942, Apr 9	16.31	13,000	—	—	30.50	42,600
1942, Oct 19	17.72	16,400	—	—	—	—
1944, May 2	16.34	12,100	—	—	—	—
1945, Mar 30	17.23	16,900	—	—	—	—
1946, Feb 18	12.96	2,510	—	—	—	—
1946, Nov 5	13.66	3,640	—	—	—	—
1948, Jul 6	10.27	1,160	—	—	—	—
1949, Mar	—	920	—	—	—	—
1949, May 17	17.29	16,700	—	—	—	—
1950, Jul 15	12.52	2,440	—	—	—	—
1951, Jun 4-14	11.90	1,950	9.93	1,740	9.65	2,760
1952, May 18-28	21.49	38,500	24.79	7,230	18.72	9,900
1953, May 12-16	11.36	1,610	24.60	7,030	26.97	19,000
1953, Oct 23	—	—	13.49	2,690	6.92	1,300
1954, Apr 13	13.90	4,500	—	—	—	—
1955, May 19	16.77	13,400	28.10	10,600	29.70	23,000
1956, May 1	20.18	30,700	31.06	25,300	38.76	55,800
1957, Apr 27	18.38	21,200	29.42	14,700	35.80	39,200
1957, May	16.20	10,800	31.60	27,100	37.93	49,400

Table 4-8 All Major Floods In The Leon River Watershed, 1900-2015 (Continued)

Date	Leon River Near Hasse (1908-2015)		Leon River Near Gatesville (1908-2015)		Cowhouse Creek near Pidcoke (1939-2015)	
	Gage Height (ft)	Peak Discharge (cfs)	Gage Height (ft)	Peak Discharge (cfs)	Gage Height (ft)	Peak Discharge (cfs)
1957, Oct 17	14.04	3,940	—	4,670	19.40	10,600
1958, May	13.83	3,590	26.03	7,680	20.21	11,400
1959, Jun	—	1,340	15.80	2,820	11.75	4,160
1959, Jul 22	12.25	2,090	—	—	—	—
1959, Oct 4	21.72	36,100	34.14	51,200	40.10	66,200
1960, Jan	—	1,930	—	3,480	14.93	6,520
1960, Oct 14	—	—	—	—	18.98	10,200
1961, Jan 8	13.69	3,820	23.34	5,980	15.23	6,760
1961, Jun	13.11	2,920	24.10	6,470	18.02	9,250
1961, Oct	—	186	32.63	35,000	33.20	30,600
1961, Nov	—	29	20.96	4,750	12.44	4,580
1962, Sep 8	19.01	24,000	26.57	8,670	—	—
1962, Oct 10	12.62	2,420	—	—	—	—
1962, Dec 20	—	—	13.67	2,320	—	—
1963, Mar 10	—	—	—	—	13.87	5,720
1964, Jun	—	12	24.37	6,680	14.65	6,280
1964, Sep 22-30	12.11	2,060	—	—	26.45	18,300
1964, Nov 24	—	1,270	—	—	—	—
1965, May	—	346	31.02	23,500	39.85	63,800
1965, Nov	—	10	30.50	20,500	37.07	45,000
1966, May 28	5.47	458	—	—	—	—
1967, May 20	—	—	—	—	8.81	2,240
1967, Jul 1-20	5.81	519	10.93	1,730	—	—
1968, Jan	—	—	25.42	6,960	22.45	13,700
1968, Feb 7	12.45	2,260	—	—	—	—
1968, May 10	—	—	—	—	22.91	14,200
1969, Apr 12	—	—	—	—	16.28	7,720
1969, May 7-8	12.13	2,060	23.82	6,990	—	—

Table 4-8 All Major Floods In The Leon River Watershed, 1900-2015 (Continued)

Date	Leon River Near Hasse (1908-2015)		Leon River Near Gatesville (1908-2015)		Cowhouse Creek near Pidcoke (1939-2015)	
	Gage Height (ft)	Peak Discharge (cfs)	Gage Height (ft)	Peak Discharge (cfs)	Gage Height (ft)	Peak Discharge (cfs)
1970, Mar 6-7	6.34	580	20.33	4,860	—	—
1970, Sep 1	—	—	—	—	33.24	30,600
1971, Jul 25-27	—	—	26.88	9,180	19.54	10,700
1971, Aug 20	4.70	276	—	—	—	—
1971, Oct 19-21	—	—	24.12	6,680	20.76	12,000
1972, May 20	4.63	251	—	—	—	—
1973, May 2	6.47	574	—	—	—	—
1973, Jun 3-4	—	—	18.68	4,210	18.18	9,430
1973, Oct 12	5.74	509	—	—	—	—
1974, Sep 17-21	—	—	19.30	4,390	16.16	7,590
1974, Oct 31	—	—	28.42	12,200	30.10	23,800
1975, Feb 7	6.93	690	—	—	—	—
1976, Jul 4	—	—	27.81	10,600	32.43	28,700
1976, Aug 30	6.70	656	—	—	—	—
1977, Mar 27	8.57	952	—	—	—	—
1977, Apr 19	—	—	23.72	6,440	—	—
1977, Jun 13	—	—	—	—	18.89	10,100
1978, Apr 10	—	—	—	—	3.35	70
1978, May 11	7.65	805	—	—	—	—
1978, Jun 3	—	—	3.72	158	—	—
1979, May 3	9.14	1,050	—	—	—	—
1979, Jun 1	—	—	25.21	7,550	23.93	15,400
1979, Dec 6	4.87	325	—	—	—	—
1980, May 8	—	—	18.39	4,130	—	—
1980, Sep 8	—	—	—	—	12.66	4,770
1980, Nov 24	4.67	266	—	—	—	—
1981, Jun 15-16	—	—	27.77	10,500	34.03	33,000
1982, May 13	—	—	—	—	18.55	9,780

Table 4-8 All Major Floods In The Leon River Watershed, 1900-2015 (Continued)

Date	Leon River Near Hasse (1908-2015)		Leon River Near Gatesville (1908-2015)		Cowhouse Creek near Pidcoke (1939-2015)	
	Gage Height (ft)	Peak Discharge (cfs)	Gage Height (ft)	Peak Discharge (cfs)	Gage Height (ft)	Peak Discharge (cfs)
1982, Jun 26-27	8.43	832	10.43	1,900	—	—
1983, Mar 4	—	—	4.57	369	4.08	194
1983, Aug 6	4.61	232	—	—	—	—
1984, Mar 23-24	—	—	5.37	589	13.27	5,230
1984, Aug 28	5.20	389	—	—	—	—
1985, Jun 6	9.59	1,140	19.68	4,460	31.18	25,800
1985, Oct 19	—	—	—	—	21.47	12,300
1986, Jun 4-6	—	—	22.63	5,770	—	—
1986, Sep 2-3	12.80	1,790	—	—	—	—
1987, May 28	12.01	1,450	—	—	—	—
1987, Jun 4-12	—	—	22.96	6,640	22.30	13,600
1988, Jun 1-5	13.86	2,410	24.23	7,470	8.25	1,760
1989, May 17	—	—	25.54	8,670	28.44	21,100
1989, Jun 11	12.08	1,270	—	—	—	—
1990, May 3-5	18.19	21,900	28.63	17,900	29.15	22,200
1991, May 5	—	—	10.45	2,120	—	—
1991, Jul 3	—	—	—	—	13.32	5,000
1991, Aug 14	7.61	753	—	—	—	—
1991, Dec 20-21	—	—	35.00	68,000	44.30	110,000
1993, Feb 4-26	—	—	14.23	3,180	12.94	4,920
1994, May 12-15	—	—	22.23	6,130	11.97	4,220
1995, Apr 4-5	—	—	26.42	9,760	26.65	19,100
1996, Aug 29-31	—	—	26.94	10,800	17.52	8,060
1997, Feb 20-24	—	—	31.04	31,000	31.16	25,200
1998, Mar 16	—	—	29.14	22,800	39.70	60,500
1999, Mar 18	—	—	—	—	14.97	6,710
1999, Apr 3	—	—	11.91	2,190	—	—
2000, Jun 3-4	—	—	24.11	7,530	24.05	14,000

Table 4-8 All Major Floods In The Leon River Watershed, 1900-2015 (Continued)

Date	Leon River Near Hasse (1908-2015)		Leon River Near Gatesville (1908-2015)		Cowhouse Creek near Pidcoke (1939-2015)	
	Gage Height (ft)	Peak Discharge (cfs)	Gage Height (ft)	Peak Discharge (cfs)	Gage Height (ft)	Peak Discharge (cfs)
2001, Feb 16	—	—	17.98	4,390	—	—
2001, Aug 28	—	—	—	—	14.22	6,160
2002, Jan 31	—	—	—	—	20.45	11,000
2002, Jul 3	—	—	17.81	4,340	—	—
2003, Jun 6	—	—	10.80	2,270	—	—
2003, Jun 6	—	—	—	—	11.43	4,200
2003, Oct. 8-9	—	—	27.28	14,800	—	—
2004, Aug 19	—	—	—	—	22.33	12,600
2004, Nov 17	—	—	27.36	15,000	30.20	23,100
2006, May 6	—	—	5.54	806	17.54	8,630
2007, Jun 28	—	—	33.20	40,700	36.71	47,600
2008, Mar 24	6.87	650	—	—	—	—
2008, Aug 6-9	—	—	19.54	5,630	12.54	4,930
2009, Apr 27	—	—	19.52	5,620	26.11	18,900
2009, Jun 11	3.76	39	—	—	—	—
2010, Jan. 10-29	—	—	28.42	15,100	32.87	33,200
2010, Sep 7	3.79	47	—	—	—	—
2011, May 22	—	—	4.48	430	10.90	4,040
2011, June 30	3.92	56	—	—	—	—
2012, Feb 22	8.71	974	—	—	—	—
2012, Mar 20	—	—	20.20	5,670	14.77	7,050
2013, Apr 3	5.26	375	—	—	—	—
2013, May 21-23	—	—	13.33	3,290	12.32	5,920
2013, Oct 27	—	—	—	—	12.43	6,000
2014, Jun 13	3.87	50	11.62	2,620	—	—
2015, May 25-31	12.55	2,350	28.57	11,700	22.98	14,700

Table 4-8 All Major Floods In The Leon River Watershed, 1900-2015 (Continued)

Date	Leon River near Belton*	
	Gage Height (ft)	Peak Discharge (cfs)
1908, May	—	—
1913, Dec	25.00	76,000
1921, Sep 1	21.00	44,000
1924, May 26	8.80	10,100
1926, Apr 22	12.50	20,100
1927, Jun 14	10.80	15,400
1927, Oct 2	15.05	27,100
1929, May 29	9.32	11,400
1930, May 10	10.60	14,900
1930, Oct 6	15.35	26,900
1932, May 9	12.30	20,300
1933, May 25	10.41	14,000
1934, Apr 6	10.73	15,200
1935, May 18	17.08	30,800
1936, Sep 28	20.00	38,000
1936, Dec 6	9.46	11,600
1938, Jul 24	14.65	25,100
1939, May 17	9.05	10,200
1940, Jun 29	9.03	10,200
1940, Nov 25	14.16	26,400
1941, May	10.20	14,000
1942, Apr 25	16.58	29,600
1942, Oct 18	10.15	14,000
1944, May 26	22.22	53,000
1945, Apr 22	24.41	70,600
1946, Mar 13	15.95	28,300
1947, Mar 19	10.52	14,500
1948, Feb 26	8.95	10,600

Table 4-8 All Major Floods In The Leon River Watershed, 1900-2015 (Continued)

Date	Leon River near Belton*	
	(1913-2015)	
	Gage Height	Peak Discharge
	(ft)	(cfs)
1949, Mar 21	19.20	36,400
1950, Sep 4	10.28	13,900
1953, May 13	10.49	14,500
1992, Mar 6	9.74	10,200

Notes:

Data from USGS Peak Sstreamflow for Texas database and "Belton Lake Regulation, Leon River, Brazos River Basin, Texas, April 1976".

*Deliberate impoundment for Belton Lake began on 8 March 1954. Therefore, peak flood flows at this gage after this impoundment date are captured by Belton Dam.

TABLE 4-9

Belton Dam and Lake Monthly and Annual Inflow Volumes in Acre-feet

TABLE 4-9

Belton Dam and Lake Monthly and Annual Inflow Volumes in Acre-Feet

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
1953					140589	11221	14509	10958	9215	30451	15594	9973	242,510
1954	8059	5121	843	7504	7001	342	0	0	113	2169	6313	0	37,465
1955	409	10026	3747	23330	74349	35006	5936	4933	21098	9299	523	263	188,918
1956	2487	3957	857	3161	128275	3123	613	2549	0	0	6265	5944	157,232
1957	1704	2831	21237	327948	591757	116938	56763	9634	6081	123669	80715	34299	1,373,578
1958	30809	130765	108331	55240	179256	27610	7957	3722	4667	2425	1652	1938	554,371
1959	2407	6287	3396	6261	6995	52914	29976	14265	8814	378267	53176	74026	636,784
1960	155594	89561	43168	29236	18106	9122	6302	2520	1759	57708	12064	117573	542,713
1961	246670	260869	94870	34329	19492	102065	103306	19165	14230	80396	29474	23442	1,028,307
1962	13897	12986	10105	16693	11669	18363	5581	8701	58046	24398	8364	12158	200,962
1963	5182	6106	7025	6452	13852	28165	10065	366	1644	354	6585	1722	87,518
1964	6499	15382	20376	50714	21019	92942	3478	19862	58293	54300	66741	30642	440,250
1965	40769	128534	58866	32013	499733	110788	62678	40436	21837	12335	87018	26351	1,121,358
1966	16626	32590	26445	83961	85253	48700	25750	49168	80586	10438	5369	3751	468,637
1967	4025	3482	4643	12845	20709	12867	26719	2376	8925	3026	6230	4224	110,073
1968	160774	125320	153555	147028	232541	99978	54257	6588	6003	2074	5413	6185	999,715
1969	4290	8525	15259	103538	127338	11008	991	5258	1012	11301	14898	26120	329,538
1970	36488	48078	205738	100521	69030	51191	2830	1348	36382	9005	2809	3632	567,052
1971	3342	3898	3001	6993	12380	2355	111850	20756	6935	63655	28769	78279	342,213
1972	41364	20832	11847	5878	26332	7597	7531	2296	1904	13266	7565	5254	151,666
1973	18464	22762	41187	51119	52796	52540	25415	1729	8052	50338	15045	5439	344,886
1974	9073	8568	7517	6265	9681	1479	2760	34371	93653	130851	105530	45183	454,932
1975	54356	180906	50634	101065	97401	47629	20010	11465	3727	2610	1151	4598	575,553
1976	2403	5077	8442	33066	27976	29544	120790	5663	15320	22676	11732	46469	329,160
1977	22088	63074	57663	251767	150186	61748	11665	3001	1588	2680	626	555	626,640
1978	2376	10216	8361	6494	6487	6202	1712	2413	2481	1422	7327	2783	58,273
1979	19134	22935	61640	45231	106628	129874	21527	14034	2379	1459	189	7585	432,614
1980	5465	10713	10300	15880	138966	15282	6146	538	4433	224	2367	3856	214,170
1981	2234	4646	14976	14298	10879	149447	17560	6884	9981	17613	8442	2318	259,278
1982	3379	6581	19901	22336	68584	37199	36155	12020	0	978	4612	3435	215,180
1983	4023	19011	36342	9239	30030	7732	2247	6212	1459	4195	1638	0	122,129
1984	2160	1830	13942	1224	4836	10740	3544	1891	2226	27123	9571	20462	99,548
1985	26906	32907	49441	28803	33760	36857	28803	3837	6100	63044	16113	55622	382,193
1986	13377	74354	11350	8188	69770	203514	84976	30348	112553	46825	44236	94875	794,368
1987	63669	59900	100792	42621	65632	234323	92836	34986	12986	1905	8897	11161	729,708
1988	4843	7634	8886	5101	5252	71877	24081	11155	5929	5731	3602	3356	157,448
1989	13442	25218	39929	20742	87146	112239	39530	24595	14177	6551	1713	0	385,282
1990	4635	7741	37612	109321	364582	131263	71375	37526	18003	13105	11217	7317	813,695
1991	26550	19024	10107	17844	42071	29800	11262	16205	26079	30782	64366	483923	778,013
1992	281633	483803	237657	131188	235172	147949	117823	79985	45522	13675	17315	38262	1,829,984
1993	37875	115153	142380	108204	71885	44325	7056	2103	9563	17679	24791	7648	588,662
1994	6664	34360	16797	10901	155308	95820	38825	6137	9863	19944	26934	49279	470,832
1995	40056	27314	60588	218603	134002	92627	26655	98383	43049	13046	7557	6822	768,701
1996	5628	6762	5410	9829	7846	21613	5988	43766	91323	27333	41510	70886	337,894
1997	53365	384797	314985	236712	234455	191532	97756	33491	7995	8415	9354	98161	1,671,018
1998	95033	93824	211697	89395	25134	19380	5708	8407	12429	42313	23211	74994	693,525
1999	35707	15893	26743	25638	18974	12044	9062	333	0	1391	0	2403	148,187
2000	3344	7828	6520	17588	7932	41900	352	670	5657	10458	85472	22731	210,453
2001	48212	75698	139718	46094	50457	16465	4191	29243	20170	5036	34496	41951	511,732
2002	22250	51728	32537	38674	9767	12370	59048	3883	3638	23033	16956	36308	310,192
2003	17206	48914	46208	17516	7317	28954	5311	3535	10736	96651	7581	5614	295,542
2004	24988	42646	56171	112258	63595	119223	37827	69588	34303	28255	298875	102895	990,624
2005	80908	156615	168561	52517	28940	18404	5994	105490	5299	2115	868	469	626,179
2006	4150	4992	14205	9034	19374	3754	2134	0	1040	5657	0	3461	67,801
2007	16530	2542	154928	83617	328316	400439	446822	172475	104361	17685	10020	9716	1,747,450
2008	7307	8227	31732	29405	63772	5411	2612	35754	3232	5500	1974	1326	196,252
2009	3587	5787	21101	30737	13070	7178	12898	5247	23742	203214	44220	32128	402,909
2010	158548	216478	127342	65151	22902	11302	16526	2493	117828	4804	2606	3636	749,617
2011	13262	7141	5383	3310	19264	2650	5091	1213	4518	10684	1868	9178	83,563
2012	33339	72550	178054	29874	14143	9804	3135	2255	5045	0	0	841	349,041
2013	9212	3972	4678	4333	24752	3779	11239	4249	9607	34997	10616	15483	136,917
2014	6125	5145	5804	4042	22050	20599	7695	1874	4568	4671	6483	1289	90,346
2015	6770	3529	15223	16836	252525	187576	104834						
TOTAL	2,091,671	3,373,947	3,406,752	3,235,704	5,489,295	3,718,684	2,194,071	1,194,349	1,262,156	1,915,204	1,436,618	1,900,193	
AVG	33,737	54,419	54,948	52,189	87,132	59,027	34,827	19,264	20,357	30,890	23,171	30,648	494,054

TABLE 7-2
Area and Capacity Curves

TABLE 7-2
Area and Capacity Curves

<u>BELTON LAKE - ELEVATION vs. AREA</u>										
AREA (IN THOUSAND ACRES)										
ELEV	0	1	2	3	4	5	6	7	8	9
480						0.000	0.001	0.003	0.005	0.007
490	0.012	0.017	0.023	0.031	0.041	0.058	0.077	0.099	0.119	0.141
500	0.164	0.192	0.225	0.267	0.316	0.351	0.386	0.420	0.454	0.494
510	0.530	0.569	0.613	0.660	0.711	0.770	0.843	0.940	1.036	1.126
520	1.204	1.279	1.355	1.425	1.501	1.589	1.668	1.743	1.814	1.885
530	1.961	2.042	2.129	2.221	2.323	2.434	2.552	2.666	2.768	2.873
540	2.987	3.101	3.222	3.348	3.455	3.574	3.711	3.855	4.007	4.161
550	4.307	4.446	4.583	4.710	4.824	4.931	5.040	5.141	5.265	5.383
560	5.509	5.655	5.806	5.977	6.138	6.267	6.397	6.571	6.788	7.015
570	7.285	7.520	7.746	7.949	8.150	8.327	8.503	8.740	8.989	9.211
580	9.420	9.626	9.815	9.998	10.178	10.370	10.554	10.747	10.952	11.163
590	11.355	11.544	11.765	11.952	12.135	12.688	12.903	13.139	13.282	13.462
600	13.660	13.810	13.984	14.177	14.438	14.743	15.173	15.610	15.843	16.034
610	16.191	16.511	16.956	17.396	17.716	18.005	18.272	18.587	18.884	19.153
620	19.482	19.769	20.071	20.370	20.860	21.275	22.175	22.529	22.792	23.061
630	23.243	23.605	24.060	24.500	24.960	25.380	25.840	26.320	26.800	27.280
640	27.860	28.360	28.880	29.400	29.940	30.460	31.000	31.520	32.080	32.660
650	33.200	33.820	34.400	35.000	35.600	36.200	36.800	37.400	38.000	38.600
660	39.220	39.820	40.420							
ELEV	0	1	2	3	4	5	6	7	8	9

ELEVATIONS IN FEET-NGVD

BELTON LAKE - ELEVATION vs. CAPACITY

ELEV	CAPACITY (IN THOUSAND ACRE-FEET)									
	0	1	2	3	4	5	6	7	8	9
480						0.000	0.000	0.002	0.006	0.012
490	0.022	0.036	0.056	0.084	0.120	0.169	0.236	0.324	0.434	0.564
500	0.716	0.894	1.102	1.348	1.640	1.974	2.342	2.745	3.182	3.656
510	4.168	4.718	5.308	5.945	6.630	7.371	8.178	9.069	10.057	11.138
520	12.303	13.544	14.862	16.252	17.714	19.260	20.888	22.594	24.372	26.222
530	28.144	30.146	32.232	34.406	36.678	39.057	41.550	44.159	46.876	49.696
540	52.626	55.670	58.832	62.117	65.518	69.033	72.676	76.458	80.390	84.474
550	88.708	93.084	97.598	102.245	107.012	111.890	116.875	121.966	127.168	132.492
560	137.938	143.520	149.251	155.142	161.200	167.402	173.734	180.218	186.898	193.800
570	200.950	208.352	215.985	223.832	231.882	240.120	248.536	257.157	266.022	275.122
580	284.437	293.960	303.680	313.587	323.675	333.949	344.411	355.062	365.911	376.968
590	388.228	399.677	411.332	423.190	435.234	447.645	460.440	473.462	486.672	500.044
600	513.605	527.340	541.237	555.318	569.625	584.216	599.174	614.565	630.292	646.230
610	662.342	678.694	695.427	712.603	730.159	748.020	766.158	784.588	803.323	822.342
620	841.659	861.284	881.204	901.425	922.040	943.108	964.832	987.184	1009.845	1032.772
630	1055.924	1079.348	1103.180	1127.460	1152.190	1177.360	1202.970	1229.050	1255.610	1282.650
640	1310.220	1338.330	1366.950	1396.090	1425.760	1455.960	1486.690	1517.950	1549.750	1582.120
650	1615.050	1648.560	1682.670	1717.370	1752.670	1788.570	1825.070	1862.170	1899.870	1938.170
660	1977.080	2016.600	2056.720							
ELEV	0	1	2	3	4	5	6	7	8	9

ELEVATIONS IN FEET-NGVD

TABLE 7-2

BELTON LAKE - ELEVATION CAPACITY

ELEVATIONS IN FEET-NGVD, CAPACITIES IN THOUSAND ACRE-FEET

ELEV	0.00	0.01	0.02	0.03	0.04	0.05	0.06	0.07	0.08	0.09
486.0	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
486.1	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
486.2	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
486.3	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
486.4	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
486.5	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
486.6	0.001	0.001	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002
486.7	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002
486.8	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002
486.9	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002
487.0	0.002	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003
487.1	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003
487.2	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003
487.3	0.003	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004
487.4	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004
487.5	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.005	0.005	0.005
487.6	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005
487.7	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005
487.8	0.006	0.006	0.006	0.006	0.006	0.006	0.006	0.006	0.006	0.006
487.9	0.006	0.006	0.006	0.006	0.006	0.006	0.006	0.006	0.006	0.006
488.0	0.007	0.007	0.007	0.007	0.007	0.007	0.007	0.007	0.007	0.007
488.1	0.007	0.007	0.007	0.007	0.007	0.007	0.007	0.007	0.007	0.007
488.2	0.008	0.008	0.008	0.008	0.008	0.008	0.008	0.008	0.008	0.008
488.3	0.008	0.008	0.008	0.008	0.008	0.008	0.008	0.008	0.009	0.009
488.4	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009
488.5	0.009	0.009	0.009	0.009	0.009	0.010	0.010	0.010	0.010	0.010
488.6	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010
488.7	0.010	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011
488.8	0.011	0.011	0.011	0.011	0.011	0.011	0.012	0.012	0.012	0.012
488.9	0.012	0.012	0.012	0.012	0.012	0.012	0.012	0.012	0.012	0.012
489.0	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013
489.1	0.013	0.013	0.013	0.013	0.014	0.014	0.014	0.014	0.014	0.014
489.2	0.014	0.014	0.014	0.014	0.014	0.014	0.014	0.015	0.015	0.015
489.3	0.015	0.015	0.015	0.015	0.015	0.015	0.015	0.015	0.016	0.016
489.4	0.016	0.016	0.016	0.016	0.016	0.016	0.016	0.016	0.016	0.017
489.5	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.018
489.6	0.018	0.018	0.018	0.018	0.018	0.018	0.018	0.018	0.018	0.019
489.7	0.019	0.019	0.019	0.019	0.019	0.019	0.019	0.019	0.019	0.020
489.8	0.020	0.020	0.020	0.020	0.020	0.020	0.020	0.020	0.021	0.021
489.9	0.021	0.021	0.021	0.021	0.021	0.021	0.022	0.022	0.022	0.022
490.0	0.022	0.022	0.022	0.022	0.022	0.023	0.023	0.023	0.023	0.023
490.1	0.023	0.023	0.023	0.024	0.024	0.024	0.024	0.024	0.024	0.024
490.2	0.024	0.025	0.025	0.025	0.025	0.025	0.025	0.025	0.026	0.026
490.3	0.026	0.026	0.026	0.026	0.026	0.027	0.027	0.027	0.027	0.027
490.4	0.027	0.027	0.027	0.028	0.028	0.028	0.028	0.028	0.028	0.028
490.5	0.029	0.029	0.029	0.029	0.029	0.029	0.030	0.030	0.030	0.030
490.6	0.030	0.030	0.030	0.031	0.031	0.031	0.031	0.031	0.031	0.031
490.7	0.032	0.032	0.032	0.032	0.032	0.032	0.033	0.033	0.033	0.033
490.8	0.033	0.033	0.034	0.034	0.034	0.034	0.034	0.034	0.034	0.035
490.9	0.035	0.035	0.035	0.035	0.035	0.036	0.036	0.036	0.036	0.036
ELEV	0.00	0.01	0.02	0.03	0.04	0.05	0.06	0.07	0.08	0.09

TABLE 7-2 (Continued)

BELTON LAKE - ELEVATION CAPACITY TABLE

ELEVATIONS IN FEET-NGVD, CAPACITIES IN THOUSAND ACRE-FEET

ELEV	0.00	0.01	0.02	0.03	0.04	0.05	0.06	0.07	0.08	0.09
491.0	0.036	0.037	0.037	0.037	0.037	0.037	0.038	0.038	0.038	0.038
491.1	0.038	0.038	0.039	0.039	0.039	0.039	0.039	0.039	0.040	0.040
491.2	0.040	0.040	0.040	0.041	0.041	0.041	0.041	0.041	0.041	0.042
491.3	0.042	0.042	0.042	0.042	0.043	0.043	0.043	0.043	0.043	0.044
491.4	0.044	0.044	0.044	0.044	0.045	0.045	0.045	0.045	0.045	0.046
491.5	0.046	0.046	0.046	0.046	0.047	0.047	0.047	0.047	0.047	0.048
491.6	0.048	0.048	0.048	0.048	0.049	0.049	0.049	0.049	0.049	0.050
491.7	0.050	0.050	0.050	0.051	0.051	0.051	0.051	0.051	0.052	0.052
491.8	0.052	0.052	0.052	0.053	0.053	0.053	0.053	0.054	0.054	0.054
491.9	0.054	0.054	0.055	0.055	0.055	0.055	0.056	0.056	0.056	0.056
492.0	0.056	0.057	0.057	0.057	0.057	0.058	0.058	0.058	0.058	0.059
492.1	0.059	0.059	0.059	0.060	0.060	0.060	0.060	0.061	0.061	0.061
492.2	0.061	0.062	0.062	0.062	0.062	0.062	0.063	0.063	0.063	0.064
492.3	0.064	0.064	0.064	0.065	0.065	0.065	0.065	0.066	0.066	0.066
492.4	0.066	0.067	0.067	0.067	0.067	0.068	0.068	0.068	0.068	0.069
492.5	0.069	0.069	0.070	0.070	0.070	0.070	0.071	0.071	0.071	0.071
492.6	0.072	0.072	0.072	0.073	0.073	0.073	0.073	0.074	0.074	0.074
492.7	0.075	0.075	0.075	0.075	0.076	0.076	0.076	0.077	0.077	0.077
492.8	0.077	0.078	0.078	0.078	0.079	0.079	0.079	0.080	0.080	0.080
492.9	0.080	0.081	0.081	0.081	0.082	0.082	0.082	0.083	0.083	0.083
493.0	0.083	0.084	0.084	0.084	0.085	0.085	0.085	0.086	0.086	0.086
493.1	0.087	0.087	0.087	0.088	0.088	0.088	0.089	0.089	0.089	0.090
493.2	0.090	0.090	0.091	0.091	0.091	0.092	0.092	0.092	0.093	0.093
493.3	0.093	0.094	0.094	0.094	0.095	0.095	0.095	0.096	0.096	0.096
493.4	0.097	0.097	0.097	0.098	0.098	0.098	0.099	0.099	0.100	0.100
493.5	0.100	0.101	0.101	0.101	0.102	0.102	0.102	0.103	0.103	0.104
493.6	0.104	0.104	0.105	0.105	0.105	0.106	0.106	0.107	0.107	0.107
493.7	0.108	0.108	0.108	0.109	0.109	0.110	0.110	0.110	0.111	0.111
493.8	0.111	0.112	0.112	0.113	0.113	0.113	0.114	0.114	0.115	0.115
493.9	0.115	0.116	0.116	0.117	0.117	0.117	0.118	0.118	0.119	0.119
494.0	0.119	0.120	0.120	0.121	0.121	0.122	0.122	0.122	0.123	0.123
494.1	0.124	0.124	0.125	0.125	0.125	0.126	0.126	0.127	0.127	0.128
494.2	0.128	0.128	0.129	0.129	0.130	0.130	0.131	0.131	0.132	0.132
494.3	0.133	0.133	0.133	0.134	0.134	0.135	0.135	0.136	0.136	0.137
494.4	0.137	0.138	0.138	0.139	0.139	0.140	0.140	0.141	0.141	0.142
494.5	0.142	0.143	0.143	0.144	0.144	0.145	0.145	0.146	0.146	0.147
494.6	0.147	0.148	0.148	0.149	0.149	0.150	0.150	0.151	0.151	0.152
494.7	0.152	0.153	0.153	0.154	0.154	0.155	0.156	0.156	0.157	0.157
494.8	0.158	0.158	0.159	0.159	0.160	0.160	0.161	0.162	0.162	0.163
494.9	0.163	0.164	0.164	0.165	0.166	0.166	0.167	0.167	0.168	0.168
495.0	0.169	0.170	0.170	0.171	0.171	0.172	0.173	0.173	0.174	0.174
495.1	0.175	0.175	0.176	0.177	0.177	0.178	0.179	0.179	0.180	0.180
495.2	0.181	0.182	0.182	0.183	0.183	0.184	0.185	0.185	0.186	0.187
495.3	0.187	0.188	0.189	0.189	0.190	0.190	0.191	0.192	0.192	0.193
495.4	0.194	0.194	0.195	0.196	0.196	0.197	0.198	0.198	0.199	0.200
495.5	0.200	0.201	0.202	0.202	0.203	0.204	0.204	0.205	0.206	0.207
495.6	0.207	0.208	0.209	0.209	0.210	0.211	0.211	0.212	0.213	0.214
495.7	0.214	0.215	0.216	0.216	0.217	0.218	0.219	0.219	0.220	0.221
495.8	0.221	0.222	0.223	0.224	0.224	0.225	0.226	0.227	0.227	0.228
495.9	0.229	0.230	0.230	0.231	0.232	0.233	0.233	0.234	0.235	0.236
ELEV	0.00	0.01	0.02	0.03	0.04	0.05	0.06	0.07	0.08	0.09

TABLE 7-2 (Continued)

BELTON LAKE - ELEVATION CAPACITY TABLE

ELEVATIONS IN FEET-NGVD, CAPACITIES IN THOUSAND ACRE-FEET

ELEV	0.00	0.01	0.02	0.03	0.04	0.05	0.06	0.07	0.08	0.09
496.0	0.236	0.237	0.238	0.239	0.240	0.240	0.241	0.242	0.243	0.244
496.1	0.244	0.245	0.246	0.247	0.247	0.248	0.249	0.250	0.251	0.252
496.2	0.252	0.253	0.254	0.255	0.256	0.256	0.257	0.258	0.259	0.260
496.3	0.261	0.261	0.262	0.263	0.264	0.265	0.266	0.266	0.267	0.268
496.4	0.269	0.270	0.271	0.272	0.273	0.273	0.274	0.275	0.276	0.277
496.5	0.278	0.279	0.280	0.280	0.281	0.282	0.283	0.284	0.285	0.286
496.6	0.287	0.288	0.288	0.289	0.290	0.291	0.292	0.293	0.294	0.295
496.7	0.296	0.297	0.298	0.299	0.300	0.300	0.301	0.302	0.303	0.304
496.8	0.305	0.306	0.307	0.308	0.309	0.310	0.311	0.312	0.313	0.314
496.9	0.315	0.316	0.317	0.318	0.319	0.320	0.321	0.322	0.323	0.324
497.0	0.324	0.325	0.326	0.327	0.328	0.329	0.330	0.331	0.332	0.333
497.1	0.335	0.336	0.337	0.338	0.339	0.340	0.341	0.342	0.343	0.344
497.2	0.345	0.346	0.347	0.348	0.349	0.350	0.351	0.352	0.353	0.354
497.3	0.355	0.356	0.357	0.358	0.359	0.360	0.361	0.362	0.364	0.365
497.4	0.366	0.367	0.368	0.369	0.370	0.371	0.372	0.373	0.374	0.375
497.5	0.376	0.378	0.379	0.380	0.381	0.382	0.383	0.384	0.385	0.386
497.6	0.387	0.389	0.390	0.391	0.392	0.393	0.394	0.395	0.396	0.398
497.7	0.399	0.400	0.401	0.402	0.403	0.404	0.406	0.407	0.408	0.409
497.8	0.410	0.411	0.412	0.414	0.415	0.416	0.417	0.418	0.419	0.421
497.9	0.422	0.423	0.424	0.425	0.426	0.428	0.429	0.430	0.431	0.432
498.0	0.433	0.435	0.436	0.437	0.438	0.439	0.441	0.442	0.443	0.444
498.1	0.446	0.447	0.448	0.449	0.450	0.452	0.453	0.454	0.455	0.457
498.2	0.458	0.459	0.460	0.461	0.463	0.464	0.465	0.466	0.468	0.469
498.3	0.470	0.471	0.473	0.474	0.475	0.476	0.478	0.479	0.480	0.482
498.4	0.483	0.484	0.485	0.487	0.488	0.489	0.491	0.492	0.493	0.494
498.5	0.496	0.497	0.498	0.500	0.501	0.502	0.504	0.505	0.506	0.508
498.6	0.509	0.510	0.512	0.513	0.514	0.515	0.517	0.518	0.520	0.521
498.7	0.522	0.524	0.525	0.526	0.528	0.529	0.530	0.532	0.533	0.534
498.8	0.536	0.537	0.538	0.540	0.541	0.543	0.544	0.545	0.547	0.548
498.9	0.550	0.551	0.552	0.554	0.555	0.556	0.558	0.559	0.561	0.562
499.0	0.563	0.565	0.566	0.568	0.569	0.571	0.572	0.573	0.575	0.576
499.1	0.578	0.579	0.581	0.582	0.583	0.585	0.586	0.588	0.589	0.591
499.2	0.592	0.594	0.595	0.597	0.598	0.599	0.601	0.602	0.604	0.605
499.3	0.607	0.608	0.610	0.611	0.613	0.614	0.616	0.617	0.619	0.620
499.4	0.622	0.623	0.625	0.626	0.628	0.629	0.631	0.632	0.634	0.635
499.5	0.637	0.638	0.640	0.641	0.643	0.645	0.646	0.648	0.649	0.651
499.6	0.652	0.654	0.655	0.657	0.658	0.660	0.662	0.663	0.665	0.666
499.7	0.668	0.669	0.671	0.673	0.674	0.676	0.677	0.679	0.680	0.682
499.8	0.684	0.685	0.687	0.688	0.690	0.692	0.693	0.695	0.696	0.698
499.9	0.700	0.701	0.703	0.705	0.706	0.708	0.709	0.711	0.713	0.714
500.0	0.716	0.718	0.719	0.721	0.723	0.724	0.726	0.728	0.729	0.731
500.1	0.733	0.734	0.736	0.738	0.739	0.741	0.743	0.744	0.746	0.748
500.2	0.749	0.751	0.753	0.754	0.756	0.758	0.760	0.761	0.763	0.765
500.3	0.766	0.768	0.770	0.772	0.773	0.775	0.777	0.779	0.780	0.782
500.4	0.784	0.786	0.787	0.789	0.791	0.793	0.794	0.796	0.798	0.800
500.5	0.801	0.803	0.805	0.807	0.809	0.810	0.812	0.814	0.816	0.818
500.6	0.819	0.821	0.823	0.825	0.827	0.829	0.830	0.832	0.834	0.836
500.7	0.838	0.839	0.841	0.843	0.845	0.847	0.849	0.851	0.852	0.854
500.8	0.856	0.858	0.860	0.862	0.864	0.866	0.867	0.869	0.871	0.873
500.9	0.875	0.877	0.879	0.881	0.883	0.884	0.886	0.888	0.890	0.892
ELEV	0.00	0.01	0.02	0.03	0.04	0.05	0.06	0.07	0.08	0.09

TABLE 7-2 (Continued)

BELTON LAKE - ELEVATION CAPACITY TABLE

ELEVATIONS IN FEET-NGVD, CAPACITIES IN THOUSAND ACRE-FEET

ELEV	0.00	0.01	0.02	0.03	0.04	0.05	0.06	0.07	0.08	0.09
501.0	0.894	0.896	0.898	0.900	0.902	0.904	0.906	0.908	0.909	0.911
501.1	0.913	0.915	0.917	0.919	0.921	0.923	0.925	0.927	0.929	0.931
501.2	0.933	0.935	0.937	0.939	0.941	0.943	0.945	0.947	0.949	0.951
501.3	0.953	0.955	0.957	0.959	0.961	0.963	0.965	0.967	0.969	0.971
501.4	0.973	0.975	0.978	0.980	0.982	0.984	0.986	0.988	0.990	0.992
501.5	0.994	0.996	0.998	1.000	1.002	1.005	1.007	1.009	1.011	1.013
501.6	1.015	1.017	1.019	1.022	1.024	1.026	1.028	1.030	1.032	1.034
501.7	1.036	1.039	1.041	1.043	1.045	1.047	1.049	1.052	1.054	1.056
501.8	1.058	1.060	1.063	1.065	1.067	1.069	1.071	1.074	1.076	1.078
501.9	1.080	1.082	1.085	1.087	1.089	1.091	1.094	1.096	1.098	1.100
502.0	1.102	1.105	1.107	1.109	1.112	1.114	1.116	1.118	1.121	1.123
502.1	1.125	1.128	1.130	1.132	1.134	1.137	1.139	1.141	1.144	1.146
502.2	1.148	1.151	1.153	1.155	1.158	1.160	1.162	1.165	1.167	1.170
502.3	1.172	1.174	1.177	1.179	1.181	1.184	1.186	1.189	1.191	1.193
502.4	1.196	1.198	1.201	1.203	1.206	1.208	1.210	1.213	1.215	1.218
502.5	1.220	1.223	1.225	1.228	1.230	1.233	1.235	1.238	1.240	1.243
502.6	1.245	1.248	1.250	1.253	1.255	1.258	1.260	1.263	1.265	1.268
502.7	1.270	1.273	1.275	1.278	1.280	1.283	1.286	1.288	1.291	1.293
502.8	1.296	1.299	1.301	1.304	1.306	1.309	1.312	1.314	1.317	1.319
502.9	1.322	1.325	1.327	1.330	1.333	1.335	1.338	1.341	1.343	1.346
503.0	1.349	1.351	1.354	1.357	1.359	1.362	1.365	1.367	1.370	1.373
503.1	1.375	1.378	1.381	1.384	1.386	1.389	1.392	1.395	1.397	1.400
503.2	1.403	1.406	1.408	1.411	1.414	1.417	1.420	1.422	1.425	1.428
503.3	1.431	1.434	1.436	1.439	1.442	1.445	1.448	1.451	1.453	1.456
503.4	1.459	1.462	1.465	1.468	1.471	1.474	1.477	1.479	1.482	1.485
503.5	1.488	1.491	1.494	1.497	1.500	1.503	1.506	1.509	1.512	1.515
503.6	1.518	1.520	1.523	1.526	1.529	1.532	1.535	1.538	1.541	1.544
503.7	1.547	1.550	1.553	1.556	1.559	1.563	1.566	1.569	1.572	1.575
503.8	1.578	1.581	1.584	1.587	1.590	1.593	1.596	1.599	1.602	1.606
503.9	1.609	1.612	1.615	1.618	1.621	1.624	1.627	1.631	1.634	1.637
504.0	1.640	1.643	1.646	1.649	1.653	1.656	1.659	1.662	1.665	1.669
504.1	1.672	1.675	1.678	1.681	1.685	1.688	1.691	1.694	1.697	1.701
504.2	1.704	1.707	1.710	1.714	1.717	1.720	1.723	1.727	1.730	1.733
504.3	1.736	1.740	1.743	1.746	1.749	1.753	1.756	1.759	1.763	1.766
504.4	1.769	1.773	1.776	1.779	1.782	1.786	1.789	1.792	1.796	1.799
504.5	1.802	1.806	1.809	1.812	1.816	1.819	1.822	1.826	1.829	1.833
504.6	1.836	1.839	1.843	1.846	1.849	1.853	1.856	1.860	1.863	1.866
504.7	1.870	1.873	1.877	1.880	1.883	1.887	1.890	1.894	1.897	1.901
504.8	1.904	1.907	1.911	1.914	1.918	1.921	1.925	1.928	1.932	1.935
504.9	1.939	1.942	1.946	1.949	1.953	1.956	1.959	1.963	1.966	1.970
505.0	1.974	1.977	1.981	1.984	1.988	1.991	1.995	1.998	2.002	2.005
505.1	2.009	2.012	2.016	2.019	2.023	2.027	2.030	2.034	2.037	2.041
505.2	2.044	2.048	2.052	2.055	2.059	2.062	2.066	2.070	2.073	2.077
505.3	2.080	2.084	2.088	2.091	2.095	2.098	2.102	2.106	2.109	2.113
505.4	2.117	2.120	2.124	2.128	2.131	2.135	2.139	2.142	2.146	2.150
505.5	2.153	2.157	2.161	2.164	2.168	2.172	2.176	2.179	2.183	2.187
505.6	2.190	2.194	2.198	2.202	2.205	2.209	2.213	2.217	2.220	2.224
505.7	2.228	2.232	2.235	2.239	2.243	2.247	2.250	2.254	2.258	2.262
505.8	2.265	2.269	2.273	2.277	2.281	2.284	2.288	2.292	2.296	2.300
505.9	2.304	2.307	2.311	2.315	2.319	2.323	2.327	2.330	2.334	2.338
ELEV	0.00	0.01	0.02	0.03	0.04	0.05	0.06	0.07	0.08	0.09

TABLE 7-2 (Continued)

BELTON LAKE - ELEVATION CAPACITY TABLE

ELEVATIONS IN FEET-NGVD, CAPACITIES IN THOUSAND ACRE-FEET

ELEV	0.00	0.01	0.02	0.03	0.04	0.05	0.06	0.07	0.08	0.09
506.0	2.342	2.346	2.350	2.354	2.357	2.361	2.365	2.369	2.373	2.377
506.1	2.381	2.385	2.389	2.392	2.396	2.400	2.404	2.408	2.412	2.416
506.2	2.420	2.424	2.428	2.432	2.436	2.440	2.444	2.447	2.451	2.455
506.3	2.459	2.463	2.467	2.471	2.475	2.479	2.483	2.487	2.491	2.495
506.4	2.499	2.503	2.507	2.511	2.515	2.519	2.523	2.527	2.531	2.535
506.5	2.539	2.543	2.547	2.551	2.555	2.559	2.563	2.568	2.572	2.576
506.6	2.580	2.584	2.588	2.592	2.596	2.600	2.604	2.608	2.612	2.616
506.7	2.621	2.625	2.629	2.633	2.637	2.641	2.645	2.649	2.653	2.658
506.8	2.662	2.666	2.670	2.674	2.678	2.682	2.687	2.691	2.695	2.699
506.9	2.703	2.707	2.712	2.716	2.720	2.724	2.728	2.732	2.737	2.741
507.0	2.745	2.749	2.753	2.758	2.762	2.766	2.770	2.774	2.779	2.783
507.1	2.787	2.791	2.796	2.800	2.804	2.808	2.813	2.817	2.821	2.825
507.2	2.830	2.834	2.838	2.842	2.847	2.851	2.855	2.860	2.864	2.868
507.3	2.873	2.877	2.881	2.885	2.890	2.894	2.898	2.903	2.907	2.911
507.4	2.916	2.920	2.924	2.929	2.933	2.937	2.942	2.946	2.951	2.955
507.5	2.959	2.964	2.968	2.972	2.977	2.981	2.986	2.990	2.994	2.999
507.6	3.003	3.008	3.012	3.016	3.021	3.025	3.030	3.034	3.038	3.043
507.7	3.047	3.052	3.056	3.061	3.065	3.070	3.074	3.078	3.083	3.087
507.8	3.092	3.096	3.101	3.105	3.110	3.114	3.119	3.123	3.128	3.132
507.9	3.137	3.141	3.146	3.150	3.155	3.159	3.164	3.168	3.173	3.177
508.0	3.182	3.187	3.191	3.196	3.200	3.205	3.209	3.214	3.218	3.223
508.1	3.228	3.232	3.237	3.241	3.246	3.251	3.255	3.260	3.264	3.269
508.2	3.274	3.278	3.283	3.287	3.292	3.297	3.301	3.306	3.311	3.315
508.3	3.320	3.325	3.329	3.334	3.339	3.343	3.348	3.353	3.357	3.362
508.4	3.367	3.372	3.376	3.381	3.386	3.390	3.395	3.400	3.405	3.409
508.5	3.414	3.419	3.423	3.428	3.433	3.438	3.443	3.447	3.452	3.457
508.6	3.462	3.466	3.471	3.476	3.481	3.486	3.490	3.495	3.500	3.505
508.7	3.510	3.514	3.519	3.524	3.529	3.534	3.539	3.543	3.548	3.553
508.8	3.558	3.563	3.568	3.573	3.577	3.582	3.587	3.592	3.597	3.602
508.9	3.607	3.612	3.617	3.622	3.626	3.631	3.636	3.641	3.646	3.651
509.0	3.656	3.661	3.666	3.671	3.676	3.681	3.686	3.691	3.696	3.701
509.1	3.706	3.711	3.716	3.721	3.726	3.731	3.736	3.741	3.746	3.751
509.2	3.756	3.761	3.766	3.771	3.776	3.781	3.786	3.791	3.796	3.801
509.3	3.806	3.811	3.816	3.821	3.826	3.831	3.836	3.841	3.846	3.851
509.4	3.856	3.862	3.867	3.872	3.877	3.882	3.887	3.892	3.897	3.902
509.5	3.908	3.913	3.918	3.923	3.928	3.933	3.938	3.943	3.949	3.954
509.6	3.959	3.964	3.969	3.974	3.979	3.984	3.989	3.994	4.000	4.005
509.7	4.011	4.016	4.021	4.026	4.031	4.037	4.042	4.047	4.052	4.057
509.8	4.063	4.068	4.073	4.078	4.084	4.089	4.094	4.099	4.105	4.110
509.9	4.115	4.120	4.126	4.131	4.136	4.142	4.147	4.152	4.157	4.163
510.0	4.168	4.173	4.179	4.184	4.189	4.195	4.200	4.205	4.211	4.216
510.1	4.221	4.227	4.232	4.237	4.243	4.248	4.253	4.259	4.264	4.269
510.2	4.275	4.280	4.286	4.291	4.296	4.302	4.307	4.313	4.318	4.323
510.3	4.329	4.334	4.340	4.345	4.350	4.356	4.361	4.367	4.372	4.378
510.4	4.383	4.389	4.394	4.400	4.405	4.410	4.416	4.421	4.427	4.432
510.5	4.438	4.443	4.449	4.454	4.460	4.465	4.471	4.476	4.482	4.487
510.6	4.493	4.499	4.504	4.510	4.515	4.521	4.526	4.532	4.537	4.543
510.7	4.549	4.554	4.560	4.565	4.571	4.576	4.582	4.588	4.593	4.599
510.8	4.604	4.610	4.616	4.621	4.627	4.633	4.638	4.644	4.650	4.655
510.9	4.661	4.666	4.672	4.678	4.683	4.689	4.695	4.700	4.706	4.712
ELEV	0.00	0.01	0.02	0.03	0.04	0.05	0.06	0.07	0.08	0.09

TABLE 7-2 (Continued)

BELTON LAKE - ELEVATION CAPACITY TABLE

ELEVATIONS IN FEET-NGVD, CAPACITIES IN THOUSAND ACRE-FEET

ELEV	0.00	0.01	0.02	0.03	0.04	0.05	0.06	0.07	0.08	0.09
511.0	4.718	4.723	4.729	4.735	4.740	4.746	4.752	4.757	4.763	4.769
511.1	4.775	4.780	4.786	4.792	4.798	4.803	4.809	4.815	4.821	4.826
511.2	4.832	4.838	4.844	4.850	4.855	4.861	4.867	4.873	4.879	4.884
511.3	4.890	4.896	4.902	4.908	4.914	4.919	4.925	4.931	4.937	4.943
511.4	4.949	4.954	4.960	4.966	4.972	4.978	4.984	4.990	4.996	5.002
511.5	5.008	5.013	5.019	5.025	5.031	5.037	5.043	5.049	5.055	5.061
511.6	5.067	5.073	5.079	5.085	5.091	5.097	5.103	5.109	5.115	5.121
511.7	5.127	5.133	5.139	5.145	5.151	5.157	5.163	5.169	5.175	5.181
511.8	5.187	5.193	5.199	5.205	5.211	5.217	5.223	5.229	5.235	5.241
511.9	5.247	5.254	5.260	5.266	5.272	5.278	5.284	5.290	5.296	5.302
512.0	5.308	5.315	5.321	5.327	5.333	5.339	5.345	5.352	5.358	5.364
512.1	5.370	5.376	5.382	5.389	5.395	5.401	5.407	5.413	5.420	5.426
512.2	5.432	5.438	5.444	5.451	5.457	5.463	5.469	5.476	5.482	5.488
512.3	5.495	5.501	5.507	5.513	5.520	5.526	5.532	5.539	5.545	5.551
512.4	5.557	5.564	5.570	5.576	5.583	5.589	5.595	5.602	5.608	5.615
512.5	5.621	5.627	5.634	5.640	5.646	5.653	5.659	5.666	5.672	5.678
512.6	5.685	5.691	5.698	5.704	5.710	5.717	5.723	5.730	5.736	5.743
512.7	5.749	5.756	5.762	5.769	5.775	5.781	5.788	5.794	5.801	5.807
512.8	5.814	5.820	5.827	5.833	5.840	5.847	5.853	5.860	5.866	5.873
512.9	5.879	5.886	5.892	5.899	5.905	5.912	5.919	5.925	5.932	5.938
513.0	5.945	5.952	5.958	5.965	5.971	5.978	5.985	5.991	5.998	6.005
513.1	6.011	6.018	6.025	6.031	6.038	6.045	6.051	6.058	6.065	6.071
513.2	6.078	6.085	6.091	6.098	6.105	6.112	6.118	6.125	6.132	6.139
513.3	6.145	6.152	6.159	6.166	6.172	6.179	6.186	6.193	6.199	6.206
513.4	6.213	6.220	6.227	6.234	6.240	6.247	6.254	6.261	6.268	6.275
513.5	6.281	6.288	6.295	6.302	6.309	6.316	6.323	6.329	6.336	6.343
513.6	6.350	6.357	6.364	6.371	6.378	6.385	6.392	6.399	6.406	6.413
513.7	6.419	6.426	6.433	6.440	6.447	6.454	6.461	6.468	6.475	6.482
513.8	6.489	6.496	6.503	6.510	6.517	6.524	6.531	6.539	6.546	6.553
513.9	6.560	6.567	6.574	6.581	6.588	6.595	6.602	6.609	6.616	6.623
514.0	6.630	6.638	6.645	6.652	6.659	6.666	6.673	6.680	6.688	6.695
514.1	6.702	6.709	6.716	6.723	6.731	6.738	6.745	6.752	6.759	6.767
514.2	6.774	6.781	6.788	6.796	6.803	6.810	6.817	6.825	6.832	6.839
514.3	6.846	6.854	6.861	6.868	6.876	6.883	6.890	6.898	6.905	6.912
514.4	6.920	6.927	6.934	6.942	6.949	6.956	6.964	6.971	6.979	6.986
514.5	6.993	7.001	7.008	7.016	7.023	7.030	7.038	7.045	7.053	7.060
514.6	7.068	7.075	7.083	7.090	7.098	7.105	7.113	7.120	7.128	7.135
514.7	7.143	7.150	7.158	7.165	7.173	7.180	7.188	7.195	7.203	7.211
514.8	7.218	7.226	7.233	7.241	7.249	7.256	7.264	7.271	7.279	7.287
514.9	7.294	7.302	7.310	7.317	7.325	7.333	7.340	7.348	7.356	7.363
515.0	7.371	7.379	7.386	7.394	7.402	7.410	7.417	7.425	7.433	7.441
515.1	7.448	7.456	7.464	7.472	7.480	7.487	7.495	7.503	7.511	7.519
515.2	7.526	7.534	7.542	7.550	7.558	7.566	7.574	7.582	7.589	7.597
515.3	7.605	7.613	7.621	7.629	7.637	7.645	7.653	7.661	7.669	7.677
515.4	7.685	7.693	7.701	7.709	7.717	7.725	7.733	7.741	7.749	7.757
515.5	7.765	7.773	7.781	7.789	7.797	7.806	7.814	7.822	7.830	7.838
515.6	7.846	7.854	7.862	7.871	7.879	7.887	7.895	7.903	7.911	7.920
515.7	7.928	7.936	7.944	7.953	7.961	7.969	7.977	7.986	7.994	8.002
515.8	8.010	8.019	8.027	8.035	8.044	8.052	8.060	8.069	8.077	8.085
515.9	8.094	8.102	8.110	8.119	8.127	8.135	8.144	8.152	8.161	8.169
ELEV	0.00	0.01	0.02	0.03	0.04	0.05	0.06	0.07	0.08	0.09

TABLE 7-2 (Continued)

BELTON LAKE - ELEVATION CAPACITY TABLE

ELEVATIONS IN FEET-NGVD, CAPACITIES IN THOUSAND ACRE-FEET

ELEV	0.00	0.01	0.02	0.03	0.04	0.05	0.06	0.07	0.08	0.09
516.0	8.177	8.186	8.194	8.203	8.211	8.220	8.228	8.237	8.245	8.254
516.1	8.262	8.271	8.279	8.288	8.296	8.305	8.314	8.322	8.331	8.339
516.2	8.348	8.357	8.365	8.374	8.383	8.391	8.400	8.409	8.417	8.426
516.3	8.435	8.443	8.452	8.461	8.470	8.478	8.487	8.496	8.505	8.514
516.4	8.522	8.531	8.540	8.549	8.558	8.567	8.576	8.584	8.593	8.602
516.5	8.611	8.620	8.629	8.638	8.647	8.656	8.665	8.674	8.683	8.692
516.6	8.701	8.710	8.719	8.728	8.737	8.746	8.755	8.764	8.773	8.782
516.7	8.791	8.800	8.810	8.819	8.828	8.837	8.846	8.855	8.865	8.874
516.8	8.883	8.892	8.901	8.911	8.920	8.929	8.938	8.948	8.957	8.966
516.9	8.975	8.985	8.994	9.003	9.013	9.022	9.031	9.041	9.050	9.060
517.0	9.069	9.078	9.088	9.097	9.107	9.116	9.126	9.135	9.145	9.154
517.1	9.163	9.173	9.182	9.192	9.202	9.211	9.221	9.230	9.240	9.249
517.2	9.259	9.269	9.278	9.288	9.297	9.307	9.317	9.326	9.336	9.346
517.3	9.355	9.365	9.375	9.384	9.394	9.404	9.414	9.423	9.433	9.443
517.4	9.453	9.462	9.472	9.482	9.492	9.502	9.512	9.521	9.531	9.541
517.5	9.551	9.561	9.571	9.581	9.591	9.601	9.610	9.620	9.630	9.640
517.6	9.650	9.660	9.670	9.680	9.690	9.700	9.710	9.720	9.730	9.740
517.7	9.751	9.761	9.771	9.781	9.791	9.801	9.811	9.821	9.831	9.842
517.8	9.852	9.862	9.872	9.882	9.892	9.903	9.913	9.923	9.933	9.944
517.9	9.954	9.964	9.974	9.985	9.995	10.005	10.016	10.026	10.036	10.047
518.0	10.057	10.067	10.078	10.088	10.099	10.109	10.119	10.130	10.140	10.151
518.1	10.161	10.172	10.182	10.192	10.203	10.213	10.224	10.234	10.245	10.255
518.2	10.266	10.277	10.287	10.298	10.308	10.319	10.329	10.340	10.351	10.361
518.3	10.372	10.382	10.393	10.404	10.414	10.425	10.436	10.446	10.457	10.468
518.4	10.479	10.489	10.500	10.511	10.522	10.532	10.543	10.554	10.565	10.575
518.5	10.586	10.597	10.608	10.619	10.630	10.640	10.651	10.662	10.673	10.684
518.6	10.695	10.706	10.717	10.728	10.738	10.749	10.760	10.771	10.782	10.793
518.7	10.804	10.815	10.826	10.837	10.848	10.859	10.870	10.881	10.892	10.904
518.8	10.915	10.926	10.937	10.948	10.959	10.970	10.981	10.992	11.004	11.015
518.9	11.026	11.037	11.048	11.059	11.071	11.082	11.093	11.104	11.115	11.127
519.0	11.138	11.149	11.161	11.172	11.183	11.194	11.206	11.217	11.228	11.240
519.1	11.251	11.262	11.274	11.285	11.296	11.308	11.319	11.331	11.342	11.353
519.2	11.365	11.376	11.388	11.399	11.410	11.422	11.433	11.445	11.456	11.468
519.3	11.479	11.491	11.502	11.514	11.525	11.537	11.548	11.560	11.572	11.583
519.4	11.595	11.606	11.618	11.629	11.641	11.653	11.664	11.676	11.687	11.699
519.5	11.711	11.722	11.734	11.746	11.757	11.769	11.781	11.792	11.804	11.816
519.6	11.828	11.839	11.851	11.863	11.875	11.886	11.898	11.910	11.922	11.934
519.7	11.945	11.957	11.969	11.981	11.993	12.004	12.016	12.028	12.040	12.052
519.8	12.064	12.076	12.088	12.099	12.111	12.123	12.135	12.147	12.159	12.171
519.9	12.183	12.195	12.207	12.219	12.231	12.243	12.255	12.267	12.279	12.291
520.0	12.303	12.315	12.327	12.339	12.351	12.363	12.375	12.387	12.400	12.412
520.1	12.424	12.436	12.448	12.460	12.472	12.484	12.497	12.509	12.521	12.533
520.2	12.545	12.557	12.570	12.582	12.594	12.606	12.619	12.631	12.643	12.655
520.3	12.668	12.680	12.692	12.704	12.717	12.729	12.741	12.754	12.766	12.778
520.4	12.791	12.803	12.815	12.828	12.840	12.852	12.865	12.877	12.890	12.902
520.5	12.914	12.927	12.939	12.952	12.964	12.977	12.989	13.001	13.014	13.026
520.6	13.039	13.051	13.064	13.076	13.089	13.101	13.114	13.127	13.139	13.152
520.7	13.164	13.177	13.189	13.202	13.214	13.227	13.240	13.252	13.265	13.278
520.8	13.290	13.303	13.315	13.328	13.341	13.353	13.366	13.379	13.392	13.404
520.9	13.417	13.430	13.442	13.455	13.468	13.481	13.493	13.506	13.519	13.532
ELEV	0.00	0.01	0.02	0.03	0.04	0.05	0.06	0.07	0.08	0.09

TABLE 7-2 (Continued)

BELTON LAKE - ELEVATION CAPACITY TABLE

ELEVATIONS IN FEET-NGVD, CAPACITIES IN THOUSAND ACRE-FEET

ELEV	0.00	0.01	0.02	0.03	0.04	0.05	0.06	0.07	0.08	0.09
521.0	13.545	13.557	13.570	13.583	13.596	13.609	13.621	13.634	13.647	13.660
521.1	13.673	13.686	13.699	13.711	13.724	13.737	13.750	13.763	13.776	13.789
521.2	13.802	13.815	13.828	13.841	13.854	13.867	13.880	13.893	13.906	13.919
521.3	13.932	13.945	13.958	13.971	13.984	13.997	14.010	14.023	14.036	14.049
521.4	14.062	14.075	14.088	14.101	14.115	14.128	14.141	14.154	14.167	14.180
521.5	14.193	14.207	14.220	14.233	14.246	14.259	14.273	14.286	14.299	14.312
521.6	14.326	14.339	14.352	14.365	14.379	14.392	14.405	14.418	14.432	14.445
521.7	14.458	14.472	14.485	14.498	14.512	14.525	14.538	14.552	14.565	14.579
521.8	14.592	14.605	14.619	14.632	14.646	14.659	14.673	14.686	14.699	14.713
521.9	14.726	14.740	14.753	14.767	14.780	14.794	14.807	14.821	14.834	14.848
522.0	14.861	14.875	14.889	14.902	14.916	14.929	14.943	14.957	14.970	14.984
522.1	14.997	15.011	15.025	15.038	15.052	15.066	15.079	15.093	15.107	15.120
522.2	15.134	15.148	15.161	15.175	15.189	15.202	15.216	15.230	15.244	15.257
522.3	15.271	15.285	15.299	15.312	15.326	15.340	15.354	15.368	15.381	15.395
522.4	15.409	15.423	15.437	15.451	15.464	15.478	15.492	15.506	15.520	15.534
522.5	15.548	15.562	15.576	15.589	15.603	15.617	15.631	15.645	15.659	15.673
522.6	15.687	15.701	15.715	15.729	15.743	15.757	15.771	15.785	15.799	15.813
522.7	15.827	15.841	15.855	15.869	15.883	15.897	15.912	15.926	15.940	15.954
522.8	15.968	15.982	15.996	16.010	16.024	16.039	16.053	16.067	16.081	16.095
522.9	16.109	16.124	16.138	16.152	16.166	16.180	16.195	16.209	16.223	16.237
523.0	16.251	16.266	16.280	16.294	16.309	16.323	16.337	16.351	16.366	16.380
523.1	16.394	16.409	16.423	16.437	16.452	16.466	16.480	16.495	16.509	16.524
523.2	16.538	16.552	16.567	16.581	16.596	16.610	16.625	16.639	16.653	16.668
523.3	16.682	16.697	16.711	16.726	16.740	16.755	16.769	16.784	16.798	16.813
523.4	16.828	16.842	16.857	16.871	16.886	16.900	16.915	16.930	16.944	16.959
523.5	16.973	16.988	17.003	17.017	17.032	17.047	17.061	17.076	17.091	17.105
523.6	17.120	17.135	17.150	17.164	17.179	17.194	17.209	17.223	17.238	17.253
523.7	17.268	17.282	17.297	17.312	17.327	17.342	17.356	17.371	17.386	17.401
523.8	17.416	17.431	17.446	17.460	17.475	17.490	17.505	17.520	17.535	17.550
523.9	17.565	17.580	17.595	17.610	17.625	17.640	17.655	17.670	17.684	17.699
524.0	17.715	17.730	17.745	17.760	17.775	17.790	17.805	17.820	17.835	17.850
524.1	17.865	17.880	17.895	17.910	17.926	17.941	17.956	17.971	17.986	18.001
524.2	18.016	18.032	18.047	18.062	18.077	18.093	18.108	18.123	18.138	18.153
524.3	18.169	18.184	18.199	18.215	18.230	18.245	18.261	18.276	18.291	18.307
524.4	18.322	18.337	18.353	18.368	18.383	18.399	18.414	18.430	18.445	18.461
524.5	18.476	18.491	18.507	18.522	18.538	18.553	18.569	18.584	18.600	18.615
524.6	18.631	18.646	18.662	18.678	18.693	18.709	18.724	18.740	18.756	18.771
524.7	18.787	18.802	18.818	18.834	18.849	18.865	18.881	18.896	18.912	18.928
524.8	18.943	18.959	18.975	18.991	19.006	19.022	19.038	19.054	19.069	19.085
524.9	19.101	19.117	19.133	19.148	19.164	19.180	19.196	19.212	19.228	19.244
525.0	19.260	19.275	19.291	19.307	19.323	19.339	19.355	19.371	19.387	19.403
525.1	19.419	19.435	19.451	19.467	19.483	19.499	19.515	19.531	19.547	19.563
525.2	19.579	19.595	19.611	19.627	19.643	19.659	19.675	19.691	19.708	19.724
525.3	19.740	19.756	19.772	19.788	19.804	19.820	19.837	19.853	19.869	19.885
525.4	19.901	19.918	19.934	19.950	19.966	19.983	19.999	20.015	20.031	20.048
525.5	20.064	20.080	20.096	20.113	20.129	20.145	20.162	20.178	20.194	20.211
525.6	20.227	20.243	20.260	20.276	20.293	20.309	20.325	20.342	20.358	20.375
525.7	20.391	20.408	20.424	20.441	20.457	20.473	20.490	20.506	20.523	20.539
525.8	20.556	20.573	20.589	20.606	20.622	20.639	20.655	20.672	20.688	20.705
525.9	20.722	20.738	20.755	20.771	20.788	20.805	20.821	20.838	20.855	20.871
ELEV	0.00	0.01	0.02	0.03	0.04	0.05	0.06	0.07	0.08	0.09

TABLE 7-2 (Continued)

BELTON LAKE - ELEVATION CAPACITY TABLE

ELEVATIONS IN FEET-NGVD, CAPACITIES IN THOUSAND ACRE-FEET

ELEV	0.00	0.01	0.02	0.03	0.04	0.05	0.06	0.07	0.08	0.09
526.0	20.888	20.905	20.921	20.938	20.955	20.971	20.988	21.005	21.022	21.038
526.1	21.055	21.072	21.089	21.105	21.122	21.139	21.156	21.173	21.189	21.206
526.2	21.223	21.240	21.257	21.274	21.290	21.307	21.324	21.341	21.358	21.375
526.3	21.392	21.409	21.426	21.443	21.459	21.476	21.493	21.510	21.527	21.544
526.4	21.561	21.578	21.595	21.612	21.629	21.646	21.663	21.680	21.697	21.714
526.5	21.731	21.748	21.765	21.783	21.800	21.817	21.834	21.851	21.868	21.885
526.6	21.902	21.919	21.937	21.954	21.971	21.988	22.005	22.022	22.040	22.057
526.7	22.074	22.091	22.108	22.126	22.143	22.160	22.177	22.195	22.212	22.229
526.8	22.246	22.264	22.281	22.298	22.316	22.333	22.350	22.368	22.385	22.402
526.9	22.420	22.437	22.454	22.472	22.489	22.506	22.524	22.541	22.559	22.576
527.0	22.594	22.611	22.628	22.646	22.663	22.681	22.698	22.716	22.733	22.751
527.1	22.768	22.786	22.803	22.821	22.838	22.856	22.873	22.891	22.908	22.926
527.2	22.944	22.961	22.979	22.996	23.014	23.031	23.049	23.067	23.084	23.102
527.3	23.120	23.137	23.155	23.173	23.190	23.208	23.226	23.243	23.261	23.279
527.4	23.296	23.314	23.332	23.350	23.367	23.385	23.403	23.421	23.438	23.456
527.5	23.474	23.492	23.509	23.527	23.545	23.563	23.581	23.599	23.616	23.634
527.6	23.652	23.670	23.688	23.706	23.724	23.741	23.759	23.777	23.795	23.813
527.7	23.831	23.849	23.867	23.885	23.903	23.921	23.939	23.957	23.975	23.993
527.8	24.011	24.029	24.047	24.065	24.083	24.101	24.119	24.137	24.155	24.173
527.9	24.191	24.209	24.227	24.245	24.263	24.281	24.299	24.318	24.336	24.354
528.0	24.372	24.390	24.408	24.426	24.445	24.463	24.481	24.499	24.517	24.536
528.1	24.554	24.572	24.590	24.608	24.627	24.645	24.663	24.681	24.700	24.718
528.2	24.736	24.755	24.773	24.791	24.809	24.828	24.846	24.864	24.883	24.901
528.3	24.919	24.938	24.956	24.974	24.993	25.011	25.030	25.048	25.066	25.085
528.4	25.103	25.122	25.140	25.159	25.177	25.195	25.214	25.232	25.251	25.269
528.5	25.288	25.306	25.325	25.343	25.362	25.380	25.399	25.418	25.436	25.455
528.6	25.473	25.492	25.510	25.529	25.548	25.566	25.585	25.603	25.622	25.641
528.7	25.659	25.678	25.696	25.715	25.734	25.752	25.771	25.790	25.809	25.827
528.8	25.846	25.865	25.883	25.902	25.921	25.940	25.958	25.977	25.996	26.015
528.9	26.033	26.052	26.071	26.090	26.109	26.127	26.146	26.165	26.184	26.203
529.0	26.222	26.240	26.259	26.278	26.297	26.316	26.335	26.354	26.373	26.391
529.1	26.410	26.429	26.448	26.467	26.486	26.505	26.524	26.543	26.562	26.581
529.2	26.600	26.619	26.638	26.657	26.676	26.695	26.714	26.733	26.752	26.771
529.3	26.790	26.810	26.829	26.848	26.867	26.886	26.905	26.924	26.943	26.962
529.4	26.982	27.001	27.020	27.039	27.058	27.077	27.097	27.116	27.135	27.154
529.5	27.174	27.193	27.212	27.231	27.250	27.270	27.289	27.308	27.328	27.347
529.6	27.366	27.385	27.405	27.424	27.443	27.463	27.482	27.502	27.521	27.540
529.7	27.560	27.579	27.598	27.618	27.637	27.657	27.676	27.695	27.715	27.734
529.8	27.754	27.773	27.793	27.812	27.832	27.851	27.871	27.890	27.910	27.929
529.9	27.949	27.968	27.988	28.007	28.027	28.047	28.066	28.086	28.105	28.125
530.0	28.145	28.164	28.184	28.203	28.223	28.243	28.262	28.282	28.302	28.321
530.1	28.341	28.361	28.380	28.400	28.420	28.440	28.459	28.479	28.499	28.519
530.2	28.538	28.558	28.578	28.598	28.617	28.637	28.657	28.677	28.697	28.717
530.3	28.736	28.756	28.776	28.796	28.816	28.836	28.856	28.876	28.896	28.915
530.4	28.935	28.955	28.975	28.995	29.015	29.035	29.055	29.075	29.095	29.115
530.5	29.135	29.155	29.175	29.195	29.215	29.235	29.255	29.275	29.296	29.316
530.6	29.336	29.356	29.376	29.396	29.416	29.436	29.456	29.477	29.497	29.517
530.7	29.537	29.557	29.577	29.598	29.618	29.638	29.658	29.678	29.699	29.719
530.8	29.739	29.759	29.780	29.800	29.820	29.841	29.861	29.881	29.902	29.922
530.9	29.942	29.963	29.983	30.003	30.024	30.044	30.064	30.085	30.105	30.126
ELEV	0.00	0.01	0.02	0.03	0.04	0.05	0.06	0.07	0.08	0.09

TABLE 7-2 (Continued)

BELTON LAKE - ELEVATION CAPACITY TABLE

ELEVATIONS IN FEET-NGVD, CAPACITIES IN THOUSAND ACRE-FEET

ELEV	0.00	0.01	0.02	0.03	0.04	0.05	0.06	0.07	0.08	0.09
531.0	30.146	30.166	30.187	30.207	30.228	30.248	30.269	30.289	30.310	30.330
531.1	30.351	30.371	30.392	30.412	30.433	30.453	30.474	30.494	30.515	30.536
531.2	30.556	30.577	30.597	30.618	30.639	30.659	30.680	30.701	30.721	30.742
531.3	30.763	30.783	30.804	30.825	30.845	30.866	30.887	30.907	30.928	30.949
531.4	30.970	30.991	31.011	31.032	31.053	31.074	31.095	31.115	31.136	31.157
531.5	31.178	31.199	31.220	31.240	31.261	31.282	31.303	31.324	31.345	31.366
531.6	31.387	31.408	31.429	31.450	31.471	31.492	31.513	31.534	31.555	31.576
531.7	31.597	31.618	31.639	31.660	31.681	31.702	31.723	31.744	31.765	31.786
531.8	31.807	31.829	31.850	31.871	31.892	31.913	31.934	31.955	31.977	31.998
531.9	32.019	32.040	32.061	32.083	32.104	32.125	32.146	32.168	32.189	32.210
532.0	32.231	32.253	32.274	32.295	32.317	32.338	32.359	32.381	32.402	32.423
532.1	32.445	32.466	32.488	32.509	32.530	32.552	32.573	32.595	32.616	32.638
532.2	32.659	32.681	32.702	32.724	32.745	32.767	32.788	32.810	32.831	32.853
532.3	32.874	32.896	32.917	32.939	32.961	32.982	33.004	33.026	33.047	33.069
532.4	33.090	33.112	33.134	33.155	33.177	33.199	33.221	33.242	33.264	33.286
532.5	33.307	33.329	33.351	33.373	33.395	33.416	33.438	33.460	33.482	33.504
532.6	33.525	33.547	33.569	33.591	33.613	33.635	33.657	33.679	33.700	33.722
532.7	33.744	33.766	33.788	33.810	33.832	33.854	33.876	33.898	33.920	33.942
532.8	33.964	33.986	34.008	34.030	34.052	34.074	34.096	34.119	34.141	34.163
532.9	34.185	34.207	34.229	34.251	34.273	34.296	34.318	34.340	34.362	34.384
533.0	34.407	34.429	34.451	34.473	34.495	34.518	34.540	34.562	34.585	34.607
533.1	34.629	34.651	34.674	34.696	34.718	34.741	34.763	34.786	34.808	34.830
533.2	34.853	34.875	34.898	34.920	34.942	34.965	34.987	35.010	35.032	35.055
533.3	35.077	35.100	35.122	35.145	35.168	35.190	35.213	35.235	35.258	35.280
533.4	35.303	35.326	35.348	35.371	35.394	35.416	35.439	35.462	35.484	35.507
533.5	35.530	35.552	35.575	35.598	35.621	35.643	35.666	35.689	35.712	35.735
533.6	35.757	35.780	35.803	35.826	35.849	35.872	35.895	35.917	35.940	35.963
533.7	35.986	36.009	36.032	36.055	36.078	36.101	36.124	36.147	36.170	36.193
533.8	36.216	36.239	36.262	36.285	36.308	36.331	36.354	36.377	36.400	36.424
533.9	36.447	36.470	36.493	36.516	36.539	36.562	36.586	36.609	36.632	36.655
534.0	36.679	36.702	36.725	36.748	36.772	36.795	36.818	36.841	36.865	36.888
534.1	36.911	36.935	36.958	36.981	37.005	37.028	37.052	37.075	37.098	37.122
534.2	37.145	37.169	37.192	37.216	37.239	37.263	37.286	37.310	37.333	37.357
534.3	37.380	37.404	37.428	37.451	37.475	37.498	37.522	37.546	37.569	37.593
534.4	37.617	37.640	37.664	37.688	37.711	37.735	37.759	37.783	37.806	37.830
534.5	37.854	37.878	37.901	37.925	37.949	37.973	37.997	38.021	38.045	38.068
534.6	38.092	38.116	38.140	38.164	38.188	38.212	38.236	38.260	38.284	38.308
534.7	38.332	38.356	38.380	38.404	38.428	38.452	38.476	38.500	38.524	38.548
534.8	38.572	38.597	38.621	38.645	38.669	38.693	38.717	38.742	38.766	38.790
534.9	38.814	38.838	38.863	38.887	38.911	38.935	38.960	38.984	39.008	39.033
535.0	39.057	39.081	39.106	39.130	39.154	39.179	39.203	39.228	39.252	39.277
535.1	39.301	39.325	39.350	39.374	39.399	39.423	39.448	39.472	39.497	39.522
535.2	39.546	39.571	39.595	39.620	39.645	39.669	39.694	39.718	39.743	39.768
535.3	39.793	39.817	39.842	39.867	39.891	39.916	39.941	39.966	39.990	40.015
535.4	40.040	40.065	40.090	40.115	40.139	40.164	40.189	40.214	40.239	40.264
535.5	40.289	40.314	40.339	40.364	40.389	40.414	40.439	40.464	40.489	40.514
535.6	40.539	40.564	40.589	40.614	40.639	40.664	40.689	40.714	40.739	40.765
535.7	40.790	40.815	40.840	40.865	40.890	40.916	40.941	40.966	40.991	41.017
535.8	41.042	41.067	41.093	41.118	41.143	41.169	41.194	41.219	41.245	41.270
535.9	41.295	41.321	41.346	41.372	41.397	41.423	41.448	41.473	41.499	41.524
ELEV	0.00	0.01	0.02	0.03	0.04	0.05	0.06	0.07	0.08	0.09

TABLE 7-2 (Continued)

BELTON LAKE - ELEVATION CAPACITY TABLE

ELEVATIONS IN FEET-NGVD, CAPACITIES IN THOUSAND ACRE-FEET

ELEV	0.00	0.01	0.02	0.03	0.04	0.05	0.06	0.07	0.08	0.09
536.0	41.550	41.576	41.601	41.627	41.652	41.678	41.703	41.729	41.755	41.780
536.1	41.806	41.831	41.857	41.883	41.908	41.934	41.960	41.985	42.011	42.037
536.2	42.063	42.088	42.114	42.140	42.166	42.192	42.217	42.243	42.269	42.295
536.3	42.321	42.347	42.372	42.398	42.424	42.450	42.476	42.502	42.528	42.554
536.4	42.580	42.606	42.632	42.658	42.684	42.710	42.736	42.762	42.788	42.814
536.5	42.840	42.866	42.892	42.919	42.945	42.971	42.997	43.023	43.049	43.076
536.6	43.102	43.128	43.154	43.180	43.207	43.233	43.259	43.285	43.312	43.338
536.7	43.364	43.391	43.417	43.443	43.470	43.496	43.522	43.549	43.575	43.602
536.8	43.628	43.655	43.681	43.707	43.734	43.760	43.787	43.813	43.840	43.866
536.9	43.893	43.920	43.946	43.973	43.999	44.026	44.052	44.079	44.106	44.132
537.0	44.159	44.186	44.212	44.239	44.266	44.292	44.319	44.346	44.373	44.399
537.1	44.426	44.453	44.480	44.506	44.533	44.560	44.587	44.614	44.641	44.667
537.2	44.694	44.721	44.748	44.775	44.802	44.829	44.856	44.883	44.909	44.936
537.3	44.963	44.990	45.017	45.044	45.071	45.098	45.125	45.152	45.179	45.206
537.4	45.234	45.261	45.288	45.315	45.342	45.369	45.396	45.423	45.450	45.478
537.5	45.505	45.532	45.559	45.586	45.614	45.641	45.668	45.695	45.722	45.750
537.6	45.777	45.804	45.832	45.859	45.886	45.913	45.941	45.968	45.995	46.023
537.7	46.050	46.078	46.105	46.132	46.160	46.187	46.215	46.242	46.270	46.297
537.8	46.324	46.352	46.379	46.407	46.434	46.462	46.489	46.517	46.545	46.572
537.9	46.600	46.627	46.655	46.682	46.710	46.738	46.765	46.793	46.821	46.848
538.0	46.876	46.904	46.931	46.959	46.987	47.015	47.042	47.070	47.098	47.126
538.1	47.153	47.181	47.209	47.237	47.265	47.292	47.320	47.348	47.376	47.404
538.2	47.432	47.460	47.487	47.515	47.543	47.571	47.599	47.627	47.655	47.683
538.3	47.711	47.739	47.767	47.795	47.823	47.851	47.879	47.907	47.935	47.964
538.4	47.992	48.020	48.048	48.076	48.104	48.132	48.160	48.189	48.217	48.245
538.5	48.273	48.301	48.330	48.358	48.386	48.414	48.443	48.471	48.499	48.527
538.6	48.556	48.584	48.612	48.641	48.669	48.697	48.726	48.754	48.783	48.811
538.7	48.839	48.868	48.896	48.925	48.953	48.982	49.010	49.038	49.067	49.095
538.8	49.124	49.153	49.181	49.210	49.238	49.267	49.295	49.324	49.352	49.381
538.9	49.410	49.438	49.467	49.496	49.524	49.553	49.582	49.610	49.639	49.668
539.0	49.696	49.725	49.754	49.783	49.812	49.840	49.869	49.898	49.927	49.956
539.1	49.984	50.013	50.042	50.071	50.100	50.129	50.158	50.187	50.215	50.244
539.2	50.273	50.302	50.331	50.360	50.389	50.418	50.447	50.476	50.505	50.534
539.3	50.564	50.593	50.622	50.651	50.680	50.709	50.738	50.767	50.796	50.826
539.4	50.855	50.884	50.913	50.942	50.972	51.001	51.030	51.059	51.089	51.118
539.5	51.147	51.177	51.206	51.235	51.265	51.294	51.323	51.353	51.382	51.411
539.6	51.441	51.470	51.500	51.529	51.559	51.588	51.618	51.647	51.676	51.706
539.7	51.736	51.765	51.795	51.824	51.854	51.883	51.913	51.943	51.972	52.002
539.8	52.031	52.061	52.091	52.120	52.150	52.180	52.209	52.239	52.269	52.299
539.9	52.328	52.358	52.388	52.418	52.447	52.477	52.507	52.537	52.567	52.597
540.0	52.626	52.656	52.686	52.716	52.746	52.776	52.806	52.836	52.866	52.896
540.1	52.926	52.956	52.986	53.016	53.046	53.076	53.106	53.136	53.166	53.196
540.2	53.226	53.256	53.286	53.317	53.347	53.377	53.407	53.437	53.467	53.498
540.3	53.528	53.558	53.588	53.618	53.649	53.679	53.709	53.739	53.770	53.800
540.4	53.830	53.861	53.891	53.921	53.952	53.982	54.013	54.043	54.073	54.104
540.5	54.134	54.165	54.195	54.226	54.256	54.287	54.317	54.348	54.378	54.409
540.6	54.439	54.470	54.500	54.531	54.562	54.592	54.623	54.653	54.684	54.715
540.7	54.745	54.776	54.807	54.837	54.868	54.899	54.930	54.960	54.991	55.022
540.8	55.053	55.083	55.114	55.145	55.176	55.207	55.237	55.268	55.299	55.330
540.9	55.361	55.392	55.423	55.454	55.485	55.516	55.547	55.578	55.609	55.639
ELEV	0.00	0.01	0.02	0.03	0.04	0.05	0.06	0.07	0.08	0.09

TABLE 7-2 (Continued)

BELTON LAKE - ELEVATION CAPACITY TABLE

ELEVATIONS IN FEET-NGVD, CAPACITIES IN THOUSAND ACRE-FEET

ELEV	0.00	0.01	0.02	0.03	0.04	0.05	0.06	0.07	0.08	0.09
541.0	55.671	55.702	55.733	55.764	55.795	55.826	55.857	55.888	55.919	55.950
541.1	55.981	56.012	56.043	56.075	56.106	56.137	56.168	56.199	56.231	56.262
541.2	56.293	56.324	56.356	56.387	56.418	56.450	56.481	56.512	56.544	56.575
541.3	56.606	56.638	56.669	56.700	56.732	56.763	56.795	56.826	56.858	56.889
541.4	56.921	56.952	56.984	57.015	57.047	57.078	57.110	57.141	57.173	57.205
541.5	57.236	57.268	57.299	57.331	57.363	57.394	57.426	57.458	57.489	57.521
541.6	57.553	57.585	57.616	57.648	57.680	57.712	57.744	57.775	57.807	57.839
541.7	57.871	57.903	57.935	57.966	57.998	58.030	58.062	58.094	58.126	58.158
541.8	58.190	58.222	58.254	58.286	58.318	58.350	58.382	58.414	58.446	58.478
541.9	58.510	58.543	58.575	58.607	58.639	58.671	58.703	58.735	58.768	58.800
542.0	58.832	58.864	58.896	58.929	58.961	58.993	59.026	59.058	59.090	59.122
542.1	59.155	59.187	59.220	59.252	59.284	59.317	59.349	59.382	59.414	59.446
542.2	59.479	59.511	59.544	59.576	59.609	59.641	59.674	59.707	59.739	59.772
542.3	59.804	59.837	59.869	59.902	59.935	59.967	60.000	60.033	60.065	60.098
542.4	60.131	60.164	60.196	60.229	60.262	60.295	60.327	60.360	60.393	60.426
542.5	60.459	60.492	60.524	60.557	60.590	60.623	60.656	60.689	60.722	60.755
542.6	60.788	60.821	60.854	60.887	60.920	60.953	60.986	61.019	61.052	61.085
542.7	61.118	61.151	61.184	61.218	61.251	61.284	61.317	61.350	61.383	61.417
542.8	61.450	61.483	61.516	61.550	61.583	61.616	61.650	61.683	61.716	61.749
542.9	61.783	61.816	61.850	61.883	61.916	61.950	61.983	62.017	62.050	62.084
543.0	62.117	62.150	62.184	62.217	62.251	62.285	62.318	62.352	62.385	62.419
543.1	62.452	62.486	62.520	62.553	62.587	62.620	62.654	62.688	62.721	62.755
543.2	62.789	62.822	62.856	62.890	62.924	62.957	62.991	63.025	63.059	63.092
543.3	63.126	63.160	63.194	63.228	63.262	63.295	63.329	63.363	63.397	63.431
543.4	63.465	63.499	63.533	63.567	63.600	63.634	63.668	63.702	63.736	63.770
543.5	63.804	63.838	63.872	63.906	63.941	63.975	64.009	64.043	64.077	64.111
543.6	64.145	64.179	64.213	64.247	64.282	64.316	64.350	64.384	64.418	64.453
543.7	64.487	64.521	64.555	64.590	64.624	64.658	64.692	64.727	64.761	64.795
543.8	64.830	64.864	64.898	64.933	64.967	65.001	65.036	65.070	65.105	65.139
543.9	65.174	65.208	65.242	65.277	65.311	65.346	65.380	65.415	65.449	65.484
544.0	65.519	65.553	65.588	65.622	65.657	65.691	65.726	65.761	65.795	65.830
544.1	65.865	65.899	65.934	65.969	66.003	66.038	66.073	66.108	66.142	66.177
544.2	66.212	66.247	66.281	66.316	66.351	66.386	66.421	66.456	66.491	66.525
544.3	66.560	66.595	66.630	66.665	66.700	66.735	66.770	66.805	66.840	66.875
544.4	66.910	66.945	66.980	67.015	67.050	67.085	67.120	67.155	67.191	67.226
544.5	67.261	67.296	67.331	67.366	67.402	67.437	67.472	67.507	67.542	67.578
544.6	67.613	67.648	67.683	67.719	67.754	67.789	67.825	67.860	67.895	67.931
544.7	67.966	68.002	68.037	68.072	68.108	68.143	68.179	68.214	68.250	68.285
544.8	68.321	68.356	68.392	68.427	68.463	68.498	68.534	68.569	68.605	68.641
544.9	68.676	68.712	68.747	68.783	68.819	68.854	68.890	68.926	68.962	68.997
545.0	69.033	69.069	69.105	69.140	69.176	69.212	69.248	69.284	69.319	69.355
545.1	69.391	69.427	69.463	69.499	69.535	69.571	69.607	69.643	69.679	69.715
545.2	69.751	69.787	69.823	69.859	69.895	69.931	69.967	70.003	70.039	70.075
545.3	70.111	70.148	70.184	70.220	70.256	70.292	70.329	70.365	70.401	70.437
545.4	70.474	70.510	70.546	70.582	70.619	70.655	70.692	70.728	70.764	70.801
545.5	70.837	70.874	70.910	70.946	70.983	71.019	71.056	71.092	71.129	71.165
545.6	71.202	71.239	71.275	71.312	71.348	71.385	71.422	71.458	71.495	71.532
545.7	71.568	71.605	71.642	71.679	71.715	71.752	71.789	71.826	71.862	71.899
545.8	71.936	71.973	72.010	72.047	72.083	72.120	72.157	72.194	72.231	72.268
545.9	72.305	72.342	72.379	72.416	72.453	72.490	72.527	72.564	72.601	72.638
ELEV	0.00	0.01	0.02	0.03	0.04	0.05	0.06	0.07	0.08	0.09

TABLE 7-2 (Continued)

BELTON LAKE - ELEVATION CAPACITY TABLE

ELEVATIONS IN FEET-NGVD, CAPACITIES IN THOUSAND ACRE-FEET

ELEV	0.00	0.01	0.02	0.03	0.04	0.05	0.06	0.07	0.08	0.09
546.0	72.675	72.713	72.750	72.787	72.824	72.861	72.898	72.936	72.973	73.010
546.1	73.047	73.085	73.122	73.159	73.196	73.234	73.271	73.308	73.346	73.383
546.2	73.421	73.458	73.495	73.533	73.570	73.608	73.645	73.683	73.720	73.758
546.3	73.795	73.833	73.870	73.908	73.946	73.983	74.021	74.058	74.096	74.134
546.4	74.171	74.209	74.247	74.285	74.322	74.360	74.398	74.436	74.473	74.511
546.5	74.549	74.587	74.625	74.663	74.700	74.738	74.776	74.814	74.852	74.890
546.6	74.928	74.966	75.004	75.042	75.080	75.118	75.156	75.194	75.232	75.270
546.7	75.308	75.347	75.385	75.423	75.461	75.499	75.537	75.576	75.614	75.652
546.8	75.690	75.729	75.767	75.805	75.844	75.882	75.920	75.959	75.997	76.035
546.9	76.074	76.112	76.151	76.189	76.227	76.266	76.304	76.343	76.381	76.420
547.0	76.459	76.497	76.536	76.574	76.613	76.651	76.690	76.729	76.767	76.806
547.1	76.845	76.883	76.922	76.961	77.000	77.038	77.077	77.116	77.155	77.194
547.2	77.233	77.271	77.310	77.349	77.388	77.427	77.466	77.505	77.544	77.583
547.3	77.622	77.661	77.700	77.739	77.778	77.817	77.856	77.895	77.934	77.974
547.4	78.013	78.052	78.091	78.130	78.169	78.209	78.248	78.287	78.326	78.366
547.5	78.405	78.444	78.484	78.523	78.562	78.602	78.641	78.681	78.720	78.759
547.6	78.799	78.838	78.878	78.917	78.957	78.996	79.036	79.075	79.115	79.155
547.7	79.194	79.234	79.273	79.313	79.353	79.393	79.432	79.472	79.512	79.551
547.8	79.591	79.631	79.671	79.711	79.750	79.790	79.830	79.870	79.910	79.950
547.9	79.990	80.029	80.069	80.109	80.149	80.189	80.229	80.269	80.309	80.349
548.0	80.390	80.430	80.470	80.510	80.550	80.590	80.630	80.670	80.711	80.751
548.1	80.791	80.831	80.871	80.912	80.952	80.992	81.033	81.073	81.113	81.154
548.2	81.194	81.234	81.275	81.315	81.356	81.396	81.437	81.477	81.518	81.558
548.3	81.599	81.639	81.680	81.720	81.761	81.801	81.842	81.883	81.923	81.964
548.4	82.005	82.045	82.086	82.127	82.167	82.208	82.249	82.290	82.331	82.371
548.5	82.412	82.453	82.494	82.535	82.576	82.617	82.658	82.699	82.739	82.780
548.6	82.821	82.862	82.903	82.944	82.986	83.027	83.068	83.109	83.150	83.191
548.7	83.232	83.273	83.314	83.356	83.397	83.438	83.479	83.521	83.562	83.603
548.8	83.644	83.686	83.727	83.768	83.810	83.851	83.892	83.934	83.975	84.017
548.9	84.058	84.100	84.141	84.183	84.224	84.266	84.307	84.349	84.390	84.432
549.0	84.474	84.515	84.557	84.598	84.640	84.682	84.723	84.765	84.807	84.849
549.1	84.890	84.932	84.974	85.016	85.057	85.099	85.141	85.183	85.225	85.267
549.2	85.309	85.351	85.392	85.434	85.476	85.518	85.560	85.602	85.644	85.686
549.3	85.728	85.770	85.812	85.855	85.897	85.939	85.981	86.023	86.065	86.107
549.4	86.150	86.192	86.234	86.276	86.318	86.361	86.403	86.445	86.488	86.530
549.5	86.572	86.615	86.657	86.699	86.742	86.784	86.827	86.869	86.911	86.954
549.6	86.996	87.039	87.081	87.124	87.166	87.209	87.252	87.294	87.337	87.379
549.7	87.422	87.465	87.507	87.550	87.593	87.635	87.678	87.721	87.763	87.806
549.8	87.849	87.892	87.935	87.977	88.020	88.063	88.106	88.149	88.192	88.235
549.9	88.278	88.320	88.363	88.406	88.449	88.492	88.535	88.578	88.621	88.664
550.0	88.707	88.751	88.794	88.837	88.880	88.923	88.966	89.009	89.053	89.096
550.1	89.139	89.182	89.225	89.269	89.312	89.355	89.398	89.442	89.485	89.528
550.2	89.572	89.615	89.658	89.702	89.745	89.789	89.832	89.875	89.919	89.962
550.3	90.006	90.049	90.093	90.136	90.180	90.223	90.267	90.311	90.354	90.398
550.4	90.441	90.485	90.529	90.572	90.616	90.660	90.703	90.747	90.791	90.835
550.5	90.878	90.922	90.966	91.010	91.054	91.097	91.141	91.185	91.229	91.273
550.6	91.317	91.361	91.405	91.448	91.492	91.536	91.580	91.624	91.668	91.712
550.7	91.756	91.800	91.845	91.889	91.933	91.977	92.021	92.065	92.109	92.153
550.8	92.198	92.242	92.286	92.330	92.374	92.419	92.463	92.507	92.551	92.596
550.9	92.640	92.684	92.729	92.773	92.817	92.862	92.906	92.951	92.995	93.040
ELEV	0.00	0.01	0.02	0.03	0.04	0.05	0.06	0.07	0.08	0.09

TABLE 7-2 (Continued)

BELTON LAKE - ELEVATION CAPACITY TABLE

ELEVATIONS IN FEET-NGVD, CAPACITIES IN THOUSAND ACRE-FEET

ELEV	0.00	0.01	0.02	0.03	0.04	0.05	0.06	0.07	0.08	0.09
551.0	93.084	93.128	93.173	93.217	93.262	93.306	93.351	93.396	93.440	93.485
551.1	93.529	93.574	93.619	93.663	93.708	93.752	93.797	93.842	93.886	93.931
551.2	93.976	94.021	94.065	94.110	94.155	94.200	94.245	94.289	94.334	94.379
551.3	94.424	94.469	94.514	94.559	94.604	94.648	94.693	94.738	94.783	94.828
551.4	94.873	94.918	94.963	95.008	95.053	95.099	95.144	95.189	95.234	95.279
551.5	95.324	95.369	95.414	95.460	95.505	95.550	95.595	95.640	95.686	95.731
551.6	95.776	95.822	95.867	95.912	95.957	96.003	96.048	96.094	96.139	96.184
551.7	96.230	96.275	96.321	96.366	96.412	96.457	96.503	96.548	96.594	96.639
551.8	96.685	96.730	96.776	96.821	96.867	96.913	96.958	97.004	97.050	97.095
551.9	97.141	97.187	97.232	97.278	97.324	97.370	97.415	97.461	97.507	97.553
552.0	97.599	97.644	97.690	97.736	97.782	97.828	97.874	97.920	97.966	98.011
552.1	98.057	98.103	98.149	98.195	98.241	98.287	98.333	98.379	98.425	98.472
552.2	98.518	98.564	98.610	98.656	98.702	98.748	98.794	98.841	98.887	98.933
552.3	98.979	99.025	99.072	99.118	99.164	99.210	99.257	99.303	99.349	99.396
552.4	99.442	99.488	99.535	99.581	99.627	99.674	99.720	99.767	99.813	99.859
552.5	99.906	99.952	99.999	100.045	100.092	100.138	100.185	100.231	100.278	100.325
552.6	100.371	100.418	100.464	100.511	100.558	100.604	100.651	100.698	100.744	100.791
552.7	100.838	100.884	100.931	100.978	101.025	101.071	101.118	101.165	101.212	101.259
552.8	101.306	101.352	101.399	101.446	101.493	101.540	101.587	101.634	101.681	101.728
552.9	101.775	101.822	101.869	101.916	101.963	102.010	102.057	102.104	102.151	102.198
553.0	102.245	102.292	102.339	102.386	102.433	102.481	102.528	102.575	102.622	102.669
553.1	102.717	102.764	102.811	102.858	102.906	102.953	103.000	103.047	103.095	103.142
553.2	103.189	103.237	103.284	103.331	103.379	103.426	103.473	103.521	103.568	103.616
553.3	103.663	103.711	103.758	103.806	103.853	103.900	103.948	103.995	104.043	104.091
553.4	104.138	104.186	104.233	104.281	104.328	104.376	104.424	104.471	104.519	104.567
553.5	104.614	104.662	104.710	104.757	104.805	104.853	104.900	104.948	104.996	105.044
553.6	105.092	105.139	105.187	105.235	105.283	105.331	105.378	105.426	105.474	105.522
553.7	105.570	105.618	105.666	105.714	105.762	105.810	105.858	105.905	105.953	106.001
553.8	106.049	106.097	106.146	106.194	106.242	106.290	106.338	106.386	106.434	106.482
553.9	106.530	106.578	106.626	106.675	106.723	106.771	106.819	106.867	106.916	106.964
554.0	107.012	107.060	107.108	107.157	107.205	107.253	107.302	107.350	107.398	107.447
554.1	107.495	107.543	107.592	107.640	107.688	107.737	107.785	107.834	107.882	107.930
554.2	107.979	108.027	108.076	108.124	108.173	108.221	108.270	108.318	108.367	108.415
554.3	108.464	108.513	108.561	108.610	108.658	108.707	108.756	108.804	108.853	108.901
554.4	108.950	108.999	109.048	109.096	109.145	109.194	109.242	109.291	109.340	109.389
554.5	109.437	109.486	109.535	109.584	109.633	109.681	109.730	109.779	109.828	109.877
554.6	109.926	109.975	110.023	110.072	110.121	110.170	110.219	110.268	110.317	110.366
554.7	110.415	110.464	110.513	110.562	110.611	110.660	110.709	110.758	110.807	110.856
554.8	110.905	110.955	111.004	111.053	111.102	111.151	111.200	111.249	111.299	111.348
554.9	111.397	111.446	111.495	111.545	111.594	111.643	111.692	111.742	111.791	111.840
555.0	111.890	111.939	111.988	112.037	112.087	112.136	112.186	112.235	112.284	112.334
555.1	112.383	112.433	112.482	112.531	112.581	112.630	112.680	112.729	112.779	112.828
555.2	112.878	112.927	112.977	113.027	113.076	113.126	113.175	113.225	113.274	113.324
555.3	113.374	113.423	113.473	113.523	113.572	113.622	113.672	113.721	113.771	113.821
555.4	113.871	113.920	113.970	114.020	114.070	114.119	114.169	114.219	114.269	114.319
555.5	114.369	114.418	114.468	114.518	114.568	114.618	114.668	114.718	114.768	114.818
555.6	114.868	114.918	114.968	115.018	115.068	115.118	115.168	115.218	115.268	115.318
555.7	115.368	115.418	115.468	115.518	115.568	115.618	115.669	115.719	115.769	115.819
555.8	115.869	115.919	115.970	116.020	116.070	116.120	116.170	116.221	116.271	116.321
555.9	116.372	116.422	116.472	116.522	116.573	116.623	116.673	116.724	116.774	116.825
ELEV	0.00	0.01	0.02	0.03	0.04	0.05	0.06	0.07	0.08	0.09

TABLE 7-2 (Continued)

BELTON LAKE - ELEVATION CAPACITY TABLE

ELEVATIONS IN FEET-NGVD, CAPACITIES IN THOUSAND ACRE-FEET

ELEV	0.00	0.01	0.02	0.03	0.04	0.05	0.06	0.07	0.08	0.09
556.0	116.875	116.925	116.976	117.026	117.077	117.127	117.178	117.228	117.279	117.329
556.1	117.380	117.430	117.481	117.531	117.582	117.632	117.683	117.733	117.784	117.834
556.2	117.885	117.936	117.986	118.037	118.088	118.138	118.189	118.239	118.290	118.341
556.3	118.392	118.442	118.493	118.544	118.594	118.645	118.696	118.747	118.797	118.848
556.4	118.899	118.950	119.001	119.052	119.102	119.153	119.204	119.255	119.306	119.357
556.5	119.408	119.459	119.509	119.560	119.611	119.662	119.713	119.764	119.815	119.866
556.6	119.917	119.968	120.019	120.070	120.121	120.172	120.223	120.274	120.326	120.377
556.7	120.428	120.479	120.530	120.581	120.632	120.683	120.735	120.786	120.837	120.888
556.8	120.939	120.991	121.042	121.093	121.144	121.195	121.247	121.298	121.349	121.401
556.9	121.452	121.503	121.555	121.606	121.657	121.709	121.760	121.811	121.863	121.914
557.0	121.965	122.017	122.068	122.120	122.171	122.223	122.274	122.326	122.377	122.429
557.1	122.480	122.532	122.583	122.635	122.686	122.738	122.790	122.841	122.893	122.945
557.2	122.996	123.048	123.100	123.151	123.203	123.255	123.306	123.358	123.410	123.462
557.3	123.513	123.565	123.617	123.669	123.721	123.772	123.824	123.876	123.928	123.980
557.4	124.032	124.084	124.136	124.188	124.240	124.292	124.343	124.395	124.447	124.499
557.5	124.551	124.604	124.656	124.708	124.760	124.812	124.864	124.916	124.968	125.020
557.6	125.072	125.125	125.177	125.229	125.281	125.333	125.386	125.438	125.490	125.542
557.7	125.595	125.647	125.699	125.751	125.804	125.856	125.908	125.961	126.013	126.066
557.8	126.118	126.170	126.223	126.275	126.328	126.380	126.433	126.485	126.538	126.590
557.9	126.643	126.695	126.748	126.800	126.853	126.905	126.958	127.011	127.063	127.116
558.0	127.169	127.221	127.274	127.326	127.379	127.432	127.485	127.537	127.590	127.643
558.1	127.696	127.748	127.801	127.854	127.907	127.960	128.012	128.065	128.118	128.171
558.2	128.224	128.277	128.330	128.383	128.436	128.488	128.541	128.594	128.647	128.700
558.3	128.753	128.806	128.859	128.912	128.965	129.018	129.072	129.125	129.178	129.231
558.4	129.284	129.337	129.390	129.443	129.497	129.550	129.603	129.656	129.709	129.763
558.5	129.816	129.869	129.922	129.976	130.029	130.082	130.135	130.189	130.242	130.295
558.6	130.349	130.402	130.455	130.509	130.562	130.616	130.669	130.723	130.776	130.829
558.7	130.883	130.936	130.990	131.043	131.097	131.150	131.204	131.258	131.311	131.365
558.8	131.418	131.472	131.525	131.579	131.633	131.686	131.740	131.794	131.847	131.901
558.9	131.955	132.008	132.062	132.116	132.170	132.223	132.277	132.331	132.385	132.439
559.0	132.492	132.546	132.600	132.654	132.708	132.762	132.816	132.870	132.924	132.977
559.1	133.031	133.085	133.139	133.193	133.247	133.301	133.355	133.409	133.463	133.518
559.2	133.572	133.626	133.680	133.734	133.788	133.842	133.896	133.951	134.005	134.059
559.3	134.113	134.167	134.222	134.276	134.330	134.384	134.439	134.493	134.547	134.601
559.4	134.656	134.710	134.764	134.819	134.873	134.928	134.982	135.036	135.091	135.145
559.5	135.200	135.254	135.309	135.363	135.418	135.472	135.527	135.581	135.636	135.690
559.6	135.745	135.800	135.854	135.909	135.963	136.018	136.073	136.127	136.182	136.237
559.7	136.291	136.346	136.401	136.456	136.510	136.565	136.620	136.675	136.730	136.784
559.8	136.839	136.894	136.949	137.004	137.059	137.114	137.168	137.223	137.278	137.333
559.9	137.388	137.443	137.498	137.553	137.608	137.663	137.718	137.773	137.828	137.883
560.0	137.939	137.994	138.049	138.104	138.159	138.214	138.269	138.324	138.380	138.435
560.1	138.490	138.545	138.601	138.656	138.711	138.766	138.822	138.877	138.932	138.988
560.2	139.043	139.099	139.154	139.209	139.265	139.320	139.376	139.431	139.487	139.542
560.3	139.598	139.653	139.709	139.764	139.820	139.876	139.931	139.987	140.042	140.098
560.4	140.154	140.209	140.265	140.321	140.377	140.432	140.488	140.544	140.600	140.655
560.5	140.711	140.767	140.823	140.879	140.935	140.991	141.046	141.102	141.158	141.214
560.6	141.270	141.326	141.382	141.438	141.494	141.550	141.606	141.662	141.718	141.774
560.7	141.831	141.887	141.943	141.999	142.055	142.111	142.167	142.222	142.280	142.336
560.8	142.392	142.449	142.505	142.561	142.618	142.674	142.730	142.787	142.843	142.899
560.9	142.956	143.012	143.069	143.125	143.181	143.238	143.294	143.351	143.407	143.464
ELEV	0.00	0.01	0.02	0.03	0.04	0.05	0.06	0.07	0.08	0.09

TABLE 7-2 (Continued)

BELTON LAKE - ELEVATION CAPACITY TABLE

ELEVATIONS IN FEET-NGVD, CAPACITIES IN THOUSAND ACRE-FEET

ELEV	0.00	0.01	0.02	0.03	0.04	0.05	0.06	0.07	0.08	0.09
561.0	143.520	143.577	143.634	143.690	143.747	143.803	143.860	143.917	143.973	144.030
561.1	144.087	144.143	144.200	144.257	144.314	144.370	144.427	144.484	144.541	144.598
561.2	144.655	144.711	144.768	144.825	144.882	144.939	144.996	145.053	145.110	145.167
561.3	145.224	145.281	145.338	145.395	145.452	145.509	145.566	145.623	145.680	145.737
561.4	145.795	145.852	145.909	145.966	146.023	146.081	146.138	146.195	146.252	146.310
561.5	146.367	146.424	146.482	146.539	146.596	146.654	146.711	146.768	146.826	146.883
561.6	146.941	146.998	147.056	147.113	147.171	147.228	147.286	147.343	147.401	147.458
561.7	147.516	147.574	147.631	147.689	147.747	147.804	147.862	147.920	147.977	148.035
561.8	148.093	148.151	148.208	148.266	148.324	148.382	148.440	148.497	148.555	148.613
561.9	148.671	148.729	148.787	148.845	148.903	148.961	149.019	149.077	149.135	149.193
562.0	149.251	149.309	149.367	149.425	149.483	149.542	149.600	149.658	149.716	149.774
562.1	149.832	149.891	149.949	150.007	150.066	150.124	150.182	150.240	150.299	150.357
562.2	150.416	150.474	150.532	150.591	150.649	150.708	150.766	150.825	150.883	150.942
562.3	151.001	151.059	151.118	151.176	151.235	151.294	151.352	151.411	151.470	151.528
562.4	151.587	151.646	151.705	151.763	151.822	151.881	151.940	151.999	152.058	152.116
562.5	152.175	152.234	152.293	152.352	152.411	152.470	152.529	152.588	152.647	152.706
562.6	152.765	152.824	152.884	152.943	153.002	153.061	153.120	153.179	153.239	153.298
562.7	153.357	153.416	153.476	153.535	153.594	153.654	153.713	153.772	153.832	153.891
562.8	153.951	154.010	154.069	154.129	154.188	154.248	154.307	154.367	154.426	154.486
562.9	154.546	154.605	154.665	154.725	154.784	154.844	154.904	154.963	155.023	155.083
563.0	155.143	155.202	155.262	155.322	155.382	155.442	155.501	155.561	155.621	155.681
563.1	155.741	155.801	155.861	155.921	155.981	156.041	156.101	156.161	156.221	156.281
563.2	156.341	156.401	156.461	156.521	156.582	156.642	156.702	156.762	156.822	156.883
563.3	156.943	157.003	157.063	157.124	157.184	157.244	157.305	157.365	157.425	157.486
563.4	157.546	157.607	157.667	157.727	157.788	157.848	157.909	157.969	158.030	158.091
563.5	158.151	158.212	158.272	158.333	158.394	158.454	158.515	158.576	158.636	158.697
563.6	158.758	158.818	158.879	158.940	159.001	159.062	159.122	159.183	159.244	159.305
563.7	159.366	159.427	159.488	159.549	159.610	159.671	159.732	159.793	159.854	159.915
563.8	159.976	160.037	160.098	160.159	160.220	160.281	160.342	160.403	160.465	160.526
563.9	160.587	160.648	160.709	160.771	160.832	160.893	160.955	161.016	161.077	161.139
564.0	161.200	161.261	161.323	161.384	161.446	161.507	161.569	161.630	161.691	161.753
564.1	161.814	161.876	161.937	161.999	162.061	162.122	162.184	162.245	162.307	162.369
564.2	162.430	162.492	162.553	162.615	162.677	162.739	162.800	162.862	162.924	162.985
564.3	163.047	163.109	163.171	163.233	163.294	163.356	163.418	163.480	163.542	163.604
564.4	163.666	163.727	163.789	163.851	163.913	163.975	164.037	164.099	164.161	164.223
564.5	164.285	164.347	164.409	164.471	164.533	164.595	164.658	164.720	164.782	164.844
564.6	164.906	164.968	165.030	165.093	165.155	165.217	165.279	165.341	165.404	165.466
564.7	165.528	165.590	165.653	165.715	165.777	165.840	165.902	165.964	166.027	166.089
564.8	166.152	166.214	166.277	166.339	166.401	166.464	166.526	166.589	166.651	166.714
564.9	166.776	166.839	166.902	166.964	167.027	167.089	167.152	167.215	167.277	167.340
565.0	167.402	167.465	167.528	167.591	167.653	167.716	167.779	167.842	167.904	167.967
565.1	168.030	168.093	168.155	168.218	168.281	168.344	168.407	168.470	168.533	168.596
565.2	168.658	168.721	168.784	168.847	168.910	168.973	169.036	169.099	169.162	169.225
565.3	169.288	169.352	169.415	169.478	169.541	169.604	169.667	169.730	169.793	169.857
565.4	169.920	169.983	170.046	170.109	170.173	170.236	170.299	170.362	170.426	170.489
565.5	170.552	170.616	170.679	170.742	170.806	170.869	170.932	170.996	171.059	171.123
565.6	171.186	171.250	171.313	171.376	171.440	171.504	171.567	171.631	171.694	171.758
565.7	171.821	171.885	171.948	172.012	172.076	172.139	172.203	172.267	172.330	172.394
565.8	172.458	172.521	172.585	172.649	172.713	172.776	172.840	172.904	172.968	173.032
565.9	173.095	173.159	173.223	173.287	173.351	173.415	173.479	173.543	173.607	173.671
ELEV	0.00	0.01	0.02	0.03	0.04	0.05	0.06	0.07	0.08	0.09

TABLE 7-2 (Continued)

BELTON LAKE - ELEVATION CAPACITY TABLE

ELEVATIONS IN FEET-NGVD, CAPACITIES IN THOUSAND ACRE-FEET

ELEV	0.00	0.01	0.02	0.03	0.04	0.05	0.06	0.07	0.08	0.09
566.0	173.734	173.798	173.862	173.926	173.991	174.055	174.119	174.183	174.247	174.311
566.1	174.375	174.439	174.503	174.568	174.632	174.696	174.760	174.824	174.889	174.953
566.2	175.017	175.082	175.146	175.210	175.275	175.339	175.404	175.468	175.532	175.597
566.3	175.661	175.726	175.790	175.855	175.920	175.984	176.049	176.113	176.178	176.243
566.4	176.307	176.372	176.437	176.501	176.566	176.631	176.696	176.760	176.825	176.890
566.5	176.955	177.020	177.084	177.149	177.214	177.279	177.344	177.409	177.474	177.539
566.6	177.604	177.669	177.734	177.799	177.864	177.929	177.994	178.060	178.125	178.190
566.7	178.255	178.320	178.385	178.451	178.516	178.581	178.646	178.712	178.777	178.842
566.8	178.908	178.973	179.039	179.104	179.169	179.235	179.300	179.366	179.431	179.497
566.9	179.562	179.628	179.693	179.759	179.825	179.890	179.956	180.021	180.087	180.153
567.0	180.219	180.284	180.350	180.416	180.482	180.547	180.613	180.679	180.745	180.811
567.1	180.877	180.943	181.009	181.075	181.141	181.207	181.273	181.339	181.405	181.471
567.2	181.537	181.603	181.669	181.736	181.802	181.868	181.934	182.001	182.067	182.133
567.3	182.200	182.266	182.332	182.399	182.465	182.532	182.598	182.665	182.731	182.798
567.4	182.864	182.931	182.997	183.064	183.131	183.197	183.264	183.331	183.398	183.464
567.5	183.531	183.598	183.665	183.732	183.798	183.865	183.932	183.999	184.066	184.133
567.6	184.200	184.267	184.334	184.401	184.468	184.535	184.603	184.670	184.737	184.804
567.7	184.871	184.939	185.006	185.073	185.140	185.208	185.275	185.342	185.410	185.477
567.8	185.545	185.612	185.680	185.747	185.815	185.882	185.950	186.017	186.085	186.153
567.9	186.220	186.288	186.356	186.423	186.491	186.559	186.627	186.694	186.762	186.830
568.0	186.898	186.966	187.034	187.102	187.170	187.238	187.306	187.374	187.442	187.510
568.1	187.578	187.646	187.714	187.782	187.851	187.919	187.987	188.055	188.124	188.192
568.2	188.260	188.328	188.397	188.465	188.534	188.602	188.671	188.739	188.808	188.876
568.3	188.945	189.013	189.082	189.150	189.219	189.288	189.356	189.425	189.494	189.563
568.4	189.631	189.700	189.769	189.838	189.907	189.976	190.044	190.113	190.182	190.251
568.5	190.320	190.389	190.458	190.528	190.597	190.666	190.735	190.804	190.873	190.942
568.6	191.012	191.081	191.150	191.219	191.289	191.358	191.428	191.497	191.566	191.636
568.7	191.705	191.775	191.844	191.914	191.983	192.053	192.122	192.192	192.262	192.331
568.8	192.401	192.471	192.540	192.610	192.680	192.750	192.820	192.889	192.959	193.029
568.9	193.099	193.169	193.239	193.309	193.379	193.449	193.519	193.589	193.659	193.729
569.0	193.799	193.870	193.940	194.010	194.080	194.151	194.221	194.291	194.362	194.432
569.1	194.502	194.573	194.643	194.714	194.784	194.855	194.925	194.996	195.067	195.137
569.2	195.208	195.279	195.349	195.420	195.491	195.562	195.633	195.703	195.774	195.845
569.3	195.916	195.987	196.058	196.129	196.200	196.271	196.342	196.414	196.485	196.556
569.4	196.627	196.698	196.770	196.841	196.912	196.984	197.055	197.126	197.198	197.269
569.5	197.341	197.412	197.484	197.555	197.627	197.699	197.770	197.842	197.914	197.985
569.6	198.057	198.129	198.201	198.273	198.344	198.416	198.488	198.560	198.632	198.704
569.7	198.776	198.848	198.920	198.992	199.065	199.137	199.209	199.281	199.353	199.426
569.8	199.498	199.570	199.643	199.715	199.787	199.860	199.932	200.005	200.077	200.150
569.9	200.222	200.295	200.368	200.440	200.513	200.586	200.658	200.731	200.804	200.877
570.0	200.949	201.022	201.095	201.168	201.241	201.314	201.387	201.460	201.533	201.606
570.1	201.679	201.752	201.825	201.899	201.972	202.045	202.118	202.191	202.265	202.338
570.2	202.411	202.485	202.558	202.631	202.705	202.778	202.852	202.925	202.999	203.072
570.3	203.146	203.219	203.293	203.366	203.440	203.514	203.587	203.661	203.735	203.809
570.4	203.882	203.956	204.030	204.104	204.178	204.252	204.325	204.399	204.473	204.547
570.5	204.621	204.695	204.769	204.844	204.918	204.992	205.066	205.140	205.214	205.289
570.6	205.363	205.437	205.511	205.586	205.660	205.734	205.809	205.883	205.958	206.032
570.7	206.107	206.181	206.256	206.330	206.405	206.479	206.554	206.629	206.703	206.778
570.8	206.853	206.927	207.002	207.077	207.152	207.227	207.301	207.376	207.451	207.526
570.9	207.601	207.676	207.751	207.826	207.901	207.976	208.051	208.126	208.202	208.277
ELEV	0.00	0.01	0.02	0.03	0.04	0.05	0.06	0.07	0.08	0.09

TABLE 7-2 (Continued)

BELTON LAKE - ELEVATION CAPACITY TABLE

ELEVATIONS IN FEET-NGVD, CAPACITIES IN THOUSAND ACRE-FEET

ELEV	0.00	0.01	0.02	0.03	0.04	0.05	0.06	0.07	0.08	0.09
571.0	208.352	208.427	208.502	208.578	208.653	208.728	208.804	208.879	208.954	209.030
571.1	209.105	209.181	209.256	209.332	209.407	209.483	209.558	209.634	209.709	209.785
571.2	209.861	209.936	210.012	210.088	210.163	210.239	210.315	210.391	210.466	210.542
571.3	210.618	210.694	210.770	210.846	210.922	210.998	211.074	211.150	211.226	211.302
571.4	211.378	211.454	211.530	211.607	211.683	211.759	211.835	211.911	211.988	212.064
571.5	212.140	212.217	212.293	212.369	212.446	212.522	212.599	212.675	212.752	212.828
571.6	212.905	212.981	213.058	213.134	213.211	213.288	213.364	213.441	213.518	213.595
571.7	213.671	213.748	213.825	213.902	213.979	214.056	214.132	214.209	214.286	214.363
571.8	214.440	214.517	214.594	214.671	214.749	214.826	214.903	214.980	215.057	215.134
571.9	215.212	215.289	215.366	215.443	215.521	215.598	215.675	215.753	215.830	215.908
572.0	215.985	216.062	216.140	216.217	216.295	216.373	216.450	216.528	216.605	216.683
572.1	216.761	216.838	216.916	216.994	217.071	217.149	217.227	217.305	217.383	217.460
572.2	217.538	217.616	217.694	217.772	217.850	217.928	218.006	218.084	218.162	218.240
572.3	218.318	218.396	218.474	218.552	218.630	218.709	218.787	218.865	218.943	219.021
572.4	219.100	219.178	219.256	219.335	219.413	219.491	219.570	219.648	219.726	219.805
572.5	219.883	219.962	220.040	220.119	220.197	220.276	220.355	220.433	220.512	220.590
572.6	220.669	220.748	220.827	220.905	220.984	221.063	221.142	221.220	221.299	221.378
572.7	221.457	221.536	221.615	221.694	221.773	221.852	221.931	222.010	222.089	222.168
572.8	222.247	222.326	222.405	222.484	222.563	222.642	222.722	222.801	222.880	222.959
572.9	223.039	223.118	223.197	223.277	223.356	223.435	223.515	223.594	223.674	223.753
573.0	223.833	223.912	223.992	224.071	224.151	224.230	224.310	224.389	224.469	224.549
573.1	224.628	224.708	224.788	224.868	224.947	225.027	225.107	225.187	225.267	225.346
573.2	225.426	225.506	225.586	225.666	225.746	225.826	225.906	225.986	226.066	226.146
573.3	226.226	226.306	226.386	226.467	226.547	226.627	226.707	226.787	226.868	226.948
573.4	227.028	227.108	227.189	227.269	227.350	227.430	227.510	227.591	227.671	227.752
573.5	227.832	227.913	227.993	228.074	228.154	228.235	228.315	228.396	228.477	228.557
573.6	228.638	228.719	228.800	228.880	228.961	229.042	229.123	229.203	229.284	229.365
573.7	229.446	229.527	229.608	229.689	229.770	229.851	229.932	230.013	230.094	230.175
573.8	230.256	230.337	230.418	230.499	230.581	230.662	230.743	230.824	230.905	230.987
573.9	231.068	231.149	231.231	231.312	231.393	231.475	231.556	231.638	231.719	231.801
574.0	231.882	231.964	232.045	232.127	232.208	232.290	232.371	232.453	232.535	232.616
574.1	232.698	232.780	232.861	232.943	233.025	233.106	233.188	233.270	233.352	233.434
574.2	233.516	233.597	233.679	233.761	233.843	233.925	234.007	234.089	234.171	234.253
574.3	234.335	234.417	234.499	234.581	234.663	234.745	234.827	234.910	234.992	235.074
574.4	235.156	235.238	235.321	235.403	235.485	235.567	235.650	235.732	235.814	235.897
574.5	235.979	236.062	236.144	236.226	236.309	236.391	236.474	236.556	236.639	236.721
574.6	236.804	236.886	236.969	237.052	237.134	237.217	237.300	237.382	237.465	237.548
574.7	237.630	237.713	237.796	237.879	237.961	238.044	238.127	238.210	238.293	238.376
574.8	238.459	238.542	238.624	238.707	238.790	238.873	238.956	239.039	239.123	239.206
574.9	239.289	239.372	239.455	239.538	239.621	239.704	239.788	239.871	239.954	240.037
575.0	240.120	240.204	240.287	240.370	240.454	240.537	240.620	240.704	240.787	240.871
575.1	240.954	241.038	241.121	241.204	241.288	241.372	241.455	241.539	241.622	241.706
575.2	241.789	241.873	241.957	242.040	242.124	242.208	242.291	242.375	242.459	242.543
575.3	242.627	242.710	242.794	242.878	242.962	243.046	243.130	243.214	243.297	243.381
575.4	243.465	243.549	243.633	243.717	243.801	243.885	243.970	244.054	244.138	244.222
575.5	244.306	244.390	244.474	244.559	244.643	244.727	244.811	244.895	244.980	245.064
575.6	245.148	245.233	245.317	245.401	245.486	245.570	245.655	245.739	245.824	245.908
575.7	245.993	246.077	246.162	246.246	246.331	246.415	246.500	246.584	246.669	246.754
575.8	246.838	246.923	247.008	247.093	247.177	247.262	247.347	247.432	247.516	247.601
575.9	247.686	247.771	247.856	247.941	248.026	248.111	248.196	248.280	248.365	248.450
ELEV	0.00	0.01	0.02	0.03	0.04	0.05	0.06	0.07	0.08	0.09

TABLE 7-2 (Continued)

BELTON LAKE - ELEVATION CAPACITY TABLE

ELEVATIONS IN FEET-NGVD, CAPACITIES IN THOUSAND ACRE-FEET

ELEV	0.00	0.01	0.02	0.03	0.04	0.05	0.06	0.07	0.08	0.09
576.0	248.536	248.621	248.706	248.791	248.876	248.961	249.046	249.131	249.217	249.302
576.1	249.387	249.472	249.558	249.643	249.728	249.814	249.899	249.984	250.070	250.155
576.2	250.241	250.326	250.412	250.497	250.583	250.669	250.754	250.840	250.926	251.011
576.3	251.097	251.183	251.269	251.354	251.440	251.526	251.612	251.698	251.784	251.870
576.4	251.956	252.042	252.128	252.214	252.300	252.386	252.472	252.558	252.644	252.730
576.5	252.817	252.903	252.989	253.075	253.162	253.248	253.334	253.421	253.507	253.594
576.6	253.680	253.766	253.853	253.939	254.026	254.113	254.199	254.286	254.372	254.459
576.7	254.546	254.632	254.719	254.806	254.893	254.979	255.066	255.153	255.240	255.327
576.8	255.414	255.501	255.588	255.675	255.762	255.849	255.936	256.023	256.110	256.197
576.9	256.284	256.371	256.459	256.546	256.633	256.720	256.808	256.895	256.982	257.070
577.0	257.157	257.244	257.332	257.419	257.507	257.594	257.682	257.769	257.857	257.945
577.1	258.032	258.120	258.208	258.295	258.383	258.471	258.559	258.646	258.734	258.822
577.2	258.910	258.998	259.086	259.174	259.262	259.350	259.438	259.526	259.614	259.702
577.3	259.790	259.878	259.967	260.055	260.143	260.231	260.320	260.408	260.496	260.585
577.4	260.673	260.761	260.850	260.938	261.027	261.115	261.204	261.292	261.381	261.469
577.5	261.558	261.647	261.735	261.824	261.913	262.002	262.090	262.179	262.268	262.357
577.6	262.446	262.535	262.624	262.713	262.802	262.891	262.980	263.069	263.158	263.247
577.7	263.336	263.425	263.514	263.604	263.693	263.782	263.871	263.961	264.050	264.139
577.8	264.229	264.318	264.408	264.497	264.586	264.676	264.765	264.855	264.945	265.034
577.9	265.124	265.214	265.303	265.393	265.483	265.572	265.662	265.752	265.842	265.932
578.0	266.022	266.111	266.201	266.291	266.381	266.471	266.561	266.651	266.741	266.831
578.1	266.922	267.012	267.102	267.192	267.282	267.372	267.463	267.553	267.643	267.733
578.2	267.824	267.914	268.004	268.095	268.185	268.276	268.366	268.457	268.547	268.638
578.3	268.728	268.819	268.909	269.000	269.091	269.181	269.272	269.363	269.453	269.544
578.4	269.635	269.726	269.816	269.907	269.998	270.089	270.180	270.271	270.362	270.453
578.5	270.544	270.635	270.726	270.817	270.908	270.999	271.090	271.181	271.272	271.364
578.6	271.455	271.546	271.637	271.729	271.820	271.911	272.003	272.094	272.185	272.277
578.7	272.368	272.460	272.551	272.643	272.734	272.826	272.917	273.009	273.100	273.192
578.8	273.284	273.375	273.467	273.559	273.651	273.742	273.834	273.926	274.018	274.110
578.9	274.202	274.293	274.385	274.477	274.569	274.661	274.753	274.845	274.937	275.029
579.0	275.121	275.214	275.306	275.398	275.490	275.582	275.675	275.767	275.859	275.951
579.1	276.044	276.136	276.228	276.321	276.413	276.505	276.598	276.690	276.783	276.875
579.2	276.968	277.060	277.153	277.246	277.338	277.431	277.523	277.616	277.709	277.801
579.3	277.894	277.987	278.080	278.172	278.265	278.358	278.451	278.544	278.637	278.730
579.4	278.823	278.916	279.009	279.102	279.195	279.288	279.381	279.474	279.567	279.660
579.5	279.753	279.846	279.939	280.033	280.126	280.219	280.312	280.406	280.499	280.592
579.6	280.686	280.779	280.872	280.966	281.059	281.153	281.246	281.340	281.433	281.527
579.7	281.620	281.714	281.808	281.901	281.995	282.089	282.182	282.276	282.370	282.463
579.8	282.557	282.651	282.745	282.839	282.932	283.026	283.120	283.214	283.308	283.402
579.9	283.496	283.590	283.684	283.778	283.872	283.966	284.060	284.155	284.249	284.343
580.0	284.437	284.531	284.625	284.720	284.814	284.908	285.003	285.097	285.191	285.286
580.1	285.380	285.474	285.569	285.663	285.758	285.852	285.947	286.041	286.136	286.231
580.2	286.325	286.420	286.514	286.609	286.704	286.798	286.893	286.988	287.083	287.177
580.3	287.272	287.367	287.462	287.557	287.652	287.747	287.842	287.936	288.031	288.126
580.4	288.221	288.316	288.412	288.507	288.602	288.697	288.792	288.887	288.982	289.078
580.5	289.173	289.268	289.363	289.459	289.554	289.649	289.745	289.840	289.935	290.031
580.6	290.126	290.222	290.317	290.412	290.508	290.603	290.699	290.795	290.890	290.986
580.7	291.081	291.177	291.273	291.368	291.464	291.560	291.656	291.751	291.847	291.943
580.8	292.039	292.135	292.231	292.327	292.422	292.518	292.614	292.710	292.806	292.902
580.9	292.998	293.095	293.191	293.287	293.383	293.479	293.575	293.671	293.767	293.864
ELEV	0.00	0.01	0.02	0.03	0.04	0.05	0.06	0.07	0.08	0.09

TABLE 7-2 (Continued)

BELTON LAKE - ELEVATION CAPACITY TABLE

ELEVATIONS IN FEET-NGVD, CAPACITIES IN THOUSAND ACRE-FEET

ELEV	0.00	0.01	0.02	0.03	0.04	0.05	0.06	0.07	0.08	0.09
581.0	293.960	294.056	294.153	294.249	294.345	294.442	294.538	294.634	294.731	294.827
581.1	294.924	295.020	295.116	295.213	295.310	295.406	295.503	295.599	295.696	295.792
581.2	295.889	295.986	296.082	296.179	296.276	296.372	296.469	296.566	296.663	296.759
581.3	296.856	296.953	297.050	297.147	297.244	297.341	297.438	297.535	297.632	297.728
581.4	297.826	297.923	298.020	298.117	298.214	298.311	298.408	298.505	298.602	298.699
581.5	298.797	298.894	298.991	299.088	299.186	299.283	299.380	299.478	299.575	299.672
581.6	299.770	299.867	299.964	300.062	300.159	300.257	300.354	300.452	300.549	300.647
581.7	300.745	300.842	300.940	301.037	301.135	301.233	301.330	301.428	301.526	301.624
581.8	301.721	301.819	301.917	302.015	302.112	302.210	302.308	302.406	302.504	302.602
581.9	302.700	302.798	302.896	302.994	303.092	303.190	303.288	303.386	303.484	303.582
582.0	303.681	303.779	303.877	303.975	304.073	304.171	304.270	304.368	304.466	304.565
582.1	304.663	304.761	304.860	304.958	305.056	305.155	305.253	305.352	305.450	305.549
582.2	305.647	305.746	305.844	305.943	306.041	306.140	306.239	306.337	306.436	306.535
582.3	306.633	306.732	306.831	306.929	307.028	307.127	307.226	307.325	307.423	307.522
582.4	307.621	307.720	307.819	307.918	308.017	308.116	308.215	308.314	308.413	308.512
582.5	308.611	308.710	308.809	308.908	309.007	309.106	309.206	309.305	309.404	309.503
582.6	309.602	309.702	309.801	309.900	310.000	310.099	310.198	310.298	310.397	310.496
582.7	310.596	310.695	310.795	310.894	310.994	311.093	311.193	311.292	311.392	311.491
582.8	311.591	311.691	311.790	311.890	311.990	312.089	312.189	312.289	312.389	312.488
582.9	312.588	312.688	312.788	312.888	312.987	313.087	313.187	313.287	313.387	313.487
583.0	313.587	313.687	313.787	313.887	313.987	314.087	314.187	314.287	314.387	314.488
583.1	314.588	314.688	314.788	314.888	314.988	315.089	315.189	315.289	315.390	315.490
583.2	315.590	315.691	315.791	315.891	315.992	316.092	316.193	316.293	316.393	316.494
583.3	316.595	316.695	316.796	316.896	316.997	317.097	317.198	317.299	317.399	317.500
583.4	317.601	317.701	317.802	317.903	318.004	318.104	318.205	318.306	318.407	318.508
583.5	318.608	318.709	318.810	318.911	319.012	319.113	319.214	319.315	319.416	319.517
583.6	319.618	319.719	319.820	319.921	320.023	320.124	320.225	320.326	320.427	320.528
583.7	320.630	320.731	320.832	320.934	321.035	321.136	321.237	321.339	321.440	321.542
583.8	321.643	321.744	321.846	321.947	322.049	322.150	322.252	322.353	322.455	322.556
583.9	322.658	322.760	322.861	322.963	323.065	323.166	323.268	323.370	323.471	323.573
584.0	323.675	323.777	323.879	323.980	324.082	324.184	324.286	324.388	324.490	324.592
584.1	324.694	324.796	324.898	325.000	325.102	325.204	325.306	325.408	325.510	325.612
584.2	325.714	325.817	325.919	326.021	326.123	326.225	326.328	326.430	326.532	326.635
584.3	326.737	326.839	326.942	327.044	327.147	327.249	327.352	327.454	327.556	327.659
584.4	327.762	327.864	327.967	328.069	328.172	328.275	328.377	328.480	328.583	328.685
584.5	328.788	328.891	328.994	329.096	329.199	329.302	329.405	329.508	329.611	329.713
584.6	329.816	329.919	330.022	330.125	330.228	330.331	330.434	330.537	330.640	330.744
584.7	330.847	330.950	331.053	331.156	331.259	331.362	331.466	331.569	331.672	331.776
584.8	331.879	331.982	332.086	332.189	332.292	332.396	332.499	332.603	332.706	332.809
584.9	332.913	333.016	333.120	333.224	333.327	333.431	333.534	333.638	333.742	333.845
585.0	333.949	334.053	334.156	334.260	334.364	334.468	334.572	334.675	334.779	334.883
585.1	334.987	335.091	335.195	335.299	335.403	335.507	335.611	335.715	335.819	335.923
585.2	336.027	336.131	336.235	336.339	336.443	336.547	336.651	336.756	336.860	336.964
585.3	337.068	337.173	337.277	337.381	337.485	337.590	337.694	337.798	337.903	338.007
585.4	338.112	338.216	338.321	338.425	338.530	338.634	338.739	338.843	338.948	339.052
585.5	339.157	339.262	339.366	339.471	339.576	339.680	339.785	339.890	339.995	340.099
585.6	340.204	340.309	340.414	340.519	340.623	340.728	340.833	340.938	341.043	341.148
585.7	341.253	341.358	341.463	341.568	341.673	341.778	341.883	341.988	342.094	342.199
585.8	342.304	342.409	342.514	342.619	342.725	342.830	342.935	343.041	343.146	343.251
585.9	343.357	343.462	343.567	343.673	343.778	343.884	343.989	344.094	344.200	344.305
ELEV	0.00	0.01	0.02	0.03	0.04	0.05	0.06	0.07	0.08	0.09

TABLE 7-2 (Continued)

BELTON LAKE - ELEVATION CAPACITY TABLE

ELEVATIONS IN FEET-NGVD, CAPACITIES IN THOUSAND ACRE-FEET

ELEV	0.00	0.01	0.02	0.03	0.04	0.05	0.06	0.07	0.08	0.09
586.0	344.411	344.517	344.622	344.728	344.833	344.939	345.045	345.150	345.256	345.362
586.1	345.467	345.573	345.679	345.785	345.890	345.996	346.102	346.208	346.314	346.420
586.2	346.526	346.632	346.738	346.844	346.950	347.056	347.162	347.268	347.374	347.480
586.3	347.586	347.692	347.798	347.904	348.010	348.117	348.223	348.329	348.435	348.542
586.4	348.648	348.754	348.861	348.967	349.073	349.180	349.286	349.393	349.499	349.606
586.5	349.712	349.819	349.925	350.032	350.138	350.245	350.352	350.458	350.565	350.671
586.6	350.778	350.885	350.992	351.098	351.205	351.312	351.419	351.526	351.632	351.739
586.7	351.846	351.953	352.060	352.167	352.274	352.381	352.488	352.595	352.702	352.809
586.8	352.916	353.023	353.130	353.237	353.344	353.452	353.559	353.666	353.773	353.880
586.9	353.988	354.095	354.202	354.310	354.417	354.524	354.632	354.739	354.847	354.954
587.0	355.061	355.169	355.276	355.384	355.492	355.599	355.707	355.814	355.922	356.030
587.1	356.137	356.245	356.353	356.460	356.568	356.676	356.784	356.891	356.999	357.107
587.2	357.215	357.323	357.431	357.539	357.647	357.755	357.863	357.971	358.079	358.187
587.3	358.295	358.403	358.511	358.619	358.727	358.836	358.944	359.052	359.160	359.268
587.4	359.377	359.485	359.593	359.702	359.810	359.918	360.027	360.135	360.244	360.352
587.5	360.461	360.569	360.678	360.786	360.895	361.003	361.112	361.221	361.329	361.438
587.6	361.547	361.655	361.764	361.873	361.982	362.090	362.199	362.308	362.417	362.526
587.7	362.635	362.744	362.852	362.961	363.070	363.179	363.288	363.397	363.507	363.616
587.8	363.725	363.834	363.943	364.052	364.161	364.271	364.380	364.489	364.598	364.707
587.9	364.817	364.926	365.035	365.145	365.254	365.364	365.473	365.583	365.692	365.801
588.0	365.911	366.021	366.130	366.240	366.349	366.459	366.569	366.678	366.788	366.898
588.1	367.007	367.117	367.227	367.337	367.446	367.556	367.666	367.776	367.886	367.996
588.2	368.106	368.216	368.326	368.436	368.546	368.656	368.766	368.876	368.986	369.096
588.3	369.206	369.316	369.426	369.537	369.647	369.757	369.867	369.978	370.088	370.198
588.4	370.309	370.419	370.529	370.640	370.750	370.861	370.971	371.082	371.192	371.303
588.5	371.413	371.524	371.635	371.745	371.856	371.966	372.077	372.188	372.299	372.409
588.6	372.520	372.631	372.742	372.853	372.964	373.074	373.185	373.296	373.407	373.518
588.7	373.629	373.740	373.851	373.962	374.073	374.184	374.295	374.407	374.518	374.629
588.8	374.740	374.851	374.963	375.074	375.185	375.296	375.408	375.519	375.630	375.742
588.9	375.853	375.965	376.076	376.188	376.299	376.411	376.522	376.634	376.745	376.857
589.0	376.969	377.080	377.192	377.303	377.415	377.527	377.639	377.750	377.862	377.974
589.1	378.086	378.198	378.309	378.421	378.533	378.645	378.757	378.869	378.981	379.093
589.2	379.205	379.317	379.429	379.541	379.653	379.765	379.877	379.990	380.102	380.214
589.3	380.326	380.438	380.551	380.663	380.775	380.887	381.000	381.112	381.224	381.337
589.4	381.449	381.561	381.674	381.786	381.899	382.011	382.124	382.236	382.349	382.461
589.5	382.574	382.687	382.799	382.912	383.025	383.137	383.250	383.363	383.475	383.588
589.6	383.701	383.814	383.926	384.039	384.152	384.265	384.378	384.491	384.604	384.717
589.7	384.830	384.943	385.056	385.169	385.282	385.395	385.508	385.621	385.734	385.847
589.8	385.960	386.073	386.187	386.300	386.413	386.526	386.640	386.753	386.866	386.980
589.9	387.093	387.206	387.320	387.433	387.547	387.660	387.773	387.887	388.000	388.114
590.0	388.228	388.341	388.455	388.568	388.682	388.796	388.909	389.023	389.137	389.250
590.1	389.364	389.478	389.591	389.705	389.819	389.933	390.047	390.161	390.274	390.388
590.2	390.502	390.616	390.730	390.844	390.958	391.072	391.186	391.300	391.414	391.528
590.3	391.642	391.757	391.871	391.985	392.099	392.213	392.328	392.442	392.556	392.670
590.4	392.785	392.899	393.013	393.128	393.242	393.356	393.471	393.585	393.700	393.814
590.5	393.929	394.043	394.158	394.272	394.387	394.501	394.616	394.731	394.845	394.960
590.6	395.075	395.189	395.304	395.419	395.533	395.648	395.763	395.878	395.993	396.107
590.7	396.222	396.337	396.452	396.567	396.682	396.797	396.912	397.027	397.142	397.257
590.8	397.372	397.487	397.602	397.717	397.832	397.948	398.063	398.178	398.293	398.408
590.9	398.524	398.639	398.754	398.869	398.985	399.100	399.215	399.331	399.446	399.562
ELEV	0.00	0.01	0.02	0.03	0.04	0.05	0.06	0.07	0.08	0.09

TABLE 7-2 (Continued)

BELTON LAKE - ELEVATION CAPACITY TABLE

ELEVATIONS IN FEET-NGVD, CAPACITIES IN THOUSAND ACRE-FEET

ELEV	0.00	0.01	0.02	0.03	0.04	0.05	0.06	0.07	0.08	0.09
591.0	399.677	399.792	399.908	400.023	400.139	400.254	400.370	400.486	400.601	400.717
591.1	400.832	400.948	401.064	401.180	401.295	401.411	401.527	401.643	401.759	401.874
591.2	401.990	402.106	402.222	402.338	402.454	402.570	402.686	402.802	402.918	403.034
591.3	403.150	403.266	403.382	403.499	403.615	403.731	403.847	403.963	404.080	404.196
591.4	404.312	404.429	404.545	404.661	404.778	404.894	405.011	405.127	405.244	405.360
591.5	405.477	405.593	405.710	405.826	405.943	406.060	406.176	406.293	406.410	406.526
591.6	406.643	406.760	406.877	406.994	407.110	407.227	407.344	407.461	407.578	407.695
591.7	407.812	407.929	408.046	408.163	408.280	408.397	408.514	408.631	408.749	408.866
591.8	408.983	409.100	409.217	409.335	409.452	409.569	409.687	409.804	409.921	410.039
591.9	410.156	410.274	410.391	410.509	410.626	410.744	410.861	410.979	411.096	411.214
592.0	411.332	411.449	411.567	411.685	411.802	411.920	412.038	412.155	412.273	412.391
592.1	412.509	412.627	412.745	412.863	412.980	413.098	413.216	413.334	413.452	413.570
592.2	413.688	413.806	413.924	414.042	414.160	414.279	414.397	414.515	414.633	414.751
592.3	414.869	414.988	415.106	415.224	415.342	415.461	415.579	415.697	415.816	415.934
592.4	416.052	416.171	416.289	416.408	416.526	416.645	416.763	416.882	417.000	417.119
592.5	417.237	417.356	417.475	417.593	417.712	417.831	417.949	418.068	418.187	418.305
592.6	418.424	418.543	418.662	418.781	418.899	419.018	419.137	419.256	419.375	419.494
592.7	419.613	419.732	419.851	419.970	420.089	420.208	420.327	420.446	420.565	420.684
592.8	420.803	420.922	421.042	421.161	421.280	421.399	421.519	421.638	421.757	421.876
592.9	421.996	422.115	422.234	422.354	422.473	422.593	422.712	422.832	422.951	423.070
593.0	423.190	423.310	423.429	423.549	423.668	423.788	423.907	424.027	424.147	424.266
593.1	424.386	424.506	424.626	424.745	424.865	424.985	425.105	425.224	425.344	425.464
593.2	425.584	425.704	425.824	425.944	426.064	426.184	426.304	426.424	426.544	426.664
593.3	426.784	426.904	427.024	427.144	427.264	427.384	427.505	427.625	427.745	427.865
593.4	427.985	428.106	428.226	428.346	428.467	428.587	428.707	428.828	428.948	429.068
593.5	429.189	429.309	429.430	429.550	429.671	429.791	429.912	430.032	430.153	430.274
593.6	430.394	430.515	430.635	430.756	430.877	430.997	431.118	431.239	431.360	431.480
593.7	431.601	431.722	431.843	431.964	432.085	432.205	432.326	432.447	432.568	432.689
593.8	432.810	432.931	433.052	433.173	433.294	433.415	433.536	433.658	433.779	433.900
593.9	434.021	434.142	434.263	434.384	434.506	434.627	434.748	434.870	434.991	435.112
594.0	435.233	435.355	435.476	435.598	435.719	435.841	435.963	436.084	436.206	436.328
594.1	436.450	436.572	436.694	436.816	436.938	437.060	437.182	437.304	437.427	437.549
594.2	437.672	437.794	437.917	438.039	438.162	438.285	438.407	438.530	438.653	438.776
594.3	438.899	439.022	439.145	439.268	439.391	439.515	439.638	439.761	439.885	440.008
594.4	440.132	440.255	440.379	440.503	440.626	440.750	440.874	440.998	441.122	441.246
594.5	441.370	441.494	441.618	441.743	441.867	441.991	442.116	442.240	442.365	442.489
594.6	442.614	442.739	442.863	442.988	443.113	443.238	443.363	443.488	443.613	443.738
594.7	443.863	443.989	444.114	444.239	444.365	444.490	444.616	444.741	444.867	444.993
594.8	445.118	445.244	445.370	445.496	445.622	445.748	445.874	446.000	446.126	446.253
594.9	446.379	446.505	446.632	446.758	446.885	447.011	447.138	447.265	447.391	447.518
595.0	447.645	447.772	447.899	448.026	448.153	448.280	448.407	448.534	448.661	448.788
595.1	448.915	449.042	449.169	449.296	449.423	449.551	449.678	449.805	449.932	450.060
595.2	450.187	450.314	450.442	450.569	450.696	450.824	450.951	451.079	451.206	451.334
595.3	451.461	451.589	451.716	451.844	451.971	452.099	452.227	452.354	452.482	452.610
595.4	452.737	452.865	452.993	453.121	453.249	453.376	453.504	453.632	453.760	453.888
595.5	454.016	454.144	454.272	454.400	454.528	454.656	454.784	454.912	455.040	455.168
595.6	455.297	455.425	455.553	455.681	455.809	455.938	456.066	456.194	456.323	456.451
595.7	456.579	456.708	456.836	456.965	457.093	457.221	457.350	457.478	457.607	457.736
595.8	457.864	457.993	458.121	458.250	458.379	458.507	458.636	458.765	458.894	459.022
595.9	459.151	459.280	459.409	459.538	459.667	459.796	459.925	460.053	460.182	460.311
ELEV	0.00	0.01	0.02	0.03	0.04	0.05	0.06	0.07	0.08	0.09

TABLE 7-2 (Continued)

BELTON LAKE - ELEVATION CAPACITY TABLE

ELEVATIONS IN FEET-NGVD, CAPACITIES IN THOUSAND ACRE-FEET

ELEV	0.00	0.01	0.02	0.03	0.04	0.05	0.06	0.07	0.08	0.09
596.0	460.440	460.570	460.699	460.828	460.957	461.086	461.215	461.344	461.474	461.603
596.1	461.732	461.861	461.991	462.120	462.249	462.379	462.508	462.637	462.767	462.896
596.2	463.026	463.155	463.285	463.414	463.544	463.674	463.803	463.933	464.063	464.192
596.3	464.322	464.452	464.582	464.711	464.841	464.971	465.101	465.231	465.361	465.491
596.4	465.621	465.751	465.881	466.011	466.141	466.271	466.401	466.531	466.661	466.791
596.5	466.922	467.052	467.182	467.312	467.443	467.573	467.703	467.834	467.964	468.094
596.6	468.225	468.355	468.486	468.616	468.747	468.877	469.008	469.138	469.269	469.400
596.7	469.530	469.661	469.792	469.923	470.053	470.184	470.315	470.446	470.577	470.707
596.8	470.838	470.969	471.100	471.231	471.362	471.493	471.624	471.755	471.887	472.018
596.9	472.149	472.280	472.411	472.542	472.674	472.805	472.936	473.067	473.199	473.330
597.0	473.461	473.593	473.724	473.856	473.987	474.119	474.250	474.382	474.513	474.645
597.1	474.776	474.908	475.039	475.171	475.302	475.434	475.566	475.697	475.829	475.961
597.2	476.092	476.224	476.356	476.487	476.619	476.751	476.882	477.014	477.146	477.278
597.3	477.410	477.541	477.673	477.805	477.937	478.069	478.201	478.333	478.465	478.597
597.4	478.729	478.861	478.992	479.125	479.257	479.389	479.521	479.653	479.785	479.917
597.5	480.049	480.181	480.313	480.445	480.577	480.710	480.842	480.974	481.106	481.238
597.6	481.371	481.503	481.635	481.767	481.900	482.032	482.164	482.297	482.429	482.561
597.7	482.694	482.826	482.959	483.091	483.224	483.356	483.488	483.621	483.753	483.886
597.8	484.018	484.151	484.284	484.416	484.549	484.681	484.814	484.947	485.079	485.212
597.9	485.345	485.477	485.610	485.743	485.875	486.008	486.141	486.274	486.406	486.539
598.0	486.672	486.805	486.938	487.071	487.203	487.336	487.469	487.602	487.735	487.868
598.1	488.001	488.134	488.267	488.400	488.533	488.666	488.799	488.933	489.066	489.199
598.2	489.332	489.465	489.598	489.732	489.865	489.998	490.131	490.265	490.398	490.531
598.3	490.665	490.798	490.931	491.065	491.198	491.332	491.465	491.599	491.732	491.866
598.4	491.999	492.133	492.266	492.400	492.534	492.667	492.801	492.934	493.068	493.202
598.5	493.336	493.469	493.603	493.737	493.871	494.004	494.138	494.272	494.406	494.540
598.6	494.674	494.807	494.941	495.075	495.209	495.343	495.477	495.611	495.745	495.879
598.7	496.013	496.148	496.282	496.416	496.550	496.684	496.818	496.953	497.087	497.221
598.8	497.355	497.489	497.624	497.758	497.892	498.027	498.161	498.295	498.430	498.564
598.9	498.699	498.833	498.968	499.102	499.237	499.371	499.506	499.640	499.775	499.909
599.0	500.044	500.179	500.313	500.448	500.583	500.717	500.852	500.987	501.122	501.256
599.1	501.391	501.526	501.661	501.796	501.931	502.066	502.200	502.335	502.470	502.605
599.2	502.740	502.875	503.010	503.146	503.281	503.416	503.551	503.686	503.821	503.956
599.3	504.091	504.227	504.362	504.497	504.633	504.768	504.903	505.039	505.174	505.309
599.4	505.445	505.580	505.716	505.851	505.986	506.122	506.257	506.393	506.529	506.664
599.5	506.800	506.935	507.071	507.207	507.342	507.478	507.614	507.750	507.885	508.021
599.6	508.157	508.293	508.428	508.564	508.700	508.836	508.972	509.108	509.244	509.380
599.7	509.516	509.652	509.788	509.924	510.060	510.196	510.332	510.468	510.605	510.741
599.8	510.877	511.013	511.149	511.286	511.422	511.558	511.695	511.831	511.967	512.104
599.9	512.240	512.376	512.513	512.649	512.786	512.922	513.059	513.195	513.332	513.468
600.0	513.605	513.742	513.878	514.015	514.152	514.288	514.425	514.562	514.698	514.835
600.1	514.972	515.109	515.245	515.382	515.519	515.656	515.793	515.929	516.066	516.203
600.2	516.340	516.477	516.614	516.751	516.888	517.025	517.162	517.299	517.436	517.573
600.3	517.710	517.847	517.984	518.121	518.258	518.395	518.532	518.669	518.807	518.944
600.4	519.081	519.218	519.355	519.493	519.630	519.767	519.904	520.042	520.179	520.316
600.5	520.454	520.591	520.728	520.866	521.003	521.141	521.278	521.416	521.553	521.690
600.6	521.828	521.966	522.103	522.241	522.378	522.516	522.653	522.791	522.928	523.066
600.7	523.204	523.341	523.479	523.617	523.754	523.892	524.030	524.168	524.305	524.443
600.8	524.581	524.719	524.857	524.994	525.132	525.270	525.408	525.546	525.684	525.822
600.9	525.960	526.098	526.236	526.374	526.512	526.650	526.788	526.926	527.064	527.202
ELEV	0.00	0.01	0.02	0.03	0.04	0.05	0.06	0.07	0.08	0.09

TABLE 7-2 (Continued)

BELTON LAKE - ELEVATION CAPACITY TABLE

ELEVATIONS IN FEET-NGVD, CAPACITIES IN THOUSAND ACRE-FEET

ELEV	0.00	0.01	0.02	0.03	0.04	0.05	0.06	0.07	0.08	0.09
601.0	527.340	527.478	527.616	527.754	527.893	528.031	528.169	528.307	528.445	528.584
601.1	528.722	528.860	528.998	529.137	529.275	529.413	529.552	529.690	529.829	529.967
601.2	530.106	530.244	530.382	530.521	530.659	530.798	530.937	531.075	531.214	531.352
601.3	531.491	531.629	531.768	531.907	532.045	532.184	532.323	532.462	532.600	532.739
601.4	532.878	533.017	533.156	533.294	533.433	533.572	533.711	533.850	533.989	534.128
601.5	534.267	534.406	534.545	534.684	534.823	534.962	535.101	535.240	535.379	535.518
601.6	535.657	535.797	535.936	536.075	536.214	536.353	536.492	536.632	536.771	536.910
601.7	537.050	537.189	537.328	537.468	537.607	537.746	537.886	538.025	538.165	538.304
601.8	538.444	538.583	538.723	538.862	539.002	539.141	539.281	539.421	539.560	539.700
601.9	539.839	539.979	540.119	540.259	540.398	540.538	540.678	540.818	540.957	541.097
602.0	541.237	541.377	541.517	541.657	541.797	541.936	542.076	542.216	542.356	542.496
602.1	542.636	542.776	542.917	543.057	543.197	543.337	543.477	543.617	543.757	543.897
602.2	544.038	544.178	544.318	544.458	544.599	544.739	544.879	545.020	545.160	545.300
602.3	545.441	545.581	545.722	545.862	546.003	546.143	546.284	546.424	546.565	546.705
602.4	546.846	546.987	547.127	547.268	547.409	547.549	547.690	547.831	547.972	548.112
602.5	548.253	548.394	548.535	548.676	548.817	548.957	549.098	549.239	549.380	549.521
602.6	549.662	549.803	549.944	550.085	550.226	550.367	550.508	550.650	550.791	550.932
602.7	551.073	551.214	551.356	551.497	551.638	551.779	551.921	552.062	552.203	552.345
602.8	552.486	552.627	552.769	552.910	553.052	553.193	553.335	553.476	553.618	553.759
602.9	553.901	554.042	554.184	554.326	554.467	554.609	554.751	554.892	555.034	555.176
603.0	555.318	555.459	555.601	555.743	555.885	556.027	556.169	556.310	556.453	556.594
603.1	556.737	556.879	557.021	557.163	557.305	557.447	557.589	557.731	557.874	558.016
603.2	558.158	558.300	558.443	558.585	558.727	558.870	559.012	559.155	559.297	559.440
603.3	559.582	559.725	559.867	560.010	560.153	560.295	560.438	560.581	560.724	560.866
603.4	561.009	561.152	561.295	561.438	561.581	561.724	561.867	562.010	562.153	562.296
603.5	562.439	562.582	562.725	562.868	563.011	563.154	563.298	563.441	563.584	563.727
603.6	563.871	564.014	564.157	564.301	564.444	564.588	564.731	564.875	565.018	565.162
603.7	565.305	565.449	565.593	565.736	565.880	566.024	566.167	566.311	566.455	566.599
603.8	566.743	566.886	567.030	567.174	567.318	567.462	567.606	567.750	567.894	568.038
603.9	568.182	568.327	568.471	568.615	568.759	568.903	569.048	569.192	569.336	569.481
604.0	569.625	569.769	569.914	570.058	570.203	570.347	570.492	570.636	570.781	570.926
604.1	571.070	571.215	571.360	571.505	571.649	571.794	571.939	572.084	572.229	572.374
604.2	572.519	572.664	572.809	572.954	573.099	573.244	573.389	573.534	573.680	573.825
604.3	573.970	574.115	574.261	574.406	574.552	574.697	574.842	574.988	575.133	575.279
604.4	575.425	575.570	575.716	575.862	576.007	576.153	576.299	576.445	576.590	576.736
604.5	576.882	577.028	577.174	577.320	577.466	577.612	577.758	577.904	578.050	578.196
604.6	578.343	578.489	578.635	578.781	578.928	579.074	579.221	579.367	579.513	579.660
604.7	579.806	579.953	580.099	580.246	580.393	580.539	580.686	580.833	580.979	581.126
604.8	581.273	581.420	581.567	581.714	581.860	582.008	582.154	582.302	582.448	582.596
604.9	582.743	582.890	583.037	583.184	583.331	583.479	583.626	583.773	583.921	584.068
605.0	584.216	584.363	584.510	584.658	584.806	584.953	585.101	585.249	585.396	585.544
605.1	585.692	585.840	585.988	586.136	586.284	586.432	586.580	586.728	586.876	587.024
605.2	587.173	587.321	587.469	587.618	587.766	587.915	588.063	588.212	588.360	588.509
605.3	588.658	588.807	588.955	589.104	589.253	589.402	589.551	589.700	589.849	589.998
605.4	590.147	590.296	590.445	590.595	590.744	590.893	591.043	591.192	591.342	591.491
605.5	591.641	591.790	591.940	592.090	592.239	592.389	592.539	592.689	592.839	592.989
605.6	593.139	593.289	593.439	593.589	593.739	593.889	594.039	594.190	594.340	594.490
605.7	594.641	594.791	594.942	595.092	595.243	595.394	595.544	595.695	595.846	595.997
605.8	596.148	596.298	596.449	596.600	596.751	596.902	597.054	597.205	597.356	597.507
605.9	597.658	597.810	597.961	598.112	598.264	598.415	598.567	598.719	598.870	599.022
ELEV	0.00	0.01	0.02	0.03	0.04	0.05	0.06	0.07	0.08	0.09

TABLE 7-2 (Continued)

BELTON LAKE - ELEVATION CAPACITY TABLE

ELEVATIONS IN FEET-NGVD, CAPACITIES IN THOUSAND ACRE-FEET

ELEV	0.00	0.01	0.02	0.03	0.04	0.05	0.06	0.07	0.08	0.09
606.0	599.174	599.325	599.477	599.629	599.781	599.933	600.085	600.237	600.389	600.541
606.1	600.693	600.845	600.997	601.150	601.302	601.454	601.607	601.759	601.912	602.064
606.2	602.217	602.369	602.522	602.675	602.828	602.980	603.133	603.286	603.439	603.592
606.3	603.745	603.898	604.051	604.204	604.358	604.511	604.664	604.817	604.971	605.124
606.4	605.278	605.431	605.585	605.738	605.892	606.046	606.199	606.353	606.507	606.661
606.5	606.815	606.969	607.123	607.277	607.431	607.585	607.739	607.893	608.047	608.202
606.6	608.356	608.510	608.665	608.819	608.974	609.128	609.283	609.438	609.592	609.747
606.7	609.902	610.057	610.211	610.366	610.521	610.676	610.831	610.986	611.141	611.297
606.8	611.452	611.607	611.762	611.918	612.073	612.228	612.384	612.539	612.695	612.851
606.9	613.006	613.162	613.318	613.473	613.629	613.785	613.941	614.097	614.253	614.409
607.0	614.565	614.721	614.877	615.033	615.190	615.346	615.502	615.658	615.815	615.971
607.1	616.127	616.284	616.440	616.596	616.753	616.909	617.066	617.222	617.379	617.535
607.2	617.692	617.848	618.005	618.161	618.318	618.475	618.631	618.788	618.945	619.102
607.3	619.258	619.415	619.572	619.729	619.886	620.043	620.200	620.357	620.514	620.671
607.4	620.828	620.985	621.142	621.299	621.456	621.613	621.770	621.927	622.085	622.242
607.5	622.399	622.556	622.714	622.871	623.028	623.186	623.343	623.501	623.658	623.815
607.6	623.973	624.130	624.288	624.446	624.603	624.761	624.918	625.076	625.234	625.391
607.7	625.549	625.707	625.865	626.022	626.180	626.338	626.496	626.654	626.812	626.970
607.8	627.128	627.286	627.443	627.602	627.760	627.918	628.076	628.234	628.392	628.550
607.9	628.708	628.867	629.025	629.183	629.341	629.500	629.658	629.816	629.975	630.133
608.0	630.292	630.450	630.608	630.767	630.925	631.084	631.242	631.401	631.560	631.718
608.1	631.877	632.035	632.194	632.353	632.511	632.670	632.829	632.988	633.146	633.305
608.2	633.464	633.623	633.782	633.940	634.099	634.258	634.417	634.576	634.735	634.894
608.3	635.053	635.212	635.371	635.530	635.689	635.848	636.007	636.167	636.326	636.485
608.4	636.644	636.803	636.962	637.122	637.281	637.440	637.599	637.759	637.918	638.078
608.5	638.237	638.396	638.556	638.715	638.875	639.034	639.193	639.353	639.513	639.672
608.6	639.832	639.991	640.151	640.310	640.470	640.630	640.789	640.949	641.109	641.269
608.7	641.428	641.588	641.748	641.908	642.068	642.227	642.387	642.547	642.707	642.867
608.8	643.027	643.187	643.347	643.507	643.667	643.827	643.987	644.147	644.307	644.467
608.9	644.628	644.788	644.948	645.108	645.268	645.429	645.589	645.749	645.909	646.070
609.0	646.230	646.390	646.551	646.711	646.872	647.032	647.192	647.353	647.513	647.674
609.1	647.834	647.995	648.155	648.316	648.476	648.637	648.797	648.958	649.119	649.279
609.2	649.440	649.601	649.761	649.922	650.083	650.243	650.404	650.565	650.726	650.886
609.3	651.047	651.208	651.369	651.530	651.691	651.852	652.012	652.173	652.334	652.495
609.4	652.656	652.817	652.978	653.139	653.300	653.461	653.622	653.783	653.944	654.106
609.5	654.267	654.428	654.589	654.750	654.911	655.072	655.234	655.395	655.556	655.717
609.6	655.879	656.040	656.201	656.363	656.524	656.685	656.847	657.008	657.169	657.331
609.7	657.492	657.654	657.815	657.977	658.138	658.300	658.461	658.623	658.784	658.946
609.8	659.107	659.269	659.431	659.592	659.754	659.916	660.077	660.239	660.401	660.562
609.9	660.724	660.886	661.048	661.209	661.371	661.533	661.695	661.857	662.019	662.181
610.0	662.343	662.504	662.666	662.828	662.990	663.152	663.315	663.477	663.639	663.801
610.1	663.963	664.125	664.288	664.450	664.612	664.775	664.937	665.100	665.262	665.425
610.2	665.587	665.750	665.912	666.075	666.238	666.400	666.563	666.726	666.888	667.051
610.3	667.214	667.377	667.540	667.703	667.866	668.029	668.192	668.355	668.518	668.681
610.4	668.844	669.008	669.171	669.334	669.497	669.661	669.824	669.988	670.151	670.315
610.5	670.478	670.641	670.805	670.969	671.132	671.296	671.460	671.623	671.787	671.951
610.6	672.115	672.279	672.442	672.606	672.770	672.934	673.098	673.262	673.426	673.590
610.7	673.755	673.919	674.083	674.247	674.411	674.576	674.740	674.904	675.069	675.233
610.8	675.398	675.562	675.727	675.891	676.056	676.220	676.385	676.550	676.714	676.879
610.9	677.044	677.209	677.374	677.539	677.703	677.868	678.033	678.198	678.363	678.528
ELEV	0.00	0.01	0.02	0.03	0.04	0.05	0.06	0.07	0.08	0.09

TABLE 7-2 (Continued)

BELTON LAKE - ELEVATION CAPACITY TABLE

ELEVATIONS IN FEET-NGVD, CAPACITIES IN THOUSAND ACRE-FEET

ELEV	0.00	0.01	0.02	0.03	0.04	0.05	0.06	0.07	0.08	0.09
611.0	678.693	678.859	679.024	679.189	679.354	679.520	679.685	679.850	680.016	680.181
611.1	680.347	680.512	680.678	680.844	681.009	681.175	681.341	681.507	681.673	681.839
611.2	682.005	682.171	682.337	682.503	682.669	682.835	683.001	683.168	683.334	683.500
611.3	683.667	683.833	684.000	684.166	684.333	684.500	684.666	684.833	685.000	685.167
611.4	685.333	685.500	685.667	685.834	686.001	686.169	686.336	686.503	686.670	686.837
611.5	687.005	687.172	687.339	687.507	687.674	687.842	688.009	688.177	688.345	688.512
611.6	688.680	688.848	689.016	689.184	689.352	689.520	689.688	689.856	690.024	690.192
611.7	690.360	690.528	690.697	690.865	691.034	691.202	691.370	691.539	691.707	691.876
611.8	692.045	692.213	692.382	692.551	692.720	692.889	693.057	693.227	693.396	693.565
611.9	693.734	693.903	694.072	694.241	694.410	694.580	694.749	694.919	695.088	695.257
612.0	695.427	695.597	695.766	695.936	696.106	696.275	696.445	696.615	696.785	696.955
612.1	697.125	697.295	697.465	697.635	697.805	697.975	698.146	698.316	698.486	698.657
612.2	698.827	698.997	699.168	699.339	699.509	699.680	699.850	700.021	700.192	700.363
612.3	700.534	700.705	700.875	701.046	701.218	701.389	701.560	701.731	701.902	702.073
612.4	702.245	702.416	702.587	702.759	702.930	703.102	703.273	703.445	703.617	703.788
612.5	703.960	704.132	704.304	704.476	704.647	704.819	704.991	705.163	705.336	705.508
612.6	705.680	705.852	706.024	706.197	706.369	706.541	706.714	706.886	707.059	707.231
612.7	707.404	707.577	707.749	707.922	708.095	708.268	708.441	708.614	708.786	708.960
612.8	709.133	709.306	709.479	709.652	709.825	709.999	710.172	710.345	710.519	710.692
612.9	710.866	711.039	711.213	711.386	711.560	711.734	711.907	712.081	712.255	712.429
613.0	712.603	712.777	712.951	713.125	713.299	713.473	713.647	713.821	713.996	714.170
613.1	714.344	714.518	714.693	714.867	715.042	715.216	715.390	715.565	715.739	715.914
613.2	716.089	716.263	716.438	716.613	716.787	716.962	717.137	717.312	717.486	717.661
613.3	717.836	718.011	718.186	718.361	718.536	718.711	718.886	719.061	719.237	719.412
613.4	719.587	719.762	719.938	720.113	720.288	720.464	720.639	720.814	720.990	721.165
613.5	721.341	721.517	721.692	721.868	722.044	722.219	722.395	722.571	722.747	722.922
613.6	723.098	723.274	723.450	723.626	723.802	723.978	724.154	724.330	724.506	724.682
613.7	724.859	725.035	725.211	725.387	725.564	725.740	725.916	726.093	726.269	726.446
613.8	726.622	726.799	726.975	727.152	727.328	727.505	727.682	727.859	728.035	728.212
613.9	728.389	728.566	728.743	728.920	729.097	729.274	729.451	729.628	729.805	729.982
614.0	730.159	730.336	730.513	730.691	730.868	731.045	731.222	731.400	731.577	731.755
614.1	731.932	732.109	732.287	732.464	732.642	732.820	732.997	733.175	733.353	733.530
614.2	733.708	733.886	734.063	734.241	734.419	734.597	734.775	734.953	735.131	735.309
614.3	735.487	735.665	735.843	736.021	736.199	736.377	736.555	736.734	736.912	737.090
614.4	737.268	737.447	737.625	737.804	737.982	738.160	738.339	738.517	738.696	738.875
614.5	739.053	739.232	739.410	739.589	739.768	739.946	740.125	740.304	740.483	740.662
614.6	740.841	741.019	741.198	741.377	741.556	741.735	741.914	742.094	742.273	742.452
614.7	742.631	742.810	742.989	743.169	743.348	743.527	743.707	743.886	744.065	744.245
614.8	744.424	744.604	744.783	744.963	745.142	745.322	745.502	745.681	745.861	746.041
614.9	746.220	746.400	746.580	746.760	746.940	747.120	747.299	747.479	747.659	747.839
615.0	748.019	748.200	748.380	748.560	748.740	748.920	749.100	749.281	749.461	749.641
615.1	749.821	750.002	750.182	750.362	750.543	750.723	750.904	751.084	751.265	751.445
615.2	751.626	751.806	751.987	752.168	752.348	752.529	752.710	752.891	753.071	753.252
615.3	753.433	753.614	753.795	753.976	754.157	754.338	754.519	754.700	754.881	755.062
615.4	755.243	755.424	755.605	755.786	755.968	756.149	756.330	756.511	756.693	756.874
615.5	757.055	757.237	757.418	757.600	757.781	757.963	758.144	758.326	758.507	758.689
615.6	758.871	759.052	759.234	759.416	759.597	759.779	759.961	760.143	760.325	760.506
615.7	760.688	760.870	761.052	761.234	761.416	761.598	761.780	761.963	762.145	762.327
615.8	762.509	762.691	762.873	763.056	763.238	763.420	763.602	763.785	763.967	764.150
615.9	764.332	764.515	764.697	764.880	765.062	765.245	765.427	765.610	765.793	765.975
ELEV	0.00	0.01	0.02	0.03	0.04	0.05	0.06	0.07	0.08	0.09

TABLE 7-2 (Continued)

BELTON LAKE - ELEVATION CAPACITY TABLE

ELEVATIONS IN FEET-NGVD, CAPACITIES IN THOUSAND ACRE-FEET

ELEV	0.00	0.01	0.02	0.03	0.04	0.05	0.06	0.07	0.08	0.09
616.0	766.158	766.341	766.523	766.706	766.889	767.072	767.255	767.438	767.621	767.804
616.1	767.987	768.170	768.353	768.536	768.719	768.902	769.086	769.269	769.452	769.635
616.2	769.819	770.002	770.185	770.369	770.552	770.736	770.919	771.103	771.286	771.470
616.3	771.654	771.837	772.021	772.205	772.389	772.573	772.756	772.940	773.124	773.308
616.4	773.492	773.676	773.860	774.044	774.228	774.412	774.596	774.781	774.965	775.149
616.5	775.333	775.518	775.702	775.886	776.071	776.255	776.440	776.624	776.809	776.993
616.6	777.178	777.362	777.547	777.732	777.917	778.101	778.286	778.471	778.656	778.841
616.7	779.026	779.211	779.396	779.581	779.766	779.951	780.136	780.321	780.506	780.691
616.8	780.876	781.062	781.247	781.432	781.618	781.803	781.988	782.174	782.359	782.545
616.9	782.730	782.916	783.102	783.287	783.473	783.659	783.844	784.030	784.216	784.402
617.0	784.588	784.773	784.959	785.145	785.331	785.517	785.703	785.889	786.075	786.262
617.1	786.448	786.634	786.820	787.006	787.193	787.379	787.565	787.752	787.938	788.124
617.2	788.311	788.497	788.684	788.870	789.057	789.244	789.430	789.617	789.804	789.990
617.3	790.177	790.364	790.551	790.737	790.924	791.111	791.298	791.485	791.672	791.859
617.4	792.046	792.233	792.420	792.607	792.794	792.982	793.169	793.356	793.544	793.731
617.5	793.918	794.106	794.293	794.480	794.668	794.855	795.043	795.230	795.418	795.606
617.6	795.793	795.981	796.169	796.356	796.544	796.732	796.920	797.107	797.295	797.483
617.7	797.671	797.859	798.047	798.235	798.423	798.611	798.799	798.987	799.176	799.364
617.8	799.552	799.740	799.929	800.117	800.305	800.494	800.682	800.871	801.059	801.248
617.9	801.436	801.625	801.813	802.002	802.190	802.379	802.568	802.757	802.945	803.134
618.0	803.323	803.512	803.701	803.890	804.079	804.268	804.456	804.646	804.835	805.024
618.1	805.213	805.402	805.591	805.780	805.969	806.159	806.348	806.537	806.727	806.916
618.2	807.105	807.295	807.484	807.673	807.863	808.052	808.242	808.432	808.621	808.811
618.3	809.000	809.190	809.380	809.569	809.759	809.949	810.139	810.328	810.518	810.708
618.4	810.898	811.088	811.278	811.468	811.658	811.848	812.038	812.228	812.418	812.608
618.5	812.799	812.989	813.179	813.369	813.560	813.750	813.940	814.131	814.321	814.511
618.6	814.702	814.892	815.083	815.273	815.464	815.654	815.845	816.036	816.226	816.417
618.7	816.608	816.798	816.989	817.180	817.371	817.562	817.753	817.943	818.134	818.325
618.8	818.516	818.707	818.898	819.089	819.280	819.472	819.663	819.854	820.045	820.236
618.9	820.428	820.619	820.810	821.001	821.193	821.384	821.576	821.767	821.958	822.150
619.0	822.341	822.533	822.725	822.916	823.108	823.300	823.491	823.683	823.875	824.067
619.1	824.258	824.450	824.642	824.834	825.026	825.218	825.410	825.602	825.794	825.987
619.2	826.179	826.371	826.563	826.755	826.948	827.140	827.332	827.525	827.717	827.910
619.3	828.102	828.295	828.487	828.680	828.873	829.065	829.258	829.451	829.643	829.836
619.4	830.029	830.222	830.415	830.608	830.801	830.994	831.187	831.380	831.573	831.766
619.5	831.959	832.152	832.346	832.539	832.732	832.925	833.119	833.312	833.506	833.699
619.6	833.893	834.086	834.280	834.473	834.667	834.860	835.054	835.248	835.442	835.635
619.7	835.829	836.023	836.217	836.411	836.605	836.799	836.993	837.187	837.381	837.575
619.8	837.769	837.963	838.158	838.352	838.546	838.740	838.935	839.129	839.323	839.518
619.9	839.712	839.907	840.102	840.296	840.491	840.685	840.880	841.075	841.269	841.464
620.0	841.659	841.854	842.049	842.244	842.438	842.633	842.828	843.023	843.219	843.414
620.1	843.609	843.804	843.999	844.194	844.389	844.584	844.780	844.975	845.170	845.366
620.2	845.561	845.757	845.952	846.147	846.343	846.539	846.734	846.930	847.125	847.321
620.3	847.516	847.712	847.908	848.104	848.299	848.495	848.691	848.887	849.083	849.279
620.4	849.475	849.671	849.867	850.063	850.259	850.455	850.651	850.847	851.043	851.240
620.5	851.436	851.632	851.828	852.025	852.221	852.417	852.614	852.810	853.007	853.203
620.6	853.400	853.596	853.793	853.990	854.186	854.383	854.580	854.776	854.973	855.170
620.7	855.367	855.564	855.760	855.957	856.154	856.351	856.548	856.745	856.942	857.139
620.8	857.336	857.534	857.731	857.928	858.125	858.322	858.520	858.717	858.914	859.112
620.9	859.309	859.506	859.704	859.901	860.099	860.296	860.494	860.692	860.889	861.087
ELEV	0.00	0.01	0.02	0.03	0.04	0.05	0.06	0.07	0.08	0.09

TABLE 7-2 (Continued)

BELTON LAKE - ELEVATION CAPACITY TABLE

ELEVATIONS IN FEET-NGVD, CAPACITIES IN THOUSAND ACRE-FEET										
ELEV	0.00	0.01	0.02	0.03	0.04	0.05	0.06	0.07	0.08	0.09
621.0	861.284	861.482	861.680	861.878	862.076	862.273	862.471	862.669	862.867	863.065
621.1	863.263	863.461	863.659	863.857	864.055	864.253	864.451	864.650	864.848	865.046
621.2	865.244	865.443	865.641	865.839	866.038	866.236	866.435	866.633	866.832	867.030
621.3	867.229	867.427	867.626	867.825	868.023	868.222	868.421	868.620	868.818	869.017
621.4	869.216	869.415	869.614	869.813	870.012	870.211	870.410	870.609	870.808	871.008
621.5	871.207	871.406	871.605	871.805	872.004	872.203	872.403	872.602	872.801	873.001
621.6	873.200	873.400	873.599	873.799	873.998	874.198	874.398	874.597	874.797	874.997
621.7	875.197	875.397	875.596	875.796	875.996	876.196	876.396	876.596	876.796	876.996
621.8	877.196	877.396	877.597	877.797	877.997	878.197	878.398	878.598	878.798	878.998
621.9	879.199	879.399	879.600	879.800	880.001	880.201	880.402	880.602	880.803	881.004
622.0	881.205	881.405	881.606	881.807	882.008	882.208	882.409	882.610	882.811	883.012
622.1	883.213	883.414	883.615	883.816	884.017	884.219	884.420	884.621	884.822	885.023
622.2	885.225	885.426	885.627	885.829	886.030	886.232	886.433	886.635	886.836	887.038
622.3	887.239	887.441	887.643	887.844	888.046	888.248	888.449	888.651	888.853	889.055
622.4	889.257	889.459	889.661	889.863	890.065	890.267	890.469	890.671	890.873	891.075
622.5	891.277	891.480	891.682	891.884	892.086	892.289	892.491	892.694	892.896	893.098
622.6	893.301	893.503	893.706	893.909	894.111	894.314	894.516	894.719	894.922	895.125
622.7	895.327	895.530	895.733	895.936	896.139	896.342	896.545	896.748	896.951	897.154
622.8	897.357	897.560	897.763	897.966	898.170	898.373	898.576	898.779	898.983	899.186
622.9	899.390	899.593	899.796	900.000	900.203	900.407	900.610	900.814	901.018	901.221
623.0	901.425	901.629	901.833	902.036	902.240	902.444	902.648	902.852	903.056	903.260
623.1	903.464	903.669	903.873	904.077	904.282	904.486	904.690	904.895	905.100	905.304
623.2	905.509	905.714	905.918	906.123	906.328	906.533	906.738	906.943	907.148	907.353
623.3	907.558	907.763	907.969	908.174	908.379	908.584	908.790	908.995	909.201	909.407
623.4	909.612	909.818	910.024	910.229	910.435	910.641	910.847	911.053	911.259	911.465
623.5	911.671	911.877	912.084	912.290	912.496	912.703	912.909	913.115	913.322	913.529
623.6	913.735	913.942	914.149	914.355	914.562	914.769	914.976	915.183	915.390	915.597
623.7	915.804	916.011	916.218	916.426	916.633	916.840	917.048	917.255	917.463	917.670
623.8	917.878	918.085	918.293	918.501	918.709	918.917	919.124	919.332	919.540	919.748
623.9	919.956	920.165	920.373	920.581	920.789	920.998	921.206	921.414	921.623	921.831
624.0	922.040	922.249	922.457	922.666	922.875	923.083	923.292	923.501	923.710	923.919
624.1	924.128	924.337	924.546	924.755	924.964	925.174	925.383	925.592	925.802	926.011
624.2	926.220	926.430	926.639	926.849	927.058	927.268	927.478	927.687	927.897	928.107
624.3	928.317	928.527	928.736	928.946	929.156	929.366	929.576	929.787	929.997	930.207
624.4	930.417	930.628	930.838	931.048	931.259	931.469	931.680	931.890	932.101	932.311
624.5	932.522	932.733	932.943	933.154	933.365	933.576	933.787	933.998	934.209	934.420
624.6	934.631	934.842	935.053	935.264	935.475	935.687	935.898	936.109	936.321	936.532
624.7	936.744	936.955	937.167	937.378	937.590	937.802	938.013	938.225	938.437	938.649
624.8	938.861	939.073	939.285	939.497	939.709	939.921	940.133	940.345	940.557	940.770
624.9	940.982	941.194	941.407	941.619	941.832	942.044	942.257	942.469	942.682	942.895
625.0	943.107	943.320	943.533	943.746	943.959	944.172	944.386	944.599	944.812	945.026
625.1	945.240	945.453	945.667	945.881	946.095	946.309	946.523	946.737	946.952	947.166
625.2	947.380	947.595	947.810	948.025	948.239	948.454	948.669	948.885	949.100	949.315
625.3	949.531	949.746	949.962	950.177	950.393	950.609	950.825	951.041	951.257	951.473
625.4	951.690	951.906	952.122	952.339	952.556	952.772	952.989	953.206	953.423	953.640
625.5	953.857	954.075	954.292	954.510	954.727	954.945	955.163	955.380	955.598	955.816
625.6	956.034	956.253	956.471	956.689	956.908	957.126	957.345	957.564	957.783	958.002
625.7	958.221	958.440	958.659	958.878	959.097	959.317	959.536	959.756	959.976	960.196
625.8	960.416	960.635	960.856	961.076	961.296	961.516	961.737	961.957	962.178	962.399
625.9	962.620	962.840	963.061	963.282	963.504	963.725	963.946	964.168	964.389	964.611
ELEV	0.00	0.01	0.02	0.03	0.04	0.05	0.06	0.07	0.08	0.09

TABLE 7-2 (Continued)

BELTON LAKE - ELEVATION CAPACITY TABLE

ELEVATIONS IN FEET-NGVD, CAPACITIES IN THOUSAND ACRE-FEET

ELEV	0.00	0.01	0.02	0.03	0.04	0.05	0.06	0.07	0.08	0.09
626.0	964.833	965.054	965.276	965.498	965.720	965.942	966.164	966.386	966.608	966.830
626.1	967.052	967.274	967.496	967.718	967.940	968.163	968.385	968.607	968.830	969.052
626.2	969.275	969.497	969.720	969.942	970.165	970.387	970.610	970.833	971.055	971.278
626.3	971.501	971.724	971.947	972.169	972.392	972.615	972.838	973.062	973.285	973.508
626.4	973.731	973.954	974.177	974.401	974.624	974.847	975.070	975.294	975.517	975.741
626.5	975.964	976.188	976.411	976.635	976.859	977.082	977.306	977.530	977.754	977.977
626.6	978.201	978.425	978.649	978.873	979.097	979.321	979.545	979.769	979.993	980.218
626.7	980.442	980.666	980.890	981.115	981.339	981.563	981.788	982.012	982.237	982.461
626.8	982.686	982.910	983.135	983.360	983.584	983.809	984.034	984.259	984.484	984.708
626.9	984.933	985.158	985.383	985.608	985.833	986.058	986.284	986.509	986.734	986.959
627.0	987.185	987.410	987.635	987.860	988.086	988.311	988.537	988.762	988.988	989.213
627.1	989.439	989.664	989.890	990.115	990.341	990.567	990.792	991.018	991.244	991.470
627.2	991.696	991.921	992.147	992.373	992.599	992.825	993.051	993.277	993.503	993.729
627.3	993.955	994.181	994.407	994.633	994.860	995.086	995.312	995.538	995.765	995.991
627.4	996.217	996.443	996.670	996.896	997.123	997.349	997.576	997.802	998.029	998.255
627.5	998.482	998.708	998.935	999.162	999.388	999.615	999.842	1000.069	1000.296	1000.522
627.6	1000.749	1000.976	1001.203	1001.430	1001.657	1001.884	1002.111	1002.338	1002.565	1002.792
627.7	1003.019	1003.246	1003.474	1003.701	1003.928	1004.155	1004.383	1004.610	1004.837	1005.065
627.8	1005.292	1005.519	1005.747	1005.974	1006.202	1006.429	1006.657	1006.884	1007.112	1007.339
627.9	1007.567	1007.795	1008.023	1008.250	1008.478	1008.706	1008.933	1009.161	1009.389	1009.617
628.0	1009.845	1010.073	1010.301	1010.529	1010.757	1010.985	1011.213	1011.441	1011.669	1011.897
628.1	1012.126	1012.354	1012.582	1012.810	1013.039	1013.267	1013.495	1013.724	1013.952	1014.180
628.2	1014.409	1014.637	1014.866	1015.094	1015.323	1015.551	1015.780	1016.009	1016.237	1016.466
628.3	1016.695	1016.923	1017.152	1017.381	1017.610	1017.839	1018.068	1018.296	1018.525	1018.754
628.4	1018.983	1019.212	1019.441	1019.670	1019.899	1020.129	1020.358	1020.587	1020.816	1021.045
628.5	1021.275	1021.504	1021.733	1021.963	1022.192	1022.421	1022.651	1022.880	1023.110	1023.339
628.6	1023.569	1023.798	1024.028	1024.257	1024.487	1024.717	1024.946	1025.176	1025.406	1025.635
628.7	1025.865	1026.095	1026.325	1026.555	1026.785	1027.015	1027.245	1027.475	1027.705	1027.935
628.8	1028.165	1028.395	1028.625	1028.855	1029.085	1029.315	1029.546	1029.776	1030.006	1030.236
628.9	1030.467	1030.697	1030.927	1031.158	1031.388	1031.619	1031.849	1032.080	1032.310	1032.541
629.0	1032.771	1033.002	1033.233	1033.463	1033.694	1033.925	1034.156	1034.386	1034.617	1034.848
629.1	1035.078	1035.309	1035.540	1035.771	1036.002	1036.233	1036.464	1036.694	1036.925	1037.156
629.2	1037.387	1037.618	1037.849	1038.080	1038.311	1038.542	1038.774	1039.005	1039.236	1039.467
629.3	1039.698	1039.929	1040.160	1040.392	1040.623	1040.854	1041.085	1041.317	1041.548	1041.779
629.4	1042.010	1042.242	1042.473	1042.705	1042.936	1043.167	1043.399	1043.630	1043.862	1044.093
629.5	1044.325	1044.556	1044.788	1045.019	1045.251	1045.483	1045.714	1045.946	1046.177	1046.409
629.6	1046.641	1046.873	1047.104	1047.336	1047.568	1047.800	1048.031	1048.263	1048.495	1048.727
629.7	1048.959	1049.191	1049.423	1049.655	1049.886	1050.118	1050.350	1050.582	1050.814	1051.047
629.8	1051.278	1051.511	1051.743	1051.975	1052.207	1052.439	1052.671	1052.903	1053.136	1053.368
629.9	1053.600	1053.832	1054.065	1054.297	1054.529	1054.761	1054.994	1055.226	1055.459	1055.691
630.0	1055.923	1056.156	1056.388	1056.621	1056.854	1057.086	1057.319	1057.551	1057.784	1058.017
630.1	1058.250	1058.482	1058.715	1058.948	1059.181	1059.414	1059.647	1059.880	1060.113	1060.346
630.2	1060.579	1060.812	1061.046	1061.279	1061.512	1061.746	1061.979	1062.212	1062.446	1062.679
630.3	1062.913	1063.146	1063.380	1063.613	1063.847	1064.081	1064.314	1064.548	1064.782	1065.016
630.4	1065.250	1065.484	1065.718	1065.952	1066.186	1066.420	1066.654	1066.888	1067.122	1067.356
630.5	1067.590	1067.824	1068.059	1068.293	1068.527	1068.762	1068.996	1069.231	1069.465	1069.700
630.6	1069.934	1070.169	1070.404	1070.638	1070.873	1071.108	1071.343	1071.578	1071.812	1072.047
630.7	1072.282	1072.517	1072.752	1072.987	1073.222	1073.458	1073.693	1073.928	1074.163	1074.398
630.8	1074.634	1074.869	1075.104	1075.340	1075.575	1075.811	1076.046	1076.282	1076.517	1076.753
630.9	1076.989	1077.224	1077.460	1077.696	1077.932	1078.168	1078.404	1078.640	1078.875	1079.111
ELEV	0.00	0.01	0.02	0.03	0.04	0.05	0.06	0.07	0.08	0.09

TABLE 7-2 (Continued)

BELTON LAKE - ELEVATION CAPACITY TABLE

ELEVATIONS IN FEET-NGVD, CAPACITIES IN THOUSAND ACRE-FEET

ELEV	0.00	0.01	0.02	0.03	0.04	0.05	0.06	0.07	0.08	0.09
631.0	1079.348	1079.584	1079.820	1080.056	1080.292	1080.528	1080.765	1081.001	1081.237	1081.474
631.1	1081.710	1081.947	1082.183	1082.420	1082.657	1082.893	1083.130	1083.367	1083.604	1083.841
631.2	1084.078	1084.315	1084.552	1084.789	1085.026	1085.263	1085.500	1085.737	1085.975	1086.212
631.3	1086.449	1086.687	1086.924	1087.162	1087.400	1087.637	1087.875	1088.113	1088.350	1088.588
631.4	1088.826	1089.064	1089.302	1089.540	1089.778	1090.016	1090.254	1090.492	1090.730	1090.969
631.5	1091.207	1091.445	1091.684	1091.922	1092.161	1092.399	1092.638	1092.876	1093.115	1093.354
631.6	1093.592	1093.831	1094.070	1094.309	1094.548	1094.787	1095.026	1095.265	1095.504	1095.743
631.7	1095.983	1096.222	1096.461	1096.700	1096.940	1097.179	1097.419	1097.658	1097.898	1098.137
631.8	1098.377	1098.617	1098.856	1099.096	1099.336	1099.576	1099.816	1100.056	1100.296	1100.536
631.9	1100.776	1101.016	1101.257	1101.497	1101.737	1101.978	1102.218	1102.458	1102.699	1102.939
632.0	1103.180	1103.421	1103.661	1103.902	1104.143	1104.384	1104.624	1104.865	1105.106	1105.347
632.1	1105.588	1105.829	1106.070	1106.312	1106.553	1106.794	1107.035	1107.276	1107.518	1107.759
632.2	1108.001	1108.242	1108.484	1108.725	1108.967	1109.209	1109.450	1109.692	1109.934	1110.176
632.3	1110.418	1110.660	1110.902	1111.144	1111.386	1111.628	1111.870	1112.112	1112.355	1112.597
632.4	1112.839	1113.082	1113.324	1113.567	1113.809	1114.052	1114.294	1114.537	1114.780	1115.022
632.5	1115.265	1115.508	1115.751	1115.994	1116.236	1116.479	1116.723	1116.966	1117.209	1117.452
632.6	1117.695	1117.938	1118.182	1118.425	1118.668	1118.912	1119.155	1119.399	1119.642	1119.886
632.7	1120.130	1120.374	1120.617	1120.861	1121.105	1121.349	1121.593	1121.837	1122.081	1122.325
632.8	1122.569	1122.813	1123.057	1123.301	1123.546	1123.790	1124.034	1124.279	1124.523	1124.768
632.9	1125.012	1125.257	1125.501	1125.746	1125.991	1126.235	1126.480	1126.725	1126.970	1127.215
633.0	1127.460	1127.705	1127.950	1128.195	1128.440	1128.686	1128.931	1129.176	1129.422	1129.667
633.1	1129.912	1130.158	1130.403	1130.649	1130.895	1131.140	1131.386	1131.632	1131.877	1132.123
633.2	1132.369	1132.615	1132.861	1133.107	1133.353	1133.599	1133.845	1134.092	1134.338	1134.584
633.3	1134.831	1135.077	1135.323	1135.570	1135.817	1136.063	1136.310	1136.557	1136.803	1137.050
633.4	1137.297	1137.544	1137.791	1138.037	1138.285	1138.532	1138.779	1139.026	1139.273	1139.520
633.5	1139.767	1140.015	1140.262	1140.510	1140.757	1141.005	1141.252	1141.500	1141.747	1141.995
633.6	1142.243	1142.491	1142.738	1142.986	1143.234	1143.482	1143.730	1143.978	1144.226	1144.474
633.7	1144.723	1144.971	1145.219	1145.468	1145.716	1145.964	1146.213	1146.461	1146.710	1146.958
633.8	1147.207	1147.456	1147.705	1147.953	1148.202	1148.451	1148.700	1148.949	1149.198	1149.447
633.9	1149.696	1149.946	1150.195	1150.444	1150.693	1150.943	1151.192	1151.441	1151.691	1151.940
634.0	1152.190	1152.440	1152.689	1152.939	1153.189	1153.438	1153.688	1153.938	1154.188	1154.438
634.1	1154.688	1154.938	1155.188	1155.438	1155.688	1155.939	1156.189	1156.439	1156.689	1156.940
634.2	1157.190	1157.441	1157.691	1157.942	1158.193	1158.443	1158.694	1158.944	1159.195	1159.446
634.3	1159.697	1159.948	1160.199	1160.450	1160.701	1160.952	1161.203	1161.454	1161.705	1161.956
634.4	1162.208	1162.459	1162.710	1162.962	1163.213	1163.464	1163.716	1163.968	1164.219	1164.471
634.5	1164.723	1164.974	1165.226	1165.478	1165.730	1165.981	1166.234	1166.485	1166.738	1166.990
634.6	1167.242	1167.494	1167.746	1167.998	1168.250	1168.503	1168.755	1169.007	1169.260	1169.512
634.7	1169.765	1170.017	1170.270	1170.523	1170.775	1171.028	1171.281	1171.534	1171.786	1172.040
634.8	1172.292	1172.545	1172.798	1173.052	1173.305	1173.558	1173.811	1174.064	1174.317	1174.571
634.9	1174.824	1175.078	1175.331	1175.584	1175.838	1176.092	1176.345	1176.599	1176.853	1177.106
635.0	1177.360	1177.614	1177.868	1178.122	1178.376	1178.630	1178.884	1179.138	1179.392	1179.646
635.1	1179.900	1180.155	1180.409	1180.663	1180.918	1181.172	1181.427	1181.681	1181.936	1182.191
635.2	1182.445	1182.700	1182.955	1183.210	1183.464	1183.719	1183.974	1184.229	1184.484	1184.740
635.3	1184.995	1185.250	1185.505	1185.760	1186.016	1186.271	1186.527	1186.782	1187.038	1187.293
635.4	1187.549	1187.804	1188.060	1188.316	1188.572	1188.828	1189.083	1189.339	1189.595	1189.851
635.5	1190.108	1190.364	1190.620	1190.876	1191.132	1191.389	1191.645	1191.901	1192.158	1192.414
635.6	1192.671	1192.927	1193.184	1193.441	1193.697	1193.954	1194.211	1194.468	1194.725	1194.982
635.7	1195.239	1195.496	1195.753	1196.010	1196.267	1196.524	1196.782	1197.039	1197.296	1197.554
635.8	1197.811	1198.069	1198.326	1198.584	1198.842	1199.099	1199.357	1199.615	1199.873	1200.130
635.9	1200.388	1200.646	1200.904	1201.162	1201.420	1201.678	1201.937	1202.195	1202.453	1202.712
ELEV	0.00	0.01	0.02	0.03	0.04	0.05	0.06	0.07	0.08	0.09

TABLE 7-2 (Continued)

BELTON LAKE - ELEVATION CAPACITY TABLE

ELEVATIONS IN FEET-NGVD, CAPACITIES IN THOUSAND ACRE-FEET

ELEV	0.00	0.01	0.02	0.03	0.04	0.05	0.06	0.07	0.08	0.09
636.0	1202.970	1203.228	1203.487	1203.745	1204.004	1204.263	1204.521	1204.780	1205.039	1205.297
636.1	1205.556	1205.815	1206.074	1206.333	1206.592	1206.851	1207.110	1207.370	1207.629	1207.888
636.2	1208.148	1208.407	1208.666	1208.926	1209.185	1209.445	1209.705	1209.964	1210.224	1210.484
636.3	1210.744	1211.004	1211.263	1211.523	1211.783	1212.043	1212.303	1212.564	1212.824	1213.084
636.4	1213.344	1213.605	1213.865	1214.126	1214.386	1214.647	1214.907	1215.168	1215.428	1215.689
636.5	1215.950	1216.211	1216.472	1216.733	1216.994	1217.255	1217.516	1217.777	1218.038	1218.299
636.6	1218.560	1218.822	1219.083	1219.344	1219.606	1219.867	1220.129	1220.391	1220.652	1220.914
636.7	1221.176	1221.437	1221.699	1221.961	1222.223	1222.485	1222.747	1223.009	1223.271	1223.533
636.8	1223.796	1224.058	1224.320	1224.583	1224.845	1225.107	1225.370	1225.632	1225.895	1226.158
636.9	1226.420	1226.683	1226.946	1227.209	1227.472	1227.735	1227.998	1228.261	1228.524	1228.787
637.0	1229.050	1229.313	1229.577	1229.840	1230.103	1230.367	1230.630	1230.894	1231.157	1231.421
637.1	1231.684	1231.948	1232.212	1232.476	1232.740	1233.003	1233.267	1233.531	1233.795	1234.059
637.2	1234.324	1234.588	1234.852	1235.116	1235.381	1235.645	1235.909	1236.174	1236.438	1236.703
637.3	1236.968	1237.232	1237.497	1237.762	1238.026	1238.291	1238.556	1238.821	1239.086	1239.351
637.4	1239.616	1239.881	1240.147	1240.412	1240.677	1240.943	1241.208	1241.473	1241.739	1242.004
637.5	1242.270	1242.536	1242.801	1243.067	1243.333	1243.599	1243.865	1244.130	1244.396	1244.662
637.6	1244.928	1245.194	1245.461	1245.727	1245.993	1246.259	1246.526	1246.792	1247.059	1247.325
637.7	1247.592	1247.858	1248.125	1248.391	1248.658	1248.925	1249.192	1249.459	1249.726	1249.993
637.8	1250.260	1250.527	1250.794	1251.061	1251.328	1251.595	1251.863	1252.130	1252.397	1252.665
637.9	1252.932	1253.200	1253.468	1253.735	1254.003	1254.271	1254.538	1254.806	1255.074	1255.342
638.0	1255.610	1255.878	1256.146	1256.414	1256.682	1256.951	1257.219	1257.487	1257.755	1258.024
638.1	1258.292	1258.561	1258.829	1259.098	1259.367	1259.635	1259.904	1260.173	1260.442	1260.711
638.2	1260.980	1261.249	1261.518	1261.787	1262.056	1262.325	1262.594	1262.864	1263.133	1263.402
638.3	1263.672	1263.941	1264.211	1264.480	1264.750	1265.019	1265.289	1265.559	1265.829	1266.099
638.4	1266.368	1266.638	1266.908	1267.178	1267.448	1267.719	1267.989	1268.259	1268.529	1268.800
638.5	1269.070	1269.340	1269.611	1269.881	1270.152	1270.423	1270.693	1270.964	1271.235	1271.505
638.6	1271.776	1272.047	1272.318	1272.589	1272.860	1273.131	1273.402	1273.674	1273.945	1274.216
638.7	1274.488	1274.759	1275.030	1275.302	1275.573	1275.845	1276.117	1276.388	1276.660	1276.932
638.8	1277.204	1277.475	1277.747	1278.019	1278.291	1278.563	1278.835	1279.108	1279.380	1279.652
638.9	1279.924	1280.197	1280.469	1280.741	1281.014	1281.287	1281.559	1281.832	1282.104	1282.377
639.0	1282.650	1282.923	1283.196	1283.469	1283.742	1284.015	1284.288	1284.561	1284.834	1285.108
639.1	1285.381	1285.654	1285.928	1286.201	1286.475	1286.749	1287.022	1287.296	1287.570	1287.844
639.2	1288.118	1288.392	1288.666	1288.940	1289.214	1289.488	1289.762	1290.037	1290.311	1290.586
639.3	1290.860	1291.135	1291.409	1291.684	1291.959	1292.234	1292.508	1292.783	1293.058	1293.333
639.4	1293.608	1293.884	1294.159	1294.434	1294.709	1294.985	1295.260	1295.536	1295.811	1296.087
639.5	1296.363	1296.638	1296.914	1297.190	1297.466	1297.742	1298.018	1298.294	1298.570	1298.846
639.6	1299.122	1299.399	1299.675	1299.952	1300.228	1300.505	1300.781	1301.058	1301.334	1301.611
639.7	1301.888	1302.165	1302.442	1302.719	1302.996	1303.273	1303.550	1303.828	1304.105	1304.382
639.8	1304.660	1304.937	1305.215	1305.492	1305.770	1306.047	1306.325	1306.603	1306.881	1307.159
639.9	1307.437	1307.715	1307.993	1308.271	1308.549	1308.828	1309.106	1309.385	1309.663	1309.941
640.0	1310.220	1310.499	1310.777	1311.056	1311.335	1311.614	1311.892	1312.171	1312.450	1312.729
640.1	1313.009	1313.288	1313.567	1313.846	1314.125	1314.405	1314.684	1314.963	1315.243	1315.522
640.2	1315.802	1316.082	1316.361	1316.641	1316.921	1317.201	1317.480	1317.760	1318.040	1318.320
640.3	1318.600	1318.881	1319.161	1319.441	1319.721	1320.002	1320.282	1320.562	1320.843	1321.123
640.4	1321.404	1321.685	1321.965	1322.246	1322.527	1322.808	1323.089	1323.369	1323.650	1323.931
640.5	1324.213	1324.494	1324.775	1325.056	1325.337	1325.619	1325.900	1326.181	1326.463	1326.744
640.6	1327.026	1327.308	1327.589	1327.871	1328.153	1328.435	1328.717	1328.998	1329.280	1329.562
640.7	1329.844	1330.127	1330.409	1330.691	1330.973	1331.256	1331.538	1331.820	1332.103	1332.385
640.8	1332.668	1332.951	1333.233	1333.516	1333.799	1334.082	1334.365	1334.647	1334.930	1335.213
640.9	1335.496	1335.780	1336.063	1336.346	1336.629	1336.913	1337.196	1337.479	1337.763	1338.046
ELEV	0.00	0.01	0.02	0.03	0.04	0.05	0.06	0.07	0.08	0.09

TABLE 7-2 (Continued)

BELTON LAKE - ELEVATION CAPACITY TABLE

ELEVATIONS IN FEET-NGVD, CAPACITIES IN THOUSAND ACRE-FEET

ELEV	0.00	0.01	0.02	0.03	0.04	0.05	0.06	0.07	0.08	0.09
641.0	1338.330	1338.614	1338.897	1339.181	1339.465	1339.749	1340.032	1340.317	1340.600	1340.885
641.1	1341.169	1341.453	1341.737	1342.021	1342.306	1342.590	1342.874	1343.159	1343.443	1343.728
641.2	1344.012	1344.297	1344.582	1344.866	1345.151	1345.436	1345.721	1346.006	1346.291	1346.576
641.3	1346.861	1347.147	1347.432	1347.717	1348.002	1348.288	1348.573	1348.859	1349.144	1349.430
641.4	1349.716	1350.001	1350.287	1350.573	1350.859	1351.145	1351.431	1351.717	1352.003	1352.289
641.5	1352.575	1352.861	1353.147	1353.434	1353.720	1354.007	1354.293	1354.580	1354.866	1355.153
641.6	1355.440	1355.726	1356.013	1356.300	1356.587	1356.874	1357.161	1357.448	1357.735	1358.022
641.7	1358.309	1358.597	1358.884	1359.171	1359.459	1359.746	1360.034	1360.321	1360.609	1360.897
641.8	1361.184	1361.472	1361.760	1362.048	1362.336	1362.624	1362.912	1363.200	1363.488	1363.776
641.9	1364.065	1364.353	1364.641	1364.930	1365.218	1365.507	1365.795	1366.084	1366.373	1366.661
642.0	1366.950	1367.239	1367.528	1367.817	1368.106	1368.395	1368.684	1368.973	1369.262	1369.551
642.1	1369.841	1370.130	1370.419	1370.709	1370.998	1371.288	1371.578	1371.867	1372.157	1372.447
642.2	1372.736	1373.026	1373.316	1373.606	1373.896	1374.186	1374.476	1374.766	1375.057	1375.347
642.3	1375.637	1375.928	1376.218	1376.509	1376.799	1377.090	1377.380	1377.671	1377.962	1378.253
642.4	1378.544	1378.834	1379.125	1379.417	1379.708	1379.999	1380.290	1380.581	1380.872	1381.164
642.5	1381.455	1381.746	1382.038	1382.329	1382.621	1382.913	1383.204	1383.496	1383.788	1384.080
642.6	1384.372	1384.663	1384.955	1385.248	1385.540	1385.832	1386.124	1386.416	1386.709	1387.001
642.7	1387.293	1387.586	1387.878	1388.171	1388.464	1388.756	1389.049	1389.342	1389.635	1389.927
642.8	1390.220	1390.513	1390.806	1391.099	1391.393	1391.686	1391.979	1392.272	1392.566	1392.859
642.9	1393.153	1393.446	1393.740	1394.033	1394.327	1394.621	1394.914	1395.208	1395.502	1395.796
643.0	1396.090	1396.384	1396.678	1396.972	1397.266	1397.561	1397.855	1398.149	1398.444	1398.738
643.1	1399.033	1399.327	1399.622	1399.917	1400.211	1400.506	1400.801	1401.096	1401.391	1401.686
643.2	1401.981	1402.276	1402.571	1402.866	1403.161	1403.457	1403.752	1404.048	1404.343	1404.639
643.3	1404.934	1405.230	1405.526	1405.821	1406.117	1406.413	1406.709	1407.005	1407.301	1407.597
643.4	1407.893	1408.189	1408.486	1408.782	1409.078	1409.375	1409.671	1409.968	1410.264	1410.561
643.5	1410.858	1411.154	1411.451	1411.748	1412.045	1412.342	1412.639	1412.936	1413.233	1413.530
643.6	1413.827	1414.125	1414.422	1414.719	1415.017	1415.314	1415.612	1415.909	1416.207	1416.505
643.7	1416.802	1417.100	1417.398	1417.696	1417.994	1418.292	1418.590	1418.888	1419.186	1419.484
643.8	1419.783	1420.081	1420.380	1420.678	1420.976	1421.275	1421.574	1421.872	1422.171	1422.470
643.9	1422.769	1423.068	1423.366	1423.666	1423.964	1424.264	1424.563	1424.862	1425.161	1425.461
644.0	1425.760	1426.059	1426.359	1426.658	1426.958	1427.258	1427.557	1427.857	1428.157	1428.457
644.1	1428.757	1429.057	1429.356	1429.657	1429.957	1430.257	1430.557	1430.857	1431.158	1431.458
644.2	1431.758	1432.059	1432.359	1432.660	1432.961	1433.261	1433.562	1433.863	1434.164	1434.464
644.3	1434.765	1435.066	1435.367	1435.668	1435.970	1436.271	1436.572	1436.873	1437.175	1437.476
644.4	1437.778	1438.079	1438.381	1438.682	1438.984	1439.286	1439.587	1439.889	1440.191	1440.493
644.5	1440.795	1441.097	1441.399	1441.701	1442.003	1442.306	1442.608	1442.910	1443.213	1443.515
644.6	1443.818	1444.120	1444.423	1444.725	1445.028	1445.331	1445.634	1445.937	1446.239	1446.542
644.7	1446.845	1447.149	1447.452	1447.755	1448.058	1448.361	1448.665	1448.968	1449.271	1449.575
644.8	1449.878	1450.182	1450.486	1450.789	1451.093	1451.397	1451.701	1452.005	1452.308	1452.613
644.9	1452.917	1453.221	1453.525	1453.829	1454.133	1454.438	1454.742	1455.046	1455.351	1455.655
645.0	1455.960	1456.265	1456.569	1456.874	1457.179	1457.484	1457.789	1458.094	1458.399	1458.704
645.1	1459.009	1459.314	1459.619	1459.924	1460.230	1460.535	1460.840	1461.146	1461.452	1461.757
645.2	1462.063	1462.369	1462.674	1462.980	1463.286	1463.592	1463.898	1464.204	1464.510	1464.816
645.3	1465.122	1465.428	1465.735	1466.041	1466.348	1466.654	1466.961	1467.267	1467.574	1467.880
645.4	1468.187	1468.494	1468.801	1469.108	1469.415	1469.722	1470.029	1470.336	1470.643	1470.950
645.5	1471.257	1471.565	1471.872	1472.180	1472.487	1472.795	1473.102	1473.410	1473.718	1474.025
645.6	1474.333	1474.641	1474.949	1475.257	1475.565	1475.873	1476.181	1476.489	1476.798	1477.106
645.7	1477.414	1477.723	1478.031	1478.340	1478.648	1478.957	1479.266	1479.574	1479.883	1480.192
645.8	1480.501	1480.810	1481.119	1481.428	1481.737	1482.046	1482.355	1482.665	1482.974	1483.283
645.9	1483.593	1483.902	1484.212	1484.521	1484.831	1485.141	1485.450	1485.760	1486.070	1486.380
ELEV	0.00	0.01	0.02	0.03	0.04	0.05	0.06	0.07	0.08	0.09

TABLE 7-2 (Continued)

BELTON LAKE - ELEVATION CAPACITY TABLE

ELEVATIONS IN FEET-NGVD, CAPACITIES IN THOUSAND ACRE-FEET

ELEV	0.00	0.01	0.02	0.03	0.04	0.05	0.06	0.07	0.08	0.09
646.0	1486.690	1487.000	1487.310	1487.620	1487.930	1488.241	1488.551	1488.861	1489.172	1489.482
646.1	1489.793	1490.103	1490.414	1490.724	1491.035	1491.346	1491.657	1491.968	1492.278	1492.589
646.2	1492.900	1493.212	1493.523	1493.834	1494.145	1494.456	1494.768	1495.079	1495.390	1495.702
646.3	1496.013	1496.325	1496.637	1496.948	1497.260	1497.572	1497.884	1498.196	1498.507	1498.819
646.4	1499.132	1499.444	1499.756	1500.068	1500.380	1500.693	1501.005	1501.317	1501.630	1501.942
646.5	1502.255	1502.568	1502.880	1503.193	1503.506	1503.819	1504.131	1504.444	1504.757	1505.071
646.6	1505.384	1505.697	1506.010	1506.323	1506.636	1506.950	1507.263	1507.577	1507.890	1508.204
646.7	1508.517	1508.831	1509.145	1509.458	1509.772	1510.086	1510.400	1510.714	1511.028	1511.342
646.8	1511.656	1511.971	1512.285	1512.599	1512.913	1513.228	1513.542	1513.857	1514.171	1514.486
646.9	1514.801	1515.115	1515.430	1515.745	1516.060	1516.375	1516.690	1517.005	1517.320	1517.635
647.0	1517.950	1518.265	1518.580	1518.896	1519.211	1519.527	1519.842	1520.158	1520.473	1520.789
647.1	1521.105	1521.421	1521.736	1522.052	1522.368	1522.684	1523.000	1523.317	1523.633	1523.949
647.2	1524.265	1524.582	1524.898	1525.214	1525.531	1525.848	1526.164	1526.481	1526.797	1527.114
647.3	1527.431	1527.748	1528.065	1528.382	1528.699	1529.016	1529.333	1529.651	1529.968	1530.285
647.4	1530.603	1530.920	1531.238	1531.555	1531.873	1532.191	1532.509	1532.826	1533.144	1533.462
647.5	1533.780	1534.098	1534.416	1534.734	1535.052	1535.371	1535.689	1536.007	1536.326	1536.644
647.6	1536.963	1537.281	1537.600	1537.919	1538.238	1538.556	1538.875	1539.194	1539.513	1539.832
647.7	1540.151	1540.470	1540.790	1541.109	1541.428	1541.748	1542.067	1542.386	1542.706	1543.026
647.8	1543.345	1543.665	1543.985	1544.304	1544.624	1544.944	1545.264	1545.584	1545.904	1546.225
647.9	1546.545	1546.865	1547.185	1547.506	1547.826	1548.147	1548.467	1548.788	1549.109	1549.429
648.0	1549.750	1550.071	1550.392	1550.713	1551.034	1551.355	1551.676	1551.997	1552.318	1552.640
648.1	1552.961	1553.282	1553.604	1553.925	1554.247	1554.568	1554.890	1555.212	1555.534	1555.856
648.2	1556.178	1556.500	1556.822	1557.144	1557.466	1557.788	1558.110	1558.433	1558.755	1559.078
648.3	1559.400	1559.723	1560.045	1560.368	1560.691	1561.014	1561.336	1561.659	1561.982	1562.305
648.4	1562.628	1562.952	1563.275	1563.598	1563.921	1564.245	1564.568	1564.892	1565.215	1565.539
648.5	1565.863	1566.186	1566.510	1566.834	1567.158	1567.482	1567.806	1568.130	1568.454	1568.778
648.6	1569.102	1569.427	1569.751	1570.075	1570.400	1570.724	1571.049	1571.374	1571.698	1572.023
648.7	1572.348	1572.673	1572.998	1573.323	1573.648	1573.973	1574.298	1574.624	1574.949	1575.274
648.8	1575.600	1575.925	1576.251	1576.576	1576.902	1577.228	1577.553	1577.879	1578.205	1578.531
648.9	1578.857	1579.183	1579.509	1579.835	1580.161	1580.488	1580.814	1581.141	1581.467	1581.793
649.0	1582.120	1582.447	1582.773	1583.100	1583.427	1583.754	1584.081	1584.407	1584.734	1585.062
649.1	1585.389	1585.716	1586.043	1586.370	1586.698	1587.025	1587.353	1587.680	1588.007	1588.335
649.2	1588.663	1588.990	1589.318	1589.646	1589.974	1590.302	1590.630	1590.958	1591.286	1591.614
649.3	1591.942	1592.271	1592.599	1592.927	1593.256	1593.584	1593.913	1594.241	1594.570	1594.899
649.4	1595.227	1595.556	1595.885	1596.214	1596.543	1596.872	1597.201	1597.530	1597.859	1598.188
649.5	1598.517	1598.847	1599.176	1599.506	1599.835	1600.165	1600.494	1600.824	1601.154	1601.483
649.6	1601.813	1602.143	1602.473	1602.803	1603.133	1603.463	1603.793	1604.123	1604.454	1604.784
649.7	1605.114	1605.445	1605.775	1606.106	1606.436	1606.767	1607.098	1607.428	1607.759	1608.090
649.8	1608.421	1608.752	1609.083	1609.414	1609.745	1610.076	1610.407	1610.739	1611.070	1611.401
649.9	1611.733	1612.064	1612.396	1612.727	1613.059	1613.391	1613.722	1614.054	1614.386	1614.718
650.0	1615.050	1615.382	1615.714	1616.046	1616.379	1616.711	1617.043	1617.375	1617.708	1618.041
650.1	1618.373	1618.706	1619.038	1619.371	1619.704	1620.037	1620.370	1620.703	1621.036	1621.369
650.2	1621.702	1622.036	1622.369	1622.702	1623.036	1623.369	1623.703	1624.037	1624.370	1624.704
650.3	1625.038	1625.372	1625.706	1626.040	1626.374	1626.708	1627.042	1627.376	1627.711	1628.045
650.4	1628.380	1628.714	1629.049	1629.383	1629.718	1630.053	1630.388	1630.723	1631.057	1631.392
650.5	1631.728	1632.063	1632.398	1632.733	1633.068	1633.404	1633.739	1634.075	1634.410	1634.746
650.6	1635.082	1635.417	1635.753	1636.089	1636.425	1636.761	1637.097	1637.433	1637.769	1638.106
650.7	1638.442	1638.778	1639.115	1639.451	1639.788	1640.124	1640.461	1640.798	1641.135	1641.472
650.8	1641.808	1642.145	1642.482	1642.819	1643.157	1643.494	1643.831	1644.169	1644.506	1644.844
650.9	1645.181	1645.519	1645.856	1646.194	1646.532	1646.870	1647.208	1647.546	1647.884	1648.222
ELEV	0.00	0.01	0.02	0.03	0.04	0.05	0.06	0.07	0.08	0.09

TABLE 7-2 (Continued)

BELTON LAKE - ELEVATION CAPACITY TABLE

ELEVATIONS IN FEET-NGVD, CAPACITIES IN THOUSAND ACRE-FEET

Table with columns: ELEV, 0.00, 0.01, 0.02, 0.03, 0.04, 0.05, 0.06, 0.07, 0.08, 0.09. Rows contain elevation and capacity data for various levels.

TABLE 7-2 (Continued)

BELTON LAKE - ELEVATION CAPACITY TABLE

ELEVATIONS IN FEET-NGVD, CAPACITIES IN THOUSAND ACRE-FEET

Table with columns: ELEV, 0.00, 0.01, 0.02, 0.03, 0.04, 0.05, 0.06, 0.07, 0.08, 0.09. Rows contain elevation and capacity data for various levels from 656.0 to 660.9.

TABLE 7-2 (Continued)

BELTON LAKE - ELEVATION CAPACITY TABLE

ELEVATIONS IN FEET-NGVD, CAPACITIES IN THOUSAND ACRE-FEET

ELEV	0.00	0.01	0.02	0.03	0.04	0.05	0.06	0.07	0.08	0.09
661.0	2016.600	2016.998	2017.396	2017.795	2018.193	2018.592	2018.990	2019.389	2019.787	2020.186
661.1	2020.585	2020.984	2021.383	2021.782	2022.181	2022.580	2022.979	2023.378	2023.777	2024.177
661.2	2024.576	2024.975	2025.375	2025.775	2026.174	2026.574	2026.974	2027.373	2027.773	2028.173
661.3	2028.573	2028.973	2029.373	2029.773	2030.173	2030.574	2030.974	2031.375	2031.775	2032.175
661.4	2032.576	2032.977	2033.377	2033.778	2034.179	2034.580	2034.981	2035.382	2035.783	2036.184
661.5	2036.585	2036.986	2037.387	2037.789	2038.190	2038.592	2038.993	2039.395	2039.797	2040.198
661.6	2040.600	2041.002	2041.404	2041.806	2042.208	2042.610	2043.012	2043.414	2043.816	2044.219
661.7	2044.621	2045.023	2045.426	2045.828	2046.231	2046.634	2047.036	2047.439	2047.842	2048.245
661.8	2048.648	2049.051	2049.454	2049.857	2050.260	2050.664	2051.067	2051.470	2051.874	2052.277
661.9	2052.681	2053.085	2053.488	2053.892	2054.296	2054.700	2055.104	2055.508	2055.912	2056.316
ELEV	0.00	0.01	0.02	0.03	0.04	0.05	0.06	0.07	0.08	0.09