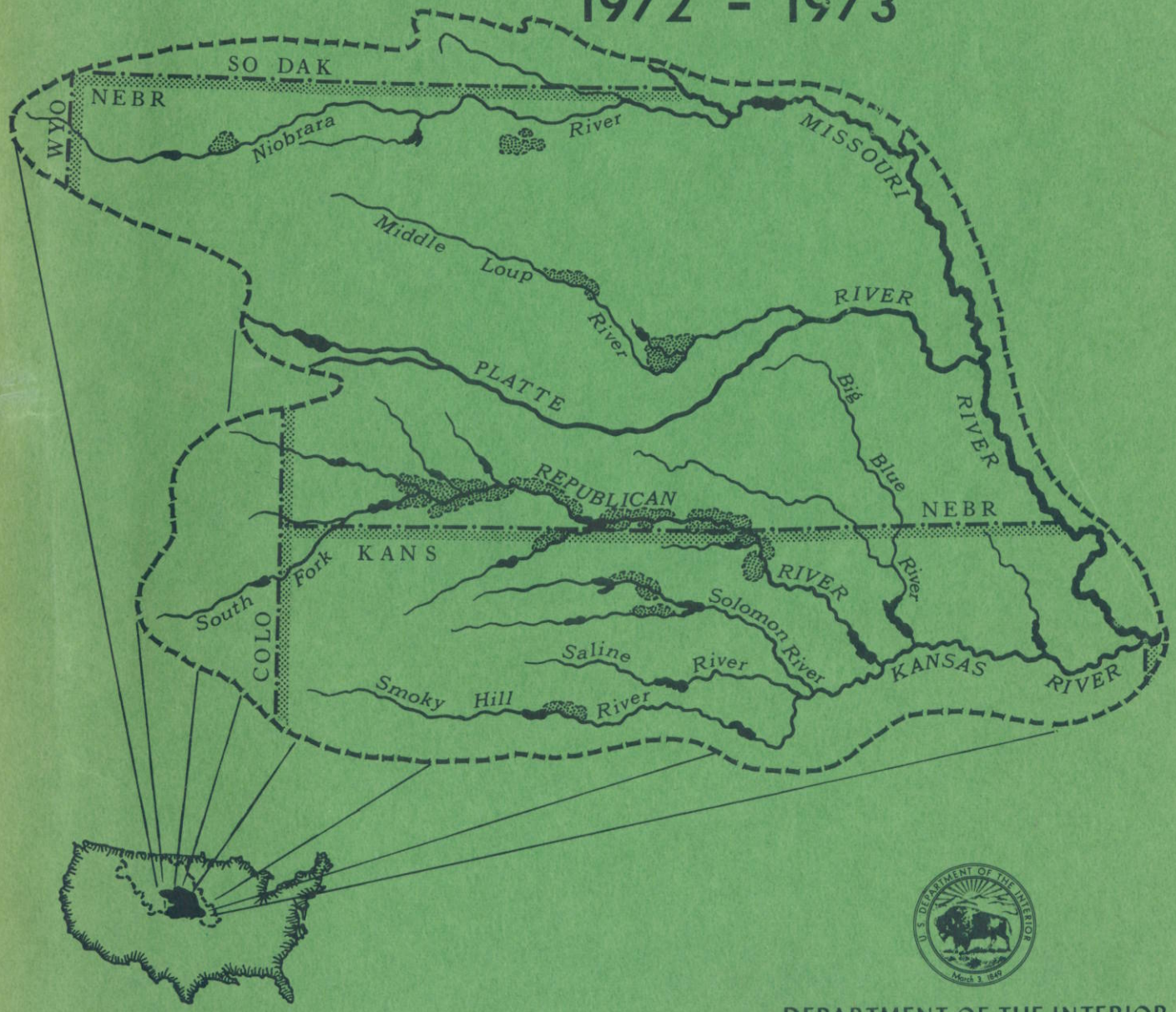
ANNUAL OPERATING PLAN

NIOBRARA, LOWER PLATTE, AND KANSAS RIVER BASINS 1972 - 1973



DEPARTMENT OF THE INTERIOR
Bureau of Reclamation

Department of the Interior

Bureau of Reclamation

Lower Missouri Region · Denver, Colorado

ANNUAL OPERATING PLAN

NIOBRARA, LOWER PLATTE, AND KANSAS RIVER BASINS

1972 OPERATIONS
1973 OUTLOOK

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SYNOPSIS

GENERAL

This is the twentieth consecutive year that an Annual Operating Plan has been prepared for the federally owned reservoirs serving an irrigation function in the Niobrara, Lower Platte, and Kansas River Basins. There are 15 dams and reservoirs, 10 diversion dams, 10 pumping plants, and 22 canal systems in operation serving approximately 268,000 acres of project lands in Colorado, Nebraska, and Kansas. A map in the back of this report shows the location of these features. The reservoirs in the Niobrara and Lower Platte River Basins are operated by either irrigation or reclamation districts, and the reservoirs in the Kansas River Basin are operated by either the Bureau of Reclamation or the Corps of Engineers. The diversion dams, pumping plants, and canal systems are operated by either irrigation or reclamation districts.

In addition to irrigation, these features serve flood control, municipal and industrial water, recreation, and fish and wildlife purposes.

The "Headlines 72" following this Synopsis is indicative of the local interest in natural resource development and conservation in the Niobrara, Lower Platte, and Kansas River Basins.

1972 SUMMARY

Climatic Conditions. The total precipitation during 1972 was normal or above over the operating area except at Sherman, Red Willow, and Medicine Creek Dams where the totals were below normal.

Storage Reservoirs. The inflows were about equal to the normal year forecasts for six reservoirs between the dry and normal year forecasts for seven; and below the dry year forecasts for the other two reservoirs. Three of the 15 reservoirs were drawn down to record-low water levels since initial filling of the conservation pools. The active conservation storage was evacuated from three reservoirs during 1972.

The carry-over storage from 1971 plus the 1972 inflows of Box Butte, Enders, and Norton Reservoirs were inadequate to fully supply the irrigation requirements of project lands served by these reservoirs. The shortage of water in the area served by Enders Reservoir, however, was

minor. There was no water available for irrigation in the Webster Unit in 1972.

Water Service. There were 464,575 acre-feet of water diverted to irrigate 205,576 acres of project lands in 12 irrigation districts. The project water supply was inadequate for 30,634 acres of lands irrigated in the Mirage Flats, Frenchman Valley, H & RW, and Almena Irrigation Districts. There was a 100-percent shortage for 8,564 irrigable acres in the Webster Irrigation District. Arrangements were made with owners of private irrigation wells in the Mirage Flats and Almena Irrigation Districts for a supplemental water supply to their lands. The project water supplies for the other units mentioned in this report were adequate in 1972.

The full water requirements of three municipalities, two industrial companies, and a Federal fish hatchery were furnished from storage releases or return flows.

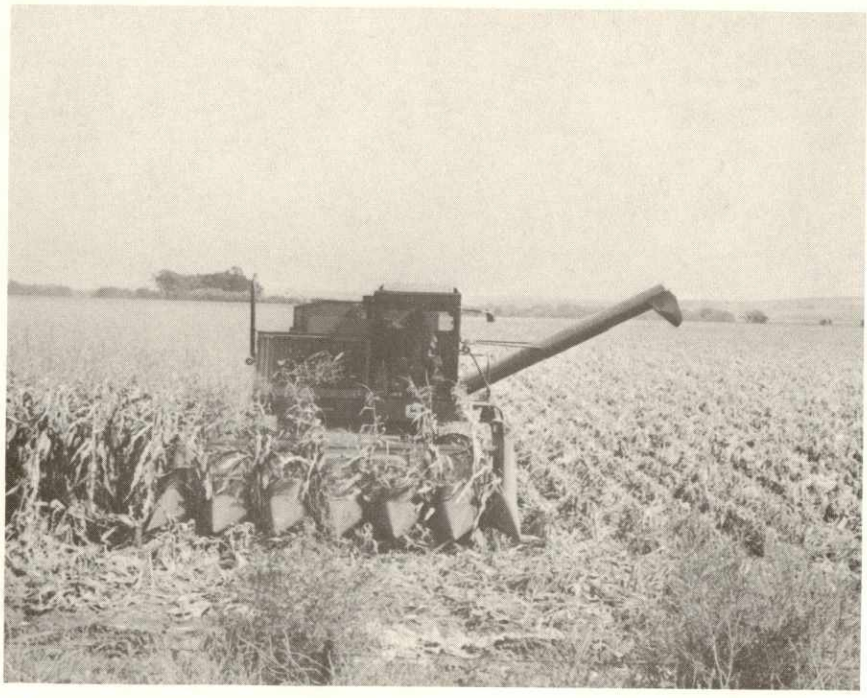
Under a long-term contract, 28,288 acre-feet were diverted to irrigate 12,934 acres of non-project lands in the Middle Loup Public Power and Irrigation District.

Irrigation Production. The crop yields from project lands in 1972 were generally higher than in 1971. Corn, the principal crop, had a higher yield by 6 percent. The unit prices for principal crops in 1972 were higher than in the previous year; along with the higher yield, this created a gross crop value of $34,388,468, which was 116 percent of the previous year. This includes the Webster Unit where the gross crop value was only 20 percent of the 1971 gross crop value.

There were 31,191 acres (11 percent of the project lands) idle under the U. S. Department of Agriculture Feed Grain Program in 1972.

Flood Control Benefits. Flood control benefits in the amount of $500,000 were accrued in 1972 by the operation of Norton Dam. The accumulated flood control benefits for the years 1951 through 1972 by the facilities covered in this report total $32,160,000.

Fish and Wildlife and Recreation Benefits. The operations were generally flexible enough in 1972 to satisfy the recommendations of the Fish and Wildlife Service. Visitation to project facilities totaled 2,937,754 visitor days, which is slightly less than the 1971 total. Table 5 contains information on 1972 visitations at specific features.



Even with today's large-volume picker-shellers (above) there was a delay in harvest due to both rain and snow in mid-October in Kansas and Nebraska. Continuing abnormal weather conditions made it difficult for farmers to harvest their crops, and as late as January a few fields remain unharvested. Feeders are storing rolled shelled corn in large trench silos (below). Operations such as this are becoming more common throughout the area.

Weather Modification. Cloud seeding activities were conducted in western Kansas during the late summer of 1972 in an effort to augment existing water supplies. Such activities were conducted under a cooperative agreement between the Kansas Water Resource Board and the Bureau of Reclamation. Preliminary results indicate that cloud seeding in western Kansas might be feasible and that further long-range experimentation should be undertaken to better identify optimum conditions and procedures.

1973 OUTLOOK

The irrigation and reclamation districts estimate that 232,670 acres will be irrigated in 1973; however, this is based on a full water supply. At the present time it is unknown what effect the Department of Agriculture Feed Grain Program will have on the irrigated area. The operation studies indicate that if 1973 is a dry year, the project water supplies will be inadequate for the irrigation of 42,400 acres in Mirage Flats, H & RW, Frenchman Valley, Almena, and Webster Irrigation Districts. As in past years, the Mirage Flats and Almena Irrigation Districts plan to use water from private irrigation wells to supplement the project water supply.

The industrial, municipal, and fish hatchery water supply requirements are expected to be met in full.

During 1973, under all forecast conditions, storage water in excess of project needs will be available from Bonny Reservoir and Waconda Lake for sale to private irrigators or for other non-project uses. Under normal forecast conditions, storage will also be available from Hugh Butler, Harry Strunk, and Swanson Lakes.

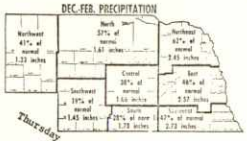
The pool levels in some of the reservoirs will more than likely be below normal during the early part of the year. With dry-year forecasted inflows, only the conservation pools of Merritt, Sherman, Bonny, and Lovewell Reservoirs and Harry Strunk Lake will fill during 1973.

Even with low pool levels in the reservoirs and inadequate water supplies for irrigation of some project lands, the recommendations of State game, fish, and park commissions will generally be satisfied. As in the past, irrigation and reclamation districts will advise State agencies regarding aquatic weed control and canal operations. The Bureau of Reclamation will continue to operate the reservoirs and other facilities under its jurisdiction in the best interests of all project functions and for the greatest public benefit whenever possible.

HEADLINES 72

Sunday Journal and Star Lincoln, Nebraska Sunday, March 12, 1972

Nebraska Dry, Irrigation Water Short



BELLEVILLE TELESCOPE -- April 27, 1972

Officials Explain Kansas River Basin Operating Plans

SALINA JOURNAL -- July 5, 1972

Central and Northwest Kansas news

Lack of Rain Shrinking Swanson, Enders Lakes

Salina Journal Salina, Kansas Thursday, March 23, 1972

Webster reservoir holds nearly as much dust as water

McCook Daily Gazette October 4, 1972

Youths involved in conservation program at Hays

River Beauty

Bartley Diversion on the Republican River April 7, 1972

McCOOK, NEBRASKA 69001, TUESDAY, APRIL 4, 1972

At Peace With Nature

With cooperation from the weatherman in providing warm weather for Easter, a young couple took advantage of the solitude of the beach at Swanson Lake for a peaceful walk by the water Sunday afternoon. (Gazette photo)

McCOOK DAILY GAZETTE -- June 3, 1972

May Rains Help Fill up Area Lakes

The Salina Journal Tuesday, April 18, 1972

We may face worst drouth in century

Salina, Kansas Thursday, January 27, 1972

Norton Daily Telegram and Norton County Champion Norton, Kansas

Farmers in Irrigation District cooperated during water shortage

McCOOK DAILY GAZETTE -- August 11, 1972

Norton Dam Irrigation Shut Off; Short 27 Feet

Salina Journal Salina, Kansas Sunday, February 13, 1972

Record waterfowl flock to the Kirwin refuge

Rains bring needed relief from Northwest Kansas water shortage

McCook Daily Gazette McCook, Nebraska Wednesday, June 14

Enders Needs More Water

Or It'll Be A Dry August

McCook Daily Gazette Tuesday, September 12, 1972

Area Lakes Low As Season Closes

After a summer of irrigating, lakes in Southwest Nebraska are far below conservation capacity.

Salina Journal

Lakes Reap Rewards of Rainfall

McCOOK DAILY GAZETTE -- June 20, 1972

Rain-making experiment explained at Colby

Salina, Kansas Wednesday, June 21

SALINA JOURNAL April 16, 1972

Groundwater levels show decline in area counties

Groundwater levels have declined in the past year in 6 of 9 northwest Kansas counties studied by the Kansas Geological Survey, US Geological Survey and Kansas Division of Water Resources.

Thursday, May 4, 1972

Costly Water Losses Stopped In Irrigation Operation

River Basin News January 22, 1972

McCOOK DAILY GAZETTE -- February 17, 1972

Swanson Lake...

Salina, Kansas

Geese, Eagles Fill the Sky

Roy Cushing of Stratton, below, took the GAZETTE photographer to the site where about 50 of the rare birds fished or perched in a tree (above). Geese by the thousands (right and bottom) were also spending the day on the lake. (Gazette photos)

The Hill City Times Hill City, Kansas

Irrigation Farmers In Sad Fix Below Webster Dam

Water levels shrink at lakes and reservoirs

August 17, 1972 McCook Daily Gazette

Bureau Plans More Jacks On Frenchman

McCook Daily Gazette Thursday, June 22, 1972

25 Years Since Flood Waters Hit Sleeping Cambridge

The Salina Journal In Western Kansas

McCOOK DAILY GAZETTE -- June 19, 1972

Rain Covers Roads, Many Culverts Out

Rain and lightning raged over Southwest Nebraska and Northwest Kansas Saturday night and Sunday, creating a series of problems for road departments, utility crews, motorists, farmers, homeowners and businesses. September 13, 1972

McCook Daily Gazette

Recent Rains Boost H&RW Hope for More Crop Water

McCook, Nebraska Thursday, July 11, 1972

SALINA JOURNAL

Big rains boost Smoky, area creeks over banks

It's wet down there

Smoky Hill river runs bank-full south and west of Lindsborg Saturday, and surface water covers some land

McCook Daily Gazette Wednesday, April 19, 1972

Publicity for Great Lakes Area

McCook, Nebraska

The Great Lakes of Southwest Nebraska gain special mention in the State of Nebraska's official "Highways and Travel Guide" for 1972.

The Lincoln Star Lincoln, Nebraska Saturday, December 2, 1972

Cloud-Seeding Experiments Foreseen Within Few Years

McCook Daily Gazette January 31, 1973

Crop Values Up 25 Per Cent

McCook Daily Gazette Saturday, July 22, 1972

SUMMER FUN DWINDLING -- Two kids fill the beach area off Trail Four at Medicine Creek Reservoir with splashes as they frolic in the lake's receding waters.

McCook, Nebraska Monday, July 3, 1972

Swanson Set for Sailboat Invasion

Flying Scotts Take Open in Third Regatta

December 15, 1972 McCook Daily Gazette

Still Standing

Continued cold weather and snow storms makes it increasingly difficult for the farmer to finish up his fall harvesting.

Tuesday, May 23, 1972 McCook Daily Gazette

Cloud Seeding 'Now Proven'

James R. Smith, former Omahan who is assistant to the secretary for water and power resources, said cloud seeding is not even a science, "neither is it an art." Cloud shapes "are becoming so ski-ilfully crystal" and should move beyond research.

McCook Daily Gazette McCook, Nebraska Monday, June 12, 1972

Youth Corps Join Lake Clean-Up

HARRY STRUNK LAKE

Monday, December 11 McCook Daily Gazette

Earliest Freeze at Lake

McCook, Nebraska Saturday, December 9, 1972

Loss of Irrigated Acres Prompts Study by Bureau

McCook Daily Gazette November 6, 1972

Area Reservoirs Below Capacity

McCOOK DAILY GAZETTE -- July 6, 1972

Soft Fields Slow Down Harvest Around McCook

Gazette McCook, Nebraska Monday, July 31, 1972

Camp Closes Down

CHAPTER I - INTRODUCTION

PURPOSE OF THIS REPORT

In addition to describing the operational responsibilities of the Bureau of Reclamation, Corps of Engineers, and irrigation or reclamation districts in the three basins, this Annual Operating Plan advises water users, cooperating agencies, and other interested groups or persons of the actual operations during 1972 and serves as guidelines for the 1973 operations.

OPERATIONAL RESPONSIBILITIES

The Bureau of Reclamation is responsible for irrigation operations at all Federal reservoirs in the Kansas River Projects area. Where the Bureau of Reclamation is the constructing agency, it is responsible for the employment of operation and maintenance personnel, safety of the structure, and reservoir operations for all other conservation functions, such as recreation, fish and wildlife, municipal and industrial uses, sanitation and water quality control not specifically associated with regulation of the flood control storage.

The Corps of Engineers is responsible for regulation of the flood control storage at all Federal reservoirs in the Kansas River Basin, and for conservation functions other than irrigation at the dams where it is the construction agency.

By contractual arrangements with the Bureau of Reclamation, 12 irrigation or reclamation districts are responsible for the operation of irrigation facilities constructed or rehabilitated by the Bureau of Reclamation in the Niobrara, Lower Platte, and Kansas River Basins with the exceptions of the reservoirs in the Kansas River Basin.

The States of Nebraska, Colorado, and Kansas are responsible for administration and enforcement of the laws of their respective States pertaining to the water rights and priorities of all parties concerned with the use of water.

The Republican River Compact was authorized on August 4, 1942, by Public Law No. 696, which was enacted by the 77th Congress. The Compact was ratified by the States of Colorado, Kansas, and Nebraska. This Annual Operating Plan is in accordance with the objectives of the Compact, which

are: ". . to provide for the most efficient use of the waters of the Republican River Basin for multiple-purposes; to provide for an equitable division of such waters; to remove all causes, present and future, which might lead to controversies; to promote interstate comity; to recognize that the most efficient utilization of the waters within the Basin is for beneficial consumptive use, and to promote joint action by the States and the United States in the efficient use of water and the control of destructive floods."

TABLES AND EXHIBITS

Principal records for the facilities reported herein are attached as tables and exhibits.

WATER SUPPLY

For forecasting purposes, values of annual inflows that will be statistically equalled or exceeded 10, 50, and 90 percent of the time were selected from the probability curve to be "reasonable maximum" (wet year), "most probable" (normal year), and "reasonable minimum" (dry year) inflow conditions, respectively.

RESERVOIR OPERATIONS

All operations are scheduled for optimum benefits to project functions. At the end of the irrigation season, the carryover storage in each reservoir and the reasonable minimum inflow are evaluated to determine if water in excess of that required to fill the conservation pool may be anticipated. If excess inflow is apparent, controlled releases will be made to accomplish maximum downstream benefits. However, this plan is not used for Bonny Reservoir as winter releases from this reservoir are undesirable.

MAJOR FEATURES

The Mirage Flats Project was constructed under the Water Conservation and Utilization Act and includes an irrigation storage reservoir, diversion dam, and canal system. The other features in the scope of this report are a part of the Pick-Sloan Missouri Basin Program and include

multipurpose reservoirs, diversion dams, pump stations, and canal systems. Fifteen storage facilities are now in operation as follows:

Constructed by the Bureau of Reclamation:

(a) Operated by irrigation or reclamation districts--Box Butte and Merritt Dams in the Niobrara River Basin and Sherman Dam in the Lower Platte River Basin.

(b) Operated by the Bureau of Reclamation--Bonny, Trenton, Enders, Red Willow, Medicine Creek, Norton, Lovewell, Kirwin, Webster, Glen Elder, and Cedar Bluff Dams in the Kansas River Basin.

Constructed and operated by the Corps of Engineers:

(a) Harlan County Dam in the Kansas River Basin.

IRRIGATION DISTRICTS

Fourteen irrigation districts and one reclamation district in the Niobrara, Lower Platte, and Kansas River Basins have contracted with the Bureau of Reclamation for water supply and irrigation facilities.

The normal irrigation season for Mirage Flats Irrigation District is April through September. The contracted irrigation season for Frenchman Valley, H & RW, Frenchman-Cambridge, and Cedar Bluff Irrigation Districts is from May 1 to October 15, and for all other districts, May 1 to September 30.

MUNICIPAL AND INDUSTRIAL WATER

Three municipalities and two oil companies have executed water service contracts for full or supplemental water supplies.

FISH HATCHERY

A United States Bureau of Sport Fisheries and Wildlife warm-water fish hatchery is in operation below Cedar Bluff Reservoir.

ENVIRONMENTAL CONSIDERATIONS

A "Statement of Operational Objectives" for Harlan County Reservoir sets forth the general operational objectives and the specific reservoir uses considered desirable, such as that fish and wildlife interests will be best served by high pool levels with minimum fluctuations and regulation of outflow in excess of minimum requirements insofar as feasible. The statement recognizes that to assure realization of the greatest public benefits, operation plans should be sufficiently comprehensive to permit the maximum integration of the secondary uses consistent with the primary purposes of flood control and irrigation.

Insofar as practicable, the above mentioned objectives are considered in the operation of all reservoirs in the Kansas River Basin, Merritt Reservoir in the Niobrara River Basin, and Sherman Reservoir in the Lower Platte River Basin. The regulated outflow will also be of advantage to farmers, ranchers, industries, cities, and other interests below all reservoirs.

CHAPTER II - NIOBRARA AND LOWER PLATTE RIVER BASINS

MIRAGE FLATS PROJECT IN NEBRASKA

GENERAL

Niobrara River flows and Box Butte Reservoir storage provide a water supply which is normally insufficient to achieve maximum yields from the 11,662-acre Mirage Flats Irrigation District. About 90 percent of the acreage in this district has been irrigated each year for the past 24 years. The project water supply will yield an average diversion of one and a half acre-feet per acre which is about one acre-foot per acre short of the long-term average for a full water supply. Several of the landowners in the district have drilled irrigation wells as a source of a supplemental supply. The farmers that own wells share the well water with their neighbors, but the wells are too few in number to fully supplement the project water supply.

The Mirage Flats Irrigation District cooperates with the Nebraska Game and Parks Commission by operating the Box Butte Dam outlet works gates and the Dunlap Diversion Dam gates in a manner that avoids large sudden changes in the flows of the Niobrara River.

1972 SUMMARY

The Niobrara River flows and the carryover storage in Box Butte Reservoir were insufficient for a full water supply for the Mirage Flats Irrigation District lands and the active storage was evacuated by September 3rd. This is the third consecutive year that all of the available active storage was used. The total precipitation in the Mirage Flats area was 15.41 inches, which is 101 percent of normal. The rainfall during June and July was 182 and 147 percent of normal, respectively.

There were 10,188 acres irrigated, which is 87 percent of the acres with service available. The farm deliveries from the project water supply were 0.78 acre-foot per acre. The gross crop value was $781,032. Water from privately owned irrigation wells was used as a supplemental supply. No information is available on the amount of well water pumped to project land.

1973 OUTLOOK

The water level in the reservoir on January 1, 1973, was about equal to what it was on that day one year previously. The Mirage Flats Irrigation District will announce to their water users in the spring the amount of water that will be available from Box Butte storage. The project water supply is expected to be inadequate in 1973 as it has been in past years. The district plans, however, for the irrigators to continue the use of water from privately owned irrigation wells as a supplemental supply. There are 10,800 acres expected to be irrigated in 1973.

AINSWORTH UNIT, SANDHILLS DIVISION IN NEBRASKA

GENERAL

The water supply for 33,986 acres in the Ainsworth Irrigation District is provided by Merritt Reservoir storage and Snake River flows. To avoid ice damage to the upstream face of Merritt Dam during the winter months, releases from Merritt Reservoir are regulated to maintain a water level about 5 feet below the top of the conservation capacity. When the reservoir surface clears of ice each spring, the conservation capacity is slowly filled. This operation greatly enhances the spring spawning of fish.

The Ainsworth Irrigation District cooperates with the Nebraska Game and Parks Commission by avoiding sudden large changes in reservoir releases. Small releases are also regulated as necessary to maintain a minimum flow of 15 c.f.s. in the Snake River below Merritt Dam.

1972 SUMMARY

The total precipitation of 17.92 inches for the year in the Merritt Dam vicinity was 102 percent of normal. The water supply was more than adequate to meet the irrigation requirements of 53,871 acre-feet to serve the 28,200 acres of irrigated land. Due to water user participation in the Department of Agriculture Feed Grain Program, the irrigated area was about 2,700 acres less than in 1971. The gross crop value was $4,467,718, which is nearly $450,000 more than the previous year.

1973 OUTLOOK

Releases from Merritt Reservoir will be regulated to slowly fill the conservation capacity by mid-May. The water supply is expected to be adequate for the irrigation of an estimated 31,000 acres.

SARGENT UNIT, MIDDLE LOUP DIVISION IN NEBRASKA

GENERAL

The Sargent Irrigation District has contracted with the Loup Basin Reclamation District for the latter to operate the Milburn Diversion Dam and Sargent Canal system to serve 13,363 acres in this unit. The water supply is diverted from the Middle Loup River into the Sargent Canal under an appropriated natural flow right from the State of Nebraska. These diversions may exceed the natural flow appropriation of 195 c.f.s. by an exchange of storage from Sherman Reservoir, provided that water is available after all senior appropriations are satisfied and the excess is not greater than the storage releases from Sherman Reservoir.

1972 SUMMARY

The annual precipitation over the Sargent Unit was normal. The diversions into Sargent Canal of 25,384 acre-feet were slightly above normal, of which 2,331 acre-feet were in excess of the Sargent Irrigation District's natural flow appropriation. The diversions exceeded the appropriated right for 24 days during 1972. There were 11,249 acres irrigated with a gross crop value of $1,424,009.

1973 OUTLOOK

The Loup Basin Reclamation District estimates that 11,000 acres in the Sargent Unit will be irrigated in 1973. The water supply is expected to be adequate.

FARWELL UNIT, MIDDLE LOUP DIVISION IN NEBRASKA

GENERAL

The Loup Basin Reclamation District operates the Arcadia Diversion Dam, Sherman Feeder Canal, Sherman Dam and Reservoir, and the Farwell Canal system serving 47,958 acres of Farwell Irrigation District land. Diversions are also made through the Arcadia Diversion Dam to 13,000 acres of non-project lands in the Middle Loup Public Power and Irrigation District under appropriated natural-flow water rights.

During the winter months, the pool level of Sherman Reservoir is normally regulated to 5 feet below the top of the conservation capacity to avoid ice damage to the upstream face of Sherman Dam. This low pool level also minimizes seepage from the reservoir into the ground-water table. Each spring, diversions into Sherman Feeder Canal from the Middle Loup River are regulated to fill the conservation capacity of Sherman Reservoir by mid-June. The gradual rising water surface in the spring is ideal for fish spawning.

The construction under contract to raise the height of the morning glory spillway to sill elevation 2162.3 was completed in the spring of 1972. The reservoir content at this elevation is 69,076 acre-feet and the water surface area is 2,868 acres.

Whenever the flows in the Middle Loup River at Arcadia, Nebr., exceed 6,000 c.f.s., and safe capacity flows are diverted into Sherman Feeder Canal to Sherman Reservoir, flood control benefits can be accrued by such operations.

1972 SUMMARY

The diversions from the Middle Loup River at Arcadia Diversion Dam were 28,288 acre-feet to Middle Loup Public Power and Irrigation District and 127,300 acre-feet into Sherman Feeder Canal.

Sherman Feeder Canal diversions into Sherman Reservoir were started on April 3, and the conservation capacity was filled on June 13, 1972. The precipitation at Sherman Dam was 15.40 inches, which is 74 percent of

normal. The releases of 92,987 acre-feet into the Farwell Canal were 131 percent of normal. The Loup Basin Reclamation District reports that 35,373 acres of Farwell Irrigation District lands were irrigated in 1972. The gross crop value of $5,538,156 was 17 percent greater than in 1971.

1973 OUTLOOK

Diversions from the Middle Loup River into Sherman Feeder Canal for the normal spring filling of the conservation capacity of Sherman Reservoir are expected to start in April.

The water supply under most probable inflow conditions is expected to be adequate for the 41,000 acres that are planned to be irrigated in 1973.

CHAPTER III - REPUBLICAN RIVER BASIN

ARMEL UNIT, UPPER REPUBLICAN DIVISION IN COLORADO

GENERAL

Bonny Reservoir storage is transferred to Swanson Lake as required where releases into the Republican River are regulated to meet the industrial needs of the Midwest Oil Corporation and LVO Company (Livingston Oil Company) for their waterflood operations in the Sleepy Hollow Oil Field, south of Bartley, Nebr.

Bonny Reservoir inflows from the South Fork of the Republican River and Landsman Creek are released into Hale Ditch, as requested by the State Engineer of Colorado. Bonny storage water is available to Hale Ditch and other natural flow appropriators under temporary contracts. Much of the land served by Hale Ditch is now owned and operated by the Colorado Division of Wildlife.

Normally, winter releases are not made from Bonny Reservoir in order to avoid potential ice damage to the exposed Hale Ditch outlet pipe, which is an integral part of the Bonny Dam outlet works. The low capacity of the river outlet gate precludes a large fall drawdown which is not desirable because it would adversely affect the waterfowl hunting on the reservoir. This necessitates lowering the pool level 2 feet below the top of the conservation capacity each spring. This drawdown is started in mid-May and regulated through the summer months to maintain a water surface elevation of 3670.0. During low inflow years, the reservoir losses and demands for storage water will lower the pool another 2 to 3 feet by September. In other years, special releases are required to lower the water surface to the winter pool level of elevation 3669.0.

The operation of Bonny Reservoir enhances the fish spawning in the spring with a slowly rising or stable pool level and affords excellent hunting conditions each fall.

1972 SUMMARY

The precipitation was above normal while the inflow to Bonny Reservoir was slightly below normal. The water supply was adequate to furnish 429 acre-feet to Midwest Oil Corporation and 12 acre-feet to LVO Company.

There were no temporary contract sales of storage water for industrial or irrigation purposes during 1972. As directed by the Colorado Water Commissioner, 3,337 acre-feet of reservoir inflows from the South Fork of the Republican River and Landsman Creek were passed through Bonny Reservoir into Hale Ditch.

1973 OUTLOOK

The Midwest Oil Corporation and the LVO Company will have an adequate water supply in 1973. Bonny storage will also be available for sale to Hale Ditch and other private irrigators under temporary contracts.

The prospects are excellent for hunting, fishing, and recreation uses.

A meter and gate will be installed in the Hale Ditch outlet pipe adjacent to the outlet works so that in future years, winter releases can be regulated.

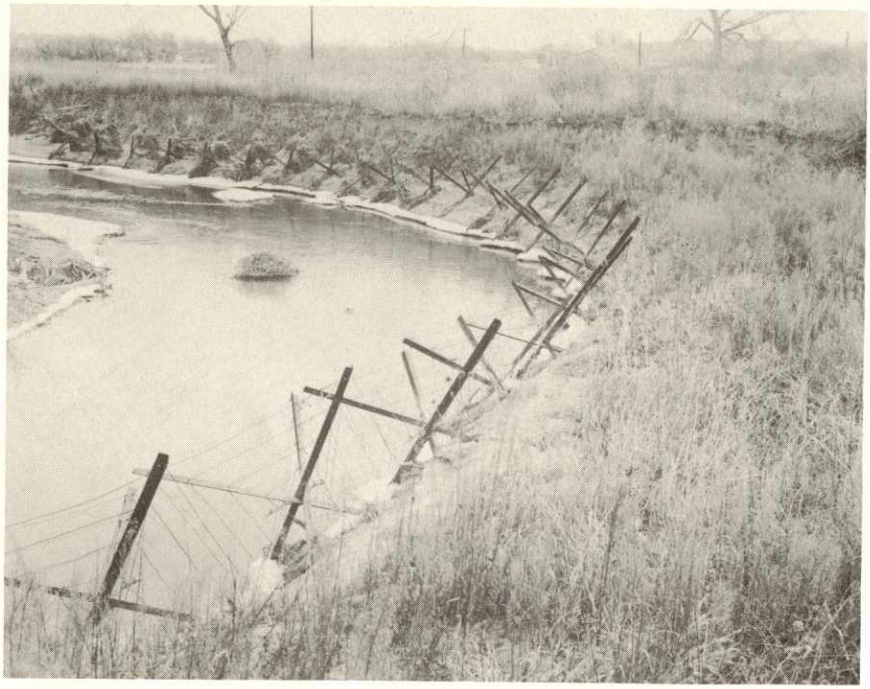
FRENCHMAN UNIT, FRENCHMAN-CAMBRIDGE DIVISION IN NEBRASKA

GENERAL

The transportation of water from Enders Reservoir through 52 miles of Frenchman Creek channel to the Culbertson Diversion Dam created an erosion problem that made it necessary to initiate a control and stabilization program in 1964, which is expected to continue until 1978. The program has restored private access, protected private and public improvements, stabilized various reaches of channel banks, and reduced sediment from the flow in the Culbertson Canal and the stream at the Culbertson Diversion Dam.

The Culbertson Canal and the Culbertson Extension Canal systems serve 9,600 acres in the Frenchman Valley Irrigation District and 11,522 acres in the H & RW Irrigation District. The water supply for these lands is furnished by flows from Frenchman River and Stinking Water Creek and off-season storage in Enders Reservoir.

The normal operation of Enders Reservoir, with the gradual rise in water surface during the spring months, provides desirable fish spawning conditions. Large irrigation releases substantially lower the pool level by late summer, thereby limiting the fishing and recreational usage.



Control and stabilization structures on the Frenchman River channel.

1972 SUMMARY

The precipitation at Enders Dam and over the district lands was above normal during most of the peak irrigation period. The annual inflow into Enders Reservoir was slightly below the dry-year forecast. This is the fifth consecutive year with below-normal inflows. The conservation pool was not filled during 1972. The active conservation storage capacity was evacuated by the 7th of September.

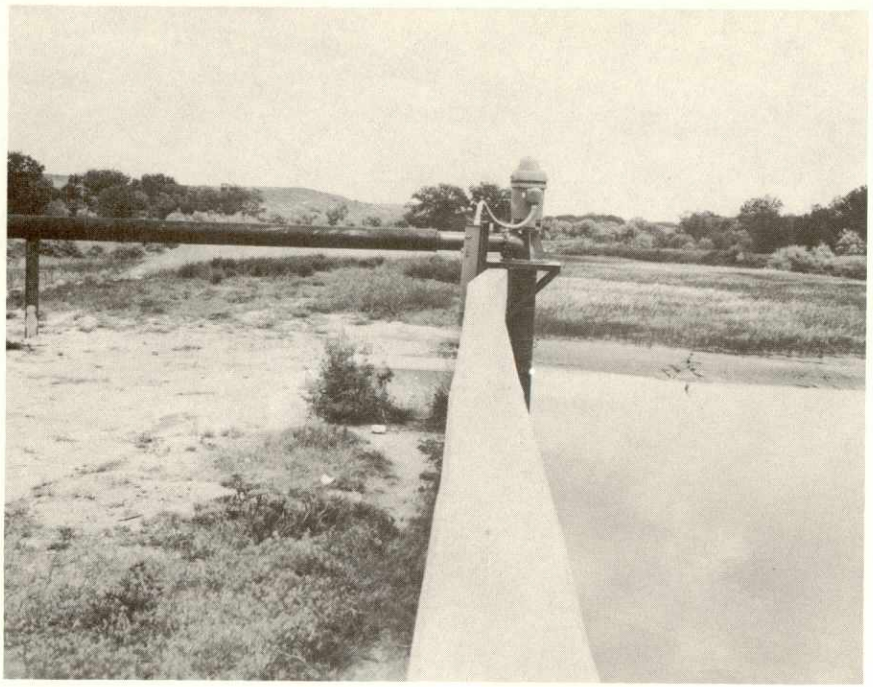
Early in 1972, the project water supply was forecasted to provide only 12 inches of water to the 19,500 acres expected to be irrigated. The farmers were urged to participate as much as possible in the Department of Agriculture Feed Grain Program. Their participation resulted in a 15 to 20 percent reduction in the irrigated acreage for 1972 in the two districts. The districts report that those farmers who cooperated in the program had an adequate water supply for their remaining irrigable acres. A few farmers were able to supplement their project water supply from private irrigation wells. The Frenchman Valley Irrigation District reports that 6,888 acres received water in 1972, and H & RW reports 9,312 acres, which are 72 and 81 percent, respectively, of the lands with service available. The gross crop value for Frenchman Valley Irrigation District was $1,390,791, and for H & RW, $1,736,889, which reflect substantial increases over the previous year even with less acres irrigated.

The districts installed a pump in the Enders Dam spillway stilling basin to pump seepage water back into Enders Reservoir. The pump has been operated almost continuously since the end of the 1972 irrigation season.

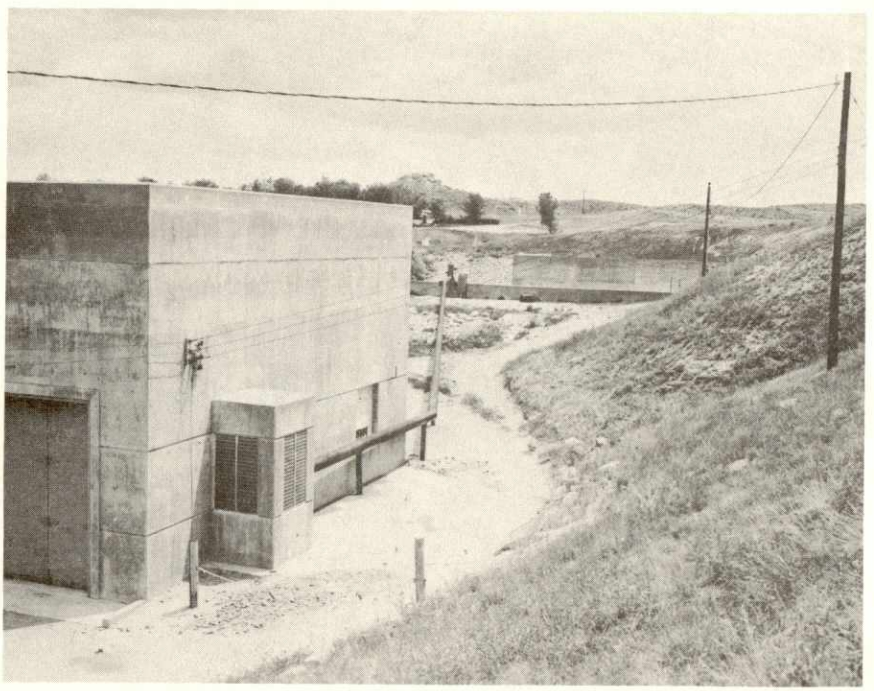
1973 OUTLOOK

The fall and early winter inflows into Enders Reservoir were about equal to dry-year forecasts. If the present trend of low inflow continues as it has in the past few years, the project water supply will be inadequate to irrigate 8,500 acres in Frenchman Valley Irrigation District and 11,000 acres in H & RW Irrigation District. If, however, the farmers elect to participate in the Department of Agriculture Feed Grain Program, the water shortage will be somewhat less severe. As much as 2,500 acre-feet are expected to be conserved by pumping seepage into the Enders Reservoir.

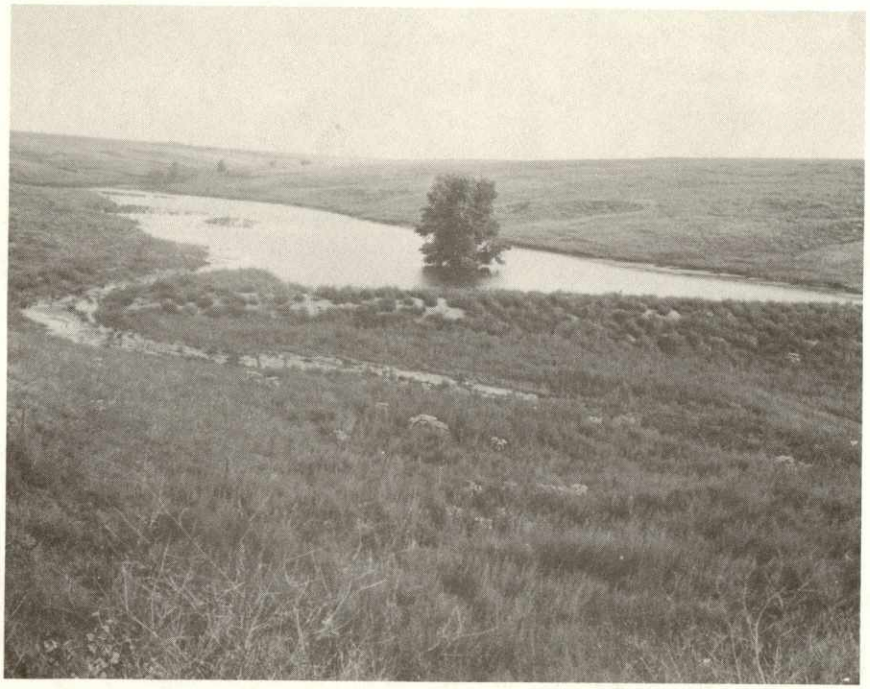
The control and stabilization program of the Frenchman River channel will be continued in 1973.



Pump installation at Enders Reservoir. Seepage water is being pumped back into Enders Reservoir.



The Department of Agriculture's Stabilization and Conservation Program, through partial Federal funding, has encouraged construction of numerous small reservoirs and wide channel terraces in the project watersheds. The terraces above are in the Kanaska Division and the off-stream storage dam below is in the Frenchman-Cambridge Division.



MEEKER-DRIFTWOOD, RED WILLOW, AND CAMBRIDGE UNITS, FRENCHMAN-CAMBRIDGE DIVISION IN NEBRASKA

GENERAL

The normal operation of Trenton Dam and Swanson Lake, Red Willow Dam and Hugh Butler Lake, and Medicine Creek Dam and Harry Strunk Lake during the spring months, with a slowly rising or stable pool level, enhances optimum spawning of northern and walleye pike. These lakes provide excellent opportunities for fishing, water sports, and recreation. The seepage below Red Willow and Medicine Creek Dams provides excellent fishing.

Service is provided by Meeker-Driftwood Canal to 16,600 acres; Red Willow Canal to 4,903 acres; Bartley Canal to 6,500 acres; and Cambridge Canal to 17,000 acres. The water for these lands is provided by Swanson, Hugh Butler, and Harry Strunk Lakes' storages, and flows of the Republican River and Red Willow and Medicine Creeks.

1972 SUMMARY

The precipitation at Trenton Dam was above normal and the inflow to Swanson Lake was between the dry and normal year forecasts. The conservation capacity lacked 10,370 acre-feet of being filled during 1972. The carryover storage and 1972 inflows furnished full water supplies to project lands served by the Meeker-Driftwood and Bartley Canal systems. The Frenchman-Cambridge Irrigation District diverted 37,529 acre-feet into Meeker-Driftwood Canal to irrigate 14,405 acres, and 12,796 acre-feet into Bartley Canal for 5,520 acres. The storage in Swanson Lake at the end of 1972 was 19,400 acre-feet greater than at the end of 1971.

The precipitation at Red Willow Dam was slightly below normal while the inflow into Hugh Butler Lake was slightly above normal. The water supply was more than adequate for Red Willow Canal diversions. The district diverted 10,218 acre-feet for the irrigation of 4,470 acres served by Red Willow Canal. There were an estimated 480 acre-feet of Red Willow Creek flows used downstream from Red Willow Dam for irrigation of non-project lands under senior water rights.

The annual precipitation was well below normal at Medicine Creek Dam and the inflow was slightly above the dry-year forecast for Harry Strunk Lake.

The water supply was adequate for the diversion of 33,666 acre-feet for 15,656 acres served by the Cambridge Canal.

The gross crop value from the lands served by Meeker-Driftwood, Bartley, Red Willow, and Cambridge Canals was $7,375,789, as compared to $5,779,300 in 1971.

1973 OUTLOOK

The carryover storage and 1973 flows are forecasted to furnish an adequate water supply to irrigate 40,600 acres in the Frenchman-Cambridge Irrigation District. It is estimated that 15,200 acres will be served from each of the Meeker-Driftwood and Cambridge Canals; 4,500 acres from Red Willow Canal; and 5,700 acres from Bartley Canal.

ALMENA UNIT, KANASKA DIVISION IN KANSAS

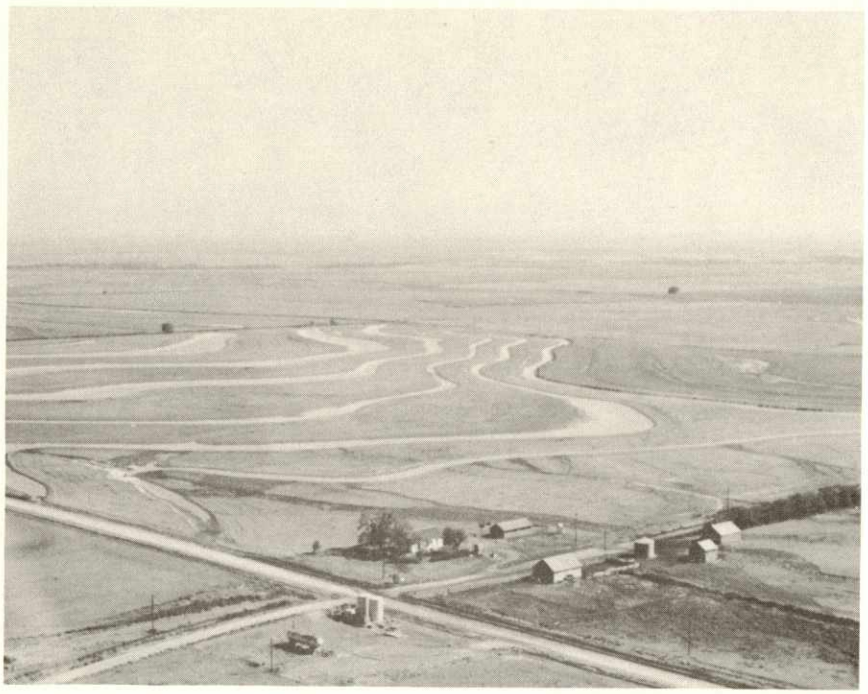
GENERAL

There are 5,350 acres with service available in the Almena Irrigation District. The project water supply is provided by Prairie Dog Creek flows and Norton Reservoir storage.

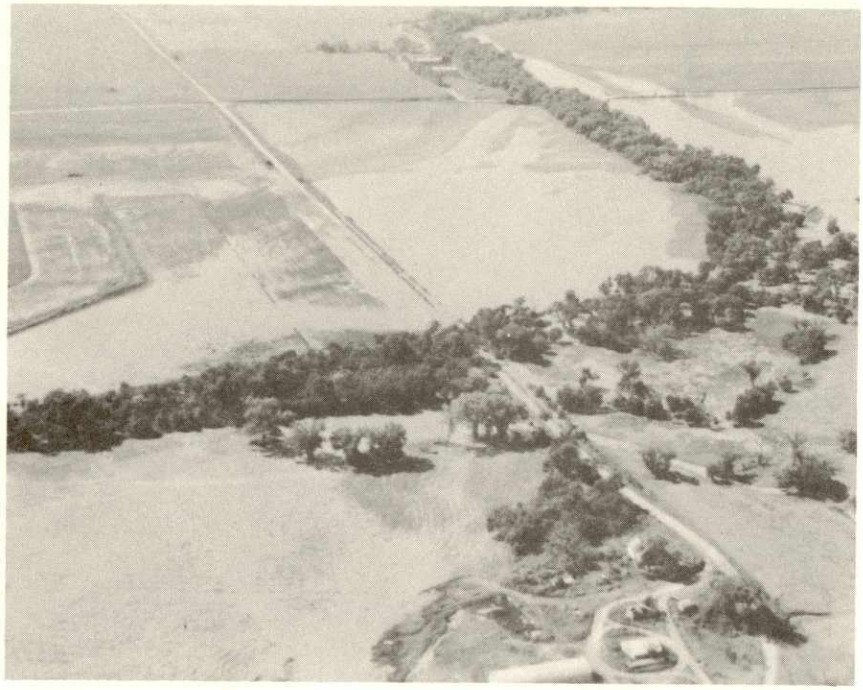
The water service contract for the city of Norton, Kans., provides for a maximum annual use of 1,600 acre-feet from Norton Reservoir.

1972 SUMMARY

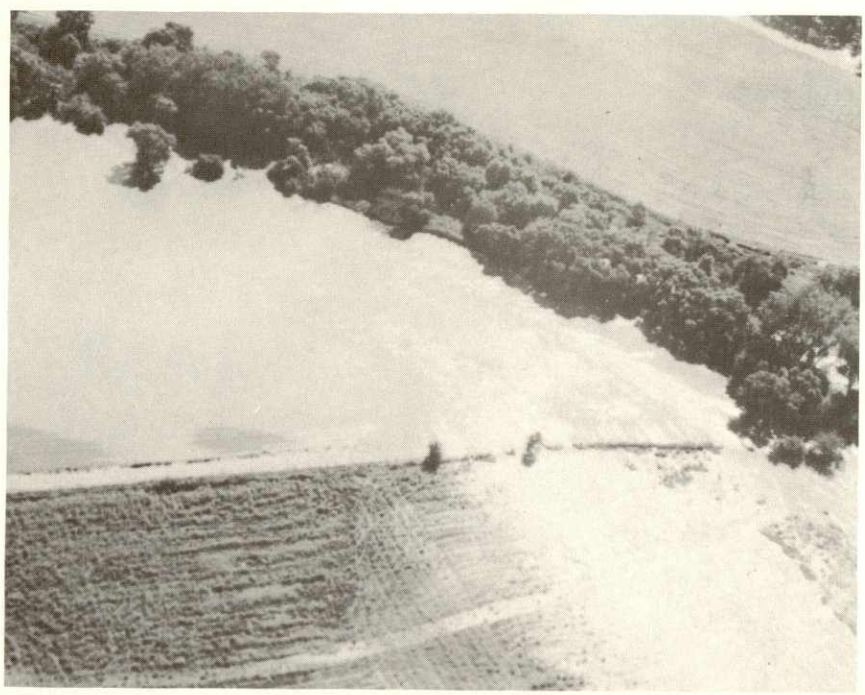
The annual precipitation at Norton Dam was 123 percent of normal. During the first 3 months, the precipitation was much below normal, but was above normal throughout the irrigation season. The total 1972 inflow of 9,396 acre-feet was only slightly above the dry-year forecast. On September 5, runoff from a severe storm created overbank flooding on Prairie Dog Creek and the pool level raised about 8 feet in Norton Reservoir. The operation of the reservoir during this storm accrued a half million dollars in flood control benefits. The accumulated flood damages prevented since the start of operations in 1964 are $1,517,000.



Development of terraces on the farms in the area of heavy rains over the Prairie Dog Creek drainage area on September 5, 1972.



General flooding on Prairie Dog Creek as the result of a storm on September 5, 1972, with a maximum recorded 6-inch rainfall.



Irrigation releases were started on July 5, and the active storage capacity was evacuated by July 12th. Reduced releases from the inactive storage capacity were continued throughout July resulting in the record-low water surface elevation of 2276.98 since initial filling of the conservation capacity in 1967. Releases to the city of Norton, however, were made throughout the year.

The irrigation district officials were advised early in the spring that carry-over storage in Norton Reservoir with dry-year inflows from Prairie Dog Creek would be inadequate and furnish only an estimated farm delivery of 3 inches of water per acre. For the third consecutive year, the district used water from privately owned irrigation wells to supplement the project water supply. Over 1,100 acres of project land were set aside under the Department of Agriculture Feed Grain Program.

The Almena Irrigation District diverted 2,576 acre-feet from Prairie Dog Creek, and the water users pumped 3,201 acre-feet as a supplemental supply from irrigation wells. Even though the project water supply was limited, the average crop yields were the highest of the 13 districts discussed in this report. The 4,246 acres that were irrigated in 1972 produced a gross crop value of $931,958 ($219.50 per acre).

The city of Norton used 599 acre-feet of municipal water during 1972.

1973 OUTLOOK

The Almena Irrigation District expects to deliver water to 5,100 acres if an adequate water supply is available. If 1973 is a dry year without significant run-off producing storms above Norton Reservoir, about 5,000 acre-feet of active storage are expected to be available for irrigation uses. The inflows, however, during the last quarter of 1972 were about normal. The district plans to use water from privately owned irrigation wells as in past years. If normal inflow into the reservoir and normal rainfall over the irrigated area occurs in 1973, a full water supply can be furnished the irrigation district lands from Norton storage and Prairie Dog Creek flows.

The city of Norton requirements are expected to be met in full in 1973.

FRANKLIN, SUPERIOR-COURTLAND, AND COURTLAND UNITS, BOSTWICK DIVISION IN NEBRASKA AND KANSAS

GENERAL

Harlan County Reservoir storage and Republican River Basin flows provide a project water supply for 22,848 acres in the Bostwick Irrigation District in Nebraska, and 12,948 acres in the Kansas-Bostwick Irrigation District above Lovewell Reservoir and, together with White Rock Creek flows and Lovewell Reservoir storage, furnish a water supply for 26,928 acres below Lovewell Reservoir in the Kansas-Bostwick Irrigation District.

The lands in the Franklin and Superior-Courtland Units are in the Bostwick Irrigation District in Nebraska. The lands in the Courtland Unit are in the Kansas-Bostwick Irrigation District.

It is desirable for water quality purposes to maintain minimum daily flows of 40 cubic feet per second in the Republican River below Superior, Nebr. When the Superior Canal and Courtland Canal (in Nebraska) are in operation, the return flows of seepage and surface irrigation runoff along with the natural flow pickup in the Republican River below the Superior-Courtland Diversion Dam will meet this minimum flow requirement. In the interest of water conservation, during dry years when forecasted operation studies indicate that reasonable minimum inflows will not fill Harlan County Reservoir before the start of the next irrigation season, available flows in the fall and spring of the year in the Republican River below Harlan County Dam, with minimum release of 10 c.f.s. from the reservoir, are diverted into Courtland Canal to transport water into the conservation capacity of Lovewell Reservoir. During these periods when flows of the Republican River are diverted into the Courtland Canal for extended periods with no irrigation deliveries, and in combination with below normal precipitation, the flows in the Republican River downstream from Superior may be as low as 20 c.f.s.

In cooperation with the Kansas Forestry, Fish and Game Commission, the Kansas-Bostwick Irrigation District and the Bureau of Reclamation maintain a minimum flow of 20 c.f.s. into Lovewell Reservoir when Courtland Canal above Lovewell Reservoir is in operation and the conservation pool is below capacity. This minimum inflow provides excellent fishing around the Courtland Canal inlet into Lovewell Reservoir. The seepage below Lovewell Dam into White Rock Creek maintains a small live stream throughout the year.

1972 SUMMARY - BOSTWICK DIVISION
HARLAN COUNTY OPERATIONS

The precipitation at Harlan County Dam was 125 percent of normal, while the inflow was between the dry and normal year forecasts. Even though the conservation capacity of Harlan County Reservoir did not fill in 1972 by about 28,400 acre-feet, the Bostwick Division water supply was adequate. There were 28,914 irrigated acres in the Bostwick Division in Nebraska and Kansas above Lovewell Dam and 28,022 acre-feet of storage delivered to Lovewell Reservoir.

During the irrigation season, the mean daily flows in the Republican River below Superior were greater than the desired minimum of 40 c.f.s. Following the end of the irrigation season, with minimum releases of only 10 c.f.s. from Harlan County Reservoir, the Republican River flows below Superior dropped below 40 c.f.s. for a short period during October.

1972 SUMMARY - BOSTWICK DIVISION - NEBRASKA

The diversions into Franklin and Superior Canals were above normal, while diversions into Naponee and Franklin Pump Canals and Courtland Canal (Nebraska) were below normal. The Bostwick Irrigation District in Nebraska diverted 48,713 acre-feet for the irrigation of 18,735 acres. The gross crop value was $3,177,523, which reflects a substantial increase over 1971, even though the irrigated area was about 1,000 acres less.

1972 SUMMARY - BOSTWICK DIVISION - KANSAS

The precipitation at Lovewell Dam was 146 percent of normal. The inflows into Lovewell Reservoir from White Rock Creek and the Courtland Canal deliveries were about normal.

The Kansas-Bostwick Irrigation District diverted a total of 50,701 acre-feet to serve 10,179 acres above Lovewell Dam and 16,336 acres below Lovewell. The gross crop value for 1972 was $5,114,061, which is an increase of 141 percent over 1971 with about 7 percent decrease in irrigated acres.

1973 OUTLOOK - BOSTWICK DIVISION

The Bostwick Irrigation District in Nebraska expects to delivery water to 22,670 acres and the Kansas-Bostwick Irrigation District to 28,000 acres. The storage in Harlan County and Lovewell Reservoirs and the flows of the Republican River and White Rock Creek are forecasted to furnish an adequate water supply for the Bostwick lands.

CHAPTER IV - SMOKY HILL RIVER BASIN

KIRWIN UNIT, SOLOMON DIVISION IN KANSAS

GENERAL

The water supply for the 11,435 acres of land in the Kirwin Irrigation District is furnished by storage from Kirwin Reservoir and inflows from the North Fork of the Solomon River.

The operation of Kirwin Dam and Reservoir affords many opportunities for recreation, fishing, hunting, water sports, spawning of fish, and for preservation of waterfowl species.

1972 SUMMARY

The precipitation was 99 percent of normal. The inflow was slightly less than the dry-year forecast and the lowest water surface elevation of 1713.43, on October 25, 1972, set a record-low pool level since the initial filling of the conservation capacity in 1960. The water supply was adequate to fully meet the irrigation requirements.

The Kirwin Irrigation District diverted 18,474 acre-feet for irrigation of 9,165 acres. The gross crop value from these acres was $1,347,549, which is about $100,000 less than in 1971. On August 2, 1972, a severe hailstorm affected 37 percent of the planted acres with 10 to 100 percent damage.

1973 OUTLOOK

The Kirwin Irrigation District estimates that 10,000 acres will be irrigated in 1973. The carryover storage in Kirwin Reservoir and the forecasted inflows from the North Fork of the Solomon River are expected to be adequate to irrigate these lands.

WEBSTER UNIT, SOLOMON DIVISION IN KANSAS

GENERAL

The Webster Irrigation District has service available to 8,564 acres. The project water supply is provided by Webster Reservoir storage and flows of the South Fork of the Solomon River.

The Kansas Forestry, Fish and Game Commission operates a portable fish hatchery at the Webster Dam spillway stilling basin during the spring months. Unless absolutely necessary for flood control releases, the spillway gates are not opened while the hatchery is in operation.

1972 SUMMARY

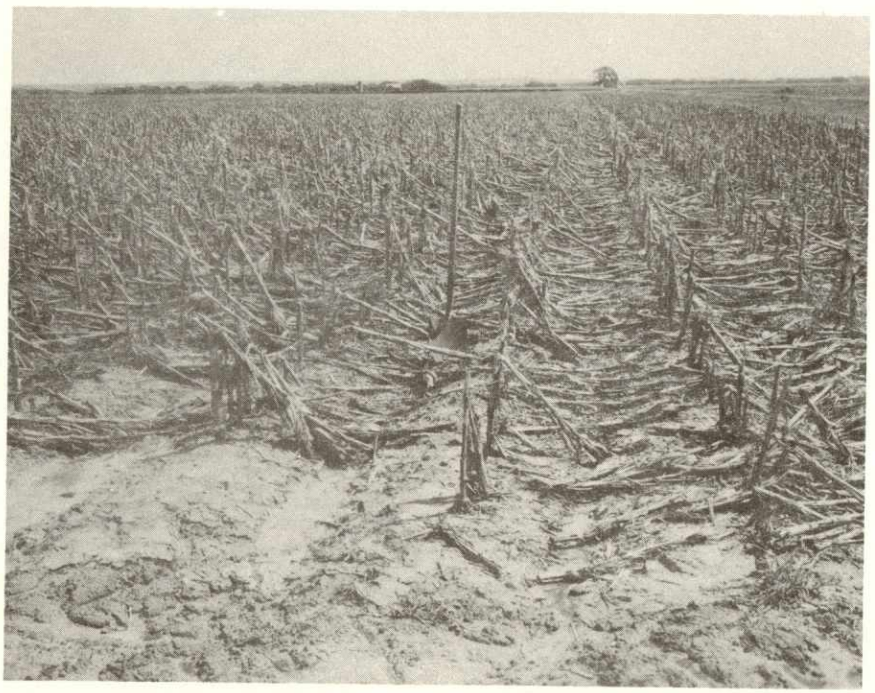
In 1972, the precipitation at Webster Dam was 111 percent of normal. The inflow was only 9,466 acre-feet, which is about 3,600 acre-feet less than the reasonable minimum forecast. At the start of 1972, the water surface elevation was 1857.58, which is 2.4 feet below the top of the inactive capacity. The inactive capacity was filled by May 12, and the maximum pool level was elevation 1863.4 on August 15, 1972. At no time during the year was the active storage large enough to make a usable irrigation release. There was, however, a small release of 430 acre-feet passing inflow through the reservoir for water right administration purposes as directed by the Kansas Water Commissioner.

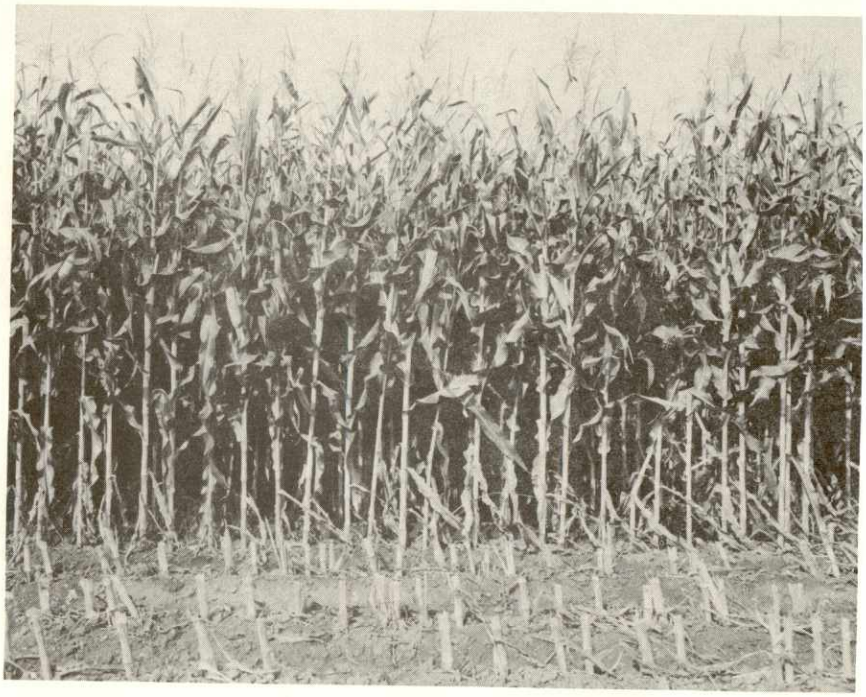
The Webster Irrigation District was informed early in the year that the chances for an irrigation water supply were extremely poor. The water users were advised to participate as much as possible in the Department of Agriculture Feed Grain Program. As a result, 25 percent of the district lands were idle in 1972. About 1,000 acres had an alternate water supply from a non-project source. The precipitation over the district area was normal or above and very timely throughout the growing season. No diversions were made into the Osborne Canal system in 1972.

1973 OUTLOOK

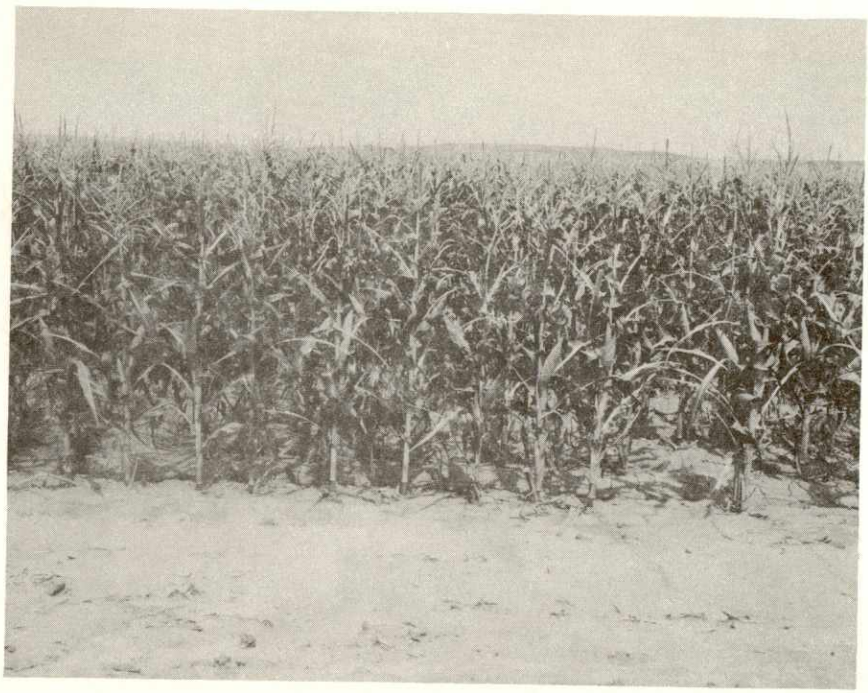
The carryover storage at the end of 1972 was 5,000 acre-feet greater than one year ago. If 1973 is a dry year, the water supply for the 7,000 acres expected to be irrigated will be inadequate. The early estimates under

100-percent crop losses as a result of a severe hailstorm occurring on August 2, 1972, over the Kirwin Unit.





The top picture was taken on an irrigated farm in the Frenchman-Cambridge Division where the water supply was adequate. The lower picture was taken on a farm in the Webster Unit, Solomon Division, where there was a 100-percent shortage of project water supply.



reasonable minimum inflow conditions indicate about 10,000 acre-feet may be available for diversion into the Osborne Canal. Under most probable inflow conditions, a full water supply will be available.

GLEN ELDER UNIT, SOLOMON DIVISION IN KANSAS

GENERAL

Releases from Waconda Lake will be regulated as required for the city of Beloit, Kans., for water right administration, and for water quality control. Water quality releases are regulated to provide desirable minimum flows in the Solomon River downstream from the municipal water supply intake at Beloit. These minimum flow requirements were published in the Solomon Division Definite Plan Report, dated June 1961.

The water service contract with Beloit provides for a maximum annual use of 2,000 acre-feet of Waconda Lake storage.

The available facilities along the shores of Waconda Lake and the large water surface area afford opportunities to many thousands of people for picnics, sightseeing, recreation, water sports, hunting, and fishing. The operating criteria for Waconda Lake also provide for a stable or rising pool level during the fish spawning period each spring.

1972 SUMMARY

The precipitation at Glen Elder Dam was 107 percent of normal. The inflow was less than the dry-year forecasts.

There were 900 acre-feet released for the benefit of Beloit. Also, about 15,000 acre-feet were released to provide water quality control in the Solomon River and to pass Waconda Lake inflows through the reservoir for senior natural flow appropriators downstream.

1973 OUTLOOK

The municipal requirements of Beloit will be met in full with releases as required from Waconda Lake. Releases will also be regulated to maintain

Development of feeding facilities has been stimulated by the increased availability of large amounts of feed grain and forage from irrigated farming. This feed lot is located about 6 miles east of Beloit, Kansas.

water quality control in the Solomon River at Beloit. The Water Commissioner of the State of Kansas may request that inflows be passed through the lake for water right administration.

CEDAR BLUFF UNIT, SMOKY HILL DIVISION IN KANSAS

GENERAL

Cedar Bluff Reservoir storage and Smoky Hill River flows provide an annual water supply for the 6 800 acres in the Cedar Bluff Irrigation District, and up to 4,000 acre-feet for the Cedar Bluff National Fish Hatchery. Cedar Bluff storage also furnishes a maximum of 2,000 acre-feet for the city of Russell, Kans.

The return flows from the Cedar Bluff National Fish Hatchery and seepage from Cedar Bluff Reservoir maintain fisheries and enhance fishing in the Smoky Hill River below Cedar Bluff Dam.

1972 SUMMARY

The precipitation was 115 percent of normal. The inflow was about equal to the normal-year forecast. The water supplies for the Cedar Bluff Irrigation District and the Cedar Bluff National Fish Hatchery were furnished in full. No releases were required for the city of Russell. The lowest water surface elevation, on April 30, 1972, of 2127.72 (95,530 acre-feet) was the lowest pool level since 1955.

The Cedar Bluff Irrigation District diverted 11,140 acre-feet to irrigate 5,654 acres of project lands. The gross crop value of $918,831 was an increase of 50 percent over the previous year.

The Cedar Bluff National Fish Hatchery diverted 2,163 acre-feet. Of this, 850 acre-feet were passed through the hatchery facilities and returned to the Smoky Hill River below Cedar Bluff Dam.

1973 OUTLOOK

The carryover storage in Cedar Bluff Reservoir and the inflows from the Smoky Hill River are expected to fully meet the requirements of the Cedar Bluff National Fish Hatchery, the city of Russell, and the irrigation of 6,000 acres of project lands.

TABLE 1

RESERVOIR DATA - NIOBRARA, LOWER PLATTE AND KANSAS RIVER BASINS

RESERVOIR		CAPACITY ALLOCATIONS 1/ DEAD	LIVE CONSERVATION Inactive	LIVE CONSERVATION Active	FLOOD CONTROL
Box Butte	- Elevation Ft.	3969.0	3976.5	4007.0	---
	Total Acre-feet	640	2,275	31,060	---
	Net Acre-feet	640	1,635	28,785	---
Merritt	- Elevation Ft.	2875.0	2896.0	2946.0	---
	Total Acre-feet	1,614	6,800	74,486	---
	Net Acre-feet	1,614	5,186	67,686	---
Sherman	- Elevation Ft.	2118.5	2129.0	2162.3	---
	Total Acre-feet	3,839	10,496	69,076	---
	Net Acre-feet	3,839	6,657	58,580	---
Bonny	- Elevation Ft.	3635.5	3638.0	3672.0	3710.0
	Total Acre-feet	1,418	2,134	41,340	170,160
	Net Acre-feet	1,418	716	39,206	128,820
Swanson	- Elevation Ft.	2710.0	2720.0	2752.0	2773.0
	Total Acre-feet	4,101	15,510	120,160	253,950
	Net Acre-feet	4,101	11,409	104,650	133,790
Enders	- Elevation Ft.	3080.0	3082.4	3112.3	3127.0
	Total Acre-feet	8,467	9,968	44,480	74,520
	Net Acre-feet	8,467	1,501	34,512	30,040
Hugh Butler Lake	- Elevation Ft.	2552.0	2558.0	2581.8	2604.9
	Total Acre-feet	6,313	10,450	37,776	86,630
	Net Acre-feet	6,313	4,137	27,326	48,854
Harry Strunk Lake	- Elevation Ft.	2335.0	2343.0	2366.1	2386.2
	Total Acre-feet	4,911	9,548	37,141	89,313
	Net Acre-feet	4,911	4,637	27,593	52,172
Norton	- Elevation Ft.	2275.0	2280.4	2304.3	2331.4
	Total Acre-feet	2,718	5,284	35,935	134,740
	Net Acre-feet	2,718	2,566	30,651	98,805
Harlan County	- Elevation Ft.	1885.0	1927.0	1946.0	1973.5
	Total Acre-feet	929	144,761	342,560	840,561
	Net Acre-feet	929	143,832	197,799	498,001
Lovewell	- Elevation Ft.	1562.0	1571.7	1582.6	1595.3
	Total Acre-feet	5,054	16,760	41,690	92,150
	Net Acre-feet	5,054	11,706	24,930	50,460
Kirwin	- Elevation Ft.	1693.0	1697.0	1729.25	1757.3
	Total Acre-feet	6,385	9,785	99,435	314,550
	Net Acre-feet	6,385	3,400	89,650	215,115
Webster	- Elevation Ft.	1855.5	1860.0	1892.45	1923.7
	Total Acre-feet	2,184	5,300	77,370	260,740
	Net Acre-feet	2,184	3,116	72,070	183,370
Waconda Lake	- Elevation Ft.	1407.8	1428.0 1452.5	1455.6	1488.3
	Total Acre-feet	1,236	36,671	241,460	963,775
	Net Acre-feet	1,236	35,435	204,789	722,315
Cedar Bluff	- Elevation Ft.	2090.0	2107.8	2144.0	2166.0
	Total Acre-feet	8,261	35,320	185,090	376,950
	Net Acre-feet	8,261	27,059	149,770	191,860
Total Storage (A.F.)		58,070	321,062	1,479,063	3,658,039
Total Net Acre-feet		58,070	262,992	1,158,001	2,353,598

1/ Includes space for sediment storage.

1467.4 spillway crest

TABLE 2
SUMMARY OF 1972 OPERATIONS

MIRAGE FLATS PROJECT
BOX BUTTE RESERVOIR

MONTH	Inflow (AF)	Outflow (AF)	Evap. (AF)	Precip. (Inches)	End Of Month Content (AF)	MIRAGE FLATS CANAL Diversions To Canal (AF)	MIRAGE FLATS CANAL Delivered To Farms (AF)
Jan.	1,955	50	64	.14	9,950	0	0
Feb.	1,831	50	74	.11	11,649	0	0
Mar.	2,172	58	155	.50	13,605	0	0
Apr.	1,828	62	364	3.18	15,009	0	0
May	1,591	70	360	2.18	16,179	0	0
June	1,002	69	372	5.09	16,749	0	0
July	289	7,274	353	2.50	9,432	7,380	2,836
Aug.	391	8,071	270	.73	2,458	8,100	4,834
Sep.	1,321	864	148	.15	2,938	870	299
Oct.	1,534	47	123	.06	4,349	0	0
Nov.	2,183	46	86	.65	6,398	0	0
Dec.	1,876	50	49	.12	8,180	0	0
TOTAL	17,973	16,711	2,418	15.41	---	16,350	7,969
NORMAL	22,100	21,000	3,800	15.27	31,060 1/	26,000	---

1/ Conservation Pool Capacity.

NOTE.--MIRAGE FLATS IRRIGATION DISTRICT
Mirage Flats Canal:
Acres with service available -- 11,662
Acres irrigated 1972 -- 10,188

SANDHILLS DIVISION
AINSWORTH UNIT
MERRITT RESERVOIR

MONTH	Inflow (AF)	Outflow (AF)	Evap. (AF)	Precip. (Inches)	End Of Month Content (AF)	AINSWORTH CANAL Diversions To Canal (AF)	AINSWORTH CANAL Delivered To Farms (AF)
Jan.	15,188	14,270	180	.50	62,193	0	0
Feb.	13,474	13,036	181	.10	62,706	0	0
Mar.	15,703	7,036	403	.92	70,226	0	0
Apr.	13,967	8,119	999	1.90	75,075	0	0
May	16,207	15,586	1,017	2.35	73,913	1,168	43
June	15,190	13,391	1,098	3.55	73,913	4,304	746
July	15,616	15,351	1,234	4.91	72,480	14,316	8,621
Aug.	15,501	26,209	1,066	.81	59,165	25,187	19,674
Sep.	10,572	12,052	774	.87	59,912	8,856	5,145
Oct.	13,453	12,844	649	.25	59,912	40	0
Nov.	15,354	14,280	326	1.51	60,660	0	0
Dec.	13,652	13,252	152	.27	60,909	0	0
TOTAL	173,877	165,425	8,079	17.92	---	53,871	34,229
NORMAL	190,600	179,800	10,800	17.52	74,486 2/	84,000	---

2/ Conservation Pool Capacity.

NOTE.--AINSWORTH IRRIGATION DISTRICT
Ainsworth Canal:
Acres with service available -- 33,986
Acres irrigated 1972 -- 28,200

MIDDLE LOUP DIVISION

MONTH	SARGENT UNIT SARGENT CANAL Diversions To Canal (AF)	SARGENT UNIT SARGENT CANAL Delivered To Farms (AF)	MIDDLE LOUP UNIT 3/ MIDDLE LOUP PUBLIC POWER CANALS Diversions To Canals (AF)	Diversion To Sherman Feeder Canal (AF)	FARWELL UNIT SHERMAN RESERVOIR Inflow (AF)	Outflow (AF)	Evap. (AF)	Precip. (Inches)	End Of Month Content (AF)	FARWELL CANALS Release To Canals (AF)	FARWELL CANALS Delivered To Farms (AF)
Jan.	0	0	0	0	0	180	156	.13	46,029	0	0
Feb.	0	0	0	0	0	173	182	.12	44,719	0	0
Mar.	0	0	0	0	0	184	171	.10	43,214	0	0
Apr.	0	0	0	13,950	10,969	178	795	1.76	53,210	0	0
May	0	0	919	19,260	16,713	184	951	4.39	68,788	0	0
June	4,056	394	5,264	20,820	17,007	538	1,284	1.00	68,499	15,185	358
July	9,392	5,096	9,853	16,130	15,780	34,048	1,166	4.25	49,191	33,868	16,810
Aug.	9,465	5,336	9,148	16,420	16,265	35,464	939	1.21	29,199	35,284	21,464
Sep.	2,471	1,192	3,104	25,000	10,866	8,830	576	1.43	41,331	8,650	4,963
Oct.	0	0	0	15,720	14,110	180	588	.70	54,673	0	0
Nov.	0	0	0	0	0	179	318	1.18	53,210	0	0
Dec.	0	0	0	0	0	178	144	.34	51,531	0	0
TOTAL	25,384	12,018	28,288	127,300	101,710	80,316	7,290	15.40	---	92,987	43,595
NORMAL	23,800	---	---	119,945	104,300	88,800	11,200	20.80	69,076 4/	70,800	---

3/ Non-Project. 4/ Conservation Pool Capacity.

NOTE.--SARGENT IRRIGATION DISTRICT
Sargent Canal:
Acres with service available -- 13,363
Acres irrigated 1972 -- 11,249

MIDDLE LOUP P. P. IRRIGATION DISTRICT
Middle Loup P. P. Canals:
Acres with service available -- 13,000
Acres irrigated 1972 -- 12,934

FARWELL IRRIGATION DISTRICT
Farwell Canals:
Acres with service available -- 47,925
Acres irrigated 1972 -- 35,379

UPPER REPUBLICAN DIVISION
ARMEL UNIT
BONNY RESERVOIR

MONTH	Inflow (AF)	Outflow (AF)	Evap. (AF)	Precip. (Inches)	End Of Month Content (AF)	Outflow To Hale Ditch (AF)	Industrial Uses (AF)
Jan.	1,810	360	0	.23	37,740	0	37
Feb.	1,730	410	0	0	39,050	0	37
Mar.	1,480	474	62	.41	40,020	40	32
Apr.	1,700	1,316	752	.93	39,630	948	33
May	3,270	3,411	990	6.14	38,470	415	34
June	2,620	2,142	816	4.19	38,160	318	37
July	1,760	1,905	966	2.47	37,030	569	36
Aug.	1,470	646	1,008	2.82	36,840	262	37
Sep.	950	830	718	1.66	36,250	482	36
Oct.	1,300	1,565	470	.41	35,500	303	40
Nov.	2,373	354	301	1.80	37,219	0	38
Dec.	2,116	363	174	.57	38,798	0	43
TOTAL	22,579	13,776	6,257	21.63	---	3,337	440
NORMAL	27,000	21,700	6,300	16.35	41,340 5/	3,800	---

5/ Conservation Pool Capacity.

No water sales under temporary contracts.

TABLE 2
SUMMARY OF 1972 OPERATIONS

FRENCHMAN-CAMBRIDGE DIVISION
FRENCHMAN UNIT

	ENDERS RESERVOIR					CULBERTSON CANAL	CULBERTSON EXT. CANAL	
MONTH	Inflow (AF)	Outflow (AF)	Evap. (AF)	Precip. (Inches)	End Of Month Content (AF)	Diversions To Canal 2/ (AF)	Diversions To Canal (AF)	Delivered To Farms (AF)
Jan.	3,740	390	0	.14	26,430	0	0	0
Feb.	3,260	470	0	.09	29,220	0	0	0
Mar.	2,390	440	60	.21	31,110	551	0	0
Apr.	2,960	472	458	1.16	33,140	3,575	0	0
May	3,680	428	662	3.37	35,730	326	3,512	110
June	3,280	330	790	5.15	37,890	754	2,986	205
July	4,490	14,364	786	2.19	27,230	5,318	8,544	4,976
Aug.	3,460	18,786	544	2.83	11,360	8,343	11,339	7,565
Sep.	4,650	3,286	264	1.41	12,460	2,217	2,707	1,001
Oct.	3,610	24	166	.75	15,880	0	0	0
Nov.	4,553	0	0	1.83	20,265	0	0	0
Dec.	3,945	0	0	.48	24,288	0	0	0
TOTAL	44,018	38,990	3,730	19.61	---	21,084	29,088	13,857
NORMAL	59,400	38,200	4,400	18.76	44,480 1/	17,000	22,000	---

1/ Conservation Pool Capacity.

2/ A.F. delivery to farms unavailable due to lack of measuring devices.

NOTE.--FRENCHMAN VALLEY IRRIGATION DISTRICT
Culbertson Canal:
Acres with service available -- 9,600
Acres irrigated 1972 -- 6,888

H & RW IRRIGATION DISTRICT
Culbertson Extension Canal:
Acres with service available -- 11,522
Acres irrigated 1972 -- 9,312

FRENCHMAN-CAMBRIDGE DIVISION (Continued)
MEEKER-DRIFTWOOD UNIT

	SWANSON LAKE					MEEKER-DRIFTWOOD		BARTLEY CANAL	
MONTH	Inflow (AF)	Outflow (AF)	Evap. (AF)	Precip. (Inches)	End Of Month Content (AF)	Diversions To Canal (AF)	Delivered To Farms (AF)	Diversions To Canal (AF)	Delivered To Farms (AF)
Jan.	4,060	60	0	.22	73,220	0	0	0	0
Feb.	7,020	60	0	.14	80,180	0	0	0	0
Mar.	5,790	62	0	.40	85,420	0	0	0	0
Apr.	4,420	60	1,500	1.37	88,450	0	0	231	0
May	12,990	2,063	2,128	5.77	97,160	2,001	0	243	0
June	15,070	3,648	2,580	3.93	105,950	3,588	136	1,014	3
July	9,260	17,123	2,736	2.56	95,600	13,325	8,571	5,661	4,719
Aug.	2,610	18,535	2,282	3.28	77,090	15,297	10,797	5,122	4,414
Sep.	1,130	3,376	1,504	.88	73,140	3,316	1,181	525	271
Oct.	2,160	92	878	.79	74,330	0	0	0	0
Nov.	4,659	90	0	2.43	82,700	0	0	0	0
Dec.	6,260	90	0	.69	88,620	0	0	0	0
TOTAL	75,429	45,259	13,608	22.46	---	37,527	20,685	12,796	9,413
NORMAL	109,300	58,000	12,800	19.38	120,160 2/	28,900	---	10,000	---

2/ Conservation Pool Capacity.

NOTE.--Meeker-Driftwood Canal:
Acres with service available -- 16,600
Acres irrigated 1972 -- 14,405

Bartley Canal:
Acres with service available -- 6,500
Acres irrigated 1972 -- 5,520

FRENCHMAN-CAMBRIDGE DIVISION (Continued)
RED WILLOW UNIT

	HUGH BUTLER LAKE					RED WILLOW CANAL	
MONTH	Inflow (AF)	Outflow (AF)	Evap. (AF)	Precip. (Inches)	End Of Month Content (AF)	Diversions To Canal (AF)	Delivered To Farms (AF)
Jan.	1,350	330	0	.06	32,440	0	0
Feb.	1,380	290	0	.17	33,530	0	0
Mar.	1,470	310	60	.28	34,630	0	0
Apr.	1,600	504	476	1.11	35,250	175	0
May	2,920	526	724	2.45	36,920	183	0
June	4,990	2,700	950	5.14	38,260	1,234	215
July	1,260	4,362	878	2.37	34,280	3,750	2,413
Aug.	1,540	5,526	784	3.04	29,510	4,120	3,086
Sep.	1,450	1,850	530	.88	28,580	756	318
Oct.	1,360	354	306	.66	29,280	0	0
Nov.	2,175	308	0	1.34	31,025	0	0
Dec.	1,690	327	0	.51	32,376	0	0
TOTAL	23,185	17,387	4,708	18.01	---	10,218	6,032
NORMAL	20,500	13,200	4,400	19.75	37,776 3/	7,300	---

3/ Conservation Pool Capacity.

No water sales under temporary contracts.

NOTE.--Red Willow Canal:
Acres with service available -- 4,903
Acres irrigated 1972 -- 4,470

FRENCHMAN-CAMBRIDGE DIVISION (Continued)
CAMBRIDGE UNIT

	HARRY STRUNK LAKE					CAMBRIDGE CANAL	
MONTH	Inflow (AF)	Outflow (AF)	Evap. (AF)	Precip. (Inches)	End Of Month Content (AF)	Diversions To Canal (AF)	Delivered To Farms (AF)
Jan.	3,060	120	0	.13	32,350	0	0
Feb.	3,090	120	0	.03	35,320	0	0
Mar.	3,020	260	60	.40	38,020	0	0
Apr.	3,760	2,734	646	1.30	38,400	0	0
May	5,300	5,498	832	3.21	37,370	2,001	0
June	4,690	2,942	1,058	3.65	38,060	2,285	16
July	3,720	14,012	978	1.40	26,790	15,292	10,456
Aug.	3,020	11,346	704	1.88	17,760	12,790	9,595
Sep.	2,300	60	470	.54	19,530	1,298	444
Oct.	2,790	62	298	.84	21,960	0	0
Nov.	3,704	60	0	1.63	25,433	0	0
Dec.	3,248	62	0	.39	28,521	0	0
TOTAL	41,702	37,006	5,046	15.40	---	33,666	14,248
NORMAL	52,800	40,500	4,700	19.20	37,141 4/	25,800	---

4/ Conservation Pool Capacity.

No water sales under temporary contracts.

NOTE.--Cambridge Canal:
Acres with service available -- 17,000
Acres irrigated 1972 -- 15,656

FRENCHMAN-CAMBRIDGE IRRIGATION DISTRICT (Meeker-Driftwood, Red Willow, Bartley, and Cambridge Canals):
Acres with service available -- 45,003
Acres irrigated 1972 -- 40,051

TABLE 2
SUMMARY OF 1972 OPERATIONS

KANASKA DIVISION
ALMENA UNIT

NORTON RESERVOIR

MONTH	Inflow (AF)	Outflow (AF)	Evap. (AV)	Precip. (Inches)	End Of Month Content (AF)	Release To City Of Norton (AF)	ALMENA CANAL Diversions To Canal (AF)	ALMENA CANAL Delivered To Farms (AF)
Jan.	294	50	0	.06	4,970	44	0	0
Feb.	276	53	0	.01	5,130	47	0	0
Mar.	234	71	0	.35	5,240	65	0	0
Apr.	490	73	230	2.85	5,380	67	0	0
May	820	121	286	4.95	5,790	59	275	0
June	800	128	350	4.71	6,120	68	105	0
July	160	2,426	292	3.59	3,560	94	1,976	1,112
Aug.	420	84	270	3.35	3,600	22	220	33
Sep.	5,160	43	312	2.07	8,320	37	0	0
Oct.	120	10	186	.81	8,180	4	0	0
Nov.	367	50	94	1.68	8,403	44	0	0
Dec.	255	54	47	.54	8,555	48	0	0
TOTAL	9,396	3,035	2,067	24.97	---	599	2,576	1,145
NORMAL	20,000	11,700	2,800	20.38	35,935 1/	1,200	10,000	---

1/ Conservation Pool Capacity.

NOTE.--ALMENA IRRIGATION DISTRICT
Almena Canal:
Acres with service available -- 5,350
Acres irrigated 1972 -- 4,246

BOSTWICK DIVISION
FRANKLIN UNIT

HARLAN COUNTY RESERVOIR

MONTH	Inflow (AF)	Outflow (AF)	Evap. (AF)	Precip. (Inches)	End Of Month Content (AF)	FRANKLIN CANAL Release To Canal (AF)	FRANKLIN CANAL Delivered To Farms (AF)	NAPONEE CANAL Release To Canal (AF)	NAPONEE CANAL Delivered To Farms (AF)
Jan.	7,810	740	0	.08	250,200	0	0	0	0
Feb.	10,980	580	0	.03	260,600	0	0	0	0
Mar.	11,690	620	370	.67	271,300	0	0	0	0
Apr.	12,940	600	3,800	2.00	279,840	0	0	0	0
May	23,860	3,098	4,702	3.90	295,900	2,505	0	0	0
June	27,200	3,220	6,090	6.75	313,790	1,388	0	0	0
July	14,780	51,834	6,446	2.15	270,290	14,440	6,940	2,127	1,374
Aug.	14,380	27,428	5,782	4.18	251,460	9,801	4,043	1,227	798
Sep.	6,330	794	4,046	1.74	252,950	102	23	0	0
Oct.	5,700	620	2,430	.79	255,600	0	0	0	0
Nov.	13,493	595	978	2.80	267,532	0	0	0	0
Dec.	8,168	615	444	.95	274,641	0	0	0	0
TOTAL	157,331	90,744	35,088	26.04	---	28,236	11,006	3,354	2,172
NORMAL	259,800	141,900	37,600	20.91	342,560 2/	24,700	---	3,900	---

2/ Conservation Pool Capacity.

NOTE.--Franklin Canal:
Acres with service available -- 11,217
Acres irrigated 1972 -- 9,070

Naponee Canal:
Acres with service available -- 1,737
Acres irrigated 1972 -- 1,394

BOSTWICK DIVISION (Continued)
SUPERIOR-COURTLAND UNIT

MONTH	FRANKLIN PUMP CANAL Diversions To Canal (AF)	FRANKLIN PUMP CANAL Delivered To Farms (AF)	SUPERIOR CANAL Diversions To Canal (AF)	SUPERIOR CANAL Delivered To Farms (AF)	COURTLAND CANAL - ABOVE LOVEWELL Total Diversion (AF)	NEBRASKA USE Total (AF)	NEBRASKA USE Delivered To Farms (AF)	KANSAS USE Diversions To Canal (AF)	KANSAS USE Delivered To Farms (AF)
Jan.	0	0	0	0	0	0	0	0	0
Feb.	0	0	0	0	0	0	0	0	0
Mar.	0	0	0	0	0	0	0	0	0
Apr.	0	0	0	0	0	0	0	0	0
May	0	0	1,482	0	6,151	0	0	0	0
June	0	0	455	13	7,732	8	7	1,574	136
July	1,911	1,350	7,207	3,418	29,393	1,000	852	10,790	6,126
Aug.	914	592	3,630	1,978	11,989	516	435	5,979	3,368
Sep.	0	0	0	0	626	0	0	0	0
Oct.	0	0	0	0	0	0	0	0	0
Nov.	0	0	0	0	0	0	0	0	0
Dec.	0	0	0	0	0	0	0	0	0
TOTAL	2,825	1,942	12,774	5,409	55,891	1,524	1,294	18,343	9,630
NORMAL	4,700	---	12,500	---	50,700	3,600	---	17,800	---

NOTE.--Franklin Pump Canal:
Acres with service available -- 2,091
Acres irrigated 1972 -- 1,855
Superior Canal:
Acres with service available -- 5,847
Acres irrigated 1972 -- 4,741

NOTE.--Courtland Canal--Nebraska Use:
Acres with service available -- 1,956
Acres irrigated 1972 -- 1,675
Courtland Canal--Kansas Use:
Acres with service available -- 12,948
Acres irrigated 1972 -- 10,179

BOSTWICK IRRIGATION DISTRICT IN NEBR. (Franklin, Naponee, Franklin Pump and Courtland Canals (Nebraska Use):
Acres with service available -- 22,848
Acres irrigated 1972 -- 18,735

BOSTWICK DIVISION (Continued)
COURTLAND UNIT

LOVEWELL RESERVOIR

MONTH	Inflow (AF)	Outflow (AF)	Evap. (AF)	Precip. (Inches)	End Of Month Content (AF)	COURTLAND (Below) Release To Canal (AF)	COURTLAND (Below) Delivered To Farms (AF)
Jan.	48	0	0	.16	34,030	0	0
Feb.	58	58	0	.16	33,800	0	0
Mar.	62	260	472	.66	33,360	0	0
Apr.	730	94	716	2.81	33,280	0	0
May	8,038	502	944	7.95	39,920	442	0
June	5,484	2,322	1,392	2.52	41,390	2,662	44
July	19,156	18,099	1,416	6.33	42,290	18,039	9,959
Aug.	8,842	11,231	1,332	5.95	38,830	11,171	6,508
Sep.	1,254	110	824	2.88	39,150	44	0
Oct.	220	62	448	1.52	38,860	0	0
Nov.	2,373	21	232	4.17	40,980	0	0
Dec.	1,200	11	89	1.02	42,080	0	0
TOTAL	47,465	31,502	7,865	36.13	---	32,358	16,511
NORMAL	41,800	38,700	5,300	24.72	41,690 3/	34,300	---

3/ Conservation Pool Capacity.

NOTE.--
Courtland Canal below Lovewell:
Acres with service available -- 26,928
Acres irrigated 1972 -- 16,336

KANSAS-BOSTWICK IRRIGATION DISTRICT (Courtland Canal--Kansas Use and Courtland Canal below Lovewell):
Acres with service available -- 39,876

TABLE 2
SUMMARY OF 1972 OPERATIONS

SOLOMON DIVISION
KIRWIN UNIT
KIRWIN RESERVOIR

MONTH	Inflow (AF)	Outflow (AF)	Evap. (AF)	Precip. (Inches)	End Of Month Content (AF)	KIRWIN CANAL Release To Canal (AF)	KIRWIN CANAL Delivered To Farms (AF)
Jan.	332	0	332	.22	54,010	0	0
Feb.	560	0	390	.04	54,180	0	0
Mar.	1,100	0	1,100	.92	54,180	0	0
Apr.	1,240	0	1,100	1.78	54,320	0	0
May	3,742	0	1,502	5.92	56,560	0	0
June	2,212	2,735	1,838	3.80	54,430	2,735	717
July	934	10,572	1,740	1.13	42,820	10,572	7,416
Aug.	1,866	5,167	1,454	3.50	37,800	5,167	3,195
Sep.	1,496	0	906	1.54	38,390	0	0
Oct.	0	0	730	.83	37,660	0	0
Nov.	1,555	0	274	2.30	39,024	0	0
Dec.	476	0	112	.23	39,388	0	0
TOTAL	15,513	18,474	11,478	22.21	---	18,474	1,328
NORMAL	38,100	18,000	11,500	22.34	99,445 1/	18,000	---

1/ Conservation Pool Capacity.

NOTE.--KIRWIN IRRIGATION DISTRICT
Kirwin Canal:
Acres with service available -- 11,435
Acres irrigated 1972 -- 9,165

SOLOMON DIVISION (Continued)
WEBSTER UNIT
WEBSTER RESERVOIR

MONTH	Inflow (AF)	Outflow (AF)	Evap. (AF)	Precip. (Inches)	End Of Month Content (AF)	OSBORNE CANAL Diversions To Canal (AF)	OSBORNE CANAL Delivered To Farms (AF)
Jan.	82	0	62	.21	3,398	0	0
Feb.	112	0	120	.07	3,330	0	0
Mar.	152	0	252	.78	3,290	0	0
Apr.	442	0	236	1.86	3,496	0	0
May	3,118	0	368	7.42	6,246	0	0
June	1,200	0	554	3.06	6,892	0	0
July	1,908	412	602	3.20	7,786	0	0
Aug.	1,260	18	582	2.52	8,500	0	0
Sep.	286	0	428	2.69	7,918	0	0
Oct.	0	0	260	.96	7,658	0	0
Nov.	499	0	97	3.04	8,060	0	0
Dec.	407	0	55	.60	8,412	0	0
TOTAL	9,466	430	3,616	26.41	---	0	0
NORMAL	34,700	19,000	4,400	23.87	76,235 2/	15,000	---

2/ Conservation Pool Capacity.

NOTE.--WEBSTER IRRIGATION DISTRICT
Osborne Canal:
Acres with service available -- 8,564
Acres irrigated 1972 -- None

SOLOMON DIVISION (Continued)
GLEN ELDER UNIT
WACONDA LAKE

MONTH	Inflow (AF)	Outflow (AF)	Evap. (AF)	Precip. (Inches)	End Of Month Content (AF)	OUTFLOW TO RIVER Used By City of Beloit (AF)	OUTFLOW TO RIVER For Water Quality (AF)	OUTFLOW TO RIVER To Bypass Natural Flow (AF)
Jan.	2,130	1,714	916	.03	103,900	300	1,414	0
Feb.	2,226	1,126	800	.03	104,200	300	826	0
Mar.	1,750	930	1,620	.73	103,400	20	910	0
Apr.	3,162	900	2,462	2.60	103,200	20	880	0
May	12,782	930	2,952	6.39	112,100	40	890	0
June	6,750	876	4,174	2.92	113,800	40	836	0
July	2,802	2,602	4,300	3.24	109,700	40	1,522	1,040
Aug.	10,638	2,194	4,044	4.27	114,100	40	1,528	626
Sep.	2,606	1,310	2,596	1.26	112,800	40	1,270	0
Oct.	1,680	1,302	1,678	2.24	111,500	20	1,282	0
Nov.	5,926	535	1,054	3.01	115,838	20	515	0
Dec.	2,489	1,249	537	.55	116,541	20	1,229	0
TOTAL	54,941	15,668	27,133	27.27	---	900	13,102	1,666
NORMAL	122,200	1,500	25,400	25.50	241,500 3/	---	10,729	---

3/ Conservation Pool Capacity.

SMOKY HILL DIVISION
ELLIS UNIT
CEDAR BLUFF RESERVOIR

MONTH	Inflow (AF)	Outflow (AF) 5/	Evap. (AF)	Precip. (Inches)	End Of Month Content (AF)	CEDAR BLUFF CANAL Release To Canal (AF)	CEDAR BLUFF CANAL Delivered To Farms (AF)	Release To Fish Hatchery (AF)
Jan.	58	75	296	.05	97,570	0	0	75
Feb.	154	112	238	0	97,430	0	0	112
Mar.	70	139	944	.22	96,480	0	0	139
Apr.	816	211	1,692	1.52	95,500	0	0	211
May	10,452	1,016	2,044	5.91	103,000	764	0	252
June	2,946	1,706	2,628	3.43	101,800	1,373	144	297
July	12,180	5,242	2,732	1.93	106,200	4,927	3,603	259
Aug.	8,030	4,019	2,722	6.59	107,500	3,660	2,544	265
Sep.	1,452	744	1,798	1.99	106,500	416	145	238
Oct.	0	228	1,504	.42	104,800	0	0	140
Nov.	2,229	177	541	2.85	106,400	0	0	89
Dec.	809	174	272	.44	106,850	0	0	86
TOTAL	39,196	13,843	14,679	25.35	---	11,140	6,436	2,163
NORMAL	42,600	19,200	15,300	22.03	185,090 4/	13,200	---	3,400

4/ Conservation Pool Capacity.

5/ No releases required for City of Russell, Kansas.

NOTE.--CEDAR BLUFF IRRIGATION DISTRICT
Cedar Bluff Canal:
Acres with service available -- 6,800
Acres irrigated 1972 -- 5,654

BØX BUTTE RESERVØIR ØPERATIØN ESTIMATES - 1973
(UNITS IN 1,000 ACRE-FEET)
(Irrigation service for 10,800 acres to be irrigated in the Mirage Flats Project.)

MØNTH	HIST. INFLØW	NET EVAP AF	TØTAL RELEASE REQ	RES CHANGE	RES CØNT AT END ØF MØNTH	RES SPILL	RES ELEV AT END ØF MØNTH	REQ SHØRT
REAS MIN								
JAN	2.0	0.1	0.1	1.8	10.0	0.0	3989.7	
FEB	2.1	0.1	0.1	1.9	11.9	0.0	3991.8	
MAR	3.2	0.2	0.1	2.9	14.8	0.0	3994.7	
APR	2.6	0.5	1.7	0.4	15.2	0.0	3995.1	
MAY	1.4	0.8	3.4	-2.8	12.4	0.0	3992.3	
JUN	0.8	0.7	3.4	-3.3	9.1	0.0	3988.6	
JUL	0.5	0.6	10.1	-8.5	0.6	0.0	3969.0	1.7
AUG	0.5	0.1	10.1	0.0	0.6	0.0	3969.0	9.7
SEP	0.5	0.1	5.1	0.0	0.6	0.0	3969.0	4.7
ØCT	0.7	0.1	0.1	0.5	1.1	0.0	3971.6	
NØV	1.5	0.1	0.1	1.3	2.4	0.0	3976.8	
DEC	2.2	0.0	0.1	2.1	4.5	0.0	3981.5	
TØTAL	18.0	3.4	34.6	-3.7	0.0	0.0		
MØST PRØB								
JAN	2.3	0.1	0.1	2.1	10.3	0.0	3990.0	
FEB	2.4	0.1	0.1	2.2	12.5	0.0	3992.4	
MAR	3.4	0.2	0.1	3.1	15.6	0.0	3995.4	
APR	2.9	0.4	1.3	1.2	16.8	0.0	3996.5	
MAY	1.5	0.7	1.3	-.5	16.3	0.0	3996.1	
JUN	1.4	0.7	2.6	-1.9	14.4	0.0	3994.3	
JUL	1.1	0.7	9.1	-8.7	5.7	0.0	3983.7	
AUG	1.0	0.3	9.1	-5.1	0.6	0.0	3969.0	3.3
SEP	0.7	0.1	2.6	0.0	0.6	0.0	3969.0	2.0
ØCT	1.0	0.1	0.1	0.8	1.4	0.0	3973.1	
NØV	1.9	0.1	0.1	1.7	3.1	0.0	3978.6	
DEC	2.5	0.1	0.1	2.3	5.4	0.0	3983.2	
TØTAL	22.1	3.6	26.5	-2.8	0.0	0.0		
REAS MAX								
JAN	2.6	0.1	0.1	2.4	10.6	0.0	3990.4	
FEB	2.7	0.1	0.1	2.5	13.1	0.0	3993.0	
MAR	4.7	0.2	0.1	4.4	17.5	0.0	3997.1	
APR	3.7	0.3	1.1	2.3	19.8	0.0	3999.0	
MAY	2.4	0.7	1.1	0.6	20.4	0.0	3999.5	
JUN	3.2	0.6	2.2	0.4	20.8	0.0	3999.8	
JUL	2.1	0.8	7.4	-6.1	14.7	0.0	3994.6	
AUG	1.6	0.6	7.4	-6.4	8.3	0.0	3987.6	
SEP	1.3	0.3	2.2	-1.2	7.1	0.0	3985.9	
ØCT	1.8	0.2	0.1	1.5	8.6	0.0	3988.0	
NØV	2.5	0.2	0.1	2.2	10.8	0.0	3990.6	
DEC	2.9	0.1	0.1	2.7	13.5	0.0	3993.4	
TØTAL	31.5	4.2	22.0	5.3	0.0	0.0		

MERRITT RESERVOIR OPERATION ESTIMATES - 1973
(UNITS IN 1,000 ACRE-FEET)
(Irrigation service for 31,000 acres to be irrigated in the Sandhills Division.)

MONTH	HIST. INFLOW	NET EVAP AF	TOTAL RELEASE REQ	RES CHANGE	RES CONT AT END OF MONTH	RES SPILL	RES ELEV AT END OF MONTH	REQ SHORT
REAS MIN								
JAN	14.5	0.2	1.0	0.0	60.9	13.3	2941.0	
FEB	14.1	0.2	1.0	0.0	60.9	12.9	2941.0	
MAR	16.6	0.4	1.0	0.0	60.9	15.2	2941.0	
APR	15.3	1.4	1.0	10.0	70.9	2.9	2944.7	
MAY	15.8	1.8	12.8	1.2	72.1	0.0	2945.2	
JUN	14.0	2.1	18.7	-6.8	65.3	0.0	2942.7	
JUL	13.3	2.0	36.3	-25.0	40.3	0.0	2931.3	
AUG	13.4	1.0	36.3	-23.9	16.4	0.0	2912.1	
SEP	13.3	0.4	18.7	-5.8	10.6	0.0	2903.7	
OCT	14.8	0.3	1.0	13.5	24.1	0.0	2919.9	
NOV	14.6	0.3	1.0	13.3	37.4	0.0	2929.6	
DEC	15.1	0.2	1.0	13.9	51.3	0.0	2936.9	
TOTAL	174.8	10.3	129.8	-9.6	0.0	44.3		
MOST PROB								
JAN	16.2	0.2	1.0	0.0	60.9	15.0	2941.0	
FEB	15.2	0.2	1.0	0.0	60.9	14.0	2941.0	
MAR	17.4	0.4	1.0	0.0	60.9	16.0	2941.0	
APR	16.9	1.0	1.0	10.0	70.9	4.9	2944.7	
MAY	17.2	1.6	9.7	3.6	74.5	2.3	2946.0	
JUN	15.5	1.8	14.0	-.3	74.2	0.0	2945.9	
JUL	14.8	2.1	27.0	-14.3	59.9	0.0	2940.6	
AUG	14.8	1.5	27.0	-13.7	46.2	0.0	2934.5	
SEP	14.8	1.0	14.0	-.2	46.0	0.0	2934.4	
OCT	15.9	0.8	1.0	14.1	60.1	0.0	2940.7	
NOV	15.8	0.5	1.0	0.8	60.9	13.5	2941.0	
DEC	16.1	0.2	1.0	0.0	60.9	14.9	2941.0	
TOTAL	190.6	11.3	98.8	-.0	0.0	80.6		
REAS MAX								
JAN	17.3	0.2	1.0	0.0	60.9	16.1	2941.0	
FEB	16.3	0.2	1.0	0.0	60.9	15.1	2941.0	
MAR	18.7	0.4	1.0	0.0	60.9	17.3	2941.0	
APR	18.8	0.7	1.0	10.0	70.9	7.1	2944.7	
MAY	18.4	1.3	6.6	3.6	74.5	6.9	2946.0	
JUN	16.6	1.5	9.4	0.0	74.5	5.7	2946.0	
JUL	16.3	1.8	17.4	-2.9	71.6	0.0	2945.0	
AUG	15.8	1.6	17.4	-3.2	68.4	0.0	2943.8	
SEP	15.8	1.1	9.4	-7.5	60.9	12.8	2941.0	
OCT	16.9	0.9	1.0	0.0	60.9	15.0	2941.0	
NOV	16.6	0.5	1.0	0.0	60.9	15.1	2941.0	
DEC	17.5	0.2	1.0	0.0	60.9	16.3	2941.0	
TOTAL	205.0	10.4	67.2	-.0	0.0	127.4		

SHERMAN RESERVOIR OPERATION ESTIMATES - 1973
(UNITS IN 1,000 ACRE-FEET)
(Irrigation service for 52,000 acres in the Middle Loup Division.)

MONTH	HIST. INFLOW	NET EVAP AF	TOTAL RELEASE REQ	RES CHANGE	RES CONT AT END OF MONTH	RES SPILL	RES ELEV AT END OF MONTH	REQ SHORT
REAS MIN								
JAN	0.0	0.2	1.5	-1.7	49.6	0.0	2154.8	
FEB	0.0	0.2	1.5	-1.7	47.9	0.0	2154.0	
MAR	0.0	0.2	1.5	-1.7	46.2	0.0	2153.3	
APR	20.7	1.3	1.5	17.9	64.1	0.0	2160.5	
MAY	19.4	1.8	12.6	5.0	69.1	0.0	2162.3	
JUN	14.8	2.2	12.6	0.0	69.1	0.0	2162.3	
JUL	11.0	2.2	40.9	-32.1	37.0	0.0	2148.8	
AUG	7.4	1.1	40.9	-26.5	10.5	0.0	2129.0	8.1
SEP	25.2	0.7	12.6	11.9	22.4	0.0	2139.9	
OCT	35.5	0.7	1.5	33.3	55.7	0.0	2157.3	
NOV	0.0	0.5	1.5	-2.0	53.7	0.0	2156.5	
DEC	0.0	0.2	1.5	-1.7	52.0	0.0	2155.8	
TOTAL	134.0	11.3	129.9	0.7	0.0	0.0		
MOST PROB								
JAN	0.0	0.2	1.5	-1.7	49.6	0.0	2154.8	
FEB	0.0	0.2	1.5	-1.7	47.9	0.0	2154.0	
MAR	0.0	0.2	1.5	-1.7	46.2	0.0	2153.3	
APR	14.9	0.9	1.5	12.5	58.7	0.0	2158.5	
MAY	17.1	1.5	5.2	10.4	69.1	0.0	2162.3	
JUN	7.0	1.8	5.2	0.0	69.1	0.0	2162.3	
JUL	18.2	2.0	31.8	-15.6	53.5	0.0	2156.4	
AUG	12.7	1.5	31.8	-20.6	32.9	0.0	2146.6	
SEP	32.2	1.1	8.9	22.2	55.1	0.0	2157.1	
OCT	3.0	0.9	1.5	0.6	55.7	0.0	2157.3	
NOV	0.0	0.5	1.5	-2.0	53.7	0.0	2156.5	
DEC	0.0	0.2	1.5	-1.7	52.0	0.0	2155.8	
TOTAL	105.1	11.0	93.4	0.7	0.0	0.0		
REAS MAX								
JAN	0.0	0.2	1.5	-1.7	49.6	0.0	2154.8	
FEB	0.0	0.2	1.5	-1.7	47.9	0.0	2154.0	
MAR	0.0	0.2	1.5	-1.7	46.2	0.0	2153.3	
APR	14.9	0.7	1.5	12.7	58.9	0.0	2158.6	
MAY	15.5	1.3	4.0	10.2	69.1	0.0	2162.3	
JUN	5.3	1.4	4.0	-.1	69.0	0.0	2162.3	
JUL	23.6	1.8	22.0	-.2	68.8	0.0	2162.2	
AUG	11.1	1.5	22.0	-12.4	56.4	0.0	2157.6	
SEP	7.7	1.1	6.4	0.2	56.6	0.0	2157.7	
OCT	0.0	0.9	0.0	-.9	55.7	0.0	2157.3	
NOV	0.0	0.5	0.0	-.5	55.2	0.0	2157.1	
DEC	0.0	0.2	0.0	-.2	55.0	0.0	2157.0	
TOTAL	78.1	10.0	64.3	3.7	0.0	0.0		

BØNNY RESERVØIR ØPERATIØN ESTIMATES - 1973
(UNITS IN 1,000 ACRE-FEET)
(Based on service to industrial water service contractors.)

MØNTH	HIST. INFLØW	NET EVAP AF	REL TØ HALE DITCH	REL TØ RIVER	TØTAL RELEASE REQ	RES CHANGE	RES CØNT AT END ØF MØNTH	RES SPILL	RES ELEV AT END ØF MØNTH
REAS MIN									
JAN	1.9	0.2	0.0	0.4	0.4	1.3	39.6	0.0	3671.1
FEB	1.9	0.3	0.0	0.4	0.4	1.2	40.8	0.0	3671.7
MAR	2.3	0.4	0.0	0.4	0.4	0.5	41.3	1.0	3672.0
APR	2.0	0.7	0.3	0.4	0.7	0.0	41.3	0.6	3672.0
MAY	1.9	0.9	0.9	4.1	5.0	-4.0	37.3	0.0	3670.0
JUN	1.3	1.1	0.9	0.4	1.3	-1.1	36.2	0.0	3669.4
JUL	0.7	1.3	0.9	0.4	1.3	-1.9	34.3	0.0	3668.3
AUG	0.4	1.1	0.8	0.4	1.2	-1.9	32.4	0.0	3667.3
SEP	0.4	0.8	0.6	0.4	1.0	-1.4	31.0	0.0	3666.5
ØCT	1.1	0.7	0.5	0.4	0.9	-.5	30.5	0.0	3666.2
NØV	1.6	0.4	0.3	0.4	0.7	0.5	31.0	0.0	3666.5
DEC	1.8	0.3	0.0	0.4	0.4	1.1	32.1	0.0	3667.1
TØTAL	17.3	8.2	5.2	8.5	13.7	-6.2	0.0	1.6	
MØST PRØB									
JAN	2.2	0.2	0.0	0.4	0.4	1.6	39.9	0.0	3671.3
FEB	2.2	0.2	0.0	0.4	0.4	1.4	41.3	0.2	3672.0
MAR	2.9	0.3	0.0	0.4	0.4	0.0	41.3	2.2	3672.0
APR	2.6	0.5	0.4	0.4	0.8	0.0	41.3	1.3	3672.0
MAY	3.0	0.5	0.6	4.1	4.7	-3.9	37.4	1.7	3670.0
JUN	3.1	0.7	0.6	0.4	1.0	0.0	37.4	1.4	3670.0
JUL	1.7	1.0	0.4	0.4	0.8	-.1	37.3	0.0	3670.0
AUG	1.8	1.0	0.4	0.4	0.8	0.0	37.3	0.0	3670.0
SEP	1.5	0.7	0.6	0.4	1.0	-1.8	35.5	1.6	3669.0
ØCT	1.7	0.7	0.6	0.4	1.0	0.0	35.5	0.0	3669.0
NØV	2.1	0.4	0.2	0.4	0.6	0.0	35.5	1.1	3669.0
DEC	2.2	0.2	0.0	0.4	0.4	1.6	37.1	0.0	3669.8
TØTAL	27.0	6.4	3.8	8.5	12.3	-1.2	0.0	9.5	
REAS MAX									
JAN	2.7	0.1	0.0	0.4	0.4	2.2	40.5	0.0	3671.6
FEB	2.7	0.2	0.0	0.4	0.4	0.8	41.3	1.3	3672.0
MAR	3.5	0.2	0.0	0.4	0.4	0.0	41.3	2.9	3672.0
APR	3.2	0.4	0.3	0.4	0.7	0.0	41.3	2.1	3672.0
MAY	5.2	0.3	0.5	4.1	4.6	-3.9	37.4	4.2	3670.0
JUN	6.4	0.4	0.2	0.4	0.6	0.0	37.4	5.4	3670.0
JUL	4.2	0.8	0.2	0.4	0.6	0.0	37.4	2.8	3670.0
AUG	4.2	0.6	0.4	0.4	0.8	0.0	37.4	2.8	3670.0
SEP	2.5	0.5	0.4	0.4	0.8	-1.9	35.5	3.1	3669.0
ØCT	2.3	0.5	0.3	0.4	0.7	0.0	35.5	1.1	3669.0
NØV	2.4	0.4	0.3	0.4	0.7	0.0	35.5	1.3	3669.0
DEC	2.5	0.2	0.0	0.4	0.4	1.9	37.4	0.0	3670.0
TØTAL	41.8	4.6	2.6	8.5	11.1	-.9	0.0	27.0	

SWANSON LAKE OPERATION ESTIMATES - 1973
(UNITS IN 1,000 ACRE-FEET)
(Irrigation service for 20,900 acres in the Frenchman-Cambridge Division.)

MONTH	UNDEPL INFLOW	CORR FOR UPSTR DEPL	DEPL INFLOW	NET EVAP AF	TOTAL RELEASE REQ	RES CHANGE	RES CONT AT END OF MONTH	RES SPILL	RES ELEV AT END OF MONTH
REAS MIN									
JAN	7.5	-1.5	6.0	0.4	0.1	5.5	94.1	0.0	2746.4
FEB	9.5	-1.5	8.0	0.4	0.1	7.5	101.6	0.0	2748.1
MAR	11.1	-1.9	9.2	0.8	0.1	8.3	109.9	0.0	2749.9
APR	8.5	-1.3	7.2	1.5	0.1	5.6	115.5	0.0	2751.0
MAY	7.7	-3.1	4.6	1.6	5.9	-2.9	112.6	0.0	2750.4
JUN	6.9	0.0	6.9	2.1	6.0	-1.2	111.4	0.0	2750.2
JUL	2.4	0.5	2.9	2.9	19.8	-19.8	91.6	0.0	2745.8
AUG	1.9	0.7	2.6	2.4	19.8	-19.6	72.0	0.0	2741.1
SEP	0.5	0.6	1.1	1.6	10.8	-11.3	60.7	0.0	2738.1
OCT	2.6	-.2	2.4	1.3	3.5	-2.4	58.3	0.0	2737.4
NOV	5.7	-.9	4.8	0.8	0.1	3.9	62.2	0.0	2738.5
DEC	6.7	-1.4	5.3	0.4	0.1	4.8	67.0	0.0	2739.8
TOTAL	71.0	-10.0	61.0	16.2	66.4	-21.6	0.0	0.0	
MOST PROB									
JAN	9.6	-1.8	7.8	0.3	0.1	7.4	96.0	0.0	2746.8
FEB	12.0	-1.8	10.2	0.4	0.1	9.7	105.7	0.0	2749.0
MAR	14.3	-2.5	11.8	0.6	0.1	11.1	116.8	0.0	2751.3
APR	12.0	-1.8	10.2	1.0	0.1	3.4	120.2	5.7	2752.0
MAY	13.5	1.7	15.2	0.9	1.4	0.0	120.2	12.9	2752.0
JUN	15.7	-1.9	13.8	1.5	1.5	0.0	120.2	10.8	2752.0
JUL	5.7	-1.0	4.7	2.4	15.2	-12.9	107.3	0.0	2749.3
AUG	6.0	-1.1	4.9	2.2	17.1	-14.4	92.9	0.0	2746.1
SEP	5.0	-.5	4.5	1.2	4.6	-1.3	91.6	0.0	2745.8
OCT	4.6	-.7	3.9	1.6	1.5	0.8	92.4	0.0	2746.0
NOV	8.1	-1.5	6.6	0.8	0.1	5.7	98.1	0.0	2747.3
DEC	8.5	-1.8	6.7	0.4	0.1	6.2	104.3	0.0	2748.7
TOTAL	115.0	-14.7	100.3	13.3	41.9	15.7	0.0	29.4	
REAS MAX									
JAN	11.8	-2.3	9.5	0.2	0.1	9.2	97.8	0.0	2747.2
FEB	14.5	-2.3	12.2	0.2	0.1	11.9	109.7	0.0	2749.8
MAR	19.3	-3.1	16.2	0.2	0.1	10.5	120.2	5.4	2752.0
APR	16.3	-2.5	13.8	0.2	0.1	0.0	120.2	13.5	2752.0
MAY	23.1	-.6	22.5	0.3	0.8	0.0	120.2	21.4	2752.0
JUN	27.4	-5.8	21.6	0.8	0.9	0.0	120.2	19.9	2752.0
JUL	29.3	-3.7	25.6	1.7	8.5	0.0	120.2	15.4	2752.0
AUG	18.3	-3.5	14.8	2.1	9.5	0.0	120.2	3.2	2752.0
SEP	10.5	-1.7	8.8	1.0	1.8	0.0	120.2	6.0	2752.0
OCT	8.7	-1.6	7.1	1.6	0.9	0.0	120.2	4.6	2752.0
NOV	10.1	-1.7	8.4	0.7	0.1	0.0	120.2	7.6	2752.0
DEC	10.7	-2.1	8.6	0.3	0.1	0.0	120.2	8.2	2752.0
TOTAL	200.0	-30.9	169.1	9.3	23.0	31.6	0.0	105.2	

ENDERS RESERVOIR OPERATION ESTIMATES - 1973
(UNITS IN 1,000 ACRE-FEET)
(Irrigation service for 19,500 acres in the Frenchman-Cambridge Division.)

MONTH	HIST. INFLOW	NET EVAP AF	TOTAL RELEASE REQ	RES CHANGE	RES CONT AT END OF MONTH	RES SPILL	RES ELEV AT END OF MONTH	REQ SHORT
REAS MIN								
JAN	4.5	0.1	0.0	4.4	28.7	0.0	3101.7	
FEB	4.0	0.1	0.0	3.9	32.6	0.0	3104.6	
MAR	4.0	0.2	0.0	3.8	36.4	0.0	3107.2	
APR	3.6	0.5	0.0	3.1	39.5	0.0	3109.3	
MAY	4.0	0.6	4.6	-1.2	38.3	0.0	3108.5	
JUN	4.2	0.7	5.0	-1.5	36.8	0.0	3107.5	
JUL	3.9	0.9	19.1	-16.1	20.7	0.0	3094.9	
AUG	4.1	0.5	17.9	-10.3	10.4	0.0	3083.0	4.0
SEP	3.8	0.3	8.4	0.0	10.4	0.0	3083.0	4.9
OCT	4.2	0.3	1.5	2.4	12.8	0.0	3086.4	
NOV	4.2	0.2	0.0	4.0	16.8	0.0	3091.0	
DEC	4.3	0.1	0.0	4.2	21.0	0.0	3095.2	
TOTAL	48.8	4.5	56.5	-3.3	0.0	0.0		
MOST PROB								
JAN	5.5	0.1	0.0	5.4	29.7	0.0	3102.5	
FEB	5.1	0.1	0.0	5.0	34.7	0.0	3106.1	
MAR	5.2	0.2	0.0	5.0	39.7	0.0	3109.4	
APR	4.9	0.4	0.0	4.5	44.2	0.0	3112.1	
MAY	5.0	0.4	0.8	0.3	44.5	3.5	3112.3	
JUN	5.1	0.5	0.8	0.0	44.5	3.8	3112.3	
JUL	4.7	0.8	14.6	-10.7	33.8	0.0	3105.5	
AUG	4.5	0.7	16.3	-12.5	21.3	0.0	3095.5	
SEP	4.5	0.3	3.1	1.1	22.4	0.0	3096.5	
OCT	4.7	0.4	0.6	3.7	26.1	0.0	3099.6	
NOV	5.0	0.2	0.0	4.8	30.9	0.0	3103.4	
DEC	5.2	0.1	0.0	5.1	36.0	0.0	3107.0	
TOTAL	59.4	4.2	36.2	11.7	0.0	7.3		
REAS MAX								
JAN	6.1	0.1	0.0	6.0	30.3	0.0	3102.9	
FEB	5.7	0.0	0.0	5.7	36.0	0.0	3107.0	
MAR	6.0	0.1	0.0	5.9	41.9	0.0	3110.7	
APR	5.6	0.1	0.0	2.6	44.5	2.9	3112.3	
MAY	6.1	0.2	0.0	0.0	44.5	5.9	3112.3	
JUN	6.6	0.3	0.0	0.0	44.5	6.3	3112.3	
JUL	5.5	0.6	8.3	-3.4	41.1	0.0	3110.3	
AUG	5.5	0.6	9.8	-4.9	36.2	0.0	3107.1	
SEP	5.7	0.3	1.4	4.0	40.2	0.0	3109.7	
OCT	5.5	0.5	0.0	4.3	44.5	0.7	3112.3	
NOV	5.6	0.3	0.0	0.0	44.5	5.3	3112.3	
DEC	5.8	0.1	0.0	0.0	44.5	5.7	3112.3	
TOTAL	69.7	3.2	19.5	20.2	0.0	26.8		

HUGH BUTLER LAKE ØPERATIØN ESTIMATES - 1973
(UNITS IN 1,000 ACRE-FEET)
(Irrigation service for 4,500 acres in the Frenchman-Cambridge Division.)

MØNTH	HIST. INFLØW	NET EVAP AF	TØTAL RELEASE REQ	RES CHANGE	RES CØNT AT END ØF MØNTH	RES SPILL	RES ELEV AT END ØF MØNTH	REQ SHØRT
REAS MIN								
JAN	1.2	0.1	0.3	0.8	32.8	0.0	2578.6	
FEB	1.4	0.1	0.3	1.0	33.8	0.0	2579.3	
MAR	1.7	0.3	0.3	1.1	34.9	0.0	2580.0	
APR	1.5	0.6	0.3	0.6	35.5	0.0	2580.4	
MAY	1.7	0.6	1.8	-.7	34.8	0.0	2579.9	
JUN	1.5	0.9	1.7	-1.1	33.7	0.0	2579.2	
JUL	1.1	1.0	4.7	-4.6	29.1	0.0	2576.0	
AUG	0.8	0.7	4.4	-4.3	24.8	0.0	2572.6	
SEP	0.7	0.6	2.1	-2.0	22.8	0.0	2570.9	
ØCT	0.8	0.4	0.8	-.4	22.4	0.0	2570.5	
NØV	1.0	0.2	0.3	0.5	22.9	0.0	2571.0	
DEC	1.1	0.1	0.3	0.7	23.6	0.0	2571.6	
TØTAL	14.5	5.6	17.3	-8.4	0.0	0.0		
MØST PRØB								
JAN	1.5	0.1	0.3	1.1	33.1	0.0	2578.8	
FEB	1.6	0.1	0.3	1.2	34.3	0.0	2579.6	
MAR	2.0	0.2	0.3	1.5	35.8	0.0	2580.6	
APR	1.9	0.4	0.3	1.2	37.0	0.0	2581.3	
MAY	2.4	0.4	1.0	0.8	37.8	0.2	2581.8	
JUN	3.1	0.4	0.9	0.0	37.8	1.8	2581.8	
JUL	1.9	0.8	4.0	-2.9	34.9	0.0	2580.0	
AUG	1.1	0.7	4.2	-3.8	31.1	0.0	2577.4	
SEP	1.0	0.4	1.2	-.6	30.5	0.0	2577.0	
ØCT	1.1	0.5	0.6	0.0	30.5	0.0	2577.0	
NØV	1.4	0.2	0.3	0.9	31.4	0.0	2577.6	
DEC	1.5	0.1	0.3	1.1	32.5	0.0	2578.4	
TØTAL	20.5	4.3	13.8	0.5	0.0	2.0		
REAS MAX								
JAN	1.8	0.0	0.3	1.5	33.5	0.0	2579.1	
FEB	1.9	0.1	0.3	1.5	35.0	0.0	2580.1	
MAR	2.5	0.1	0.3	2.1	37.1	0.0	2581.4	
APR	2.4	0.2	0.3	0.7	37.8	1.2	2581.8	
MAY	2.9	0.2	0.8	0.0	37.8	1.9	2581.8	
JUN	5.4	0.2	0.7	0.0	37.8	4.5	2581.8	
JUL	3.0	0.5	2.8	-.3	37.5	0.0	2581.6	
AUG	1.8	0.6	2.8	-1.6	35.9	0.0	2580.6	
SEP	2.3	0.4	0.9	1.0	36.9	0.0	2581.3	
ØCT	1.5	0.4	0.4	0.7	37.6	0.0	2581.7	
NØV	1.6	0.2	0.3	0.2	37.8	0.9	2581.8	
DEC	1.6	0.1	0.3	0.0	37.8	1.2	2581.8	
TØTAL	28.7	3.0	10.2	5.8	0.0	9.7		

HARRY STRUNK LAKE ØPERATIØN ESTIMATES - 1972
(UNITS IN 1,000 ACRE-FEET)
(Irrigation service for 15,200 acres in the Frenchman-Cambridge Division.)

MØNTH	HIST. INFLØW	NET EVAP AF	TØTAL RELEASE REQ	RES CHANGE	RES CØNT AT END ØF MØNTH	RES SPILL	RES ELEV AT END ØF MØNTH	REQ SHØRT
REAS MIN								
JAN	3.0	0.1	0.3	2.6	31.1	0.0	2362.6	
FEB	3.3	0.1	0.3	2.9	34.0	0.0	2364.3	
MAR	3.8	0.3	0.3	3.1	37.1	0.1	2366.1	
APR	3.6	0.7	0.3	0.0	37.1	2.6	2366.1	
MAY	3.5	0.6	2.5	0.0	37.1	0.4	2366.1	
JUN	3.9	0.8	2.5	0.0	37.1	0.6	2366.1	
JUL	2.8	1.2	10.4	-8.8	28.3	0.0	2360.8	
AUG	2.8	0.8	10.2	-8.2	20.1	0.0	2354.6	
SEP	2.2	0.4	4.5	-2.7	17.4	0.0	2352.1	
ØCT	2.5	0.4	0.7	1.4	18.8	0.0	2353.5	
NØV	2.9	0.2	0.3	2.4	21.2	0.0	2355.5	
DEC	2.9	0.1	0.3	2.5	23.7	0.0	2357.5	
TØTAL	37.2	5.7	32.6	-4.8	0.0	3.7		
MØST PRØB								
JAN	3.6	0.1	0.3	3.2	31.7	0.0	2363.0	
FEB	3.8	0.1	0.3	3.4	35.1	0.0	2365.0	
MAR	4.4	0.2	0.3	2.0	37.1	1.9	2366.1	
APR	4.7	0.4	0.3	0.0	37.1	4.0	2366.1	
MAY	6.1	0.4	0.3	0.0	37.1	5.4	2366.1	
JUN	7.6	0.6	0.3	0.0	37.1	6.7	2366.1	
JUL	6.1	0.9	8.0	-2.8	34.3	0.0	2364.5	
AUG	3.6	0.7	9.2	-6.3	28.0	0.0	2360.6	
SEP	3.1	0.4	1.3	1.4	29.4	0.0	2361.5	
ØCT	3.1	0.5	0.3	2.3	31.7	0.0	2363.0	
NØV	3.3	0.3	0.3	2.7	34.4	0.0	2364.6	
DEC	3.4	0.1	0.3	2.7	37.1	0.3	2366.1	
TØTAL	52.8	4.7	21.2	8.6	0.0	18.3		
REAS MAX								
JAN	4.2	0.0	0.3	3.9	32.4	0.0	2363.4	
FEB	4.6	0.1	0.3	4.2	36.6	0.0	2365.8	
MAR	5.7	0.1	0.3	0.5	37.1	4.8	2366.1	
APR	6.1	0.1	0.3	0.0	37.1	5.7	2366.1	
MAY	8.3	0.1	0.3	0.0	37.1	7.9	2366.1	
JUN	20.4	0.2	0.3	0.0	37.1	19.9	2366.1	
JUL	9.5	0.8	3.8	0.0	37.1	4.9	2366.1	
AUG	5.8	0.6	4.6	0.0	37.1	0.6	2366.1	
SEP	6.4	0.4	0.3	0.0	37.1	5.7	2366.1	
ØCT	4.0	0.6	0.3	0.0	37.1	3.1	2366.1	
NØV	3.8	0.1	0.3	0.0	37.1	3.4	2366.1	
DEC	4.1	0.1	0.3	0.0	37.1	3.7	2366.1	
TØTAL	82.9	3.2	11.4	8.6	0.0	59.7		

NØRTØN RESERVØIR ØPERATIØN ESTIMATES - 1973
(UNITS IN 1,000 ACRE-FEET)
(Irrigation service for 5,100 acres and City of Norton in the Kanaska Division.)

MØNTH	HIST. INFLØW	NET EVAP AF	TØTAL RELEASE REQ	RES CHANGE	RES CØNT AT END ØF MØNTH	RES SPILL	RES ELEV AT END ØF MØNTH	REQ SHØRT
REAS MIN								
JAN	0.2	0.1	0.1	0.0	8.6	0.0	2285.1	
FEB	0.4	0.1	0.1	0.2	8.8	0.0	2285.4	
MAR	0.5	0.1	0.1	0.3	9.1	0.0	2285.7	2286.2
APR	0.5	0.3	0.1	0.1	9.2	0.0	2285.8	
MAY	0.9	0.3	2.1	-1.5	7.7	0.0	2284.0	
JUN	2.2	0.5	2.5	-.8	6.9	0.0	2282.9	
JUL	1.1	0.4	6.2	-3.3	3.6	0.0	2277.1	2.2
AUG	0.8	0.3	5.8	0.0	3.6	0.0	2277.1	5.3
SEP	0.3	0.2	3.1	0.0	3.6	0.0	2277.1	3.0
ØCT	0.1	0.2	1.4	-.1	3.5	0.0	2276.8	1.4
NØV	0.2	0.1	0.1	0.1	3.6	0.0	2277.1	0.1
DEC	0.2	0.0	0.1	0.1	3.7	0.0	2277.3	
TØTAL	7.4	2.6	21.7	-4.9	0.0	0.0		
MØST PRØB								
JAN	0.4	0.1	0.1	0.2	8.8	0.0	2285.4	
FEB	0.7	0.1	0.1	0.5	9.3	0.0	2286.0	
MAR	0.8	0.1	0.1	0.6	9.9	0.0	2286.6	2286.2
APR	0.9	0.2	0.1	0.6	10.5	0.0	2287.3	
MAY	2.4	0.2	0.2	2.0	12.5	0.0	2289.3	
JUN	6.7	0.4	0.1	6.2	18.7	0.0	2294.5	
JUL	4.4	0.7	4.0	-.3	18.4	0.0	2294.3	
AUG	1.8	0.6	4.5	-3.3	15.1	0.0	2291.7	
SEP	0.8	0.4	1.2	-.8	14.3	0.0	2291.0	
ØCT	0.4	0.4	0.6	-.6	13.7	0.0	2290.4	
NØV	0.3	0.2	0.1	0.0	13.7	0.0	2290.4	
DEC	0.4	0.1	0.1	0.2	13.9	0.0	2290.6	
TØTAL	20.0	3.5	11.2	5.3	0.0	0.0		
REAS MAX								
JAN	0.8	0.0	0.1	0.7	9.3	0.0	2286.0	
FEB	1.2	0.0	0.1	1.1	10.4	0.0	2287.2	
MAR	1.8	0.0	0.1	1.7	12.1	0.0	2288.9	
APR	1.4	0.1	0.1	1.2	13.3	0.0	2290.1	
MAY	9.1	0.1	0.1	8.9	22.2	0.0	2296.9	
JUN	16.2	0.4	0.1	13.7	35.9	2.0	2304.3	
JUL	10.7	0.8	0.3	0.0	35.9	9.6	2304.3	
AUG	5.2	1.0	1.5	0.0	35.9	2.7	2304.3	
SEP	3.1	0.6	0.1	0.0	35.9	2.4	2304.3	
ØCT	1.9	0.5	0.4	0.0	35.9	1.0	2304.3	
NØV	0.8	0.2	0.1	0.0	35.9	0.5	2304.3	
DEC	0.8	0.1	0.1	0.0	35.9	0.6	2304.3	
TØTAL	53.0	3.8	3.1	27.3	0.0	18.8		

HARLAN COUNTY RESERVOIR OPERATION ESTIMATES - 1973
(UNITS IN 1,000 ACRE-FEET)
(Irrigation service for 50,670 acres in the Bostwick Division.)

MONTH	UNDEPL INFLOW	CORR FOR UPSTR DEPL	DEPL INFLOW	NET EVAP AF	TOTAL RELEASE REQ	RES CHANGE	RES CONT AT END OF MONTH	RES SPILL	RES ELEV AT END OF MONTH
REAS MIN									
JAN	19.2	-14.3	4.9	0.8	0.6	3.5	278.1	0.0	1940.7
FEB	24.3	-16.7	7.6	0.7	0.6	6.3	284.4	0.0	1941.2
MAR	32.1	-19.1	13.0	1.7	0.6	10.7	295.1	0.0	1942.2
APR	28.0	-13.2	14.8	4.7	0.6	9.5	304.6	0.0	1943.0
MAY	36.5	-14.1	22.4	4.4	12.7	5.3	309.9	0.0	1943.4
JUN	42.0	-13.9	28.1	6.8	12.2	9.1	319.0	0.0	1944.2
JUL	15.4	3.0	18.4	9.7	38.5	-29.8	289.2	0.0	1941.7
AUG	13.6	-4.9	8.7	7.7	44.1	-43.1	246.1	0.0	1937.8
SEP	6.2	-6.5	-.4	4.8	20.0	-25.1	221.0	0.0	1935.3
OCT	5.6	-9.0	-3.4	3.8	0.6	-7.8	213.2	0.0	1934.6
NOV	13.2	-11.2	2.0	2.1	0.6	-.7	212.5	0.0	1934.5
DEC	16.9	-12.6	4.3	0.9	0.6	2.8	215.3	0.0	1934.8
TOTAL	253.0	-132.6	120.4	48.1	131.7	-59.3	0.0	0.0	
MOST PROB									
JAN	22.4	-18.5	3.9	0.6	0.6	2.7	277.3	0.0	1940.6
FEB	31.2	-21.3	9.9	0.6	0.6	8.7	286.0	0.0	1941.4
MAR	38.0	-22.9	15.1	1.1	0.6	13.4	299.4	0.0	1942.5
APR	38.8	-12.8	26.0	1.3	0.6	24.1	323.5	0.0	1944.5
MAY	59.9	-7.1	52.8	3.5	1.6	19.1	342.6	28.6	1946.0
JUN	106.6	-15.0	91.6	6.0	1.8	0.0	342.6	83.8	1946.0
JUL	42.1	-5.6	36.5	8.5	26.1	0.0	342.6	1.9	1946.0
AUG	26.6	-5.1	21.5	6.5	28.4	-13.4	329.2	0.0	1945.0
SEP	19.7	-10.6	9.0	4.8	5.7	-1.4	327.8	0.0	1944.8
OCT	16.4	-12.9	3.5	3.6	0.6	-.7	327.1	0.0	1944.8
NOV	20.8	-15.2	5.6	1.7	0.6	3.3	330.4	0.0	1945.0
DEC	23.5	-16.1	7.4	0.8	0.6	6.0	336.4	0.0	1945.5
TOTAL	446.0	-163.2	282.8	39.0	67.8	61.8	0.0	114.3	
REAS MAX									
JAN	28.1	-22.6	5.5	0.0	0.6	4.9	279.5	0.0	1940.8
FEB	42.6	-26.0	16.6	0.3	0.6	15.7	295.2	0.0	1942.2
MAR	57.1	-23.2	33.9	0.7	0.6	32.6	327.8	0.0	1944.8
APR	55.8	-6.6	49.2	0.2	0.6	14.8	342.6	33.6	1946.0
MAY	105.5	-11.8	93.7	2.0	0.9	0.0	342.6	90.8	1946.0
JUN	166.5	-22.7	143.8	1.7	0.9	0.0	342.6	141.2	1946.0
JUL	105.4	-24.2	81.2	7.2	6.7	0.0	342.6	67.3	1946.0
AUG	63.8	-24.3	39.5	3.8	6.7	0.0	342.6	29.0	1946.0
SEP	75.0	-12.9	62.1	4.2	1.6	0.0	342.6	56.3	1946.0
OCT	34.4	-10.8	23.6	2.5	0.6	0.0	342.6	20.5	1946.0
NOV	31.4	-1.3	30.1	1.1	0.6	0.0	342.6	28.4	1946.0
DEC	30.4	-1.0	29.4	0.4	0.6	0.0	342.6	28.4	1946.0
TOTAL	796.0	-187.5	608.5	24.1	21.0	68.0	0.0	495.5	

LØVEWELL RESERVØIR ØPERATIØN ESTIMATES - 1973
(UNITS IN 1,000 ACRE-FEET)
(Irrigation service for 18,850 acres in the Bostwick Division.)

MØNTH	INFLØW FRØM W.R.CR	INFLØW FRØM CØURT.	TØTAL INFLØW	NET EVAP AF	TØTAL RELEASE REQ	RES CHANGE	RES CØNT AT END ØF MØNTH	RES SPILL	RES ELEV AT END ØF MØNTH
REAS MIN									
JAN	0.1	0.0	0.1	0.2	0.0	-.1	41.6	0.0	1582.6
FEB	0.1	0.0	0.1	0.2	0.0	-.1	41.5	0.0	1582.5
MAR	0.2	0.0	0.2	0.4	0.0	-.2	41.3	0.0	1582.5
APR	0.2	0.0	0.2	0.9	0.0	-.7	40.6	0.0	1582.2
MAY	0.9	5.3	6.2	0.9	4.9	0.4	41.0	0.0	1582.4
JUN	1.6	5.4	7.0	1.4	4.9	0.7	41.7	0.0	1582.6
JUL	0.7	9.9	10.6	1.8	14.5	5.7	36.0	0.0	1580.6
AUG	0.4	10.4	10.8	1.3	17.0	-7.5	28.5	0.0	1577.6
SEP	0.3	5.9	6.2	1.0	7.4	-2.2	26.3	0.0	1576.5
ØCT	0.1	0.7	0.8	0.6	0.0	0.2	26.5	0.0	1576.7
NØV	0.0	0.0	0.0	0.4	0.0	-.4	26.1	0.0	1576.5
DEC	0.0	0.0	0.0	0.2	0.0	-.2	25.9	0.0	1576.4
TØTAL	4.6	37.6	42.2	9.3	48.7	-15.8	0.0	0.0	
MØST PRØB									
JAN	0.3	0.0	0.3	0.1	0.0	0.0	41.7	0.2	1582.6
FEB	0.7	0.0	0.7	0.1	0.0	0.0	41.7	0.6	1582.6
MAR	1.1	0.0	1.1	0.2	0.0	0.0	41.7	0.9	1582.6
APR	1.2	0.0	1.2	0.5	0.0	0.0	41.7	0.7	1582.6
MAY	4.2	0.6	4.8	0.4	1.7	0.0	41.7	2.7	1582.6
JUN	9.7	0.6	10.3	0.4	1.7	0.0	41.7	8.2	1582.6
JUL	2.6	8.8	11.4	1.3	13.9	-3.8	37.9	0.0	1581.3
AUG	1.3	6.2	7.5	0.9	14.1	-7.5	30.4	0.0	1578.4
SEP	2.6	1.2	3.8	0.7	3.6	-.5	29.9	0.0	1578.2
ØCT	1.2	2.7	3.9	0.4	0.0	3.5	33.4	0.0	1579.6
NØV	0.5	0.0	0.5	0.3	0.0	0.2	33.6	0.0	1579.7
DEC	0.3	0.0	0.3	0.1	0.0	0.2	33.8	0.0	1579.7
TØTAL	25.7	20.1	45.8	5.4	35.0	-7.9	0.0	13.3	
REAS MAX									
JAN	0.6	0.0	0.6	0.0	0.0	0.0	41.7	0.6	1582.6
FEB	1.7	0.0	1.7	0.1	0.0	0.0	41.7	1.6	1582.6
MAR	3.3	0.0	3.3	0.1	0.0	0.0	41.7	3.2	1582.6
APR	3.6	0.0	3.6	0.1	0.0	0.0	41.7	3.5	1582.6
MAY	8.5	1.2	9.7	0.1	0.8	0.0	41.7	8.8	1582.6
JUN	20.8	1.2	22.0	-.3	0.9	0.0	41.7	21.4	1582.6
JUL	11.8	1.2	13.0	1.1	6.8	0.0	41.7	5.1	1582.6
AUG	4.0	1.2	5.2	0.8	1.7	0.0	41.7	2.7	1582.6
SEP	8.3	1.2	9.5	0.4	0.0	0.0	41.7	9.1	1582.6
ØCT	3.9	0.0	3.9	0.4	0.0	0.0	41.7	3.5	1582.6
NØV	1.1	0.0	1.1	0.2	0.0	0.0	41.7	0.9	1582.6
DEC	0.9	0.0	0.9	0.0	0.0	0.0	41.7	0.9	1582.6
TØTAL	68.5	6.0	74.5	3.0	10.2	0.0	0.0	61.3	

KIRWIN RESERVOIR OPERATION ESTIMATES - 1973
(UNITS IN 1,000 ACRE-FEET)
(Irrigation service for 10,000 acres in the Solomon Division.)

MONTH	HIST. INFLOW	NET EVAP AF	TOTAL RELEASE REQ	RES CHANGE	RES CONT AT END OF MONTH	RES SPILL	RES ELEV AT END OF MONTH	REQ SHORT
REAS MIN								
JAN	0.2	0.2	0.0	0.0	39.8	0.0	1714.2	
FEB	0.9	0.2	0.0	0.7	40.5	0.0	1714.4	
MAR	1.4	0.4	0.0	1.0	41.5	0.0	1714.8	1715.9
APR	1.7	0.4	0.0	1.3	42.8	0.0	1715.2	
MAY	2.2	1.2	2.7	-1.7	41.1	0.0	1714.6	
JUN	4.2	1.5	2.7	0.0	41.1	0.0	1714.6	
JUL	2.8	2.0	8.0	-7.2	33.9	0.0	1711.9	
AUG	1.8	1.4	9.3	-8.9	25.0	0.0	1707.7	
SEP	0.7	0.8	4.0	-4.1	20.9	0.0	1705.3	
OCT	0.2	0.6	0.0	-.4	20.5	0.0	1705.1	
NOV	0.3	0.3	0.0	0.0	20.5	0.0	1705.1	
DEC	0.3	0.2	0.0	0.1	20.6	0.0	1705.1	
TOTAL	16.7	9.2	26.7	-19.2	0.0	0.0		
MOST PROB								
JAN	0.8	0.2	0.0	0.6	40.4	0.0	1714.4	
FEB	1.8	0.2	0.0	1.6	42.0	0.0	1715.0	
MAR	2.1	0.3	0.0	1.8	43.8	0.0	1715.5	1715.9
APR	2.7	0.5	0.0	2.2	46.0	0.0	1716.2	
MAY	4.3	1.0	0.9	2.4	48.4	0.0	1717.0	
JUN	10.2	1.3	0.9	8.0	56.4	0.0	1719.3	
JUL	6.4	1.9	7.2	-2.7	53.7	0.0	1718.5	
AUG	4.0	1.6	7.2	-4.8	48.9	0.0	1717.2	
SEP	2.4	1.2	1.8	-.6	48.3	0.0	1717.0	
OCT	1.3	1.0	0.0	0.3	48.6	0.0	1717.1	
NOV	1.2	0.5	0.0	0.7	49.3	0.0	1717.3	
DEC	0.9	0.2	0.0	0.7	50.0	0.0	1717.5	
TOTAL	38.1	9.9	18.0	10.2	0.0	0.0		
REAS MAX								
JAN	2.0	0.1	0.0	1.9	41.7	0.0	1714.9	
FEB	2.6	0.1	0.0	2.5	44.2	0.0	1715.7	
MAR	3.3	0.1	0.0	3.2	47.4	0.0	1716.7	1715.9
APR	5.2	0.1	0.0	5.1	52.5	0.0	1718.2	
MAY	15.3	0.5	0.5	14.3	66.8	0.0	1722.0	
JUN	30.9	0.6	0.6	29.7	96.5	0.0	1728.7	
JUL	15.2	2.3	4.5	2.9	99.4	5.5	1729.2	
AUG	11.6	2.0	4.5	0.0	99.4	5.1	1729.2	
SEP	12.6	1.2	1.1	0.0	99.4	10.3	1729.2	
OCT	5.0	1.0	0.0	0.0	99.4	4.0	1729.2	
NOV	2.6	0.4	0.0	0.0	99.4	2.2	1729.2	
DEC	2.0	0.2	0.0	0.0	99.4	1.8	1729.2	
TOTAL	108.3	8.6	11.2	59.6	0.0	28.9		

WEBSTER RESERVOIR OPERATION ESTIMATES - 1973
(UNITS IN 1,000 ACRE-FEET)
(Irrigation service for 7,000 acres in the Solomon Division.)

MONTH	HIST. INFLOW	NET EVAP AF	TOTAL RELEASE REQ	RES CHANGE	RES CONT AT END OF MONTH	RES SPILL	RES ELEV AT END OF MONTH	REQ SHORT
REAS MIN								
JAN	0.3	0.1	0.0	0.2	8.7	0.0	1863.3	
FEB	0.8	0.1	0.0	0.7	9.4	0.0	1863.9	
MAR	1.3	0.2	0.0	1.1	10.5 13.5	0.0	1864.8	1867.1
APR	1.7	0.5	0.0	1.2	11.7	0.0	1865.7	
MAY	1.9	0.5	3.3	1.9	9.8	0.0	1864.2	
JUN	3.5	0.7	3.9	-1.1	8.7	0.0	1863.3	
JUL	1.7	0.7	8.3	-6.0	2.7	0.0	1856.4	1.3
AUG	0.6	0.4	9.4	0.6	2.7	0.0	1856.4	9.2
SEP	0.8	0.3	5.0	0.0	2.7	0.0	1856.4	4.5
OCT	0.1	0.2	0.0	-.1	2.6	0.0	1856.2	0.0
NOV	0.2	0.1	0.0	0.1	2.7	0.0	1856.4	0.0
DEC	0.2	0.1	0.0	0.1	2.8	0.0	1856.6	
TOTAL	13.1	3.9	29.9	-5.7	0.0	0.0		
MOST PROB								
JAN	0.8	0.1	0.0	0.7	9.2	0.0	1863.7	
FEB	1.7	0.1	0.0	1.6	10.8	0.0	1865.1	
MAR	2.1	0.2	0.0	1.9	12.7 13.5	0.0	1866.5	1867.1
APR	2.9	0.3	0.0	2.6	15.3	0.0	1868.2	
MAY	4.2	0.4	0.8	3.0	18.3	0.0	1870.1	
JUN	10.0	0.7	1.0	8.3	26.6	0.0	1874.6	
JUL	4.5	1.1	7.4	-4.0	22.6	0.0	1872.5	
AUG	3.2	0.8	7.4	-5.0	17.6	0.0	1869.7	
SEP	2.4	0.6	2.2	-.4	17.2	0.0	1869.4	
OCT	1.0	0.5	0.0	0.5	17.7	0.0	1869.7	
NOV	1.0	0.2	0.0	0.8	18.5	0.0	1870.2	
DEC	0.9	0.1	0.0	0.8	19.3	0.0	1870.7	
TOTAL	34.7	5.1	18.8	10.8	0.0	0.0		
REAS MAX								
JAN	2.2	0.1	0.0	2.1	10.6	0.0	1864.9	
FEB	3.3	0.1	0.0	3.2	13.8	0.0	1867.2	
MAR	4.1	0.1	0.0	4.0	17.8 13.5	0.0	1869.8	1867.1
APR	6.5	0.2	0.0	6.3	24.1	0.0	1873.3	
MAY	14.1	0.3	0.0	13.8	37.9	0.0	1879.6	
JUN	25.9	0.2	0.0	25.7	63.6	0.0	1888.6	
JUL	17.2	1.7	3.8	11.7	75.3	0.0	1891.9	
AUG	12.9	1.2	3.9	0.9	76.2	6.9	1892.1	
SEP	9.6	1.2	0.3	0.0	76.2	8.1	1892.1	
OCT	5.6	0.9	0.0	0.0	76.2	4.7	1892.1	
NOV	3.8	0.3	0.0	0.0	76.2	3.3	1892 1	
DEC	2.8	0.2	0.0	0.0	76.2	2.6	1892.1	
TOTAL	108.0	6.5	8.0	67.7	0.0	25.8		

WACØNDA LAKE ØPERATIØN ESTIMATES - 1973
(UNITS IN 1,000 ACRE-FEET)
(Service for City of Beloit and water quality control in the Solomon Division.)

MØNTH	UNDEPL INFLØW	CØRR FØR UPSTR DEPL	DEPL INFLØW	NET EVAP AF	TØTAL RELEASE REQ	RES CHANGE	RES CØNT AT END ØF MØNTH	RES SPILL	RES ELEV AT END ØF MØNTH
REAS MIN									
JAN	1.8	-.5	1.3	0.6	0.6	0.1	116.6	0.0	1443.2
FEB	3.2	-1.7	1.5	0.6	0.6	0.3	116.9	0.0	1443.2
MAR	4.4	-2.7	1.7	1.2	0.3	0.2	117.1	0.0	1443.3
APR	5.3	-3.4	1.9	2.9	0.3	-1.3	115.8	0.0	1443.1
MAY	8.0	-.3	7.7	2.9	0.6	4.2	120.0	0.0	1443.6
JUN	15.1	-1.1	14.0	4.4	0.9	8.7	128.7	0.0	1444.7
JUL	11.1	4.0	15.1	5.7	2.6	6.8	135.5	0.0	1445.5
AUG	6.0	-.5	5.5	6.1	2.5	-3.1	132.4	0.0	1445.2
SEP	4.5	-.3	4.2	4.4	1.6	-1.8	130.6	0.0	1444.9
ØCT	2.0	-.3	1.7	3.1	0.8	-2.2	128.4	0.0	1444.7
NØV	1.9	-.5	1.4	1.7	0.3	-.6	127.8	0.0	1444.6
DEC	2.2	-.5	1.7	0.8	0.3	0.6	128.4	0.0	1444.7
TØTAL	65.5	-7.8	57.7	34.4	11.4	11.9	0.0	0.0	
MØST PRØB									
JAN	4.4	-1.6	2.8	0.3	0.6	1.9	118.4	0.0	1443.4
FEB	6.3	-3.5	2.8	0.4	0.6	1.8	120.2	0.0	1443.7
MAR	7.5	-4.2	3.3	0.6	0.3	2.4	122.6	0.0	1444.0
APR	11.6	-5.6	6.0	2.0	0.3	3.7	126.3	0.0	1444.4
MAY	27.5	-7.5	20.0	2.1	0.3	17.6	143.9	0.0	1446.5
JUN	49.0	-19.1	29.9	2.6	0.4	26.9	170.8	0.0	1449.3
JUL	24.1	-2.2	21.9	5.2	2.3	14.4	185.2	0.0	1450.7
AUG	13.0	1.4	14.4	4.0	2.2	8.2	193.4	0.0	1451.5
SEP	13.8	-2.3	11.5	3.6	1.3	6.6	200.0	0.0	1452.1
ØCT	6.0	-2.3	3.7	3.0	0.5	0.2	200.2	0.0	1452.1
NØV	4.8	-2.2	2.6	1.7	0.3	0.6	200.8	0.0	1452.2
DEC	5.0	-1.8	3.2	0.7	0.3	2.2	203.0	0.0	1452.4
TØTAL	173.0	-50.9	122.1	26.2	9.4	86.5	0.0	0.0	
REAS MAX									
JAN	9.5	-4.2	5.3	0.2	0.3	4.8	121.3	0.0	1443.8
FEB	15.5	-5.9	9.6	0.1	0.3	9.2	130.5	0.0	1444.9
MAR	19.0	-7.4	11.6	0.2	0.3	11.1	141.6	0.0	1446.2
APR	36.4	-11.7	24.7	1.1	0.3	23.3	164.9	0.0	1448.7
MAY	56.6	-29.3	27.3	0.7	0.3	26.3	191.2	0.0	1451.3
JUN	165.9	-56.7	109.2	-.2	0.3	50.3	241.5	58.8	1455.6
JUL	69.8	-27.8	42.0	4.7	0.3	0.0	241.5	37.0	1455.6
AUG	41.8	-19.8	22.0	3.4	0.3	0.0	241.5	18.3	1455.6
SEP	53.5	-21.7	31.8	2.4	0.3	0.0	241.5	29.1	1455.6
ØCT	28.5	-10.6	17.9	2.5	0.3	0.0	241.5	15.1	1455.6
NØV	14.9	-6.4	8.5	1.0	0.3	0.0	241.5	7.2	1455.6
DEC	9.6	-4.8	4.8	0.4	0.3	0.0	241.5	4.1	1455.6
TØTAL	521.0	-206.3	314.7	16.5	3.6	125.0	0.0	169.6	

CEDAR BLUFF RESERVOIR OPERATION ESTIMATES - 1973
(UNITS IN 1,000 ACRE-FEET)
(Irrigation service for 6,000 acres and City of Russell in the Smoky Hill Division.)

MONTH	HIST. INFLOW	NET EVAP AF	TOTAL RELEASE REQ	RES CHANGE	RES CONT AT END OF MONTH	RES SPILL	RES ELEV AT END OF MONTH	REQ SHORT
REAS MIN								
JAN	0.3	0.5	0.5	-.7	106.3	0.0	2130.2	
FEB	0.6	0.5	0.4	.3	106.0	0.0	2130.1	
MAR	0.8	0.9	0.6	-.7	105.3	0.0	2130.0	
APR	1.1	2.0	0.4	-1.3	104.0	0.0	2129.7	
MAY	2.1	1.9	2.5	-2.3	101.7	0.0	2129.2	
JUN	4.0	2.8	2.4	-1.2	100.5	0.0	2128.9	
JUL	2.6	3.2	6.4	-7.0	93.5	0.0	2127.2	
AUG	1.5	3.0	6.4	-7.9	85.6	0.0	2125.3	
SEP	0.8	2.0	4.0	-5.2	80.4	0.0	2123.9	
OCT	0.4	1.5	1.7	-2.8	77.6	0.0	2123.1	
NOV	0.4	0.9	0.4	-.9	76.7	0.0	2122.9	
DEC	0.4	0.4	0.4	-.4	76.3	0.0	2122.7	
TOTAL	15.0	19.6	25.9	-30.7	0.0	0.0		
MOST PROB								
JAN	0.7	0.4	0.5	-.2	106.8	0.0	2130.3	
FEB	1.2	0.4	0.3	0.5	107.3	0.0	2130.4	
MAR	1.6	0.7	0.6	0.3	107.6	0.0	2130.5	
APR	2.7	1.4	0.4	0.9	108.5	0.0	2130.7	
MAY	5.4	1.2	1.3	2.9	111.4	0.0	2131.3	
JUN	10.6	1.7	1.2	7 7	119.1	0.0	2132.9	
JUL	8.0	3.1	5.1	-.2	118.9	0.0	2132.9	
AUG	4.6	2.5	5.9	-3.8	115.1	0.0	2132.1	
SEP	4.4	1.8	1.8	0.8	115.9	0.0	2132.2	
OCT	1.5	1.5	1.2	-1.2	114.7	0.0	2132.0	
NOV	1.1	1.0	0.4	-.3	114.4	0.0	2131.9	
DEC	0.8	0.5	0.4	-.1	114.3	0.0	2131.9	
TOTAL	42.6	16.2	19.0	7.3	0.0	0.0		
REAS MAX								
JAN	2.0	0.4	0.5	1.1	108.1	0.0	2130.6	
FEB	2.5	0.3	0.4	1.8	109.9	0.0	2131.0	
MAR	3.3	0.5	0.6	2.2	112.1	0.0	2131.4	
APR	6.7	0.9	0.4	5.4	117.5	0.0	2132.6	
MAY	22.3	0.9	1.0	20.4	137.9	0.0	2136.4	
JUN	27.4	0.6	0.9	25.9	163.8	0.0	2140.8	
JUL	20.2	2.8	3.4	14.0	177.8	0.0	2142.9	
AUG	21.7	2.4	3.9	7.3	185.1	8.1	2144.0	
SEP	12.2	2.2	1.3	0.0	185.1	8.7	2144.0	
OCT	7.1	1.5	0.9	0.0	185.1	4.7	2144.0	
NOV	2.6	0.9	0.4	0.0	185.1	1.3	2144.0	
DEC	2.1	0.5	0.4	0.0	185.1	1.2	2144.0	
TOTAL	130.1	13.9	14.2	78.1	0.0	24.0		

TABLE 4

FLOOD DAMAGES PREVENTED BY KANSAS RIVER PROJECTS RESERVOIRS

BONNY

Year	Damages Prevented	Cumulative Total
1951	$ 293,000	$ 293,000
1953	135,000	428,000
1957	1,050,000	1,478,000
1960	169,000	1,647,000
1965	273,000	1,920,000
1967	42,000	1,962,000
1969	200,000	2,162,000

SWANSON

Year	Damages Prevented	Cumulative Total
1957	$ 233,000	$ 233,000
1960	900,000	1,133,000
1962	126,000	1,259,000
1964	50,000	1,309,000
1965	477,000	1,786,000
1967	182,000	1,968,000
1969	1,000	$1,969,000

ENDERS

Year	Damages Prevented	Cumulative Total
1951	$ 220,000	$ 220,000
1956	104,000	324,000
1960	412,000	736,000
1962	37,000	773,000
1965	137,000	910,000
1967	42,000	952,000
1969	1,000	953,000

HUGH BUTLER

Year	Damages Prevented	Cumulative Total
1962	$ 2,000	$ 2,000
1965	137,000	139,000
1967	42,000	181,000

HARRY STRUNK

Year	Damages Prevented	Cumulative Total
1951	$ 14,000	$ 14,000
1957	5,000	19,000
1960	198,000	217,000
1962	29,000	246,000
1967	129,000	375,000
1969	6,000	381,000

NORTON

Year	Damages Prevented	Cumulative Total
1966	$ 132,000	$ 132,000
1967	885,000	1,017,000
1972	500,000	1,517,000

HARLAN COUNTY

Year	Damages Prevented	Cumulative Total
1957	$1,045,000	$1,045,000
1960	4,853,000	5,898,000
1961	255,000	6,153,000
1962	39,000	6,192,000
1964	182,000	6,374,000
1965	60,000	6,434,000
1966	1,658,000	8,092,000
1967	3,539,000	11,631,000
1969	14,000	11,645,000
1971	64,000	11,709,000

LOVEWELL

Year	Damages Prevented	Cumulative Total
1957	$ 349,000	$ 349,000
1960	178,000	527,000
1961	165,000	692,000
1962	5,000	697,000
1971	9,000	706,000

KIRWIN

Year	Damages Prevented	Cumulative Total
1957	$ 522,000	$ 522,000
1958	10,000	532,000
1960	499,000	1,031,000
1961	1,000	1,032,000
1962	1,000	1,033,000
1964	34,000	1,067,000
1965	325,000	1,392,000
1967	191,000	1,583,000
1968	44,000	1,627,000
1969	2,000	1,629,000
1971	3,000	1,632,000

WEBSTER

Year	Damages Prevented	Cumulative Total
1957	$ 326,000	$ 326,000
1958	114,000	440,000
1960	1,018,000	1,458,000
1961	1,000	1,459,000
1962	1,000	1,460,000
1964	17,000	1,477,000
1965	325,000	1,802,000
1967	85,000	1,887,000
1968	2,000	1,889,000
1969	1,000	1,890,000
1971	3,000	1,893,000

WACONDA

Year	Damages Prevented	Cumulative Total
1968	$ 280,000	$ 280,000
1969	606,000	886,000
1971	9,000	895,000

CEDAR BLUFF

Year	Damages Prevented	Cumulative Total
1951	$ 597,000	$ 597,000
1955	357,000	954,000
1956	19,000	973,000
1957	4,812,000	5,785,000
1958	829,000	6,614,000
1960	1,573,000	8,187,000
1961	101,000	8,288,000
1962	1,000	8,289,000
1964	17,000	8,306,000
1965	38,000	8,344,000
1967	42,000	8,386,000
1969	1,000	8,387,000
1971	8,000	8,395,000

PROJECT TOTALS

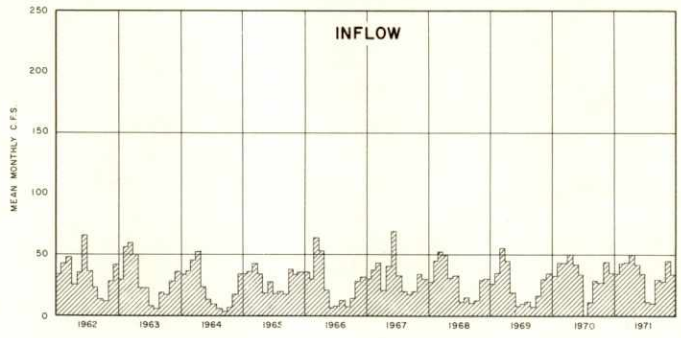
Year	Damages Prevented	Cumulative Total
1951	$1,124,000	$1,124,000
1953	135,000	1,259,000
1955	357,000	1,616,000
1956	123,000	1,739,000
1957	8,109,000	9,848,000
1958	953,000	10,801,000
1960	9,800,000	20,601,000
1961	523,000	21,124,000
1962	241,000	21,365,000
1964	300,000	21,665,000
1965	1,772,000	23,437,000
1966	1,790,000	25,227,000
1967	5,179,000	30,406,000
1968	326,000	30,732,000
1969	832,000	31,564,000
1971	96,000	31,660,000
1972	500,000	32,160,000

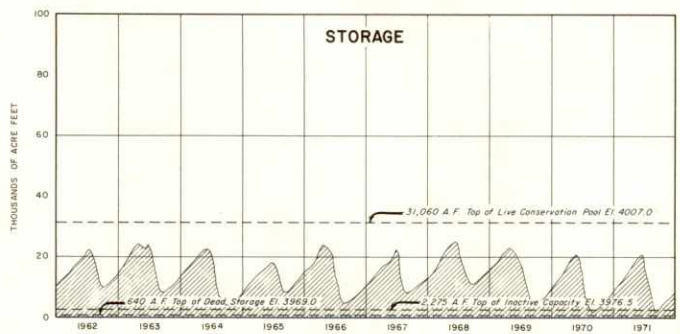
TABLE 5
OTHER USES AT FEDERALLY CONSTRUCTED STORAGE AND DIVERSION DAMS
NIOBRARA, LOWER PLATTE AND KANSAS RIVER BASINS
During 1972
Annual Totals

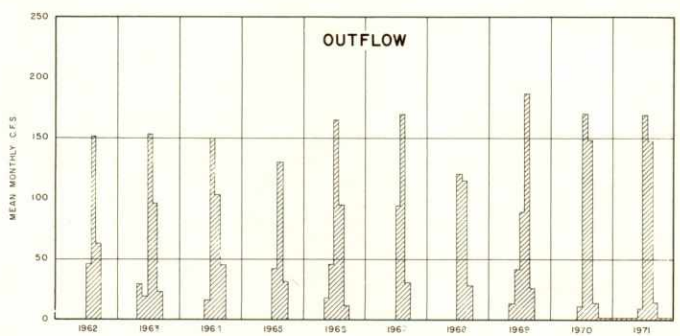
Features	Visitors	Cars In Area	Water Craft	Sport Fish Caught	Season Take Ducks	Season Take Geese
Colorado						
Bonny Reservoir	246,256	70,359	5,260	6,000	2,650	75
Kansas						
Norton Reservoir	102,622	39,155	1,255	18,000	300	35
Almena Diversion Dam	1,330	300	0	111	5	40
Lovewell Reservoir	152,724	37,683	4,680	12,000	150	80
Kirwin Reservoir	213,803	70,440	2,940	105,000	74	164
Webster Reservoir	87,687	27,212	385	6,500	300	85
Woodston Diversion Dam	915	500	0	210	0	0
Waconda Lake	293,212	89,303	5,490	35,000	1,050	75
Cedar Bluff Reservoir	155,451	45,860	5,700	8,500	200	100
Nebraska						
Box Butte Reservoir	32,150	9,800	3,825	4,100	90	5
Merritt Reservoir	45,942	14,500	3,065	24,195	290	4
Milburn Diversion Dam	1,120	900	0	3,180	Not Reported	
Arcadia Diversion Dam	13,500	3,600	0	8,680	50	4
Sherman Reservoir	148,400	58,500	16,685	50,000	1,200	85
Swanson Lake	141,856	44,428	5,111	46,400	95	9
Enders Reservoir	26,551	6,670	1,193	8,800	310	12
Hugh Butler Lake	207,234	54,150	8,684	45,284	140	0
Harry Strunk Lake	77,001	20,611	2,202	20,200	115	6
Harlan County Reservoir	990,000	323,000	- - - - - - (Not Available) - - - - - -			
TOTAL REPORTED	2,937,754	916,971	66,465	402,160	7,019	779

Visitors = Total visitor-days which includes fishing, hunting, boating, skiing, camping, picnicking and sightseeing.
Water Craft = Boating days which includes rentals, inboards, outboards, rowboats and sailboats.

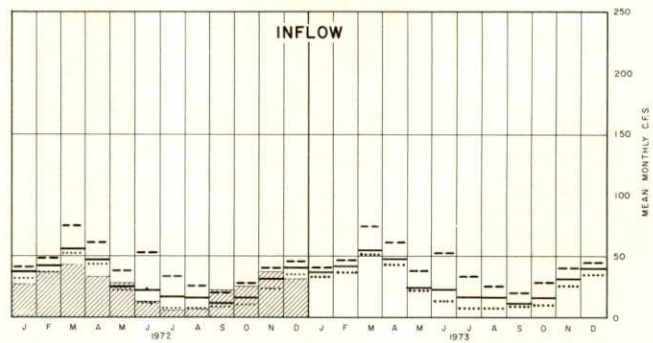
BOX BUTTE RESERVOIR
HISTORICAL OPERATION

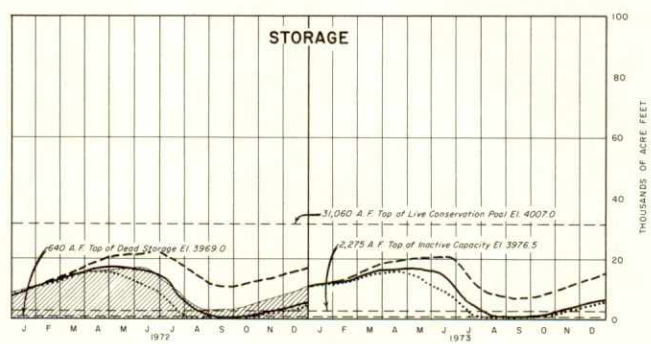


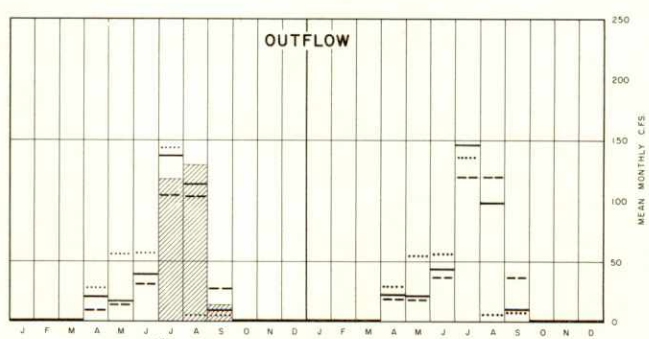




BOX BUTTE RESERVOIR
OPERATING PLANS





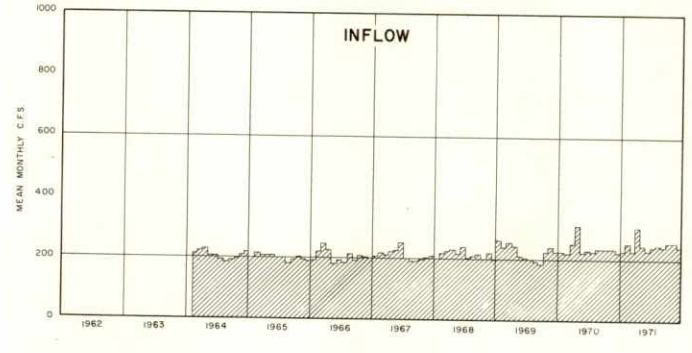


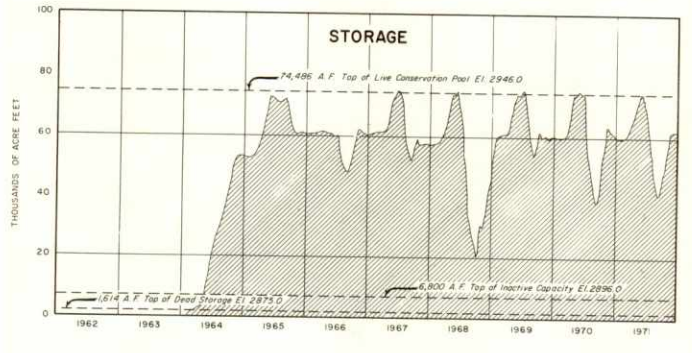
MOST PROBABLE
REASONABLE MAXIMUM
REASONABLE MINIMUM
ACTUAL

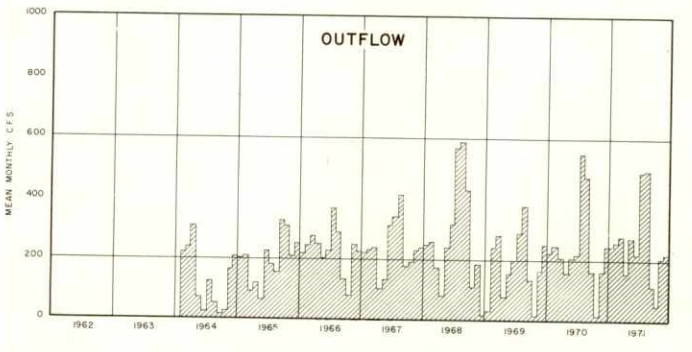
Exhibit 1

Exhibit 2

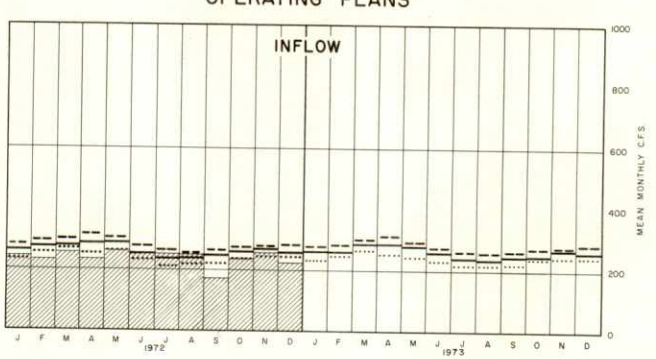
MERRITT RESERVOIR
HISTORICAL OPERATION

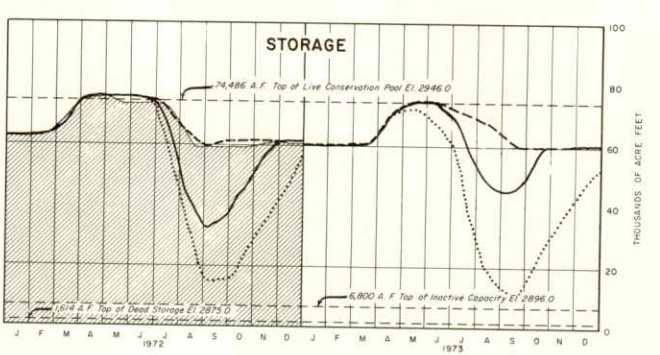


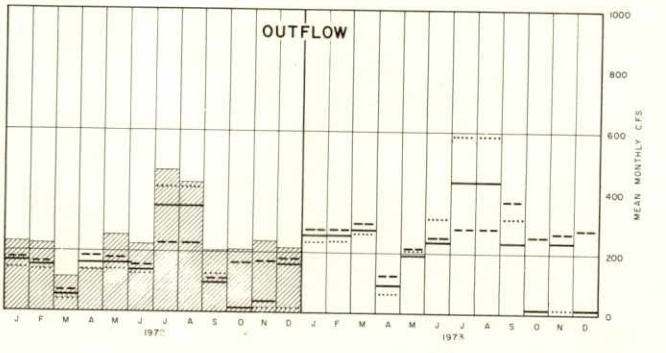




MERRITT RESERVOIR
OPERATING PLANS



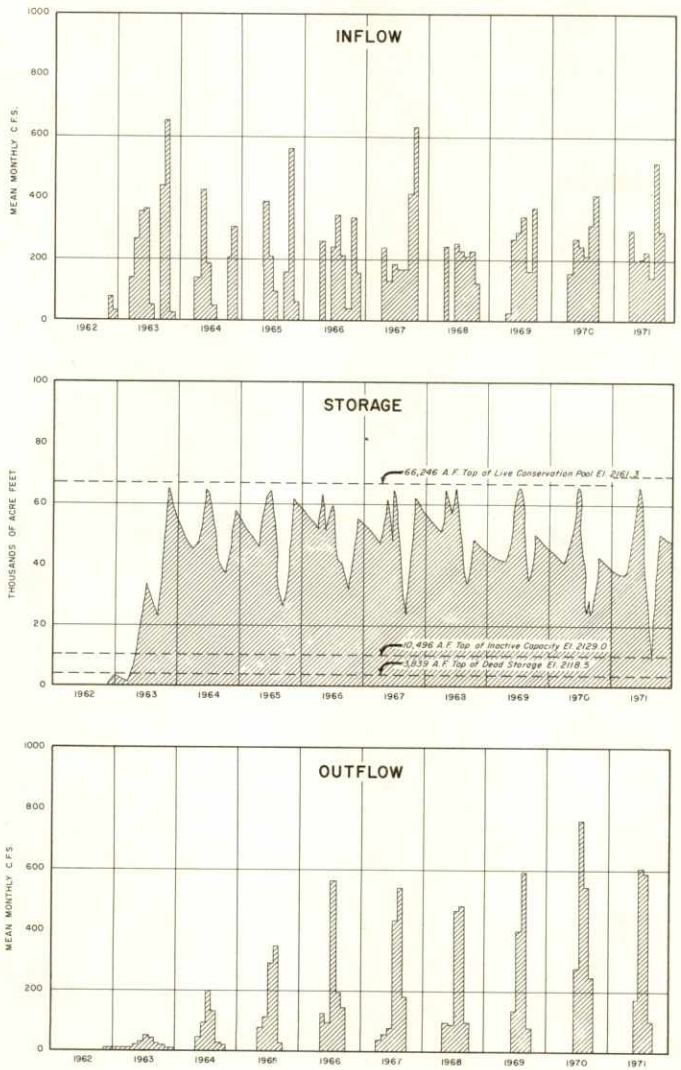




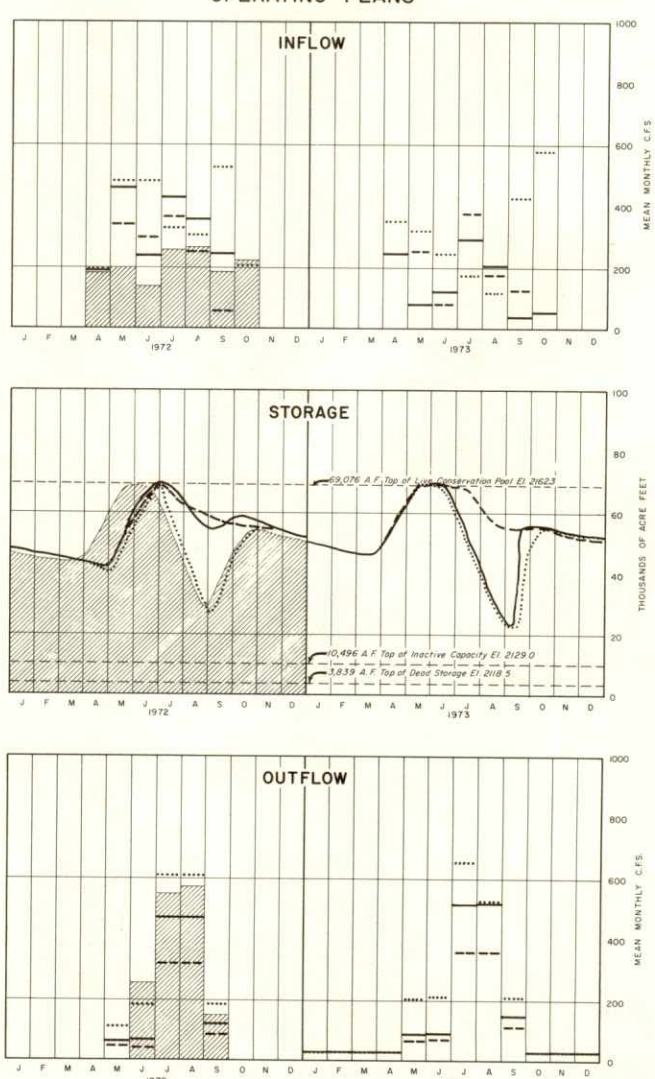
MOST PROBABLE
REASONABLE MAXIMUM
REASONABLE MINIMUM
ACTUAL

Exhibit 2

SHERMAN RESERVOIR
HISTORICAL OPERATION



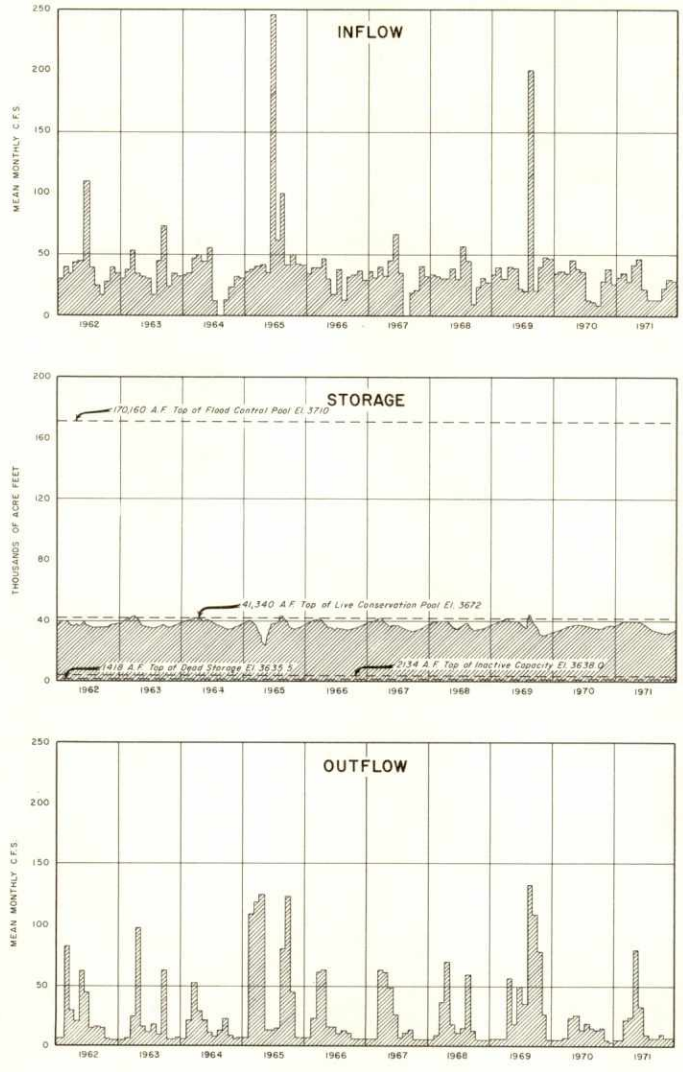
SHERMAN RESERVOIR
OPERATING PLANS



MOST PROBABLE
REASONABLE MAXIMUM
REASONABLE MINIMUM
ACTUAL

Exhibit 3

BONNY RESERVOIR
HISTORICAL OPERATION



BONNY RESERVOIR
OPERATING PLANS

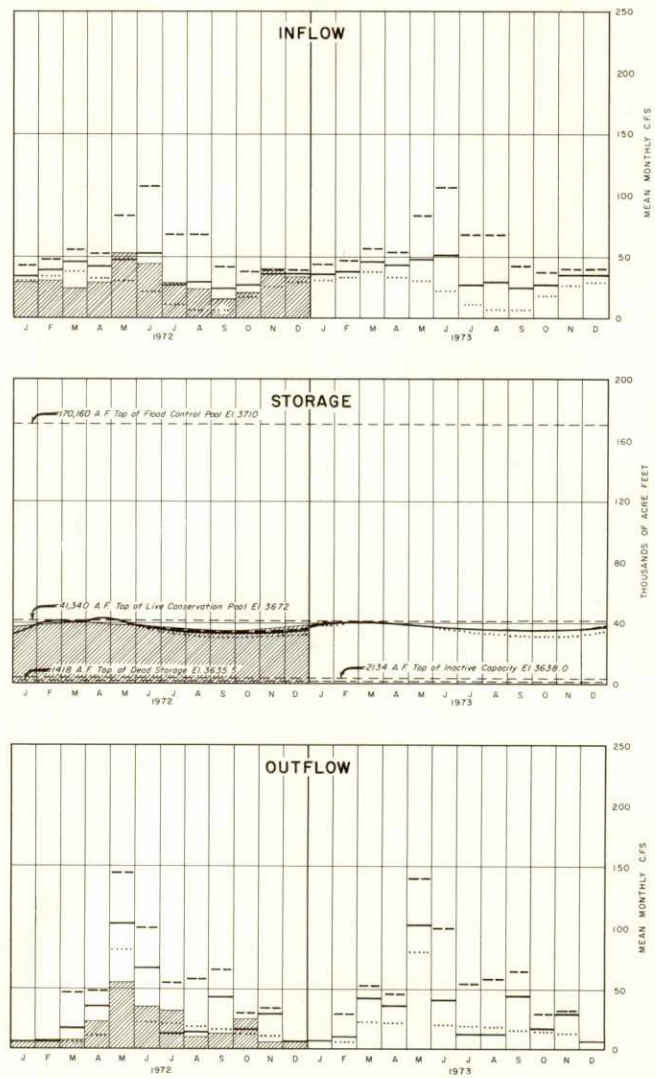


Exhibit 4

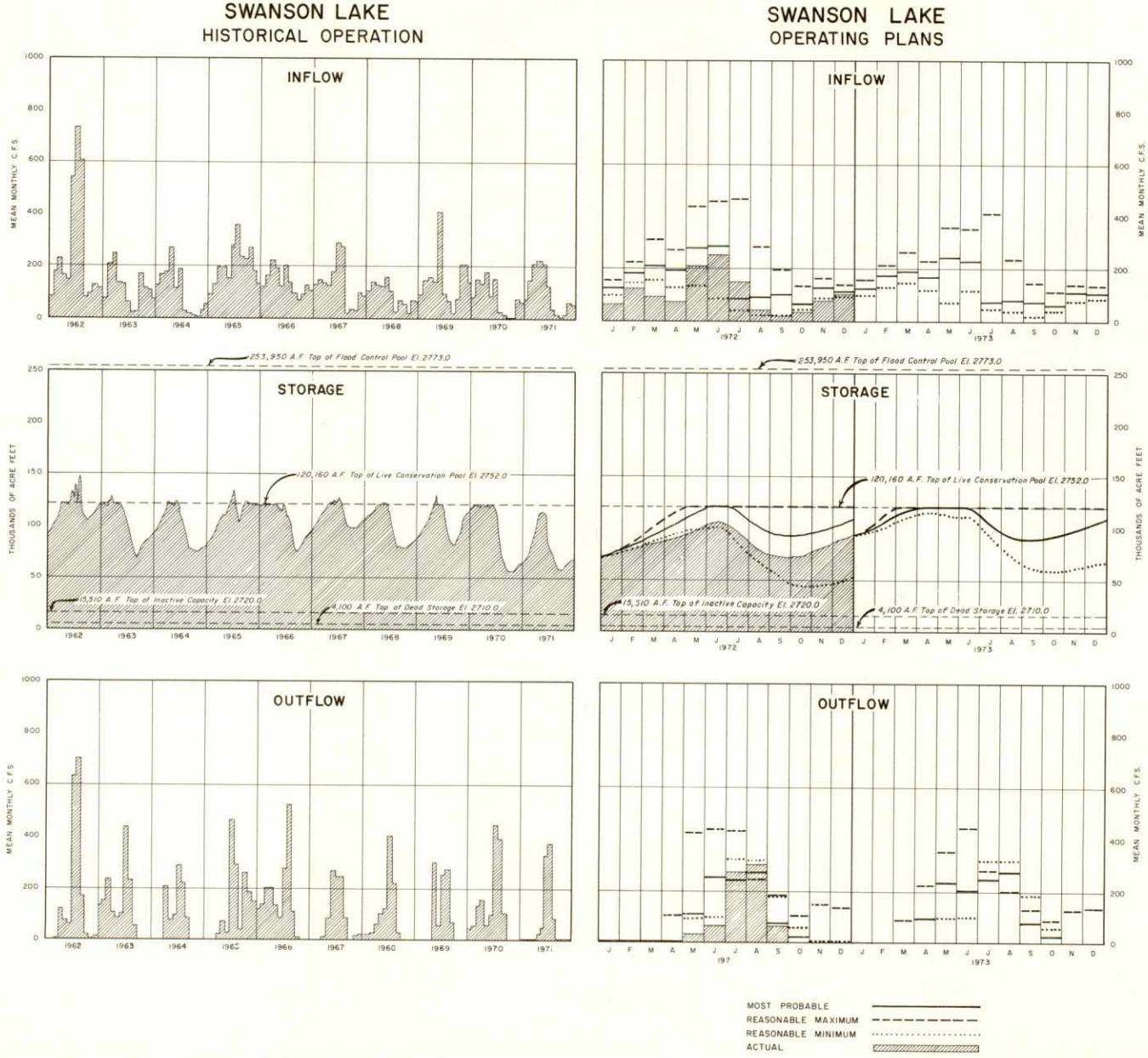
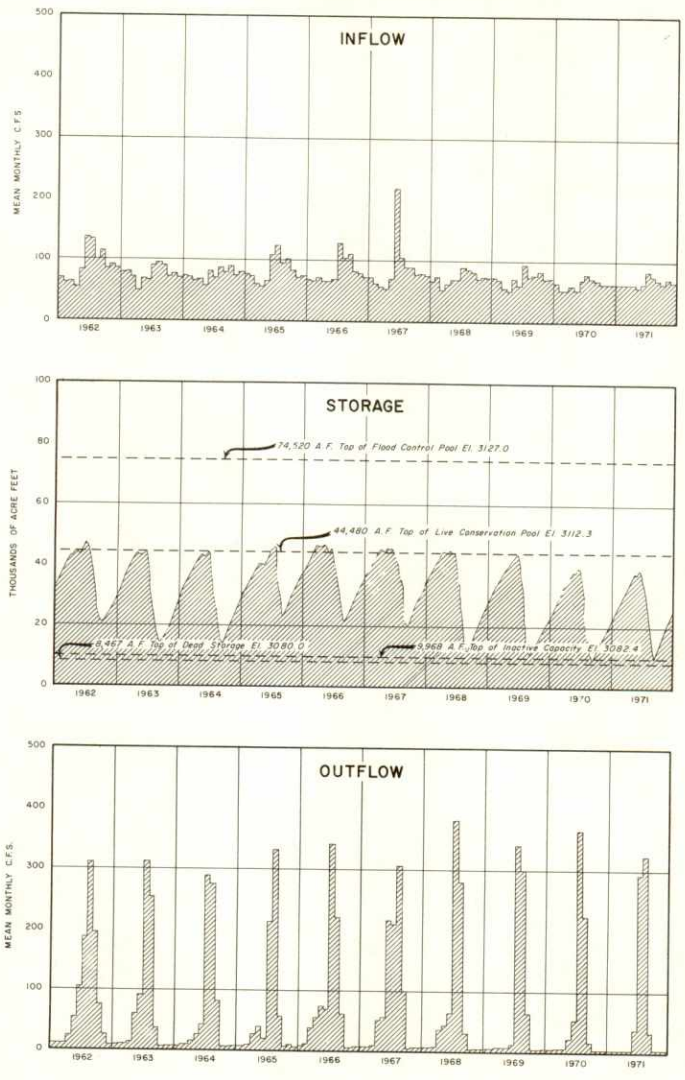
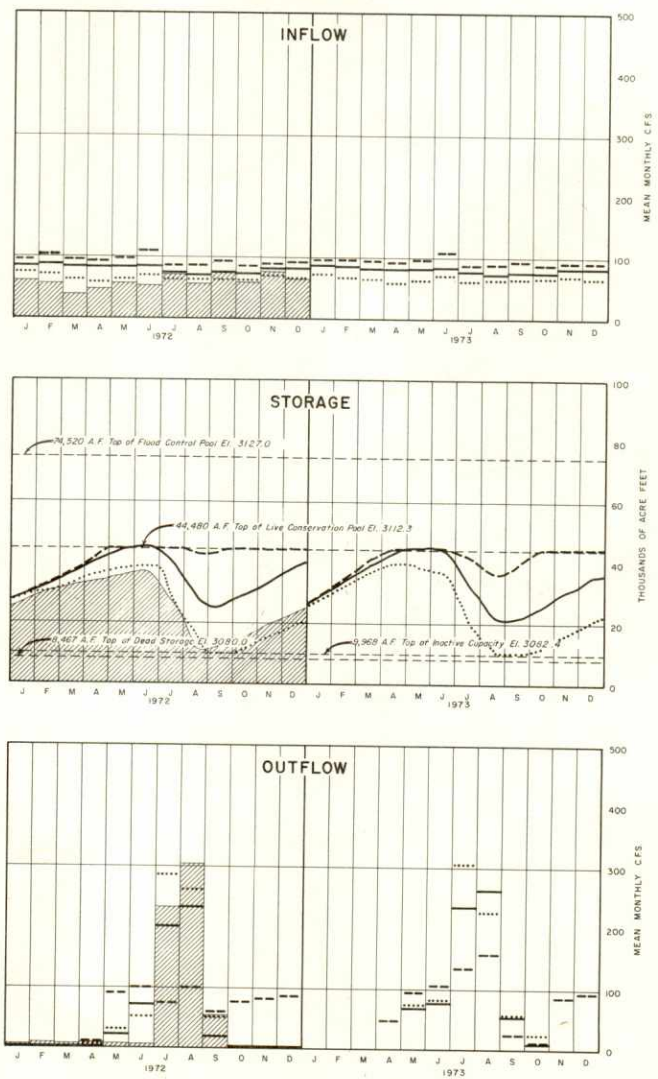

SWANSON LAKE
HISTORICAL OPERATION
SWANSON LAKE
OPERATING PLANS
INFLOW
STORAGE
OUTFLOW
MEAN MONTHLY C.F.S.
THOUSANDS OF ACRE FEET
253,950 A.F. Top of Flood Control Pool El. 2773.0
120,160 A.F. Top of Live Conservation Pool El. 2752.0
15,510 A.F. Top of Inactive Capacity El. 2720.0
4,100 A.F. Top of Dead Storage El. 2710.0
1962
1963
1964
1965
1966
1967
1968
1969
1970
1971
1972
1973
MOST PROBABLE
REASONABLE MAXIMUM
REASONABLE MINIMUM
ACTUAL

Exhibit 5

ENDERS RESERVOIR
HISTORICAL OPERATION



ENDERS RESERVOIR
OPERATING PLANS



MOST PROBABLE
REASONABLE MAXIMUM
REASONABLE MINIMUM
ACTUAL

Exhibit 6

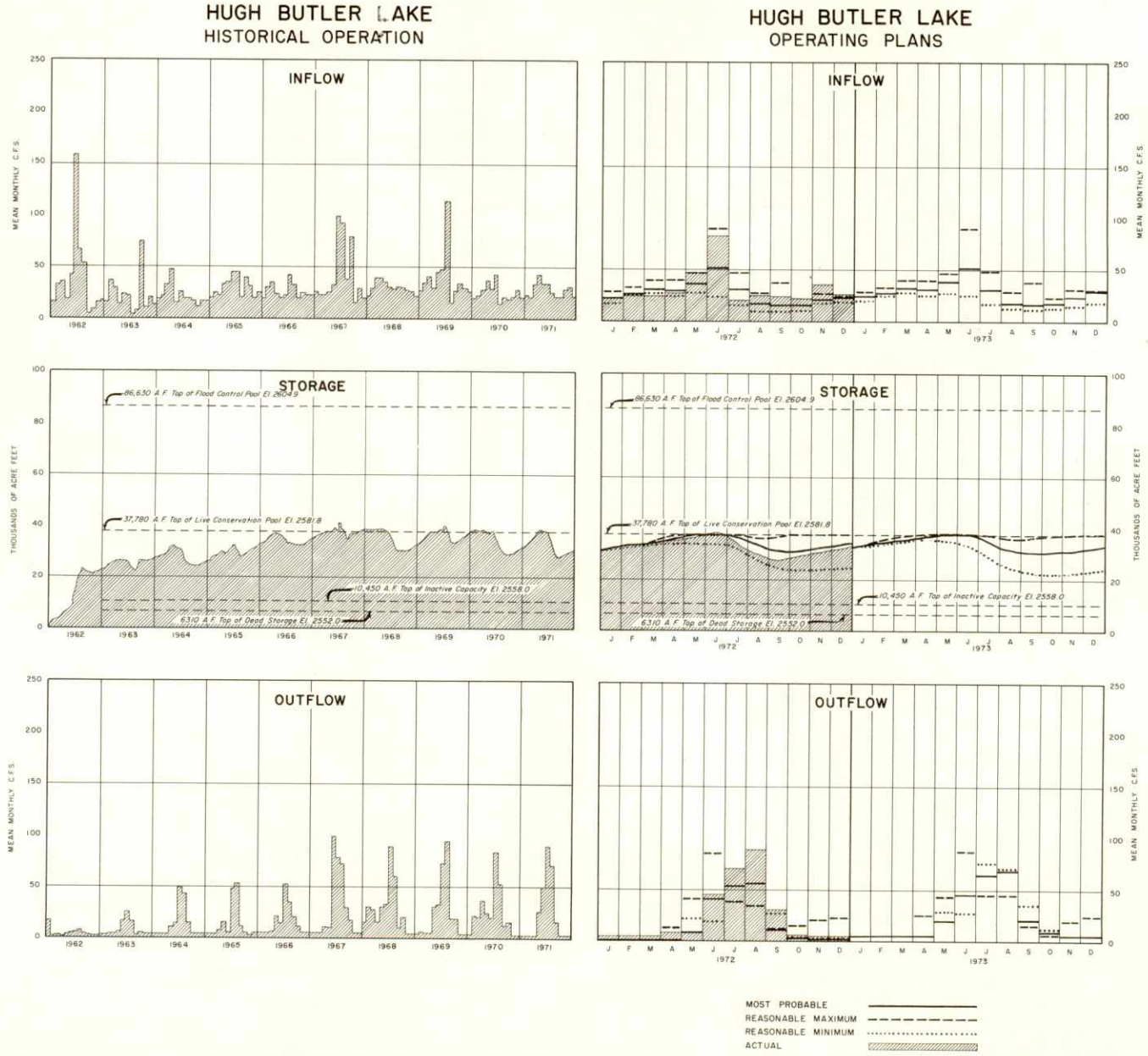
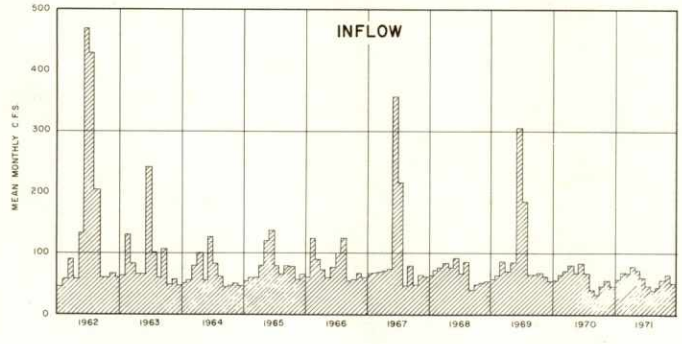
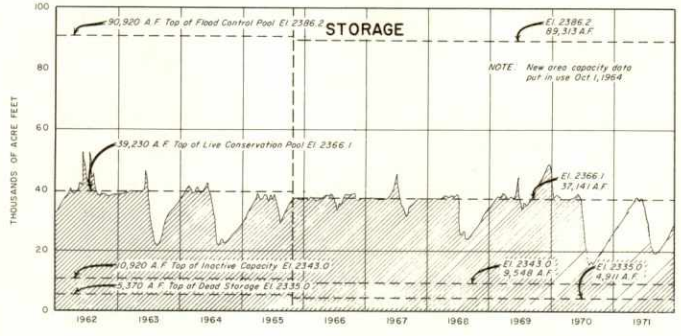
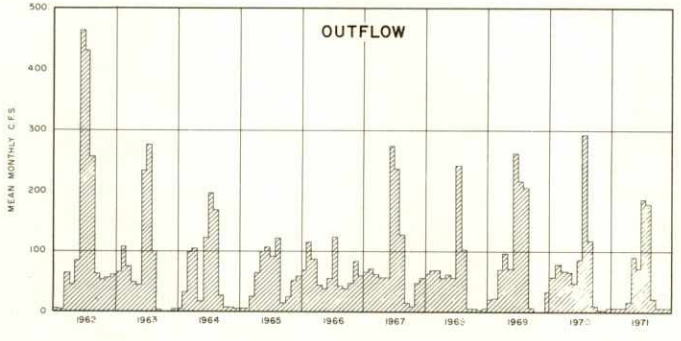

HUGH BUTLER LAKE
HISTORICAL OPERATION
HUGH BUTLER LAKE
OPERATING PLANS
INFLOW
STORAGE
OUTFLOW
MEAN MONTHLY C.F.S.
THOUSANDS OF ACRE FEET
86,630 A.F. Top of Flood Control Pool El. 2604.9
37,780 A.F. Top of Live Conservation Pool El. 2581.8
10,450 A.F. Top of Inactive Capacity El. 2558.0
6310 A.F. Top of Dead Storage El. 2552.0
1962
1963
1964
1965
1966
1967
1968
1969
1970
1971
1972
1973
MOST PROBABLE
REASONABLE MAXIMUM
REASONABLE MINIMUM
ACTUAL

Exhibit 7

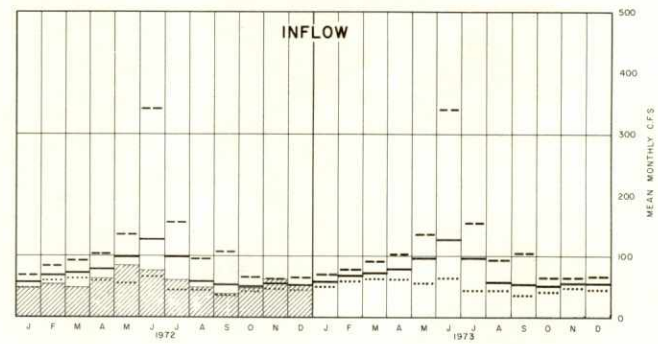
HARRY STRUNK LAKE
HISTORICAL OPERATION

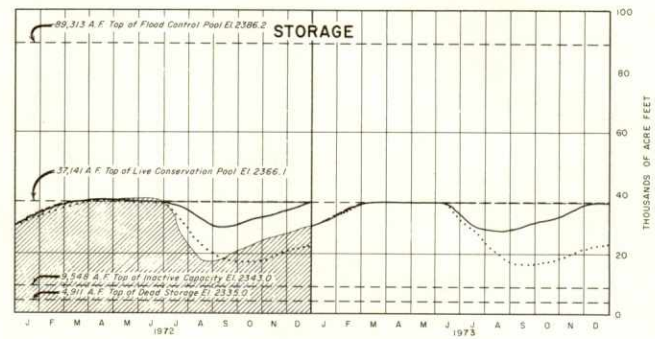


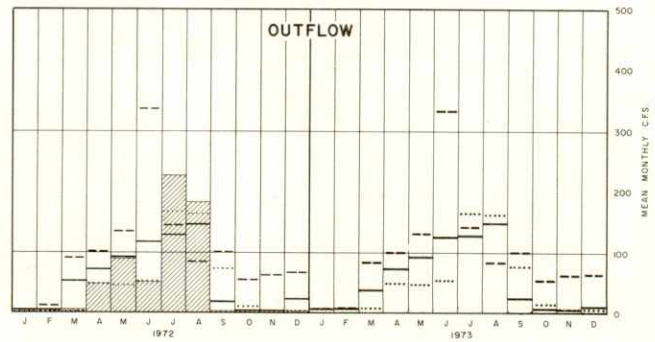




HARRY STRUNK LAKE
OPERATING PLANS





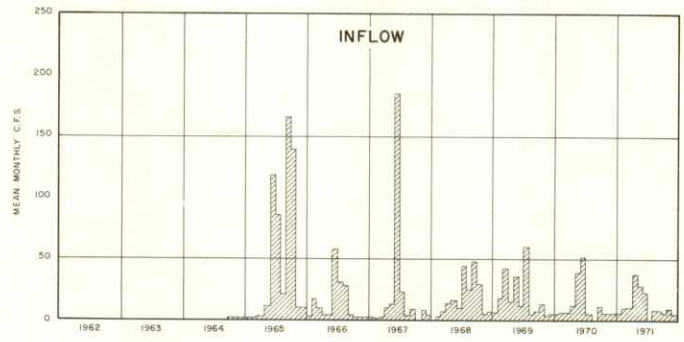


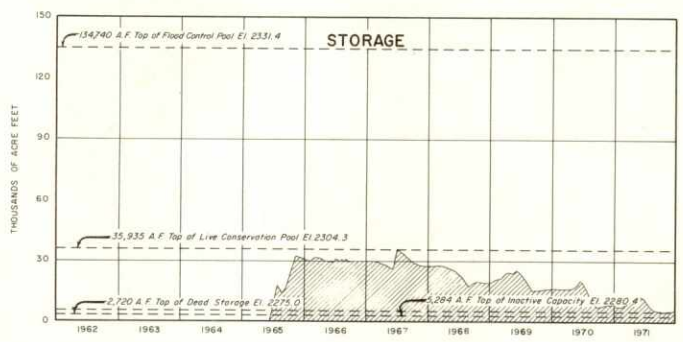
MOST PROBABLE
REASONABLE MAXIMUM
REASONABLE MINIMUM
ACTUAL

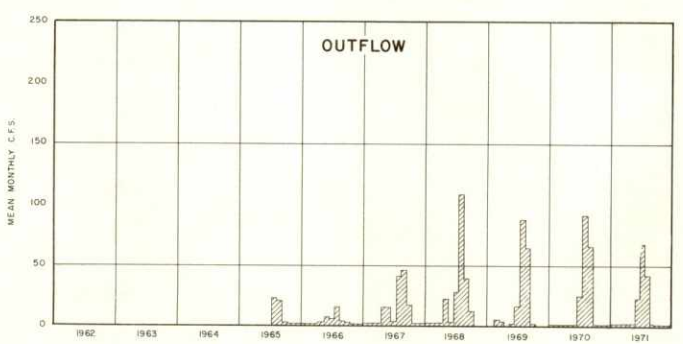
Exhibit 8

Exhibit 9

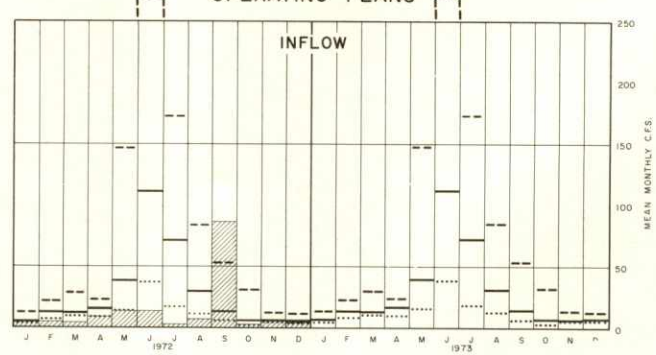
NORTON RESERVOIR
HISTORICAL OPERATION

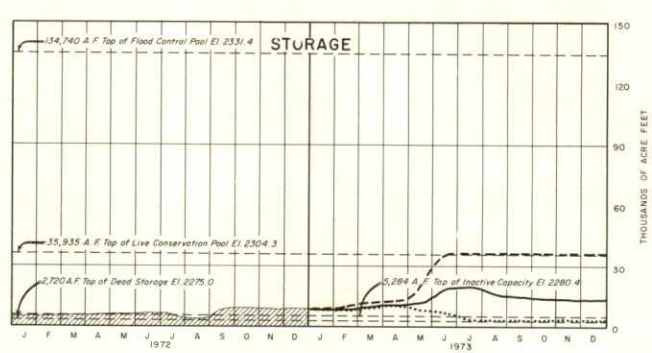


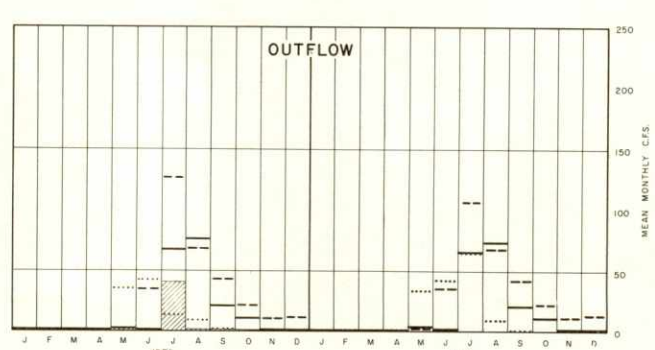




NORTON RESERVOIR
OPERATING PLANS





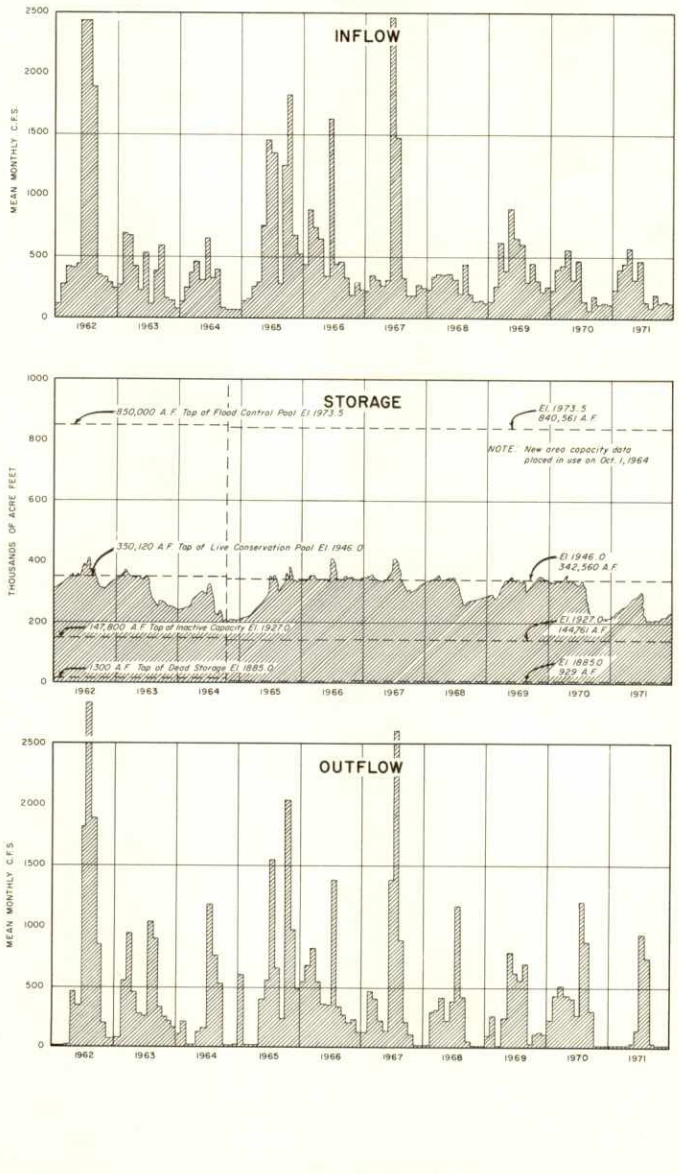


MOST PROBABLE
REASONABLE MAXIMUM
REASONABLE MINIMUM
ACTUAL

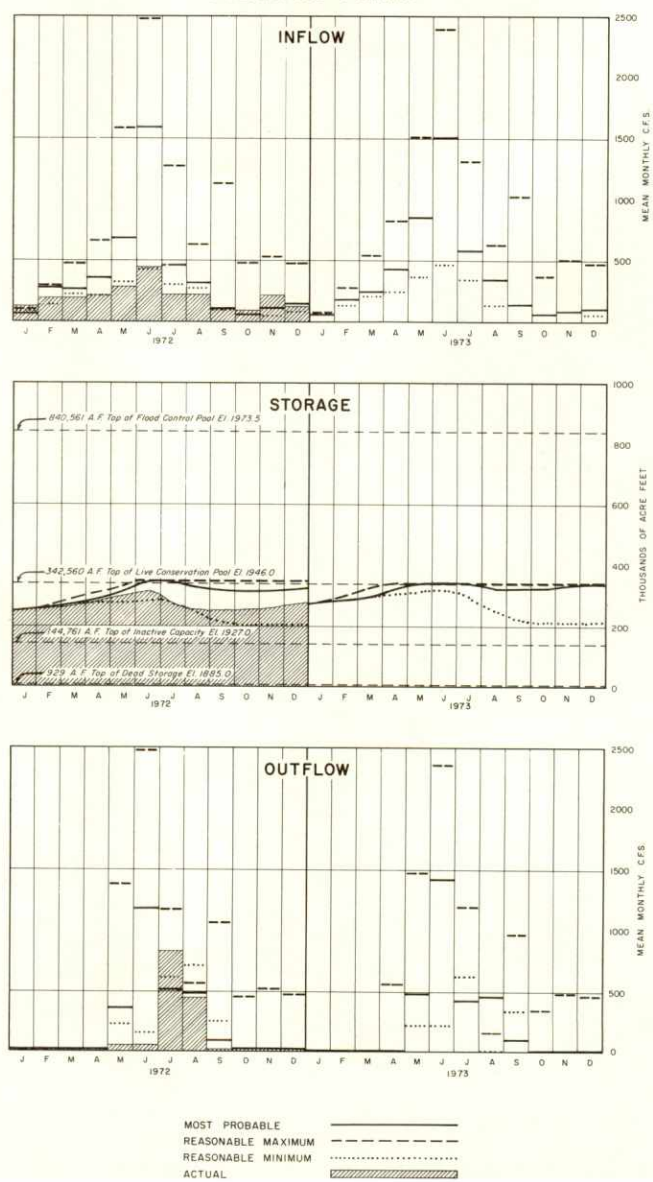
Exhibit 9

Exhibit 10

HARLAN COUNTY RESERVOIR
HISTORICAL OPERATION



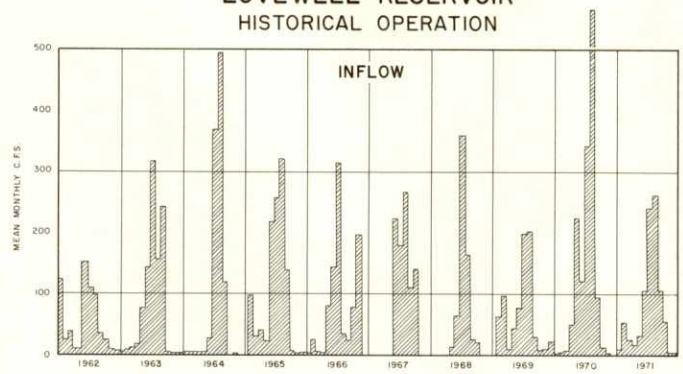
HARLAN COUNTY RESERVOIR
OPERATING PLANS

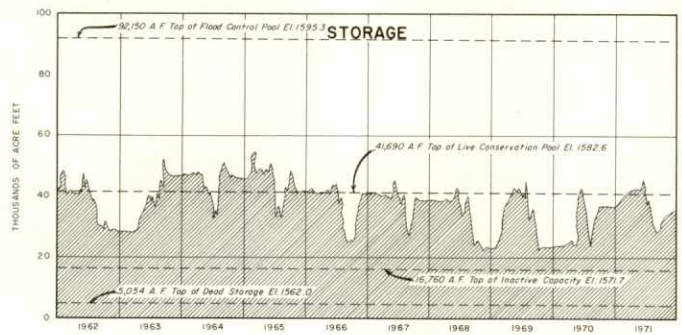


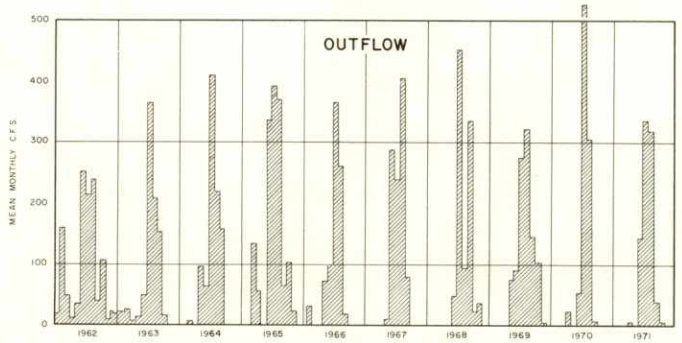
MOST PROBABLE
REASONABLE MAXIMUM
REASONABLE MINIMUM
ACTUAL

Exhibit 10

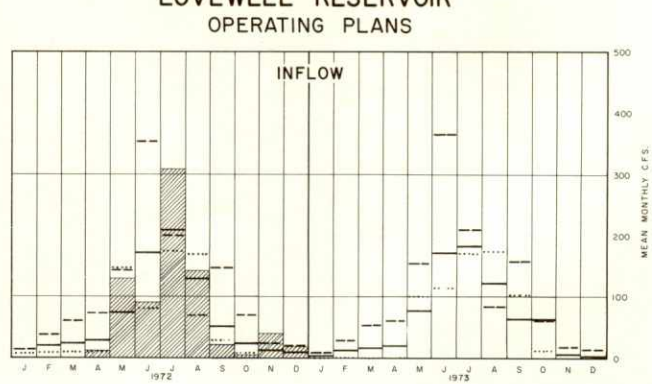
LOVEWELL RESERVOIR
HISTORICAL OPERATION

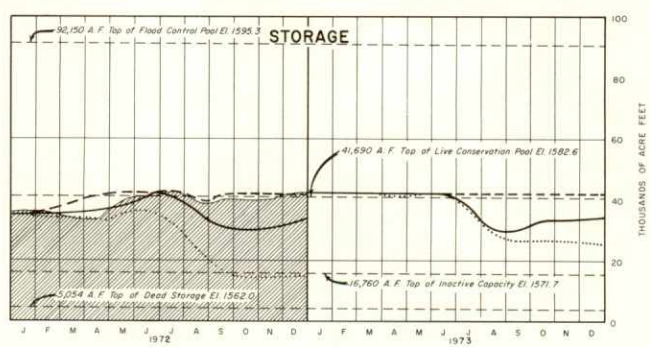


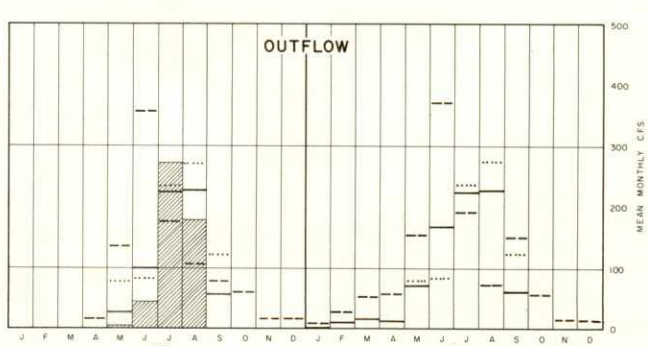




LOVEWELL RESERVOIR
OPERATING PLANS





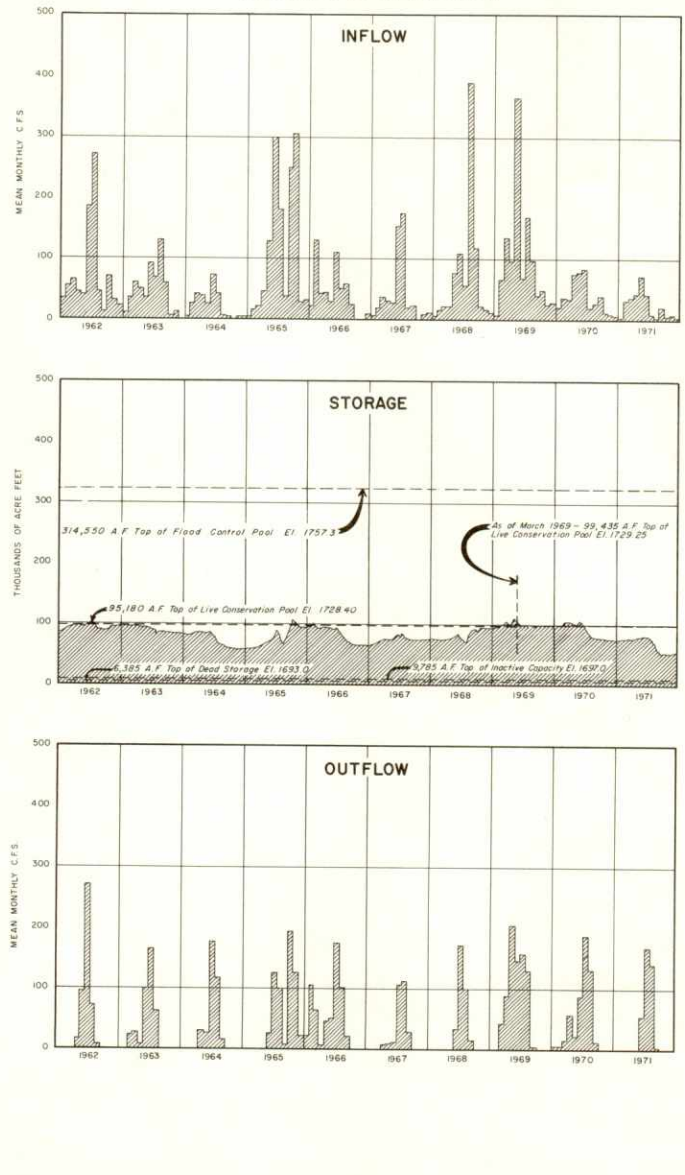


MOST PROBABLE
REASONABLE MAXIMUM
REASONABLE MINIMUM
ACTUAL

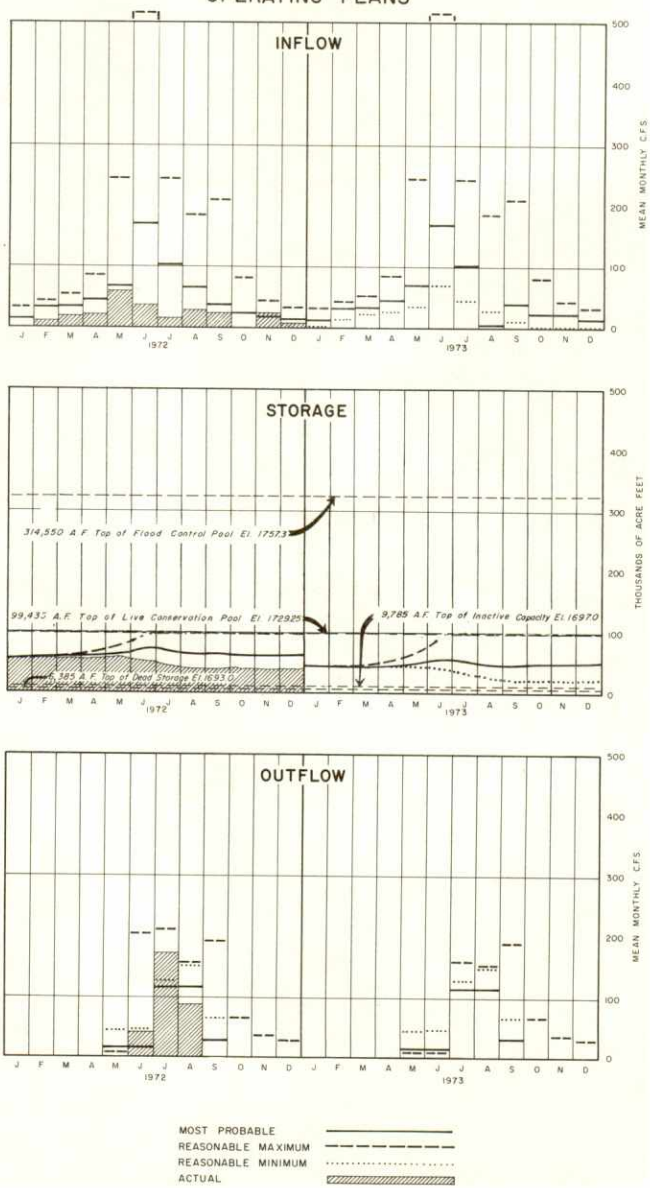
Exhibit II

Exhibit 12

KIRWIN RESERVOIR
HISTORICAL OPERATION



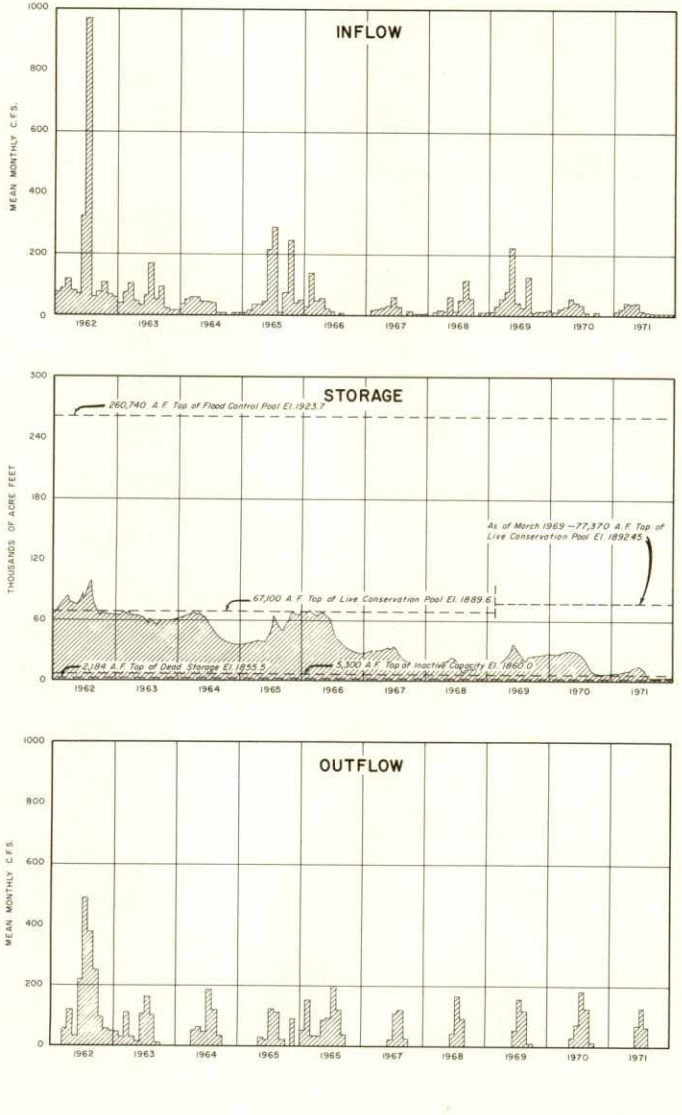
KIRWIN RESERVOIR
OPERATING PLANS



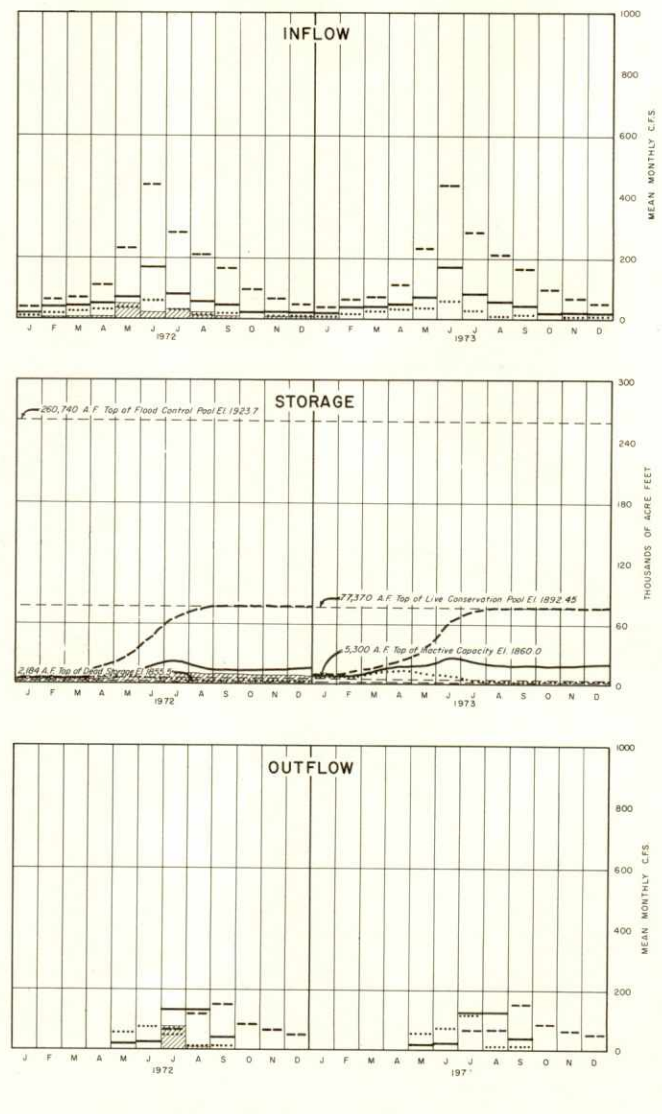
MOST PROBABLE
REASONABLE MAXIMUM
REASONABLE MINIMUM
ACTUAL

Exhibit 13

WEBSTER RESERVOIR
HISTORICAL OPERATION



WEBSTER RESERVOIR
OPERATING PLANS



MOST PROBABLE
REASONABLE MAXIMUM
REASONABLE MINIMUM
ACTUAL

Exhibit 13

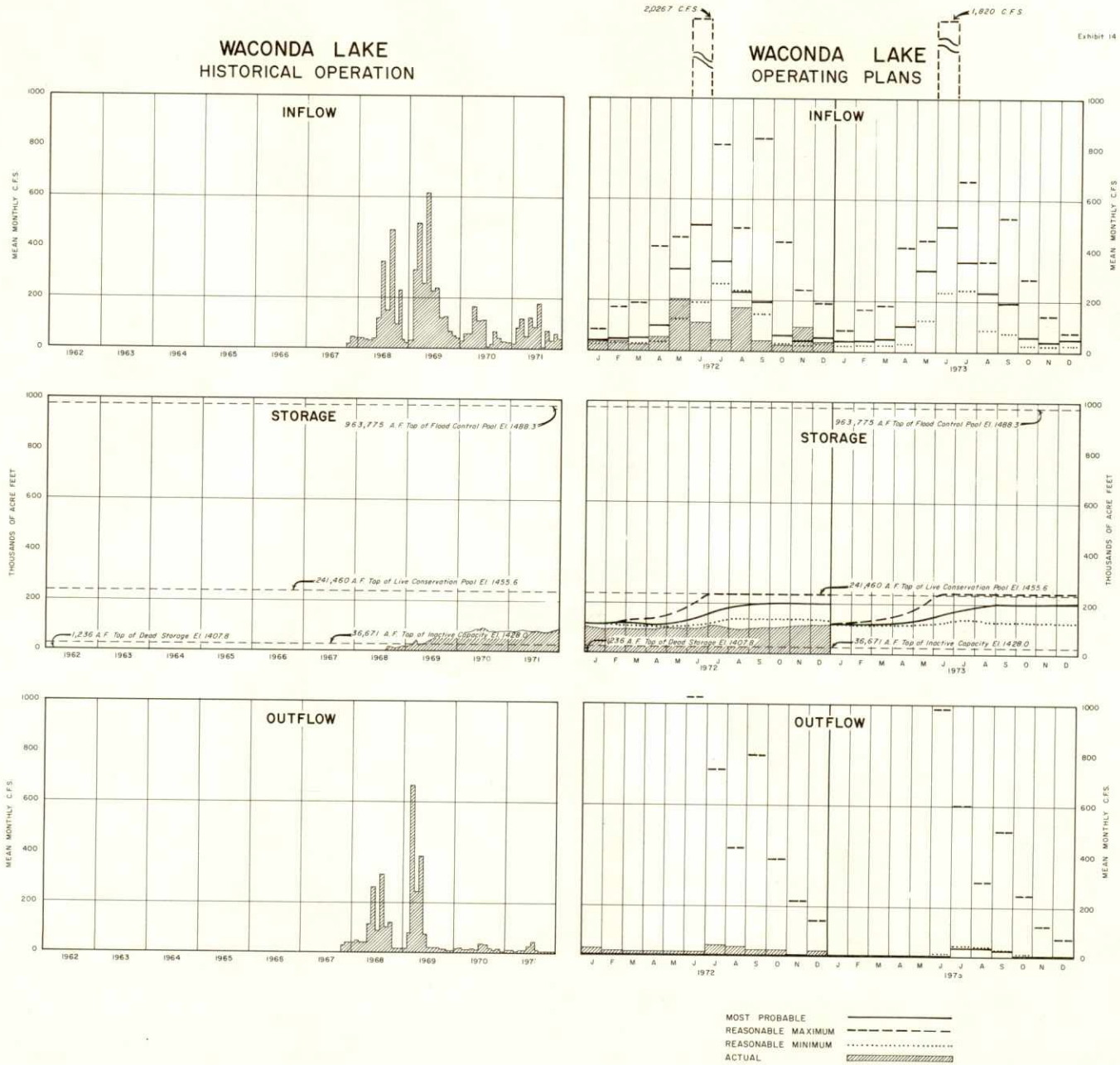
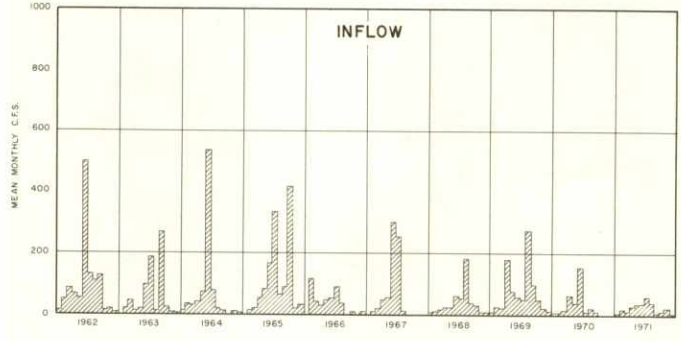
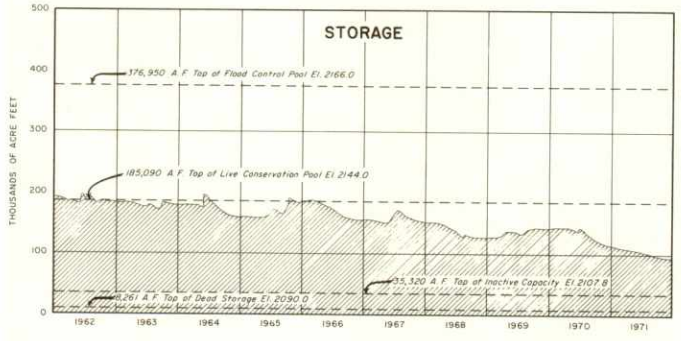
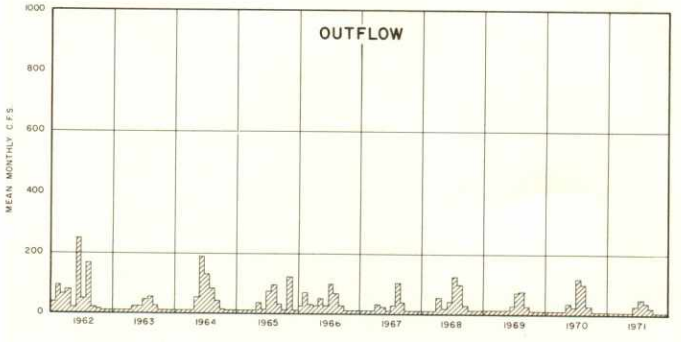

WACONDA LAKE
HISTORICAL OPERATION
WACONDA LAKE
OPERATING PLANS
Exhibit 14
2,026.7 C.F.S.
1,820 C.F.S.
INFLOW
STORAGE
OUTFLOW
MEAN MONTHLY C.F.S.
THOUSANDS OF ACRE FEET
963,775 A.F. Top of Flood Control Pool El 1488.3
241,460 A.F. Top of Live Conservation Pool El 1455.6
1,236 A.F. Top of Dead Storage El 1407.8
36,671 A.F. Top of Inactive Capacity El 1428.0
1962
1963
1964
1965
1966
1967
1968
1969
1970
1971
1972
1973
MOST PROBABLE
REASONABLE MAXIMUM
REASONABLE MINIMUM
ACTUAL

Exhibit 14

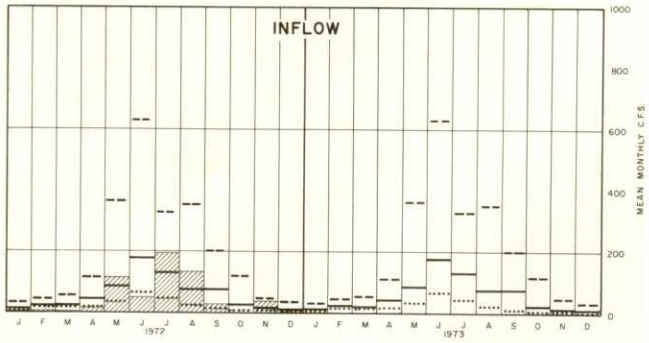
CEDAR BLUFF RESERVOIR
HISTORICAL OPERATION

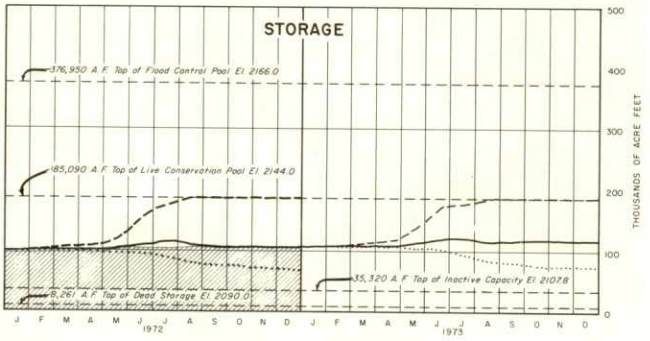


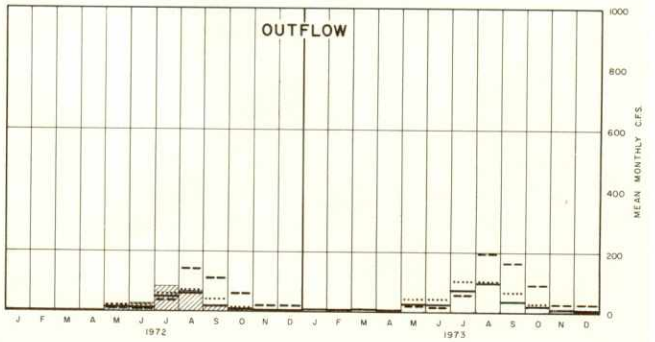




CEDAR BLUFF RESERVOIR
OPERATING PLANS



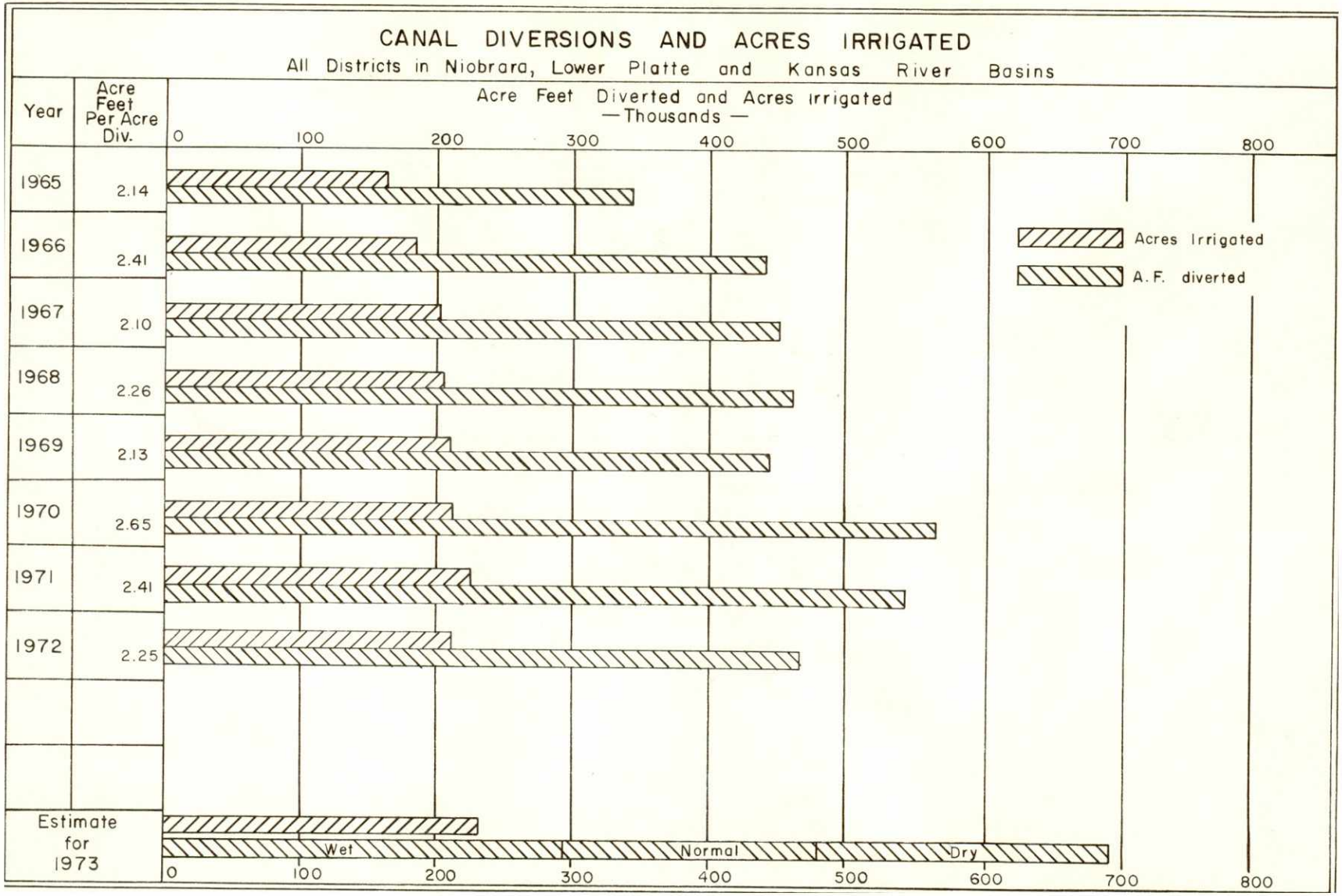




MOST PROBABLE
REASONABLE MAXIMUM
REASONABLE MINIMUM
ACTUAL

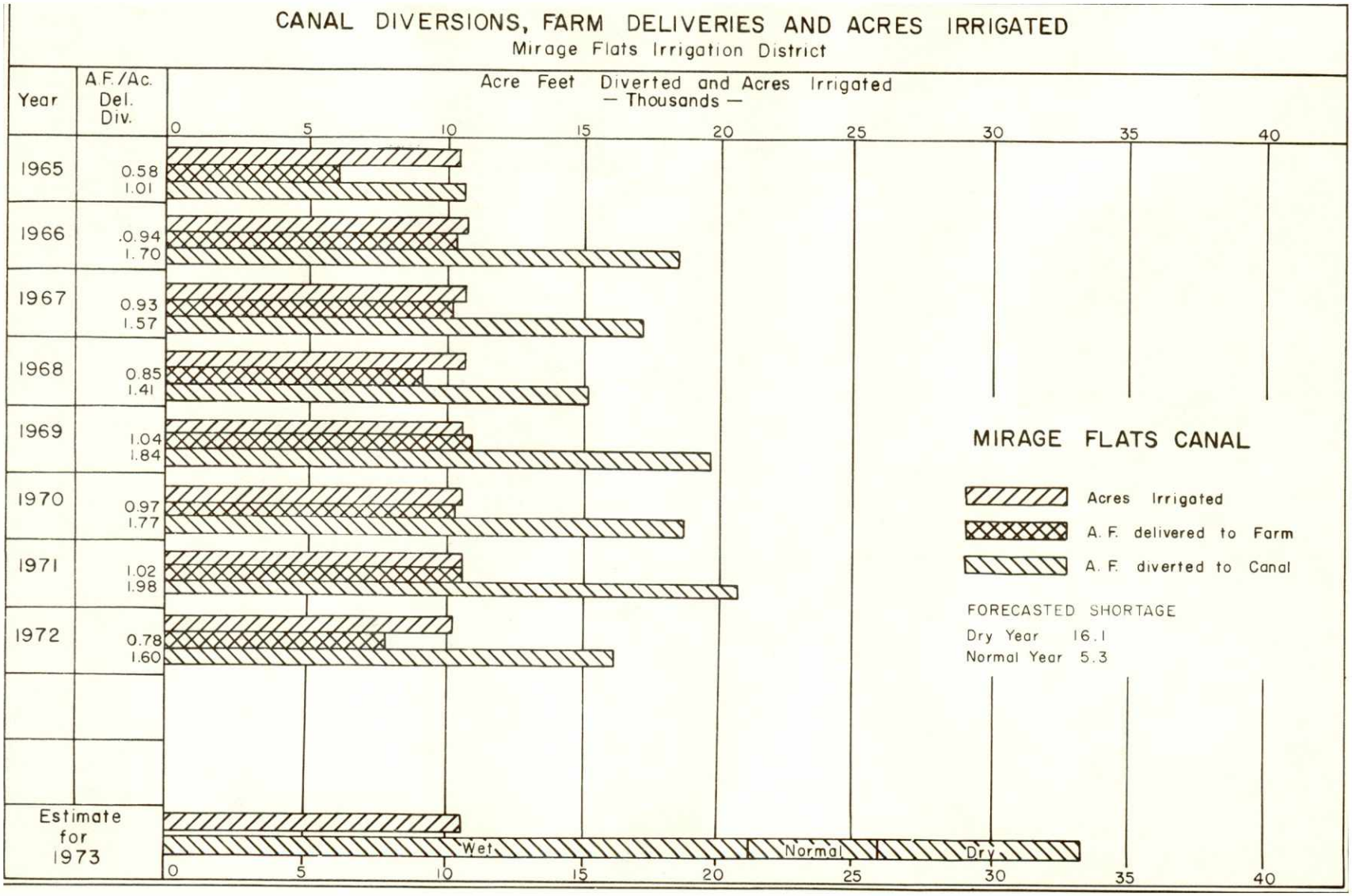
CANAL DIVERSIONS AND ACRES IRRIGATED

All Districts in Niobrara, Lower Platte and Kansas River Basins



CANAL DIVERSIONS, FARM DELIVERIES AND ACRES IRRIGATED

Mirage Flats Irrigation District



CANAL DIVERSIONS, FARM DELIVERIES AND ACRES IRRIGATED

Ainsworth Irrigation District

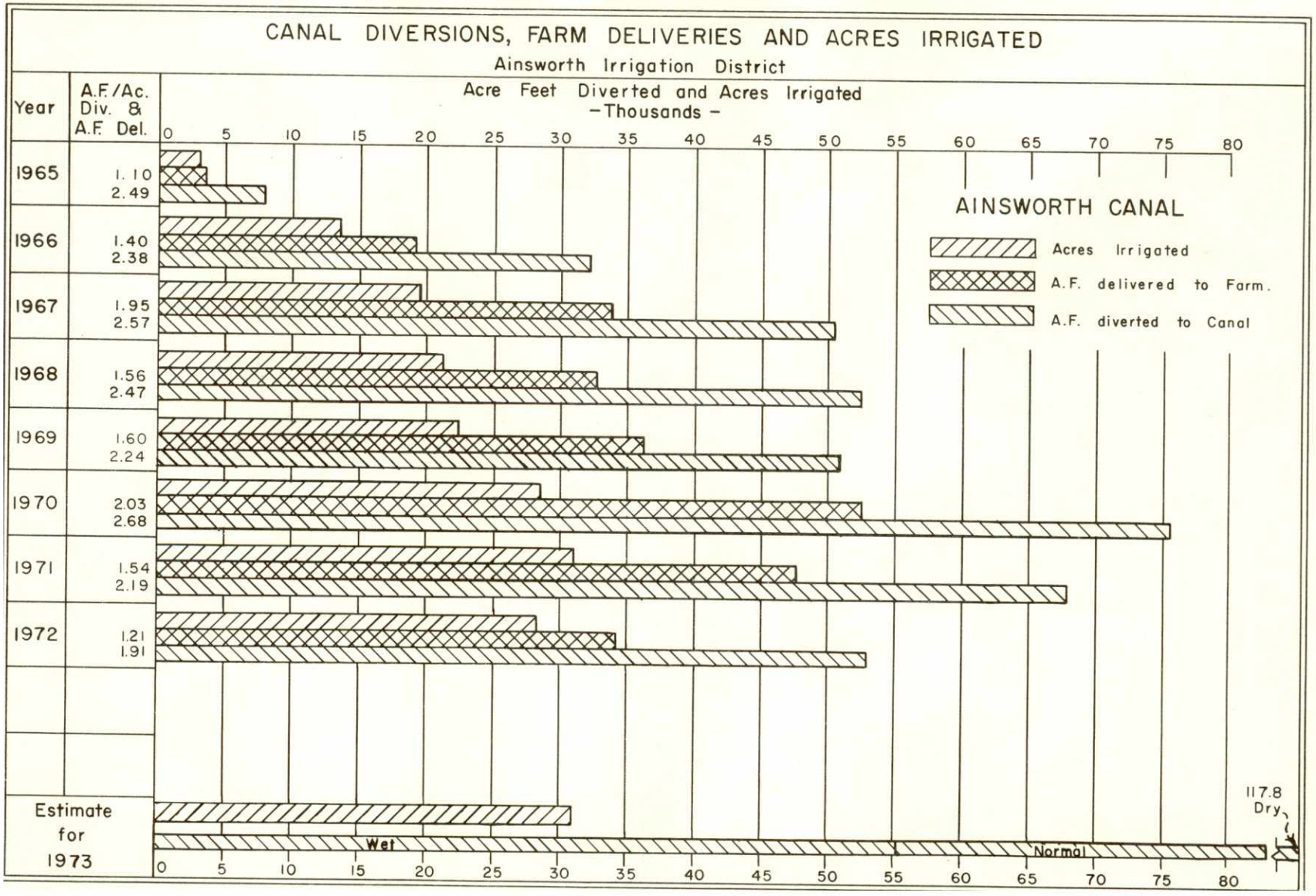
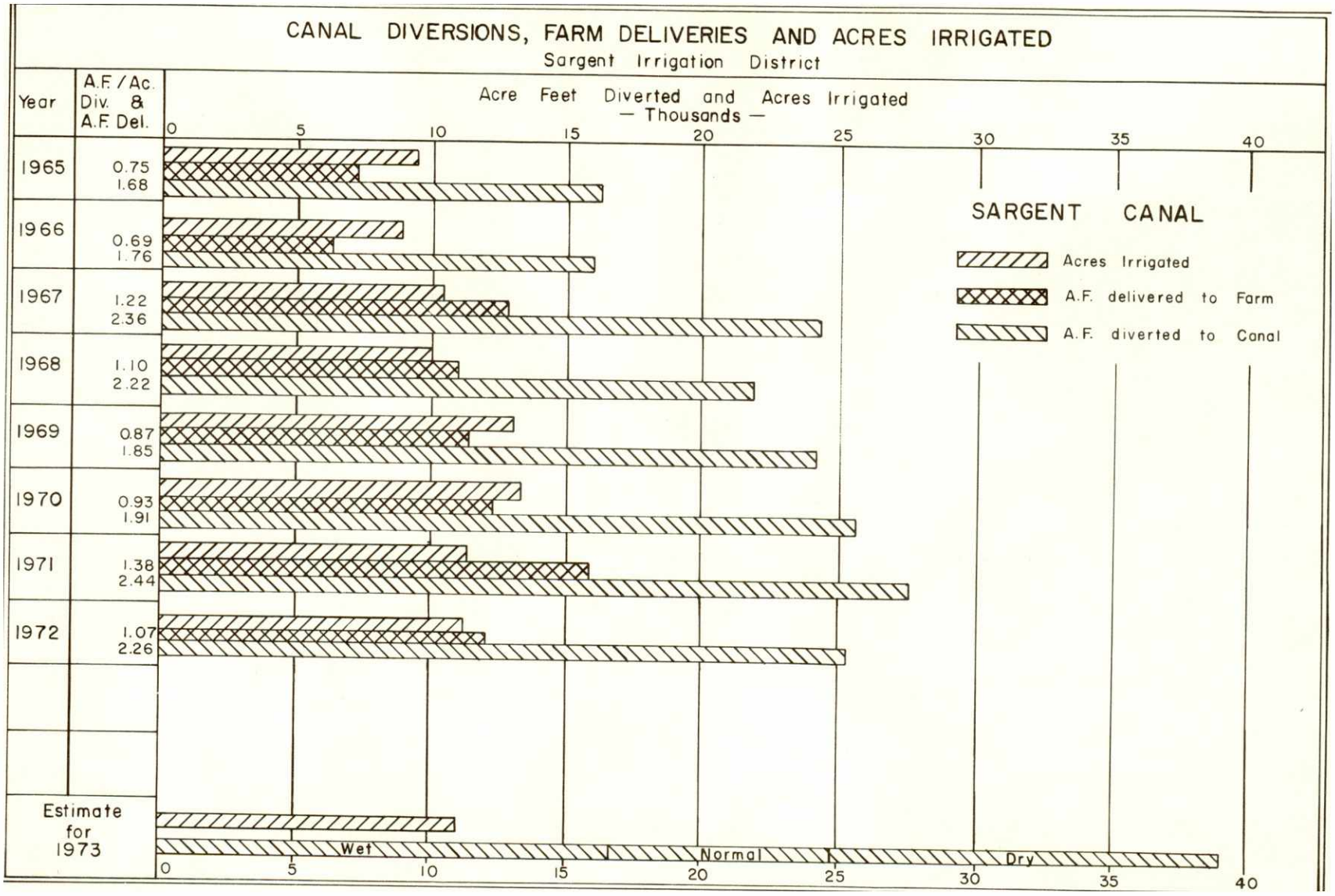


Exhibit 18

CANAL DIVERSIONS, FARM DELIVERIES AND ACRES IRRIGATED

Sargent Irrigation District



CANAL DIVERSIONS, FARM DELIVERIES AND ACRES IRRIGATED

Farwell Irrigation District

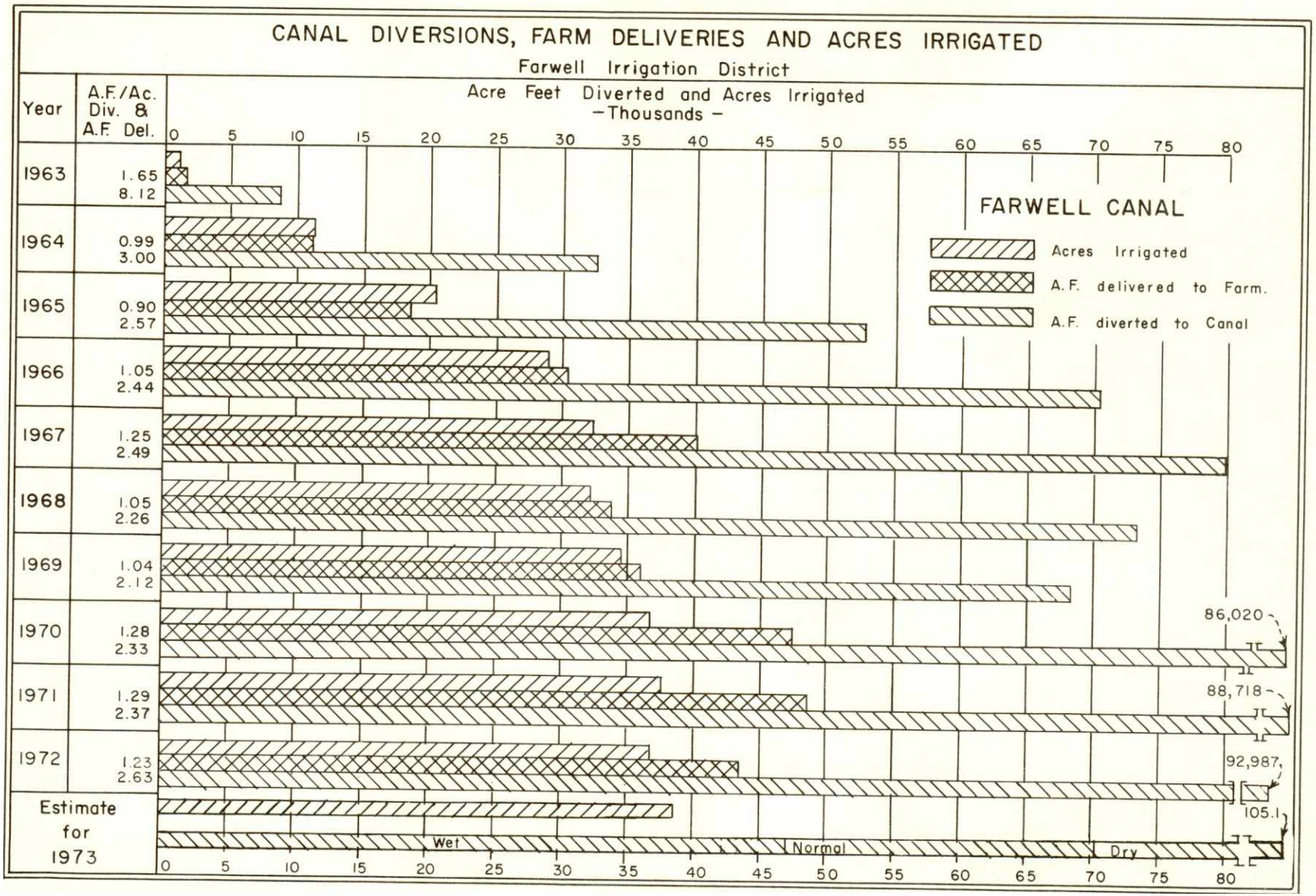


Exhibit 20

CANAL DIVERSIONS, FARM DELIVERIES AND ACRES IRRIGATED

Frenchman Valley Irrigation District

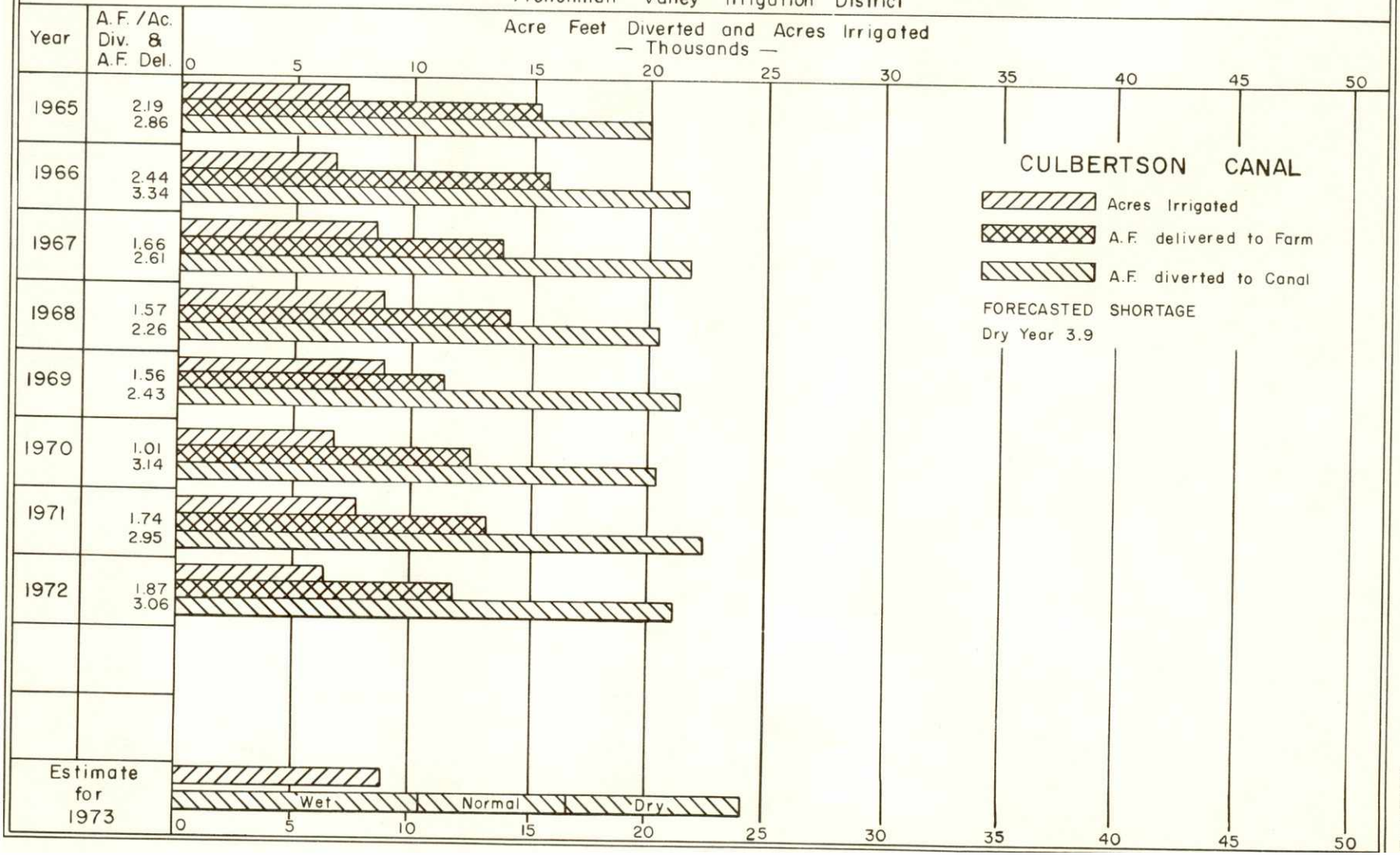
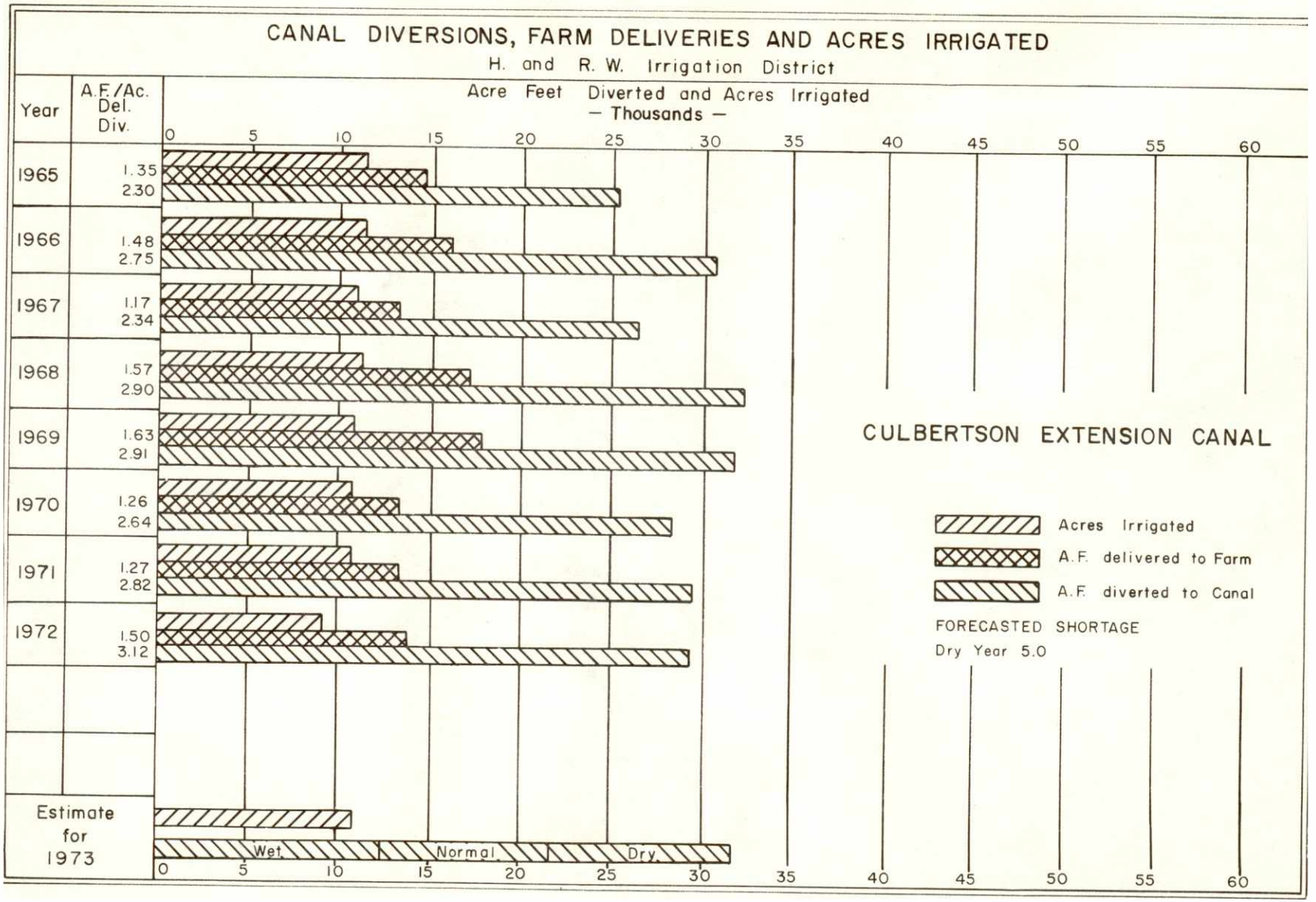
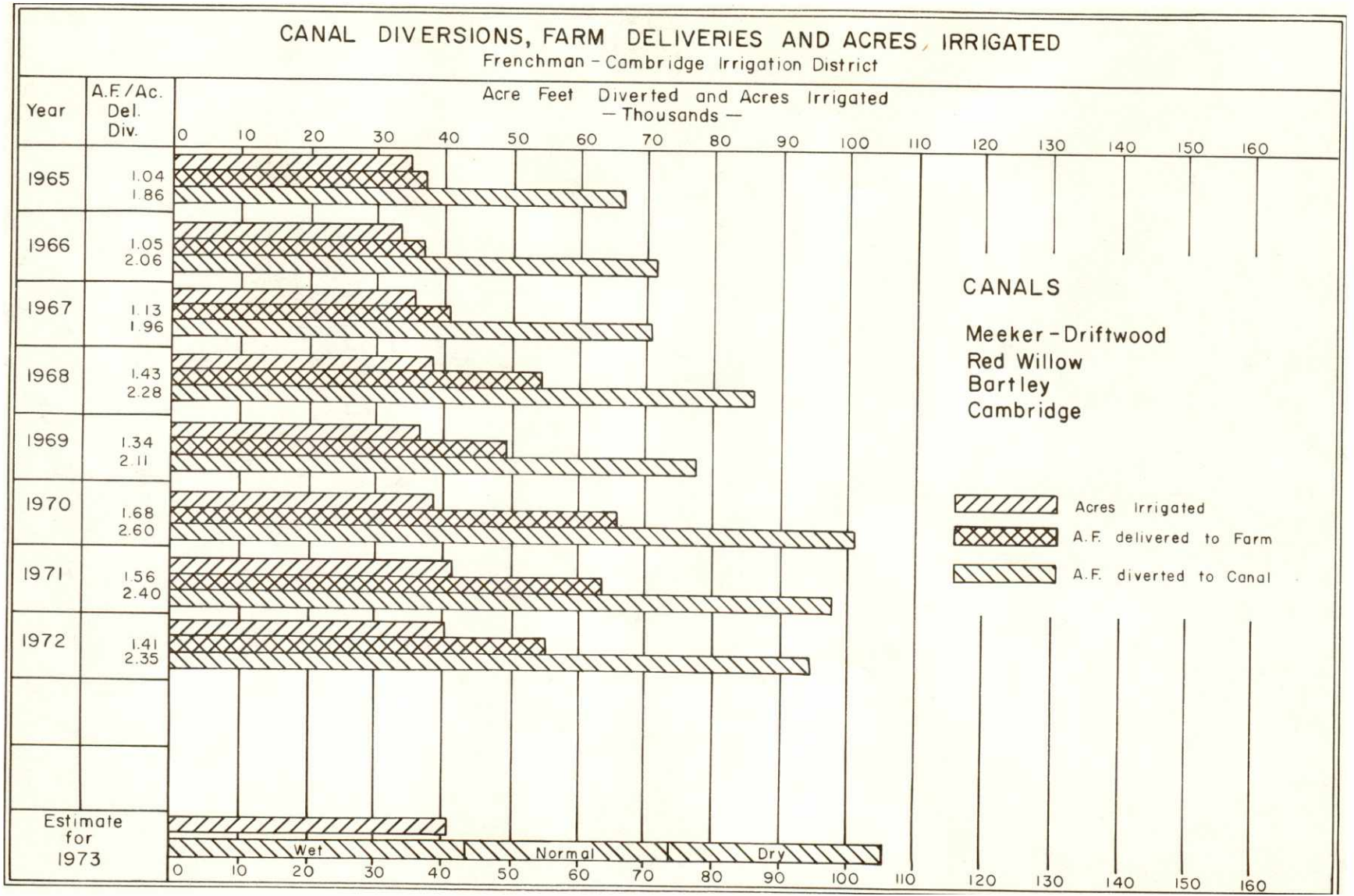


Exhibit 2

CANAL DIVERSIONS, FARM DELIVERIES AND ACRES IRRIGATED

H. and R. W. Irrigation District




CANAL DIVERSIONS, FARM DELIVERIES AND ACRES IRRIGATED
Frenchman - Cambridge Irrigation District
Year
A.F./Ac. Del. Div.
Acre Feet Diverted and Acres Irrigated
— Thousands —
0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150 160
1965 1.04 1.86
1966 1.05 2.06
1967 1.13 1.96
1968 1.43 2.28
1969 1.34 2.11
1970 1.68 2.60
1971 1.56 2.40
1972 1.41 2.35
Estimate for 1973
Wet
Normal
Dry
CANALS
Meeker - Driftwood
Red Willow
Bartley
Cambridge
Acres Irrigated
A.F. delivered to Farm
A.F. diverted to Canal

CANAL DIVERSIONS, FARM DELIVERIES AND ACRES IRRIGATED

Almena Irrigation District

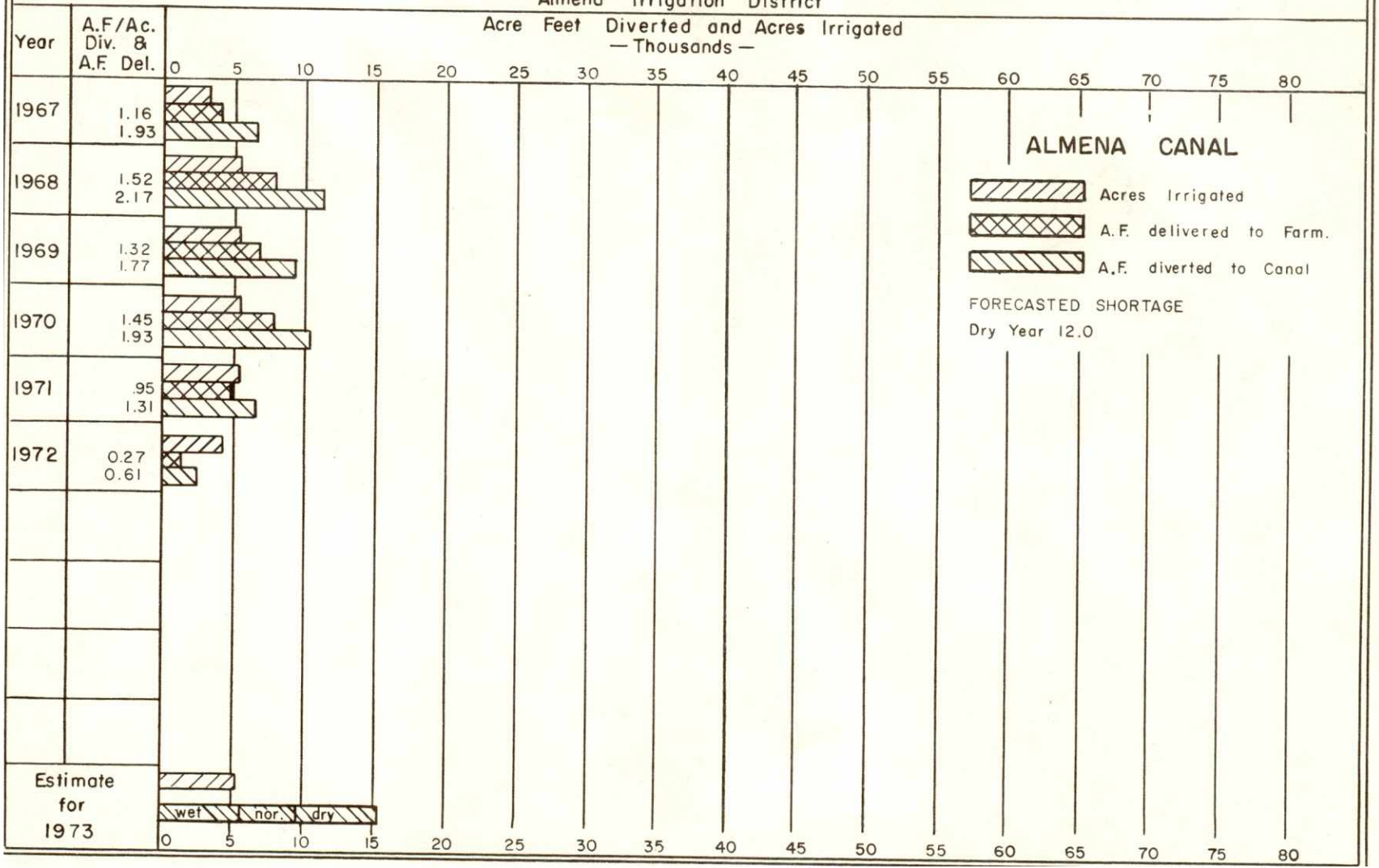


Exhibit 24

CANAL DIVERSIONS, FARM DELIVERIES AND ACRES IRRIGATED

Bostwick Irrigation District in Nebraska

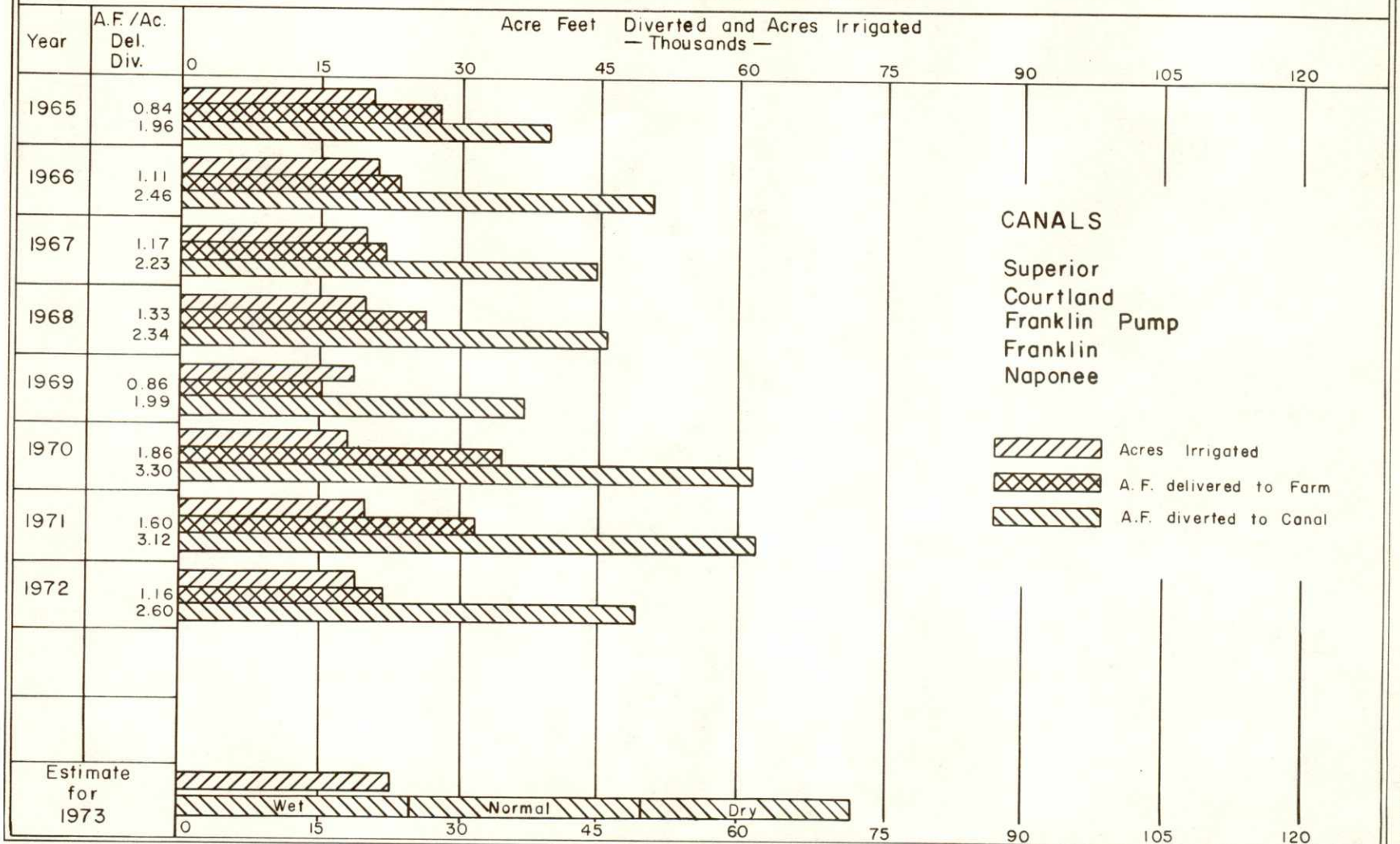


Exhibit 25

CANAL DIVERSIONS, FARM DELIVERIES AND ACRES IRRIGATED

Kansas – Bostwick Irrigation District

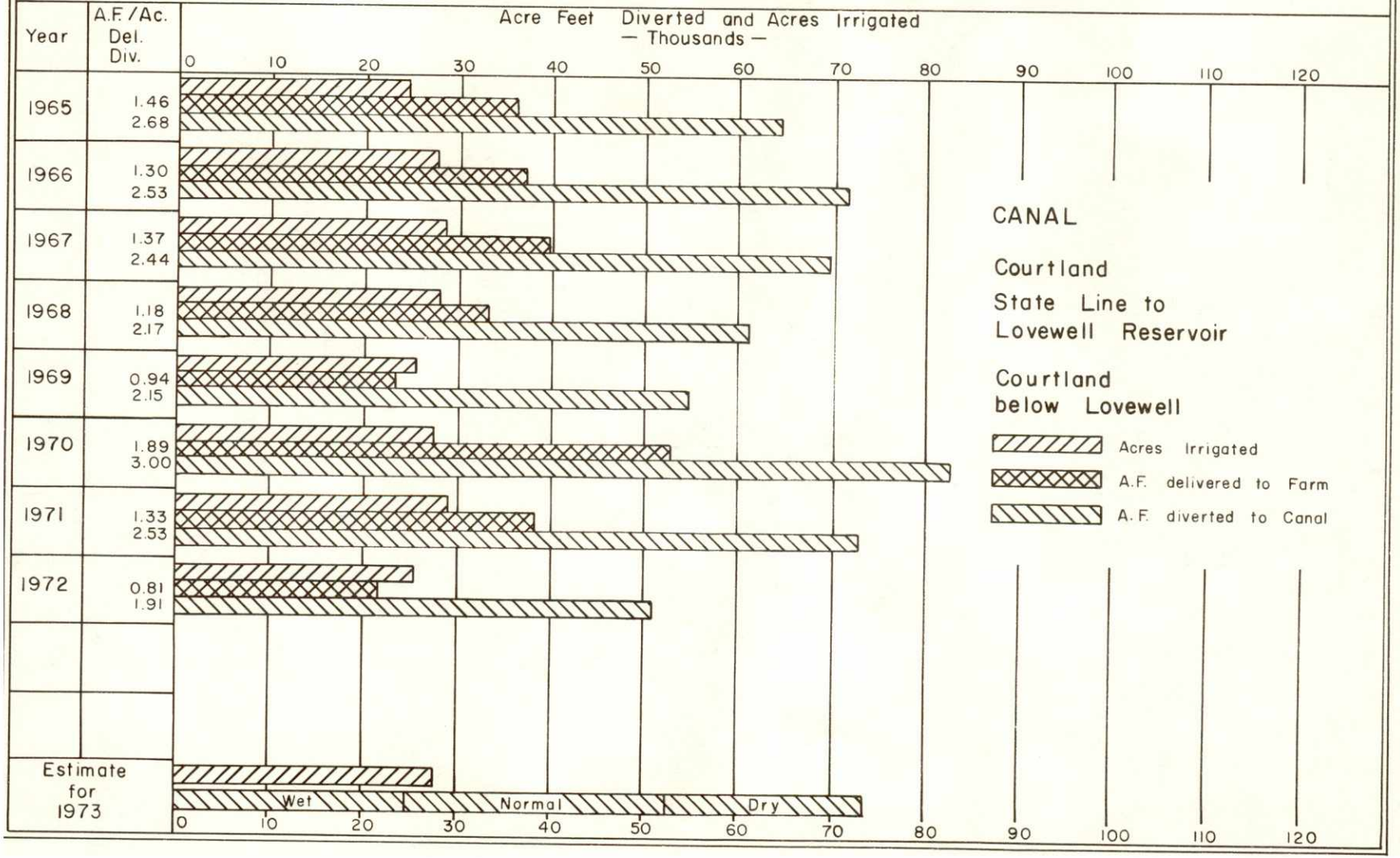


Exhibit 26

CANAL DIVERSIONS, FARM DELIVERIES AND ACRES IRRIGATED

Kirwin Irrigation District

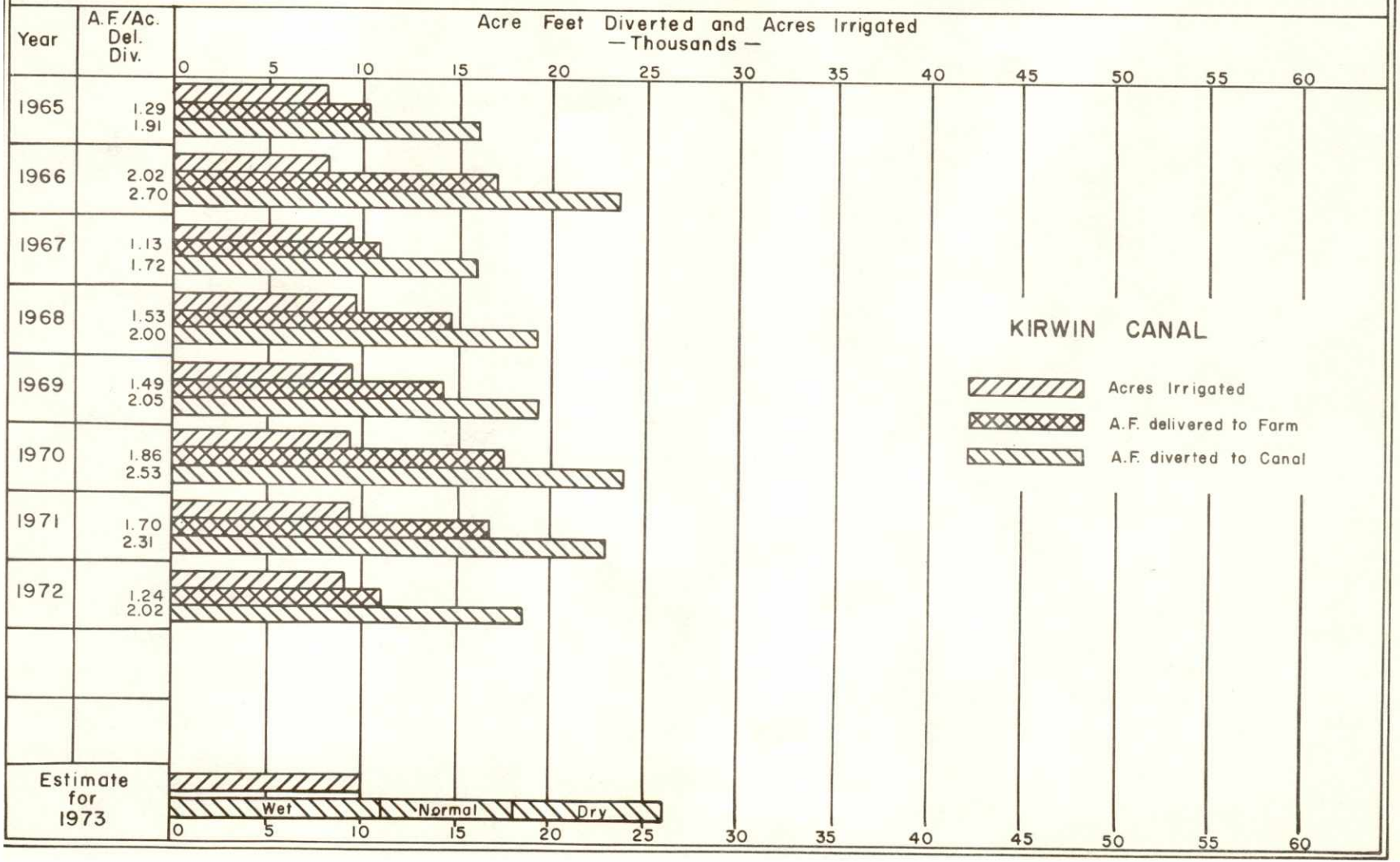


Exhibit 27

CANAL DIVERSIONS, FARM DELIVERIES AND ACRES IRRIGATED

Webster Irrigation District

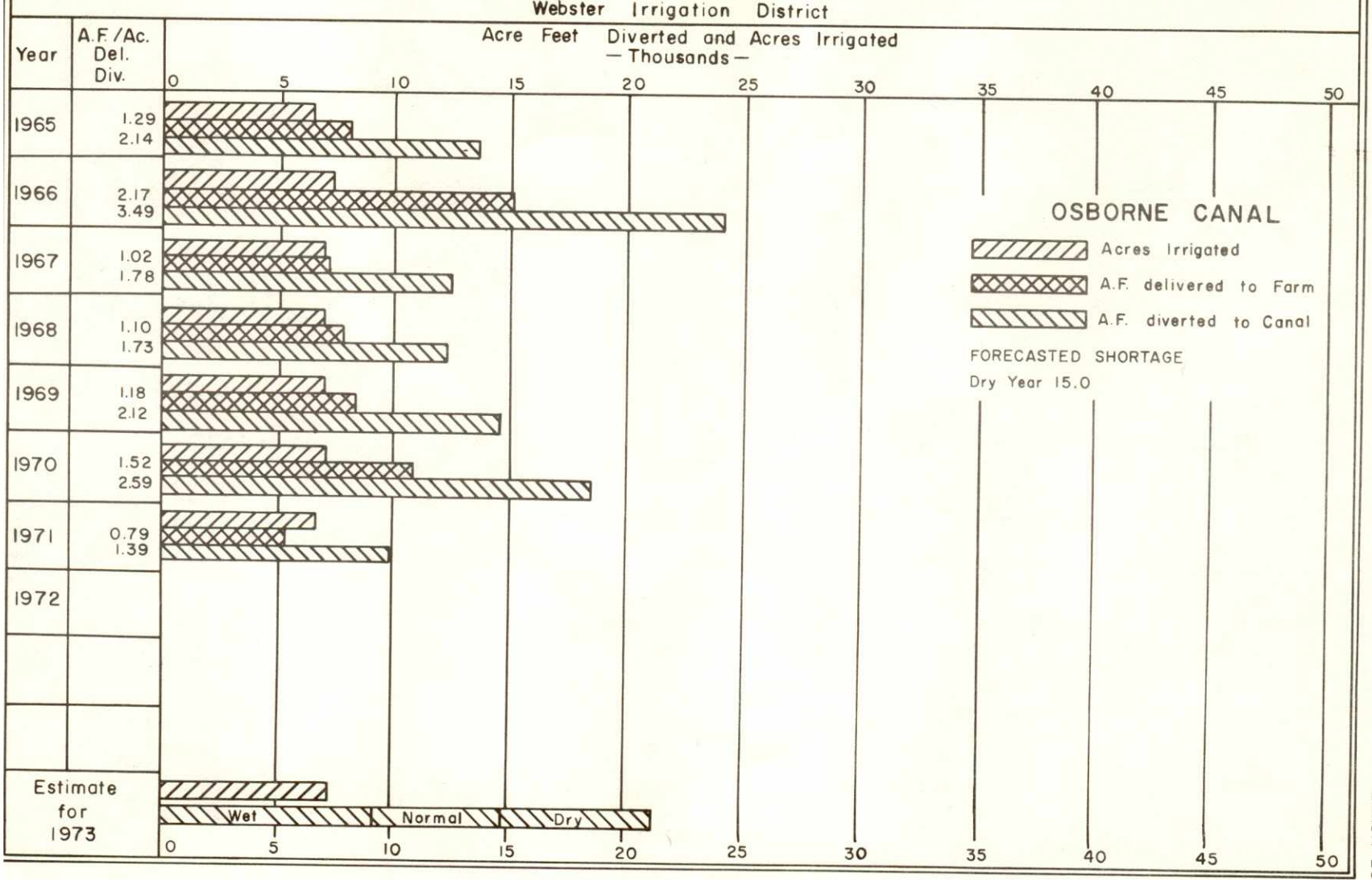
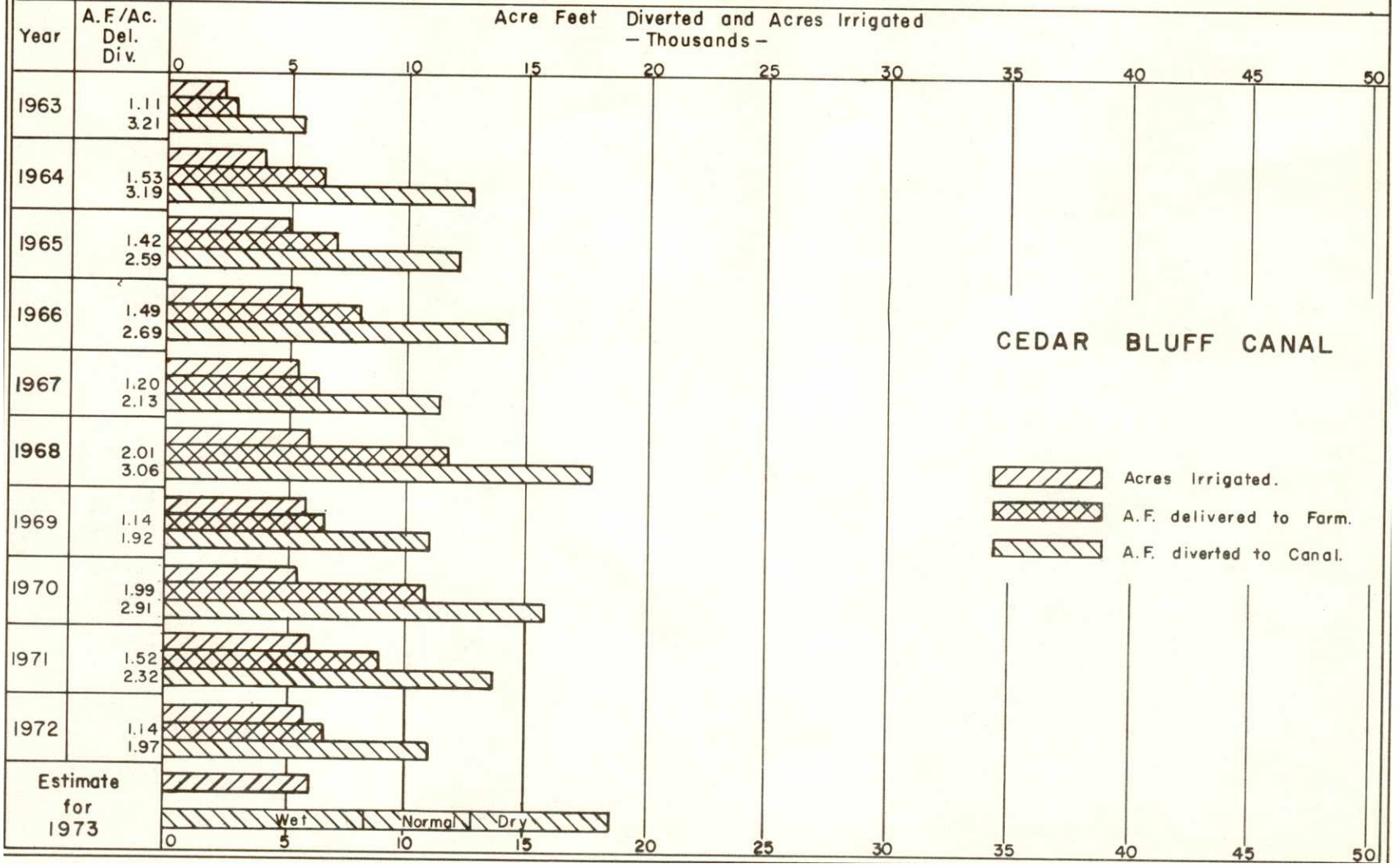


Exhibit 28

CANAL DIVERSIONS, FARM DELIVERIES AND ACRES IRRIGATED

Cedar Bluff Irrigation District



Chadron
Gordon
Valentine
Hay Springs
Niobrara River
Merritt Dam
Box Butte Dam
Mirage Flats Canal
Dunlap Diversion Dam
Snake River
Ainsworth Canal
Ainsworth
Niobrara
Niobrara River
O'Neill
Missouri
Box Butte Reservoir
Capacity Allocation
Conser. 30,420 a.f.
Dead 640 a.f.
Total 31,060 a.f.
Merritt Reservoir
Capacity Allocation
Conser. 72,872 a.f.
Dead 1,614 a.f.
Total 74,486 a.f.
SANDHILLS DIVISION
AINSWORTH UNIT
MIRAGE FLATS PROJECT
Alliance
Norfolk
Scottsbluff
North Middle Loup River
Thedford
Burwell
Milburn Diversion Dam
Sargent Canal
SARGENT UNIT
Oshkosh
North Platte River
Lake McConaughy
Arcadia Diversion Dam
Sherman Feeder Canal
Woods Park Pumping Plant
Broken Bow
MIDDLE LOUP DIVISION
SHERMAN DAM
Sherman Reservoir
Capacity Allocation
Conser. 62,407 a.f.
Dead 3,839 a.f.
Total 66,246 a.f.
FARWELL UNIT
Columbus
Platte River
Omaha
Sidney
Ogallala
North Platte
South Loup River
Deer Station Lateral and Pumping Plant
Dunning Ditch
Farwell Main Canal
Farwell Lower Main Canal
Farwell Central Canal
Farwell Upper South Canal
Farwell South Canal
NEBRASKA
COLORADO
FRENCHMAN – CAMBRIDGE DIVISION
Grand Island
Lexington
Kearney
Lincoln
Big Blue River
Red Willow Unit
Enders Reservoir
Capacity Allocation
Flood 30,040 a.f.
Conser. 36,010 a.f.
Dead 8,470 a.f.
Total 74,520 a.f.
Hugh Butler Lake
Capacity Allocation
Flood 48,850 a.f.
Conser. 31,470 a.f.
Dead 6,310 a.f.
Total 86,630 a.f.
Harry Strunk Lake
Capacity Allocation
Flood 52,170 a.f.
Conser. 32,230 a.f.
Dead 4,910 a.f.
Total 89,310 a.f.
Harlan County Reservoir
Capacity Allocation
Flood 498,000 a.f.
Conser. & Dead 342,560 a.f.
Total 840,560 a.f.
FRENCHMAN UNIT
CAMBRIDGE UNIT
FRANKLIN UNIT
BOSTWICK – SUPERIOR–COURTLAND UNIT
Imperial
Holyoke
Frenchman River
Enders Dam
Red Willow Dam
Medicine Creek Dam
Harlan County Dam (U.S.C.E.)
Culbertson Diversion Dam
Culbertson Canal
Culbertson Extension Canal
Red Willow Diversion Dam
Red Willow Canal
Cambridge Diversion Dam
Cambridge Canal
Swanson Lake
Capacity Allocation
Flood 133,790 a.f.
Conser. 116,060 a.f.
Dead 4,100 a.f.
Total 253,950 a.f.
Trenton Dam
Upper Meeker Sub Canal
Trenton
McCook
Meeker Extension Canal
Barsley Canal
Barsley Diversion
Driftwood Canal
Upper Meeker Canal
Driftwood West Canal
Driftwood Sub Canal
Republican River
Alma
Franklin Canal
Franklin
Red Cloud
Superior–Courtland Diversion Dam
Superior Canal
Superior
Naponee Canal
Franklin Pump Canal
Courtland Canal
Pump No. 1 Canal
North Canal
Ridge Canal
White Rock Canal & Extension
Miller Canal
Pumps No. 3A & 3B Canals
Courtland West Canal
Pump No. 4 Canal
Courtland Reservoir
Capacity Allocation
Flood 215,115 a.f.
Conser. 93,050 a.f.
Dead 6,385 a.f.
Total 314,550 a.f.
Lovewell Reservoir
Capacity Allocation
Flood 50,460 a.f.
Conser. 36,640 a.f.
Dead 5,050 a.f.
Total 92,150 a.f.
Lovewell Dam
COURTLAND UNIT
NEBRASKA DIVISION
NEBRASKA
KANSAS
UPPER REPUBLICAN DIVISION
Wray
North Fork Republican River
Bonny Reservoir
Capacity Allocation
Flood 128,820 a.f.
Conser. 39,920 a.f.
Dead 1,420 a.f.
Total 170,160 a.f.
ARMEL UNIT
Bonny Dam
Arikaree River
St. Francis
Hale
Burlington
MEEKER–DRIFTWOOD UNIT
KANASKA DIVISION
Oberlin
Atwood
Norton
Phillipsburg
Almena Main Canal
Almena South Canal
Almena Diversion Dam
ALMENA UNIT
KIRWIN UNIT
Norton Reservoir
Capacity Allocation
Flood 98,800 a.f.
Conser. 33,220 a.f.
Dead 2,720 a.f.
Total 134,740 a.f.
Norton Dam
Kirwin Reservoir
Capacity Allocation
Flood 215,115 a.f.
Conser. 93,050 a.f.
Dead 6,385 a.f.
Total 314,550 a.f.
Kirwin Main Canal
Kirwin North Canal
Kirwin South Canal
Kirwin Dam
Glen Elder Dam
Webster Reservoir
Capacity Allocation
Flood 183,370 a.f.
Conser. 75,190 a.f.
Dead 2,180 a.f.
Total 260,740 a.f.
Stockton
Osborne Canal
Glen Elder
Beloit
Osborne
Woodston Diversion Dam
Webster Dam
WEBSTER UNIT
GLEN ELDER UNIT
SOLOMON DIVISION
Waconda Lake
Capacity Allocation
Flood 722,315 a.f.
Conser. 240,224 a.f.
Dead 1,236 a.f.
Total 963,775 a.f.
Republican River
Solomon River
Beatrice
Little Blue River
Tuttle Creek Dam (U.S.C.E.)
Manhattan
Kansas River
Kansas City
Topeka
Junction City
Milford Dam (U.S.C.E.)
Abilene
Salina
Lincoln
Wilson Dam (U.S.C.E.)
Saline River
Smoky Hill River
Cedar Bluff Reservoir
Capacity Allocation
Flood 191,860 a.f.
Conser. 176,830 a.f.
Dead 8,260 a.f.
Total 376,950 a.f.
Wakeeney
Hays
Russell
Cedar Bluff Canal
Cedar Bluff Dam
Fish Hatchery
Cedar Bluff Unit
Smoky Hill Division
Kanopolis Dam (U.S.C.E.)
Lindsborg
Ness City
COLORADO
KANSAS
10 0 10 20 30

N

EXPLANATION
RESERVOIR
DIVERSION DAM
PUMPING PLANT
CANAL
IRRIGATED LAND

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF RECLAMATION – LM REGION

MIRAGE FLATS PROJECT AND PICK–SLOAN MISSOURI BASIN PROGRAM
NIOBRARA, LOWER PLATTE AND KANSAS RIVER BASINS

IRRIGATION AND FLOOD CONTROL FACILITIES

Mc COOK, NEBRASKA
JULY 1970