



TRANS-TEXAS WATER PROGRAM

SOUTHEAST AREA

Memorandum Report

Impact of Potential Toledo Bend Operational Changes

April 1998

**Sabine River Authority of Texas
Lower Neches Valley Authority
San Jacinto River Authority
City of Houston
Brazos River Authority
Texas Water Development Board**

This document is a product of the Trans-Texas Water Program: Southeast Area. The program's mission is to propose the best economically and environmentally beneficial methods to meet water needs in Texas for the long term. The program's four planning areas are the Southeast Area, which includes the Houston-Galveston metropolitan area, the South-Central Area (including Corpus Christi), the North-Central Area (including Austin), and the West-Central Area (including San Antonio).

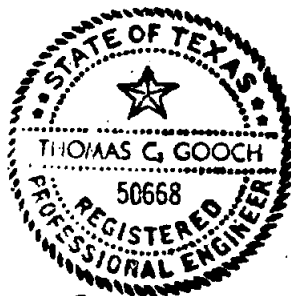
The Southeast Area of the Trans-Texas Water Program draws perspectives from many organizations and citizens. The Policy Management Committee and its Southeast Area subcommittee guide the program; the Southeast Area Technical Advisory Committee serves as program advisor. Local sponsors are the Sabine River Authority of Texas, the Lower Neches Valley Authority, the San Jacinto River Authority, the City of Houston and the Brazos River Authority.

The Texas Water Development Board is the lead Texas agency for the Trans-Texas Water Program. The Board, along with the Texas Natural Resource Conservation Commission, the Texas Parks & Wildlife Department and the Texas General Land Office, set goals and policies for the program pertaining to water resources management and are members of the Policy Management Committee.

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4/10/98

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Contents

1. Introduction	1-1
2. Conservative Estimates of Needs	2-1
3. 50-Year Reservoir Operation Studies	3-1
4. Impacts of Operational Change at Toledo Bend: 1940-1989	4-1
4.1 Impact on Toledo Bend Lake Levels	4-1
4.2 Impact on Spills at Toledo Bend Dam	4-3
4.3 Impact on Inflows to Sabine Lake	4-5
4.4 Impact on Sabine River Flows	4-9
5. Comparisons with Conservative Estimates of Needs During the Period 1941-1965	5-1
6. Proposed Environmental Criteria	6-1
7. Conclusions	7-1

List of Appendices

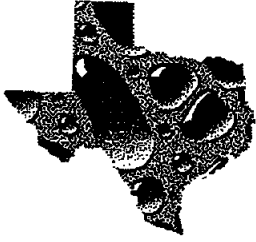
- Appendix A Trans-Texas Environmental Assessment**
- Appendix B Conservative Estimate of Inflow Needs**
- Appendix C Operation Study for Existing Conditions**
- Appendix D Operation Study for Modified Conditions**
- Appendix E Historical Stream Flows**
- Appendix F Sabine Lake Flow Comparisons**
- Appendix G Graphs of Estimated Sabine Lake Inflows**
- Appendix H Environmental Water Needs Criteria of the Consensus Planning Process**
- Appendix I Comments**

Figures

Figure 1	Reservoir Levels, Existing and Modified Operation	4-2
Figure 2	Reservoir Level Frequency Curve - Existing and Modified Operation	4-2
Figure 3	Reservoir Spills - Existing and Modified Operation	4-5
Figure 4	Cumulative Spills - Existing and Modified Operation	4-5
Figure 5	Sabine River Discharge in Sabine Lake	4-7
Figure 6	Median Monthly Flows into Sabine Lake	4-8
Figure 7	Average Monthly Flows into Sabine Lake	4-8
Figure 8	Shortages to Conservative Estimate of Inflow Needs to Sabine Lake	5-3
Figure 9	Monthly Shortages to Conservative Estimate of Inflow Needs	5-3
Figure 10	Shortages to Conservative Estimate of Needs with Other Sources	5-5
Figure 11	Monthly Shortages to Estimate of Needs with Other Sources	5-5

Tables

Table 1	Decreases in Toledo Bend Lake Levels Due to Operational Changes: 1940-1989	4-1
Table 2	Decreases in Toledo Bend Spills Due to Operational Changes: 1940-1989	4-4
Table 3	Decreases in Sabine Lake Inflow Due to Operational Changes: 1940-1989	4-6
Table 4	Shortages in Meeting Conservative Estimates of Need	5-2
Table 5	Increase in Months Where Permitted and Modified Sabine Lake Inflows Exceeded Historical Inflows	5-6



1. Introduction

This memorandum report describes a set of hydrologic studies relating to the potential impact of changes in the operation of Toledo Bend Reservoir. These studies are covered by Task Group 1.3 (*Analysis of the Impact of Toledo Bend Water Right Revisions*) in the scope of work for Phase II of the Trans-Texas Water Program for the Southeast Area.

Toledo Bend Reservoir was built and is operated to provide water supply for municipal, industrial and irrigation use and for generation of hydroelectric power. The water surface elevation of the lake changes from month to month, as the amounts of inflow and use vary. Normally, the lake level stays within the top 9.8 feet of storage (i.e., between elevation 162.2 and elevation 172.0), which is the specified operating range of the power pool. At the top of the controlled storage (elevation 172.0), the rated storage capacity of the reservoir is 4,476,000 acre-feet. At the bottom of the active power pool (elevation 162.2), the rated capacity is 2,922,000 acre-feet. Occasionally, under prolonged drought conditions, the water level could fall below elevation 162.2, although that has not happened historically. The lowest water level so far experienced in the operational life of the project has been elevation 164.78, or approximately 7.2 feet below the top of conservation storage. That condition has occurred several times in the past.

The existing water rights of the Sabine River Authority of Texas authorize diversion and use of 750,000 acre-feet per year from Toledo

Bend Reservoir. The total firm yield of the reservoir is estimated at 2,086,600 acre-feet per year. Under the terms of the interstate agreement relating to Toledo Bend, half of the yield (1,043,300 acre-feet per year) belongs to Texas, and the other half belongs to Louisiana. Thus, the present water rights in Texas leave some 293,300 acre-feet per year of firm yield unallocated.

The issues considered in this investigation concern the potential environmental significance of (a) increasing the permitted diversions for use in Texas from 750,000 to 1,043,300 acre-feet per year and (b) obtaining an interbasin transfer amendment and transferring 672,000 acre-feet per year (600 MGD) to areas west of the Sabine and Neches River Basins, where there would not be any return flow to Sabine Lake.

For purposes of this first look at the matter, the computations have been made with monthly flows rather than daily flows. This makes the work less costly but does not give results that are as accurate as they would be if based on daily data. Although further refinement may be desirable in later studies, the monthly analysis should be adequate for arriving at valid initial qualitative conclusions.



2. Conservative Estimates of Needs

A key element of this analysis is a set of desired monthly inflow amounts to Sabine Lake, formulated according to the guidelines set out in the Environmental Assessment adopted for purposes of Trans-Texas Water Program investigations. That document is reproduced in Appendix A.

The Texas Water Development Board has derived estimates of monthly historical inflows to Sabine Lake for the period from 1941 through 1987. For the years 1941-1965 (Toledo Bend Reservoir began impoundment in 1966), those historical inflows were used to develop conservative estimates of Sabine Lake inflow needs, based on the methods given in the TTWP Environmental Assessment. For each month of that period of available data, a quantity designated as the *Conservative Estimate of Needs* was calculated, representing a desired inflow to Sabine Lake from the standpoint of the well being of the estuary. As spelled out in the Trans-Texas environmental guidelines, the conservative estimate of needs for any given month is the lesser of (a) the actual flow for that specific month or (b) the normal mean flow for that month if it falls within the periods May-June or September-October and the normal median flow for that month if it is one of the remaining months of the year. Appendix B covers the derivations of these quantities and gives summaries of the amounts of flow obtained from the Sabine River Basin.

It should be noted that the Trans-Texas environmental guidelines are not the official requirements for any of the state agencies but are simply a proposed method for setting up site-specific values representing the needs of the bays and estuaries. Since the guidelines used in Appendix B were originally chosen, there have been other proposals, including the "consensus" guidelines used for the analysis discussed in Section 6. None of them has yet been formally adopted.



3. 50-Year Reservoir Operation Studies

Reservoir operation studies were made for two different scenarios at Toledo Bend: (a) with the existing operating conditions and (b) with modified operating conditions. These analyses covered the 50-year period 1940-1989. For the first scenario, it was assumed that:

- Louisiana use = 1,043,300 acre-feet per year.
- Louisiana use = 90% hydropower generation and 10% for water supply.
- Hydropower generation was discontinued in the infrequent months when the reservoir fell below the top of the power head pool. Other uses were not halted in those months.
- No return flow reached Sabine Lake from Louisiana's water supply use.
- Texas use = 750,000 acre-feet per year.
- Texas use is for municipal, industrial and irrigation purposes in the Sabine River Basin.
- Return flows from Texas followed the historical patterns for the lower Sabine Basin.

This scenario is referred to herein as the "existing" operating condition, since it is

consistent with full use under the existing water rights.

The operation study for this existing condition scenario is reproduced in Appendix C.

The case with modified operation was the same as the first scenario except for two changes:

- Texas use was increased to 1,043,300 acre-feet per year.
- Of the Texas use, 672,000 acre-feet per year (600 mgd) were assumed to be taken out of the Sabine Basin and transferred to areas from which there would be no return flow to Sabine Lake.

This is referred to herein as the "modified" operating condition, since it assumes changes in the present water rights and substantial transfers to other basins.

The study of the modified operation scenario is contained in Appendix D.

It should be noted that both of these sets of study conditions assume greater use from the reservoir than is now occurring. The term "existing operation condition", as applied in the study in Appendix C, relates to the fact that it is based on existing water rights and does not mean that it reflects current levels of water use.



4. Impacts of Operational Changes at Toledo Bend: 1940-1989

4.1. Impact on Toledo Bend Lake Levels

Figure 1 is a graph of Toledo Bend Reservoir levels during the 50-year study period from 1940 through 1989 for the existing and modified operational conditions. Figure 2 is a pair of frequency distribution curves for the water surface levels under the two different scenarios. Table 1 is a statistical summary of the changes in water surface elevation caused by the change in operation.

- Approximately 1/3 of the time, there would be no significant change in the lake level due to the change in operation.
- There would be changes greater than 0.10 foot approximately 2/3 of the time.
- The changes in lake level would range from a minimum of zero to a maximum of 3.30 feet.
- The average lake level change for all months in the study would be 0.92 foot.

The following points were observed from comparison of the operation studies:

Table 1: Decreases in Toledo Bend Lake Levels Due to Operational Changes: 1940-1989 (Feet)

	<i>Minimum</i>	<i>Average</i>	<i>Median</i>	<i>Maximum</i>
January	0.0	1.10	0.10	3.20
February	0.0	0.90	0.45	3.30
March	0.0	0.77	0.00	3.10
April	0.0	0.72	0.00	3.30
May	0.0	0.62	0.00	2.50
June	0.0	0.65	0.20	2.80
July	0.0	0.78	0.30	3.20
August	0.1	0.93	0.50	2.90
September	0.0	1.04	0.60	2.70
October	0.0	1.16	0.80	2.60
November	0.0	1.20	0.95	2.90
December	0.0	1.14	1.05	3.00
ALL MONTHS	0.0	0.92	0.70	3.30

Figure 1: Reservoir Levels
Existing and Modified Operation

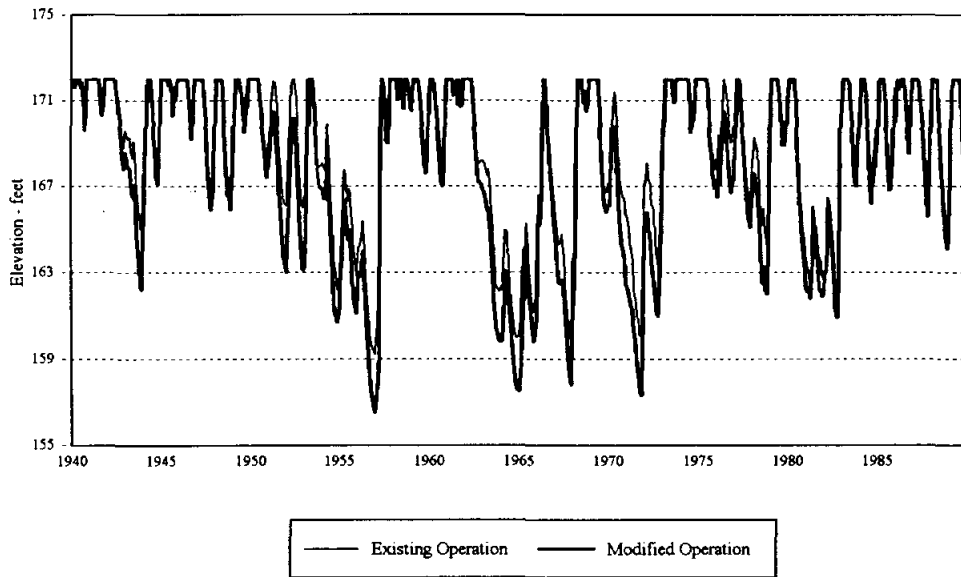
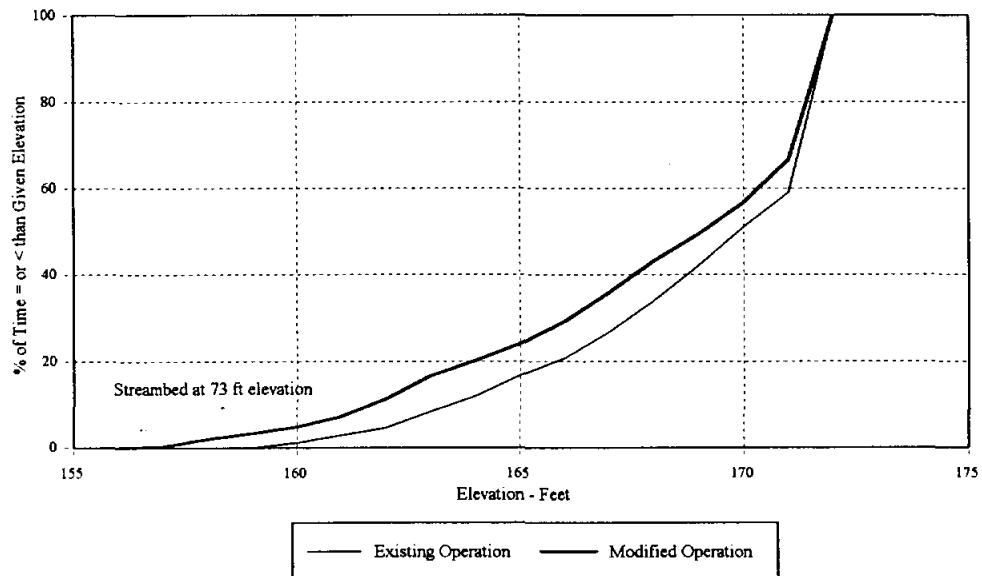


Figure 2: Reservoir Level Frequency Curve
Existing and Modified Operation



- The median lake level change for all months in the study period would be 0.70 foot. For given months, the median lake level change ranges from 0.0 to 1.05 feet.
- In general, the changes would tend to be more in the winter months than in summer months.
- The maximum changes for given months would range from 2.50 feet for the month of May to 3.30 feet for the months of February and April.

Fishing, boating and other recreational activities on Toledo Bend Reservoir are heaviest during the summer months when water level decreases will be least. Proposed monthly mean and maximum decreases were used to evaluate the potential impacts of lake water level decreases on fisheries and recreational activities.

Approximately 35 locations are available for public access to the Texas side of Toledo Bend Reservoir. These locations provide users with boat ramps, shoreline fishing, and camping facilities, which include both fee and non-fee amenities. Some of these facilities, particularly boat ramps are currently unusable during low flow conditions. Lower water levels would increase the amount of time these ramps are unusable and decrease the usage of adjacent facilities. It is also possible that facilities which are usable under the current water level regime would become unusable during periods of maximum water level decreases. The magnitude of impact on each facility would depend on site-specific and shoreline conditions.

Although proposed maximum water level decreases would be infrequent and short term, these conditions are potentially more stressful for fish communities than an evaluation of mean values would indicate. Spawning seasons for game and other fish species extend from as early as February to as late as August, peaking during the period from March through June. Mean spawning depths required for species such as Largemouth Bass (*Micropterus salmoides*), Spotted Bass (*M. Punctulatus*), White Crappie (*Pomoxis annularis*), Black Crappie (*Pomoxis nigromaculatus*), Channel Catfish (*Ictalurus punctatus*), Blue Catfish (*Ictalurus furcatus*), and Flathead Catfish (*Pilodictus olivaris*) range from approximately four to ten feet. The beginning of the spawning season would correspond to the most significant decreases in water levels, lessening through the remainder of the season. The resultant conditions would provide less shelter and habitat for fish nesting during the beginning of the spawning season, but would provide more submerged area for spawning and juvenile protection later in the season. The potential loss of submerged shoreline during the beginning of the season would not significantly impact reproduction of these species, as the exposed areas are well above the mean spawning depths.

4.2. Impact on Spills at Toledo Bend Dam

Figure 3 is a comparative bar graph showing annual spills at Toledo Bend Dam, and Figure 4 is a set of mass curves of cumulative spills for the existing and modified operating conditions, respectively. Table 2 is a summary of the statistics of monthly spills. The following points were noted with respect to spills:

Table 2: Decreases in Toledo Bend Spills Due to Operational Changes: 1940-1989 (Acre-Foot per month)

	<i>Minimum</i>	<i>Average</i>	<i>Median</i>	<i>Maximum</i>
January	0	18,893	0	244,945
February	0	42,322	10,706	300,040
March	0	39,494	22,291	455,338
April	0	22,461	24,344	239,030
May	0	35,273	26,690	370,325
June	0	14,588	0	190,386
July	0	4,361	0	54,531
August	0	0	0	0
September	0	2,319	0	81,004
October	0	2,023	0	76,800
November	0	10,739	0	127,775
December	0	21,060	0	176,517
ALL MONTHS	0	17,794	0	455,338

- The changes in operation would cause a decrease in spills at Toledo Bend Dam.
- The decreases in spills would range from zero in a number of years to a maximum of 592,140 acre-feet in the year 1953.
- The average decrease in annual spills would be 213,532 acre-feet per year, or about 11.6 percent.
- The changes would tend to be greatest in the late winter and spring.
- The median decrease in spills would be zero for all months except February, March, April and May.
- The months of greatest change in average spills would be February and March .

- In 70.5 percent of all months from 1940 to 1989, there is no change in spills from the existing to the modified operation.

4.3. Impact on Inflows to Sabine Lake

Figure 5 is a plot of the annual Sabine River inflows to Sabine Lake for historical conditions and for the existing and modified operating conditions during the period 1940-1989. Figures 6 and 7 show the median and average monthly Sabine River flows into Sabine Lake with Toledo Bend Reservoir operating under the two alternative scenarios for the 50-year study period. Table 3 is a summary of the differences in Sabine River flows entering Sabine Lake under the two scenarios. The following observations are

Figure 3: Reservoir Spills
Existing and Modified Operation

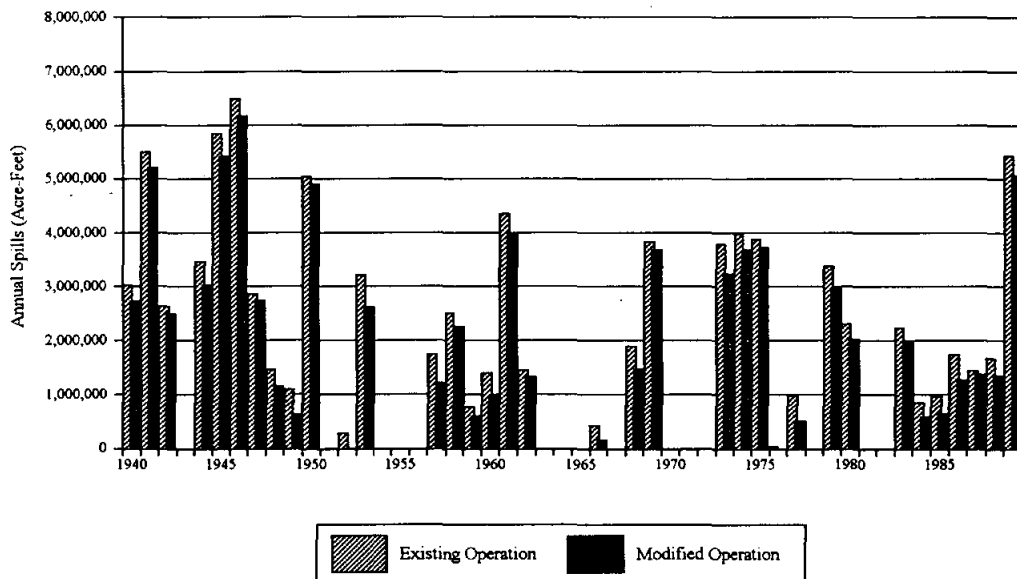


Figure 4: Cumulative Spills
Existing and Modified Operation

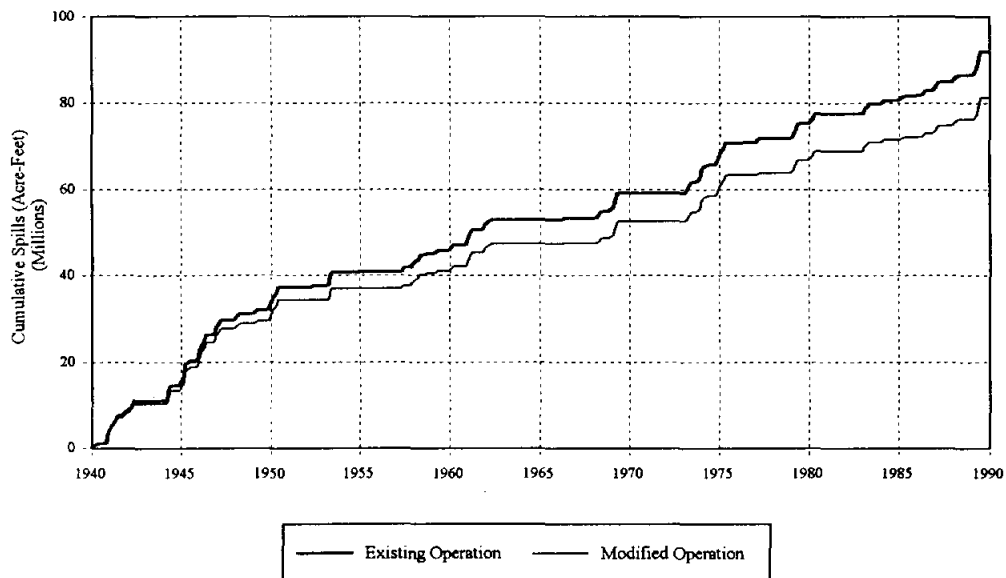


Table 3: Decreases in Sabine Lake Inflow Due to Operational Changes: 1940-1989 (Acre-Feet per Month)

	<i>Minimum</i>	<i>Average</i>	<i>Median</i>	<i>Maximum</i>
January	20,864	46,867	20,864	265,809
February	18,355	68,373	39,766	318,395
March	20,864	64,640	43,155	476,202
April	18,528	47,156	42,872	257,558
May	18,225	58,624	44,915	388,550
June	0	36,493	17,120	207,506
July	17,521	27,234	17,521	106,723
August	17,521	23,780	17,521	106,273
September	18,176	26,330	18,176	99,180
October	19,633	27,875	19,633	97,568
November	19,760	37,090	19,760	147,535
December	20,866	50,489	20,866	197,383
ALL MONTHS	0	42,912	20,864	476,202

observations are suggested by these comparisons:

approximately 20.7 percent for the modified conditions.

- In general, the annual Sabine Lake inflows would be less with Toledo Bend Reservoir operating under existing conditions than with the historical flows.
- In some years, however, the operation with existing conditions would result in more Sabine River inflow to Sabine Lake than occurred historically.
- In all years, the Sabine Lake inflow with the modified conditions would be less than with the existing operation.
- The percentage decreases in historical Sabine River flows reaching Sabine Lake would average approximately 12.2 percent for the existing conditions and

Two major effects of reduced flows to estuaries are increased salinities and decreased inputs of nutrients and organic matter. Sabine Lake currently exhibits the lowest salinity of any Texas estuary, largely due to heavy springtime precipitation in the Sabine basin. Seasonal measurements of salinity in Sabine Lake indicate that lowest values generally occur in the winter and spring months, while the highest occur in the summer and fall months (Longley, 1994).

The seasonal salinity pattern observed in Sabine Lake corresponds closely with the proposed seasonal changes in flow regime. The greatest decreases in flow to Sabine Lake would occur during winter and spring months, while more flow would be available during

Figure 5: Sabine River
Discharge in Sabine Lake

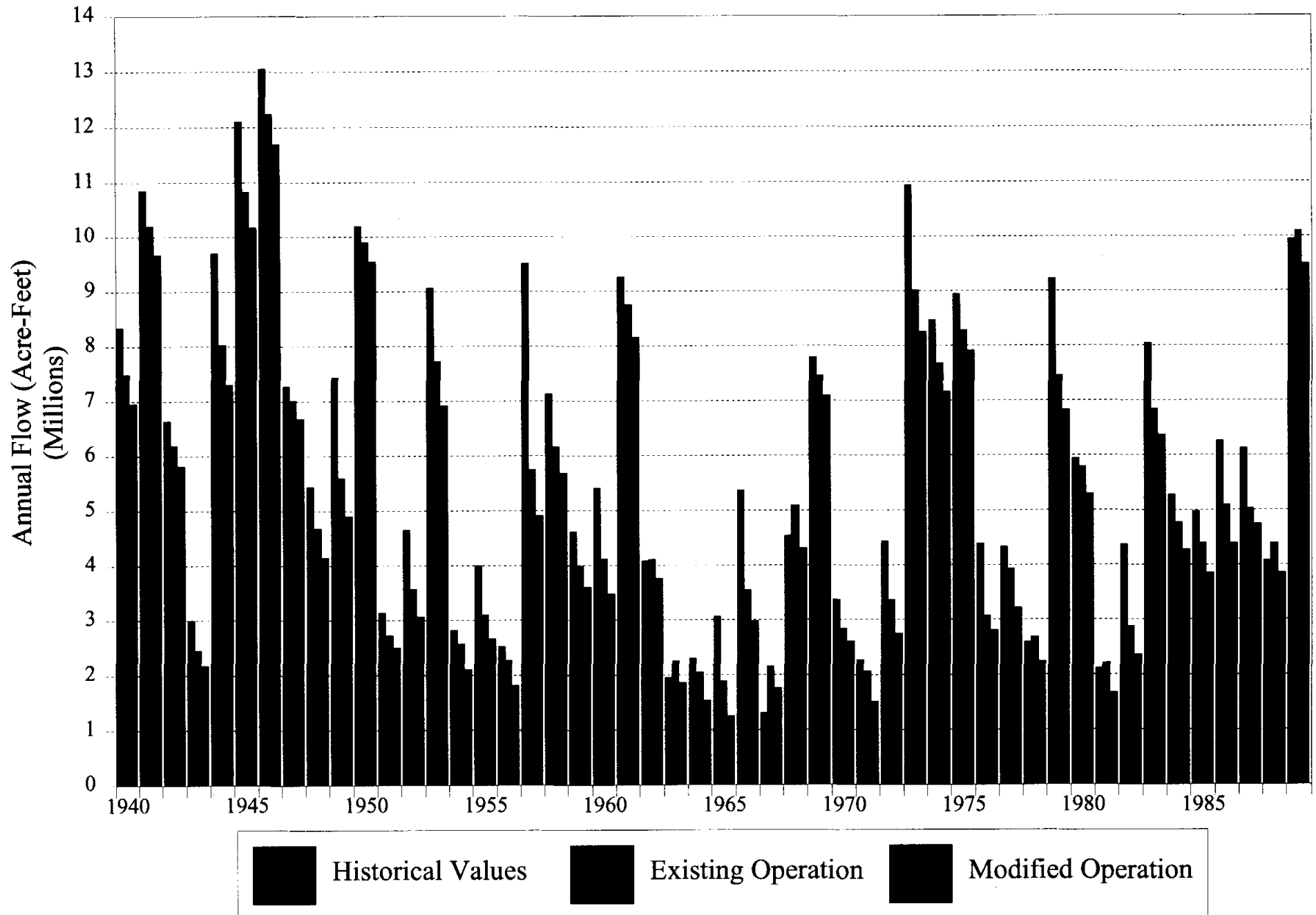


Figure 6: Median Monthly Flows into Sabine Lake

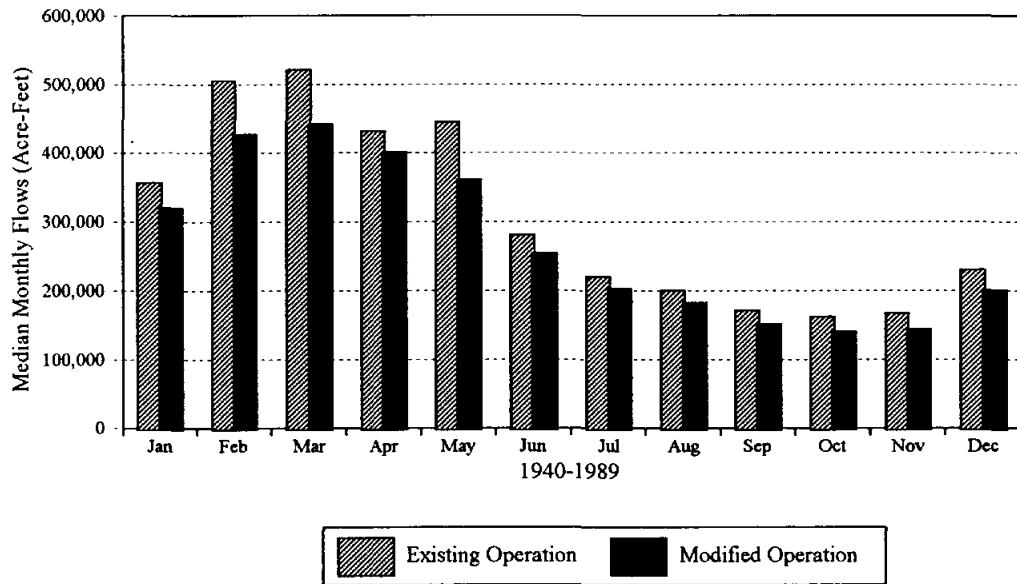
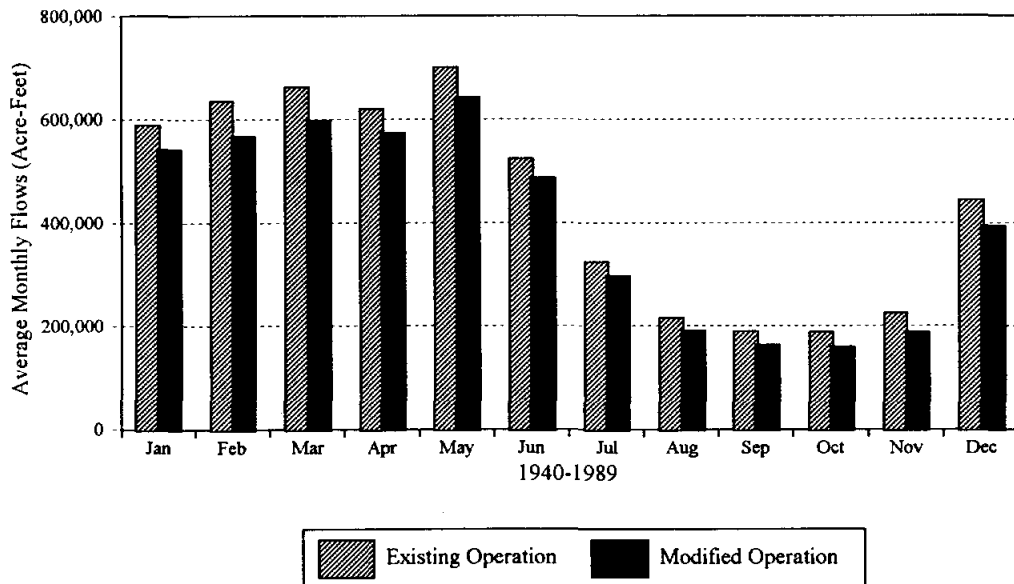


Figure 7: Average Monthly Flows into Sabine Lake



the summer and fall months. This would result in higher salinity and lower nutrient concentrations during winter and spring, with less overall seasonal variation. Biological responses to reduced inflows to Sabine Lake may include impacts to larval stages of marine organisms as well as a compositional shift in planktonic and shoreline communities. Timing of inflow reductions to lessen impacts on juvenile species would preserve the estuary's role as a productive nursery for fish and other commercially important marine species.

4.4. Impact on Sabine River Flows

Flows in the Sabine are best represented by the flows at its most downstream point. The most downstream gaged flow is at Ruliff. This flow is considered essentially the same as the Sabine River flow that goes into Sabine Lake. Therefore the conclusions reached above for the impact on inflows to Sabine Lake can also be applied as the impacts on Sabine River flows.

Demands of fisheries and recreational activities on the Sabine River below Toledo Bend Reservoir are also heaviest during the summer months when decreases in flow and water levels would be least. Flow and water level decreases in the Sabine River during late winter and early spring would impact the available habitat for fish reproduction in some portions of the river. Because fish are able to retreat to tributaries and riverine areas of lesser impact, they are able to live and reproduce under fluctuating flow regimes. The diversion of water from Toledo Bend Reservoir for uses in areas west of the Sabine River basin would decrease return flows normally received by way of direct runoff and tributaries. The lack of these return flows may

also impact flows and water levels of smaller streams used by fish as spawning areas. Quantification of the impacts to Sabine River fisheries would require specific data such as the suitability and amount of available habitat.

Although flow decreases are greatest during the winter, recreational use of the river may still be impacted by flow and water level decreases during late spring and summer months. The magnitude of impact to recreational areas would be dependent on site-specific conditions such as channel morphology. Areas available for fish spawning and recreational use would increase during late spring and summer when demand is greatest.



5. Comparisons with Conservative Estimates of Needs During the Period 1941-1965

In evaluating the impact of Toledo Bend operation on inflows to Sabine Lake, it should be kept in mind that the natural flow of the river would not always meet the proposed Trans-Texas Water Program criteria regardless of whether Toledo Bend Reservoir was in operation. In the criteria, the bay requirements for some months are set equal to the normal median monthly flow rates, and those for the other months are set equal to the normal average flow rates. Half the time, the natural flows will be less than the median values, and more than half the time they will be less than the average values. From that standpoint, it is informative to examine the effect of Toledo Bend on ability to meet the conservative estimates of needs, which by definition cannot exceed the historical natural flow in any given month.

Appendix E contains USGS streamflow data that were used in deriving flows for this study. Appendix F contains detailed comparisons of the conservative estimates of estuary needs versus (a) historical flows, (b) flows with existing Toledo Bend operating conditions and (c) flows with the modified operating conditions. The period covered by these comparisons is the time from January of 1941 through March of 1965, for which the Texas Water Development Board has prepared the monthly estimates of historical inflows to Sabine Lake before closure of Toledo Bend

and Sam Rayburn Reservoirs. For purposes of this report, the three months of data from 1965 are omitted, and the remaining 24 complete years (1941-1964) are used.

Appendix G contains graphs showing (a) the portion of the conservative estimate of needs applicable to the Sabine River, (b) the historical Sabine inflow to Sabine Lake, (c) the Sabine River inflow to Sabine Lake with Toledo Bend operating under existing water rights and (d) the Sabine River inflow to Sabine Lake with Toledo Bend operating under the modified water rights for each month of the 24-year period.

Table 4 is a summary of shortages encountered in meeting the conservative estimates of needs for each year from 1941 through 1964 (a) with Toledo Bend operating with the existing conditions and (b) with Toledo Bend operating with the modified conditions. Since both the existing condition and the modified condition assume greater amounts of water diversion and use than actually occurred during the years 1941-1965, there would be many months in that period when either of these modes of operation would involve shortages in meeting the conservative estimates of needs. It was found that there would be shortages in most years with either mode of operation, but that the shortages would be greater under the modified conditions. On the average, such

Table 4: Shortages in Meeting Conservative Estimates of Need

	<i>Cons. Est. of Need</i>	<i>Existing Conditions</i>			<i>Modified Conditions</i>		
		<i>Mos. Short</i>	<i>AF Short</i>	<i>% Short</i>	<i>Mos. Short</i>	<i>AF Short</i>	<i>% Short</i>
1941	5,158,433	2	94,355	1.8	2	176,993	3.4
1942	5,041,011	2	101,789	2.0	3	195,647	3.9
1943	2,572,236	5	742,689	28.9	7	888,514	34.5
1944	4,880,558	3	457,476	9.4	3	732,540	15.0
1945	5,147,233	2	169,337	3.3	2	231,372	4.5
1946	5,021,255	0	0	0.0	0	0	0.0
1947	4,618,747	3	142,619	3.1	4	259,368	5.6
1948	4,533,309	4	617,248	13.6	5	971,161	21.4
1949	4,582,386	4	693,131	15.1	4	794,387	17.3
1950	5,028,774	1	43,894	0.9	2	99,916	2.0
1951	3,128,100	5	861,918	27.6	7	988,812	31.6
1952	4,081,913	7	1,011,057	24.8	7	1,435,382	35.2
1953	4,875,269	5	782,915	16.1	5	1,077,517	22.1
1954	2,825,364	6	787,989	27.8	7	1,032,340	36.4
1955	3,361,765	5	957,474	28.5	7	1,146,253	34.1
1956	2,427,230	4	616,351	25.4	6	809,237	33.3
1957	4,612,564	5	1,389,695	30.1	5	1,758,509	38.1
1958	5,370,745	5	477,922	8.9	7	676,450	12.6
1959	3,599,665	5	316,163	8.8	5	525,468	14.6
1960	3,593,719	3	390,594	10.9	4	566,217	15.8
1961	4,191,441	1	100,041	2.4	2	118,168	2.8
1962	3,917,681	5	317,505	8.1	6	522,909	13.3
1963	1,835,268	5	229,642	12.5	7	344,529	18.8
1964	2,310,946	6	545,362	23.6	7	796,512	34.5
AVG	4,029,817	3.9	493,632	12.2	4.7	672,842	16.7

shortages would represent 12.2 percent of the conservative estimates of needs with the existing conditions and 16.7 percent with the modified conditions. Figure 8 also shows the number of months with shortages in meeting the conservative estimates of needs over the 24-year period.

the average gain would be 147,648 acre-feet, an increase of 59.0 percent.

Figure 9 illustrates the seasonal nature of these shortages, which tend to be minimal in the months from July through October and to occur more than half the time in the months from January through May.

Figures 10 and 11 show the same information as in Figures 8 and 9, but with the historical excess flows from outside the Sabine Basin assumed to be available where needed to fill in if shortages would otherwise occur.

From examination of the graphs in Appendix G, it is apparent that Toledo Bend frequently serves to enhance the inflows to Sabine Lake during summer months. When the natural runoff would be lower than the desired inflows based on the Trans-Texas criteria, the flows from Toledo Bend often make more fresh water available for the estuary. Table 5 is a summary of the impact of Toledo Bend during those months. Although such gains do not offset the months of shortages in terms of total acre-feet of water, they are nevertheless very significant when measured as percentage increases for the months in which they occur. On the average, the releases from Toledo Bend with existing water rights would increase Sabine Lake inflows during 3 to 4 summer months. The gain would be some 236,306 acre-feet in an average year and would represent an increase of 65.9 percent over the natural flows. With the modified conditions,

Figure 8: Shortages to Conservative Estimate of Inflow Needs to Sabine Lake

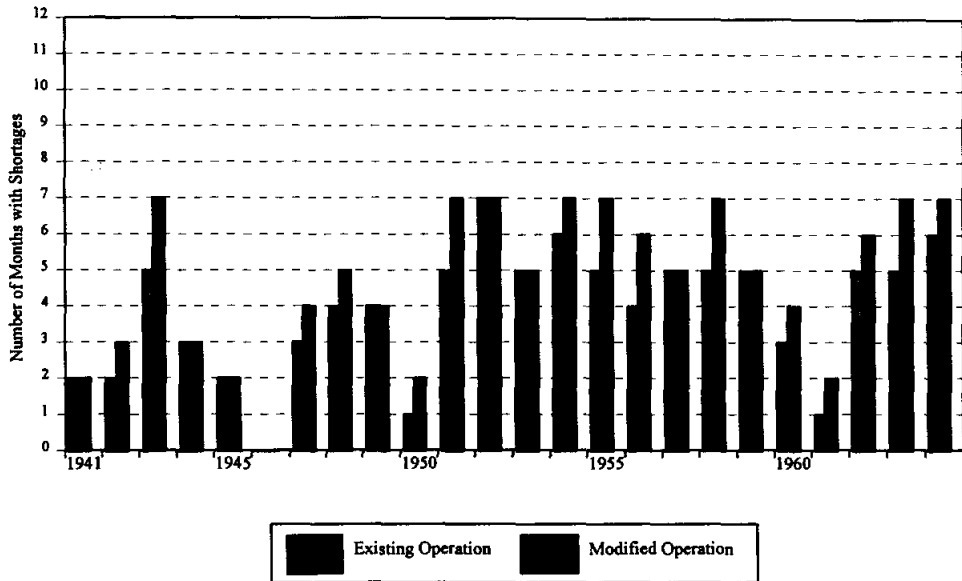


Figure 9: Monthly Shortages to Conservative Estimate of Inflow Needs

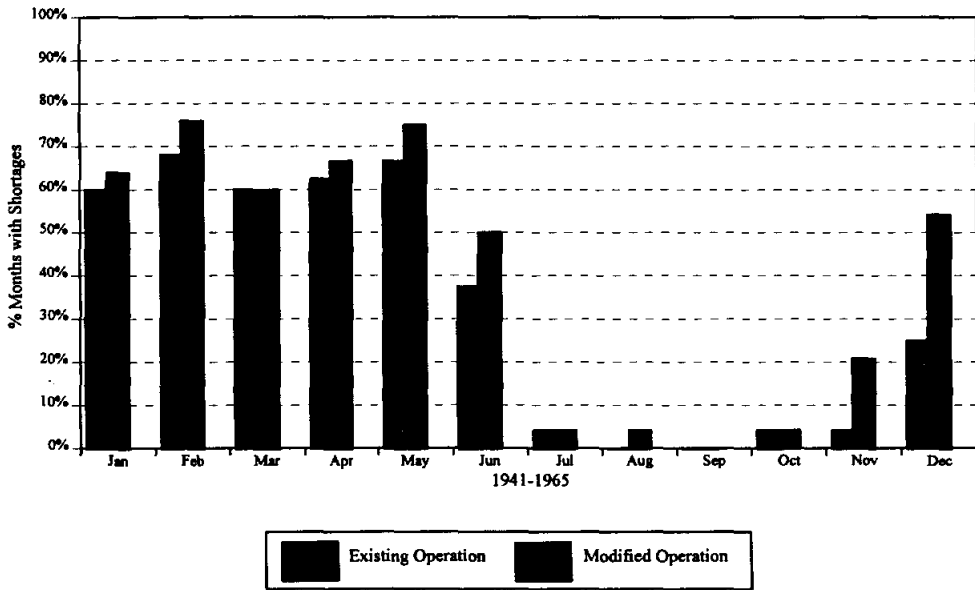


Figure 10: Shortages to Conservative Estimate of Needs with Other Sources

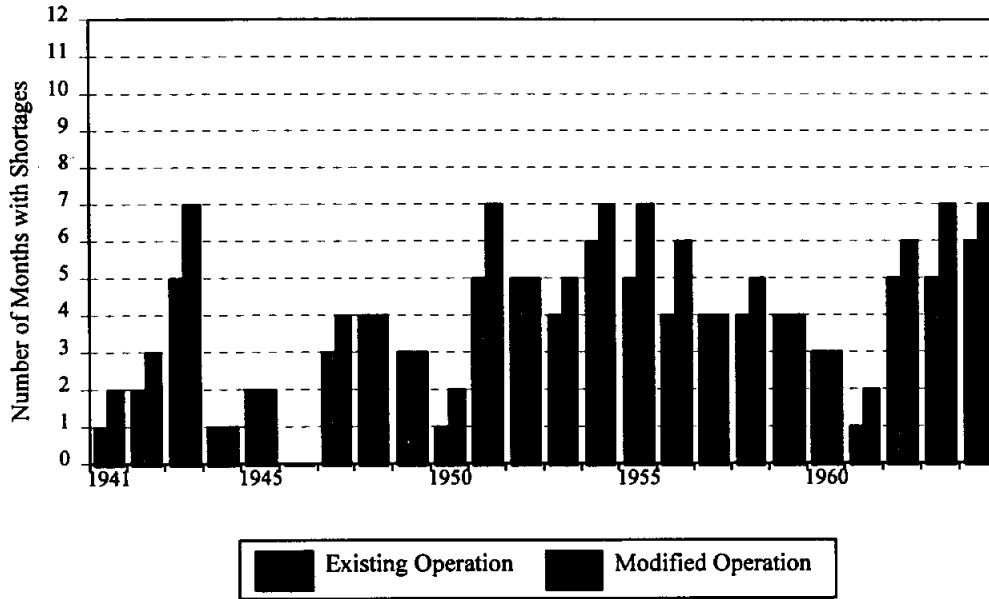


Figure 11: Monthly Shortages to Estimate of Needs with Other Sources

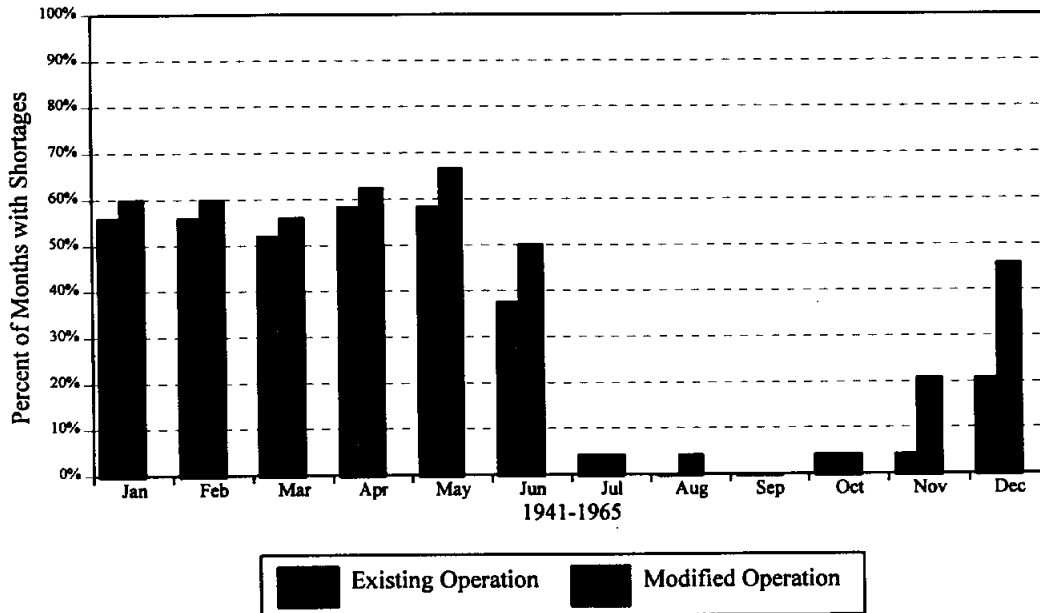


Table 5: Increase in Months Where Existing and Modified Sabine Lake Inflows Exceeded Historical Inflows

	<i>EXISTING CONDITIONS</i>				<i>MODIFIED CONDITIONS</i>			
	<i>Hist. Inflow in Months w\Increase</i>	<i># of Months</i>	<i>Increase in Inflow</i>	<i>% Incr.</i>	<i>Hist. Inflow in Months w\Increase</i>	<i># of Months</i>	<i>Increase in Inflow</i>	<i>% Incr.</i>
1941	0	0	0	0.0	0	0	0	0.0
1942	394,314	3	115,045	29.2	221,197	2	65,724	29.7
1943	685,690	6	376,357	54.9	351,634	4	258,030	73.4
1944	401,059	3	209,469	52.2	401,059	3	154,140	38.4
1945	115,775	1	75,274	65.0	115,775	1	57,098	49.3
1946	0	0	0	0.0	0	0	0	0.0
1947	295,546	4	341,516	115.6	295,546	4	268,666	90.9
1948	370,481	5	438,886	118.5	370,481	5	345,171	93.2
1949	93,402	1	65,930	70.6	93,402	1	47,754	51.1
1950	654,287	5	207,306	31.7	457,011	4	124,502	27.2
1951	656,200	6	358,437	54.6	315,083	4	276,074	87.6
1952	165,207	4	412,182	249.5	165,207	4	337,093	204.0
1953	247,264	3	244,092	98.7	247,264	3	186,524	75.4
1954	446,345	6	537,421	120.4	343,522	5	316,873	92.2
1955	800,946	6	416,498	52.0	623,068	4	182,619	29.3
1956	421,173	7	381,982	90.7	191,314	5	139,192	72.8
1957	95,187	1	96,453	101.3	95,187	1	78,932	82.9
1958	185,236	1	16,004	8.6	0	0	0	0.0
1959	256,423	2	112,613	43.6	256,423	2	73,572	28.7
1960	408,454	3	121,490	29.7	408,454	3	68,673	16.8
1961	343,835	2	72,420	21.1	135,729	1	35,569	26.2
1962	776,386	6	363,736	46.8	484,320	5	267,836	55.3
1963	488,026	6	419,585	86.0	247,271	4	227,252	91.9
1964	301,672	6	288,647	95.7	189,933	5	32,252	17.0
AVG	358,455	3.6	236,306	65.9	250,370	2.9	147,648	59.0



6. Proposed Environmental Criteria

The Texas Natural Resource Conservation Commission (TNRCC), the Texas Water Development Board (TWDB), and the Texas Parks and Wildlife Department (TPWD) have proposed new criteria that could serve as a guide for permitting new reservoirs and issuing permit amendments for existing reservoirs. A copy of these proposed criteria is included in Appendix H. Table H-1 gives the reservoir pass-through requirements on a monthly basis. These criteria would regulate pass-through flows from new reservoirs to support instream flows and bays and estuaries. At the time of this report, these criteria were still in draft proposal form. Should the proposed criteria be accepted as the definitive criteria, a water right revision at Toledo Bend Reservoir might be subject to these requirements.

Operation studies were run for Toledo Bend with the new criteria to determine what effect they would have on the firm yield and the lake levels and contents for the existing and proposed operation of the lake. The firm yield of Toledo Bend with the data derived for this study was found to be 2,078,450 acre-feet per year, which is essentially the same as the 2,086,600 acre-feet per year quoted in the scope of work. With the environmental pass-through flows, the yield decreases to 1,834,860 acre-feet per year. This is an 11.7 percent decrease in yield.



7. Conclusions

The analysis described in the previous sections leads to the following conclusions:

- a. A change from the existing operating conditions at Toledo Bend Reservoir to modified conditions involving (a) full use of the Texas share of the firm yield and (b) export of 672,000 acre-feet per year would tend to lower the lake level by an average of about 0.9 foot and a maximum of 3.3 feet. There would be no noticeable decrease in lake level about 1/3 of the time.
- b. The change in operation would decrease the spills at Toledo Bend Dam by approximately 213,532 acre-feet per year, or 11.6 percent. The decreases would occur mostly in the winter months.
- c. Toledo Bend Reservoir tends to decrease the volumes of water flowing into Sabine Lake from the Sabine River. With maximum operation of the lake, the decrease would be approximately 12.2 percent for the existing conditions and 20.7 percent with the modified conditions.
- d. Toledo Bend Reservoir tends to cause additional shortages in meeting the calculated conservative estimates of needs, mostly during the months from January through May. Based on the 24-year period from 1941 through 1964, the average annual shortage would be approximately 12.2 percent if operating with present conditions and 16.7 percent with the modified conditions.
- e. If formerly surplus flows from outside the Sabine Basin could be made available to fill in the shortages in conservative estimates of need, the percentage deficiencies in conclusion "d" could be lowered to 10.7 percent and 13.5 percent for the existing and modified operating conditions, respectively.
- f. Toledo Bend Reservoir also tends to increase the inflows to Sabine Lake in summer months, when the natural flows would have been less than the desired fresh water input to the estuary. The aggregate of these increases will not be as large an amount as the total of the decreases in winter months, but the summer increases will be significant when they occur. The gains in the months when they take place will average 65.9 percent and 59.0 percent of the historical flows with the existing and modified conditions, respectively.
- g. In terms of fishing and other forms of recreation at Toledo Bend Reservoir, the impact of the contemplated changes should not be a significant problem.
- h. From the standpoint of flows in the lower reaches of the Sabine River, downstream from Toledo Bend, either of the two

- scenarios for Toledo Bend would generally result in increased flows during summer months.
- i. The difference between the two scenarios with Toledo Bend in operation would not significantly impair fishing and boating conditions on the lower river.
 - j. In the summer months, either of the two Toledo Bend scenarios will usually tend to increase fresh water inflows to Sabine Lake.
 - k. The added shortages of desired estuary inflows caused by the modified operation scenario in winter months would be a significant consideration, but not prohibitive.
 - l. In terms of salinity conditions in Sabine Lake, both of the operating scenarios for Toledo Bend would tend to produce less fresh water inflow than the natural river conditions (and thus would lead to higher salinities) in all but the summer months. In the summer, however, the overall effect of Toledo Bend is to increase the fresh water flows and therefore to reduce the salinity in Sabine Lake. For all months of the year, the modified operating condition would have the effect of lowering the inflows to Sabine Lake slightly and would tend to raise salinities as compared with the existing operating mode. All of these changes would be moderate, and the actual impacts on salinities would be relatively small.
 - m. It should be emphasized that the modified scenario includes the effect of taking 672,000 acre-feet per year out of the Sabine Basin. The estimated losses of desired fresh water inflow to Sabine Lake attributable to the modified scenario are heavily influenced by that assumption. Any significant change in the assumed volume of transbasin diversions would affect the results of the analysis noticeably in this respect.

APPENDIX A

TRANS-TEXAS ENVIRONMENTAL ASSESSMENT

TRANSTEXAS WATER PROGRAM ENVIRONMENTAL ASSESSMENT

Water Quality

Preliminary water quality impact assessment of affected State waters must include evaluation of water quality standards attainment, chemical and biological compatibility of mixed waters, coastal salt water intrusion, and nutrients for compliance with drinking water standards. The recommended methodology, if any, for each analysis is given as follows:

1. Water Quality Standards Attainment

A. Chloride. Sulfate. Total Dissolved Solids--Mass balance these constituents under a 7-day, 2-year, low flow (7Q2) condition to insure that the Standards are not violated.

B. Dissolved Oxygen--If any interbasin transfer scenarios result in a reduction of a river's 7Q2, or if the baseflow is significantly reduced during spring spawning months (defined as the first half of the year when water temperatures are 63°-73°F in TWC Rule 307.7.(b)3. Aquatic Life), then simplified mathematical modeling must be performed to evaluate compliance with the Standard. Basic modeling assumptions are listed below:

- Summer Analysis
Headwater--7Q2 flow conditions
Temperature--average of the three hottest months, plus one standard deviation, from the closest USGS station with water temperature data
Discharges--full permitted effluent flow and quality
BOD--compute $BOD_u = BOD_5 \text{ day} \times 2.3$
 K_n --nitrification rate = 0.30/day
 K_d --BOD oxidation rate = 0.10/day
Reaeration--use Texas equation
- Spring Spawning Analysis
Same as above, except
Headwaters--10th percentile monthly low flow conditions
Temperature--90th percentile monthly high temperature conditions

C. pH--No recommended method.

D. Temperature--Mass balance temperature to insure compliance with the maximum temperature criteria, as well as the "rise over ambient" Standard.

E. Fecal Coliform--No recommended method.

2. Chemical and Biological Compatibility of Waters

- A. Formation of precipitates, etc.--No recommended method.
 - B. Introduction of exotic plants and animals--No recommended method.
3. Salt Water Intrusion
- A. Migration of coastal salt wedge and effect of intrusion up tidal rivers--No recommended method.
 - B. Effect on water supply operations--No recommended method.
 - C. Effect on freshwater marshes/wetlands--No recommended method.
4. Nutrients
- A. Potable water limits--Determine compliance with Drinking Water Standards.
 - B. Potential for nuisance aquatic vegetation--No recommended method.

Instream Flows

A relatively rapid assessment of instream flow needs to maintain downstream fish and wildlife habitats affected by the TransTexas Water Program can be performed by using the TPWD-modified Tennant's Method (Lyons 1979), which is based on a fixed percentage of median (50th percentile) monthly flows. At any point in a river basin intercepted by the TransTexas Water Program, streamflows must be passed downstream in an amount up to 60% of the median monthly flows from March through September, and 40 % of the median monthly flows from October through February. Streamflows above these monthly flow limits are to be considered available for other beneficial uses and interbasin transfer. Water stored in existing reservoirs will not be allocated to instream uses and released downstream to make up for normal flows below the specified limits.

Freshwater Inflows to Bays and Estuaries

For preliminary planning purposes, the freshwater inflow needs of the bays and estuaries can be conservatively estimated as a function of selected central tendency values. The typical bimodal distribution of monthly rainfall runoff during the historical period is enhanced by requiring the pass through of normal inflows up to the mean (arithmetic average) monthly flow in May-June and September-October, while the minimum maintenance needs are satisfied with inflows up to the median (50th percentile) monthly flow in the remaining months of the year. Water stored in existing reservoirs will not be allocated to bay and estuary uses and released downstream to make up for normal flows below the specified limits.

New Reservoirs

Existing reservoirs that could potentially contribute to the TransTexas Water Program will be evaluated as to the effects on downstream flows and freshwater inflows to bays and estuaries under their existing state and federal permits which authorize their current operations, while any new reservoirs involved in the Program's future water storage and distribution system will be considered to operate such that they pass through impounded

streamflows up to the mean (arithmetic average) monthly flow in April-June and August-October, and median (50th percentile) streamflows in the remaining months of the year, as long as reservoir capacity is above 60%. When reservoir capacity is below 60%, the water management operations will recognize drought contingency by passing through up to the median daily flow of the stream observed during the historical drought of record. The analysis will be repeated at 40% and 80% capacity thresholds to demonstrate a range of feasible solutions for operating any new reservoirs.

APPENDIX B

CONSERVATIVE ESTIMATE OF INFLOW NEEDS

APPENDIX B

Conservative Estimate of Inflow Needs

The Trans-Texas Environmental Assessment defines the *Conservative Estimate of Inflow Needs* as the minimum of either (1) the historical flow or (2) the mean monthly flow in May-June and September-October and the median monthly flow in the remaining months.

Table B-1 lists the historical flows into Sabine Lake from 1941 to 1965, and Table B-2 calculates the mean and median monthly values from those historical inflows. Table B-3 compares the values from Tables B-1 and B-2 to find the minimum values which are the Conservative Estimate of Inflow Needs.

The remaining tables in the Appendix deal with excess flow into Sabine Lake beyond the estimate of need, in particular the flows that come to Sabine Lake from the Sabine River.

APPENDIX B

Conservative Estimate of Inflow Needs

Table B-1	Monthly Surface Inflows to Sabine Lake from Sabine & Neches Rivers
Table B-2	Surface Inflows to Sabine Lake in Ascending Order
Table B-3	Conservative Estimates of Needs for Inflow to Sabine Lake
Table B-4	Inflows to the Sabine Lake, Beyond the Conservative Estimate of Needs
Table B-5	Sabine River near Ruliff, TX, Historical Monthly Discharges
Table B-6	Portion of Conservative Estimate of Needs Provided by Inflows upstream from the Ruliff gages
Table B-7	Historical Flows at Ruliff Beyond the Sabine Portion of the Conservative Estimates of Needs

Table B-1**Monthly Surface Inflows to Sabine Lake from the Sabine & Neches Rivers (Acre-Feet)**

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1941	3,668,611	1,644,717	2,851,264	1,399,824	2,850,244	2,627,976	2,127,350	344,945	960,445	1,097,458	2,727,286	1,433,104
1942	1,230,804	1,052,574	1,818,662	2,830,356	2,057,708	1,739,292	1,415,827	806,591	974,443	187,715	227,716	368,257
1943	1,207,205	611,208	834,887	663,149	463,384	520,783	1,897,316	195,502	495,257	129,047	216,388	372,952
1944	2,169,110	1,794,661	2,619,777	2,197,926	7,273,612	2,646,419	216,402	352,770	484,520	172,698	508,473	1,716,335
1945	4,068,257	2,968,238	2,434,381	6,334,236	1,538,551	734,787	1,294,407	1,266,084	237,413	1,123,227	640,215	1,732,607
1946	3,791,234	4,520,149	3,382,989	2,118,659	2,853,667	4,026,005	1,615,251	423,329	535,838	488,236	2,603,170	2,658,350
1947	4,245,780	1,539,183	2,672,717	1,687,771	1,505,212	1,001,758	306,044	109,637	95,325	91,160	301,922	1,186,621
1948	1,345,253	2,477,882	1,935,296	1,432,769	788,249	549,894	115,179	40,181	44,113	51,010	361,789	275,719
1949	1,246,401	2,483,032	2,776,358	2,650,828	1,117,051	573,914	639,924	337,083	297,841	2,271,168	736,595	1,993,588
1950	3,360,812	3,935,602	3,097,525	1,493,982	2,453,462	4,713,131	687,662	285,992	293,621	181,498	181,750	207,504
1951	787,672	677,819	933,447	1,037,426	435,802	205,549	189,603	46,197	650,574	104,655	99,752	346,182
1952	303,413	1,995,493	1,159,142	2,371,554	1,898,351	780,912	547,342	124,518	39,543	46,596	88,506	464,684
1953	675,323	1,351,303	2,249,598	1,008,108	8,091,329	1,948,636	505,764	665,260	229,105	109,096	157,579	616,140
1954	708,325	490,259	336,116	581,641	1,591,197	340,663	132,047	39,248	30,371	67,581	210,528	175,968
1955	479,544	1,569,907	617,186	1,802,682	750,921	443,515	244,357	1,069,247	283,025	135,235	96,152	228,618
1956	342,609	1,272,959	670,616	585,663	817,580	151,677	58,482	36,193	25,532	32,040	60,412	927,919
1957	120,892	319,720	1,345,428	2,096,843	4,551,424	2,399,047	866,304	166,892	568,424	879,996	2,763,110	2,306,269
1958	2,249,299	1,770,305	1,205,558	946,535	2,368,383	772,879	437,985	287,590	2,057,004	1,300,746	310,129	328,656
1959	425,704	2,516,275	949,101	1,971,184	1,463,352	590,366	1,365,624	626,746	171,355	315,337	372,721	968,340
1960	1,711,143	1,967,468	1,975,435	575,359	411,853	315,372	353,589	466,500	161,814	488,337	700,590	2,710,726
1961	6,408,642	2,972,378	2,518,715	1,963,147	447,498	1,076,886	1,329,310	311,607	1,373,480	237,689	775,854	2,159,920
1962	1,494,368	1,170,802	1,005,079	588,716	1,462,083	591,526	229,644	142,479	216,195	126,631	226,241	538,962
1963	957,089	729,895	550,016	333,524	317,217	149,605	239,271	61,800	1,535,333	66,562	287,405	382,114
1964	581,668	582,320	1,377,881	838,615	902,938	182,707	169,205	69,955	139,067	51,960	56,726	446,729
1965	233,298	536,976	910,181									
Avg.	1,752,498	1,718,045	1,689,094	1,646,271	2,017,128	1,211,804	707,662	344,848	495,818	406,487	612,959	1,022,761

Source: Texas Water Development Board

Table B-2

Surface Inflows to Sabine Lake in Ascending Order (Acre-Feet)

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
	120,892	319,720	336,116	333,524	317,217	149,605	58,482	36,193	25,532	32,040	56,726	175,968
	233,298	490,259	550,016	575,359	411,853	151,677	115,179	39,248	30,371	46,596	60,412	207,504
	303,413	536,976	617,186	581,641	435,802	182,707	132,047	40,181	39,543	51,010	88,506	228,618
	342,609	582,320	670,616	585,663	447,498	205,549	169,205	46,197	44,113	51,960	96,152	275,719
	425,704	611,208	834,887	588,716	463,384	315,372	189,603	61,800	95,325	66,562	99,752	328,656
	479,544	677,819	910,181	663,149	750,921	340,663	216,402	69,955	139,067	67,581	157,579	346,182
	581,668	729,895	933,447	838,615	788,249	443,515	229,644	109,637	161,814	91,160	181,750	368,257
	675,323	1,052,574	949,101	946,535	817,580	520,783	239,271	124,518	171,355	104,655	210,528	372,952
	708,325	1,170,802	1,005,079	1,008,108	902,938	549,894	244,357	142,479	216,195	109,096	216,388	382,114
	787,672	1,272,959	1,159,142	1,037,426	1,117,051	573,914	306,044	166,892	229,105	126,631	226,241	446,729
	957,089	1,351,303	1,205,558	1,399,824	1,462,083	590,366	353,589	195,502	237,413	129,047	227,716	464,684
	1,207,205	1,539,183	1,345,428	1,432,769	1,463,352	591,526	437,985	285,992	283,025	135,235	287,405	538,962
	1,230,804	1,569,907	1,377,881	1,493,982	1,505,212	734,787	505,764	287,590	293,621	172,698	301,922	616,140
	1,246,401	1,644,717	1,818,662	1,687,771	1,538,551	772,879	547,342	311,607	297,841	181,498	310,129	927,919
	1,345,253	1,770,305	1,935,296	1,802,682	1,591,197	780,912	639,924	337,083	484,520	187,715	361,789	968,340
	1,494,368	1,794,661	1,975,435	1,963,147	1,898,351	1,001,758	687,662	344,945	495,257	237,689	372,721	1,186,621
	1,711,143	1,967,468	2,249,598	1,971,184	2,057,708	1,076,886	866,304	352,770	535,838	315,337	508,473	1,433,104
	2,169,110	1,995,493	2,434,381	2,096,843	2,368,383	1,739,292	1,294,407	423,329	568,424	488,236	640,215	1,716,335
	2,249,299	2,477,882	2,518,715	2,118,659	2,453,462	1,948,636	1,329,310	466,500	650,574	488,337	700,590	1,732,607
	3,360,812	2,483,032	2,619,777	2,197,926	2,850,244	2,399,047	1,365,624	626,746	960,445	879,996	736,595	1,993,588
	3,668,611	2,516,275	2,672,717	2,371,554	2,853,667	2,627,976	1,415,827	665,260	974,443	1,097,458	775,854	2,159,920
	3,791,234	2,968,238	2,776,358	2,650,828	4,551,424	2,646,419	1,615,251	806,591	1,373,480	1,123,227	2,603,170	2,306,269
	4,068,257	2,972,378	2,851,264	2,830,356	7,273,612	4,026,005	1,897,316	1,069,247	1,535,333	1,300,746	2,727,286	2,658,350
	4,245,780	3,935,602	3,097,525	6,334,236	8,091,329	4,713,131	2,127,350	1,266,084	2,057,004	2,271,168	2,763,110	2,710,726
	6,408,642	4,520,149	3,382,989									
Mean:	1,752,498	1,718,045	1,689,094	1,646,271	2,017,128	1,211,804	707,662	344,848	495,818	406,487	612,959	1,022,761
Median:	1,230,804	1,569,907	1,377,881	1,463,376	1,484,282	663,157	471,875	286,791	288,323	153,967	294,664	577,551
Guidelines to set Conservative Estimate of Inflow Needs:												
	1,230,804	1,569,907	1,377,881	1,463,376	2,017,128	1,211,804	471,875	286,791	495,818	406,487	294,664	577,551

Note: Guidelines to set Conservative Estimate of Inflow Needs = the mean monthly flow in May, June, Sept, and Oct, and the median (50th percentile) monthly flow for the remaining months of the y

Table B-3**Conservative Estimates of Needs for Inflow to Sabine Lake (Acre-Feet)**

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1941	1,230,804	1,569,907	1,377,881	1,399,824	2,017,128	1,211,804	471,875	286,791	495,818	406,487	294,664	577,551
1942	1,230,804	1,052,574	1,377,881	1,463,376	2,017,128	1,211,804	471,875	286,791	495,818	187,715	227,716	368,257
1943	1,207,205	611,208	834,887	663,149	463,384	520,783	471,875	195,502	495,257	129,047	216,388	372,952
1944	1,230,804	1,569,907	1,377,881	1,463,376	2,017,128	1,211,804	216,402	286,791	484,520	172,698	294,664	577,551
1945	1,230,804	1,569,907	1,377,881	1,463,376	1,538,551	734,787	471,875	286,791	237,413	406,487	294,664	577,551
1946	1,230,804	1,569,907	1,377,881	1,463,376	2,017,128	1,211,804	471,875	286,791	495,818	406,487	294,664	577,551
1947	1,230,804	1,539,183	1,377,881	1,463,376	1,505,212	1,001,758	306,044	109,637	95,325	91,160	294,664	577,551
1948	1,230,804	1,569,907	1,377,881	1,432,769	788,249	549,894	115,179	40,181	44,113	51,010	294,664	275,719
1949	1,230,804	1,569,907	1,377,881	1,463,376	1,117,051	573,914	471,875	286,791	297,841	406,487	294,664	577,551
1950	1,230,804	1,569,907	1,377,881	1,463,376	2,017,128	1,211,804	471,875	285,992	293,621	181,498	181,750	207,504
1951	787,672	677,819	933,447	1,037,426	435,802	205,549	189,603	46,197	495,818	104,655	99,752	346,182
1952	303,413	1,569,907	1,159,142	1,463,376	1,898,351	780,912	471,875	124,518	39,543	46,596	88,506	464,684
1953	675,323	1,351,303	1,377,881	1,008,108	2,017,128	1,211,804	471,875	286,791	229,105	109,096	157,579	577,551
1954	708,325	490,259	336,116	581,641	1,591,197	340,663	132,047	39,248	30,371	67,581	210,528	175,968
1955	479,544	1,569,907	617,186	1,463,376	750,921	443,515	244,357	286,791	283,025	135,235	96,152	228,618
1956	342,609	1,272,959	670,616	585,663	817,580	151,677	58,482	36,193	25,532	32,040	60,412	577,551
1957	120,892	319,720	1,345,428	1,463,376	2,017,128	1,211,804	471,875	166,892	495,818	406,487	294,664	577,551
1958	1,230,804	1,569,907	1,205,558	946,535	2,017,128	772,879	437,985	286,791	495,818	406,487	294,664	328,656
1959	425,704	1,569,907	949,101	1,463,376	1,463,352	590,366	471,875	286,791	171,355	315,337	294,664	577,551
1960	1,230,804	1,569,907	1,377,881	575,359	411,853	315,372	353,589	286,791	161,814	406,487	294,664	577,551
1961	1,230,804	1,569,907	1,377,881	1,463,376	447,498	1,076,886	471,875	286,791	495,818	237,689	294,664	577,551
1962	1,230,804	1,170,802	1,005,079	588,716	1,462,083	591,526	229,644	142,479	216,195	126,631	226,241	538,962
1963	957,089	729,895	550,016	333,524	317,217	149,605	239,271	61,800	495,818	66,562	287,405	382,114
1964	581,668	582,320	1,377,881	838,615	902,938	182,707	169,205	69,955	139,067	51,960	56,726	446,729
1965	233,298	536,976	910,181									

Note: Values are the minimum of values from Table B-1 and the Guidelines of Inflow Needs from Table B-2.

Table B-4**Inflows to the Sabine Lake, Beyond the Conservative Estimate of Needs (Acre-Feet)**

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1941	2,437,807	74,810	1,473,383	0	833,116	1,416,172	1,655,476	58,154	464,627	690,971	2,432,623	855,553
1942	0	0	440,781	1,366,981	40,580	527,488	943,953	519,800	478,625	0	0	0
1943	0	0	0	0	0	0	1,425,442	0	0	0	0	0
1944	938,306	224,754	1,241,896	734,551	5,256,484	1,434,615	0	65,979	0	0	213,810	1,138,784
1945	2,837,453	1,398,331	1,056,500	4,870,861	0	0	822,533	979,293	0	716,740	345,552	1,155,056
1946	2,560,430	2,950,242	2,005,108	655,284	836,539	2,814,201	1,143,377	136,538	40,020	81,749	2,308,507	2,080,799
1947	3,014,976	0	1,294,836	224,396	0	0	0	0	0	0	7,259	609,070
1948	114,449	907,975	557,415	0	0	0	0	0	0	0	67,126	0
1949	15,597	913,125	1,398,477	1,187,453	0	0	168,050	50,292	0	1,864,681	441,932	1,416,037
1950	2,130,008	2,365,695	1,719,644	30,607	436,334	3,501,327	215,788	0	0	0	0	0
1951	0	0	0	0	0	0	0	0	154,756	0	0	0
1952	0	425,586	0	908,179	0	0	75,468	0	0	0	0	0
1953	0	0	871,717	0	6,074,201	736,832	33,890	378,469	0	0	0	38,589
1954	0	0	0	0	0	0	0	0	0	0	0	0
1955	0	0	0	339,307	0	0	0	782,456	0	0	0	0
1956	0	0	0	0	0	0	0	0	0	0	0	350,368
1957	0	0	0	633,468	2,534,296	1,187,243	394,430	0	72,606	473,509	2,468,447	1,728,718
1958	1,018,495	200,398	0	0	351,255	0	0	799	1,561,186	894,259	15,466	0
1959	0	946,368	0	507,809	0	0	893,750	339,955	0	0	78,058	390,789
1960	480,339	397,561	597,554	0	0	0	0	179,709	0	81,850	405,927	2,133,175
1961	5,177,838	1,402,471	1,140,834	499,772	0	0	857,436	24,816	877,662	0	481,191	1,582,369
1962	263,564	0	0	0	0	0	0	0	0	0	0	0
1963	0	0	0	0	0	0	0	0	1,039,515	0	0	0
1964	0	0	0	0	0	0	0	0	0	0	0	0
1965	0	0	0	0	0	0	0	0	0	0	0	0

Note: Values = Table B-1 - Table B-3

Table B-6

Portion of the Conservative Estimate of Needs Provided by Inflows upstream from the Rulliff gage (Acre-Feet)

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
1941	667,975	728,486	647,383	635,365	816,762	629,710	257,689	177,722	116,791	99,656	117,252	263,642	5,158,433
1942	588,416	536,132	707,612	592,110	1,241,081	608,463	111,462	71,413	190,008	101,534	119,663	173,117	5,041,011
1943	513,243	236,985	286,830	363,372	184,225	344,588	141,528	103,710	63,346	85,702	98,876	149,831	2,572,236
1944	472,944	707,214	600,578	844,254	791,644	689,343	140,926	65,838	182,559	77,574	84,017	223,667	4,880,558
1945	629,840	703,710	789,119	777,119	925,170	292,760	312,049	75,126	115,775	185,451	137,611	203,503	5,147,233
1946	577,445	775,478	719,320	681,726	706,060	591,222	224,680	121,312	132,842	118,551	88,983	283,636	5,021,255
1947	637,199	804,357	625,084	812,587	590,915	309,818	126,476	50,434	66,633	52,003	176,025	367,216	4,618,747
1948	754,744	802,254	764,413	798,565	445,785	385,646	89,613	42,883	33,747	28,106	211,421	176,132	4,533,309
1949	737,941	714,060	605,294	664,205	629,871	296,945	171,679	200,665	93,402	89,526	161,580	217,218	4,582,386
1950	572,832	734,554	779,435	378,581	1,084,756	614,576	209,753	197,276	131,722	111,213	103,339	110,737	5,028,774
1951	456,218	413,911	536,370	651,927	348,853	150,962	151,815	46,675	64,621	56,918	59,675	190,155	3,128,100
1952	167,088	578,802	646,433	620,533	973,884	512,509	177,497	74,297	28,820	23,252	38,838	239,960	4,081,913
1953	342,030	615,669	812,996	456,178	1,012,030	762,653	244,626	95,648	116,965	61,135	69,164	286,175	4,875,269
1954	374,023	319,696	192,516	361,745	963,114	218,519	48,587	31,618	20,721	24,077	167,925	102,823	2,825,364
1955	211,121	670,254	350,995	771,320	389,038	217,765	138,962	168,091	185,911	80,430	57,005	120,873	3,361,765
1956	186,883	726,466	347,524	341,891	448,740	89,792	42,256	22,356	19,402	17,508	42,976	141,436	2,427,230
1957	100,661	274,155	677,593	623,606	1,098,017	700,721	357,805	95,187	115,312	139,107	147,790	282,610	4,612,564
1958	508,874	678,248	640,820	571,715	1,264,949	522,010	274,968	160,887	176,895	212,933	173,210	185,236	5,370,745
1959	175,061	581,620	576,872	503,241	657,639	270,764	82,861	94,546	81,362	177,679	125,431	272,589	3,599,665
1960	682,812	761,109	733,939	291,035	208,721	134,420	195,352	58,067	78,682	107,382	121,898	220,302	3,593,719
1961	420,017	645,008	690,214	777,068	208,106	253,091	191,455	188,064	221,730	135,729	118,834	342,125	4,191,441
1962	718,982	628,046	577,686	345,203	663,213	292,066	129,124	82,746	110,321	81,243	80,886	208,165	3,917,681
1963	326,301	257,851	261,005	161,970	270,783	82,274	91,081	45,628	58,849	28,288	78,785	172,453	1,835,268
1964	242,003	185,117	597,362	431,107	387,649	111,739	53,345	39,479	31,894	30,960	34,255	166,036	2,310,946
1965	147,015	361,765	495,114										1,003,894

Note: Values = (Table B-5 / Table B-1) * Table B-3

Table B-7

Historical Flows at Rulliff Beyond the Sabine Portion of the Conservative Estimates of Needs (Acre-Feet)

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
1941	1,323,032	34,714	692,253	0	337,340	735,909	904,049	36,037	109,444	169,402	967,984	390,546	5,700,710
1942	0	0	226,364	553,106	24,968	264,859	222,971	129,433	183,420	0	0	0	1,605,121
1943	0	0	0	0	0	0	427,530	0	0	0	0	0	427,530
1944	360,550	101,248	541,306	423,778	2,062,966	816,091	0	15,147	0	0	60,963	441,014	4,823,063
1945	1,452,010	626,802	605,062	2,586,648	0	0	543,937	256,530	0	326,998	161,377	406,989	6,966,353
1946	1,201,252	1,457,314	1,046,762	305,269	292,816	1,373,008	544,411	57,756	10,722	23,842	697,126	1,021,884	8,032,162
1947	1,560,883	0	587,411	124,603	0	0	0	0	0	0	4,336	387,256	2,664,489
1948	70,181	463,993	309,239	0	0	0	0	0	0	0	48,162	0	891,575
1949	9,351	415,328	614,342	538,968	0	0	61,141	35,189	0	410,685	242,334	532,573	2,859,911
1950	991,333	1,106,900	972,762	7,918	234,648	1,775,724	95,920	0	0	0	0	0	5,185,205
1951	0	0	0	0	0	0	0	0	20,170	0	0	0	20,170
1952	0	156,907	0	385,106	0	0	28,387	0	0	0	0	0	570,400
1953	0	0	514,342	0	3,047,538	463,727	17,569	126,223	0	0	0	19,121	4,188,520
1954	0	0	0	0	0	0	0	0	0	0	0	0	0
1955	0	0	0	178,842	0	0	0	458,606	0	0	0	0	637,448
1956	0	0	0	0	0	0	0	0	0	0	0	85,802	85,802
1957	0	0	0	269,947	1,379,536	686,518	299,081	0	16,886	162,043	1,238,061	845,905	4,897,977
1958	421,096	86,578	0	0	220,273	0	0	448	556,989	468,448	9,091	0	1,762,923
1959	0	350,611	0	174,630	0	0	156,941	112,072	0	0	33,227	184,442	1,011,923
1960	266,477	192,742	318,292	0	0	0	0	36,386	0	21,623	167,927	813,681	1,817,128
1961	1,766,957	576,215	571,471	265,384	0	0	347,890	16,273	392,491	0	194,058	937,352	5,068,091
1962	153,963	0	0	0	0	0	0	0	0	0	0	0	153,963
1963	0	0	0	0	0	0	0	0	123,382	0	0	0	123,382
1964	0	0	0	0	0	0	0	0	0	0	0	0	0
1965	0	0	0										0

Note: Values = Table B-5 - Table B-6

APPENDIX C

OPERATION STUDY FOR EXISTING CONDITIONS

SUMMARY - Outflow from Toledo Bend using EXISTING Operation (Acre-Feet)

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
1940	186,835	739,404	105,562	243,318	195,846	354,266	131,952	131,952	118,062	115,285	275,107	1,819,410	4,416,999
1941	1,316,335	507,544	867,171	322,393	893,286	919,726	635,249	131,952	118,062	115,285	637,171	429,469	6,893,643
1942	299,839	304,044	514,171	457,101	1,229,806	518,706	131,952	131,952	118,062	115,285	105,562	105,561	4,032,041
1943	105,562	101,395	105,562	115,285	126,396	126,396	131,952	131,952	118,062	115,285	105,562	105,561	1,388,970
1944	105,562	101,395	249,181	774,601	2,156,967	754,354	131,952	131,952	118,062	115,285	105,562	105,561	4,850,434
1945	874,075	514,844	926,931	3,100,061	346,406	126,396	668,019	131,952	118,062	115,285	105,562	206,423	7,234,016
1946	1,189,336	1,481,164	1,124,631	554,813	731,786	1,465,106	131,952	131,952	118,062	115,285	119,240	713,129	7,876,456
1947	1,276,456	420,384	730,731	639,141	351,306	126,396	131,952	131,952	118,062	115,285	105,562	105,561	4,252,788
1948	105,562	478,122	694,355	395,061	338,106	130,674	131,952	131,952	118,062	115,285	105,562	105,561	2,850,254
1949	105,562	101,395	563,059	471,201	183,554	126,396	131,952	131,952	118,062	115,285	105,562	330,368	2,484,348
1950	1,160,351	1,144,064	1,038,055	182,101	1,021,626	1,176,626	131,952	131,952	118,062	115,285	105,562	105,561	6,431,197
1951	105,562	101,395	105,562	115,285	126,396	126,396	131,952	131,952	118,062	115,285	105,562	105,561	1,388,970
1952	105,562	101,395	105,562	115,285	375,552	166,742	131,952	131,952	118,062	115,285	105,562	105,561	1,678,472
1953	105,562	101,395	250,990	164,982	2,632,987	632,618	131,952	131,952	118,062	115,285	105,562	105,561	4,596,908
1954	105,562	101,395	105,562	115,285	126,396	126,396	131,952	131,952	118,062	115,285	105,562	105,561	1,388,970
1955	104,222	32,850	105,562	115,285	126,396	126,396	131,952	131,952	118,062	115,285	105,562	105,561	1,319,085
1956	105,562	101,395	105,562	115,285	126,396	126,396	131,952	42,750	38,250	37,350	34,200	34,200	999,298
1957	34,200	32,850	34,200	37,350	312,927	918,826	131,952	131,952	118,062	115,285	381,076	594,869	2,843,549
1958	551,411	387,084	319,131	115,285	1,262,808	197,606	131,952	131,952	403,259	183,633	105,562	105,561	3,895,244
1959	105,562	126,378	256,175	435,861	398,758	126,396	131,952	131,952	118,062	115,285	105,562	105,561	2,157,504
1960	192,346	688,604	671,771	115,285	126,396	126,396	131,952	131,952	118,062	115,285	105,562	266,846	2,790,457
1961	1,374,547	770,104	1,024,791	652,169	126,396	126,396	184,013	131,952	153,022	115,285	105,562	973,422	5,737,659
1962	541,287	391,684	375,975	251,501	449,026	126,396	131,952	131,952	118,062	115,285	105,562	105,561	2,844,243
1963	105,562	101,395	105,562	115,285	126,396	126,396	131,952	131,952	118,062	115,285	34,200	34,200	1,246,247
1964	34,200	60,378	34,200	115,285	126,396	126,396	131,952	42,750	38,250	37,350	34,200	34,200	815,557
1965	34,200	32,850	34,200	115,285	126,396	126,396	131,952	131,952	98,947	37,350	34,200	34,200	937,928
1966	34,200	101,395	105,562	115,285	494,370	188,850	131,952	131,952	118,062	115,285	105,562	105,561	1,748,036
1967	105,562	101,395	105,562	115,285	126,396	126,396	131,952	131,952	38,250	37,350	34,200	34,200	1,088,500
1968	34,200	101,395	105,562	400,019	794,426	534,206	176,077	131,952	118,062	115,285	105,562	595,548	3,212,294
1969	192,491	507,644	1,163,931	1,374,661	1,008,166	264,858	131,952	131,952	118,062	115,285	105,562	105,561	5,220,125
1970	105,562	101,395	105,562	115,285	126,396	126,396	131,952	131,952	118,062	115,285	105,562	105,561	1,388,970
1971	105,562	101,395	105,562	115,285	126,396	126,396	42,750	42,750	38,250	37,350	34,200	34,200	910,096
1972	105,562	101,395	105,562	115,285	126,396	126,396	131,952	131,952	118,062	115,285	105,562	105,561	1,388,970
1973	105,562	101,395	750,099	787,941	715,270	669,578	201,989	131,952	118,062	321,487	295,223	977,969	5,176,527
1974	1,669,939	679,336	258,327	334,705	265,166	188,898	131,952	131,952	118,062	115,285	454,055	1,018,629	5,366,306
1975	656,819	1,262,584	571,771	471,741	1,220,306	374,934	131,952	131,952	118,062	115,285	105,562	105,561	5,266,529
1976	105,562	101,395	105,562	115,285	126,396	167,045	131,952	131,952	118,062	115,285	105,562	105,561	1,429,619
1977	105,562	101,395	687,078	520,665	126,396	126,396	131,952	131,952	118,062	115,285	105,562	105,561	2,375,866
1978	105,562	101,395	105,562	115,285	126,396	126,396	131,952	131,952	118,062	115,285	105,562	105,561	1,388,970
1979	105,562	811,456	717,839	1,022,709	885,698	509,926	131,952	131,952	118,062	115,285	105,562	105,561	4,761,564
1980	168,105	557,784	462,371	932,625	739,378	126,396	131,952	131,952	118,062	115,285	105,562	105,561	3,695,033
1981	105,562	101,395	105,562	111,889	40,950	126,396	131,952	131,952	118,062	115,285	105,562	105,561	1,300,128
1982	105,562	101,395	105,562	115,285	126,396	126,396	131,952	131,952	92,864	37,350	34,200	105,561	1,214,475
1983	105,562	1,034,184	593,075	166,701	895,790	126,396	131,952	131,952	118,062	115,285	105,562	105,561	3,630,082
1984	105,562	397,009	642,491	133,921	126,396	126,396	131,952	131,952	118,062	115,285	105,562	105,561	2,240,149
1985	105,562	337,368	502,575	202,285	378,022	126,396	131,952	131,952	118,062	115,285	105,562	105,561	2,360,582
1986	105,562	294,789	105,562	136,766	391,330	840,930	131,952	131,952	118,062	115,285	125,337	631,469	3,128,996
1987	313,883	882,144	568,111	115,481	126,396	126,396	131,952	131,952	118,062	115,285	105,562	105,561	2,840,785
1988	839,793	344,488	615,555	298,277	126,396	126,396	131,952	131,952	118,062	115,285	105,562	105,561	3,059,279
1989	105,562	270,273	696,407	814,265	1,386,386	1,853,807	1,121,061	131,952	118,062	115,285	105,562	105,561	6,824,183

PERMITTED OPERATION

	Evaporative Loss (ac-ft)	Texas Demand (ac-ft)	Louisiana Demand (ac-ft)	Inflow (ac-ft)	Shortage (ac-ft)	Hydropower Release (ac-ft)	Spills (ac-ft)	End-of-month Content (ac-ft)	End-of-month Elevation (ft)	Proposed Transfer (ac-ft)	Texas Return Flow (ac-ft)	Total D/S Flow (ac-ft)
1940	1	(7,264)	57,000	7,929	210,300	0	71,362	81,273	4,477,000	172	0	186,835
1940	2	(36,320)	54,750	7,616	732,600	0	68,545	638,009	4,477,000	172	0	739,404
1940	3	23,540	57,000	7,929	123,100	0	71,362	0	4,440,269	172	0	105,562
1940	4	(18,108)	62,250	8,659	295,500	0	77,935	128,033	4,477,000	172	0	243,318
1940	5	18,160	68,250	9,494	250,800	0	85,446	69,450	4,477,000	172	0	195,846
1940	6	(18,160)	68,250	9,494	372,900	0	85,446	227,870	4,477,000	172	0	354,266
1940	7	28,976	71,250	9,911	164,300	0	89,202	0	4,441,961	172	0	131,952
1940	8	(18,098)	71,250	9,911	178,800	0	89,202	0	4,468,496	172	0	131,952
1940	9	46,750	63,750	8,868	90,700	0	79,812	0	4,360,016	171	0	118,062
1940	10	42,206	62,250	8,659	23,000	0	77,935	0	4,191,966	170	0	115,285
1940	11	(124,270)	57,000	7,929	466,600	0	71,362	169,545	4,477,000	172	0	275,107
1940	12	(72,641)	57,000	7,931	1,777,500	0	71,361	1,713,849	4,477,000	172	0	1,819,410
		(135,229)	750,000	104,330	4,686,100	0	938,970	3,028,029		0	450,000	4,416,999
1941	1	(7,264)	57,000	7,929	1,339,800	0	71,362	1,210,773	4,477,000	172	0	1,316,335
1941	2	(18,160)	54,750	7,616	518,900	0	68,545	406,149	4,477,000	172	0	507,544
1941	3	0	57,000	7,929	897,900	0	71,362	761,609	4,477,000	172	0	867,171
1941	4	5,448	62,250	8,659	361,400	0	77,935	207,108	4,477,000	172	0	322,393
1941	5	(54,480)	68,250	9,494	875,600	0	85,446	766,890	4,477,000	172	0	893,286
1941	6	(36,320)	68,250	9,494	920,200	0	85,446	793,330	4,477,000	172	0	919,726
1941	7	(18,160)	71,250	9,911	655,500	0	89,202	503,297	4,477,000	172	0	635,249
1941	8	48,478	71,250	9,911	75,200	0	89,202	0	4,333,359	171	0	131,952
1941	9	12,352	63,750	8,868	92,300	0	79,812	0	4,260,877	171	0	118,062
1941	10	(52,967)	62,250	8,659	175,000	0	77,935	0	4,340,000	171	0	115,285
1941	11	0	57,000	7,929	804,900	0	71,362	531,609	4,477,000	172	0	637,171
1941	12	0	57,000	7,931	460,200	0	71,361	323,908	4,477,000	172	0	429,469
		(121,073)	750,000	104,330	7,176,900	0	938,970	5,504,673		0	450,000	6,893,643
1942	1	3,632	57,000	7,929	334,200	0	71,362	194,277	4,477,000	172	0	299,839
1942	2	(18,160)	54,750	7,616	315,400	0	68,545	202,649	4,477,000	172	0	304,044
1942	3	0	57,000	7,929	544,900	0	71,362	408,609	4,477,000	172	0	514,171
1942	4	(18,160)	62,250	8,659	472,500	0	77,935	341,816	4,477,000	172	0	457,101
1942	5	0	68,250	9,494	1,266,600	0	85,446	1,103,410	4,477,000	172	0	1,229,806
1942	6	0	68,250	9,494	555,500	0	85,446	392,310	4,477,000	172	0	518,706
1942	7	39,643	71,250	9,911	111,600	0	89,202	0	4,378,594	171	0	131,952
1942	8	26,604	71,250	9,911	96,800	0	89,202	0	4,278,427	171	0	131,952
1942	9	35,168	63,750	8,868	181,500	0	79,812	0	4,272,329	171	0	118,062
1942	10	46,846	62,250	8,659	38,400	0	77,935	0	4,115,039	170	0	115,285
1942	11	22,071	57,000	7,929	54,600	0	71,362	0	4,011,277	169	0	105,562
1942	12	(16,740)	57,000	7,931	57,100	0	71,361	0	3,948,825	169	0	105,561
		120,904	750,000	104,330	4,029,100	0	938,970	2,643,071		0	450,000	4,032,041

PERMITTED OPERATION

	Evaporative Loss (ac-ft)	Texas Demand (ac-ft)	Louisiana Demand (ac-ft)	Inflow (ac-ft)	Shortage (ac-ft)	Hydropower Release (ac-ft)	Spills (ac-ft)	End-of-month Content (ac-ft)	End-of-month Elevation (ft)	Proposed Transfer (ac-ft)	Texas Return Flow (ac-ft)	Total D/S Flow (ac-ft)	
1943	1	(5,055)	57,000	7,929	270,700	0	71,362	0	4,088,289	170	0	34,200	105,562
1943	2	20,389	54,750	7,616	110,500	0	68,545	0	4,047,489	169	0	32,850	101,395
1943	3	0	57,000	7,929	106,000	0	71,362	0	4,017,198	169	0	34,200	105,562
1943	4	25,313	62,250	8,659	194,700	0	77,935	0	4,037,741	169	0	37,350	115,285
1943	5	10,043	68,250	9,494	56,500	0	85,446	0	3,921,008	169	0	40,950	126,396
1943	6	21,452	68,250	9,494	135,700	0	85,446	0	3,872,066	168	0	40,950	126,396
1943	7	31,559	71,250	9,911	327,100	0	89,202	0	3,997,244	169	0	42,750	131,952
1943	8	59,352	71,250	9,911	18,000	0	89,202	0	3,785,529	168	0	42,750	131,952
1943	9	22,337	63,750	8,868	14,400	0	79,812	0	3,625,162	167	0	38,250	118,062
1943	10	35,711	62,250	8,659	45,000	0	77,935	0	3,485,607	166	0	37,350	115,285
1943	11	12,134	57,000	7,929	36,500	0	71,362	0	3,373,682	165	0	34,200	105,562
1943	12	(14,918)	57,000	7,931	59,000	0	71,361	0	3,311,308	165	0	34,200	105,561
		218,317	750,000	104,330	1,374,100	0	938,970	0			0	450,000	1,388,970
1944	1	(61,515)	57,000	7,929	459,700	0	71,362	0	3,696,232	167	0	34,200	105,562
1944	2	(16,389)	54,750	7,616	436,500	0	68,545	0	4,018,210	169	0	32,850	101,395
1944	3	0	57,000	7,929	738,700	0	71,362	143,619	4,477,000	172	0	34,200	249,181
1944	4	(18,160)	62,250	8,659	790,000	0	77,935	659,316	4,477,000	172	0	37,350	774,601
1944	5	(108,961)	68,250	9,494	2,084,800	0	85,446	2,030,571	4,477,000	172	0	40,950	2,156,967
1944	6	39,952	68,250	9,494	831,100	0	85,446	627,958	4,477,000	172	0	40,950	754,354
1944	7	60,821	71,250	9,911	41,100	0	89,202	0	4,286,916	171	0	42,750	131,952
1944	8	0	71,250	9,911	22,700	0	89,202	0	4,139,253	170	0	42,750	131,952
1944	9	37,458	63,750	8,868	71,900	0	79,812	0	4,021,265	169	0	38,250	118,062
1944	10	49,799	62,250	8,659	18,100	0	77,935	0	3,840,722	168	0	37,350	115,285
1944	11	(32,562)	57,000	7,929	61,300	0	71,362	0	3,798,293	168	0	34,200	105,562
1944	12	(66,354)	57,000	7,931	327,500	0	71,361	0	4,055,855	169	0	34,200	105,561
		(115,911)	750,000	104,330	5,883,400	0	938,970	3,461,464			0	450,000	4,850,434
1945	1	(29,849)	57,000	7,929	1,296,100	0	71,362	768,513	4,477,000	172	0	34,200	874,075
1945	2	(18,160)	54,750	7,616	526,200	0	68,545	413,449	4,477,000	172	0	32,850	514,844
1945	3	(18,160)	57,000	7,929	939,500	0	71,362	821,369	4,477,000	172	0	34,200	926,931
1945	4	(36,320)	62,250	8,659	3,097,300	0	77,935	2,984,776	4,477,000	172	0	37,350	3,100,061
1945	5	0	68,250	9,494	383,200	0	85,446	220,010	4,477,000	172	0	40,950	346,406
1945	6	10,880	68,250	9,494	155,700	0	85,446	0	4,458,630	172	0	40,950	126,396
1945	7	0	71,250	9,911	724,800	0	89,202	536,067	4,477,000	172	0	42,750	668,019
1945	8	32,506	71,250	9,911	132,100	0	89,202	0	4,406,231	172	0	42,750	131,952
1945	9	44,327	63,750	8,868	37,800	0	79,812	0	4,247,274	171	0	38,250	118,062
1945	10	(35,514)	62,250	8,659	290,600	0	77,935	0	4,424,544	172	0	37,350	115,285
1945	11	10,799	57,000	7,929	138,800	0	71,362	0	4,416,254	172	0	34,200	105,562
1945	12	0	57,000	7,931	297,900	0	71,361	100,862	4,477,000	172	0	34,200	206,423
		(39,491)	750,000	104,330	8,020,000	0	938,970	5,845,046			0	450,000	7,234,016

PERMITTED OPERATION

		Evaporative Loss (ac-ft)	Texas Demand (ac-ft)	Louisiana Demand (ac-ft)	Inflow (ac-ft)	Shortage (ac-ft)	Hydropower Release (ac-ft)	Spills (ac-ft)	End-of-month Content (ac-ft)	End-of-month Elevation (ft)	Proposed Transfer (ac-ft)	Texas Return Flow (ac-ft)	Total D/S Flow (ac-ft)
1946	1	(98,065)	57,000	7,929	1,122,000	0	71,362	1,083,774	4,477,000	172	0	34,200	1,189,336
1946	2	(54,480)	54,750	7,616	1,456,200	0	68,545	1,379,769	4,477,000	172	0	32,850	1,481,164
1946	3	(18,160)	57,000	7,929	1,137,200	0	71,362	1,019,069	4,477,000	172	0	34,200	1,124,631
1946	4	14,528	62,250	8,659	602,900	0	77,935	439,528	4,477,000	172	0	37,350	554,813
1946	5	(54,480)	68,250	9,494	714,100	0	85,446	605,390	4,477,000	172	0	40,950	731,786
1946	6	0	68,250	9,494	1,501,900	0	85,446	1,338,710	4,477,000	172	0	40,950	1,465,106
1946	7	32,685	71,250	9,911	201,800	0	89,202	0	4,475,752	172	0	42,750	131,952
1946	8	28,726	71,250	9,911	57,100	0	89,202	0	4,333,763	171	0	42,750	131,952
1946	9	22,871	63,750	8,868	64,800	0	79,812	0	4,223,262	170	0	38,250	118,062
1946	10	6,918	62,250	8,659	57,000	0	77,935	0	4,124,500	170	0	37,350	115,285
1946	11	(52,969)	57,000	7,929	449,500	0	71,362	13,678	4,477,000	172	0	34,200	119,240
1946	12	(18,160)	57,000	7,931	725,700	0	71,361	607,568	4,477,000	172	0	34,200	713,129
		(190,586)	750,000	104,330	8,090,200	0	938,970	6,487,486			0	450,000	7,876,456
1947	1	(88,985)	57,000	7,929	1,218,200	0	71,362	1,170,894	4,477,000	172	0	34,200	1,276,456
1947	2	0	54,750	7,616	449,900	0	68,545	318,989	4,477,000	172	0	32,850	420,384
1947	3	(18,160)	57,000	7,929	743,300	0	71,362	625,169	4,477,000	172	0	34,200	730,731
1947	4	0	62,250	8,659	672,700	0	77,935	523,856	4,477,000	172	0	37,350	639,141
1947	5	0	68,250	9,494	388,100	0	85,446	224,910	4,477,000	172	0	40,950	351,306
1947	6	19,853	68,250	9,494	104,700	0	85,446	0	4,398,657	172	0	40,950	126,396
1947	7	56,647	71,250	9,911	63,200	0	89,202	0	4,234,847	171	0	42,750	131,952
1947	8	60,062	71,250	9,911	15,200	0	89,202	0	4,019,622	169	0	42,750	131,952
1947	9	53,117	63,750	8,868	27,800	0	79,812	0	3,841,875	168	0	38,250	118,062
1947	10	30,619	62,250	8,659	18,700	0	77,935	0	3,681,112	167	0	37,350	115,285
1947	11	(31,655)	57,000	7,929	63,800	0	71,362	0	3,640,276	167	0	34,200	105,562
1947	12	(31,969)	57,000	7,931	255,200	0	71,361	0	3,791,153	168	0	34,200	105,561
		49,529	750,000	104,330	4,020,800	0	938,970	2,863,818			0	450,000	4,252,788
1948	1	(28,310)	57,000	7,929	425,000	0	71,362	0	4,108,172	170	0	34,200	105,562
1948	2	(35,266)	54,750	7,616	841,200	0	68,545	376,727	4,477,000	172	0	32,850	478,122
1948	3	1,816	57,000	7,929	726,900	0	71,362	588,793	4,477,000	172	0	34,200	694,355
1948	4	9,080	62,250	8,659	437,700	0	77,935	279,776	4,477,000	172	0	37,350	395,061
1948	5	0	68,250	9,494	374,900	0	85,446	211,710	4,477,000	172	0	40,950	338,106
1948	6	49,032	68,250	9,494	216,500	0	85,446	4,278	4,477,000	172	0	40,950	130,674
1948	7	50,106	71,250	9,911	35,000	0	89,202	0	4,291,531	171	0	42,750	131,952
1948	8	64,085	71,250	9,911	17,700	0	89,202	0	4,074,783	170	0	42,750	131,952
1948	9	38,540	63,750	8,868	13,100	0	79,812	0	3,896,913	168	0	38,250	118,062
1948	10	39,002	62,250	8,659	11,700	0	77,935	0	3,720,767	167	0	37,350	115,285
1948	11	(64,037)	57,000	7,929	79,400	0	71,362	0	3,727,913	167	0	34,200	105,562
1948	12	0	57,000	7,931	63,000	0	71,361	0	3,654,621	167	0	34,200	105,561
		124,048	750,000	104,330	3,242,100	0	938,970	1,461,284			0	450,000	2,850,254

PERMITTED OPERATION

	Evaporative Loss (ac-ft)	Texas Demand (ac-ft)	Louisiana Demand (ac-ft)	Inflow (ac-ft)	Shortage (ac-ft)	Hydropower Release (ac-ft)	Spills (ac-ft)	End-of-month Content (ac-ft)	End-of-month Elevation (ft)	Proposed Transfer (ac-ft)	Texas Return Flow (ac-ft)	Total D/S Flow (ac-ft)	
1949	1	(58,487)	57,000	7,929	383,200	0	71,362	0	3,960,017	169	0	34,200	105,562
1949	2	(17,235)	54,750	7,616	500,000	0	68,545	0	4,346,341	171	0	32,850	101,395
1949	3	(35,947)	57,000	7,929	688,500	0	71,362	457,497	4,477,000	172	0	34,200	563,059
1949	4	(18,160)	62,250	8,659	486,600	0	77,935	355,916	4,477,000	172	0	37,350	471,201
1949	5	39,952	68,250	9,494	260,300	0	85,446	57,158	4,477,000	172	0	40,950	183,554
1949	6	0	68,250	9,494	145,900	0	85,446	0	4,459,710	172	0	40,950	126,396
1949	7	3,605	71,250	9,911	115,400	0	89,202	0	4,401,142	172	0	42,750	131,952
1949	8	46,308	71,250	9,911	124,000	0	89,202	0	4,308,471	171	0	42,750	131,952
1949	9	22,745	63,750	8,868	47,700	0	79,812	0	4,180,996	170	0	38,250	118,062
1949	10	(70,299)	62,250	8,659	260,800	0	77,935	0	4,363,251	171	0	37,350	115,285
1949	11	39,469	57,000	7,929	249,400	0	71,362	0	4,436,891	172	0	34,200	105,562
1949	12	(54,308)	57,000	7,931	346,900	0	71,361	224,807	4,477,000	172	0	34,200	330,368
		(102,357)	750,000	104,330	3,608,700	0	938,970	1,095,378			0	450,000	2,484,348
1950	1	(54,480)	57,000	7,929	1,136,600	0	71,362	1,054,789	4,477,000	172	0	34,200	1,160,351
1950	2	(54,480)	54,750	7,616	1,119,100	0	68,545	1,042,669	4,477,000	172	0	32,850	1,144,064
1950	3	1,816	57,000	7,929	1,070,600	0	71,362	932,493	4,477,000	172	0	34,200	1,038,055
1950	4	(18,160)	62,250	8,659	197,500	0	77,935	66,816	4,477,000	172	0	37,350	182,101
1950	5	(36,320)	68,250	9,494	1,022,100	0	85,446	895,230	4,477,000	172	0	40,950	1,021,626
1950	6	(36,320)	68,250	9,494	1,177,100	0	85,446	1,050,230	4,477,000	172	0	40,950	1,176,626
1950	7	27,033	71,250	9,911	100,900	0	89,202	0	4,380,504	171	0	42,750	131,952
1950	8	33,686	71,250	9,911	95,500	0	89,202	0	4,271,955	171	0	42,750	131,952
1950	9	0	63,750	8,868	58,800	0	79,812	0	4,178,325	170	0	38,250	118,062
1950	10	22,278	62,250	8,659	52,300	0	77,935	0	4,059,503	169	0	37,350	115,285
1950	11	5,049	57,000	7,929	44,800	0	71,362	0	3,962,963	169	0	34,200	105,562
1950	12	3,312	57,000	7,931	49,000	0	71,361	0	3,872,359	168	0	34,200	105,561
		(106,586)	750,000	104,330	6,124,300	0	938,970	5,042,227			0	450,000	6,431,197
1951	1	(44,765)	57,000	7,929	194,700	0	71,362	0	3,975,533	169	0	34,200	105,562
1951	2	(33,796)	54,750	7,616	216,800	0	68,545	0	4,095,218	170	0	32,850	101,395
1951	3	(17,431)	57,000	7,929	372,200	0	71,362	0	4,348,558	171	0	34,200	105,562
1951	4	14,371	62,250	8,659	282,800	0	77,935	0	4,468,143	172	0	37,350	115,285
1951	5	19,900	68,250	9,494	152,100	0	85,446	0	4,437,153	172	0	40,950	126,396
1951	6	0	68,250	9,494	50,200	0	85,446	0	4,324,163	171	0	40,950	126,396
1951	7	42,036	71,250	9,911	66,500	0	89,202	0	4,178,264	170	0	42,750	131,952
1951	8	69,640	71,250	9,911	15,300	0	89,202	0	3,953,561	169	0	42,750	131,952
1951	9	(16,511)	63,750	8,868	28,600	0	79,812	0	3,846,242	168	0	38,250	118,062
1951	10	45,083	62,250	8,659	14,500	0	77,935	0	3,666,815	167	0	37,350	115,285
1951	11	1,568	57,000	7,929	20,700	0	71,362	0	3,549,656	166	0	34,200	105,562
1951	12	(30,993)	57,000	7,931	95,700	0	71,361	0	3,540,057	166	0	34,200	105,561
		49,102	750,000	104,330	1,510,100	0	938,970	0			0	450,000	1,388,970

PERMITTED OPERATION

		Evaporative Loss (ac-ft)	Texas Demand (ac-ft)	Louisiana Demand (ac-ft)	Inflow (ac-ft)	Shortage (ac-ft)	Hydropower Release (ac-ft)	Spills (ac-ft)	End-of-month Content (ac-ft)	End-of-month Elevation (ft)	Proposed Transfer (ac-ft)	Texas Return Flow (ac-ft)	Total D/S Flow (ac-ft)
1952	1	(12,360)	57,000	7,929	101,300	0	71,362	0	3,517,426	166	0	34,200	105,562
1952	2	(15,889)	54,750	7,616	444,700	0	68,545	0	3,847,104	168	0	32,850	101,395
1952	3	0	57,000	7,929	380,600	0	71,362	0	4,091,413	170	0	34,200	105,562
1952	4	(70,183)	62,250	8,659	419,900	0	77,935	0	4,432,652	172	0	37,350	115,285
1952	5	(36,194)	68,250	9,494	420,500	0	85,446	249,156	4,477,000	172	0	40,950	375,552
1952	6	52,664	68,250	9,494	256,200	0	85,446	40,346	4,477,000	172	0	40,950	166,742
1952	7	(18,028)	71,250	9,911	59,600	0	89,202	0	4,384,265	171	0	42,750	131,952
1952	8	72,069	71,250	9,911	20,300	0	89,202	0	4,162,133	170	0	42,750	131,952
1952	9	71,212	63,750	8,868	10,200	0	79,812	0	3,948,691	169	0	38,250	118,062
1952	10	76,794	62,250	8,659	7,900	0	77,935	0	3,730,953	167	0	37,350	115,285
1952	11	34,753	57,000	7,929	9,300	0	71,362	0	3,569,209	166	0	34,200	105,562
1952	12	0	57,000	7,931	68,000	0	71,361	0	3,500,917	166	0	34,200	105,561
		154,838	750,000	104,330	2,198,500	0	938,970	289,502			0	450,000	1,678,472
1953	1	(6,170)	57,000	7,929	167,900	0	71,362	0	3,538,696	166	0	34,200	105,562
1953	2	(31,726)	54,750	7,616	368,200	0	68,545	0	3,807,711	168	0	32,850	101,395
1953	3	(34,408)	57,000	7,929	916,600	0	71,362	145,428	4,477,000	172	0	34,200	250,990
1953	4	(72,641)	62,250	8,659	125,900	0	77,935	49,697	4,477,000	172	0	37,350	164,982
1953	5	(145,281)	68,250	9,494	2,524,500	0	85,446	2,506,591	4,477,000	172	0	40,950	2,632,987
1953	6	32,688	68,250	9,494	702,100	0	85,446	506,222	4,477,000	172	0	40,950	632,618
1953	7	3,612	71,250	9,911	102,300	0	89,202	0	4,405,325	172	0	42,750	131,952
1953	8	35,550	71,250	9,911	79,600	0	89,202	0	4,279,012	171	0	42,750	131,952
1953	9	53,784	63,750	8,868	34,900	0	79,812	0	4,107,698	170	0	38,250	118,062
1953	10	50,535	62,250	8,659	17,600	0	77,935	0	3,925,919	169	0	37,350	115,285
1953	11	4,925	57,000	7,929	24,200	0	71,362	0	3,808,903	168	0	34,200	105,562
1953	12	0	57,000	7,931	138,000	0	71,361	0	3,810,611	168	0	34,200	105,561
		(109,132)	750,000	104,330	5,201,800	0	938,970	3,207,938			0	450,000	4,596,908
1954	1	(13,021)	57,000	7,929	137,600	0	71,362	0	3,824,941	168	0	34,200	105,562
1954	2	35,907	54,750	7,616	184,000	0	68,545	0	3,842,123	168	0	32,850	101,395
1954	3	19,519	57,000	7,929	99,800	0	71,362	0	3,786,113	168	0	34,200	105,562
1954	4	0	62,250	8,659	161,700	0	77,935	0	3,798,969	168	0	37,350	115,285
1954	5	(33,416)	68,250	9,494	469,700	0	85,446	0	4,138,895	170	0	40,950	126,396
1954	6	61,103	68,250	9,494	69,700	0	85,446	0	3,984,302	169	0	40,950	126,396
1954	7	77,168	71,250	9,911	14,200	0	89,202	0	3,750,971	168	0	42,750	131,952
1954	8	81,839	71,250	9,911	9,400	0	89,202	0	3,508,169	166	0	42,750	131,952
1954	9	70,890	63,750	8,868	7,400	0	79,812	0	3,292,249	165	0	38,250	118,062
1954	10	33,404	62,250	8,659	6,600	0	77,935	0	3,116,601	164	0	37,350	115,285
1954	11	16,931	57,000	7,929	73,500	0	71,362	0	3,036,879	163	0	34,200	105,562
1954	12	11,069	57,000	7,931	64,100	0	71,361	0	2,953,618	162	0	34,200	105,561
		361,393	750,000	104,330	1,297,700	0	938,970	0			0	450,000	1,388,970

PERMITTED OPERATION

	Evaporative Loss (ac-ft)	Texas Demand (ac-ft)	Louisiana Demand (ac-ft)	Inflow (ac-ft)	Shortage (ac-ft)	Hydropower Release (ac-ft)	Spills (ac-ft)	End-of-month Content (ac-ft)	End-of-month Elevation (ft)	Proposed Transfer (ac-ft)	Texas Return Flow (ac-ft)	Total D/S Flow (ac-ft)
1955 1	(23,283)	57,000	7,929	111,400	0	70,022	0	2,953,350	162	0	34,200	104,222
1955 2	(42,407)	54,750	7,616	282,200	0	0	0	3,215,591	164	0	32,850	32,850
1955 3	17,613	57,000	7,929	239,300	0	71,362	0	3,300,987	165	0	34,200	105,562
1955 4	(15,383)	62,250	8,659	541,800	0	77,935	0	3,709,326	167	0	37,350	115,285
1955 5	0	68,250	9,494	248,900	0	85,446	0	3,795,036	168	0	40,950	126,396
1955 6	49,663	68,250	9,494	79,200	0	85,446	0	3,661,383	167	0	40,950	126,396
1955 7	3,133	71,250	9,911	59,900	0	89,202	0	3,547,787	166	0	42,750	131,952
1955 8	0	71,250	9,911	276,700	0	89,202	0	3,654,124	167	0	42,750	131,952
1955 9	25,000	63,750	8,868	49,000	0	79,812	0	3,525,694	166	0	38,250	118,062
1955 10	56,200	62,250	8,659	28,500	0	77,935	0	3,349,150	165	0	37,350	115,285
1955 11	22,098	57,000	7,929	14,900	0	71,362	0	3,205,661	164	0	34,200	105,562
1955 12	4,308	57,000	7,931	31,200	0	71,361	0	3,096,261	163	0	34,200	105,561
	96,942	750,000	104,330	1,963,000	0	869,085	0			0	450,000	1,319,085
1956 1	(11,242)	57,000	7,929	51,800	0	71,362	0	3,023,012	163	0	34,200	105,562
1956 2	(28,495)	54,750	7,616	292,000	0	68,545	0	3,212,596	164	0	32,850	101,395
1956 3	1,454	57,000	7,929	135,300	0	71,362	0	3,210,151	164	0	34,200	105,562
1956 4	0	62,250	8,659	206,000	0	77,935	0	3,267,307	165	0	37,350	115,285
1956 5	8,942	68,250	9,494	311,900	0	85,446	0	3,407,075	165	0	40,950	126,396
1956 6	11,910	68,250	9,494	24,700	0	85,446	0	3,256,675	165	0	40,950	126,396
1956 7	58,834	71,250	9,911	12,600	0	89,202	0	3,040,078	163	0	42,750	131,952
1956 8	60,550	71,250	9,911	7,400	0	0	0	2,905,767	162	0	42,750	42,750
1956 9	58,640	63,750	8,868	6,800	0	0	0	2,781,309	161	0	38,250	38,250
1956 10	22,055	62,250	8,659	6,300	0	0	0	2,694,645	160	0	37,350	37,350
1956 11	16,528	57,000	7,929	13,300	0	0	0	2,626,488	160	0	34,200	34,200
1956 12	(12,570)	57,000	7,931	34,600	0	0	0	2,608,727	159	0	34,200	34,200
	186,606	750,000	104,330	1,102,700	0	549,298	0			0	450,000	999,298
1957 1	(16,254)	57,000	7,929	26,900	0	0	0	2,586,952	159	0	34,200	34,200
1957 2	0	54,750	7,616	153,800	0	0	0	2,678,386	160	0	32,850	32,850
1957 3	(12,983)	57,000	7,929	177,100	0	0	0	2,803,540	161	0	34,200	34,200
1957 4	(53,790)	62,250	8,659	168,700	0	0	0	2,955,121	162	0	37,350	37,350
1957 5	0	68,250	9,494	1,871,600	0	85,446	186,531	4,477,000	172	0	40,950	312,927
1957 6	(36,320)	68,250	9,494	919,300	0	85,446	792,430	4,477,000	172	0	40,950	918,826
1957 7	39,755	71,250	9,911	147,300	0	89,202	0	4,414,182	172	0	42,750	131,952
1957 8	54,891	71,250	9,911	33,700	0	89,202	0	4,222,628	170	0	42,750	131,952
1957 9	6,891	63,750	8,868	15,800	0	79,812	0	4,079,107	170	0	38,250	118,062
1957 10	(17,033)	62,250	8,659	139,000	0	77,935	0	4,086,296	170	0	37,350	115,285
1957 11	(88,009)	57,000	7,929	714,500	0	71,362	275,514	4,477,000	172	0	34,200	381,076
1957 12	0	57,000	7,931	625,600	0	71,361	489,308	4,477,000	172	0	34,200	594,869
	(122,852)	750,000	104,330	4,993,300	0	649,766	1,743,783			0	450,000	2,843,549

PERMITTED OPERATION

		Evaporative Loss (ac-ft)	Texas Demand (ac-ft)	Louisiana Demand (ac-ft)	Inflow (ac-ft)	Shortage (ac-ft)	Hydropower Release (ac-ft)	Spills (ac-ft)	End-of-month Content (ac-ft)	End-of-month Elevation (ft)	Proposed Transfer (ac-ft)	Texas Return Flow (ac-ft)	Total D/S Flow (ac-ft)
1958	1	(27,240)	57,000	7,929	554,900	0	71,362	445,849	4,477,000	172	0	34,200	551,411
1958	2	0	54,750	7,616	416,600	0	68,545	285,689	4,477,000	172	0	32,850	387,084
1958	3	(18,160)	57,000	7,929	331,700	0	71,362	213,569	4,477,000	172	0	34,200	319,131
1958	4	0	62,250	8,659	7,700	0	77,935	0	4,335,856	171	0	37,350	115,285
1958	5	19,754	68,250	9,494	1,460,500	0	85,446	1,136,412	4,477,000	172	0	40,950	1,262,808
1958	6	0	68,250	9,494	234,400	0	85,446	71,210	4,477,000	172	0	40,950	197,606
1958	7	59,518	71,250	9,911	142,800	0	89,202	0	4,389,919	172	0	42,750	131,952
1958	8	0	71,250	9,911	83,700	0	89,202	0	4,303,256	171	0	42,750	131,952
1958	9	(107,471)	63,750	8,868	503,900	0	79,812	285,197	4,477,000	172	0	38,250	403,259
1958	10	23,608	62,250	8,659	240,800	0	77,935	68,348	4,477,000	172	0	37,350	183,633
1958	11	0	57,000	7,929	83,000	0	71,362	0	4,423,709	172	0	34,200	105,562
1958	12	12,537	57,000	7,931	80,300	0	71,361	0	4,355,180	171	0	34,200	105,561
		(37,454)	750,000	104,330	4,140,300	0	938,970	2,506,274			0	450,000	3,895,244
1959	1	(7,093)	57,000	7,929	73,000	0	71,362	0	4,298,982	171	0	34,200	105,562
1959	2	(35,812)	54,750	7,616	298,100	0	68,545	24,983	4,477,000	172	0	32,850	126,378
1959	3	10,896	57,000	7,929	297,800	0	71,362	150,613	4,477,000	172	0	34,200	256,175
1959	4	(36,320)	62,250	8,659	433,100	0	77,935	320,576	4,477,000	172	0	37,350	435,861
1959	5	5,448	68,250	9,494	441,000	0	85,446	272,362	4,477,000	172	0	40,950	398,758
1959	6	7,260	68,250	9,494	162,500	0	85,446	0	4,469,050	172	0	40,950	126,396
1959	7	(17,986)	71,250	9,911	46,700	0	89,202	0	4,363,373	171	0	42,750	131,952
1959	8	35,318	71,250	9,911	82,200	0	89,202	0	4,239,892	171	0	42,750	131,952
1959	9	27,628	63,750	8,868	29,400	0	79,812	0	4,089,234	170	0	38,250	118,062
1959	10	0	62,250	8,659	45,500	0	77,935	0	3,985,890	169	0	37,350	115,285
1959	11	4,999	57,000	7,929	76,600	0	71,362	0	3,921,200	169	0	34,200	105,562
1959	12	(50,146)	57,000	7,931	186,500	0	71,361	0	4,021,554	169	0	34,200	105,561
		(55,808)	750,000	104,330	2,172,400	0	938,970	768,534			0	450,000	2,157,504
1960	1	(38,521)	57,000	7,929	640,000	0	71,362	86,784	4,477,000	172	0	34,200	192,346
1960	2	(36,320)	54,750	7,616	681,800	0	68,545	587,209	4,477,000	172	0	32,850	688,604
1960	3	0	57,000	7,929	702,500	0	71,362	566,209	4,477,000	172	0	34,200	671,771
1960	4	21,766	62,250	8,659	155,300	0	77,935	0	4,461,690	172	0	37,350	115,285
1960	5	43,146	68,250	9,494	109,000	0	85,446	0	4,364,354	171	0	40,950	126,396
1960	6	0	68,250	9,494	69,800	0	85,446	0	4,270,964	171	0	40,950	126,396
1960	7	46,971	71,250	9,911	95,200	0	89,202	0	4,148,830	170	0	42,750	131,952
1960	8	(17,077)	71,250	9,911	51,500	0	89,202	0	4,047,044	169	0	42,750	131,952
1960	9	33,461	63,750	8,868	45,200	0	79,812	0	3,906,353	169	0	38,250	118,062
1960	10	0	62,250	8,659	79,400	0	77,935	0	3,836,909	168	0	37,350	115,285
1960	11	(16,404)	57,000	7,929	170,900	0	71,362	0	3,887,922	168	0	34,200	105,562
1960	12	(51,955)	57,000	7,931	834,700	0	71,361	161,285	4,477,000	172	0	34,200	266,846
		(14,933)	750,000	104,330	3,635,300	0	938,970	1,401,487			0	450,000	2,790,457

PERMITTED OPERATION

		Evaporative Loss (ac-ft)	Texas Demand (ac-ft)	Louisiana Demand (ac-ft)	Inflow (ac-ft)	Shortage (ac-ft)	Hydropower Release (ac-ft)	Spills (ac-ft)	End-of-month Content (ac-ft)	End-of-month Elevation (ft)	Proposed Transfer (ac-ft)	Texas Return Flow (ac-ft)	Total D/S Flow (ac-ft)
1961	1	(65,376)	57,000	7,929	1,339,900	0	71,362	1,268,985	4,477,000	172	0	34,200	1,374,547
1961	2	(36,320)	54,750	7,616	763,300	0	68,545	668,709	4,477,000	172	0	32,850	770,104
1961	3	(36,320)	57,000	7,929	1,019,200	0	71,362	919,229	4,477,000	172	0	34,200	1,024,791
1961	4	30,872	62,250	8,659	716,600	0	77,935	536,884	4,477,000	172	0	37,350	652,169
1961	5	37,831	68,250	9,494	99,200	0	85,446	0	4,375,179	171	0	40,950	126,396
1961	6	(17,935)	68,250	9,494	191,200	0	85,446	0	4,421,124	172	0	40,950	126,396
1961	7	0	71,250	9,911	278,300	0	89,202	52,061	4,477,000	172	0	42,750	184,013
1961	8	44,911	71,250	9,911	78,200	0	89,202	0	4,339,926	171	0	42,750	131,952
1961	9	(17,964)	63,750	8,868	306,500	0	79,812	34,960	4,477,000	172	0	38,250	153,022
1961	10	41,332	62,250	8,659	57,500	0	77,935	0	4,344,324	171	0	37,350	115,285
1961	11	(17,832)	57,000	7,929	154,500	0	71,362	0	4,380,365	171	0	34,200	105,562
1961	12	(72,088)	57,000	7,931	1,028,700	0	71,361	867,861	4,477,000	172	0	34,200	973,422
		(108,889)	750,000	104,330	6,033,100	0	938,970	4,348,689			0	450,000	5,737,659
1962	1	(47,216)	57,000	7,929	524,800	0	71,362	435,725	4,477,000	172	0	34,200	541,287
1962	2	0	54,750	7,616	421,200	0	68,545	290,289	4,477,000	172	0	32,850	391,684
1962	3	10,896	57,000	7,929	417,600	0	71,362	270,413	4,477,000	172	0	34,200	375,975
1962	4	(18,160)	62,250	8,659	266,900	0	77,935	136,216	4,477,000	172	0	37,350	251,501
1962	5	9,080	68,250	9,494	494,900	0	85,446	322,630	4,477,000	172	0	40,950	449,026
1962	6	0	68,250	9,494	109,800	0	85,446	0	4,423,610	172	0	40,950	126,396
1962	7	69,196	71,250	9,911	54,100	0	89,202	0	4,238,151	171	0	42,750	131,952
1962	8	20,704	71,250	9,911	34,400	0	89,202	0	4,081,484	170	0	42,750	131,952
1962	9	6,743	63,750	8,868	39,100	0	79,812	0	3,961,411	169	0	38,250	118,062
1962	10	23,097	62,250	8,659	39,600	0	77,935	0	3,829,070	168	0	37,350	115,285
1962	11	(16,333)	57,000	7,929	136,800	0	71,362	0	3,845,912	168	0	34,200	105,562
1962	12	(16,368)	57,000	7,931	128,000	0	71,361	0	3,853,988	168	0	34,200	105,561
		41,639	750,000	104,330	2,667,200	0	938,970	1,455,273			0	450,000	2,844,243
1963	1	(4,913)	57,000	7,929	128,400	0	71,362	0	3,851,010	168	0	34,200	105,562
1963	2	0	54,750	7,616	118,800	0	68,545	0	3,838,899	168	0	32,850	101,395
1963	3	14,665	57,000	7,929	121,400	0	71,362	0	3,809,343	168	0	34,200	105,562
1963	4	0	62,250	8,659	88,100	0	77,935	0	3,748,599	168	0	37,350	115,285
1963	5	29,044	68,250	9,494	232,100	0	85,446	0	3,788,465	168	0	40,950	126,396
1963	6	19,190	68,250	9,494	41,600	0	85,446	0	3,647,685	167	0	40,950	126,396
1963	7	14,023	71,250	9,911	38,000	0	89,202	0	3,501,299	166	0	42,750	131,952
1963	8	55,817	71,250	9,911	25,900	0	89,202	0	3,301,019	165	0	42,750	131,952
1963	9	18,950	63,750	8,868	15,400	0	79,812	0	3,145,039	164	0	38,250	118,062
1963	10	36,526	62,250	8,659	12,300	0	77,935	0	2,971,969	162	0	37,350	115,285
1963	11	(27,449)	57,000	7,929	17,300	0	0	0	2,951,789	162	0	34,200	34,200
1963	12	(13,670)	57,000	7,931	38,900	0	0	0	2,939,428	162	0	34,200	34,200
		142,183	750,000	104,330	878,200	0	796,247	0			0	450,000	1,246,247

PERMITTED OPERATION

	Evaporative Loss (ac-ft)	Texas Demand (ac-ft)	Louisiana Demand (ac-ft)	Inflow (ac-ft)	Shortage (ac-ft)	Hydropower Release (ac-ft)	Spills (ac-ft)	End-of-month Content (ac-ft)	End-of-month Elevation (ft)	Proposed Transfer (ac-ft)	Texas Return Flow (ac-ft)	Total D/S Flow (ac-ft)	
1964	1	(26,045)	57,000	7,929	74,100	0	0	2,974,644	162	0	34,200	34,200	
1964	2	0	54,750	7,616	68,600	0	27,528	2,953,350	162	0	32,850	60,378	
1964	3	(28,182)	57,000	7,929	272,400	0	0	3,189,003	164	0	34,200	34,200	
1964	4	(44,081)	62,250	8,659	254,800	0	77,935	3,339,040	165	0	37,350	115,285	
1964	5	7,439	68,250	9,494	149,700	0	85,446	3,318,111	165	0	40,950	126,396	
1964	6	45,345	68,250	9,494	53,900	0	85,446	3,163,476	164	0	40,950	126,396	
1964	7	38,041	71,250	9,911	22,900	0	89,202	2,977,972	162	0	42,750	131,952	
1964	8	13,654	71,250	9,911	20,700	0	0	2,903,857	162	0	42,750	42,750	
1964	9	22,768	63,750	8,868	13,900	0	0	2,822,371	161	0	38,250	38,250	
1964	10	40,605	62,250	8,659	17,300	0	0	2,728,157	160	0	37,350	37,350	
1964	11	0	57,000	7,929	13,700	0	0	2,676,928	160	0	34,200	34,200	
1964	12	(25,557)	57,000	7,931	45,200	0	0	2,682,754	160	0	34,200	34,200	
		43,987	750,000	104,330	1,007,200	0	365,557			0	450,000	815,557	
1965	1	(10,240)	57,000	7,929	61,500	0	0	2,689,565	160	0	34,200	34,200	
1965	2	(26,055)	54,750	7,616	165,400	0	0	2,818,654	161	0	32,850	32,850	
1965	3	(27,177)	57,000	7,929	243,300	0	0	3,024,202	163	0	34,200	34,200	
1965	4	25,582	62,250	8,659	340,800	0	77,935	3,190,576	164	0	37,350	115,285	
1965	5	(28,929)	68,250	9,494	120,900	0	85,446	3,177,215	164	0	40,950	126,396	
1965	6	23,598	68,250	9,494	398,800	0	85,446	3,389,227	165	0	40,950	126,396	
1965	7	53,309	71,250	9,911	53,300	0	89,202	3,218,855	164	0	42,750	131,952	
1965	8	20,027	71,250	9,911	22,600	0	89,202	3,051,065	163	0	42,750	131,952	
1965	9	0	63,750	8,868	35,600	0	60,697	2,953,350	162	0	38,250	98,947	
1965	10	31,191	62,250	8,659	21,900	0	0	2,873,150	162	0	37,350	37,350	
1965	11	0	57,000	7,929	17,900	0	0	2,826,121	161	0	34,200	34,200	
1965	12	(40,203)	57,000	7,931	103,500	0	0	2,904,893	162	0	34,200	34,200	
		21,103	750,000	104,330	1,585,500	0	487,928			0	450,000	937,928	
1966	1	(26,002)	57,000	7,929	129,500	0	0	2,995,466	163	0	34,200	34,200	
1966	2	(73,928)	54,750	7,616	658,400	0	68,545	3,596,883	167	0	32,850	101,395	
1966	3	17,158	57,000	7,929	120,600	0	71,362	3,564,034	166	0	34,200	105,562	
1966	4	(15,674)	62,250	8,659	219,300	0	77,935	3,650,164	167	0	37,350	115,285	
1966	5	0	68,250	9,494	1,358,000	0	85,446	4,477,000	172	0	40,950	494,370	
1966	6	29,056	68,250	9,494	254,700	0	85,446	62,454	4,477,000	172	0	40,950	188,850
1966	7	30,476	71,250	9,911	37,600	0	89,202	0	4,313,761	171	0	42,750	131,952
1966	8	0	71,250	9,911	34,700	0	89,202	0	4,178,098	170	0	42,750	131,952
1966	9	30,766	63,750	8,868	33,600	0	79,812	0	4,028,502	169	0	38,250	118,062
1966	10	6,679	62,250	8,659	28,600	0	77,935	0	3,901,579	169	0	37,350	115,285
1966	11	16,307	57,000	7,929	6,700	0	71,362	0	3,755,681	168	0	34,200	105,562
1966	12	(15,927)	57,000	7,931	200	0	71,361	0	3,635,516	167	0	34,200	105,561
		(1,089)	750,000	104,330	2,881,900	0	867,608	430,428		0	450,000	1,748,036	

PERMITTED OPERATION

	Evaporative Loss (ac-ft)	Texas Demand (ac-ft)	Louisiana Demand (ac-ft)	Inflow (ac-ft)	Shortage (ac-ft)	Hydropower Release (ac-ft)	Spills (ac-ft)	End-of-month Content (ac-ft)	End-of-month Elevation (ft)	Proposed Transfer (ac-ft)	Texas Return Flow (ac-ft)	Total D/S Flow (ac-ft)	
1967	1	7,777	57,000	7,929	2,700	0	71,362	0	3,494,148	166	0	34,200	105,562
1967	2	(15,227)	54,750	7,616	28,800	0	68,545	0	3,407,264	165	0	32,850	101,395
1967	3	14,897	57,000	7,929	6,700	0	71,362	0	3,262,776	165	0	34,200	105,562
1967	4	(14,644)	62,250	8,659	101,600	0	77,935	0	3,230,176	164	0	37,350	115,285
1967	5	(43,930)	68,250	9,494	151,700	0	85,446	0	3,262,616	165	0	40,950	126,396
1967	6	10,326	68,250	9,494	216,300	0	85,446	0	3,305,400	165	0	40,950	126,396
1967	7	5,847	71,250	9,911	39,600	0	89,202	0	3,168,790	164	0	42,750	131,952
1967	8	40,858	71,250	9,911	14,900	0	89,202	0	2,972,469	162	0	42,750	131,952
1967	9	36,695	63,750	8,868	8,400	0	0	0	2,871,556	162	0	38,250	38,250
1967	10	30,484	62,250	8,659	1,500	0	0	0	2,771,663	161	0	37,350	37,350
1967	11	25,902	57,000	7,929	10,200	0	0	0	2,691,032	160	0	34,200	34,200
1967	12	0	57,000	7,931	48,600	0	0	0	2,674,701	160	0	34,200	34,200
		98,985	750,000	104,330	631,000	0	638,500	0			0	450,000	1,088,500
1968	1	(20,232)	57,000	7,929	478,000	0	0	0	3,108,004	164	0	34,200	34,200
1968	2	0	54,750	7,616	200,500	0	68,545	0	3,177,593	164	0	32,850	101,395
1968	3	0	57,000	7,929	455,000	0	71,362	0	3,496,302	166	0	34,200	105,562
1968	4	(50,276)	62,250	8,659	1,364,000	0	77,935	284,734	4,477,000	172	0	37,350	400,019
1968	5	(36,320)	68,250	9,494	794,900	0	85,446	668,030	4,477,000	172	0	40,950	794,426
1968	6	0	68,250	9,494	571,000	0	85,446	407,810	4,477,000	172	0	40,950	534,206
1968	7	12,712	71,250	9,911	227,200	0	89,202	44,125	4,477,000	172	0	42,750	176,077
1968	8	35,869	71,250	9,911	48,200	0	89,202	0	4,318,968	171	0	42,750	131,952
1968	9	7,131	63,750	8,868	242,600	0	79,812	0	4,402,007	172	0	38,250	118,062
1968	10	30,293	62,250	8,659	90,500	0	77,935	0	4,313,370	171	0	37,350	115,285
1968	11	0	57,000	7,929	214,400	0	71,362	0	4,391,479	172	0	34,200	105,562
1968	12	0	57,000	7,931	711,800	0	71,361	489,987	4,477,000	172	0	34,200	595,548
		(20,823)	750,000	104,330	5,398,100	0	867,608	1,894,686			0	450,000	3,212,294
1969	1	9,080	57,000	7,929	232,300	0	71,362	86,929	4,477,000	172	0	34,200	192,491
1969	2	(18,160)	54,750	7,616	519,000	0	68,545	406,249	4,477,000	172	0	32,850	507,644
1969	3	(18,160)	57,000	7,929	1,176,500	0	71,362	1,058,369	4,477,000	172	0	34,200	1,163,931
1969	4	(36,320)	62,250	8,659	1,371,900	0	77,935	1,259,376	4,477,000	172	0	37,350	1,374,661
1969	5	(18,160)	68,250	9,494	1,026,800	0	85,446	881,770	4,477,000	172	0	40,950	1,008,166
1969	6	50,848	68,250	9,494	352,500	0	85,446	138,462	4,477,000	172	0	40,950	264,858
1969	7	51,807	71,250	9,911	15,200	0	89,202	0	4,270,030	171	0	42,750	131,952
1969	8	65,586	71,250	9,911	19,500	0	89,202	0	4,053,581	169	0	42,750	131,952
1969	9	58,332	63,750	8,868	12,100	0	79,812	0	3,854,919	168	0	38,250	118,062
1969	10	30,668	62,250	8,659	10,800	0	77,935	0	3,686,207	167	0	37,350	115,285
1969	11	23,719	57,000	7,929	98,700	0	71,362	0	3,624,897	167	0	34,200	105,562
1969	12	(47,165)	57,000	7,931	86,900	0	71,361	0	3,622,670	167	0	34,200	105,561
		152,075	750,000	104,330	4,922,200	0	938,970	3,831,155			0	450,000	5,220,125

PERMITTED OPERATION

	Evaporative Loss (ac-ft)	Texas Demand (ac-ft)	Louisiana Demand (ac-ft)	Inflow (ac-ft)	Shortage (ac-ft)	Hydropower Release (ac-ft)	Spills (ac-ft)	End-of-month Content (ac-ft)	End-of-month Elevation (ft)	Proposed Transfer (ac-ft)	Texas Return Flow (ac-ft)	Total D/S Flow (ac-ft)
1970 1	4,741	57,000	7,929	199,500	0	71,362	0	3,681,138	167	0	34,200	105,562
1970 2	0	54,750	7,616	157,900	0	68,545	0	3,708,127	167	0	32,850	101,395
1970 3	0	57,000	7,929	544,600	0	71,362	0	4,116,436	170	0	34,200	105,562
1970 4	8,675	62,250	8,659	311,800	0	77,935	0	4,270,717	171	0	37,350	115,285
1970 5	8,868	68,250	9,494	288,200	0	85,446	0	4,386,859	171	0	40,950	126,396
1970 6	30,088	68,250	9,494	50,700	0	85,446	0	4,244,281	171	0	40,950	126,396
1970 7	38,020	71,250	9,911	59,000	0	89,202	0	4,094,898	170	0	42,750	131,952
1970 8	70,471	71,250	9,911	38,300	0	89,202	0	3,892,364	168	0	42,750	131,952
1970 9	29,214	63,750	8,868	0	0	79,812	0	3,710,720	167	0	38,250	118,062
1970 10	(15,834)	62,250	8,659	37,800	0	77,935	0	3,615,510	167	0	37,350	115,285
1970 11	17,252	57,000	7,929	143,300	0	71,362	0	3,605,267	167	0	34,200	105,562
1970 12	4,679	57,000	7,931	89,700	0	71,361	0	3,553,996	166	0	34,200	105,561
	196,174	750,000	104,330	1,920,800	0	938,970	0			0	450,000	1,388,970
1971 1	16,908	57,000	7,929	46,900	0	71,362	0	3,447,697	166	0	34,200	105,562
1971 2	3,034	54,750	7,616	98,500	0	68,545	0	3,412,252	166	0	32,850	101,395
1971 3	13,512	57,000	7,929	76,800	0	71,362	0	3,339,249	165	0	34,200	105,562
1971 4	41,239	62,250	8,659	63,800	0	77,935	0	3,212,966	164	0	37,350	115,285
1971 5	20,212	68,250	9,494	106,300	0	85,446	0	3,135,864	164	0	40,950	126,396
1971 6	51,819	68,250	9,494	34,500	0	85,446	0	2,955,355	162	0	40,950	126,396
1971 7	44,902	71,250	9,911	69,000	0	0	0	2,898,292	162	0	42,750	42,750
1971 8	29,474	71,250	9,911	42,800	0	0	0	2,830,457	161	0	42,750	42,750
1971 9	23,717	63,750	8,868	32,400	0	0	0	2,766,522	161	0	38,250	38,250
1971 10	22,028	62,250	8,659	26,400	0	0	0	2,699,985	160	0	37,350	37,350
1971 11	6,423	57,000	7,929	70,900	0	0	0	2,699,533	160	0	34,200	34,200
1971 12	(13,480)	57,000	7,931	430,700	0	0	0	3,078,782	163	0	34,200	34,200
	259,788	750,000	104,330	1,099,000	0	460,096	0			0	450,000	910,096
1972 1	(7,503)	57,000	7,929	718,000	0	71,362	0	3,667,994	167	0	34,200	105,562
1972 2	12,737	54,750	7,616	194,500	0	68,545	0	3,718,846	167	0	32,850	101,395
1972 3	8,082	57,000	7,929	263,900	0	71,362	0	3,838,373	168	0	34,200	105,562
1972 4	32,371	62,250	8,659	76,600	0	77,935	0	3,733,758	167	0	37,350	115,285
1972 5	28,734	68,250	9,494	141,100	0	85,446	0	3,682,934	167	0	40,950	126,396
1972 6	39,207	68,250	9,494	56,900	0	85,446	0	3,537,437	166	0	40,950	126,396
1972 7	26,200	71,250	9,911	152,300	0	89,202	0	3,493,174	166	0	42,750	131,952
1972 8	43,765	71,250	9,911	34,200	0	89,202	0	3,313,246	165	0	42,750	131,952
1972 9	26,316	63,750	8,868	28,700	0	79,812	0	3,163,200	164	0	38,250	118,062
1972 10	15,711	62,250	8,659	94,800	0	77,935	0	3,093,445	163	0	37,350	115,285
1972 11	0	57,000	7,929	266,600	0	71,362	0	3,223,754	164	0	34,200	105,562
1972 12	0	57,000	7,931	467,400	0	71,361	0	3,554,862	166	0	34,200	105,561
	225,620	750,000	104,330	2,495,000	0	938,970	0			0	450,000	1,388,970

PERMITTED OPERATION

	Evaporative Loss (ac-ft)	Texas Demand (ac-ft)	Louisiana Demand (ac-ft)	Inflow (ac-ft)	Shortage (ac-ft)	Hydropower Release (ac-ft)	Spills (ac-ft)	End-of-month Content (ac-ft)	End-of-month Elevation (ft)	Proposed Transfer (ac-ft)	Texas Return Flow (ac-ft)	Total D/S Flow (ac-ft)
1973	1	(16,368)	57,000	7,929	710,000	0	71,362	0	4,144,939	170	0	105,562
1973	2	0	54,750	7,616	444,900	0	68,545	0	4,458,928	172	0	101,395
1973	3	0	57,000	7,929	798,900	0	71,362	644,537	4,477,000	172	0	750,099
1973	4	0	62,250	8,659	821,500	0	77,935	672,656	4,477,000	172	0	787,941
1973	5	38,136	68,250	9,494	790,200	0	85,446	588,874	4,477,000	172	0	715,270
1973	6	14,528	68,250	9,494	720,900	0	85,446	543,182	4,477,000	172	0	669,578
1973	7	45,400	71,250	9,911	285,800	0	89,202	70,037	4,477,000	172	0	201,989
1973	8	46,655	71,250	9,911	65,900	0	89,202	0	4,325,882	171	0	131,952
1973	9	21,324	63,750	8,868	202,900	0	79,812	0	4,355,028	171	0	118,062
1973	10	23,382	62,250	8,659	500,400	0	77,935	206,202	4,477,000	172	0	321,487
1973	11	5,448	57,000	7,929	331,400	0	71,362	189,661	4,477,000	172	0	295,223
1973	12	0	57,000	7,931	1,008,700	0	71,361	872,408	4,477,000	172	0	977,969
		178,505	750,000	104,330	6,681,500	0	938,970	3,787,557		0	450,000	5,176,527
1974	1	(41,768)	57,000	7,929	1,658,900	0	71,362	1,564,377	4,477,000	172	0	1,669,939
1974	2	5,448	54,750	7,616	714,300	0	68,545	577,941	4,477,000	172	0	679,336
1974	3	16,344	57,000	7,929	305,400	0	71,362	152,765	4,477,000	172	0	258,327
1974	4	38,136	62,250	8,659	406,400	0	77,935	219,420	4,477,000	172	0	334,705
1974	5	27,240	68,250	9,494	329,200	0	85,446	138,770	4,477,000	172	0	265,166
1974	6	69,008	68,250	9,494	294,700	0	85,446	62,502	4,477,000	172	0	188,898
1974	7	50,170	71,250	9,911	50,900	0	89,202	0	4,307,367	171	0	131,952
1974	8	34,812	71,250	9,911	16,500	0	89,202	0	4,118,692	170	0	131,952
1974	9	19,026	63,750	8,868	283,500	0	79,812	0	4,230,736	171	0	118,062
1974	10	22,808	62,250	8,659	233,300	0	77,935	0	4,292,384	171	0	115,285
1974	11	0	57,000	7,929	669,400	0	71,362	348,493	4,477,000	172	0	454,055
1974	12	(18,160)	57,000	7,931	1,031,200	0	71,361	913,068	4,477,000	172	0	1,018,629
		223,064	750,000	104,330	5,993,700	0	938,970	3,977,336		0	450,000	5,366,306
1975	1	(5,448)	57,000	7,929	682,100	0	71,362	551,257	4,477,000	172	0	656,819
1975	2	0	54,750	7,616	1,292,100	0	68,545	1,161,189	4,477,000	172	0	1,262,584
1975	3	0	57,000	7,929	602,500	0	71,362	466,209	4,477,000	172	0	571,771
1975	4	0	62,250	8,659	505,300	0	77,935	356,456	4,477,000	172	0	471,741
1975	5	0	68,250	9,494	1,257,100	0	85,446	1,093,910	4,477,000	172	0	1,220,306
1975	6	30,872	68,250	9,494	442,600	0	85,446	248,538	4,477,000	172	0	374,934
1975	7	34,460	71,250	9,911	188,600	0	89,202	0	4,460,777	172	0	131,952
1975	8	42,767	71,250	9,911	7,200	0	89,202	0	4,254,847	171	0	131,952
1975	9	48,340	63,750	8,868	18,000	0	79,812	0	4,072,077	170	0	118,062
1975	10	23,609	62,250	8,659	75,000	0	77,935	0	3,974,624	169	0	115,285
1975	11	21,560	57,000	7,929	60,100	0	71,362	0	3,876,873	168	0	105,562
1975	12	1,632	57,000	7,931	53,800	0	71,361	0	3,792,749	168	0	105,561
		197,792	750,000	104,330	5,184,400	0	938,970	3,877,559		0	450,000	5,266,529

PERMITTED OPERATION

		Evaporative Loss (ac-ft)	Texas Demand (ac-ft)	Louisiana Demand (ac-ft)	Inflow (ac-ft)	Shortage (ac-ft)	Hydropower Release (ac-ft)	Spills (ac-ft)	End-of-month Content (ac-ft)	End-of-month Elevation (ft)	Proposed Transfer (ac-ft)	Texas Return Flow (ac-ft)	Total D/S Flow (ac-ft)
1976	1	11,427	57,000	7,929	231,800	0	71,362	0	3,876,831	168	0	34,200	105,562
1976	2	6,515	54,750	7,616	27,000	0	68,545	0	3,766,405	168	0	32,850	101,395
1976	3	0	57,000	7,929	423,000	0	71,362	0	4,053,114	169	0	34,200	105,562
1976	4	31,841	62,250	8,659	47,400	0	77,935	0	3,919,829	169	0	37,350	115,285
1976	5	23,968	68,250	9,494	573,600	0	85,446	0	4,306,271	171	0	40,950	126,396
1976	6	35,832	68,250	9,494	410,400	0	85,446	40,649	4,477,000	172	0	40,950	167,045
1976	7	23,501	71,250	9,911	136,400	0	89,202	0	4,419,536	172	0	42,750	131,952
1976	8	75,153	71,250	9,911	173,900	0	89,202	0	4,347,920	171	0	42,750	131,952
1976	9	35,158	63,750	8,868	39,100	0	79,812	0	4,199,432	170	0	38,250	118,062
1976	10	30,970	62,250	8,659	66,700	0	77,935	0	4,086,318	170	0	37,350	115,285
1976	11	1,690	57,000	7,929	35,000	0	71,362	0	3,983,337	169	0	34,200	105,562
1976	12	0	57,000	7,931	207,200	0	71,361	0	4,054,245	169	0	34,200	105,561
		276,055	750,000	104,330	2,371,500	0	938,970	40,649			0	450,000	1,429,619
1977	1	(17,076)	57,000	7,929	205,900	0	71,362	0	4,140,930	170	0	34,200	105,562
1977	2	0	54,750	7,616	395,200	0	68,545	0	4,405,219	172	0	32,850	101,395
1977	3	3,612	57,000	7,929	793,200	0	71,362	581,516	4,477,000	172	0	34,200	687,078
1977	4	19,976	62,250	8,659	574,200	0	77,935	405,380	4,477,000	172	0	37,350	520,665
1977	5	54,382	68,250	9,494	194,600	0	85,446	0	4,454,028	172	0	40,950	126,396
1977	6	48,240	68,250	9,494	52,000	0	85,446	0	4,294,598	171	0	40,950	126,396
1977	7	60,695	71,250	9,911	22,900	0	89,202	0	4,086,440	170	0	42,750	131,952
1977	8	28,735	71,250	9,911	100,400	0	89,202	0	3,987,742	169	0	42,750	131,952
1977	9	44,590	63,750	8,868	24,000	0	79,812	0	3,814,722	168	0	38,250	118,062
1977	10	52,891	62,250	8,659	33,900	0	77,935	0	3,646,887	167	0	37,350	115,285
1977	11	0	57,000	7,929	80,600	0	71,362	0	3,591,196	167	0	34,200	105,562
1977	12	10,897	57,000	7,931	104,600	0	71,361	0	3,548,607	166	0	34,200	105,561
		306,942	750,000	104,330	2,581,500	0	938,970	986,896			0	450,000	2,375,866
1978	1	(22,110)	57,000	7,929	314,300	0	71,362	0	3,748,726	168	0	34,200	105,562
1978	2	0	54,750	7,616	292,600	0	68,545	0	3,910,415	169	0	32,850	101,395
1978	3	8,358	57,000	7,929	266,600	0	71,362	0	4,032,366	169	0	34,200	105,562
1978	4	25,191	62,250	8,659	107,400	0	77,935	0	3,965,731	169	0	37,350	115,285
1978	5	36,681	68,250	9,494	181,800	0	85,446	0	3,947,660	169	0	40,950	126,396
1978	6	65,429	68,250	9,494	25,600	0	85,446	0	3,744,641	168	0	40,950	126,396
1978	7	61,533	71,250	9,911	29,200	0	89,202	0	3,541,945	166	0	42,750	131,952
1978	8	45,729	71,250	9,911	44,600	0	89,202	0	3,370,453	165	0	42,750	131,952
1978	9	(15,185)	63,750	8,868	268,200	0	79,812	0	3,501,408	166	0	38,250	118,062
1978	10	55,849	62,250	8,659	10,300	0	77,935	0	3,307,015	165	0	37,350	115,285
1978	11	0	57,000	7,929	58,900	0	71,362	0	3,229,624	164	0	34,200	105,562
1978	12	13,260	57,000	7,931	245,900	0	71,361	0	3,325,972	165	0	34,200	105,561
		274,735	750,000	104,330	1,845,400	0	938,970	0			0	450,000	1,388,970

PERMITTED OPERATION

		Evaporative Loss (ac-ft)	Texas Demand (ac-ft)	Louisiana Demand (ac-ft)	Inflow (ac-ft)	Shortage (ac-ft)	Hydropower Release (ac-ft)	Spills (ac-ft)	End-of-month Content (ac-ft)	End-of-month Elevation (ft)	Proposed Transfer (ac-ft)	Texas Return Flow (ac-ft)	Total D/S Flow (ac-ft)
1979	1	(26,244)	57,000	7,929	1,182,100	0	71,362	0	4,398,025	172	0	34,200	105,562
1979	2	(18,047)	54,750	7,616	901,900	0	68,545	710,061	4,477,000	172	0	32,850	811,456
1979	3	3,632	57,000	7,929	752,200	0	71,362	612,277	4,477,000	172	0	34,200	717,839
1979	4	3,632	62,250	8,659	1,059,900	0	77,935	907,424	4,477,000	172	0	37,350	1,022,709
1979	5	23,608	68,250	9,494	946,100	0	85,446	759,302	4,477,000	172	0	40,950	885,698
1979	6	54,480	68,250	9,494	601,200	0	85,446	383,530	4,477,000	172	0	40,950	509,926
1979	7	36,055	71,250	9,911	113,700	0	89,202	0	4,384,282	171	0	42,750	131,952
1979	8	67,169	71,250	9,911	84,100	0	89,202	0	4,230,850	171	0	42,750	131,952
1979	9	29,594	63,750	8,868	148,000	0	79,812	0	4,196,826	170	0	38,250	118,062
1979	10	34,361	62,250	8,659	57,900	0	77,935	0	4,071,521	170	0	37,350	115,285
1979	11	23,859	57,000	7,929	188,700	0	71,362	0	4,100,071	170	0	34,200	105,562
1979	12	0	57,000	7,931	255,700	0	71,361	0	4,219,479	170	0	34,200	105,561
		232,099	750,000	104,330	6,291,500	0	938,970	3,372,594			0	450,000	4,761,564
1980	1	(12,455)	57,000	7,929	443,900	0	71,362	62,543	4,477,000	172	0	34,200	168,105
1980	2	0	54,750	7,616	587,300	0	68,545	456,389	4,477,000	172	0	32,850	557,784
1980	3	0	57,000	7,929	493,100	0	71,362	356,809	4,477,000	172	0	34,200	462,371
1980	4	1,816	62,250	8,659	968,000	0	77,935	817,340	4,477,000	172	0	37,350	932,625
1980	5	14,528	68,250	9,494	790,700	0	85,446	612,982	4,477,000	172	0	40,950	739,378
1980	6	86,307	68,250	9,494	123,800	0	85,446	0	4,351,303	171	0	40,950	126,396
1980	7	97,757	71,250	9,911	27,100	0	89,202	0	4,110,283	170	0	42,750	131,952
1980	8	108,818	71,250	9,911	19,600	0	89,202	0	3,850,702	168	0	42,750	131,952
1980	9	61,225	63,750	8,868	32,700	0	79,812	0	3,669,747	167	0	38,250	118,062
1980	10	29,663	62,250	8,659	9,700	0	77,935	0	3,500,940	166	0	37,350	115,285
1980	11	0	57,000	7,929	9,900	0	71,362	0	3,374,549	165	0	34,200	105,562
1980	12	17,845	57,000	7,931	57,200	0	71,361	0	3,277,612	165	0	34,200	105,561
		405,504	750,000	104,330	3,563,000	0	938,970	2,306,063			0	450,000	3,695,033
1981	1	2,913	57,000	7,929	21,800	0	71,362	0	3,160,208	164	0	34,200	105,562
1981	2	0	54,750	7,616	64,100	0	68,545	0	3,093,397	163	0	32,850	101,395
1981	3	7,062	57,000	7,929	119,000	0	71,362	0	3,069,044	163	0	34,200	105,562
1981	4	31,946	62,250	8,659	61,700	0	74,539	0	2,953,350	162	0	37,350	111,889
1981	5	26,476	68,250	9,494	246,800	0	0	0	3,095,930	163	0	40,950	40,950
1981	6	20,729	68,250	9,494	599,100	0	85,446	0	3,511,111	166	0	40,950	126,396
1981	7	44,220	71,250	9,911	108,500	0	89,202	0	3,405,028	165	0	42,750	131,952
1981	8	69,135	71,250	9,911	192,400	0	89,202	0	3,357,930	165	0	42,750	131,952
1981	9	34,158	63,750	8,868	109,000	0	79,812	0	3,280,342	165	0	38,250	118,062
1981	10	17,476	62,250	8,659	42,300	0	77,935	0	3,156,322	164	0	37,350	115,285
1981	11	12,901	57,000	7,929	123,900	0	71,362	0	3,131,030	164	0	34,200	105,562
1981	12	9,904	57,000	7,931	60,500	0	71,361	0	3,045,334	163	0	34,200	105,561
		276,920	750,000	104,330	1,749,100	0	850,128	0			0	450,000	1,300,128

PERMITTED OPERATION

	Evaporative Loss (ac-ft)	Texas Demand (ac-ft)	Louisiana Demand (ac-ft)	Inflow (ac-ft)	Shortage (ac-ft)	Hydropower Release (ac-ft)	Spills (ac-ft)	End-of-month Content (ac-ft)	End-of-month Elevation (ft)	Proposed Transfer (ac-ft)	Texas Return Flow (ac-ft)	Total D/S Flow (ac-ft)
1982 1	(1,394)	57,000	7,929	94,800	0	71,362	0	3,005,237	163	0	34,200	105,562
1982 2	0	54,750	7,616	199,100	0	68,545	0	3,073,426	163	0	32,850	101,395
1982 3	2,837	57,000	7,929	189,900	0	71,362	0	3,124,198	164	0	34,200	105,562
1982 4	0	62,250	8,659	605,700	0	77,935	0	3,581,054	167	0	37,350	115,285
1982 5	34,222	68,250	9,494	166,300	0	85,446	0	3,549,942	166	0	40,950	126,396
1982 6	39,956	68,250	9,494	103,000	0	85,446	0	3,449,796	166	0	40,950	126,396
1982 7	52,648	71,250	9,911	95,500	0	89,202	0	3,322,285	165	0	42,750	131,952
1982 8	50,955	71,250	9,911	10,200	0	89,202	0	3,111,167	164	0	42,750	131,952
1982 9	40,485	63,750	8,868	9,900	0	54,614	0	2,953,350	162	0	38,250	92,864
1982 10	10,943	62,250	8,659	71,700	0	0	0	2,943,198	162	0	37,350	37,350
1982 11	0	57,000	7,929	186,400	0	0	0	3,064,669	163	0	34,200	34,200
1982 12	(47,155)	57,000	7,931	1,205,000	0	71,361	0	4,180,532	170	0	34,200	105,561
	183,497	750,000	104,330	2,937,500	0	764,475	0			0	450,000	1,214,475
1983 1	0	57,000	7,929	362,100	0	71,362	0	4,406,341	172	0	34,200	105,562
1983 2	(18,059)	54,750	7,616	1,116,300	0	68,545	932,789	4,477,000	172	0	32,850	1,034,184
1983 3	10,896	57,000	7,929	634,700	0	71,362	487,513	4,477,000	172	0	34,200	593,075
1983 4	27,240	62,250	8,659	227,500	0	77,935	51,416	4,477,000	172	0	37,350	166,701
1983 5	1,816	68,250	9,494	934,400	0	85,446	769,394	4,477,000	172	0	40,950	895,790
1983 6	34,482	68,250	9,494	189,300	0	85,446	0	4,468,628	172	0	40,950	126,396
1983 7	73,707	71,250	9,911	132,800	0	89,202	0	4,357,358	171	0	42,750	131,952
1983 8	43,917	71,250	9,911	38,300	0	89,202	0	4,181,378	170	0	42,750	131,952
1983 9	40,974	63,750	8,868	23,400	0	79,812	0	4,011,374	169	0	38,250	118,062
1983 10	51,343	62,250	8,659	13,100	0	77,935	0	3,824,287	168	0	37,350	115,285
1983 11	4,884	57,000	7,929	130,700	0	71,362	0	3,813,812	168	0	34,200	105,562
1983 12	(16,767)	57,000	7,931	471,200	0	71,361	0	4,165,487	170	0	34,200	105,561
	254,433	750,000	104,330	4,273,800	0	938,970	2,241,112			0	450,000	3,630,082
1984 1	(5,229)	57,000	7,929	243,400	0	71,362	0	4,277,825	171	0	34,200	105,562
1984 2	0	54,750	7,616	625,700	0	68,545	295,614	4,477,000	172	0	32,850	397,009
1984 3	9,080	57,000	7,929	682,300	0	71,362	536,929	4,477,000	172	0	34,200	642,491
1984 4	36,320	62,250	8,659	203,800	0	77,935	18,636	4,477,000	172	0	37,350	133,921
1984 5	39,816	68,250	9,494	159,500	0	85,446	0	4,433,494	172	0	40,950	126,396
1984 6	46,234	68,250	9,494	32,100	0	85,446	0	4,256,170	171	0	40,950	126,396
1984 7	65,507	71,250	9,911	32,600	0	89,202	0	4,052,900	169	0	42,750	131,952
1984 8	58,327	71,250	9,911	30,400	0	89,202	0	3,854,610	168	0	42,750	131,952
1984 9	40,309	63,750	8,868	12,400	0	79,812	0	3,674,271	167	0	38,250	118,062
1984 10	0	62,250	8,659	307,400	0	77,935	0	3,832,827	168	0	37,350	115,285
1984 11	1,647	57,000	7,929	243,100	0	71,362	0	3,937,989	169	0	34,200	105,562
1984 12	6,706	57,000	7,931	244,000	0	71,361	0	4,038,991	169	0	34,200	105,561
	298,717	750,000	104,330	2,816,700	0	938,970	851,179			0	450,000	2,240,149

PERMITTED OPERATION

	Evaporative Loss (ac-ft)	Texas Demand (ac-ft)	Louisiana Demand (ac-ft)	Inflow (ac-ft)	Shortage (ac-ft)	Hydropower Release (ac-ft)	Spills (ac-ft)	End-of-month Content (ac-ft)	End-of-month Elevation (ft)	Proposed Transfer (ac-ft)	Texas Return Flow (ac-ft)	Total D/S Flow (ac-ft)
1985 1	1,716	57,000	7,929	313,700	0	71,362	0	4,214,684	170	0	34,200	105,562
1985 2	0	54,750	7,616	629,200	0	68,545	235,973	4,477,000	172	0	32,850	337,368
1985 3	10,896	57,000	7,929	544,200	0	71,362	397,013	4,477,000	172	0	34,200	502,575
1985 4	29,056	62,250	8,659	264,900	0	77,935	87,000	4,477,000	172	0	37,350	202,285
1985 5	43,584	68,250	9,494	458,400	0	85,446	251,626	4,477,000	172	0	40,950	378,022
1985 6	66,504	68,250	9,494	99,500	0	85,446	0	4,346,806	171	0	40,950	126,396
1985 7	69,954	71,250	9,911	30,600	0	89,202	0	4,137,089	170	0	42,750	131,952
1985 8	85,950	71,250	9,911	21,300	0	89,202	0	3,902,076	169	0	42,750	131,952
1985 9	47,198	63,750	8,868	30,200	0	79,812	0	3,732,648	167	0	38,250	118,062
1985 10	0	62,250	8,659	197,700	0	77,935	0	3,781,504	168	0	37,350	115,285
1985 11	0	57,000	7,929	328,600	0	71,362	0	3,973,813	169	0	34,200	105,562
1985 12	1,735	57,000	7,931	578,600	0	71,361	0	4,414,386	172	0	34,200	105,561
	356,593	750,000	104,330	3,496,900	0	938,970	971,612			0	450,000	2,360,582
1986 1	17,890	57,000	7,929	90,700	0	71,362	0	4,350,905	171	0	34,200	105,562
1986 2	0	54,750	7,616	450,400	0	68,545	193,394	4,477,000	172	0	32,850	294,789
1986 3	30,772	57,000	7,929	126,000	0	71,362	0	4,435,937	172	0	34,200	105,562
1986 4	19,912	62,250	8,659	231,300	0	77,935	21,481	4,477,000	172	0	37,350	136,766
1986 5	19,976	68,250	9,494	448,100	0	85,446	264,934	4,477,000	172	0	40,950	391,330
1986 6	19,976	68,250	9,494	897,700	0	85,446	714,534	4,477,000	172	0	40,950	840,930
1986 7	84,905	71,250	9,911	188,600	0	89,202	0	4,410,332	172	0	42,750	131,952
1986 8	53,308	71,250	9,911	83,400	0	89,202	0	4,270,061	171	0	42,750	131,952
1986 9	34,645	63,750	8,868	14,800	0	79,812	0	4,097,786	170	0	38,250	118,062
1986 10	8,482	62,250	8,659	78,800	0	77,935	0	4,019,260	169	0	37,350	115,285
1986 11	(17,506)	57,000	7,929	596,300	0	71,362	19,775	4,477,000	172	0	34,200	125,337
1986 12	0	57,000	7,931	662,200	0	71,361	525,908	4,477,000	172	0	34,200	631,469
	272,360	750,000	104,330	3,868,300	0	938,970	1,740,026			0	450,000	3,128,996
1987 1	(12,712)	57,000	7,929	331,900	0	71,362	208,321	4,477,000	172	0	34,200	313,883
1987 2	(18,160)	54,750	7,616	893,500	0	68,545	780,749	4,477,000	172	0	32,850	882,144
1987 3	18,160	57,000	7,929	617,000	0	71,362	462,549	4,477,000	172	0	34,200	568,111
1987 4	63,560	62,250	8,659	212,600	0	77,935	196	4,477,000	172	0	37,350	115,481
1987 5	19,772	68,250	9,494	53,000	0	85,446	0	4,347,038	171	0	40,950	126,396
1987 6	30,126	68,250	9,494	146,200	0	85,446	0	4,299,922	171	0	40,950	126,396
1987 7	45,342	71,250	9,911	65,400	0	89,202	0	4,149,617	170	0	42,750	131,952
1987 8	64,428	71,250	9,911	45,900	0	89,202	0	3,960,726	169	0	42,750	131,952
1987 9	39,457	63,750	8,868	20,900	0	79,812	0	3,789,739	168	0	38,250	118,062
1987 10	41,481	62,250	8,659	21,000	0	77,935	0	3,620,414	167	0	37,350	115,285
1987 11	0	57,000	7,929	361,600	0	71,362	0	3,845,723	168	0	34,200	105,562
1987 12	(17,171)	57,000	7,931	689,500	0	71,361	0	4,416,102	172	0	34,200	105,561
	274,283	750,000	104,330	3,458,500	0	938,970	1,451,815			0	450,000	2,840,785

PERMITTED OPERATION

	Evaporative Loss (ac-ft)	Texas Demand (ac-ft)	Louisiana Demand (ac-ft)	Inflow (ac-ft)	Shortage (ac-ft)	Hydropower Release (ac-ft)	Spills (ac-ft)	End-of-month Content (ac-ft)	End-of-month Elevation (ft)	Proposed Transfer (ac-ft)	Texas Return Flow (ac-ft)	Total D/S Flow (ac-ft)
1988 1	19,880	57,000	7,929	951,300	0	71,362	734,231	4,477,000	172	0	34,200	839,793
1988 2	10,896	54,750	7,616	384,900	0	68,545	243,093	4,477,000	172	0	32,850	344,488
1988 3	(43,584)	57,000	7,929	602,700	0	71,362	509,993	4,477,000	172	0	34,200	615,555
1988 4	52,664	62,250	8,659	384,500	0	77,935	182,992	4,477,000	172	0	37,350	298,277
1988 5	89,458	68,250	9,494	64,700	0	85,446	0	4,289,052	171	0	40,950	126,396
1988 6	86,686	68,250	9,494	49,800	0	85,446	0	4,088,976	170	0	40,950	126,396
1988 7	62,182	71,250	9,911	60,900	0	89,202	0	3,917,331	169	0	42,750	131,952
1988 8	57,138	71,250	9,911	62,700	0	89,202	0	3,752,530	168	0	42,750	131,952
1988 9	74,482	63,750	8,868	57,200	0	79,812	0	3,582,818	167	0	38,250	118,062
1988 10	36,976	62,250	8,659	47,100	0	77,935	0	3,444,098	166	0	37,350	115,285
1988 11	33,201	57,000	7,929	87,600	0	71,362	0	3,362,206	165	0	34,200	105,562
1988 12	(49,941)	57,000	7,931	197,800	0	71,361	0	3,473,655	166	0	34,200	105,561
	430,038	750,000	104,330	2,951,200	0	938,970	1,670,309			0	450,000	3,059,279
1989 1	(65,964)	57,000	7,929	627,400	0	71,362	0	4,030,728	169	0	34,200	105,562
1989 2	(8,761)	54,750	7,616	737,300	0	68,545	168,878	4,477,000	172	0	32,850	270,273
1989 3	(38,136)	57,000	7,929	689,000	0	71,362	590,845	4,477,000	172	0	34,200	696,407
1989 4	65,376	62,250	8,659	913,200	0	77,935	698,980	4,477,000	172	0	37,350	814,265
1989 5	(9,080)	68,250	9,494	1,414,100	0	85,446	1,259,990	4,477,000	172	0	40,950	1,386,386
1989 6	(136,201)	68,250	9,494	1,754,400	0	85,446	1,727,411	4,477,000	172	0	40,950	1,853,807
1989 7	(30,872)	71,250	9,911	1,128,600	0	89,202	989,109	4,477,000	172	0	42,750	1,121,061
1989 8	96,944	71,250	9,911	122,000	0	89,202	0	4,331,693	171	0	42,750	131,952
1989 9	78,661	63,750	8,868	45,800	0	79,812	0	4,146,402	170	0	38,250	118,062
1989 10	73,006	62,250	8,659	55,900	0	77,935	0	3,980,452	169	0	37,350	115,285
1989 11	42,966	57,000	7,929	28,400	0	71,362	0	3,829,595	168	0	34,200	105,562
1989 12	(22,727)	57,000	7,931	60,000	0	71,361	0	3,776,030	168	0	34,200	105,561
	45,212	750,000	104,330	7,576,100	0	938,970	5,435,213			0	450,000	6,824,183

APPENDIX D

OPERATION OF STUDY FOR MODIFIED CONDITIONS

SUMMARY - Outflow from Toledo Bend using MODIFIED Operation (Acre-Feet)

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
1940	143,680	699,638	84,698	178,164	150,931	310,456	114,431	114,431	99,886	95,652	128,094	1,776,255	3,896,317
1941	1,273,180	467,778	824,016	279,521	848,371	875,916	589,864	114,431	99,886	95,652	517,610	386,314	6,372,540
1942	256,684	264,278	471,016	414,229	1,184,891	474,896	114,431	114,431	99,886	95,652	85,802	84,695	3,660,892
1943	84,698	83,040	84,698	96,757	108,171	109,276	114,431	114,431	99,886	95,652	85,802	13,334	1,090,177
1944	13,336	83,040	84,698	517,043	2,112,052	710,544	114,431	114,431	99,886	95,652	85,802	84,695	4,115,611
1945	680,080	475,078	883,776	3,057,189	301,491	109,276	595,967	114,431	99,886	95,652	85,802	84,695	6,583,324
1946	1,125,303	1,441,398	1,081,476	511,941	686,871	1,421,296	114,431	114,431	99,886	95,652	85,802	555,879	7,334,367
1947	1,233,301	380,618	687,576	596,269	306,391	109,276	114,431	114,431	99,886	95,652	85,802	84,695	3,908,329
1948	84,698	239,156	651,200	352,189	293,191	109,276	114,431	114,431	99,886	95,652	85,802	84,695	2,324,608
1949	84,698	83,040	301,955	428,329	138,639	109,276	114,431	114,431	99,886	95,652	85,802	132,985	1,789,125
1950	1,117,196	1,104,298	994,900	139,229	976,711	1,132,816	114,431	114,431	99,886	95,652	85,802	84,695	6,060,048
1951	84,698	83,040	84,698	96,757	108,171	109,276	114,431	114,431	99,886	95,652	85,802	84,695	1,161,538
1952	84,698	83,040	84,698	96,757	108,171	109,276	114,431	114,431	99,886	95,652	85,802	84,695	1,161,538
1953	84,698	83,040	84,698	96,757	2,244,437	588,808	114,431	114,431	99,886	95,652	85,802	84,695	3,777,336
1954	84,698	83,040	84,698	96,757	108,171	109,276	114,431	114,431	83,079	17,717	14,440	13,334	924,073
1955	13,336	14,495	84,698	96,757	108,171	109,276	114,431	114,431	99,886	95,652	14,440	13,334	878,908
1956	13,336	14,495	84,698	96,757	108,171	109,276	25,229	25,229	20,074	17,717	14,440	13,334	542,757
1957	13,336	14,495	13,336	18,822	22,725	711,320	114,431	114,431	99,886	95,652	233,541	551,714	2,003,690
1958	508,256	347,318	275,976	96,757	1,193,587	153,796	114,431	114,431	304,079	139,656	85,802	84,695	3,418,785
1959	84,698	83,040	149,405	392,989	353,843	109,276	114,431	114,431	99,886	95,652	85,802	84,695	1,768,149
1960	84,698	535,253	628,616	96,757	108,171	109,276	114,431	114,431	99,886	95,652	85,802	84,695	2,157,669
1961	1,264,811	730,338	981,636	609,297	108,171	109,276	114,431	114,431	99,886	95,652	85,802	836,358	5,150,090
1962	498,132	351,918	332,820	208,629	404,111	109,276	114,431	114,431	99,886	95,652	85,802	84,695	2,499,784
1963	84,698	83,040	84,698	96,757	108,171	109,276	114,431	94,401	20,074	17,717	14,440	13,334	841,038
1964	13,336	14,495	13,336	18,822	108,171	23,830	25,229	25,229	20,074	17,717	14,440	13,334	308,014
1965	13,336	14,495	13,336	18,822	22,725	23,830	114,431	25,229	20,074	17,717	14,440	13,334	311,770
1966	13,336	14,495	84,698	96,757	231,811	145,040	114,431	114,431	99,886	95,652	85,802	84,695	1,181,035
1967	84,698	83,040	84,698	96,757	108,171	109,276	25,229	25,229	20,074	17,717	14,440	13,334	682,664
1968	13,336	14,495	13,336	169,686	749,511	490,396	130,692	114,431	99,886	95,652	85,802	453,404	2,430,628
1969	149,336	467,878	1,120,776	1,331,789	963,251	221,048	114,431	114,431	99,886	95,652	85,802	84,695	4,848,976
1970	84,698	83,040	84,698	96,757	108,171	109,276	114,431	114,431	99,886	95,652	85,802	84,695	1,161,538
1971	84,698	68,505	13,336	18,822	22,725	23,830	25,229	25,229	20,074	17,717	14,440	13,334	347,940
1972	13,336	83,040	84,698	96,757	108,171	109,276	114,431	25,229	20,074	17,717	14,440	84,695	771,865
1973	84,698	83,040	404,892	745,069	670,355	625,768	156,804	114,431	99,886	225,054	253,172	934,814	4,397,784
1974	1,626,784	639,570	215,172	291,833	220,251	145,088	114,431	114,431	99,886	95,652	307,905	975,474	4,846,478
1975	613,664	1,222,818	528,616	428,869	1,175,391	331,124	114,431	114,431	99,886	95,652	85,802	84,695	4,895,380
1976	84,698	83,040	84,698	96,757	108,171	109,276	114,431	114,431	99,886	95,652	85,802	84,695	1,161,538
1977	84,698	83,040	210,876	477,793	108,171	109,276	114,431	114,431	99,886	95,652	85,802	84,695	1,668,752
1978	84,698	83,040	84,698	96,757	108,171	109,276	114,431	114,431	99,886	18,464	14,440	13,334	941,627
1979	84,698	493,061	674,684	979,837	840,783	466,116	114,431	114,431	99,886	95,652	85,802	84,695	4,134,077
1980	84,698	410,271	418,216	889,753	694,463	109,276	114,431	114,431	99,886	95,652	85,802	84,695	3,202,575
1981	84,698	14,495	13,336	18,822	22,725	109,276	114,431	114,431	99,886	95,652	41,697	13,334	742,784
1982	13,336	14,495	84,698	96,757	108,171	109,276	114,431	89,122	20,074	17,717	14,440	13,334	695,852
1983	84,698	84,697	549,920	123,829	850,875	109,276	114,431	114,431	99,886	95,652	85,802	84,695	3,160,193
1984	84,698	160,888	599,336	96,757	108,171	109,276	114,431	114,431	99,886	95,652	85,802	84,695	1,754,024
1985	84,698	83,040	446,503	159,413	333,107	109,276	114,431	114,431	99,886	95,652	85,802	84,695	1,810,935
1986	84,698	83,040	84,698	96,757	297,999	797,120	114,431	114,431	99,886	95,652	85,802	481,552	2,436,067
1987	270,728	842,378	524,956	96,757	108,171	109,276	114,431	114,431	99,886	95,652	85,802	84,695	2,547,164
1988	573,984	304,722	572,400	255,405	108,171	109,276	114,431	114,431	99,886	95,652	85,802	84,695	2,518,856
1989	84,698	83,040	576,769	771,393	1,341,471	1,809,997	1,075,676	114,431	99,886	95,652	85,802	84,695	6,223,511

PROPOSED OPERATION

		Evaporative Loss (ac-ft)	Texas Demand (ac-ft)	Louisiana Demand (ac-ft)	Inflow (ac-ft)	Shortage (ac-ft)	Hydropower Release (ac-ft)	Spills (ac-ft)	End-of-month Content (ac-ft)	End-of-month Elevation (ft)	Proposed Transfer (ac-ft)	Texas Return Flow (ac-ft)	Total D/S Flow (ac-ft)
1940	1	(7,264)	79,291	7,929	210,300	0	71,362	58,982	4,477,000	172.0	57,065	13,336	143,680
1940	2	(36,320)	76,161	7,616	732,600	0	68,545	616,598	4,477,000	172.0	52,003	14,495	699,638
1940	3	23,499	79,291	7,929	123,100	0	71,362	0	4,418,019	171.6	57,065	13,336	84,698
1940	4	(18,076)	86,594	8,659	295,500	0	77,935	81,407	4,477,000	172.0	55,224	18,822	178,164
1940	5	18,160	94,940	9,494	250,800	0	85,446	42,760	4,477,000	172.0	57,065	22,725	150,931
1940	6	(18,160)	94,940	9,494	372,900	0	85,446	201,180	4,477,000	172.0	55,224	23,830	310,456
1940	7	28,913	99,114	9,911	164,300	0	89,202	0	4,414,160	171.6	57,065	25,229	114,431
1940	8	(17,978)	99,114	9,911	178,800	0	89,202	0	4,412,711	171.6	57,065	25,229	114,431
1940	9	46,245	88,681	8,868	90,700	0	79,812	0	4,279,805	170.8	55,224	20,074	99,886
1940	10	41,574	86,594	8,659	23,000	0	77,935	0	4,088,043	169.6	57,065	17,717	95,652
1940	11	(123,231)	79,291	7,929	466,600	0	71,362	42,292	4,477,000	172.0	55,224	14,440	128,094
1940	12	(72,641)	79,289	7,931	1,777,500	0	71,361	1,691,560	4,477,000	172.0	57,065	13,334	1,776,255
		(135,279)	1,043,300	104,330	4,686,100	0	938,970	2,734,779			672354	222,568	3,896,317
1941	1	(7,264)	79,291	7,929	1,339,800	0	71,362	1,188,482	4,477,000	172.0	57,065	13,336	1,273,180
1941	2	(18,160)	76,161	7,616	518,900	0	68,545	384,738	4,477,000	172.0	52,003	14,495	467,778
1941	3	0	79,291	7,929	897,900	0	71,362	739,318	4,477,000	172.0	57,065	13,336	824,016
1941	4	5,448	86,594	8,659	361,400	0	77,935	182,764	4,477,000	172.0	55,224	18,822	279,521
1941	5	(54,480)	94,940	9,494	875,600	0	85,446	740,200	4,477,000	172.0	57,065	22,725	848,371
1941	6	(36,320)	94,940	9,494	920,200	0	85,446	766,640	4,477,000	172.0	55,224	23,830	875,916
1941	7	(18,160)	99,114	9,911	655,500	0	89,202	475,433	4,477,000	172.0	57,065	25,229	589,864
1941	8	48,371	99,114	9,911	75,200	0	89,202	0	4,305,602	170.9	57,065	25,229	114,431
1941	9	12,272	88,681	8,868	92,300	0	79,812	0	4,208,269	170.3	55,224	20,074	99,886
1941	10	(52,409)	86,594	8,659	175,000	0	77,935	0	4,262,490	170.7	57,065	17,717	95,652
1941	11	0	79,291	7,929	804,900	0	71,362	431,808	4,477,000	172.0	55,224	14,440	517,610
1941	12	0	79,289	7,931	460,200	0	71,361	301,619	4,477,000	172.0	57,065	13,334	386,314
		(120,702)	1,043,300	104,330	7,176,900	0	938,970	5,211,002			672354	222,568	6,372,540
1942	1	3,632	79,291	7,929	334,200	0	71,362	171,986	4,477,000	172.0	57,065	13,336	256,684
1942	2	(18,160)	76,161	7,616	315,400	0	68,545	181,238	4,477,000	172.0	52,003	14,495	264,278
1942	3	0	79,291	7,929	544,900	0	71,362	386,318	4,477,000	172.0	57,065	13,336	471,016
1942	4	(18,160)	86,594	8,659	472,500	0	77,935	317,472	4,477,000	172.0	55,224	18,822	414,229
1942	5	0	94,940	9,494	1,266,600	0	85,446	1,076,720	4,477,000	172.0	57,065	22,725	1,184,891
1942	6	0	94,940	9,494	555,500	0	85,446	365,620	4,477,000	172.0	55,224	23,830	474,896
1942	7	39,556	99,114	9,911	111,600	0	89,202	0	4,350,817	171.2	57,065	25,229	114,431
1942	8	26,425	99,114	9,911	96,800	0	89,202	0	4,222,965	170.4	57,065	25,229	114,431
1942	9	34,781	88,681	8,868	181,500	0	79,812	0	4,192,323	170.3	55,224	20,074	99,886
1942	10	46,138	86,594	8,659	38,400	0	77,935	0	4,011,397	169.1	57,065	17,717	95,652
1942	11	21,645	79,291	7,929	54,600	0	71,362	0	3,885,770	168.4	55,224	14,440	85,802
1942	12	(16,349)	79,289	7,931	57,100	0	71,361	0	3,800,638	167.8	57,065	13,334	84,695
		119,508	1,043,300	104,330	4,029,100	0	938,970	2,499,354			672354	222,568	3,660,892

PROPOSED OPERATION

		Evaporative Loss (ac-ft)	Texas Demand (ac-ft)	Louisiana Demand (ac-ft)	Inflow (ac-ft)	Shortage (ac-ft)	Hydropower Release (ac-ft)	Spills (ac-ft)	End-of-month Content (ac-ft)	End-of-month Elevation (ft)	Proposed Transfer (ac-ft)	Texas Return Flow (ac-ft)	Total D/S Flow (ac-ft)
1943	1	(4,918)	79,291	7,929	270,700	0	71,362	0	3,917,674	168.6	57,065	13,336	84,698
1943	2	19,768	76,161	7,616	110,500	0	68,545	0	3,856,084	168.2	52,003	14,495	83,040
1943	3	0	79,291	7,929	106,000	0	71,362	0	3,803,502	167.9	57,065	13,336	84,698
1943	4	24,347	86,594	8,659	194,700	0	77,935	0	3,800,667	167.8	55,224	18,822	96,757
1943	5	9,614	94,940	9,494	56,500	0	85,446	0	3,657,673	167.0	57,065	22,725	108,171
1943	6	20,426	94,940	9,494	135,700	0	85,446	0	3,583,067	166.5	55,224	23,830	109,276
1943	7	29,919	99,114	9,911	327,100	0	89,202	0	3,682,021	167.1	57,065	25,229	114,431
1943	8	55,983	99,114	9,911	18,000	0	89,202	0	3,445,811	165.7	57,065	25,229	114,431
1943	9	20,931	88,681	8,868	14,400	0	79,812	0	3,261,919	164.5	55,224	20,074	99,886
1943	10	33,251	86,594	8,659	45,000	0	77,935	0	3,100,480	163.4	57,065	17,717	95,652
1943	11	11,173	79,291	7,929	36,500	0	71,362	0	2,967,225	162.3	55,224	14,440	85,802
1943	12	(13,718)	79,289	7,931	59,000	0	0	0	2,952,723	162.2	57,065	13,334	13,334
		206,776	1,043,300	104,330	1,374,100	0	867,609	0			672354	222,568	1,090,177
1944	1	(57,660)	79,291	7,929	459,700	0	0	0	3,382,863	165.3	57,065	13,336	13,336
1944	2	(15,461)	76,161	7,616	436,500	0	68,545	0	3,682,502	167.1	52,003	14,495	83,040
1944	3	0	79,291	7,929	738,700	0	71,362	0	4,262,620	170.7	57,065	13,336	84,698
1944	4	(17,854)	86,594	8,659	790,000	0	77,935	420,286	4,477,000	172.0	55,224	18,822	517,043
1944	5	(108,961)	94,940	9,494	2,084,800	0	85,446	2,003,881	4,477,000	172.0	57,065	22,725	2,112,052
1944	6	39,952	94,940	9,494	831,100	0	85,446	601,268	4,477,000	172.0	55,224	23,830	710,544
1944	7	60,686	99,114	9,911	41,100	0	89,202	0	4,259,187	170.7	57,065	25,229	114,431
1944	8	0	99,114	9,911	22,700	0	89,202	0	4,083,660	169.6	57,065	25,229	114,431
1944	9	37,031	88,681	8,868	71,900	0	79,812	0	3,941,168	168.7	55,224	20,074	99,886
1944	10	49,012	86,594	8,659	18,100	0	77,935	0	3,737,068	167.5	57,065	17,717	95,652
1944	11	(31,904)	79,291	7,929	61,300	0	71,362	0	3,671,690	167.1	55,224	14,440	85,802
1944	12	(64,771)	79,289	7,931	327,500	0	71,361	0	3,905,380	168.5	57,065	13,334	84,695
		(109,930)	1,043,300	104,330	5,883,400	0	867,608	3,025,435			672354	222,568	4,115,611
1945	1	(29,484)	79,291	7,929	1,296,100	0	71,362	595,382	4,477,000	172.0	57,065	13,336	680,080
1945	2	(18,160)	76,161	7,616	526,200	0	68,545	392,038	4,477,000	172.0	52,003	14,495	475,078
1945	3	(18,160)	79,291	7,929	939,500	0	71,362	799,078	4,477,000	172.0	57,065	13,336	883,776
1945	4	(36,320)	86,594	8,659	3,097,300	0	77,935	2,960,432	4,477,000	172.0	55,224	18,822	3,057,189
1945	5	0	94,940	9,494	383,200	0	85,446	193,320	4,477,000	172.0	57,065	22,725	301,491
1945	6	10,857	94,940	9,494	155,700	0	85,446	0	4,431,963	171.7	55,224	23,830	109,276
1945	7	0	99,114	9,911	724,800	0	89,202	481,536	4,477,000	172.0	57,065	25,229	595,967
1945	8	32,435	99,114	9,911	132,100	0	89,202	0	4,378,438	171.4	57,065	25,229	114,431
1945	9	44,040	88,681	8,868	37,800	0	79,812	0	4,194,837	170.3	55,224	20,074	99,886
1945	10	(35,144)	86,594	8,659	290,600	0	77,935	0	4,347,393	171.2	57,065	17,717	95,652
1945	11	10,648	79,291	7,929	138,800	0	71,362	0	4,316,963	171.0	55,224	14,440	85,802
1945	12	0	79,289	7,931	297,900	0	71,361	0	4,456,282	171.9	57,065	13,334	84,695
		(39,288)	1,043,300	104,330	8,020,000	0	938,970	5,421,786			672354	222,568	6,583,324

PROPOSED OPERATION

		Evaporative Loss (ac-ft)	Texas Demand (ac-ft)	Louisiana Demand (ac-ft)	Inflow (ac-ft)	Shortage (ac-ft)	Hydropower Release (ac-ft)	Spills (ac-ft)	End-of-month Content (ac-ft)	End-of-month Elevation (ft)	Proposed Transfer (ac-ft)	Texas Return Flow (ac-ft)	Total D/S Flow (ac-ft)
1946	1	(97,905)	79,291	7,929	1,122,000	0	71,362	1,040,605	4,477,000	172.0	57,065	13,336	1,125,303
1946	2	(54,480)	76,161	7,616	1,456,200	0	68,545	1,358,358	4,477,000	172.0	52,003	14,495	1,441,398
1946	3	(18,160)	79,291	7,929	1,137,200	0	71,362	996,778	4,477,000	172.0	57,065	13,336	1,081,476
1946	4	14,528	86,594	8,659	602,900	0	77,935	415,184	4,477,000	172.0	55,224	18,822	511,941
1946	5	(54,480)	94,940	9,494	714,100	0	85,446	578,700	4,477,000	172.0	57,065	22,725	686,871
1946	6	0	94,940	9,494	1,501,900	0	85,446	1,312,020	4,477,000	172.0	55,224	23,830	1,421,296
1946	7	32,614	99,114	9,911	201,800	0	89,202	0	4,447,959	171.8	57,065	25,229	114,431
1946	8	28,536	99,114	9,911	57,100	0	89,202	0	4,278,296	170.8	57,065	25,229	114,431
1946	9	22,619	88,681	8,868	64,800	0	79,812	0	4,143,116	169.9	55,224	20,074	99,886
1946	10	6,812	86,594	8,659	57,000	0	77,935	0	4,020,116	169.2	57,065	17,717	95,652
1946	11	(52,034)	79,291	7,929	449,500	0	71,362	0	4,363,068	171.3	55,224	14,440	85,802
1946	12	(17,997)	79,289	7,931	725,700	0	71,361	471,184	4,477,000	172.0	57,065	13,334	555,879
		(189,947)	1,043,300	104,330	8,090,200	0	938,970	6,172,829			672354	222,568	7,334,367
1947	1	(88,985)	79,291	7,929	1,218,200	0	71,362	1,148,603	4,477,000	172.0	57,065	13,336	1,233,301
1947	2	0	76,161	7,616	449,900	0	68,545	297,578	4,477,000	172.0	52,003	14,495	380,618
1947	3	(18,160)	79,291	7,929	743,300	0	71,362	602,878	4,477,000	172.0	57,065	13,336	687,576
1947	4	0	86,594	8,659	672,700	0	77,935	499,512	4,477,000	172.0	55,224	18,822	596,269
1947	5	0	94,940	9,494	388,100	0	85,446	198,220	4,477,000	172.0	57,065	22,725	306,391
1947	6	19,811	94,940	9,494	104,700	0	85,446	0	4,372,009	171.4	55,224	23,830	109,276
1947	7	56,278	99,114	9,911	63,200	0	89,202	0	4,180,704	170.2	57,065	25,229	114,431
1947	8	59,385	99,114	9,911	15,200	0	89,202	0	3,938,292	168.7	57,065	25,229	114,431
1947	9	52,263	88,681	8,868	27,800	0	79,812	0	3,736,468	167.4	55,224	20,074	99,886
1947	10	29,982	86,594	8,659	18,700	0	77,935	0	3,551,998	166.3	57,065	17,717	95,652
1947	11	(30,851)	79,291	7,929	63,800	0	71,362	0	3,488,067	165.9	55,224	14,440	85,802
1947	12	(31,033)	79,289	7,931	255,200	0	71,361	0	3,615,719	166.7	57,065	13,334	84,695
		48,690	1,043,300	104,330	4,020,800	0	938,970	2,746,791			672354	222,568	3,908,329
1948	1	(27,402)	79,291	7,929	425,000	0	71,362	0	3,909,539	168.5	57,065	13,336	84,698
1948	2	(34,699)	76,161	7,616	841,200	0	68,545	156,116	4,477,000	172.0	52,003	14,495	239,156
1948	3	1,816	79,291	7,929	726,900	0	71,362	566,502	4,477,000	172.0	57,065	13,336	651,200
1948	4	9,080	86,594	8,659	437,700	0	77,935	255,432	4,477,000	172.0	55,224	18,822	352,189
1948	5	0	94,940	9,494	374,900	0	85,446	185,020	4,477,000	172.0	57,065	22,725	293,191
1948	6	48,946	94,940	9,494	216,500	0	85,446	0	4,454,674	171.9	55,224	23,830	109,276
1948	7	49,817	99,114	9,911	35,000	0	89,202	0	4,241,630	170.6	57,065	25,229	114,431
1948	8	63,414	99,114	9,911	17,700	0	89,202	0	3,997,689	169.1	57,065	25,229	114,431
1948	9	37,953	88,681	8,868	13,100	0	79,812	0	3,795,475	167.8	55,224	20,074	99,886
1948	10	38,225	86,594	8,659	11,700	0	77,935	0	3,595,762	166.6	57,065	17,717	95,652
1948	11	(62,471)	79,291	7,929	79,400	0	71,362	0	3,579,051	166.5	55,224	14,440	85,802
1948	12	0	79,289	7,931	63,000	0	71,361	0	3,483,470	165.9	57,065	13,334	84,695
		124,679	1,043,300	104,330	3,242,100	0	938,970	1,163,070			672354	222,568	2,324,608

PROPOSED OPERATION

		Evaporative Loss (ac-ft)	Texas Demand (ac-ft)	Louisiana Demand (ac-ft)	Inflow (ac-ft)	Shortage (ac-ft)	Hydropower Release (ac-ft)	Spills (ac-ft)	End-of-month Content (ac-ft)	End-of-month Elevation (ft)	Proposed Transfer (ac-ft)	Texas Return Flow (ac-ft)	Total D/S Flow (ac-ft)
1949	1	(56,602)	79,291	7,929	383,200	0	71,362	0	3,764,690	167.6	57,065	13,336	84,698
1949	2	(16,645)	76,161	7,616	500,000	0	68,545	0	4,129,013	169.9	52,003	14,495	83,040
1949	3	(35,326)	79,291	7,929	688,500	0	71,362	217,257	4,477,000	172.0	57,065	13,336	301,955
1949	4	(18,160)	86,594	8,659	486,600	0	77,935	331,572	4,477,000	172.0	55,224	18,822	428,329
1949	5	39,952	94,940	9,494	260,300	0	85,446	30,468	4,477,000	172.0	57,065	22,725	138,639
1949	6	0	94,940	9,494	145,900	0	85,446	0	4,433,020	171.7	55,224	23,830	109,276
1949	7	3,582	99,114	9,911	115,400	0	89,202	0	4,346,611	171.2	57,065	25,229	114,431
1949	8	45,802	99,114	9,911	124,000	0	89,202	0	4,226,582	170.5	57,065	25,229	114,431
1949	9	22,395	88,681	8,868	47,700	0	79,812	0	4,074,526	169.5	55,224	20,074	99,886
1949	10	(68,935)	86,594	8,659	260,800	0	77,935	0	4,231,073	170.5	57,065	17,717	95,652
1949	11	38,570	79,291	7,929	249,400	0	71,362	0	4,283,321	170.8	55,224	14,440	85,802
1949	12	(53,650)	79,289	7,931	346,900	0	71,361	48,290	4,477,000	172.0	57,065	13,334	132,985
		(99,017)	1,043,300	104,330	3,608,700	0	938,970	627,587			672354	222,568	1,789,125
1950	1	(54,480)	79,291	7,929	1,136,600	0	71,362	1,032,498	4,477,000	172.0	57,065	13,336	1,117,196
1950	2	(54,480)	76,161	7,616	1,119,100	0	68,545	1,021,258	4,477,000	172.0	52,003	14,495	1,104,298
1950	3	1,816	79,291	7,929	1,070,600	0	71,362	910,202	4,477,000	172.0	57,065	13,336	994,900
1950	4	(18,160)	86,594	8,659	197,500	0	77,935	42,472	4,477,000	172.0	55,224	18,822	139,229
1950	5	(36,320)	94,940	9,494	1,022,100	0	85,446	868,540	4,477,000	172.0	57,065	22,725	976,711
1950	6	(36,320)	94,940	9,494	1,177,100	0	85,446	1,023,540	4,477,000	172.0	55,224	23,830	1,132,816
1950	7	26,974	99,114	9,911	100,900	0	89,202	0	4,352,699	171.2	57,065	25,229	114,431
1950	8	33,460	99,114	9,911	95,500	0	89,202	0	4,216,512	170.4	57,065	25,229	114,431
1950	9	0	88,681	8,868	58,800	0	79,812	0	4,097,951	169.7	55,224	20,074	99,886
1950	10	21,935	86,594	8,659	52,300	0	77,935	0	3,955,128	168.8	57,065	17,717	95,652
1950	11	4,950	79,291	7,929	44,800	0	71,362	0	3,836,396	168.1	55,224	14,440	85,802
1950	12	3,234	79,289	7,931	49,000	0	71,361	0	3,723,581	167.4	57,065	13,334	84,695
		(107,391)	1,043,300	104,330	6,124,300	0	938,970	4,898,510			672354	222,568	6,060,048
1951	1	(43,526)	79,291	7,929	194,700	0	71,362	0	3,803,225	167.9	57,065	13,336	84,698
1951	2	(32,747)	76,161	7,616	216,800	0	68,545	0	3,900,450	168.5	52,003	14,495	83,040
1951	3	(16,842)	79,291	7,929	372,200	0	71,362	0	4,130,910	169.9	57,065	13,336	84,698
1951	4	13,846	86,594	8,659	282,800	0	77,935	0	4,226,676	170.5	55,224	18,822	96,757
1951	5	19,100	94,940	9,494	152,100	0	85,446	0	4,169,796	170.1	57,065	22,725	108,171
1951	6	0	94,940	9,494	50,200	0	85,446	0	4,030,116	169.3	55,224	23,830	109,276
1951	7	39,931	99,114	9,911	66,500	0	89,202	0	3,858,458	168.2	57,065	25,229	114,431
1951	8	65,752	99,114	9,911	15,300	0	89,202	0	3,609,779	166.7	57,065	25,229	114,431
1951	9	(15,491)	88,681	8,868	28,600	0	79,812	0	3,476,509	165.9	55,224	20,074	99,886
1951	10	42,040	86,594	8,659	14,500	0	77,935	0	3,275,781	164.6	57,065	17,717	95,652
1951	11	1,453	79,291	7,929	20,700	0	71,362	0	3,136,446	163.7	55,224	14,440	85,802
1951	12	(28,504)	79,289	7,931	95,700	0	71,361	0	3,102,069	163.4	57,065	13,334	84,695
		45,012	1,043,300	104,330	1,510,100	0	938,970	0			672354	222,568	1,161,538

PROPOSED OPERATION

		Evaporative Loss (ac-ft)	Texas Demand (ac-ft)	Louisiana Demand (ac-ft)	Inflow (ac-ft)	Shortage (ac-ft)	Hydropower Release (ac-ft)	Spills (ac-ft)	End-of-month Content (ac-ft)	End-of-month Elevation (ft)	Proposed Transfer (ac-ft)	Texas Return Flow (ac-ft)	Total D/S Flow (ac-ft)
1952	1	(11,294)	79,291	7,929	101,300	0	71,362	0	3,056,081	163.0	57,065	13,336	84,698
1952	2	(14,538)	76,161	7,616	444,700	0	68,545	0	3,362,997	165.2	52,003	14,495	83,040
1952	3	0	79,291	7,929	380,600	0	71,362	0	3,585,015	166.5	57,065	13,336	84,698
1952	4	(64,221)	86,594	8,659	419,900	0	77,935	0	3,895,948	168.4	55,224	18,822	96,757
1952	5	(33,755)	94,940	9,494	420,500	0	85,446	0	4,160,323	170.1	57,065	22,725	108,171
1952	6	50,107	94,940	9,494	256,200	0	85,446	0	4,176,536	170.2	55,224	23,830	109,276
1952	7	(17,128)	99,114	9,911	59,600	0	89,202	0	4,055,037	169.4	57,065	25,229	114,431
1952	8	68,071	99,114	9,911	20,300	0	89,202	0	3,809,039	167.9	57,065	25,229	114,431
1952	9	66,851	88,681	8,868	10,200	0	79,812	0	3,575,027	166.5	55,224	20,074	99,886
1952	10	71,646	86,594	8,659	7,900	0	77,935	0	3,338,093	165.0	57,065	17,717	95,652
1952	11	32,221	79,291	7,929	9,300	0	71,362	0	3,156,590	163.8	55,224	14,440	85,802
1952	12	0	79,289	7,931	68,000	0	71,361	0	3,066,009	163.1	57,065	13,334	84,695
		147,960	1,043,300	104,330	2,198,500	0	938,970	0			672354	222,568	1,161,538
1953	1	(5,639)	79,291	7,929	167,900	0	71,362	0	3,080,966	163.2	57,065	13,336	84,698
1953	2	(29,041)	76,161	7,616	368,200	0	68,545	0	3,325,885	164.9	52,003	14,495	83,040
1953	3	(31,999)	79,291	7,929	916,600	0	71,362	0	4,115,902	169.8	57,065	13,336	84,698
1953	4	(68,635)	86,594	8,659	125,900	0	77,935	0	4,137,249	169.9	55,224	18,822	96,757
1953	5	(141,397)	94,940	9,494	2,524,500	0	85,446	2,136,266	4,477,000	172.0	57,065	22,725	2,244,437
1953	6	32,688	94,940	9,494	702,100	0	85,446	479,532	4,477,000	172.0	55,224	23,830	588,808
1953	7	3,604	99,114	9,911	102,300	0	89,202	0	4,377,469	171.4	57,065	25,229	114,431
1953	8	35,311	99,114	9,911	79,600	0	89,202	0	4,223,531	170.4	57,065	25,229	114,431
1953	9	53,184	88,681	8,868	34,900	0	79,812	0	4,027,886	169.2	55,224	20,074	99,886
1953	10	49,750	86,594	8,659	17,600	0	77,935	0	3,822,548	168.0	57,065	17,717	95,652
1953	11	4,827	79,291	7,929	24,200	0	71,362	0	3,683,339	167.1	55,224	14,440	85,802
1953	12	0	79,289	7,931	138,000	0	71,361	0	3,662,758	167.0	57,065	13,334	84,695
		(97,347)	1,043,300	104,330	5,201,800	0	938,970	2,615,798			672354	222,568	3,777,336
1954	1	(12,657)	79,291	7,929	137,600	0	71,362	0	3,654,433	166.9	57,065	13,336	84,698
1954	2	34,771	76,161	7,616	184,000	0	68,545	0	3,651,340	166.9	52,003	14,495	83,040
1954	3	18,828	79,291	7,929	99,800	0	71,362	0	3,573,730	166.4	57,065	13,336	84,698
1954	4	0	86,594	8,659	161,700	0	77,935	0	3,562,242	166.4	55,224	18,822	96,757
1954	5	(31,983)	94,940	9,494	469,700	0	85,446	0	3,874,045	168.3	57,065	22,725	108,171
1954	6	58,255	94,940	9,494	69,700	0	85,446	0	3,695,610	167.2	55,224	23,830	109,276
1954	7	73,130	99,114	9,911	14,200	0	89,202	0	3,438,453	165.6	57,065	25,229	114,431
1954	8	77,024	99,114	9,911	9,400	0	89,202	0	3,172,602	164.0	57,065	25,229	114,431
1954	9	66,098	88,681	8,868	7,400	0	63,005	0	2,953,350	162.2	55,224	20,074	83,079
1954	10	31,038	86,594	8,659	6,600	0	0	0	2,833,659	161.2	57,065	17,717	17,717
1954	11	15,893	79,291	7,929	73,500	0	0	0	2,804,046	161.0	55,224	14,440	14,440
1954	12	10,511	79,289	7,931	64,100	0	0	0	2,770,415	160.7	57,065	13,334	13,334
		340,908	1,043,300	104,330	1,297,700	0	701,505	0			672354	222,568	924,073

PROPOSED OPERATION

		Evaporative Loss (ac-ft)	Texas Demand (ac-ft)	Louisiana Demand (ac-ft)	Inflow (ac-ft)	Shortage (ac-ft)	Hydropower Release (ac-ft)	Spills (ac-ft)	End-of-month Content (ac-ft)	End-of-month Elevation (ft)	Proposed Transfer (ac-ft)	Texas Return Flow (ac-ft)	Total D/S Flow (ac-ft)
1955	1	(22,372)	79,291	7,929	111,400	0	0	0	2,816,967	161.1	57,065	13,336	13,336
1955	2	(40,919)	76,161	7,616	282,200	0	0	0	3,056,309	163.0	52,003	14,495	14,495
1955	3	16,978	79,291	7,929	239,300	0	71,362	0	3,120,049	163.6	57,065	13,336	84,698
1955	4	(14,830)	86,594	8,659	541,800	0	77,935	0	3,503,491	166.0	55,224	18,822	96,757
1955	5	0	94,940	9,494	248,900	0	85,446	0	3,562,511	166.4	57,065	22,725	108,171
1955	6	47,494	94,940	9,494	79,200	0	85,446	0	3,404,337	165.4	55,224	23,830	109,276
1955	7	2,979	99,114	9,911	59,900	0	89,202	0	3,263,031	164.5	57,065	25,229	114,431
1955	8	0	99,114	9,911	276,700	0	89,202	0	3,341,504	165.0	57,065	25,229	114,431
1955	9	23,517	88,681	8,868	49,000	0	79,812	0	3,189,626	164.1	55,224	20,074	99,886
1955	10	52,384	86,594	8,659	28,500	0	77,935	0	2,992,554	162.5	57,065	17,717	95,652
1955	11	20,507	79,291	7,929	14,900	0	0	0	2,899,727	161.8	55,224	14,440	14,440
1955	12	4,025	79,289	7,931	31,200	0	0	0	2,839,682	161.3	57,065	13,334	13,334
		89,763	1,043,300	104,330	1,963,000	0	656,340	0			672354	222,568	878,908
1956	1	(10,618)	79,291	7,929	51,800	0	0	0	2,814,880	161.1	57,065	13,336	13,336
1956	2	(27,252)	76,161	7,616	292,000	0	0	0	3,050,355	163.0	52,003	14,495	14,495
1956	3	1,398	79,291	7,929	135,300	0	71,362	0	3,025,675	162.8	57,065	13,336	84,698
1956	4	0	86,594	8,659	206,000	0	77,935	0	3,058,487	163.1	55,224	18,822	96,757
1956	5	8,543	94,940	9,494	311,900	0	85,446	0	3,171,964	164.0	57,065	22,725	108,171
1956	6	11,306	94,940	9,494	24,700	0	85,446	0	2,995,478	162.5	55,224	23,830	109,276
1956	7	55,686	99,114	9,911	12,600	0	0	0	2,843,367	161.3	57,065	25,229	25,229
1956	8	57,464	99,114	9,911	7,400	0	0	0	2,684,278	160.0	57,065	25,229	25,229
1956	9	55,213	88,681	8,868	6,800	0	0	0	2,538,316	158.8	55,224	20,074	20,074
1956	10	20,604	86,594	8,659	6,300	0	0	0	2,428,759	157.9	57,065	17,717	17,717
1956	11	15,322	79,291	7,929	13,300	0	0	0	2,339,517	157.2	55,224	14,440	14,440
1956	12	(11,568)	79,289	7,931	34,600	0	0	0	2,298,465	156.9	57,065	13,334	13,334
		176,098	1,043,300	104,330	1,102,700	0	320,189	0			672354	222,568	542,757
1957	1	(14,850)	79,291	7,929	26,900	0	0	0	2,252,995	156.5	57,065	13,336	13,336
1957	2	0	76,161	7,616	153,800	0	0	0	2,323,018	157.1	52,003	14,495	14,495
1957	3	(11,752)	79,291	7,929	177,100	0	0	0	2,424,650	157.9	57,065	13,336	13,336
1957	4	(48,507)	86,594	8,659	168,700	0	0	0	2,546,604	158.9	55,224	18,822	18,822
1957	5	0	94,940	9,494	1,871,600	0	0	0	4,313,770	171.0	57,065	22,725	22,725
1957	6	(35,854)	94,940	9,494	919,300	0	85,446	602,044	4,477,000	172.0	55,224	23,830	711,320
1957	7	39,668	99,114	9,911	147,300	0	89,202	0	4,386,405	171.4	57,065	25,229	114,431
1957	8	54,524	99,114	9,911	33,700	0	89,202	0	4,167,354	170.1	57,065	25,229	114,431
1957	9	6,814	88,681	8,868	15,800	0	79,812	0	3,998,979	169.1	55,224	20,074	99,886
1957	10	(16,769)	86,594	8,659	139,000	0	77,935	0	3,981,560	169.0	57,065	17,717	95,652
1957	11	(87,261)	79,291	7,929	714,500	0	71,362	147,739	4,477,000	172.0	55,224	14,440	233,541
1957	12	0	79,289	7,931	625,600	0	71,361	467,019	4,477,000	172.0	57,065	13,334	551,714
		(113,987)	1,043,300	104,330	4,993,300	0	564,320	1,216,802			672354	222,568	2,003,690

PROPOSED OPERATION

		Evaporative Loss (ac-ft)	Texas Demand (ac-ft)	Louisiana Demand (ac-ft)	Inflow (ac-ft)	Shortage (ac-ft)	Hydropower Release (ac-ft)	Spills (ac-ft)	End-of-month Content (ac-ft)	End-of-month Elevation (ft)	Proposed Transfer (ac-ft)	Texas Return Flow (ac-ft)	Total D/S Flow (ac-ft)
1958	1	(27,240)	79,291	7,929	554,900	0	71,362	423,558	4,477,000	172.0	57,065	13,336	508,256
1958	2	0	76,161	7,616	416,600	0	68,545	264,278	4,477,000	172.0	52,003	14,495	347,318
1958	3	(18,160)	79,291	7,929	331,700	0	71,362	191,278	4,477,000	172.0	57,065	13,336	275,976
1958	4	0	86,594	8,659	7,700	0	77,935	0	4,311,512	171.0	55,224	18,822	96,757
1958	5	19,716	94,940	9,494	1,460,500	0	85,446	1,085,416	4,477,000	172.0	57,065	22,725	1,193,587
1958	6	0	94,940	9,494	234,400	0	85,446	44,520	4,477,000	172.0	55,224	23,830	153,796
1958	7	59,387	99,114	9,911	142,800	0	89,202	0	4,362,186	171.3	57,065	25,229	114,431
1958	8	0	99,114	9,911	83,700	0	89,202	0	4,247,659	170.6	57,065	25,229	114,431
1958	9	(106,995)	88,681	8,868	503,900	0	79,812	204,193	4,477,000	172.0	55,224	20,074	304,079
1958	10	23,608	86,594	8,659	240,800	0	77,935	44,004	4,477,000	172.0	57,065	17,717	139,656
1958	11	0	79,291	7,929	83,000	0	71,362	0	4,401,418	171.5	55,224	14,440	85,802
1958	12	12,470	79,289	7,931	80,300	0	71,361	0	4,310,667	171.0	57,065	13,334	84,695
		(37,214)	1,043,300	104,330	4,140,300	0	938,970	2,257,247			672354	222,568	3,418,785
1959	1	(7,029)	79,291	7,929	73,000	0	71,362	0	4,232,114	170.5	57,065	13,336	84,698
1959	2	(35,438)	76,161	7,616	298,100	0	68,545	0	4,413,330	171.6	52,003	14,495	83,040
1959	3	10,841	79,291	7,929	297,800	0	71,362	64,707	4,477,000	172.0	57,065	13,336	149,405
1959	4	(36,320)	86,594	8,659	433,100	0	77,935	296,232	4,477,000	172.0	55,224	18,822	392,989
1959	5	5,448	94,940	9,494	441,000	0	85,446	245,672	4,477,000	172.0	57,065	22,725	353,843
1959	6	7,244	94,940	9,494	162,500	0	85,446	0	4,442,376	171.8	55,224	23,830	109,276
1959	7	(17,870)	99,114	9,911	46,700	0	89,202	0	4,308,719	171.0	57,065	25,229	114,431
1959	8	34,927	99,114	9,911	82,200	0	89,202	0	4,157,765	170.0	57,065	25,229	114,431
1959	9	27,196	88,681	8,868	29,400	0	79,812	0	3,982,608	169.0	55,224	20,074	99,886
1959	10	0	86,594	8,659	45,500	0	77,935	0	3,854,920	168.2	57,065	17,717	95,652
1959	11	4,877	79,291	7,929	76,600	0	71,362	0	3,768,061	167.6	55,224	14,440	85,802
1959	12	(48,731)	79,289	7,931	186,500	0	71,361	0	3,844,711	168.1	57,065	13,334	84,695
		(54,855)	1,043,300	104,330	2,172,400	0	938,970	606,611			672354	222,568	1,768,149
1960	1	(37,609)	79,291	7,929	640,000	0	71,362	0	4,363,738	171.3	57,065	13,336	84,698
1960	2	(35,997)	76,161	7,616	681,800	0	68,545	452,213	4,477,000	172.0	52,003	14,495	535,253
1960	3	0	79,291	7,929	702,500	0	71,362	543,918	4,477,000	172.0	57,065	13,336	628,616
1960	4	21,724	86,594	8,659	155,300	0	77,935	0	4,437,388	171.8	55,224	18,822	96,757
1960	5	42,888	94,940	9,494	109,000	0	85,446	0	4,313,620	171.0	57,065	22,725	108,171
1960	6	0	94,940	9,494	69,800	0	85,446	0	4,193,540	170.3	55,224	23,830	109,276
1960	7	46,269	99,114	9,911	95,200	0	89,202	0	4,044,244	169.3	57,065	25,229	114,431
1960	8	(16,738)	99,114	9,911	51,500	0	89,202	0	3,914,255	168.5	57,065	25,229	114,431
1960	9	32,633	88,681	8,868	45,200	0	79,812	0	3,749,461	167.5	55,224	20,074	99,886
1960	10	0	86,594	8,659	79,400	0	77,935	0	3,655,673	167.0	57,065	17,717	95,652
1960	11	(15,853)	79,291	7,929	170,900	0	71,362	0	3,683,844	167.1	55,224	14,440	85,802
1960	12	(50,796)	79,289	7,931	834,700	0	71,361	0	4,410,759	171.6	57,065	13,334	84,695
		(13,479)	1,043,300	104,330	3,635,300	0	938,970	996,131			672354	222,568	2,157,669

PROPOSED OPERATION

		Evaporative Loss (ac-ft)	Texas Demand (ac-ft)	Louisiana Demand (ac-ft)	Inflow (ac-ft)	Shortage (ac-ft)	Hydropower Release (ac-ft)	Spills (ac-ft)	End-of-month Content (ac-ft)	End-of-month Elevation (ft)	Proposed Transfer (ac-ft)	Texas Return Flow (ac-ft)	Total D/S Flow (ac-ft)
1961	1	(65,036)	79,291	7,929	1,339,900	0	71,362	1,180,113	4,477,000	172.0	57,065	13,336	1,264,811
1961	2	(36,320)	76,161	7,616	763,300	0	68,545	647,298	4,477,000	172.0	52,003	14,495	730,338
1961	3	(36,320)	79,291	7,929	1,019,200	0	71,362	896,938	4,477,000	172.0	57,065	13,336	981,636
1961	4	30,872	86,594	8,659	716,600	0	77,935	512,540	4,477,000	172.0	55,224	18,822	609,297
1961	5	37,751	94,940	9,494	99,200	0	85,446	0	4,348,569	171.2	57,065	22,725	108,171
1961	6	(17,820)	94,940	9,494	191,200	0	85,446	0	4,367,709	171.3	55,224	23,830	109,276
1961	7	0	99,114	9,911	278,300	0	89,202	0	4,447,782	171.8	57,065	25,229	114,431
1961	8	44,604	99,114	9,911	78,200	0	89,202	0	4,283,151	170.8	57,065	25,229	114,431
1961	9	(17,816)	88,681	8,868	306,500	0	79,812	0	4,430,106	171.7	55,224	20,074	99,886
1961	10	40,945	86,594	8,659	57,500	0	77,935	0	4,273,473	170.7	57,065	17,717	95,652
1961	11	(17,598)	79,291	7,929	154,500	0	71,362	0	4,286,989	170.8	55,224	14,440	85,802
1961	12	(71,555)	79,289	7,931	1,028,700	0	71,361	751,663	4,477,000	172.0	57,065	13,334	836,358
		(108,293)	1,043,300	104,330	6,033,100	0	938,970	3,988,552			672354	222,568	5,150,090
1962	1	(47,216)	79,291	7,929	524,800	0	71,362	413,434	4,477,000	172.0	57,065	13,336	498,132
1962	2	0	76,161	7,616	421,200	0	68,545	268,878	4,477,000	172.0	52,003	14,495	351,918
1962	3	10,896	79,291	7,929	417,600	0	71,362	248,122	4,477,000	172.0	57,065	13,336	332,820
1962	4	(18,160)	86,594	8,659	266,900	0	77,935	111,872	4,477,000	172.0	55,224	18,822	208,629
1962	5	9,080	94,940	9,494	494,900	0	85,446	295,940	4,477,000	172.0	57,065	22,725	404,111
1962	6	0	94,940	9,494	109,800	0	85,446	0	4,396,920	171.5	55,224	23,830	109,276
1962	7	68,746	99,114	9,911	54,100	0	89,202	0	4,184,047	170.2	57,065	25,229	114,431
1962	8	20,472	99,114	9,911	34,400	0	89,202	0	3,999,748	169.1	57,065	25,229	114,431
1962	9	6,636	88,681	8,868	39,100	0	79,812	0	3,854,851	168.2	55,224	20,074	99,886
1962	10	22,623	86,594	8,659	39,600	0	77,935	0	3,698,640	167.2	57,065	17,717	95,652
1962	11	(15,927)	79,291	7,929	136,800	0	71,362	0	3,692,785	167.2	55,224	14,440	85,802
1962	12	(15,898)	79,289	7,931	128,000	0	71,361	0	3,678,102	167.1	57,065	13,334	84,695
		41,252	1,043,300	104,330	2,667,200	0	938,970	1,338,246			672354	222,568	2,499,784
1963	1	(4,752)	79,291	7,929	128,400	0	71,362	0	3,652,672	166.9	57,065	13,336	84,698
1963	2	0	76,161	7,616	118,800	0	68,545	0	3,619,150	166.7	52,003	14,495	83,040
1963	3	14,072	79,291	7,929	121,400	0	71,362	0	3,567,896	166.4	57,065	13,336	84,698
1963	4	0	86,594	8,659	88,100	0	77,935	0	3,482,808	165.9	55,224	18,822	96,757
1963	5	27,612	94,940	9,494	232,100	0	85,446	0	3,497,416	166.0	57,065	22,725	108,171
1963	6	18,147	94,940	9,494	41,600	0	85,446	0	3,330,989	165.0	55,224	23,830	109,276
1963	7	13,174	99,114	9,911	38,000	0	89,202	0	3,157,588	163.9	57,065	25,229	114,431
1963	8	51,941	99,114	9,911	25,900	0	69,172	0	2,953,350	162.2	57,065	25,229	94,401
1963	9	17,587	88,681	8,868	15,400	0	0	0	2,853,614	161.4	55,224	20,074	20,074
1963	10	34,228	86,594	8,659	12,300	0	0	0	2,736,433	160.4	57,065	17,717	17,717
1963	11	(25,788)	79,291	7,929	17,300	0	0	0	2,692,301	160.1	55,224	14,440	14,440
1963	12	(12,760)	79,289	7,931	38,900	0	0	0	2,656,741	159.8	57,065	13,334	13,334
		133,461	1,043,300	104,330	878,200	0	618,470	0			672354	222,568	841,038

PROPOSED OPERATION

		Evaporative Loss (ac-ft)	Texas Demand (ac-ft)	Louisiana Demand (ac-ft)	Inflow (ac-ft)	Shortage (ac-ft)	Hydropower Release (ac-ft)	Spills (ac-ft)	End-of-month Content (ac-ft)	End-of-month Elevation (ft)	Proposed Transfer (ac-ft)	Texas Return Flow (ac-ft)	Total D/S Flow (ac-ft)
1964	1	(24,167)	79,291	7,929	74,100	0	0	0	2,667,788	159.9	57,065	13,336	13,336
1964	2	0	76,161	7,616	68,600	0	0	0	2,652,611	159.8	52,003	14,495	14,495
1964	3	(26,083)	79,291	7,929	272,400	0	0	0	2,863,874	161.5	57,065	13,336	13,336
1964	4	(41,197)	86,594	8,659	254,800	0	0	0	3,064,618	163.1	55,224	18,822	18,822
1964	5	6,995	94,940	9,494	149,700	0	85,446	0	3,017,443	162.7	57,065	22,725	108,171
1964	6	42,639	94,940	9,494	53,900	0	0	0	2,924,270	162.0	55,224	23,830	23,830
1964	7	36,161	99,114	9,911	22,900	0	0	0	2,801,984	161.0	57,065	25,229	25,229
1964	8	13,018	99,114	9,911	20,700	0	0	0	2,700,641	160.2	57,065	25,229	25,229
1964	9	21,542	88,681	8,868	13,900	0	0	0	2,595,450	159.3	55,224	20,074	20,074
1964	10	38,132	86,594	8,659	17,300	0	0	0	2,479,365	158.4	57,065	17,717	17,717
1964	11	0	79,291	7,929	13,700	0	0	0	2,405,845	157.8	55,224	14,440	14,440
1964	12	(23,657)	79,289	7,931	45,200	0	0	0	2,387,482	157.6	57,065	13,334	13,334
		43,383	1,043,300	104,330	1,007,200	0	85,446	0			672354	222,568	308,014
1965	1	(9,416)	79,291	7,929	61,500	0	0	0	2,371,178	157.5	57,065	13,336	13,336
1965	2	(23,840)	76,161	7,616	165,400	0	0	0	2,476,641	158.3	52,003	14,495	14,495
1965	3	(24,800)	79,291	7,929	243,300	0	0	0	2,657,521	159.8	57,065	13,336	13,336
1965	4	23,536	86,594	8,659	340,800	0	0	0	2,879,532	161.6	55,224	18,822	18,822
1965	5	(27,042)	94,940	9,494	120,900	0	0	0	2,923,040	162.0	57,065	22,725	22,725
1965	6	22,480	94,940	9,494	398,800	0	0	0	3,194,926	164.1	55,224	23,830	23,830
1965	7	51,038	99,114	9,911	53,300	0	89,202	0	2,998,961	162.6	57,065	25,229	114,431
1965	8	19,140	99,114	9,911	22,600	0	0	0	2,893,396	161.7	57,065	25,229	25,229
1965	9	0	88,681	8,868	35,600	0	0	0	2,831,447	161.2	55,224	20,074	20,074
1965	10	30,160	86,594	8,659	21,900	0	0	0	2,727,934	160.4	57,065	17,717	17,717
1965	11	0	79,291	7,929	17,900	0	0	0	2,658,614	159.8	55,224	14,440	14,440
1965	12	(38,396)	79,289	7,931	103,500	0	0	0	2,713,290	160.3	57,065	13,334	13,334
		22,860	1,043,300	104,330	1,585,500	0	89,202	0			672354	222,568	311,770
1966	1	(24,705)	79,291	7,929	129,500	0	0	0	2,780,275	160.8	57,065	13,336	13,336
1966	2	(70,990)	76,161	7,616	658,400	0	0	0	3,425,888	165.5	52,003	14,495	14,495
1966	3	16,586	79,291	7,929	120,600	0	71,362	0	3,371,320	165.2	57,065	13,336	84,698
1966	4	(15,088)	86,594	8,659	219,300	0	77,935	0	3,432,520	165.6	55,224	18,822	96,757
1966	5	0	94,940	9,494	1,358,000	0	85,446	123,640	4,477,000	172.0	57,065	22,725	231,811
1966	6	29,056	94,940	9,494	254,700	0	85,446	35,764	4,477,000	172.0	55,224	23,830	145,040
1966	7	30,408	99,114	9,911	37,600	0	89,202	0	4,285,965	170.8	57,065	25,229	114,431
1966	8	0	99,114	9,911	34,700	0	89,202	0	4,122,438	169.8	57,065	25,229	114,431
1966	9	30,416	88,681	8,868	33,600	0	79,812	0	3,948,261	168.8	55,224	20,074	99,886
1966	10	6,573	86,594	8,659	28,600	0	77,935	0	3,797,100	167.8	57,065	17,717	95,652
1966	11	15,977	79,291	7,929	6,700	0	71,362	0	3,629,241	166.8	55,224	14,440	85,802
1966	12	(15,533)	79,289	7,931	200	0	71,361	0	3,486,393	165.9	57,065	13,334	84,695
		2,700	1,043,300	104,330	2,881,900	0	799,063	159,404			672354	222,568	1,181,035

PROPOSED OPERATION

		Evaporative Loss (ac-ft)	Texas Demand (ac-ft)	Louisiana Demand (ac-ft)	Inflow (ac-ft)	Shortage (ac-ft)	Hydropower Release (ac-ft)	Spills (ac-ft)	End-of-month Content (ac-ft)	End-of-month Elevation (ft)	Proposed Transfer (ac-ft)	Texas Return Flow (ac-ft)	Total D/S Flow (ac-ft)
1967	1	7,548	79,291	7,929	2,700	0	71,362	0	3,322,963	164.9	57,065	13,336	84,698
1967	2	(14,707)	76,161	7,616	28,800	0	68,545	0	3,214,148	164.2	52,003	14,495	83,040
1967	3	14,292	79,291	7,929	6,700	0	71,362	0	3,047,974	163.0	57,065	13,336	84,698
1967	4	(13,916)	86,594	8,659	101,600	0	77,935	0	2,990,302	162.5	55,224	18,822	96,757
1967	5	(41,476)	94,940	9,494	151,700	0	85,446	0	2,993,598	162.5	57,065	22,725	108,171
1967	6	9,701	94,940	9,494	216,300	0	85,446	0	3,010,317	162.7	55,224	23,830	109,276
1967	7	5,504	99,114	9,911	39,600	0	0	0	2,935,388	162.1	57,065	25,229	25,229
1967	8	38,896	99,114	9,911	14,900	0	0	0	2,802,367	161.0	57,065	25,229	25,229
1967	9	35,049	88,681	8,868	8,400	0	0	0	2,678,169	160.0	55,224	20,074	20,074
1967	10	28,904	86,594	8,659	1,500	0	0	0	2,555,512	159.0	57,065	17,717	17,717
1967	11	24,382	79,291	7,929	10,200	0	0	0	2,454,110	158.2	55,224	14,440	14,440
1967	12	0	79,289	7,931	48,600	0	0	0	2,415,490	157.8	57,065	13,334	13,334
		94,177	1,043,300	104,330	631,000	0	460,096	0			672354	222,568	682,664
1968	1	(18,868)	79,291	7,929	478,000	0	0	0	2,825,138	161.2	57,065	13,336	13,336
1968	2	0	76,161	7,616	200,500	0	0	0	2,941,861	162.1	52,003	14,495	14,495
1968	3	0	79,291	7,929	455,000	0	0	0	3,309,641	164.8	57,065	13,336	13,336
1968	4	(49,476)	86,594	8,659	1,364,000	0	77,935	72,929	4,477,000	172.0	55,224	18,822	169,686
1968	5	(36,320)	94,940	9,494	794,900	0	85,446	641,340	4,477,000	172.0	57,065	22,725	749,511
1968	6	0	94,940	9,494	571,000	0	85,446	381,120	4,477,000	172.0	55,224	23,830	490,396
1968	7	12,712	99,114	9,911	227,200	0	89,202	16,261	4,477,000	172.0	57,065	25,229	130,692
1968	8	35,789	99,114	9,911	48,200	0	89,202	0	4,291,184	170.9	57,065	25,229	114,431
1968	9	7,085	88,681	8,868	242,600	0	79,812	0	4,349,338	171.2	55,224	20,074	99,886
1968	10	29,978	86,594	8,659	90,500	0	77,935	0	4,236,672	170.5	57,065	17,717	95,652
1968	11	0	79,291	7,929	214,400	0	71,362	0	4,292,490	170.9	55,224	14,440	85,802
1968	12	0	79,289	7,931	711,800	0	71,361	368,709	4,477,000	172.0	57,065	13,334	453,404
		(19,100)	1,043,300	104,330	5,398,100	0	727,701	1,480,359			672354	222,568	2,430,628
1969	1	9,080	79,291	7,929	232,300	0	71,362	64,638	4,477,000	172.0	57,065	13,336	149,336
1969	2	(18,160)	76,161	7,616	519,000	0	68,545	384,838	4,477,000	172.0	52,003	14,495	467,878
1969	3	(18,160)	79,291	7,929	1,176,500	0	71,362	1,036,078	4,477,000	172.0	57,065	13,336	1,120,776
1969	4	(36,320)	86,594	8,659	1,371,900	0	77,935	1,235,032	4,477,000	172.0	55,224	18,822	1,331,789
1969	5	(18,160)	94,940	9,494	1,026,800	0	85,446	855,080	4,477,000	172.0	57,065	22,725	963,251
1969	6	50,848	94,940	9,494	352,500	0	85,446	111,772	4,477,000	172.0	55,224	23,830	221,048
1969	7	51,692	99,114	9,911	15,200	0	89,202	0	4,242,281	170.6	57,065	25,229	114,431
1969	8	65,135	99,114	9,911	19,500	0	89,202	0	3,998,419	169.1	57,065	25,229	114,431
1969	9	57,659	88,681	8,868	12,100	0	79,812	0	3,775,499	167.7	55,224	20,074	99,886
1969	10	30,172	86,594	8,659	10,800	0	77,935	0	3,582,939	166.5	57,065	17,717	95,652
1969	11	23,230	79,291	7,929	98,700	0	71,362	0	3,499,827	166.0	55,224	14,440	85,802
1969	12	(45,993)	79,289	7,931	86,900	0	71,361	0	3,474,139	165.8	57,065	13,334	84,695
		151,023	1,043,300	104,330	4,922,200	0	938,970	3,687,438			672354	222,568	4,848,976

PROPOSED OPERATION

		Evaporative Loss (ac-ft)	Texas Demand (ac-ft)	Louisiana Demand (ac-ft)	Inflow (ac-ft)	Shortage (ac-ft)	Hydropower Release (ac-ft)	Spills (ac-ft)	End-of-month Content (ac-ft)	End-of-month Elevation (ft)	Proposed Transfer (ac-ft)	Texas Return Flow (ac-ft)	Total D/S Flow (ac-ft)
1970	1	4,604	79,291	7,929	199,500	0	71,362	0	3,510,453	166.1	57,065	13,336	84,698
1970	2	0	76,161	7,616	157,900	0	68,545	0	3,516,031	166.1	52,003	14,495	83,040
1970	3	0	79,291	7,929	544,600	0	71,362	0	3,902,049	168.5	57,065	13,336	84,698
1970	4	8,352	86,594	8,659	311,800	0	77,935	0	4,032,309	169.3	55,224	18,822	96,757
1970	5	8,509	94,940	9,494	288,200	0	85,446	0	4,122,120	169.8	57,065	22,725	108,171
1970	6	28,740	94,940	9,494	50,700	0	85,446	0	3,954,200	168.8	55,224	23,830	109,276
1970	7	36,114	99,114	9,911	59,000	0	89,202	0	3,778,859	167.7	57,065	25,229	114,431
1970	8	66,534	99,114	9,911	38,300	0	89,202	0	3,552,398	166.3	57,065	25,229	114,431
1970	9	27,405	88,681	8,868	0	0	79,812	0	3,347,632	165.1	55,224	20,074	99,886
1970	10	(14,760)	86,594	8,659	37,800	0	77,935	0	3,227,004	164.3	57,065	17,717	95,652
1970	11	15,998	79,291	7,929	143,300	0	71,362	0	3,195,724	164.1	55,224	14,440	85,802
1970	12	4,316	79,289	7,931	89,700	0	71,361	0	3,122,527	163.6	57,065	13,334	84,695
		185,812	1,043,300	104,330	1,920,800	0	938,970	0			672354	222,568	1,161,538
1971	1	15,455	79,291	7,929	46,900	0	71,362	0	2,995,390	162.5	57,065	13,336	84,698
1971	2	2,753	76,161	7,616	98,500	0	54,010	0	2,953,350	162.2	52,003	14,495	68,505
1971	3	12,292	79,291	7,929	76,800	0	0	0	2,930,638	162.0	57,065	13,336	13,336
1971	4	37,809	86,594	8,659	63,800	0	0	0	2,861,376	161.5	55,224	18,822	18,822
1971	5	18,703	94,940	9,494	106,300	0	0	0	2,844,539	161.3	57,065	22,725	22,725
1971	6	48,588	94,940	9,494	34,500	0	0	0	2,726,017	160.4	55,224	23,830	23,830
1971	7	42,224	99,114	9,911	69,000	0	0	0	2,643,768	159.7	57,065	25,229	25,229
1971	8	27,500	99,114	9,911	42,800	0	0	0	2,550,043	158.9	57,065	25,229	25,229
1971	9	21,954	88,681	8,868	32,400	0	0	0	2,462,940	158.2	55,224	20,074	20,074
1971	10	20,232	86,594	8,659	26,400	0	0	0	2,373,855	157.5	57,065	17,717	17,717
1971	11	5,857	79,291	7,929	70,900	0	0	0	2,351,678	157.3	55,224	14,440	14,440
1971	12	(12,274)	79,289	7,931	430,700	0	0	0	2,707,432	160.2	57,065	13,334	13,334
		241,093	1,043,300	104,330	1,099,000	0	125,372	0			672354	222,568	347,940
1972	1	(6,970)	79,291	7,929	718,000	0	0	0	3,345,182	165.0	57,065	13,336	13,336
1972	2	11,975	76,161	7,616	194,500	0	68,545	0	3,375,385	165.2	52,003	14,495	83,040
1972	3	7,576	79,291	7,929	263,900	0	71,362	0	3,473,127	165.8	57,065	13,336	84,698
1972	4	30,220	86,594	8,659	76,600	0	77,935	0	3,346,319	165.1	55,224	18,822	96,757
1972	5	26,678	94,940	9,494	141,100	0	85,446	0	3,270,861	164.6	57,065	22,725	108,171
1972	6	36,179	94,940	9,494	56,900	0	85,446	0	3,101,702	163.4	55,224	23,830	109,276
1972	7	23,929	99,114	9,911	152,300	0	89,202	0	3,031,846	162.8	57,065	25,229	114,431
1972	8	39,923	99,114	9,911	34,200	0	0	0	2,917,098	161.9	57,065	25,229	25,229
1972	9	24,153	88,681	8,868	28,700	0	0	0	2,824,096	161.2	55,224	20,074	20,074
1972	10	14,561	86,594	8,659	94,800	0	0	0	2,809,082	161.0	57,065	17,717	17,717
1972	11	0	79,291	7,929	266,600	0	0	0	2,988,462	162.5	55,224	14,440	14,440
1972	12	0	79,289	7,931	467,400	0	71,361	0	3,297,281	164.7	57,065	13,334	84,695
		208,224	1,043,300	104,330	2,495,000	0	549,297	0			672354	222,568	771,865

PROPOSED OPERATION

		Evaporative Loss (ac-ft)	Texas Demand (ac-ft)	Louisiana Demand (ac-ft)	Inflow (ac-ft)	Shortage (ac-ft)	Hydropower Release (ac-ft)	Spills (ac-ft)	End-of-month Content (ac-ft)	End-of-month Elevation (ft)	Proposed Transfer (ac-ft)	Texas Return Flow (ac-ft)	Total D/S Flow (ac-ft)
1973	1	(15,599)	79,291	7,929	710,000	0	71,362	0	3,864,298	168.2	57,065	13,336	84,698
1973	2	0	76,161	7,616	444,900	0	68,545	0	4,156,876	170.0	52,003	14,495	83,040
1973	3	0	79,291	7,929	798,900	0	71,362	320,194	4,477,000	172.0	57,065	13,336	404,892
1973	4	0	86,594	8,659	821,500	0	77,935	648,312	4,477,000	172.0	55,224	18,822	745,069
1973	5	38,136	94,940	9,494	790,200	0	85,446	562,184	4,477,000	172.0	57,065	22,725	670,355
1973	6	14,528	94,940	9,494	720,900	0	85,446	516,492	4,477,000	172.0	55,224	23,830	625,768
1973	7	45,400	99,114	9,911	285,800	0	89,202	42,173	4,477,000	172.0	57,065	25,229	156,604
1973	8	46,552	99,114	9,911	65,900	0	89,202	0	4,298,121	170.9	57,065	25,229	114,431
1973	9	21,186	88,681	8,868	202,900	0	79,812	0	4,302,474	170.9	55,224	20,074	99,886
1973	10	23,284	86,594	8,659	500,400	0	77,935	129,402	4,477,000	172.0	57,065	17,717	225,054
1973	11	5,448	79,291	7,929	331,400	0	71,362	167,370	4,477,000	172.0	55,224	14,440	253,172
1973	12	0	79,289	7,931	1,008,700	0	71,361	850,119	4,477,000	172.0	57,065	13,334	934,814
		178,935	1,043,300	104,330	6,681,500	0	938,970	3,236,246			672354	222,568	4,397,784
1974	1	(41,768)	79,291	7,929	1,658,900	0	71,362	1,542,086	4,477,000	172.0	57,065	13,336	1,626,784
1974	2	5,448	76,161	7,616	714,300	0	68,545	556,530	4,477,000	172.0	52,003	14,495	639,570
1974	3	16,344	79,291	7,929	305,400	0	71,362	130,474	4,477,000	172.0	57,065	13,336	215,172
1974	4	38,136	86,594	8,659	406,400	0	77,935	195,076	4,477,000	172.0	55,224	18,822	291,833
1974	5	27,240	94,940	9,494	329,200	0	85,446	112,080	4,477,000	172.0	57,065	22,725	220,251
1974	6	69,008	94,940	9,494	294,700	0	85,446	35,812	4,477,000	172.0	55,224	23,830	145,088
1974	7	50,059	99,114	9,911	50,900	0	89,202	0	4,279,614	170.8	57,065	25,229	114,431
1974	8	34,574	99,114	9,911	16,500	0	89,202	0	4,063,313	169.5	57,065	25,229	114,431
1974	9	18,813	88,681	8,868	283,500	0	79,812	0	4,150,639	170.0	55,224	20,074	99,886
1974	10	22,466	86,594	8,659	233,300	0	77,935	0	4,188,285	170.2	57,065	17,717	95,652
1974	11	0	79,291	7,929	669,400	0	71,362	222,103	4,477,000	172.0	55,224	14,440	307,905
1974	12	(18,160)	79,289	7,931	1,031,200	0	71,361	890,779	4,477,000	172.0	57,065	13,334	975,474
		222,160	1,043,300	104,330	5,993,700	0	938,970	3,684,940			672354	222,568	4,846,478
1975	1	(5,448)	79,291	7,929	682,100	0	71,362	528,966	4,477,000	172.0	57,065	13,336	613,664
1975	2	0	76,161	7,616	1,292,100	0	68,545	1,139,778	4,477,000	172.0	52,003	14,495	1,222,818
1975	3	0	79,291	7,929	602,500	0	71,362	443,918	4,477,000	172.0	57,065	13,336	528,616
1975	4	0	86,594	8,659	505,300	0	77,935	332,112	4,477,000	172.0	55,224	18,822	428,869
1975	5	0	94,940	9,494	1,257,100	0	85,446	1,067,220	4,477,000	172.0	57,065	22,725	1,175,391
1975	6	30,872	94,940	9,494	442,600	0	85,446	221,848	4,477,000	172.0	55,224	23,830	331,124
1975	7	34,385	99,114	9,911	188,600	0	89,202	0	4,432,988	171.7	57,065	25,229	114,431
1975	8	42,482	99,114	9,911	7,200	0	89,202	0	4,199,479	170.3	57,065	25,229	114,431
1975	9	47,799	88,681	8,868	18,000	0	79,812	0	3,992,319	169.0	55,224	20,074	99,886
1975	10	23,242	86,594	8,659	75,000	0	77,935	0	3,870,889	168.3	57,065	17,717	95,652
1975	11	21,134	79,291	7,929	60,100	0	71,362	0	3,751,273	167.5	55,224	14,440	85,802
1975	12	1,593	79,289	7,931	53,800	0	71,361	0	3,644,899	166.9	57,065	13,334	84,695
		196,059	1,043,300	104,330	5,184,400	0	938,970	3,733,842			672354	222,568	4,895,380

PROPOSED OPERATION

		Evaporative Loss (ac-ft)	Texas Demand (ac-ft)	Louisiana Demand (ac-ft)	Inflow (ac-ft)	Shortage (ac-ft)	Hydropower Release (ac-ft)	Spills (ac-ft)	End-of-month Content (ac-ft)	End-of-month Elevation (ft)	Proposed Transfer (ac-ft)	Texas Return Flow (ac-ft)	Total D/S Flow (ac-ft)
1976	1	11,110	79,291	7,929	231,800	0	71,362	0	3,707,007	167.3	57,065	13,336	84,698
1976	2	6,309	76,161	7,616	27,000	0	68,545	0	3,575,376	166.5	52,003	14,495	83,040
1976	3	0	79,291	7,929	423,000	0	71,362	0	3,839,794	168.1	57,065	13,336	84,698
1976	4	30,620	86,594	8,659	47,400	0	77,935	0	3,683,386	167.1	55,224	18,822	96,757
1976	5	22,971	94,940	9,494	573,600	0	85,446	0	4,044,135	169.3	57,065	22,725	108,171
1976	6	34,378	94,940	9,494	410,400	0	85,446	0	4,230,277	170.5	55,224	23,830	109,276
1976	7	22,535	99,114	9,911	136,400	0	89,202	0	4,145,915	170.0	57,065	25,229	114,431
1976	8	71,722	99,114	9,911	173,900	0	89,202	0	4,049,866	169.4	57,065	25,229	114,431
1976	9	33,388	88,681	8,868	39,100	0	79,812	0	3,878,217	168.3	55,224	20,074	99,886
1976	10	29,259	86,594	8,659	66,700	0	77,935	0	3,742,470	167.5	57,065	17,717	95,652
1976	11	1,588	79,291	7,929	35,000	0	71,362	0	3,617,300	166.7	55,224	14,440	85,802
1976	12	0	79,289	7,931	207,200	0	71,361	0	3,665,919	167.0	57,065	13,334	84,695
		263,880	1,043,300	104,330	2,371,500	0	938,970	0			672354	222,568	1,161,538
1977	1	(15,933)	79,291	7,929	205,900	0	71,362	0	3,729,170	167.4	57,065	13,336	84,698
1977	2	0	76,161	7,616	395,200	0	68,545	0	3,972,048	168.9	52,003	14,495	83,040
1977	3	3,488	79,291	7,929	793,200	0	71,362	126,178	4,477,000	172.0	57,065	13,336	210,876
1977	4	19,976	86,594	8,659	574,200	0	77,935	381,036	4,477,000	172.0	55,224	18,822	477,793
1977	5	54,268	94,940	9,494	194,600	0	85,446	0	4,427,452	171.7	57,065	22,725	108,171
1977	6	47,933	94,940	9,494	52,000	0	85,446	0	4,241,639	170.6	55,224	23,830	109,276
1977	7	60,029	99,114	9,911	22,900	0	89,202	0	4,006,283	169.1	57,065	25,229	114,431
1977	8	28,279	99,114	9,911	100,400	0	89,202	0	3,880,177	168.3	57,065	25,229	114,431
1977	9	43,667	88,681	8,868	24,000	0	79,812	0	3,683,149	167.1	55,224	20,074	99,886
1977	10	51,542	86,594	8,659	33,900	0	77,935	0	3,492,319	165.9	57,065	17,717	95,652
1977	11	0	79,291	7,929	80,600	0	71,362	0	3,414,337	165.5	55,224	14,440	85,802
1977	12	10,522	79,289	7,931	104,600	0	71,361	0	3,349,834	165.1	57,065	13,334	84,695
		303,771	1,043,300	104,330	2,581,500	0	938,970	507,214			672354	222,568	1,668,752
1978	1	(21,269)	79,291	7,929	314,300	0	71,362	0	3,526,821	166.2	57,065	13,336	84,698
1978	2	0	76,161	7,616	292,600	0	68,545	0	3,667,099	167.0	52,003	14,495	83,040
1978	3	7,994	79,291	7,929	266,600	0	71,362	0	3,767,123	167.6	57,065	13,336	84,698
1978	4	24,005	86,594	8,659	107,400	0	77,935	0	3,677,330	167.1	55,224	18,822	96,757
1978	5	34,790	94,940	9,494	181,800	0	85,446	0	3,634,460	166.8	57,065	22,725	108,171
1978	6	61,718	94,940	9,494	25,600	0	85,446	0	3,408,462	165.4	55,224	23,830	109,276
1978	7	57,652	99,114	9,911	29,200	0	89,202	0	3,181,783	164.0	57,065	25,229	114,431
1978	8	42,399	99,114	9,911	44,600	0	89,202	0	2,985,757	162.5	57,065	25,229	114,431
1978	9	(13,980)	88,681	8,868	268,200	0	79,812	0	3,090,576	163.3	55,224	20,074	99,886
1978	10	51,526	86,594	8,659	10,300	0	747	0	2,953,350	162.2	57,065	17,717	18,464
1978	11	0	79,291	7,929	58,900	0	0	0	2,925,030	162.0	55,224	14,440	14,440
1978	12	12,461	79,289	7,931	245,900	0	0	0	3,071,249	163.2	57,065	13,334	13,334
		257,296	1,043,300	104,330	1,845,400	0	719,059	0			672354	222,568	941,627

PROPOSED OPERATION

		Evaporative Loss (ac-ft)	Texas Demand (ac-ft)	Louisiana Demand (ac-ft)	Inflow (ac-ft)	Shortage (ac-ft)	Hydropower Release (ac-ft)	Spills (ac-ft)	End-of-month Content (ac-ft)	End-of-month Elevation (ft)	Proposed Transfer (ac-ft)	Texas Return Flow (ac-ft)	Total D/S Flow (ac-ft)
1979	1	(25,026)	79,291	7,929	1,182,100	0	71,362	0	4,119,793	169.8	57,065	13,336	84,698
1979	2	(17,650)	76,161	7,616	901,900	0	68,545	410,021	4,477,000	172.0	52,003	14,495	493,061
1979	3	3,632	79,291	7,929	752,200	0	71,362	589,986	4,477,000	172.0	57,065	13,336	674,684
1979	4	3,632	86,594	8,659	1,059,900	0	77,935	883,080	4,477,000	172.0	55,224	18,822	979,837
1979	5	23,608	94,940	9,494	946,100	0	85,446	732,612	4,477,000	172.0	57,065	22,725	840,783
1979	6	54,480	94,940	9,494	601,200	0	85,446	356,840	4,477,000	172.0	55,224	23,830	466,116
1979	7	35,976	99,114	9,911	113,700	0	89,202	0	4,356,497	171.3	57,065	25,229	114,431
1979	8	66,718	99,114	9,911	84,100	0	89,202	0	4,175,652	170.1	57,065	25,229	114,431
1979	9	29,266	88,681	8,868	148,000	0	79,812	0	4,117,025	169.8	55,224	20,074	99,886
1979	10	33,837	86,594	8,659	57,900	0	77,935	0	3,967,900	168.9	57,065	17,717	95,652
1979	11	23,401	79,291	7,929	188,700	0	71,362	0	3,974,617	168.9	55,224	14,440	85,802
1979	12	0	79,289	7,931	255,700	0	71,361	0	4,071,736	169.5	57,065	13,334	84,695
		231,874	1,043,300	104,330	6,291,500	0	938,970	2,972,539			672354	222,568	4,134,077
1980	1	(12,199)	79,291	7,929	443,900	0	71,362	0	4,369,253	171.3	57,065	13,336	84,698
1980	2	0	76,161	7,616	587,300	0	68,545	327,231	4,477,000	172.0	52,003	14,495	410,271
1980	3	0	79,291	7,929	493,100	0	71,362	334,518	4,477,000	172.0	57,065	13,336	419,216
1980	4	1,816	86,594	8,659	968,000	0	77,935	792,996	4,477,000	172.0	55,224	18,822	889,753
1980	5	14,528	94,940	9,494	790,700	0	85,446	586,292	4,477,000	172.0	57,065	22,725	694,463
1980	6	86,125	94,940	9,494	123,800	0	85,446	0	4,324,795	171.1	55,224	23,830	109,276
1980	7	97,115	99,114	9,911	27,100	0	89,202	0	4,056,553	169.4	57,065	25,229	114,431
1980	8	107,573	99,114	9,911	19,600	0	89,202	0	3,770,353	167.7	57,065	25,229	114,431
1980	9	60,222	88,681	8,868	32,700	0	79,812	0	3,565,470	166.4	55,224	20,074	99,886
1980	10	29,032	86,594	8,659	9,700	0	77,935	0	3,372,950	165.2	57,065	17,717	95,652
1980	11	0	79,291	7,929	9,900	0	71,362	0	3,224,268	164.3	55,224	14,440	85,802
1980	12	17,286	79,289	7,931	57,200	0	71,361	0	3,105,601	163.4	57,065	13,334	84,695
		401,498	1,043,300	104,330	3,563,000	0	938,970	2,041,037			672354	222,568	3,202,575
1981	1	2,794	79,291	7,929	21,800	0	71,362	0	2,966,025	162.3	57,065	13,336	84,698
1981	2	0	76,161	7,616	64,100	0	0	0	2,946,348	162.1	52,003	14,495	14,495
1981	3	6,857	79,291	7,929	119,000	0	0	0	2,971,271	162.3	57,065	13,336	13,336
1981	4	31,388	86,594	8,659	61,700	0	0	0	2,906,330	161.8	55,224	18,822	18,822
1981	5	26,093	94,940	9,494	246,800	0	0	0	3,022,603	162.8	57,065	22,725	22,725
1981	6	20,383	94,940	9,494	599,100	0	85,446	0	3,411,440	165.5	55,224	23,830	109,276
1981	7	43,282	99,114	9,911	108,500	0	89,202	0	3,278,431	164.6	57,065	25,229	114,431
1981	8	67,300	99,114	9,911	192,400	0	89,202	0	3,205,304	164.2	57,065	25,229	114,431
1981	9	33,053	88,681	8,868	109,000	0	79,812	0	3,103,890	163.4	55,224	20,074	99,886
1981	10	16,744	86,594	8,659	42,300	0	77,935	0	2,956,258	162.2	57,065	17,717	95,652
1981	11	12,331	79,291	7,929	123,900	0	27,257	0	2,953,350	162.2	55,224	14,440	41,697
1981	12	9,544	79,289	7,931	60,500	0	0	0	2,917,086	161.9	57,065	13,334	13,334
		269,769	1,043,300	104,330	1,749,100	0	520,216	0			672354	222,568	742,784

PROPOSED OPERATION

	Evaporative Loss (ac-ft)	Texas Demand (ac-ft)	Louisiana Demand (ac-ft)	Inflow (ac-ft)	Shortage (ac-ft)	Hydropower Release (ac-ft)	Spills (ac-ft)	End-of-month Content (ac-ft)	End-of-month Elevation (ft)	Proposed Transfer (ac-ft)	Texas Return Flow (ac-ft)	Total D/S Flow (ac-ft)
1982	1	(1,359)	79,291	7,929	94,800	0	0	2,926,025	162.0	57,065	13,336	13,336
1982	2	0	76,161	7,616	199,100	0	0	3,041,348	162.9	52,003	14,495	14,495
1982	3	2,808	79,291	7,929	189,900	0	71,362	3,069,858	163.1	57,065	13,336	84,698
1982	4	0	86,594	8,659	605,700	0	77,935	3,502,370	166.0	55,224	18,822	96,757
1982	5	33,645	94,940	9,494	166,300	0	85,446	3,445,145	165.7	57,065	22,725	108,171
1982	6	39,081	94,940	9,494	103,000	0	85,446	3,319,184	164.9	55,224	23,830	109,276
1982	7	51,210	99,114	9,911	95,500	0	89,202	3,165,247	163.9	57,065	25,229	114,431
1982	8	49,179	99,114	9,911	10,200	0	63,893	2,953,350	162.2	57,065	25,229	89,122
1982	9	39,101	88,681	8,868	9,900	0	0	2,826,600	161.2	55,224	20,074	20,074
1982	10	10,571	86,594	8,659	71,700	0	0	2,792,476	160.9	57,065	17,717	17,717
1982	11	0	79,291	7,929	186,400	0	0	2,891,656	161.7	55,224	14,440	14,440
1982	12	(45,877)	79,289	7,931	1,205,000	0	0	4,055,313	169.4	57,065	13,334	13,334
		178,359	1,043,300	104,330	2,937,500	0	473,284			672354	222,568	695,852
1983	1	0	79,291	7,929	362,100	0	71,362	4,258,831	170.7	57,065	13,336	84,698
1983	2	(17,848)	76,161	7,616	1,116,300	0	68,545	763,657	172.0	52,003	14,495	846,697
1983	3	10,896	79,291	7,929	634,700	0	71,362	465,222	172.0	57,065	13,336	549,920
1983	4	27,240	86,594	8,659	227,500	0	77,935	27,072	172.0	55,224	18,822	123,829
1983	5	1,816	94,940	9,494	934,400	0	85,446	742,704	172.0	57,065	22,725	850,875
1983	6	34,409	94,940	9,494	189,300	0	85,446	4,442,011	171.8	55,224	23,830	109,276
1983	7	73,234	99,114	9,911	132,800	0	89,202	4,303,350	170.9	57,065	25,229	114,431
1983	8	43,433	99,114	9,911	38,300	0	89,202	4,099,990	169.7	57,065	25,229	114,431
1983	9	40,332	88,681	8,868	23,400	0	79,812	3,905,697	168.5	55,224	20,074	99,886
1983	10	50,303	86,594	8,659	13,100	0	77,935	3,695,306	167.2	57,065	17,717	95,652
1983	11	4,764	79,291	7,929	130,700	0	71,362	3,662,660	167.0	55,224	14,440	85,802
1983	12	(16,303)	79,289	7,931	471,200	0	71,361	3,991,582	169.0	57,065	13,334	84,695
		252,276	1,043,300	104,330	4,273,800	0	938,970	1,998,655		672354	222,568	3,160,193
1984	1	(5,070)	79,291	7,929	243,400	0	71,362	4,081,470	169.6	57,065	13,336	84,698
1984	2	0	76,161	7,616	625,700	0	68,545	77,848	172.0	52,003	14,495	160,888
1984	3	9,080	79,291	7,929	682,300	0	71,362	514,638	172.0	57,065	13,336	599,336
1984	4	36,304	86,594	8,659	203,800	0	77,935	0	172.0	55,224	18,822	96,757
1984	5	39,696	94,940	9,494	159,500	0	85,446	4,401,232	171.5	57,065	22,725	108,171
1984	6	45,897	94,940	9,494	32,100	0	85,446	4,197,555	170.3	55,224	23,830	109,276
1984	7	64,723	99,114	9,911	32,600	0	89,202	3,967,205	168.9	57,065	25,229	114,431
1984	8	57,335	99,114	9,911	30,400	0	89,202	3,742,043	167.5	57,065	25,229	114,431
1984	9	39,419	88,681	8,868	12,400	0	79,812	3,537,663	166.2	55,224	20,074	99,886
1984	10	0	86,594	8,659	307,400	0	77,935	3,671,875	167.1	57,065	17,717	95,652
1984	11	1,598	79,291	7,929	243,100	0	71,362	3,754,795	167.6	55,224	14,440	85,802
1984	12	6,484	79,289	7,931	244,000	0	71,361	3,833,730	168.0	57,065	13,334	84,695
		295,466	1,043,300	104,330	2,816,700	0	938,970	592,486		672354	222,568	1,754,024

PROPOSED OPERATION

		Evaporative Loss (ac-ft)	Texas Demand (ac-ft)	Louisiana Demand (ac-ft)	Inflow (ac-ft)	Shortage (ac-ft)	Hydropower Release (ac-ft)	Spills (ac-ft)	End-of-month Content (ac-ft)	End-of-month Elevation (ft)	Proposed Transfer (ac-ft)	Texas Return Flow (ac-ft)	Total D/S Flow (ac-ft)
1985	1	1,654	79,291	7,929	313,700	0	71,362	0	3,987,194	169.0	57,065	13,336	84,698
1985	2	0	76,161	7,616	629,200	0	68,545	0	4,464,072	171.9	52,003	14,495	83,040
1985	3	10,885	79,291	7,929	544,200	0	71,362	361,805	4,477,000	172.0	57,065	13,336	446,503
1985	4	29,056	86,594	8,659	264,900	0	77,935	62,656	4,477,000	172.0	55,224	18,822	159,413
1985	5	43,584	94,940	9,494	458,400	0	85,446	224,936	4,477,000	172.0	57,065	22,725	333,107
1985	6	66,364	94,940	9,494	99,500	0	85,446	0	4,320,256	171.0	55,224	23,830	109,276
1985	7	69,494	99,114	9,911	30,600	0	89,202	0	4,083,135	169.6	57,065	25,229	114,431
1985	8	84,968	99,114	9,911	21,300	0	89,202	0	3,821,240	168.0	57,065	25,229	114,431
1985	9	46,428	88,681	8,868	30,200	0	79,812	0	3,627,651	166.8	55,224	20,074	99,886
1985	10	0	86,594	8,659	197,700	0	77,935	0	3,652,163	166.9	57,065	17,717	95,652
1985	11	0	79,291	7,929	328,600	0	71,362	0	3,822,181	168.0	55,224	14,440	85,802
1985	12	1,689	79,289	7,931	578,600	0	71,361	0	4,240,511	170.5	57,065	13,334	84,695
		354,122	1,043,300	104,330	3,496,900	0	938,970	649,397			672354	222,568	1,810,935
1986	1	17,362	79,291	7,929	90,700	0	71,362	0	4,155,267	170.0	57,065	13,336	84,698
1986	2	0	76,161	7,616	450,400	0	68,545	0	4,453,345	171.9	52,003	14,495	83,040
1986	3	30,604	79,291	7,929	126,000	0	71,362	0	4,390,159	171.5	57,065	13,336	84,698
1986	4	19,763	86,594	8,659	231,300	0	77,935	0	4,428,508	171.7	55,224	18,822	96,757
1986	5	19,900	94,940	9,494	448,100	0	85,446	189,828	4,477,000	172.0	57,065	22,725	297,999
1986	6	19,976	94,940	9,494	897,700	0	85,446	687,844	4,477,000	172.0	55,224	23,830	797,120
1986	7	84,719	99,114	9,911	188,600	0	89,202	0	4,382,654	171.4	57,065	25,229	114,431
1986	8	52,952	99,114	9,911	83,400	0	89,202	0	4,214,875	170.4	57,065	25,229	114,431
1986	9	34,260	88,681	8,868	14,800	0	79,812	0	4,018,054	169.2	55,224	20,074	99,886
1986	10	8,351	86,594	8,659	78,800	0	77,935	0	3,915,315	168.5	57,065	17,717	95,652
1986	11	(17,205)	79,291	7,929	596,300	0	71,362	0	4,370,238	171.3	55,224	14,440	85,802
1986	12	0	79,289	7,931	662,200	0	71,361	396,857	4,477,000	172.0	57,065	13,334	481,552
		270,682	1,043,300	104,330	3,868,300	0	938,970	1,274,529			672354	222,568	2,436,067
1987	1	(12,712)	79,291	7,929	331,900	0	71,362	186,030	4,477,000	172.0	57,065	13,336	270,728
1987	2	(18,160)	76,161	7,616	893,500	0	68,545	759,338	4,477,000	172.0	52,003	14,495	842,378
1987	3	18,160	79,291	7,929	617,000	0	71,362	440,258	4,477,000	172.0	57,065	13,336	524,956
1987	4	63,440	86,594	8,659	212,600	0	77,935	0	4,452,972	171.9	55,224	18,822	96,757
1987	5	19,655	94,940	9,494	53,000	0	85,446	0	4,296,437	170.9	57,065	22,725	108,171
1987	6	29,816	94,940	9,494	146,200	0	85,446	0	4,222,941	170.4	55,224	23,830	109,276
1987	7	44,669	99,114	9,911	65,400	0	89,202	0	4,045,445	169.3	57,065	25,229	114,431
1987	8	63,152	99,114	9,911	45,900	0	89,202	0	3,829,966	168.0	57,065	25,229	114,431
1987	9	38,478	88,681	8,868	20,900	0	79,812	0	3,635,027	166.8	55,224	20,074	99,886
1987	10	40,245	86,594	8,659	21,000	0	77,935	0	3,442,594	165.6	57,065	17,717	95,652
1987	11	0	79,291	7,929	361,600	0	71,362	0	3,645,612	166.9	55,224	14,440	85,802
1987	12	(16,567)	79,289	7,931	689,500	0	71,361	0	4,193,098	170.3	57,065	13,334	84,695
		270,176	1,043,300	104,330	3,458,500	0	938,970	1,385,626			672354	222,568	2,547,164

PROPOSED OPERATION

		Evaporative Loss (ac-ft)	Texas Demand (ac-ft)	Louisiana Demand (ac-ft)	Inflow (ac-ft)	Shortage (ac-ft)	Hydropower Release (ac-ft)	Spills (ac-ft)	End-of-month Content (ac-ft)	End-of-month Elevation (ft)	Proposed Transfer (ac-ft)	Texas Return Flow (ac-ft)	Total D/S Flow (ac-ft)
1988	1	19,530	79,291	7,929	951,300	0	71,362	489,286	4,477,000	172.0	57,065	13,336	573,984
1988	2	10,896	76,161	7,616	384,900	0	68,545	221,682	4,477,000	172.0	52,003	14,495	304,722
1988	3	(43,584)	79,291	7,929	602,700	0	71,362	487,702	4,477,000	172.0	57,065	13,336	572,400
1988	4	52,664	86,594	8,659	384,500	0	77,935	158,648	4,477,000	172.0	55,224	18,822	255,405
1988	5	89,269	94,940	9,494	64,700	0	85,446	0	4,262,551	170.7	57,065	22,725	108,171
1988	6	86,120	94,940	9,494	49,800	0	85,446	0	4,036,351	169.3	55,224	23,830	109,276
1988	7	61,482	99,114	9,911	60,900	0	89,202	0	3,837,542	168.1	57,065	25,229	114,431
1988	8	56,206	99,114	9,911	62,700	0	89,202	0	3,645,809	166.9	57,065	25,229	114,431
1988	9	72,892	88,681	8,868	57,200	0	79,812	0	3,452,756	165.7	55,224	20,074	99,886
1988	10	36,003	86,594	8,659	47,100	0	77,935	0	3,290,665	164.7	57,065	17,717	95,652
1988	11	32,169	79,291	7,929	87,600	0	71,362	0	3,187,514	164.1	55,224	14,440	85,802
1988	12	(48,180)	79,289	7,931	197,800	0	71,361	0	3,274,913	164.6	57,065	13,334	84,695
		425,467	1,043,300	104,330	2,951,200	0	938,970	1,357,318			672,354	222,568	2,518,856
1989	1	(63,490)	79,291	7,929	627,400	0	71,362	0	3,807,221	167.9	57,065	13,336	84,698
1989	2	(8,547)	76,161	7,616	737,300	0	68,545	0	4,400,746	171.5	52,003	14,495	83,040
1989	3	(37,907)	79,291	7,929	689,000	0	71,362	492,071	4,477,000	172.0	57,065	13,336	576,769
1989	4	65,376	86,594	8,659	913,200	0	77,935	674,636	4,477,000	172.0	55,224	18,822	771,393
1989	5	(9,080)	94,940	9,494	1,414,100	0	85,446	1,233,300	4,477,000	172.0	57,065	22,725	1,341,471
1989	6	(136,201)	94,940	9,494	1,754,400	0	85,446	1,700,721	4,477,000	172.0	55,224	23,830	1,809,997
1989	7	(30,872)	99,114	9,911	1,128,600	0	89,202	961,245	4,477,000	172.0	57,065	25,229	1,075,676
1989	8	96,730	99,114	9,911	122,000	0	89,202	0	4,304,043	170.9	57,065	25,229	114,431
1989	9	78,148	88,681	8,868	45,800	0	79,812	0	4,094,334	169.6	55,224	20,074	99,886
1989	10	72,222	86,594	8,659	55,900	0	77,935	0	3,904,824	168.5	57,065	17,717	95,652
1989	11	42,324	79,291	7,929	28,400	0	71,362	0	3,732,318	167.4	55,224	14,440	85,802
1989	12	(22,292)	79,289	7,931	60,000	0	71,361	0	3,656,029	167.0	57,065	13,334	84,695
		46,411	1,043,300	104,330	7,576,100	0	938,970	5,061,973			672,354	222,568	6,223,511

APPENDIX E
HISTORICAL STREAM FLOWS

Table E-1

Sabine River Gage Near Ruliff, Historical Flows: 1940-1989 (Acre-Feet)

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
1940	573,937	1,015,080	259,458	448,304	558,525	525,659	349,983	833,771	177,818	70,139	625,027	2,911,139	8,348,840
1941	1,991,007	763,200	1,339,636	635,365	1,154,102	1,365,619	1,161,738	213,759	226,235	269,058	1,085,236	654,188	10,859,143
1942	588,416	536,132	933,976	1,145,216	1,266,049	873,322	334,433	200,846	373,428	101,534	119,663	173,117	6,646,132
1943	513,243	236,985	286,830	363,372	184,225	344,588	569,058	103,710	63,346	85,702	98,878	149,831	2,999,766
1944	833,494	808,462	1,141,884	1,268,032	2,854,610	1,505,434	140,926	80,985	182,559	77,574	144,980	664,681	9,703,621
1945	2,081,850	1,330,512	1,394,181	3,363,767	925,170	292,760	855,986	331,656	115,775	512,449	298,988	610,492	12,113,586
1946	1,778,697	2,232,792	1,766,082	986,995	998,878	1,964,230	769,091	179,068	143,564	142,393	786,109	1,305,520	13,053,417
1947	2,198,082	804,357	1,212,495	937,190	590,915	309,818	126,476	50,434	66,633	52,003	180,361	754,472	7,283,236
1948	824,925	1,266,247	1,073,652	798,565	445,785	385,646	89,613	42,883	33,747	26,106	259,583	176,132	5,424,884
1949	747,292	1,129,388	1,219,636	1,203,173	629,871	296,945	232,820	235,854	93,402	500,211	403,914	749,791	7,442,297
1950	1,564,165	1,841,454	1,752,197	386,499	1,319,404	2,390,300	305,673	197,276	131,722	111,213	103,339	110,737	10,213,979
1951	456,218	413,911	536,370	651,927	348,853	150,962	151,815	46,675	84,791	56,918	59,675	190,155	3,148,270
1952	167,088	735,709	646,433	1,005,639	973,884	512,509	205,884	74,297	28,820	23,252	38,838	239,960	4,652,313
1953	342,030	615,669	1,327,338	456,178	4,059,568	1,226,380	262,195	221,871	116,965	61,135	69,164	305,296	9,063,789
1954	374,023	319,696	192,516	361,745	963,114	218,519	48,587	31,618	20,721	24,077	167,925	102,823	2,825,364
1955	211,121	670,254	350,995	950,162	389,038	217,765	138,962	626,697	185,911	80,430	57,005	120,873	3,999,213
1956	186,883	726,466	347,524	341,891	448,740	89,792	42,256	89,792	19,402	17,508	42,976	227,238	2,313,032
1957	100,661	274,155	677,593	893,553	2,477,553	1,387,239	656,886	95,187	132,198	301,150	1,365,851	1,128,515	9,510,541
1958	929,970	764,826	640,820	571,715	1,485,222	522,010	274,968	161,335	733,884	681,381	182,301	185,236	7,133,668
1959	175,061	932,231	576,872	677,871	657,639	270,764	239,802	206,618	81,362	177,679	158,858	457,031	4,611,588
1960	949,289	853,851	1,052,231	291,035	208,721	134,420	195,352	94,453	78,682	129,005	289,825	1,033,963	5,410,847
1961	2,186,974	1,221,223	1,261,685	1,042,452	208,106	253,091	539,345	204,337	614,221	135,729	312,892	1,279,477	9,259,532
1962	872,945	628,046	577,686	345,203	663,213	292,066	129,124	82,746	110,321	81,243	80,886	208,165	4,071,644
1963	326,301	257,851	261,005	161,970	270,783	82,274	91,081	45,628	182,231	28,288	78,785	172,453	1,958,650
1964	242,003	185,117	597,362	431,107	387,649	111,739	53,345	39,479	31,894	30,960	34,255	166,036	2,310,946
1965	147,015	361,765	495,114	550,234	332,469	637,428	113,653	37,103	48,821	44,793	41,336	254,053	3,063,784
1966	337,230	1,379,979	316,780	222,406	2,027,701	614,023	80,182	74,023	75,263	62,543	72,196	113,185	5,375,511
1967	181,964	166,512	161,573	333,094	125,675	109,059	49,507	23,478	19,811	17,939	19,478	104,255	1,312,343
1968	260,787	89,673	155,683	376,958	381,560	1,022,737	343,359	201,580	336,099	165,521	129,144	1,075,834	4,538,935
1969	665,196	494,241	1,689,718	1,978,115	1,475,900	633,461	206,281	217,666	191,008	49,474	87,433	108,363	7,796,856
1970	139,735	191,365	600,515	762,902	493,170	84,952	121,981	164,102	187,478	335,238	168,297	132,188	3,381,923
1971	270,010	184,681	328,106	81,315	92,509	119,716	93,592	85,095	36,944	63,221	58,397	871,701	2,265,287
1972	1,257,718	606,267	282,525	147,094	319,101	191,790	207,947	343,359	343,983	119,427	146,856	468,258	4,434,335
1973	1,071,471	998,082	1,122,823	1,606,214	1,428,098	907,715	779,087	385,111	626,360	410,618	519,153	1,078,214	10,932,946
1974	2,016,594	1,554,644	641,851	566,400	565,329	356,846	349,904	358,631	340,800	77,240	374,658	1,264,264	8,467,161
1975	1,456,065	1,312,462	1,260,297	897,163	1,322,816	919,537	573,163	490,810	335,544	165,580	91,517	121,884	8,946,838
1976	158,856	216,912	610,948	428,469	517,487	699,471	523,239	482,638	295,894	108,264	89,349	252,892	4,364,419
1977	433,606	453,084	833,732	770,360	376,304	251,226	227,940	271,835	266,737	72,559	105,933	255,630	4,318,946
1978	382,790	514,909	352,324	127,131	150,319	215,405	160,681	126,305	200,628	48,660	93,253	231,352	2,603,757
1979	972,852	1,339,636	1,446,743	1,463,801	1,048,661	1,027,140	364,939	290,777	402,030	135,973	181,071	549,203	9,222,826
1980	596,767	945,123	785,176	1,272,198	1,289,632	261,798	195,868	177,917	150,303	97,134	84,797	84,018	5,940,731
1981	87,449	127,815	140,828	94,262	152,749	310,036	397,150	420,515	96,020	91,154	91,735	111,233	2,120,746
1982	119,603	473,315	225,005	572,429	607,378	211,478	231,154	270,248	72,938	85,686	152,033	1,357,170	4,378,437
1983	1,457,851	1,367,801	1,101,223	569,534	863,643	689,276	478,135	280,145	140,311	84,813	118,459	895,834	8,047,025
1984	623,325	880,601	1,175,404	362,856	153,759	253,527	251,762	116,541	102,692	305,197	428,906	611,563	5,266,133
1985	470,261	638,182	1,087,933	441,719	325,567	256,026	247,121	169,537	135,483	201,472	336,781	663,992	4,974,074
1986	732,818	680,055	270,768	171,288	260,986	1,151,068	595,121	247,754	129,123	268,760	705,401	1,036,185	6,249,327
1987	1,104,595	516,674	1,191,074	608,727	237,203	462,744	435,848	291,213	110,856	91,716	234,406	846,426	6,131,482
1988	1,066,115	568,919	928,423	544,919	166,770	161,891	117,679	118,034	110,102	80,340	72,230	140,291	4,075,713
1989	639,153	853,090	824,429	924,575	1,489,665	1,561,566	2,602,015	346,849	293,197	172,899	105,402	146,578	9,959,438
Avg.	757,310	751,588	789,105	711,462	813,481	576,676	354,254	208,296	181,561	142,707	231,467	537,038	6,054,945

Table E-2

Sabine River Gage Near Bon Wier, Historical Flows: 1940-1989 (Acre-Feet)

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
1940	351,253	885,500	195,649	461,395	431,028	505,606	276,734	413,930	138,218	42,795	510,962	2,324,032	6,537,102
1941	1,656,793	664,284	1,141,289	520,978	1,064,152	1,107,828	854,003	140,390	146,777	236,568	964,601	584,211	9,081,874
1942	446,102	457,785	740,410	949,348	1,236,099	699,094	192,059	117,346	256,125	66,778	89,078	138,585	5,388,807
1943	380,846	165,977	206,321	277,944	144,079	392,152	367,529	37,882	26,649	65,084	63,072	84,504	2,214,039
1944	597,203	585,441	923,107	1,003,914	2,381,553	1,168,105	77,611	43,127	125,435	38,630	93,318	474,268	7,511,712
1945	1,617,917	960,396	1,279,140	2,864,329	642,823	230,340	832,661	210,843	67,809	447,659	200,073	389,851	9,743,841
1946	1,441,031	1,816,264	1,384,462	798,307	954,565	1,581,619	370,691	113,702	96,516	99,531	745,487	967,933	10,370,108
1947	1,654,214	584,291	985,487	798,585	510,863	196,959	99,562	35,115	47,784	32,719	153,574	558,525	5,657,678
1948	624,099	1,039,973	851,504	617,892	451,517	274,802	60,563	32,249	25,474	22,009	183,790	108,623	4,292,295
1949	641,216	820,363	932,231	787,358	434,003	237,183	168,654	167,345	68,713	431,218	302,559	522,644	5,513,487
1950	1,506,208	1,529,652	1,454,419	301,527	1,145,652	1,729,308	205,210	152,945	97,904	79,855	73,807	75,808	8,352,295
1951	366,803	360,972	470,618	431,048	273,679	133,983	110,297	29,704	50,368	26,854	33,058	124,574	2,411,958
1952	131,802	568,165	482,201	798,585	644,568	341,117	127,799	38,947	20,497	16,705	29,615	184,840	3,384,841
1953	252,694	491,682	1,146,109	351,134	3,746,577	964,383	173,554	132,595	66,059	33,576	44,214	230,618	7,633,195
1954	282,109	252,337	140,926	258,486	678,026	114,050	27,548	19,884	13,448	16,159	145,581	79,210	2,025,764
1955	146,559	420,734	290,499	728,945	291,312	124,721	99,114	463,239	90,307	46,235	28,423	57,987	2,788,075
1956	99,921	441,302	211,815	253,765	366,724	41,250	12,813	12,833	11,459	11,810	30,902	89,528	1,593,772
1957	61,587	229,845	398,816	745,507	2,311,734	1,107,570	247,180	55,553	45,110	240,466	1,088,171	829,388	7,360,927
1958	776,310	540,734	522,327	425,613	1,586,974	348,635	210,446	147,054	610,512	410,241	125,216	119,147	5,823,209
1959	113,712	505,668	421,428	626,598	513,540	208,423	106,383	115,497	42,468	147,788	111,253	376,849	3,289,605
1960	832,304	850,373	854,241	219,471	162,268	125,970	135,788	67,775	58,322	109,488	231,035	939,689	4,586,724
1961	1,615,536	960,872	1,141,884	878,221	154,552	240,476	377,375	129,005	484,036	87,640	243,154	1,212,991	7,525,742
1962	660,496	518,836	515,841	338,578	597,699	165,858	83,068	52,453	79,765	53,256	57,465	190,076	3,313,391
1963	211,200	181,686	193,468	133,874	252,214	60,440	56,206	32,283	20,279	14,382	30,248	70,141	1,256,421
1964	124,423	111,392	394,294	386,717	223,111	70,126	32,598	24,125	18,323	21,291	23,417	83,905	1,513,722
1965	87,620	285,084	354,982	429,263	331,285	522,287	76,647	24,619	42,712	30,417	30,236	179,052	2,394,204
1966	210,625	1,112,965	192,555	192,694	1,919,206	360,337	55,888	48,411	52,312	27,289	28,766	86,650	4,287,698
1967	123,372	104,926	109,454	151,616	83,123	70,116	38,162	12,984	12,274	11,587	12,895	54,286	784,795
1968	110,360	42,930	80,138	227,082	355,563	708,892	257,143	154,850	260,410	139,006	109,527	891,788	3,337,689
1969	431,645	396,313	1,400,727	1,628,429	1,220,409	450,347	158,053	180,934	169,265	36,256	67,642	71,923	6,211,943
1970	103,325	148,602	510,029	527,780	361,039	39,477	161,191	72,067	152,807	98,820	57,558	111,031	2,343,726
1971	205,706	144,026	163,569	37,724	72,918	101,296	79,315	69,608	36,101	47,615	39,179	604,195	1,601,252
1972	1,008,357	415,596	165,560	104,243	263,863	192,430	170,731	319,708	308,100	59,687	67,045	377,692	3,453,012
1973	848,786	686,578	1,043,940	1,421,156	1,327,001	840,079	596,687	284,311	379,041	171,078	434,231	1,037,137	9,070,025
1974	1,901,553	1,203,768	481,805	463,001	509,633	317,673	318,704	348,476	294,186	56,130	339,868	1,230,743	7,465,542
1975	1,235,305	1,288,462	1,128,991	694,849	1,323,927	722,400	481,210	391,656	279,887	100,278	38,977	60,178	7,746,120
1976	81,773	180,262	432,099	323,887	486,004	612,416	466,175	448,145	290,757	66,885	61,331	140,781	3,590,515
1977	276,377	373,963	691,299	616,383	279,788	216,020	195,679	261,784	250,274	41,090	99,616	124,197	3,426,470
1978	204,885	355,577	302,678	63,903	150,861	184,611	148,998	119,216	191,056	32,912	39,209	168,073	1,961,979
1979	916,681	1,221,818	1,234,432	1,255,338	919,398	883,715	260,039	256,205	337,071	58,163	136,358	429,778	7,908,996
1980	386,023	768,277	659,603	1,162,849	1,001,791	214,096	188,787	158,636	154,558	50,001	69,654	50,531	4,864,806
1981	61,474	59,808	79,188	83,895	153,060	210,944	327,749	371,825	65,222	58,439	68,866	79,934	1,620,404
1982	74,273	347,365	142,344	479,163	454,951	152,632	212,509	223,852	58,427	80,372	146,102	1,316,965	3,688,955
1983	1,139,702	1,194,644	1,050,049	425,792	846,811	552,476	392,628	175,644	70,312	73,045	110,338	668,826	6,700,267
1984	459,372	679,239	1,001,851	153,638	88,842	247,846	225,419	90,779	80,610	240,988	346,016	408,793	4,023,393
1985	404,608	495,292	884,033	316,740	316,951	230,834	244,106	139,244	117,977	152,136	170,378	532,366	4,004,665
1986	694,963	605,549	161,286	155,255	200,191	1,016,616	521,211	229,566	107,469	260,969	530,360	744,138	5,227,573
1987	951,252	516,337	1,067,305	526,151	191,702	202,239	356,112	249,281	96,317	82,651	186,288	756,734	5,182,369
1988	989,553	505,249	809,038	414,204	132,684	146,789	97,676	111,741	105,858	73,063	65,330	125,411	3,576,596
1989	623,266	817,170	710,836	818,519	1,282,651	1,567,338	1,936,382	327,610	285,580	135,495	78,373	127,019	8,710,259
Avg.	602,464	597,886	642,726	572,629	709,419	458,678	265,646	157,139	138,179	99,662	178,724	423,923	4,847,075

Table E-3

Sabine River Gage Near Millam, Historical Flows: 1940-1966 (Acre-Feet)

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
1940	143,889	660,515	105,080	315,411	275,206	379,497	180,123	71,377	90,286	16,270	572,293	1,667,702	4,477,649
1941	1,217,018	495,649	802,155	319,121	814,195	815,980	600,833	66,815	75,951	159,602	763,715	451,953	6,582,987
1942	295,656	283,656	485,177	697,011	1,119,669	528,099	81,076	102,220	167,722	32,969	57,183	68,251	3,918,689
1943	267,392	100,776	129,917	197,018	105,187	561,203	259,791	13,115	7,343	54,353	26,630	58,118	1,780,843
1944	474,625	474,049	847,537	759,510	2,017,784	741,282	33,600	14,319	56,335	11,169	68,694	376,165	5,875,069
1945	1,321,388	540,198	1,201,785	2,585,652	283,894	210,970	694,730	108,855	26,838	330,426	149,316	279,927	7,733,979
1946	1,126,175	1,290,049	1,041,322	555,213	727,795	1,350,941	131,278	39,330	59,889	42,639	606,775	649,210	7,620,616
1947	1,019,266	400,463	672,317	661,943	383,544	96,428	55,319	11,861	36,113	14,547	74,176	357,699	3,783,676
1948	466,135	859,914	702,624	383,306	401,950	207,005	35,149	14,410	7,527	6,781	30,341	45,878	3,161,020
1949	395,942	538,671	676,641	409,249	247,194	135,412	116,386	118,157	41,562	369,044	250,185	271,815	3,570,258
1950	1,136,885	1,132,958	922,413	190,810	957,421	956,846	118,070	111,413	67,882	43,341	34,965	40,625	5,713,629
1951	130,927	283,597	350,499	222,248	118,387	111,594	58,556	9,378	15,511	7,997	16,449	90,422	1,415,565
1952	105,229	431,782	382,155	529,428	461,058	264,563	27,701	12,282	4,058	3,378	8,945	121,396	2,351,975
1953	177,005	346,135	881,494	218,360	2,288,131	574,413	87,967	57,654	34,072	8,624	20,864	149,431	4,844,150
1954	211,418	204,654	89,827	158,719	442,314	59,689	7,670	3,814	2,192	4,693	144,656	63,679	1,393,325
1955	110,309	276,773	270,565	554,281	244,604	63,259	42,282	198,744	32,162	20,035	8,019	18,268	1,839,301
1956	29,052	267,318	106,592	199,099	358,990	17,421	7,200	3,118	2,178	1,974	12,234	7,525	1,012,701
1957	19,224	155,326	201,451	626,975	2,324,032	1,038,545	105,580	22,715	14,337	228,069	813,203	572,191	6,121,648
1958	562,631	368,132	363,471	255,669	1,508,250	224,844	137,498	52,685	474,047	161,183	74,860	70,693	4,253,963
1959	58,883	295,874	319,597	463,378	436,720	154,850	55,023	76,447	23,334	141,124	95,696	345,146	2,466,072
1960	758,995	647,762	687,887	134,797	118,931	74,321	94,562	44,634	44,499	71,504	163,438	923,166	3,764,496
1961	1,224,793	669,798	866,201	673,646	80,253	217,487	245,395	52,766	226,112	42,516	132,781	1,001,256	5,433,004
1962	487,220	411,927	412,502	281,197	484,582	95,851	45,983	22,776	51,346	34,225	34,719	129,064	2,491,392
1963	113,296	95,464	98,539	94,869	240,357	36,276	20,678	11,940	7,597	4,786	8,321	23,808	755,931
1964	49,710	50,890	234,107	228,518	121,585	40,138	5,689	9,558	6,258	10,604	6,891	26,906	790,854
1965	53,732	248,261	272,608	325,396	352,984	511,418	31,079	9,661	29,919	12,571	8,878	69,832	1,926,339
1966	97,979	504,793	92,947	170,354	1,986,842	202,100	17,706	20,458	37,464				3,130,643

Table E-4**Sabine River Gage Near Burkeville, Historical Flows: 1966-1971 (Acre-Feet)**

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
1966										10,596	5,334	59,911	75,841
1967	67,618	63,800	62,156	41,181	28,939	28,770	17,980	5,641	4,616	5,076	5,129	15,178	346,084
1968	29,768	15,322	29,825	107,464	345,638	654,347	240,095	134,340	238,826	120,845	84,615	830,062	2,831,147
1969	351,933	324,436	1,363,834	1,578,445	1,122,267	412,875	129,648	167,445	162,775	19,932	49,422	30,323	5,713,335
1970	52,776	105,671	529,228	499,551	319,210	23,792	152,156	58,225	131,532	36,313	30,647	93,765	2,032,866
1971	152,317	94,590	84,609	13,751	49,146	89,635	55,152	42,520	26,719	26,459	24,833	495,629	1,155,360

Table E-5**Big Cow Creek Gage Near Newton, Historical Flows: 1966-1971 (Acre-Feet)**

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
1966										5,082	3,455	4,213	12,750
1967	4,826	6,095	4,316	8,513	3,572	5,675	1,843	1,486	1,331	1,398	1,624	3,915	44,594
1968	5,641	3,368	6,424	21,703	5,675	9,019	2,967	2,426	2,261	2,212	4,316	6,783	72,795
1969	3,905	10,379	11,867	6,760	15,152	4,475	2,251	1,617	1,355	1,492	2,255	5,681	67,189
1970	3,660	3,753	5,464	5,417	6,857	1,825	1,531	1,498	1,807	7220	3626	2826	45,484
1971	3055	3854	4969	1751	1948	988	875	1456	1248				20,144

Table E-6

Historical Flows At Toledo Bend: 1940-1966 (Acre-Feet)

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec	Total
1940	224,618	748,104	140,339	372,244	335,869	428,592	217,734	204,736	108,946	26,596	548,416	1,923,217	5,279,412
1941	1,388,226	561,300	934,183	397,706	911,505	929,599	699,394	95,458	103,524	189,566	841,922	503,442	7,555,825
1942	354,226	351,446	584,541	795,248	1,164,996	594,669	124,283	108,109	202,138	46,130	69,600	95,633	4,491,018
1943	311,561	126,159	159,662	228,523	120,328	495,390	301,734	22,757	15,638	58,531	40,817	68,390	1,949,490
1944	522,346	517,415	876,957	854,659	2,159,402	907,448	50,734	25,534	83,236	21,860	78,280	414,357	6,512,228
1945	1,436,829	703,785	1,231,900	2,694,143	423,628	218,511	748,428	148,560	42,788	376,066	169,076	322,721	8,516,435
1946	1,248,751	1,494,909	1,174,909	649,852	816,078	1,440,746	224,484	68,284	74,148	64,788	660,777	773,292	8,691,017
1947	1,266,457	472,029	794,237	715,139	433,110	135,566	72,543	20,914	40,657	21,622	105,086	435,882	4,513,241
1948	527,632	930,013	760,584	474,554	421,247	233,399	45,043	21,355	14,514	12,709	90,080	70,305	3,601,435
1949	491,429	648,336	776,144	556,450	319,920	175,032	136,734	137,306	52,132	393,249	270,575	369,465	4,326,774
1950	1,280,666	1,287,394	1,129,527	233,913	1,030,701	1,257,572	151,994	127,582	79,570	57,556	50,087	54,322	6,740,884
1951	222,756	313,720	397,262	303,536	178,844	120,310	78,699	17,291	29,081	15,338	22,915	103,718	1,803,469
1952	115,574	484,877	421,104	634,213	532,500	294,366	66,670	22,663	10,458	8,566	16,992	146,095	2,754,079
1953	206,471	402,798	984,511	270,050	2,855,916	726,232	121,287	86,829	46,525	18,338	29,954	181,038	5,929,949
1954	238,939	223,217	109,720	197,559	533,300	80,852	15,409	10,070	6,574	9,157	145,016	69,725	1,639,539
1955	124,421	332,818	278,325	622,279	262,788	87,187	64,407	301,714	54,798	30,235	15,962	33,731	2,208,667
1956	56,642	335,051	147,556	220,381	362,001	26,698	13,142	6,900	5,791	5,803	19,502	39,449	1,238,917
1957	35,716	184,337	278,287	673,121	2,319,244	1,065,417	160,706	35,499	26,317	232,895	920,250	672,320	6,604,110
1958	645,818	435,327	425,315	321,830	1,538,898	273,037	165,897	89,424	527,174	258,143	94,464	89,557	4,864,884
1959	80,228	377,548	359,241	526,921	466,627	175,706	75,018	91,649	30,783	143,718	101,752	357,488	2,786,680
1960	787,535	726,640	752,650	167,761	135,802	94,428	110,612	53,643	49,880	86,291	189,754	929,599	4,084,596
1961	1,376,913	783,116	973,527	753,289	109,178	226,437	296,776	82,446	326,524	60,083	175,750	1,083,686	6,247,725
1962	554,678	453,548	452,733	303,536	528,619	123,105	60,421	34,330	62,410	41,634	43,574	152,816	2,811,403
1963	151,411	129,031	135,496	110,054	244,973	45,683	34,509	19,860	12,534	8,522	16,857	41,846	950,776
1964	78,796	74,444	296,469	290,106	161,110	51,813	16,165	15,229	10,955	14,765	13,325	49,096	1,072,273
1965	66,925	262,597	304,677	365,832	344,536	515,649	48,819	15,484	34,899	19,519	17,193	112,352	2,108,483
1966	141,833	741,560	131,725	179,051	1,960,511	263,703	32,571	31,340	43,244				3,525,538

Note: Flow = (Flow at Bon Wier - Flow at Milam) * ((7,178-6,508)/(8,229-6,508)) + Flow at Milam

Table E-7

Historic Flows at Toledo Bend: 1966-1989 (Acre-Feet)

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
1966										0	0	49,905	49,905
1967	56,156	49,324	51,906	20,963	20,456	15,292	13,603	2,112	1,455	1,756	1,272	5,880	240,173
1968	16,371	7,323	14,568	55,919	332,160	632,927	233,048	128,578	233,456	115,592	74,365	813,952	2,658,259
1969	342,659	299,786	1,335,650	1,562,390	1,086,281	402,247	124,302	163,605	159,557	16,389	44,066	16,831	5,553,761
1970	44,084	96,758	516,251	486,686	302,925	19,458	148,520	54,667	127,240	19,166	22,035	87,053	1,924,842
1971	145,061	85,437	72,808	9,592	44,520	87,289	53,074	39,062	23,755	26,459	24,833	495,629	1,107,518
1972	786,882	319,299	14,182	61,745	227,980	144,833	119,980	280,145	270,585	19,815	7,775	201,322	2,454,543
1973	701,434	449,117	802,056	1,032,595	1,019,623	663,848	479,504	228,992	299,583	85,230	390,783	932,568	7,085,333
1974	1,701,817	876,059	371,226	309,620	429,818	265,468	299,960	284,846	243,292	10,155	275,861	1,089,322	6,157,444
1975	993,719	1,138,909	890,796	542,578	965,871	508,066	319,517	283,557	268,641	3,628	3,015	4,582	5,922,879
1976	9,418	136,007	317,984	233,141	345,935	481,600	398,795	413,926	254,009	18,940	33,550	94,147	2,737,452
1977	174,327	321,586	565,051	533,355	227,528	184,649	157,507	262,842	257,288	7,581	71,577	5,492	2,768,783
1978	5,534	245,097	259,333	14,703	134,491	126,619	121,884	101,030	153,292	15,667	15,544	106,102	1,299,296
1979	779,684	959,008	1,005,592	1,067,186	841,408	761,258	194,380	221,811	251,466	9,265	91,434	352,556	6,535,048
1980	293,260	628,066	424,498	957,548	870,997	154,836	159,344	110,767	145,113	25,942	44,340	32,329	3,847,040
1981	44,404	18,835	24,200	57,088	117,540	132,728	274,429	333,134	44,632	45,624	53,197	54,970	1,200,781
1982	42,623	297,907	98,336	350,662	413,206	118,945	190,360	207,901	45,574	69,112	61,856	814,591	2,711,073
1983	836,092	793,578	922,115	298,473	603,181	385,428	346,929	120,339	25,220	44,287	37,150	419,286	4,832,078
1984	310,052	357,927	868,768	40,584	19,107	213,997	207,935	46,969	40,705	99,378	199,291	342,605	2,747,318
1985	337,289	317,851	680,608	216,603	289,936	198,645	222,728	101,377	85,289	40,707	12,230	432,000	2,935,263
1986	664,482	521,268	67,886	128,545	150,379	924,265	476,560	185,123	66,924	227,177	294,196	592,939	4,299,744
1987	794,419	358,354	892,363	441,568	118,889	121,234	297,663	197,359	45,935	52,621	47,506	580,074	3,947,985
1988	859,041	395,276	586,671	268,836	120,797	130,302	61,726	78,581	85,698	48,898	48,260	52,909	2,736,995
1989	443,617	671,321	499,888	678,367	1,022,114	1,485,203	1,155,522	266,094	236,779	87,683	46,064	96,621	6,689,273
Avg.	451,410	406,265	490,554	407,337	421,963	354,745	263,360	178,818	146,326	45,461	79,175	319,736	3,435,116

Note: From October 1966 - September 1971 taken to be equal to Flow at Burkeville - (Flow at Big Cow * 304/128)
 From October 1971 - December 1989 taken from gage # 08025360 (Sabine River at Toledo Bend Reservoir nr Burkville)

Table E-8

Ruliff Flows with Toledo Bend in Operation and Existing Water Rights (Acre-Feet)

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
1940	536,154	1,006,380	224,681	319,378	418,502	451,333	264,201	760,987	186,934	158,828	351,718	2,807,332	7,486,428
1941	1,919,116	709,444	1,272,624	560,052	1,135,883	1,355,746	1,097,593	250,253	240,773	194,777	880,485	580,215	10,196,961
1942	534,029	488,730	863,606	807,069	1,330,859	797,359	342,102	224,689	289,352	170,689	155,625	183,045	6,187,155
1943	307,244	212,221	232,730	250,134	190,293	0	399,276	212,905	165,770	142,456	163,621	187,002	2,463,652
1944	416,710	392,442	514,108	1,187,974	2,852,175	1,352,340	222,144	187,403	217,385	170,999	172,262	355,885	8,041,827
1945	1,519,096	1,141,571	1,089,212	3,769,685	847,948	200,645	775,577	315,048	191,049	251,668	235,474	494,194	10,831,167
1946	1,719,282	2,219,047	1,715,804	891,956	914,584	1,988,590	676,559	242,736	187,478	192,890	244,572	1,245,357	12,238,856
1947	2,208,081	752,712	1,148,989	861,192	509,111	300,648	185,885	161,472	144,038	145,666	180,837	424,151	7,022,783
1948	402,855	814,356	1,007,423	719,072	362,644	282,921	176,522	153,480	137,295	130,682	275,065	211,388	4,673,703
1949	361,425	582,447	1,006,551	1,117,924	493,505	248,309	228,038	230,500	159,332	222,247	238,901	710,694	5,599,871
1950	1,443,850	1,698,124	1,660,725	334,687	1,310,329	2,309,354	285,631	201,646	170,214	168,942	158,814	161,976	9,904,292
1951	339,024	201,586	244,670	463,676	296,405	157,048	205,068	161,336	173,772	156,865	142,322	191,998	2,733,771
1952	157,076	352,227	330,891	486,711	816,936	384,885	271,166	183,586	136,424	129,971	127,408	199,426	3,576,706
1953	241,121	314,266	593,817	351,110	3,836,639	1,132,766	272,860	266,994	188,502	158,082	144,772	229,819	7,730,748
1954	240,646	197,874	188,358	279,471	556,210	264,063	165,130	153,500	132,209	130,205	128,471	138,659	2,574,795
1955	190,922	370,286	178,232	443,168	252,646	256,974	206,507	456,935	249,175	165,480	146,605	192,703	3,109,631
1956	235,803	492,810	305,530	236,795	213,135	189,490	161,066	58,206	51,861	49,055	57,674	221,989	2,273,413
1957	99,145	122,668	433,506	257,782	471,236	1,240,648	628,132	191,640	223,943	183,540	846,677	1,051,064	5,749,980
1958	835,563	716,583	534,636	365,170	1,209,132	446,579	241,023	203,863	609,969	606,871	193,399	201,240	6,164,028
1959	200,395	681,061	473,806	586,811	589,770	221,454	296,736	246,921	168,641	149,246	162,468	205,104	3,982,412
1960	354,100	915,815	971,352	238,559	189,315	166,388	216,692	172,762	146,864	157,999	205,633	371,230	4,116,708
1961	2,184,608	1,208,211	1,312,949	941,332	225,324	153,050	426,582	253,843	440,719	190,931	242,704	1,169,213	8,749,466
1962	859,554	566,182	500,928	293,168	583,620	295,357	200,655	180,368	165,973	154,894	142,874	160,910	4,104,484
1963	280,452	230,215	231,071	167,201	152,206	162,987	188,524	157,720	287,759	135,051	96,128	164,807	2,254,121
1964	197,407	171,051	335,093	256,286	352,935	186,322	169,132	67,000	59,189	53,545	55,130	151,140	2,054,230
1965	114,290	132,018	224,637	299,687	114,329	248,175	196,786	153,571	112,869	62,624	58,343	175,901	1,893,229
1966	229,597	739,814	290,617	158,640	561,560	539,170	179,563	174,635	150,081	177,828	177,758	168,841	3,548,104
1967	231,370	218,583	215,230	427,416	231,616	220,163	167,856	153,318	56,606	53,533	52,404	132,575	2,160,670
1968	278,616	183,745	246,677	721,058	843,826	924,016	286,388	204,954	220,705	165,215	160,342	857,430	5,092,970
1969	515,028	702,099	1,517,999	1,790,386	1,397,785	496,072	213,931	186,013	149,513	148,371	148,929	197,093	7,483,220
1970	201,214	196,002	189,826	391,501	316,641	191,890	105,413	241,387	178,300	431,358	251,824	150,696	2,846,052
1971	230,511	200,639	360,860	167,008	174,386	158,824	83,268	88,783	51,439	74,112	67,764	410,272	2,067,865
1972	576,398	388,363	373,905	200,634	217,517	173,353	219,919	195,166	191,470	214,697	244,643	372,497	3,368,762
1973	475,599	650,360	1,070,866	1,361,560	1,123,745	913,445	501,572	288,071	444,839	648,875	423,593	1,123,615	9,024,140
1974	1,984,716	1,357,921	528,952	591,485	400,677	280,276	181,896	205,737	215,570	182,370	552,852	1,193,571	7,676,023
1975	1,119,165	1,436,137	941,272	826,326	1,577,251	786,405	385,598	339,205	184,965	277,237	194,064	222,863	8,290,488
1976	255,000	182,300	398,526	310,613	297,948	384,916	256,396	200,664	159,947	204,609	161,361	264,306	3,076,586
1977	364,841	232,893	955,759	757,670	275,172	192,973	202,385	140,945	127,511	180,263	139,918	355,699	3,926,029
1978	482,818	371,207	198,553	227,713	142,224	215,182	170,749	157,227	165,398	148,278	183,271	230,811	2,693,431
1979	298,730	1,192,084	1,158,990	1,419,324	1,092,951	775,808	302,511	200,918	268,626	241,993	195,199	302,208	7,449,342
1980	471,612	874,841	823,049	1,247,275	1,158,013	233,358	168,476	199,102	123,252	186,477	146,019	157,250	5,788,724
1981	148,607	210,375	221,990	149,063	76,159	303,704	254,673	219,333	169,450	160,815	144,100	161,824	2,220,093
1982	182,542	276,803	232,231	337,052	320,568	218,929	172,746	194,299	120,228	53,924	124,377	648,140	2,881,839
1983	727,321	1,608,407	772,183	437,762	1,156,252	430,244	263,158	291,758	233,153	155,811	186,871	582,109	6,845,029
1984	418,835	919,683	949,127	456,193	261,048	165,926	175,779	201,524	180,049	321,104	335,177	374,519	4,758,964
1985	238,534	657,699	909,900	427,401	413,653	183,777	156,345	200,112	168,256	276,050	430,113	337,553	4,399,393
1986	173,898	453,576	308,444	179,509	501,937	1,067,733	250,513	194,583	180,261	156,868	536,542	1,074,715	5,078,579
1987	624,059	1,040,464	866,822	282,640	244,710	467,906	270,137	225,806	182,983	154,380	292,462	371,913	5,024,282
1988	1,046,867	518,131	957,307	574,360	172,369	157,985	187,905	171,405	142,466	146,727	129,532	192,943	4,397,997
1989	301,098	452,042	1,020,948	1,060,473	1,853,937	1,930,190	2,567,554	212,707	174,480	200,501	164,900	155,518	10,094,348
Avg.	589,498	635,090	662,119	619,782	700,952	524,114	324,486	214,740	189,541	187,878	225,040	444,508	5,317,747
Median	357,762	505,470	521,530	432,589	444,869	281,599	221,032	200,388	171,993	163,015	168,581	230,315	4,716,333

Table E-9

Ruliff Flows with Toledo Bend in Operation and Modified Water Rights (Acre-Feet)

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
1940	492,999	966,614	203,817	254,224	373,587	407,523	246,680	743,466	168,758	139,195	204,705	2,764,177	6,965,745
1941	1,875,960	669,678	1,229,469	517,180	1,090,968	1,311,936	1,052,208	232,732	222,597	175,145	760,925	537,060	9,675,858
1942	490,874	448,964	820,450	764,197	1,285,944	753,549	324,582	207,169	271,176	151,056	135,865	162,180	5,816,005
1943	286,380	193,865	211,866	231,606	172,068	0	381,755	195,384	147,595	122,824	143,861	94,775	2,181,979
1944	324,484	374,087	349,825	930,416	2,807,260	1,308,530	204,624	169,882	199,209	151,367	152,502	335,019	7,307,004
1945	1,325,100	1,101,805	1,046,057	3,726,813	803,033	183,525	703,526	297,528	172,873	232,036	215,714	372,466	10,180,474
1946	1,655,248	2,179,281	1,672,648	849,084	869,669	1,944,780	659,039	225,216	169,302	173,258	211,134	1,088,108	11,696,767
1947	2,164,926	712,946	1,105,834	818,320	464,196	283,528	168,364	143,951	125,863	126,034	161,077	403,285	6,678,324
1948	381,991	575,390	964,267	676,200	317,729	261,523	159,002	135,960	119,119	111,049	255,305	180,522	4,148,057
1949	340,580	584,092	745,446	1,075,052	448,590	231,188	210,517	212,979	141,156	202,615	219,142	513,312	4,904,648
1950	1,400,695	1,658,357	1,617,569	291,815	1,265,414	2,265,544	268,110	184,126	152,038	149,309	139,055	141,110	9,533,142
1951	318,160	183,231	223,805	445,148	278,180	139,927	187,547	143,815	155,596	137,232	122,562	171,133	2,506,338
1952	136,212	333,872	310,027	468,183	549,555	327,418	253,645	166,065	118,248	110,338	107,648	178,560	3,059,772
1953	220,256	295,911	427,525	282,885	3,448,089	1,088,956	255,340	249,473	170,326	138,449	125,012	208,954	6,911,176
1954	219,782	179,518	167,493	260,943	537,985	246,942	147,610	135,979	97,226	32,638	37,349	46,432	2,109,898
1955	100,035	351,931	157,367	424,640	234,421	239,854	188,986	439,414	230,999	145,848	55,483	100,476	2,669,454
1956	143,577	405,909	284,665	218,267	194,910	172,370	54,343	40,685	33,685	29,422	37,915	201,123	1,816,872
1957	78,280	104,313	412,642	239,254	181,034	1,033,142	610,611	174,119	205,767	163,907	699,142	1,007,909	4,910,121
1958	792,408	676,816	491,481	348,642	1,139,911	402,769	223,502	186,343	510,789	562,894	173,839	180,375	5,687,589
1959	179,530	637,723	367,036	543,939	544,855	204,333	279,216	229,400	150,465	129,613	142,708	184,238	3,593,056
1960	246,452	782,464	928,197	220,031	181,090	149,267	199,172	155,241	128,688	138,366	185,873	189,080	3,483,919
1961	2,074,872	1,168,445	1,269,794	898,460	207,099	135,930	357,000	236,322	387,583	171,298	222,944	1,032,149	8,161,897
1962	816,389	526,416	457,773	250,296	538,705	278,236	183,135	162,848	147,797	135,261	123,114	140,044	3,760,024
1963	259,588	211,860	210,207	148,673	133,981	145,866	171,003	120,170	189,771	37,484	76,368	143,942	1,848,912
1964	176,542	125,168	314,228	159,823	334,710	83,756	62,409	49,479	41,013	33,913	35,370	130,274	1,546,687
1965	93,426	113,663	203,773	203,224	10,658	145,608	179,265	46,848	33,996	42,992	38,583	155,035	1,267,071
1966	208,733	652,914	269,752	140,112	299,001	495,360	162,043	157,114	131,905	158,195	157,998	147,975	2,981,101
1967	210,505	200,227	194,365	408,888	213,391	203,043	61,134	46,596	38,430	33,901	32,644	111,710	1,754,833
1968	257,752	96,845	154,451	490,725	798,911	880,206	241,003	187,433	202,529	145,582	140,582	715,286	4,311,304
1969	471,873	662,333	1,474,844	1,747,514	1,352,870	452,262	196,411	168,493	131,337	128,738	129,169	176,228	7,092,070
1970	180,349	177,647	168,962	372,973	298,416	174,770	87,893	223,866	160,124	411,725	232,064	129,830	2,618,619
1971	209,646	167,749	268,834	70,545	70,715	56,257	65,748	71,262	33,263	54,479	48,004	389,406	1,505,709
1972	484,172	370,008	353,041	182,106	199,292	156,233	202,398	88,443	93,482	117,329	153,521	351,631	2,751,657
1973	454,735	632,005	725,659	1,318,688	1,078,830	869,635	456,187	270,550	426,663	550,442	381,542	1,080,460	8,245,397
1974	1,941,561	1,318,155	485,797	548,613	355,762	236,466	164,375	188,216	197,394	162,737	406,702	1,150,416	7,156,195
1975	1,076,010	1,396,371	898,117	783,454	1,532,336	742,595	368,077	321,684	166,789	257,604	174,304	201,997	7,919,339
1976	234,136	163,945	377,662	292,085	279,723	327,147	238,875	183,143	141,771	184,976	141,601	243,440	2,808,505
1977	343,977	214,538	479,557	714,798	256,947	175,853	184,864	123,424	109,335	160,630	120,158	334,833	3,218,915
1978	461,954	352,852	177,689	209,185	123,999	198,062	153,228	139,706	147,222	51,457	92,149	138,584	2,246,088
1979	277,866	873,689	1,115,835	1,376,452	1,048,036	731,998	284,990	183,397	250,450	222,360	175,439	281,342	6,821,855
1980	388,205	727,328	779,894	1,204,403	1,113,098	216,238	150,955	181,581	105,076	166,844	126,259	136,384	5,296,266
1981	127,743	123,475	129,764	55,996	57,934	286,584	237,152	201,812	151,274	141,182	80,235	69,597	1,662,749
1982	90,316	189,903	211,367	318,524	302,343	201,809	155,225	151,469	47,438	34,291	104,617	555,913	2,363,216
1983	706,457	1,420,920	729,028	394,890	1,111,337	413,124	245,637	274,237	214,977	136,178	167,111	561,243	6,375,140
1984	397,971	683,562	905,972	419,029	242,823	148,806	158,258	184,003	161,873	301,471	315,417	353,653	4,272,839
1985	217,670	403,371	853,828	384,529	368,738	166,657	138,824	182,591	150,080	256,417	410,353	316,687	3,849,746
1986	153,034	241,827	287,580	139,500	408,606	1,023,923	232,992	177,062	162,085	137,235	497,007	924,798	4,385,650
1987	580,904	1,000,698	823,667	263,916	226,485	450,786	252,616	208,285	164,807	134,747	272,702	351,047	4,730,661
1988	781,058	478,365	914,152	531,488	154,144	140,865	170,384	153,884	124,290	127,094	109,772	172,077	3,857,574
1989	280,234	264,809	901,310	1,017,601	1,809,022	1,886,380	2,522,169	195,186	156,304	180,868	145,140	134,652	9,493,676
Avg.	542,632	566,717	597,480	572,627	642,328	487,621	297,253	190,961	163,211	160,001	187,950	394,019	4,802,797
Median	321,322	427,437	442,649	401,889	362,250	254,233	203,511	182,867	151,656	140,189	144,501	201,560	4,210,448

APPENDIX F
SABINE LAKE FLOW COMPARISONS

Table F-1

Sabine River Historical Flows above Ruliff minus Conservative Estimates of Needs (Acre-Feet)

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Totals
1941	1,323,032	34,714	692,253	0	337,340	735,909	904,049	36,037	109,444	169,402	967,984	390,546	5,700,710
1942	0	0	226,364	553,106	24,968	264,859	222,971	129,433	183,420	0	0	0	1,605,121
1943	0	0	0	0	0	0	427,530	0	0	0	0	0	427,530
1944	360,550	101,248	541,306	423,778	2,062,966	816,091	0	15,147	0	0	60,963	441,014	4,823,063
1945	1,452,010	626,802	605,062	2,586,648	0	0	543,937	256,530	0	326,998	161,377	406,989	6,966,353
1946	1,201,252	1,457,314	1,046,762	305,269	292,816	1,373,008	544,411	57,756	10,722	23,842	697,126	1,021,884	8,032,162
1947	1,560,883	0	587,411	124,603	0	0	0	0	0	0	4,336	387,256	2,664,489
1948	70,181	463,993	309,239	0	0	0	0	0	0	0	48,162	0	891,575
1949	9,351	415,328	614,342	538,968	0	0	61,141	35,189	0	410,685	242,334	532,573	2,859,911
1950	991,333	1,106,900	972,762	7,918	234,648	1,775,724	95,920	0	0	0	0	0	5,185,205
1951	0	0	0	0	0	0	0	0	20,170	0	0	0	20,170
1952	0	156,907	0	385,106	0	0	28,387	0	0	0	0	0	570,400
1953	0	0	514,342	0	3,047,538	463,727	17,569	126,223	0	0	0	19,121	4,188,520
1954	0	0	0	0	0	0	0	0	0	0	0	0	0
1955	0	0	0	178,842	0	0	0	458,606	0	0	0	0	637,448
1956	0	0	0	0	0	0	0	0	0	0	0	85,802	85,802
1957	0	0	0	269,947	1,379,536	686,518	299,081	0	16,886	162,043	1,238,061	845,905	4,897,977
1958	421,096	86,578	0	0	220,273	0	0	448	556,989	468,448	9,091	0	1,762,923
1959	0	350,611	0	174,630	0	0	156,941	112,072	0	0	33,227	184,442	1,011,923
1960	266,477	192,742	318,292	0	0	0	0	36,386	0	21,623	167,927	813,681	1,817,128
1961	1,766,957	576,215	571,471	265,384	0	0	347,890	16,273	392,491	0	194,058	937,352	5,068,091
1962	153,963	0	0	0	0	0	0	0	0	0	0	0	153,963
1963	0	0	0	0	0	0	0	0	123,382	0	0	0	123,382
1964	0	0	0	0	0	0	0	0	0	0	0	0	0
1965	0	0	0	0	0	0	0	0	0	0	0	0	0

Note: Values = Table B-5 - Table B-6

Table F-2

Sabine River Flows above Rulliff, with Existing Toledo Bend Operation minus Conservative Estimates of Needs (Acre-Feet)

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Totals
1941	1,251,141	(19,042)	625,241	(75,313)	319,121	726,036	839,904	72,531	123,982	95,121	763,233	316,573	5,038,528
1942	(54,387)	(47,402)	155,994	214,959	89,778	188,896	230,640	153,276	99,344	69,155	35,962	9,928	1,146,143
1943	(205,999)	(24,764)	(54,100)	(113,238)	6,068	(344,588)	257,748	109,195	102,424	56,754	64,745	37,171	(108,584)
1944	(56,234)	(314,772)	(86,470)	343,720	2,060,531	662,997	81,218	121,565	34,826	93,425	88,245	132,218	3,161,269
1945	889,256	437,861	300,093	2,992,566	(77,222)	(92,115)	463,528	239,922	75,274	66,217	97,863	290,691	5,683,934
1946	1,141,837	1,443,569	996,484	210,230	208,524	1,397,368	451,879	121,424	54,636	74,339	155,589	961,721	7,217,600
1947	1,570,882	(51,645)	523,905	48,605	(81,804)	(9,170)	59,409	111,038	77,405	93,663	4,812	56,935	2,404,035
1948	(351,889)	12,102	243,010	(79,493)	(83,141)	(102,725)	86,909	110,597	103,548	102,576	63,644	35,256	140,394
1949	(376,516)	(131,613)	401,257	453,719	(136,366)	(48,636)	56,359	29,835	65,930	132,721	77,321	493,476	1,017,487
1950	871,018	963,570	881,290	(43,894)	225,573	1,694,778	75,878	4,370	38,492	57,729	55,475	51,239	4,875,518
1951	(117,194)	(212,325)	(291,700)	(188,251)	(52,448)	6,086	53,253	114,661	109,151	99,947	82,647	1,843	(394,330)
1952	(10,012)	(226,575)	(315,542)	(133,822)	(156,948)	(127,624)	93,669	109,289	107,604	106,719	88,570	(40,534)	(505,206)
1953	(100,909)	(301,403)	(219,179)	(105,068)	2,824,609	370,113	28,234	171,346	71,537	96,947	75,608	(56,356)	2,855,479
1954	(133,377)	(121,822)	(4,158)	(82,274)	(406,904)	45,544	116,543	121,882	111,488	106,128	(39,454)	35,836	(250,568)
1955	(20,199)	(299,968)	(172,763)	(328,152)	(136,392)	39,209	67,545	288,844	63,264	85,050	89,600	71,830	(252,132)
1956	48,920	(233,656)	(41,994)	(105,096)	(235,605)	99,698	118,810	35,850	32,459	31,547	14,698	80,553	(153,816)
1957	(1,516)	(151,487)	(244,087)	(365,824)	(626,781)	539,927	270,327	96,453	108,631	44,433	698,887	768,454	1,137,417
1958	326,689	38,335	(106,184)	(206,545)	(55,817)	(75,431)	(33,945)	42,976	433,074	393,938	20,189	16,004	793,283
1959	25,334	99,441	(103,066)	83,570	(67,869)	(49,310)	213,875	152,375	87,279	(28,433)	37,037	(67,485)	382,748
1960	(328,712)	154,706	237,413	(52,476)	(9,406)	31,968	21,340	114,695	68,182	50,617	83,735	150,928	522,990
1961	1,764,591	563,203	622,735	164,264	17,218	(100,041)	235,127	65,779	218,989	55,202	123,870	827,088	4,558,025
1962	140,572	(61,864)	(76,758)	(52,035)	(79,593)	3,291	71,531	97,622	55,652	73,651	61,988	(47,255)	186,802
1963	(45,849)	(27,636)	(29,934)	5,231	(118,577)	80,713	97,443	112,092	228,910	106,763	17,343	(7,646)	418,853
1964	(44,596)	(14,066)	(262,269)	(174,821)	(34,714)	74,583	115,787	27,521	27,295	22,585	20,875	(14,896)	(256,716)
1965	(32,725)	(229,747)	(270,477)										(532,949)

Note: Values = Table E-8 - Table B-6

Table F-3

Sabine River Flows above Rulliff, with Modified Toledo Bend Operation minus Conservative Estimates of Needs (Acre-Feet)

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Totals
1941	1,207,985	(58,808)	582,086	(118,185)	274,206	682,226	794,519	55,010	105,806	75,489	643,673	273,418	4,517,425
1942	(97,542)	(87,168)	112,838	172,087	44,863	145,086	213,120	135,756	81,168	49,522	16,202	(10,937)	774,995
1943	(226,863)	(43,120)	(74,964)	(131,766)	(12,157)	(344,588)	240,227	91,674	84,249	37,122	44,985	(55,056)	(390,257)
1944	(148,460)	(333,127)	(250,953)	86,162	2,015,616	619,187	63,698	104,044	16,650	73,793	68,485	111,352	2,426,447
1945	695,260	398,095	256,938	2,949,694	(122,137)	(109,235)	391,477	222,402	57,098	46,585	78,103	168,963	5,033,243
1946	1,077,803	1,403,803	953,328	167,358	163,609	1,353,558	434,359	103,904	36,460	54,707	122,151	804,472	6,675,512
1947	1,527,727	(91,411)	480,750	5,733	(126,719)	(26,290)	41,888	93,517	59,230	74,031	(14,948)	36,069	2,059,577
1948	(372,753)	(226,864)	199,854	(122,365)	(128,056)	(124,123)	69,389	93,077	85,372	82,943	43,884	14,390	(385,252)
1949	(397,381)	(149,968)	140,152	410,847	(181,281)	(65,757)	38,838	12,314	47,754	113,089	57,562	296,094	322,263
1950	827,863	923,803	838,134	(86,766)	180,658	1,650,968	58,357	(13,150)	20,316	38,096	35,716	30,373	4,504,368
1951	(138,058)	(230,680)	(312,565)	(206,779)	(70,673)	(11,035)	35,732	97,140	90,975	80,314	62,887	(19,022)	(621,764)
1952	(30,876)	(244,930)	(336,406)	(152,350)	(424,329)	(185,091)	76,148	91,768	89,428	87,086	68,810	(61,400)	(1,022,142)
1953	(121,774)	(319,758)	(385,471)	(173,293)	2,436,059	326,303	10,714	153,825	53,361	77,314	55,848	(77,221)	2,035,907
1954	(154,241)	(140,178)	(25,023)	(100,802)	(425,129)	28,423	99,023	104,361	76,505	8,561	(130,576)	(56,391)	(715,467)
1955	(111,086)	(318,323)	(193,628)	(346,680)	(154,617)	22,089	50,024	271,323	45,088	65,418	(1,522)	(20,397)	(692,311)
1956	(43,306)	(320,557)	(62,859)	(123,624)	(253,830)	82,578	12,087	18,329	14,283	11,914	(5,061)	59,687	(610,359)
1957	(22,381)	(169,842)	(264,951)	(384,352)	(916,983)	332,421	252,806	78,932	90,455	24,800	551,352	725,299	297,556
1958	283,534	(1,432)	(149,339)	(225,073)	(125,038)	(119,241)	(51,466)	25,456	333,894	349,961	429	(4,861)	316,824
1959	4,469	56,103	(209,836)	40,698	(112,784)	(66,431)	196,355	134,854	69,103	(48,066)	17,277	(88,351)	(6,609)
1960	(436,360)	1,355	194,258	(71,004)	(27,631)	14,847	3,820	97,174	50,006	30,984	63,975	(31,222)	(109,798)
1961	1,654,855	523,437	579,580	121,392	(1,007)	(117,161)	165,545	48,258	165,853	35,569	104,110	690,024	3,970,455
1962	97,417	(101,630)	(119,913)	(94,907)	(124,508)	(13,830)	54,011	80,102	37,476	54,018	42,228	(68,121)	(157,657)
1963	(66,713)	(45,991)	(50,798)	(13,297)	(136,802)	63,592	79,922	74,542	130,922	9,196	(2,417)	(28,511)	13,645
1964	(65,461)	(59,949)	(283,134)	(271,284)	(52,939)	(27,983)	9,064	10,000	9,119	2,953	1,115	(35,762)	(764,261)
1965	(53,589)	(248,102)	(291,341)										(593,032)

Note: Values = Table E-9 - Table B-6

26,879,308

Table F-6

**Remaining Shortage to Sabine Portion of Conservative Estimate of Estuary Inflow Needs
after Excess Flow from Other Sources has been used (EXISTING Operation) (Acre-Feet)**

	Jan	Feb	March	April	May	June	July	August	Sept	Oct	Nov	Dec	Totals
1941	0	0	0	(75,313)	0	0	0	0	0	0	0	0	(75,313)
1942	(54,387)	(47,402)	0	0	0	0	0	0	0	0	0	0	(101,789)
1943	(205,999)	(24,764)	(54,100)	(113,238)	0	(344,588)	0	0	0	0	0	0	(742,689)
1944	0	(191,266)	0	0	0	0	0	0	0	0	0	0	(191,266)
1945	0	0	0	0	(77,222)	(92,115)	0	0	0	0	0	0	(169,337)
1946	0	0	0	0	0	0	0	0	0	0	0	0	0
1947	0	(51,645)	0	0	(81,804)	(9,170)	0	0	0	0	0	0	(142,619)
1948	(307,621)	0	0	(79,493)	(83,141)	(102,725)	0	0	0	0	0	0	(572,980)
1949	(370,270)	0	0	0	(136,366)	(48,636)	0	0	0	0	0	0	(555,272)
1950	0	0	0	(21,206)	0	0	0	0	0	0	0	0	(21,206)
1951	(117,194)	(212,325)	(291,700)	(188,251)	(52,448)	0	0	0	0	0	0	0	(861,918)
1952	(10,012)	0	(315,542)	0	(156,948)	(127,624)	0	0	0	0	0	(40,534)	(650,660)
1953	(100,909)	(301,403)	0	(105,068)	0	0	0	0	0	0	0	(36,888)	(544,268)
1954	(133,377)	(121,822)	(4,158)	(82,274)	(406,904)	0	0	0	0	0	(39,454)	0	(787,989)
1955	(20,199)	(299,968)	(172,763)	(167,688)	(136,392)	0	0	0	0	0	0	0	(797,010)
1956	0	(233,656)	(41,994)	(105,096)	(235,605)	0	0	0	0	0	0	0	(616,351)
1957	(1,516)	(151,487)	(244,087)	(2,304)	0	0	0	0	0	0	0	0	(399,394)
1958	0	0	(106,184)	(206,545)	0	(75,431)	(33,945)	0	0	0	0	0	(422,105)
1959	0	0	(103,066)	0	(67,869)	(49,310)	0	0	0	(28,433)	0	0	(248,678)
1960	(114,850)	0	0	(52,476)	(9,406)	0	0	0	0	0	0	0	(176,732)
1961	0	0	0	0	0	(100,041)	0	0	0	0	0	0	(100,041)
1962	0	(61,864)	(76,758)	(52,035)	(79,593)	0	0	0	0	0	0	(47,255)	(317,505)
1963	(45,849)	(27,636)	(29,934)	0	(118,577)	0	0	0	0	0	0	(7,646)	(229,642)
1964	(44,596)	(14,066)	(262,269)	(174,821)	(34,714)	0	0	0	0	0	0	(14,896)	(545,362)
1965	(32,725)	(229,747)	(270,477)										(532,949)

Note: Values = Table F-4 - Table F-2

Table F-7

**Remaining Shortage to Sabine Portion of Conservative Estimate of Estuary Inflow Needs
after Excess Flow from Other Sources has been used (MODIFIED Operation) (Acre-Feet)**

	Jan	Feb	March	April	May	June	July	August	Sept	Oct	Nov	Dec	Totals
1941	0	(18,712)	0	(118,185)	0	0	0	0	0	0	0	0	(136,897)
1942	(97,542)	(87,168)	0	0	0	0	0	0	0	0	0	(10,937)	(195,647)
1943	(226,863)	(43,120)	(74,964)	(131,766)	(12,157)	(344,588)	0	0	0	0	0	(55,056)	(888,514)
1944	0	(209,621)	0	0	0	0	0	0	0	0	0	0	(209,621)
1945	0	0	0	0	(122,137)	(109,235)	0	0	0	0	0	0	(231,372)
1946	0	0	0	0	0	0	0	0	0	0	0	0	0
1947	0	(91,411)	0	0	(126,719)	(26,290)	0	0	0	0	(12,026)	0	(256,446)
1948	(328,485)	0	0	(122,365)	(128,056)	(124,123)	0	0	0	0	0	0	(703,029)
1949	(391,135)	0	0	0	(181,281)	(65,757)	0	0	0	0	0	0	(638,173)
1950	0	0	0	(64,078)	0	0	0	(13,150)	0	0	0	0	(77,228)
1951	(138,058)	(230,680)	(312,565)	(206,779)	(70,673)	(11,035)	0	0	0	0	0	(19,022)	(988,812)
1952	(30,876)	0	(336,406)	0	(424,329)	(185,091)	0	0	0	0	0	(61,400)	(1,038,102)
1953	(121,774)	(319,758)	(28,096)	(173,293)	0	0	0	0	0	0	0	(57,753)	(700,674)
1954	(154,241)	(140,178)	(25,023)	(100,802)	(425,129)	0	0	0	0	0	(130,576)	(56,391)	(1,032,340)
1955	(111,086)	(318,323)	(193,628)	(186,216)	(154,617)	0	0	0	0	0	(1,522)	(20,397)	(985,789)
1956	(43,306)	(320,557)	(62,859)	(123,624)	(253,830)	0	0	0	0	0	(5,061)	0	(809,237)
1957	(22,381)	(169,842)	(264,951)	(20,832)	0	0	0	0	0	0	0	0	(478,006)
1958	0	0	(149,339)	(225,073)	0	(119,241)	(51,466)	0	0	0	0	(4,861)	(549,980)
1959	0	0	(209,836)	0	(112,784)	(66,431)	0	0	0	(48,066)	0	0	(437,117)
1960	(222,498)	0	0	(71,004)	(27,631)	0	0	0	0	0	0	0	(321,133)
1961	0	0	0	0	(1,007)	(117,161)	0	0	0	0	0	0	(118,168)
1962	0	(101,630)	(119,913)	(94,907)	(124,508)	(13,830)	0	0	0	0	0	(68,121)	(522,909)
1963	(66,713)	(45,991)	(50,798)	(13,297)	(136,802)	0	0	0	0	0	(2,417)	(28,511)	(344,529)
1964	(65,461)	(59,949)	(283,134)	(271,284)	(52,939)	(27,983)	0	0	0	0	0	(35,762)	(796,512)
1965	(53,589)	(248,102)	(291,341)										(593,032)

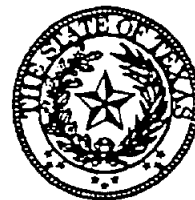
Note: Values = Table F-5 - Table F-3

APPENDIX G

GRAPHS OF ESTIMATED SABINE LAKE INFLOWS

EXECUTIVE SUMMARY

ENVIRONMENTAL WATER NEEDS CRITERIA OF THE CONSENSUS PLANNING PROCESS



In pursuit of the goals of reducing conflict among competing water interests, providing consistent State water policy, and increasing planning and regulatory clarity to State water managers, the draft consensus planning methods reached among the three State water agencies for providing water needs involve trade-offs where neither human nor environmental needs unacceptably "prevail" over the other. The proposed methodology is based on the concept of retaining target flows for environmental purposes and allowing human use of flows greater than the target flows. Each of the new project environmental criteria described below provides for the priority of human needs during dry conditions, but also provides for some sharing of the adverse impact of drought by humans and the environment.

Specific data or project features identified in the final design and permitting process of water supply projects may require consideration of detailed criteria, based on site-specific field studies, which were not applied during the longer-range planning process. The environmental provisions specified below are representative of the basic approach to apportion surface water subject to regulatory actions in the entire water development process (i.e., planning through permitting), but only approximating what may be required for environmental needs in the final permit decision. In addition to passage of environmental flows, adequate flows will be passed through for protection of downstream water rights. In lieu of site-specific studies in the permitting process, the criteria will have the rebuttable presumption of validity. When the results of intensive freshwater inflow or instream flow studies are available and criteria have been established, those criteria will be used in the Water Plan rather than any generic rule.

NEW PROJECT ON-CHANNEL RESERVOIRS

The conservation storage of new, on-channel water supply reservoirs would be divided into three zones with provisions for varying levels of instream flows downstream of on-channel reservoir projects. Zone 1 occurs when reservoir water levels are greater than 80% of storage capacity, and inflows will be passed up to the monthly medians, calculated with naturalized daily stream flow estimates. Also, inflows will be passed to provide one channel flushing flow per season to provide for channel and habitat maintenance. Zone 2 occurs as dry conditions drop reservoir levels to between 50 and 80% of storage capacity. In this zone, inflows would be passed only up to the monthly 25th percentile flow values, calculated with naturalized daily stream flow estimates. In Zone 3, drought conditions worsen, dropping reservoir levels below 50% storage capacity. Inflows would be passed up to the established water quality standard (or 7Q2 value published by the TNRCC) for the downstream segment.

In all zones, instream flow pass-throughs would be targeted to reach the associated estuary system. Flows necessary for the protection of downstream water rights will be added to the appropriate instream flow value determined by the above method. In all cases, no releases will be made from water supply storage to provide environmental flows.

NEW DIRECT DIVERSIONS

Criteria governing direct diversions from a river or stream recommended in the State Water Plan would be based on stream flow conditions just upstream of the diversion point after providing for downstream water rights, and would also be divided into three zones based on hydrologic conditions. Zone 1 occurs when flow is greater than monthly medians; minimum flows passed will be the monthly medians, calculated with naturalized daily stream flow estimates. Zone 2 occurs when flows are greater than the monthly 25th percentile and less than or equal to medians. Minimum flows passed will be the monthly 25th percentile, calculated with naturalized daily stream flow estimates. Zone 3 occurs when stream flow is less than or equal to monthly 25th percentile values. Minimum flows passed will be the larger of: (1) the value necessary to maintain downstream water quality, or (2) a continuous flow threshold to be determined by consensus planning staff (e.g., 15th percentile), that would not allow the diversion by itself to dry up the stream.

NEW DIRECT DIVERSION PROJECTS INTO OFF-CHANNEL STORAGE

In those cases where a recommended water supply project would divert its water from a river or stream into off-channel storage, a combination of the direct diversion and reservoir criteria would apply. The direct diversion criteria will govern the ability to divert water into the off-channel reservoir. The reservoir criteria will address the ability of the project to capture water, as well as define the reservoir's operations to pass environmental flows from its own watershed.

BAY AND ESTUARY CONSIDERATIONS

For most planning purposes, the Zone 1 environmental flow requirements previously described will also provide the target inflows to bays and estuaries (B&E). However, where inflow values that are adequate to meet the beneficial inflow needs as described in Texas Water Code §11.147 have been established, those inflow volumes will be used as the basis for calculating the contributing portions of required water during Zone 1 conditions in new reservoirs or direct diversions for projects located within 200 river miles of the coast, to commence at the mouth of the river. No other special B&E provisions would be made in Zone 2 or Zone 3. These inflow values may be determined by TPWD until that agency and the TNRCC jointly make the determination in accordance with Texas Water Code §11.1491.

AMENDMENTS TO EXISTING PERMITS

Once water supply projects are specifically designed and submitted for permit consideration, a more detailed environmental assessment of its features may be performed. The scope of environmental review and permit consideration of an amendment to an existing water right is limited by law. Because of the many varied conditions around the State, the TNRCC can only provide general guidance as to how the Commission would evaluate applications for water rights and amendments to existing permits. In general, evaluation of impacts to instream or estuarine ecosystems will occur when there is a *significant* change in the point of diversion from downstream to upstream, to an adjoining tributary, to endangered species habitat, or if there is a change of purpose of use from non-consumptive to consumptive. Other changes in place or type of use may have limited or no further

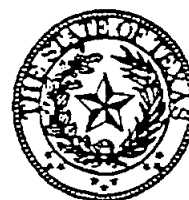
environmental review. For further details, refer to A Regulatory Guidance Document for Applications to Divert, Store or Use State Water (June, 1995), published by the TNRCC.

For planning purposes, proposed amendments, such as conversion from non-consumptive to consumptive use (having the effect of a new appropriation) would have the appropriate environmental considerations described for new projects. For other types of amendments where only the intervening river or stream would be affected, the appropriate reservoir or direct diversion instream flow criteria would be applied. Where applicable, environmental flow criteria would only affect that portion of the existing water right subject to change.

APPENDIX H

**ENVIRONMENTAL WATER NEEDS CRITERIA OF THE CONSENSUS
PLANNING PROCESS**

ENVIRONMENTAL WATER NEEDS CRITERIA OF THE CONSENSUS PLANNING PROCESS



OVERVIEW

In pursuit of the goals of reducing conflict among competing water interests, providing consistent State water policy, and increasing planning and regulatory clarity to State water managers, the draft consensus proposals reached among the Texas Water Development Board, the Texas Natural Resource Conservation Commission, and the Texas Parks and Wildlife Department on planning methods for providing water needs necessarily involve trade-offs where neither human nor environmental needs unacceptably "prevail" over the other. The challenge facing the technical and policy staff of the three agencies was to craft methods that seek to optimize the provision of environmental flows while minimizing impact on water supply capability.

A guiding desire was to develop a procedure for the Water Plan process that would improve the current method of providing instream flows for environmental purposes with one that will ensure the long-term maintenance of the water-based environment that is so important to Texans, realizing that dry conditions are a natural part of Texas. This process leaves water in the rivers up to an environmental target flow amount and allows human use of flows larger than the target rate. The agencies sought the advice of national experts on how to quantify instream environmental flow targets in a planning process. Their recommendation was that site specific studies should be required, but the instream environment that developed over time should be maintained if river flow rates are normal. The procedure developed uses median flows calculated from naturalized daily streamflow estimates. These estimates are calculated by removing human impacts on the measured flows to represent normal flows, with different operating procedures as river flow conditions change from normal to dry and finally to drought to balance human and environmental uses.

Inter-agency staff have modeled and evaluated well over 100 different scenarios with a variety of alternative management options and in diverse locations and site conditions around the State. We feel the draft proposals listed below produce an acceptable balance between human and environmental needs, and employing straightforward policy considerations and planning methods that are intuitive, consistent, and equitable in their approach. Each of the new project criteria described below provides for the priority of human needs during dry and drought conditions, but at the same time provides for some sharing of the adverse impact of drought by humans and the environment.

It should be emphasized that specific features that are identified in the final project design may require application of detailed criteria during the permitting process which were not applied during the long-range planning process. The environmental provisions specified below are representative of the basic approach to apportion surface water subject to regulatory action in the water planning process, and only approximating what may be required for environmental

needs in the ultimate regulatory decision. In lieu of site-specific studies in the permitting process, the criteria will have the rebuttable presumption of validity.

For planning purposes, the environmental pass-through requirements for all zones will be added to flows that provide for downstream water rights. The protection of downstream water rights will be presented by using the full recorded amount of the existing water right and the higher of current reported use or future projected consumptive use (never larger than the full recorded amount of the right) for each downstream right. This range of available water will be noted so that sponsors of surface water development projects will be aware that certain actions on their part may be needed to produce the projected water supply. This approach will ensure that the full permitted rights are recognized during the planning process while identifying areas where significant amounts of appropriated water are presently not being used and potentially available to meet future water needs through marketing, subordination agreements, or other regulatory means.

NEW PROJECT ON-CHANNEL RESERVOIRS

As illustrated in Figure 1, the conservation storage of new-project, on-channel water supply reservoirs would be divided into three zones for environmental instream flow provision as follows:

Zone 1

In Zone 1 of the reservoir, when the reservoir water level is greater than 80% of storage capacity, inflows will be passed up to the monthly medians that are calculated with naturalized daily streamflow estimates.*

Also when the reservoir level is within Zone 1, inflows will be passed to provide one channel flushing flow event per three-month calendar season to provide for channel and habitat maintenance. The default planning criteria allow for a flushing flow event with a 72-hour duration and a peak discharge equal to the site's daily maximum flow with a 1.5-year recurrence interval calculated using an annual historical series of naturalized daily streamflow estimates. During these events, the reservoir will pass-through the higher of: (a) peak flow values, or (b) the sum of environmental pass-throughs, plus flows for protection of downstream water rights. Thus, the flushing flow is not to be stacked on other flow requirements. These environmental criteria should not and are not intended to provide any increase in flooding or cause over-banking below a new reservoir.

* Naturalized streamflow is the estimated amount of water that would have been present in a watercourse with no direct man-made impacts in the watershed. It is calculated by taking values of historically measured streamflow, adding amounts of estimated man-made losses from the upstream watershed caused by diversion and lake evaporation, then subtracting amounts of estimated man-made gains to the upstream watershed caused by return flows.

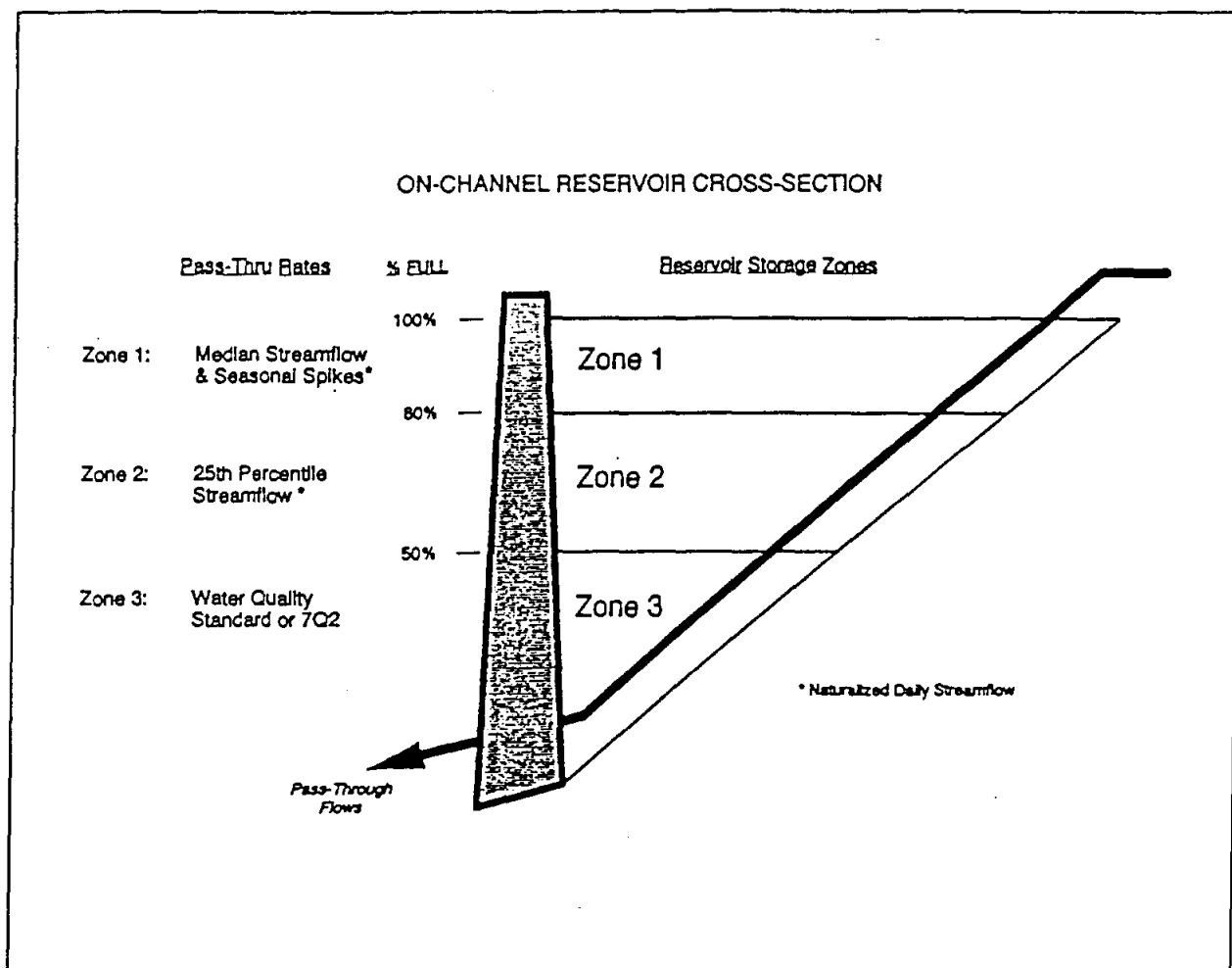


FIGURE 1
NEW PROJECT, ON-CHANNEL RESERVOIR CRITERIA
FOR PASSING ENVIRONMENTAL FLOWS

Zone 2

As dry conditions develop and the reservoir water level declines into Zone 2 between 50 and 80% storage capacity, inflows passed would be reduced and provided only up to the monthly 25th percentile flow values that are calculated with naturalized daily streamflow estimates.

Zone 3

As more severe drought conditions develop and the reservoir level declines into Zone 3 below 50% storage capacity, environmental pass-throughs would be reduced, and flows would be passed up to a target of the established water quality standard for the downstream segment. In lieu of any established water quality standard, the 7Q2 low flow value, as published in the TNRCC's Water Quality Standards, would be used as the default criterion for Zone 3 pass-throughs. If in Zones 1 and 2, the value necessary to maintain downstream water quality is higher than the medians or 25th percentiles then the value necessary to maintain downstream water quality will be used instead of the other target flow values.

All Reservoir Zones

In all zones, it is the intent of these planning criteria that flows passed for instream purposes would also reflect the needs of the associated bay and estuary system. In addition to passage of environmental flows, adequate flows will be passed through for protection of downstream water rights. In all zones, water that can be captured by reservoirs in excess of the environmental provisions is available for water supply storage, and no water will be released from storage to meet environmental targets when inflows are below these limits. However, most future reservoir projects and direct diversions are anticipated to be designed solely for water supply rather than flood control, meaning that most floods can't be captured by the reservoir, but will spill downstream. These spills increase the amount of water available for instream flow maintenance and estuarine needs than would be provided by the environmental criteria alone.

NEW PROJECT DIRECT DIVERSIONS

As illustrated in Figure 2, the criteria for direct diversions from a river or stream that are recommended in the Water Plan, would be based on streamflow conditions just upstream of the diversion point, and would also be divided into three zones as follows:

Zone 1

Zone 1 occurs when actual streamflow is greater than monthly medians calculated with naturalized daily streamflow estimates. When streamflow is within Zone 1, minimum flows passed will be the monthly medians that are calculated with naturalized daily streamflow estimates.

Zone 2

Zone 2 occurs when actual streamflow is less than or equal to medians, but greater than monthly 25th percentile values. When streamflow is within Zone 2, minimum flows passed will be the monthly 25th percentile values that are calculated with naturalized daily streamflow estimates.

Zone 3

Zone 3 occurs when actual streamflow is less than or equal to monthly 25th percentile values. When streamflow is within Zone 3, minimum flows passed will be the larger of: (1) the value necessary to maintain downstream water quality or (2) a continuous flow threshold to be determined by consensus planning staff (e.g., 15th percentile flow) that will not allow the diversion by itself, to dry up the stream.

For perennial river/stream segments where a water quality standard has been established for a stream segment, that value will be used as the pass-by target. Where such a standard has not yet been established, the default planning criterion is the 7Q2 value as published in the TNRCC's Water Quality Standards. For Zones 1 and 2, if the value necessary to maintain downstream water quality is higher than the medians or 25th percentiles, this value necessary to maintain downstream water quality will be used instead of the other values.

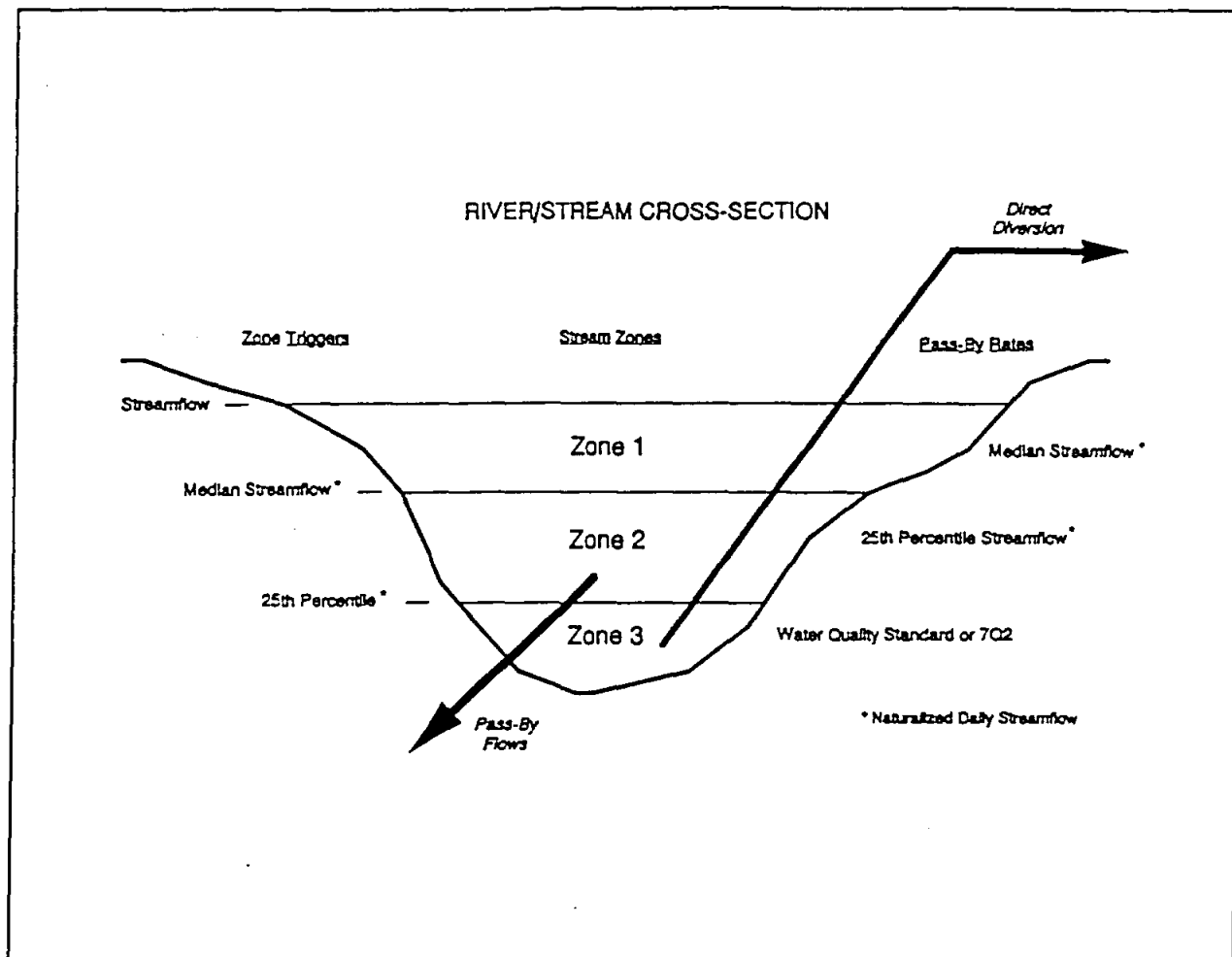


FIGURE 2
NEW PROJECT, DIRECT DIVERSION CRITERIA
FOR PASSING ENVIRONMENTAL FLOWS

All Zones

The trigger values above are calculated with naturalized daily streamflow estimates. In addition to passage of environmental flows, adequate flows will be passed through for protection of downstream water rights. The above procedure, because it provides a specific quantity of flow for environmental use for each zone, does not have smooth transitions between zones for diversion restrictions, and the agencies agree that the procedure should be investigated to see if it is possible to make smoother transitions.

NEW DIRECT DIVERSIONS INTO LARGE OFF-CHANNEL STORAGE

As illustrated in Figure 3, in those cases where a large water supply project would divert its water from a river or stream into off-channel storage, a combination of the direct diversion and reservoir criteria would apply.

The direct diversion criteria will govern the ability to divert water into the off-channel project. The reservoir criteria will address the ability of the reservoir to capture water from its own watershed, as well as define the reservoir's multi-stage operations to pass-through environmental flows, as well as flows for protection of downstream water rights.

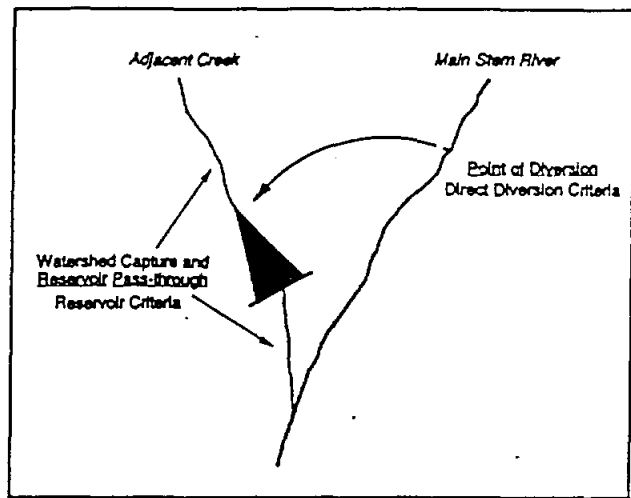


FIGURE 3
COMBINED CRITERIA FOR DIVERSION
INTO OFF-CHANNEL RESERVOIR

BAY AND ESTUARY CONSIDERATIONS

As a planning place-holder value, the Zone 1 reservoir pass-throughs or direct diversion pass-bys described previously will also provide freshwater inflow to the bays and estuaries. However where inflow values adequate to meet the beneficial inflow needs as described in Texas Water Code §11.147 have been established, those inflow volumes will be used for projects within 200 river miles of the coast, commencing from the mouth of the river, as the basis for calculating the relative contributions of fresh water from the associated rivers and coastal basins during times of Zone 1 conditions. No other special provisions would be made for B&E purposes in Zone 2 or 3 conditions for either new reservoirs or large direct diversions. These inflow values may be determined by TPWD until that agency and the TNRCC jointly make the determination in accordance with Texas Water Code §11.1491.

The target flows in Zone 1 of the reservoir operating procedure should be established to provide the beneficial flows as defined in §11.147(a) of the Texas Water Code, i.e. the "salinity, nutrient, and sediment loading regime adequate to maintain an ecologically sound environment in the receiving bay and estuary system that is necessary for the maintenance of productivity of economically important and ecologically characteristic sport or commercial fish and shellfish species and estuarine life upon which such fish and shellfish are dependent."

In practical terms, that means it is not necessarily MinQ or MaxQ produced by the optimization model, but a point along that curve between these values that provides some margin of safety (comfort) in providing sufficient flows in Zone 1 to maintain average historic productivity on the fisheries. The fresh water inflow target is one that has been validated by comparing the seasonal distribution of salinity regimes with the density distribution of selected estuarine flora and fauna.

B&E pass-through requirements for a new water development project will be based on a pro-rata share of that location's contribution of flow to the estuary in question. Once the target amount of water reaches an estuary during a month, no additional flows need to be provided for bay and estuary purposes during that month. For the remainder of the month, environmental flows revert to the instream criteria.

RESULTS OF INFLOW AND INSTREAM STUDIES - USE OF STATE DETERMINATIONS

When the results of intensive fresh water inflow or instream flow studies are available and criteria have been established in the regulatory process, those criteria will be used in the Water Plan rather than any generic rule. The instream flow requirements for the Colorado River have been approved by TNRCC through the regulatory process. When established criteria are available and agreed to by TPWD and TNRCC, bay and estuary inflow requirements would be apportioned to each new project identified in the plan according to its proportional share (based on contribution hydrology), and as provided for by TNRCC's A Regulatory Guidance Document for Applications to Divert, Store or Use State Water (June, 1995). Where possible, this process seeks to restore seasonal flow patterns and minimize cumulative impacts from water development projects.

In order to facilitate the timely completion of the (joint) determination of the inflow conditions necessary for the (remaining) bays and estuaries, TPWD and TNRCC, per §11.1491 of the Texas Water Code, will each designate an employee to share equally in the oversight of the program to review the studies prepared by the TWDB and TPWD under Section 16.058 (bay and estuary inflow studies) to determine inflow conditions necessary for the bays and estuaries. The three agencies will continue to work together as they have in development of the Guadalupe Estuary (San Antonio Bay system) target flows to meet the bay and estuary studies completion deadlines, and that provides a salinity, nutrient, and sediment loading regime at or above the identified needs.

AMENDMENTS TO EXISTING PERMITS

Once projects are specifically designed and submitted for permit consideration, a more straightforward and factual environmental assessment of its features may then be performed. The scope of environmental review and corresponding permit considerations relating to an amendment of an existing water right is limited by law, and is set forth in more detail in the TNRCC's A Regulatory Guidance Document for Application to Divert, Store or Use State Water (June, 1995).

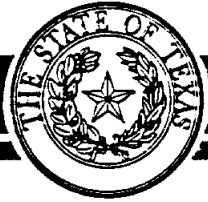
An environmental assessment and any corresponding permit conditions relating to an application for an amendment are limited to addressing any new or additional environmental impacts which may result from granting the amendment, and where such impacts would be beyond that which are possible under the full, legal operation of the existing water right prior to its amendment. Because of the many varied conditions around the State, the TNRCC Regulatory Guidance Document can only provide general procedures in many instances as to how the Commission would evaluate applications for water rights permits and amendments to existing permits. A

summarization and categorization of the TNRCC's general guidance for determining potential adverse impact to the environment is as follows for types of possible water right amendments likely to be considered in the consensus planning process:

Type of Amendment	Scope of Environmental Review	Basis for Environmental Reservation
Interbasin Transfer with no change in <i>permitted</i> purpose of use, appropriative amount, point of diversion, and rate of diversion.	No additional environmental impacts considered with respect to the originating basin. Consideration of potential changes in water quality and/or migration of nuisance species, and excessive freshwater inflows to maintain proper salinity levels for B&E's may be made for receiving basin. A social, economic, and environmental impact statement may be required to be submitted.	Not applicable for originating basin.
Significant change in point of diversion from downstream to upstream, to adjoining tributary, or to endangered species habitat	Evaluation of impacts to intervening instream or site-affected environmental resources.	Case-by-case basis where level of significance evaluated as per Regulatory Guidance Document.
Change of purpose of use from non-consumptive to consumptive use	Evaluation of impacts to instream and B&E environmental resources.	Three-zone planning criteria described previously.
Change in purpose of use where there is no increase in the consumption of water from that legally authorized in the existing water right.	No environmental review.	not applicable.

For consensus planning purposes, possible water rights amendments, such as conversion from non-consumptive to consumptive use (having the effect of a new appropriation) would have the appropriate *instream and B&E* considerations described above for new projects applied in our planning assessment. For other types of amendments where only the intervening river or stream segment would be affected, the appropriate reservoir or direct diversion *instream* criteria would then be applied, in lieu of a detailed, site-specific study.

Where applicable, the "environmental planning criteria" would only affect that portion of the existing water right subject to change. Also, where regional or local planning efforts may specify higher environmental goals than that provided for by existing minimum legal or regulatory requirements, such alternate goals can be requested by the applicant and can be ultimately provided for in the permit language.



TEXAS WATER DEVELOPMENT BOARD

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Charles L. Geren, *Member*

November 17, 1997

Mr. Tom Gooch
Freese & Nichols
4055 International Plaza, Ste. 200
Fort Worth, Texas 76190-4895

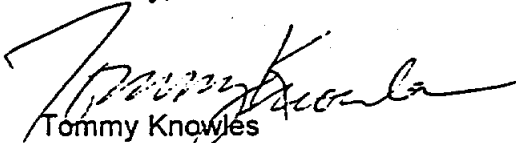
Re: Texas Water Development Board (Board staff) Comments on Trans-Texas Water Program "Impact of Potential Toledo Bend Operational Changes, April 1997"

Dear Mr. Gooch:

Board staff has reviewed the above-referenced report and offer the following comments shown in Attachment 1.

Board staff hopes that these comments are of benefit to you and should you have any questions please call Gordon Thorn at (512) 463-7979.

Sincerely,


Tommy Knowles
Deputy Executive Administrator
for Planning

Our Mission

Exercise leadership in the conservation and responsible development of water resources for the benefit of the citizens, economy, and environment of Texas.

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ATTACHMENT 1

TEXAS WATER DEVELOPMENT BOARD

COMMENTS ON TRANS-TEXAS WATER PROGRAM "IMPACT OF POTENTIAL TOLEDO BEND OPERATIONAL CHANGES"

Section 1.3.6 of the Scope of Work instructs the contractor to "prepare a preliminary qualitative analysis of the effects of the reservoir operational changes on recreational use of Toledo Bend Reservoir, fisheries and other instream uses in the Sabine River, and salinity, fisheries, and other resources in Sabine Lake." Only one statement was made about the recreational lake use: "In terms of fishing and other forms of recreation at Toledo Bend Reservoir, the impact of the contemplated changes should not be a significant problem." There is no analysis to substantiate this statement.

Similarly, only a one sentence statement was made concerning the effect of the proposed changes on the fisheries and other instream uses in the Sabine River: "The difference between the two scenarios (i.e., with and without Trans-Texas diversions) with Toledo Bend in operation would not significantly impair fishing and boating conditions on the lower river." There is no analysis of the potential impact on recreation or fisheries of a 20.7 percent reduction from historical downstream flows.

The report sufficiently described the inflow hydrology and identified the seasons in which inflow changes would result in increases or decreases in salinity; however, no qualitative interpretations of these effects on the fisheries and other resources in Sabine Lake were made.

RESPONSE TO COMMENTS

Response to Comments from TWDB:

Three paragraphs were added to the end of Section 4.1 to address the preliminary qualitative analysis of the effects of Toledo Bend's operational change on recreational use, fisheries, and other instream uses in the Sabine River as well as the salinity, fisheries, and other resources in Sabine Lake.



TEXAS WATER DEVELOPMENT BOARD

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Executive Administrator

Noé Fernández, *Vice-Chairman*
Jack Hunt, *Member*
Wales H. Madden, Jr., *Member*

February 4, 1998

Mr. Tom Gooch
Freese & Nichols
4055 International Plaza, Ste. 200
Fort Worth, Texas 76190-4895

Re: Texas Water Development Board (Board staff) Comments on Trans-Texas
Water Program "Impact of Potential Toledo Bend Operational Changes"

Dear Mr. Gooch:

The above referenced report has been received and reviewed by the Board's staff. The revisions to the report are acceptable and conform to the terms of the contract.

The Board looks forward to receiving one (1) unbound camera-ready original and nine (9) bound double-sided copies of the Final Report on this planning project. Please contact me at (512) 463-7979 if you have any questions concerning the project.

Sincerely,

A handwritten signature in cursive script that reads "Gordon L. Thorn".

Gordon Thorn, P.E., Director
Research and Planning Funds
Management Division

Our Mission

Exercise leadership in the conservation and responsible development of water resources for the benefit of the citizens, economy, and environment of Texas.

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summarization and categorization of the TNRCC's general guidance for determining potential adverse impact to the environment is as follows for types of possible water right amendments likely to be considered in the consensus planning process:

Type of Amendment	Scope of Environmental Review	Basis for Environmental Reservation
Interbasin Transfer with no change in <i>permitted purpose of use</i> , appropriative amount, point of diversion, and rate of diversion.	No additional environmental impacts considered with respect to the originating basin. Consideration of potential changes in water quality and/or migration of nuisance species, and excessive freshwater inflows to maintain proper salinity levels for B&E's may be made for receiving basin. A social, economic, and environmental impact statement may be required to be submitted.	Not applicable for originating basin.
Significant change in point of diversion from downstream to upstream, to adjoining tributary, or to endangered species habitat	Evaluation of impacts to intervening instream or site-affected environmental resources.	Case-by-case basis where level of significance evaluated as per Regulatory Guidance Document.
Change of purpose of use from non-consumptive to consumptive use	Evaluation of impacts to instream and B&E environmental resources.	Three-zone planning criteria described previously.
Change in purpose of use where there is no increase in the consumption of water from that legally authorized in the existing water right.	No environmental review.	not applicable.

For consensus planning purposes, possible water rights amendments, such as conversion from non-consumptive to consumptive use (having the effect of a new appropriation) would have the appropriate *instream and B&E* considerations described above for new projects applied in our planning assessment. For other types of amendments where only the intervening river or stream segment would be affected, the appropriate reservoir or direct diversion *instream* criteria would then be applied, in lieu of a detailed, site-specific study.

Where applicable, the "environmental planning criteria" would only affect that portion of the existing water right subject to change. Also, where regional or local planning efforts may specify higher environmental goals than that provided for by existing minimum legal or regulatory requirements, such alternate goals can be requested by the applicant and can be ultimately provided for in the permit language.

Table H-1: Pass-Through Requirements for Toledo Bend Reservoir

<u>Content (%)</u>	<u>Content (Acre-Ft)</u>	<u>Zone</u>	<u>Goal</u>	<u>Release Inflow up to this Level (cfs)</u>											
				<u>J</u>	<u>F</u>	<u>M</u>	<u>A</u>	<u>M</u>	<u>J</u>	<u>J</u>	<u>A</u>	<u>S</u>	<u>O</u>	<u>N</u>	<u>D</u>
>80%	>3,581,600	1	Median	3,927	7,412	6,596	4,809	7,412	2,482	728	366	393	346	710	1,903
50-80%	2,238,500 - 3,581,600	2	25%	1,279	3,706	2,779	2,404	2,184	849	374	184	139	137	227	619
<50%	<2,238,500	3	7Q2	137	137	137	137	137	137	137	137	137	137	137	137

The flushing flow (1.5 year event) is 18,837 cfs.

APPENDIX I
COMMENTS



TEXAS WATER DEVELOPMENT BOARD

William B. Madden, *Chairman*
Charles W. Jenness, *Member*
Lynwood Sanders, *Member*

Craig D. Pedersen
Executive Administrator

Noé Fernández, *Vice-Chairman*
Elaine M. Barrón, M.D., *Member*
Charles L. Geren, *Member*

November 17, 1997

Mr. Tom Gooch
Freese & Nichols
4055 International Plaza, Ste. 200
Fort Worth, Texas 76190-4895

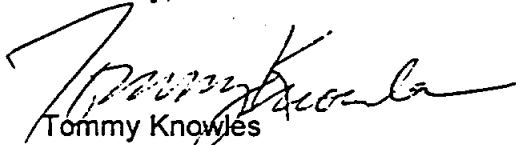
Re: Texas Water Development Board (Board staff) Comments on Trans-Texas Water Program "Impact of Potential Toledo Bend Operational Changes, April 1997"

Dear Mr. Gooch:

Board staff has reviewed the above-referenced report and offer the following comments shown in Attachment 1.

Board staff hopes that these comments are of benefit to you and should you have any questions please call Gordon Thorn at (512) 463-7979.



Sincerely,


Tommy Knowles
Deputy Executive Administrator
for Planning

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ATTACHMENT 1

TEXAS WATER DEVELOPMENT BOARD

COMMENTS ON TRANS-TEXAS WATER PROGRAM "IMPACT OF POTENTIAL TOLEDO BEND OPERATIONAL CHANGES"

Section 1.3.6 of the Scope of Work instructs the contractor to "prepare a preliminary qualitative analysis of the effects of the reservoir operational changes on recreational use of Toledo Bend Reservoir, fisheries and other instream uses in the Sabine River, and salinity, fisheries, and other resources in Sabine Lake." Only one statement was made about the recreational lake use: "In terms of fishing and other forms of recreation at Toledo Bend Reservoir, the impact of the contemplated changes should not be a significant problem." There is no analysis to substantiate this statement.

Similarly, only a one sentence statement was made concerning the effect of the proposed changes on the fisheries and other instream uses in the Sabine River: "The difference between the two scenarios (i.e., with and without Trans-Texas diversions) with Toledo Bend in operation would not significantly impair fishing and boating conditions on the lower river." There is no analysis of the potential impact on recreation or fisheries of a 20.7 percent reduction from historical downstream flows.

The report sufficiently described the inflow hydrology and identified the seasons in which inflow changes would result in increases or decreases in salinity; however, no qualitative interpretations of these effects on the fisheries and other resources in Sabine Lake were made.

RESPONSE TO COMMENTS

Response to Comments from TWDB:

Three paragraphs were added to the end of Section 4.1 to address the preliminary qualitative analysis of the effects of Toledo Bend's operational change on recreational use, fisheries, and other instream uses in the Sabine River as well as the salinity, fisheries, and other resources in Sabine Lake.



TEXAS WATER DEVELOPMENT BOARD

William B. Madden, *Chairman*
Elaine M. Barrón, M.D., *Member*
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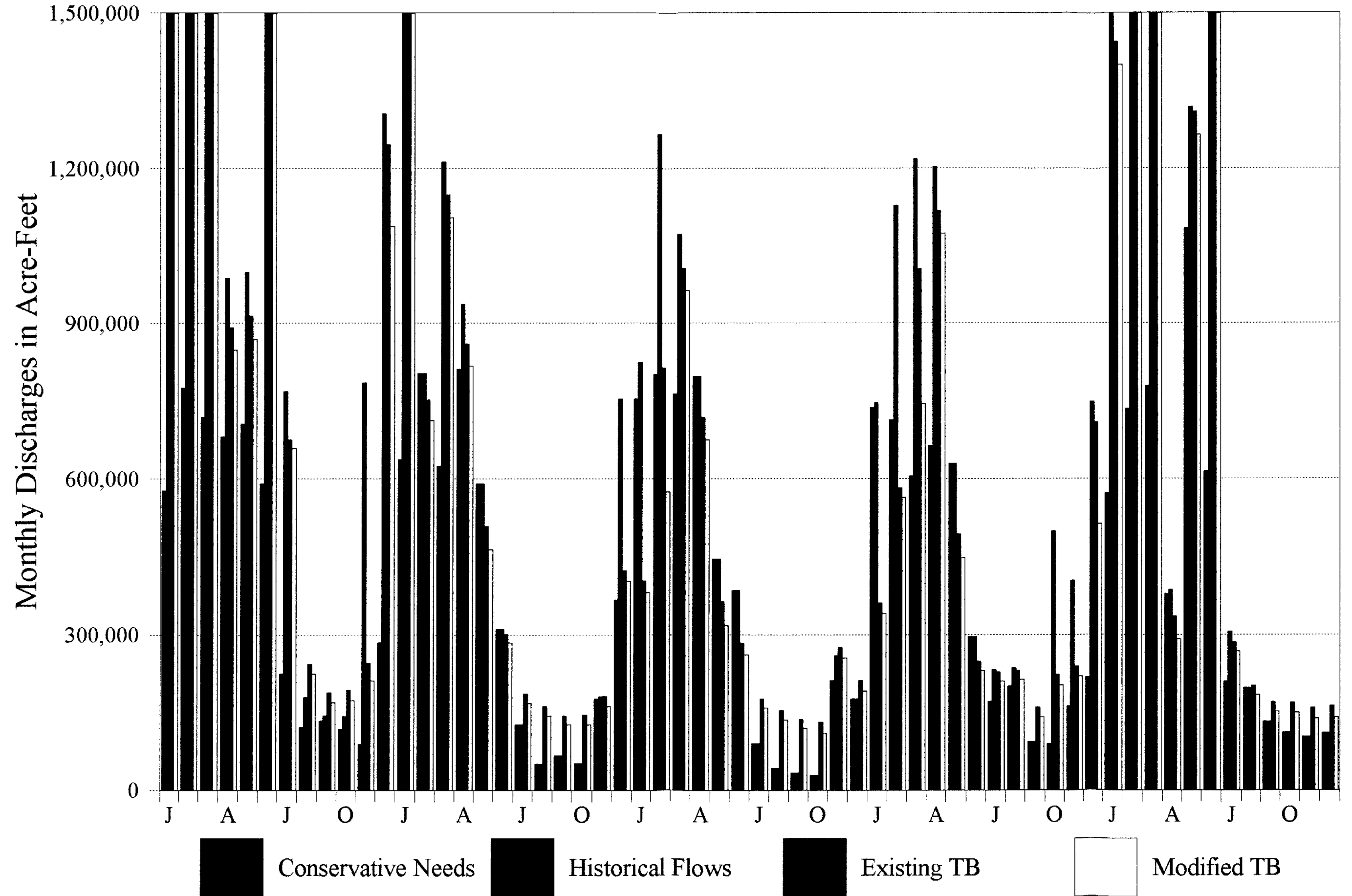
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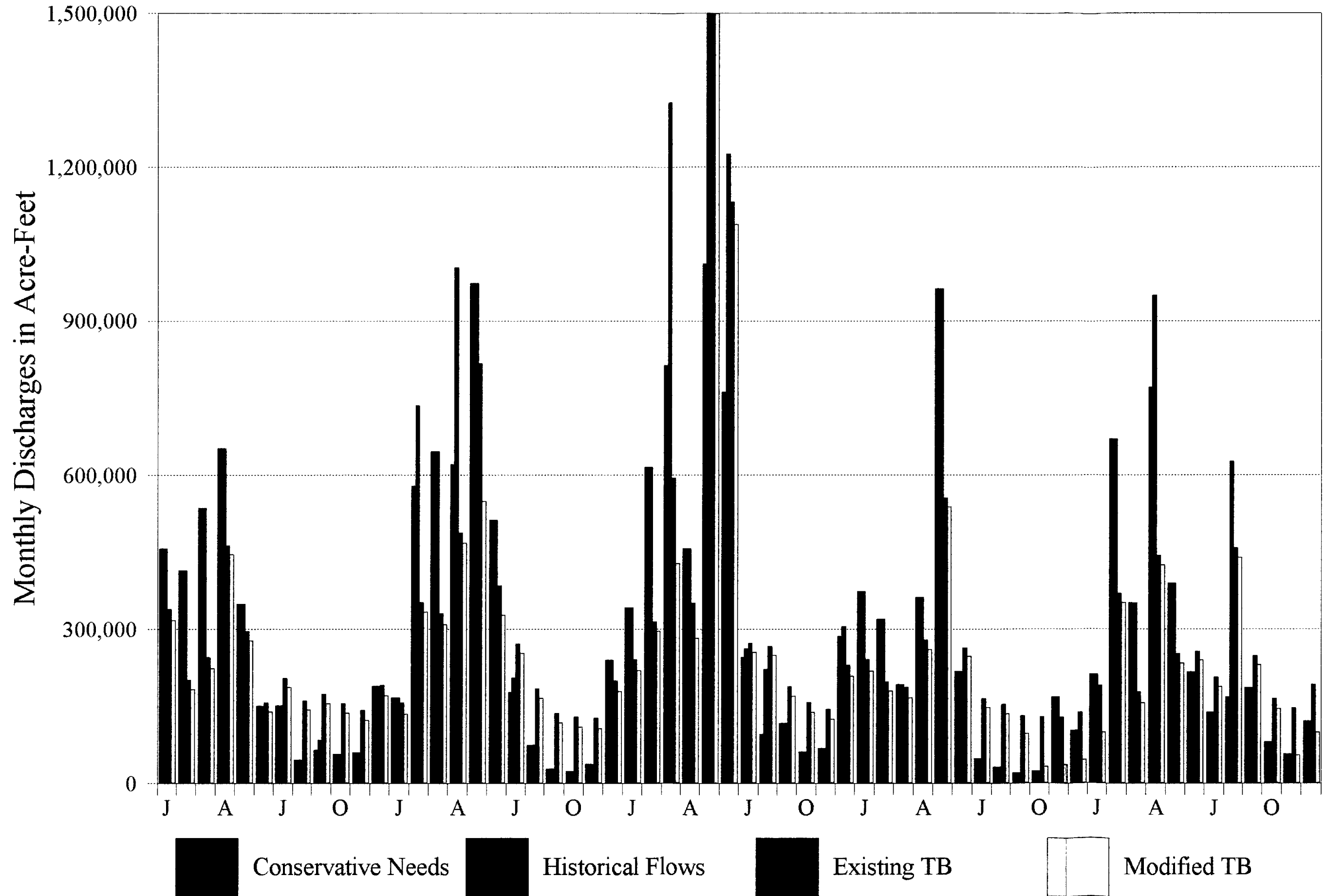
Sabine River Inflows To Sabine Lake

1946 - 1950



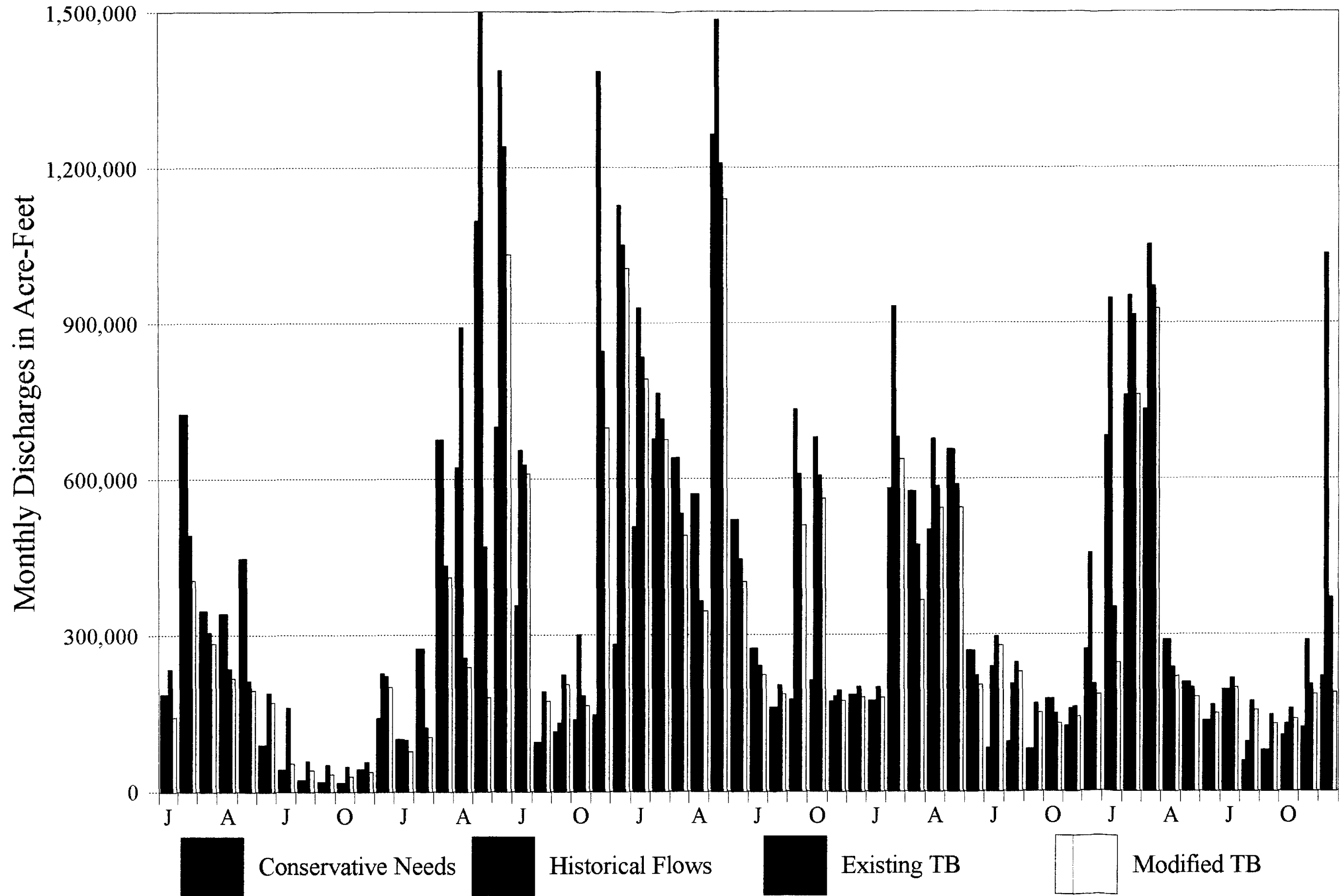
Sabine River Inflows To Sabine Lake

1951 - 1955



Sabine River Inflows To Sabine Lake

1956 - 1960



Sabine River Inflows To Sabine Lake

1961 - 1965

