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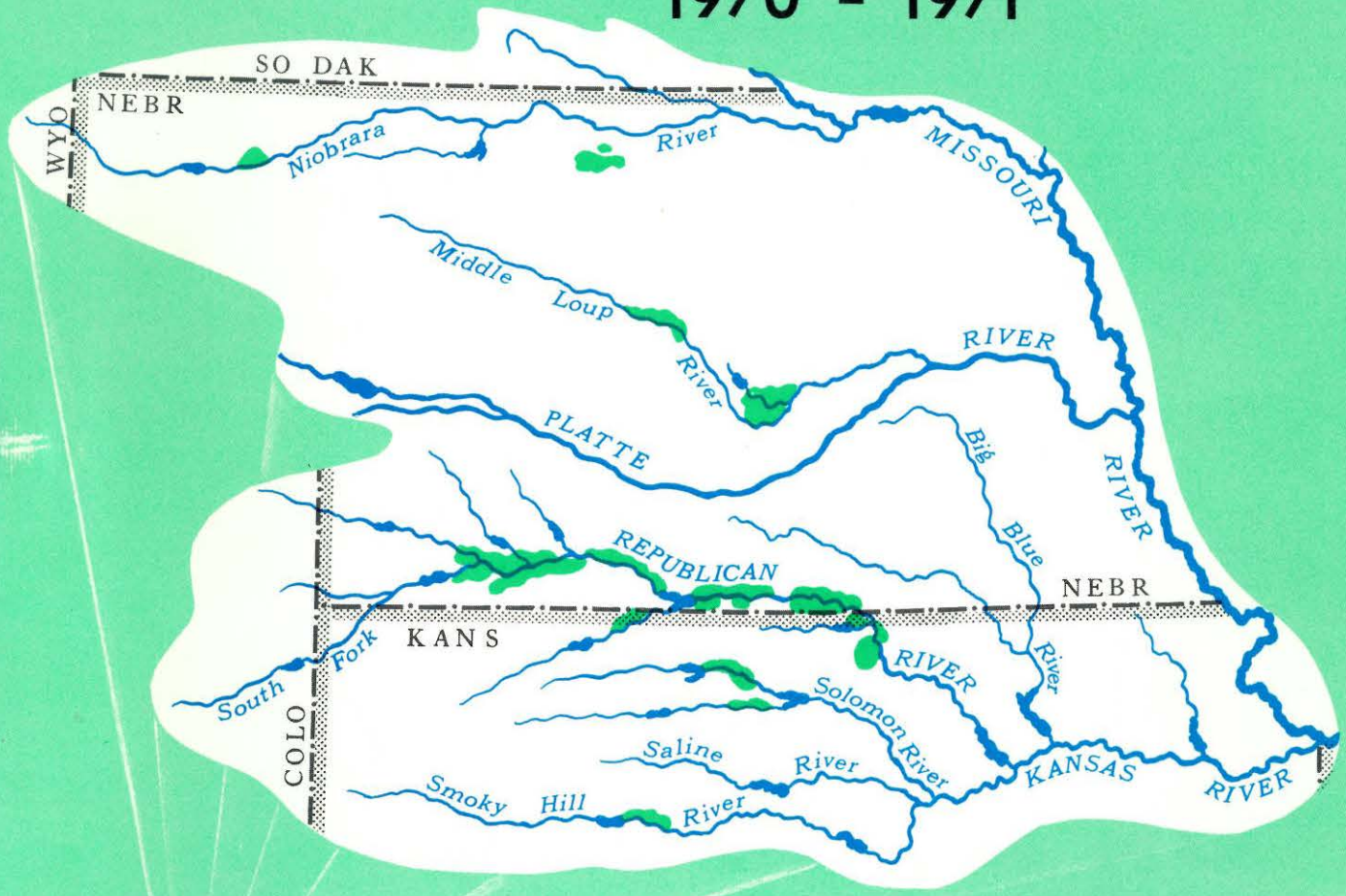
ANNUAL OPERATING PLAN

NIOBRARA, LOWER PLATTE, AND KANSAS RIVER BASINS 1970 - 1971



DEPARTMENT OF THE INTERIOR
ROGERS C. B. MORTON, SECRETARY

Bureau of Reclamation
Ellis L. Armstrong, Commissioner

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Ellis L. Armstrong, Commissioner

Region 7 — Denver, Colorado
James M. Ingles, Regional Director

ANNUAL OPERATING PLAN

NIOBRARA, LOWER PLATTE, AND KANSAS RIVER BASINS

1970 OPERATIONS
1971 OUTLOOK

TABLE OF CONTENTS

TABLE OF CONTENTS
(continued)

All following page 26

LIST OF TABLES

TABLE OF CONTENTS
(continued)

All following page 26

LIST OF TABLES
(continued)

LIST OF EXHIBITS

All following page 26

LIST OF EXHIBITS
(continued)

SYNOPSIS

GENERAL

This is the eighteenth Annual Operating Plan 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 265,236 acres of project land. These features are located in Colorado, Nebraska, and Kansas as shown on the location map in the back of this report. The reservoirs in the Niobrara and Lower Platte River Basins are operated by irrigation or reclamation districts, and the reservoirs in the Kansas River Basin are operated by 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, fish and wildlife, and environmental purposes.

1970 SUMMARY

Climatic Conditions. The precipitation during the peak of the irrigation season fell in small amounts and the totals for late June, July, and August were generally much below normal. The annual precipitation at the 15 reservoirs ranged from 63 to 107 percent of normal. Extended periods of high temperatures accompanied by strong winds in late June and early July started the heavy irrigation demand a week to 10 days earlier than normal.

Storage Reservoirs. The 1970 inflows to storage reservoirs were below normal at 13 of the 15 reservoirs. Eight reservoirs experienced record low water levels since initial filling of the conservation pools. The carryover storage and inflows of Box Butte, Enders, and Norton Reservoirs were not adequate to meet the requirements of irrigated lands in Mirage Flats, H & RW, and Almena Irrigation Districts.

Water Service. The diversion of approximately 569,000 acre-feet to irrigate 214,275 acres of project land in 13 irrigation districts in 1979 was considerably above normal. The available project water supply was 35 percent short of providing 10,750 irrigated acres of the H & RW Irrigation District lands with a full supply. Severe shortages were avoided in the Mirage Flats and Almena Irrigation Districts by the use of private irrigation wells to supplement the project water supplies. The requirements of the lands in the other 10 irrigation districts were met in full by project water supplies.

Full water supplies totaling 4,780 acre-feet were furnished two industrial companies and a Federal fish hatchery.

Under short term temporary contracts in 1970, 366 acre-feet of storage water were delivered to irrigators, an industrial contractor, and a state fish hatchery.

Irrigation Production. The 1970 irrigated crop yields were generally lower than in 1969 by an average of 6 percent. However, the unit prices received for main crops in 1970 were higher than in the previous year, and the total gross crop value of $28,643,299 was nearly $2 million more than in 1969.

Flood Control Benefits. There were no flood damages prevented in 1970 by the operation of facilities described in this report. The accumulated flood damages through 1970 prevented by these facilities total $31,564,000.

Fish and Wildlife and Recreation Benefits. The recommendations of the Fish and Wildlife Service were generally satisfied in the 1970 operations when it was possible to do so and still serve the irrigation function. Even though the reservoir areas were less attractive with the low pool levels in the latter part of the season, the total visitation was only slightly less than during the previous year.

1971 OUTLOOK

Of the 221,750 acres expected to be irrigated in 1971, project water supplies will be adequate for only 179,800 acres of irrigable land in 8 of the 13 irrigation districts. If 1971 is a dry year, the operation studies indicate that there will be a shortage of project water supply for the irrigation of 41,950 acres in Mirage Flats, H & RW, Frenchman Valley, Almena, and Webster Irrigation Districts. The Mirage Flats and Almena Irrigation Districts plan to use water from private irrigation wells, as available, to supplement the water supply to 16,150 acres of these lands.

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

Storage water will be available from Bonny Reservoir and Waconda Lake for sale under short term temporary contracts. Although not in the scope of this report, storage water will also be for sale from Kanopolis and Wilson Reservoirs in the Smoky Hill River Basin in Kansas. Kanopolis and Wilson Dams are operated by the Corps of Engineers.

The multipurpose reservoirs in the Kansas River Projects are expected to furnish adequate flood protection during 1971.

Although the pool levels in some of the reservoirs will likely be below normal, the operations of the facilities described in this report will enhance the visitation, fishing, hunting, boating, and other recreational purposes. The recommendations of state fish, game and park commissions will generally be satisfied and still fully meet the primary functions of flood control and irrigation. When possible, the Bureau of Reclamation will cooperate with the fish, wildlife, and recreation interests. The irrigation and reclamation districts have also been urged to cooperate.

CHAPTER I - INTRODUCTION

PURPOSE OF THE REPORT

In addition to describing the responsibilities of the Bureau of Reclamation, Corps of Engineers, and irrigation or reclamation districts, this Annual Operating Plan advises water users, cooperating agencies, and other interested groups or persons of the actual operations during 1970 and serves as guidelines for the 1971 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 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 of the 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 and graphs for the facilities in this report 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.

RESERVOIR OPERATIONS

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 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 Missouri River Basin Project 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 in the Kansas River Basin.

Constructed and operated by the Corps of Engineers:

(a) Harlan County in the Kansas River Basin.

There are 22 canal systems, 10 diversion dams and 10 pump stations that are operated by irrigation and reclamation districts. Capacities and locations of the 15 reservoirs and locations of diversion dams, irrigation canals and pump stations presently serving flood control, irrigation and other project functions in the scope of this report are shown on the general map in the back of this report.

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 a water supply and construction of irrigation facilities.

The normal irrigation season for Mirage Flats 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.

OTHER FUNCTIONS

A "Statement of Operational Objectives" for Harlan County Reservoir was adopted by representatives of the Federal, State, and local interests in

June 1952. The statement 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 objectives are considered in the operation of all reservoirs in the Kansas River Basin and also for Merritt Reservoir in the Niobrara River Basin. The regulated outflow to avoid unregulated spills will be of some advantage to farmers, ranchers, industries, cities and other interests below all reservoirs.

MIRAGE FLATS PROJECT IN NEBRASKA

GENERAL

Box Butte Reservoir storage and Niobrara River flows provide a water supply which is normally inadequate for the 11,662 acres in the Mirage Flats Irrigation District.

As recommended by the Nebraska Game and Parks Commission, the Mirage Flats Irrigation District operates Box Butte Dam and Dunlap Diversion Dam to avoid stranding of fish by sudden large reductions in flow in the Niobrara River. The District also informs the Commission about plans for chemical treatment to control algae and pondweed.

1970 SUMMARY

The carryover storage from 1969 and the 1970 inflow was insufficient to meet the requirements of the Mirage Flats Irrigation District land. The active conservation pool was evacuated by late August and about 1,200 acre-feet of inactive storage was released by September 7, when releases were shut off for the season. This was the first time all the active storage had been utilized since initial filling of the conservation capacity in 1948. The precipitation for 1970 in the Box Butte area was 84 percent of normal, but was well above normal during June and July.

The Mirage Flats water users irrigated 10,740 acres, which is 92 percent of the project acreage. The irrigators were informed in the spring that the water supply was limited. The water diverted into the Mirage Flats Canal, mainly from Box Butte Reservoir, was 18,965 acre-feet. Even with an additional 4,260 acre-feet from some private wells, the water supply was inadequate.

The gross crop value from the irrigated land was $947,502.

The visitation in 1970 was 29,785 visitor-days, which is an increase of about 3,400 over 1969.

1971 OUTLOOK

The operation studies indicate that if the drought conditions experienced in 1970 continue into 1971, a severe shortage in project water supply will occur. The carryover storage in Box Butte Reservoir at the end of 1970 was 600 acre-feet less than the previous year.

The Mirage Flats Irrigation District estimates that 10,800 acres will be irrigated in 1971.

AINSWORTH UNIT, SANDHILLS DIVISION IN NEBRASKA

GENERAL

The water supply for the 33,960 acres in the Ainsworth Irrigation District is provided by Merritt Reservoir storage and Snake River flows.

In order to avoid ice damage on the face of Merritt Dam, the pool level of Merritt Reservoir is kept 5 feet below the top of the conservation capacity through the winter months. The conservation capacity is slowly filled each spring as soon as the reservoir surface is clear of ice. The spawning of fish is greatly enhanced by this operation each spring.

The large releases from Merritt Reservoir are reduced gradually to avoid stranding of fish in shallow pools in the Snake River. Also, as requested by the Nebraska Game and Parks Commission, when possible releases are regulated to maintain a minimum flow of 15 c.f.s. in the Snake River.

The Ainsworth Irrigation District advises the State of Nebraska each time a chemical is introduced into its irrigation system for control of aquatic weeds.

1970 SUMMARY

While the precipitation at Merritt Dam was only 63 percent of normal, it was near normal over the Ainsworth Irrigation District area. Even though the inflow into Merritt Reservoir was about equal to the dry-year forecasts, the water supply was more than adequate. The farmers irrigated 28,175 acres--2,000 more than forecast. The gross crop income was $3,333,430.

The Nebraska Game and Parks Commission reported that 40,950 persons visited Merritt Dam and Reservoir in 1970. This is an increase of about 3,000 over 1969.

1971 OUTLOOK

The conservation capacity of Merritt Reservoir will be full by no later than mid-May. The water supply is expected to be adequate to irrigate the 29,000 acres of land in the Ainsworth Irrigation District.

Merritt Dam & Reservoir

Looking southeast towards the dam and reservoir, located on the Snake River, Nebraska. The Ainsworth Canal, which originates at the dam, can be seen on the right.

SARGENT UNIT, MIDDLE LOUP DIVISION IN NEBRASKA

GENERAL

The Loup Basin Reclamation District operates the Milburn Diversion Dam and Sargent Canal system to serve 13,349 acres in the Sargent Irrigation District. The Reclamation District may divert more than the natural flow appropriation if the excess is not greater than the storage releases from Sherman Reservoir or the amount of natural flow in the Middle Loup River that has not been diverted at the Arcadia Diversion Dam.

The Loup Basin Reclamation District informs the Nebraska Game and Parks Commission of plans for chemical treatment in the Sargent Canal to control aquatic weeds.

1970 SUMMARY

The precipitation in the Sargent Irrigation District was below normal; accordingly, the diversion of 25,530 acre-feet was above normal. The diversion exceeded the natural flow water right for 19 days. There were 10,535 acres irrigated in 1970. This is about 2,600 acres less than the previous year due to the farmers' participation in the Federal Feed Grain Program. The gross crop value was $1,504,118.

The visitation to the Milburn Diversion Dam area for fishing, sightseeing, picnicking, etc., was reported as 3,500 persons. This is a decrease of approximately 25 percent from the previous year.

1971 OUTLOOK

The water supply is forecast to be adequate for the 10,500 acres expected to receive water in 1971.

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 Farwell Canal system to serve 47,925 acres in the Farwell Irrigation District. Diversions are also made at the Arcadia Diversion Dam into Canals 3 and 4 of the Middle Loup Public Power and Irrigation District, which is not a part of the Bureau of Reclamation projects.

The pool level of Sherman Reservoir is kept at least 5 feet below the top of the conservation capacity through the winter months to avoid ice damage to the face of Sherman Dam. As soon as the frost is out of Sherman Feeder Canal each spring, diversion from the Middle Loup River will be made to gradually fill the conservation capacity. This spring operation creates a desirable condition for spawning of fish.

As a flood control operation, 850 c. f. s. will be diverted into Sherman Feeder Canal when flows in the Middle Loup River at Arcadia, Nebr., exceed 6,000 c. f. s.

The Loup Basin Reclamation District informs the Nebraska Game and Parks Commission of chemical treatment in the Farwell Canal system for the control of algae and pondweed.

1970 SUMMARY

The diversion of 139,210 acre-feet through the Arcadia Diversion Dam was above normal. Of this, 30,280 acre-feet were diverted to irrigate 12,094 acres of nonproject land in the Middle Loup Public Power and Irrigation District, and the 108,390 acre-feet diverted into Sherman Feeder Canal were for Sherman Reservoir. Approximately 15 percent of the diversions through Sherman Feeder Canal is lost to seepage and evaporation. For a short period in July, there were no Middle Loup flows available for diversion into the Feeder Canal.

There were no flood control operations required in 1970.

The conservation capacity of Sherman Reservoir was filled by the end of May. The heavy releases from Sherman Reservoir during July and August lowered the pool level to elevation 2140.2, which was the record-low since the conservation capacity was first filled in 1963. The precipitation at Sherman Dam was only 66 percent of normal in 1970. Moderate rains in early August over the Farwell Irrigation District relieved a possible shortage when only a 10-day water supply of Sherman Reservoir inflows and storage was available.

After the end of the irrigation season on September 8, diversions through Sherman Feeder Canal were regulated to raise the pool level to a maximum elevation of 2152.0 by the end of September. This was 4 feet lower than normal, but was required to facilitate the completion of the repair to the riprap on the upstream face of Sherman Dam.

The releases of 86,020 acre-feet from Sherman Reservoir were 130 percent of normal to irrigate 36,970 acres in the Farwell Irrigation District. The gross crop value for 1970 was $4,945,591.

The visitation to Arcadia Diversion Dam was 14,150 persons, which is an increase of about 10 percent over 1969. There was also an increase in the visitation to Sherman Dam and Reservoir with 130,600 visitor-days, compared to 112,800 in the previous year.

1971 OUTLOOK

The riprap repair on the upstream face of Sherman Dam was completed in January of 1971; and the conservation capacity will be gradually filled this spring.

The water supply is expected to be adequate for the 36,000 acres that may receive water in 1971.

CHAPTER III - REPUBLICAN RIVER BASIN

ARMEL UNIT, UPPER REPUBLICAN DIVISION IN COLORADO

GENERAL

Bonny Reservoir storage is transferred to Swanson Lake where releases into the Republican River are regulated to meet the industrial requirements 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 is available to Hale Ditch and other natural flow appropriators under temporary contracts.

Winter releases are normally 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 winter pool level is kept 3 feet below the bottom of the flood control pool to insure that cold weather flood control releases will not be required. To reduce the chances of a large fall drawdown, the reservoir pool level is lowered 2 feet after May 15, and maintained there or below through the spring and summer months. During dry years, the normal reservoir losses will lower the pool another 2- to 3-feet by September. In other years, it will be necessary to make special releases to lower the water surface another foot to the winter pool level.

The operation of Bonny Reservoir enhances the fish spawning in the spring with a slowly rising or stable pool level, and in the fall, the stable pool level, during the waterfowl migration period, affords excellent hunting conditions. These operations are planned in cooperation with the Colorado Department of Game, Fish and Parks and the Fish and Wildlife Service.

1970 SUMMARY

Even though the annual precipitation at Bonny Dam was 107 percent of normal the inflows were less than normal. As requested by the Colorado Water Commissioner, there were 2,232 acre-feet of Bonny Reservoir inflows released to Hale Ditch to irrigate 700 acres of nonproject land and for a seasonal State fish hatchery. Two short-term contracts were completed for the release of 167 acre-feet of Bonny storage into Hale Ditch. One of the contractors was a farmer and the other the Colorado Department of Game, Fish and Parks. The total diversion of Bonny inflow and storage into Hale Ditch was 2,399 acre-feet.

Midwest Oil Corporation used 574 acre-feet of Bonny Reservoir storage, and LVO Company used 17 acre-feet. The Hawn Petroleum Company, of McPherson, Kans., also contracted for a small amount of storage from Bonny Reservoir to test waterflood in an oilfield near Alma, Nebr.

1971 OUTLOOK

The Midwest Oil Corporation and the LVO Company will be furnished a full water supply in 1971. As in previous years, storage water from Bonny Reservoir will be available for sale under temporary one-year contracts.

Releases to regulate the pool level in Bonny Reservoir will be normal in 1971.

Bonny Dam & Reservoir

This dam and reservoir, in eastern Colorado, has been developed extensively as a recreation area by the Colorado Game, Fish and Parks Commission.

FRENCHMAN UNIT, FRENCHMAN-CAMBRIDGE DIVISION IN NEBRASKA

GENERAL

The transportation of water from Enders Reservoir down 52 miles of Frenchman Creek to the Culbertson Diversion Dam, created an erosion problem that made it necessary to initiate a Control and Stabilization Program in 1964. The program has restored private access, protected private and public improvements, stabilized various reaches of channel banks, and removed excess sediment from the Culbertson Canal at the headworks settling basin. The stabilization portion of the program has been effective in reducing the sediment load carried by the stream at the Culbertson Diversion Dam.

The seepage losses in Frenchman Creek and the canal systems, to serve lands in Frenchman Valley and H & RW Irrigation Districts, have been much greater than were considered in the Definite Plan Report. These losses have created extra requirements on Enders Reservoir storage and have also created a water supply problem under reasonable minimum inflow conditions.

The Culbertson Canal and the Culbertson Extension Canal systems serve 9,600 acres in Frenchman Valley Irrigation District and 11,490 acres in H & RW Irrigation District. The water supply for these lands is furnished by Enders Reservoir storage, Frenchman Creek, and Stinking Water Creek flows.

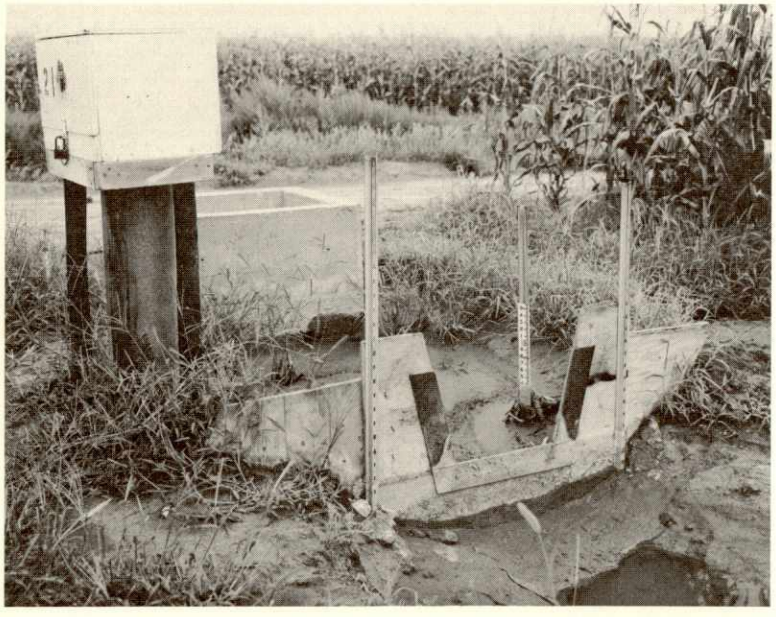
The normal operation of Enders Reservoir, with the gradual rise in water surface during the spring months, provides desirable fish spawning conditions. The seepage of 5- to 10-c.f.s. maintains a live stream to preserve fisheries and improve fishing below the dam. The joint Manager of Frenchman Valley and H & RW Irrigation Districts advises the Nebraska Game and Parks Commission on canal operations and chemical treatment for aquatic weed control.

1970 SUMMARY

The precipitation at Enders Dam was 68 percent of normal, and the inflow into Enders Reservoir was less than the reasonable minimum forecast. The year of 1970 was the third consecutive year of below-normal inflows. The conservation capacity was not full at any time in 1970. The active storage in the conservation pool was evacuated by the third week in August. This was the first time that the active conservation capacity had been emptied since initial filling in 1952. The inflow was passed through the reservoir during late August and early September. The water supply was not adequate to meet the normal requirements of the Frenchman Valley and

Irrigation management, Frenchman-Cambridge Division

A field of corn under the irrigation management project. Bureau of Reclamation personnel maintain records of a soil moisture level and determine when irrigation water should be applied. Here, Noel R. Runyon, USBR Natural Resources Specialist, observes uniformity of plant stand in row.



Standard 1.5-foot Cipoletti weir and recorder, water use study, Frenchman-Cambridge Division

The water use study was conducted on irrigated fields under the Driftwood West Canal from 1965 to 1969. The study consisted of accurately determining the use of irrigation water on the farm. The delivery, runoff, and crop consumptive use were measured.

H & RW Irrigation Districts' lands. The diversion of 48,809 acre-feet at the Culbertson Diversion Dam, for both districts, was above normal. There were 6,500 acres of Frenchman Valley land, and 10,752 acres of H & RW land irrigated in 1970. These acreages represent 68 and 94 percent, respectively, of the district lands provided service.

The districts were forewarned in the spring that a water shortage situation appeared to be developing. The Frenchman Valley Irrigation District farmers, with their long-established history of irrigation, were able to take full advantage of the Federal Feed Grain Program, and irrigated 2,345 fewer acres in 1970 than in 1969. After Enders storage was depleted, this district scheduled the deliveries to their users every 15 days and continued operations on a limited basis with natural flow available under their 1890 water appropriation. The gross crop value for Frenchman Valley farmers was $967,592. The H & RW Irrigation District had delivered 15 inches of water for each irrigated acre by August 21, when Enders storage was no longer available. The shortage in water supply was estimated at 35 percent, with a 15-percent average reduction in crop yields. The gross crop value was reported to be $1,268,771.

Even with a low pool level during the peak of the visitation period, the visitation 1970 record of 19,697 persons indicates a 5-percent increase over the previous year.

1971 OUTLOOK

The carryover storage of Enders Reservoir at the end of 1970 was about 3,000 acre-feet less than one year ago. If the present drought conditions continue, a severe shortage in water supply will occur. The operation studies indicate that the conservation pool will be filled if most probable inflows develop. At the end of January 1971, the pool level was about two-tenths of a foot below the dry-year forecast.

If water is available, the Frenchman Valley Irrigation District estimates that 8,000 acres will be irrigated in 1971. The H & RW Irrigation District expects to deliver water for 10,800 acres. The Control and Stabilization Program on Frenchman Creek will be continued during 1971.

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. The seepage below Red Willow and Medicine Creek Dams provides excellent fishing. The seepage below Trenton Dam preserves fishery in the spillway stilling basin and maintains a small, live stream in the Republican River near Trenton.

The Frenchman-Cambridge Irrigation District advises the Nebraska Game and Parks Commission of their plans for canal operation and chemical treatment for the control of aquatic weeds.

The Frenchman-Cambridge Irrigation District has 43,190 acres of irrigable land. Service is provided by Meeker-Driftwood Canal to 16,440 acres; Red Willow Canal to 4,150 acres; Bartley Canal to 7,000 acres; and Cambridge Canal to 15,600 acres. The water for these lands is provided by Swanson, Hugh Butler, and Harry Strunk Lakes' storage and flows of the Republican River and Red Willow and Medicine Creeks.

SUMMARY

The precipitation and inflow at Swanson Lake were below normal. The carry-over storage and 1970 inflow were adequate to furnish full water supplies to the lands served by the Meeker-Driftwood and Bartley Canal systems. The diversion of 42,960 acre-feet into Meeker-Driftwood Canal was 5 percent greater than the dry-year forecasts, irrigating 13,125 acres. The diversion of 12,354 acre-feet into Bartley Canal was above normal, irrigating 5,441 acres.

During a 2-week period in August, storage releases were required from Swanson Lake to supplement the water supply to irrigate land under the Cambridge Canal.

The precipitation was only 72 percent of normal at Red Willow Dam, and the inflow was below normal. The diversion of 9,098 acre-feet was about equal to the dry-year forecast, irrigating 3,588 acres of Frenchman - Cambridge Irrigation District land. A severe hailstorm occurred on about one-third of the Red Willow land in July. The corn yields from the damaged fields were about 15 percent below the 1970 averages for irrigated corn outside of the storm area.

The precipitation and inflow at Medicine Creek Dam were considerably below normal in 1970. The releases from Harry Strunk Lake for Cambridge Canal diversions were nearly double the dry-year forecasts. In early August, the active storage in Harry Strunk Lake and the inflow were assessed as a 10-day supply for the irrigators served by Cambridge Canal. The transfer of storage from Swanson Lake and late August precipitation relieved the tight water supply situation. The pool level of Harry Strunk Lake at the end of

August was the lowest since the conservation capacity was first filled in 1951. The diversion of 36, 873 acre-feet was nearly equal to the dry-year forecasts. The Frenchman-Cambridge Irrigation District reports that 14, 945 acres were irrigated in 1970.

The gross crop value from the lands served by Meeker-Driftwood, Bartley, Red Willow, and Cambridge Canals was $5, 236, 472.

The Frenchman-Cambridge Irrigation District avoided excessive bypasses of water normally required to provide adequate head for sluicing action at Cambridge Diversion Dam by maintaining sandbags on the crest of the ogee section during the irrigation season. The sandbag experiment was so successful that modification, consisting of permanently raising the crest 6 inches, will be completed before the start of the 1971 irrigation season.

The Nebraska Game and Parks Commission reported that 372, 684 persons visited Swanson, Hugh Butler, and Harry Strunk Lakes in 1970, which is a slight increase over 1969.

Fishing at Hugh Butler Lake

Fishermen come in all sizes as evidenced here by Tammy and Rickie Corder as they sit on the bank of Hugh Butler Lake. Nebr. waiting for a bite.

1971 OUTLOOK

The carryover storage and 1971 inflows are expected to be adequate to furnish a full water supply to 40,000 acres that the Frenchman-Cambridge Irrigation District expects to be irrigated. Of this acreage, 15,200 acres are under Meeker-Driftwood Canal; 5,600 acres under the Bartley Canal; 4,000 acres under Red Willow Canal; and 15,200 acres under the Cambridge Canal.

ALMENA UNIT, KANASKA DIVISION IN KANSAS

GENERAL

The normal plan of operation of Norton Reservoir during the spring months provides for a nearly stable or gradual rising pool, as requested by the Kansas Forestry, Fish and Game Commission, for the most desirable fish spawning conditions. The seepage below Norton Dam is less than 1 c.f.s., but this keeps the Prairie Dog Creek a live stream to support some fishing.

The Almena Irrigation District has been requested to notify the Commission of plans for chemical treatment in the Almena Canal System to control aquatic weeds.

There are 5,350 acres with service available from the Almena Canal system. Norton Reservoir storage and Prairie Dog Creek flows provide a water supply for these lands.

The city of Norton water service contract provides for a maximum of 1,600 acre-feet annually. About 600 acre-feet of storage in the bottom of the conservation capacity is reserved for the city of Norton.

1970 SUMMARY

The precipitation at Norton Dam was 84 percent of normal. During July and August, it was only 55 percent of normal. The inflows and carryover storage of Norton Reservoir were not adequate to meet the irrigation requirements of the Almena Irrigation District land. The District Board of Directors was advised early in the spring of 1970 that a water shortage situation was developing. Plans were made before the start of the irrigation season to use privately owned irrigation wells within the district boundaries as a supplemental supply to the project water supply. The active storage in the conservation pool was very nearly evacuated by the end of the season.

The diversion of 10,091 acre-feet from Prairie Dog Creek furnished 75 percent of the water delivered to the 5,233 acres irrigated in 1970.

There were about 3,500 acre-feet delivered to the district land from 50 low-capacity irrigation wells. The gross crop value for 1970 was $858,828.

The city of Norton used 824 acre-feet in 1970.

The visitation to Norton Reservoir in 1970 was reported to be 136,232 persons. This is nearly 100,000 less than 1969. The surface area of Norton Reservoir at the end of September was only 770 acres as compared to 2,180 acres for a full conservation pool.

1971 OUTLOOK

If 1971 is a dry year, the storage in Norton Reservoir will be inadequate to furnish a full water supply to the 5,350 acres that the Almena Irrigation District expects to be irrigated. The district plans to supplement its water supply, if required, with water from private irrigation wells as it did in 1970.

The water requirements of the city of Norton are expected to be met in full in 1971.

Hunter and Dog near Norton Reservoir

A hunter and his dog walk along the edge of an access road next to a food and cover patch in the wildlife management area near Norton Reservoir, Kans.

FRANKLIN, SUPERIOR-COURTLAND, AND COURTLAND UNITS, BOSTWICK DIVISION

GENERAL

The storage of Harlan County Reservoir and flows of the Republican River provide a water supply for 22,787 acres in the Bostwick Irrigation District in Nebraska, and 12,400 acres in the Kansas-Bostwick Irrigation District above Lovewell Reservoir. The above source of supply, along with White Rock Creek flows and Lovewell Reservoir storage, provides a water supply for 26,988 acres below Lovewell Reservoir, also in the Kansas-Bostwick Irrigation District.

The land in the Bostwick Irrigation District in Nebraska is in the Franklin and Superior-Courtland Units; and the land in the Kansas-Bostwick Irrigation District is in the Courtland Unit. These irrigation districts have been requested to inform their respective states of their canal operations and plans for control of aquatic weeds.

The Kansas-Bostwick Irrigation District No. 2 and the Bureau of Reclamation cooperate with the Kansas Forestry, Fish and Game Commission by maintaining a minimum inflow of 20 c.f.s. when possible into Lovewell Reservoir from Courtland Canal. The minimum flow to provide better fishing conditions in White Rock Creek below Lovewell Dam is maintained by seepage.

1970 SUMMARY - BOSTWICK DIVISION - NEBRASKA

The 1970 precipitation at Harlan County Dam was 82 percent of normal. September and October were the only months of the year with normal or above-normal rainfall. Even though the inflows into Harlan County Reservoir were less than the reasonable minimum, the water supply was adequate for the above-normal requirements of 27,936 acres irrigated in the Bostwick Division between Harlan County Dam and Lovewell Dam and transfers of storage to Lovewell Reservoir.

The Bostwick Irrigation District diverted 60,010 acre-feet of water to irrigate 18,480 acres. This diversion was about equal to the dry-year forecast. The gross value of the crops in this District was $2,726,430.

In March of 1970, special low-head pump tests were made at the Franklin South Side Pumping Plant with pre-scheduled releases of 0 to 1,000 c.f.s. from Harlan County Reservoir. As a result of these tests, the Bostwick Irrigation District in Nebraska modified one of the three pumps this winter with a larger capacity low-head impeller.

During the summer of 1970, the mean daily flows for quality control in the Republican River below Superior, Nebr., were greater than the minimum 40 c.f.s. on all days but September 11, when the mean flow was 38 c.f.s. No special releases were made from Harlan County Reservoir for this purpose in 1970.

The Corps of Engineers reported a visitation of 907,376 persons in 1970, which is down slightly from the previous year.

1970 SUMMARY - BOSTWICK DIVISION - KANSAS

The precipitation at Lovewell Dam was near normal. The inflows from White Rock Creek were below normal, while the diversions into Courtland Canal from the Republican River were more than double the dry-year forecasts.

Kansas-Bostwick Irrigation District diverted 83,304 acre-feet to irrigate 9,456 acres above Lovewell and 18,280 acres below Lovewell. These diversions were 10,000 acre-feet greater than the dry-year forecast. The gross crop value of the land irrigated in this district was $3,882,835.

The visitation of 154,660 persons to Lovewell Dam and Reservoir in 1970 was about 15 percent lower than in 1969.

1971 OUTLOOK - BOSTWICK DIVISION

The water supply is expected to be adequate to irrigate 20,000 acres in the Bostwick Irrigation District in Nebraska, and 28,000 acres in the Kansas-Bostwick Irrigation District.

CHAPTER IV - SMOKY HILL RIVER BASIN

KIRWIN UNIT, SOLOMON DIVISION IN KANSAS

GENERAL

The Kirwin Reservoir storage and flows of the North Fork of the Solomon River provides a water supply for 11,435 acres of land in the Kirwin Irrigation District.

The normal spring operation of Kirwin Reservoir provides a stable or slightly rising pool level which is ideal for spawning of fish.

1970 SUMMARY

The precipitation was only 78 percent of normal at Kirwin Dam. The inflow into Kirwin Reservoir was also below normal. The carryover storage and 1970 inflows of Kirwin Reservoir were adequate for the requirements of the land irrigated in the Kirwin Irrigation District.

The diversion of 23,990 acre-feet of water was much above normal for the 9,500 acres that were irrigated in 1970. The gross value of the crops from this land was $1,403,418.

The 1970 visitation to Kirwin Dam was 219,619 persons. This is an increase over the 1969 visitation by nearly 65,000.

1971 OUTLOOK

The operation studies indicate that the irrigation requirements of 10,000 acres in the Kirwin Irrigation District will be met in full.

WEBSTER UNIT, SOLOMON DIVISION IN KANSAS

GENERAL

Webster Reservoir storage and the South Fork of the Solomon River flows furnishes a water supply for 8,500 acres in the Webster Irrigation District.

The seepage losses between Webster Dam and Woodston Diversion Dam have been much greater than were considered in the Definite Plan Report. These losses have created extra requirements on Webster Reservoir storage and have created a water supply problem under reasonable minimum inflow conditions.

The normal operation of Webster Reservoir creates a stable or slowly rising pool level in the spring which is favorable for the spawning of fish. The Kansas Forestry, Fish and Game Commission is advised in advance if the active conservation capacity is expected to be evacuated so that plans can be made for fish salvage.

The Commission operates a portable fish hatchery at the Webster Dam spillway stilling basin during March, April, and May each year. Unless absolutely necessary for flood releases, the spillway gates are not operated during this period.

1970 SUMMARY

The 1970 precipitation at Webster Dam was 72 percent of normal. The inflow was about equal to the reasonable minimum forecast. The carryover storage and 1970 inflows provided the Webster Irrigation District with a full water supply.

The diversion of 18,476 acre-feet of water into Osborne Canal was above normal. Water was delivered to 84 percent of the project area, 7,132 acres. The 1970 gross crop value was $1,029,526.

The visitation to Webster Dam and Reservoir in 1970 was 95,242, which is an increase of more than 30,000 visitor days over 1969.

1971 OUTLOOK

If reasonable minimum inflows into Webster Reservoir occur with below normal rainfall over the Webster Irrigation District area, a severe shortage in water supply is expected. The district estimates that about 7,100 acres will be irrigated in 1971.

GLEN ELDER UNIT, SOLOMON DIVISION IN KANSAS

GENERAL

All major construction was completed and Glen Elder Dam and Waconda Lake were considered to be in full operation by February of 1970. The dam was dedicated by the Commissioner of the Bureau of Reclamation and other dignitaries on June 6, 1970.

Specified flows in the Solomon River downstream from the city of Beloit, Kans., are maintained by releases from Waconda Lake for water quality control. Such releases are not administered by the State of Kansas and the

Unveiling the plaque

Ellis L. Armstrong, Commissioner, Bureau of Reclamation, and Orren Campbell, President, Solomon Valley Water Conservation and Flood Control Association, unveil the Glen Elder Dam plaque at the visitor center.

Glen Elder Dam was dedicated on June 6, 1970

U.S. Senator Robert Dole addresses the audience during the dedication ceremonies for Glen Elder Dam and Waconda Lake. Seated in the front row, from left to right, Congressman Keith Sebelius, Orren Campbell, and Commissioner Armstrong. Region 7 Director, James Ingles, is immediately behind Senator Dole.

Glen Elder Dam and Waconda Lake

This reservoir is the Bureau of Reclamation's newest storage facility in the Kansas River Basin. The city of Glen Elder, Kans., is seen in the foreground.

natural flow appropriators along the Solomon River use such releases for irrigation.

The water service contract with the city of Beloit provides for a maximum of 2,000 acre-feet annually from Waconda Lake.

The normal operation of Waconda Lake provides a stable or rising pool level during the fish spawning period each spring. The Waconda Lake releases for water quality control and Beloit preserve fisheries below Glen Elder Dam.

1970 SUMMARY

The precipitation at Glen Elder Dam was 70 percent of normal in 1970. The inflow into Waconda Lake was less than the reasonable minimum forecast. The water requirements of Beloit and water quality control in the Solomon River below Beloit were met in full. The releases amounted to 720 acre-feet.

During March, releases were regulated to facilitate an inspection of the Solomon River downstream from Glen Elder Dam by the Fish and Wildlife Service.

The visitation of 106,900 persons was nearly double the visitor days reported for 1969.

1971 OUTLOOK

The water requirements for the city of Beloit will be met in full from Waconda Lake. Releases will be regulated as required to furnish flows as required in the Solomon River below Beloit for water quality control.

CEDAR BLUFF UNIT, SMOKY HILL DIVISION

GENERAL

Cedar Bluff Reservoir storage and Smoky Hill River flows provide a water supply to irrigate 6,600 acres of project land in the Cedar Bluff Irrigation District, up to 4,000 acre-feet per year for the Cedar Bluff National Fish Hatchery, and up to 2,000 acre-feet of storage for the city of Russell, Kans.

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

1970 SUMMARY

The precipitation at Cedar Bluff Dam was 72 percent of normal. The inflow was slightly above the reasonable minimum forecast. The carryover storage and the 1970 inflows provided the Cedar Bluff Irrigation District and the Cedar Bluff National Fish Hatchery with full water supplies. No storage releases were required for the city of Russell.

The Cedar Bluff Irrigation District diverted 15,796 acre-feet to irrigate 5,423 acres in 1970. This acreage represents 82 percent of the project lands. The 1970 gross crop value was $538,784.

The Cedar Bluff National Fish Hatchery diverted 2,638 acre-feet of which 1,121 acre-feet were passed through the hatchery into the Smoky Hill River below Cedar Bluff Dam.

The Kansas Forestry, Fish and Game Commission reported 153,435 visitors to Cedar Bluff Dam and Reservoir in 1970. This is over 90,000 persons less than in 1969.

1971 OUTLOOK

The water supplies for the Cedar Bluff National Fish Hatchery, the city of Russell, and the 6,300 acres expected to be irrigated in the Cedar Bluff Irrigation District are forecast to be met in full.

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	2161.3	---
	Total Acre-feet	3,839	10,496	66,246	---
	Net Acre-feet	3,839	6,657	55,750	---
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 Lake	- 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	37,780	86,630
	Net Acre-feet	6,313	4,137	27,330	48,850
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	99,445	314,550
	Net Acre-feet	6,385	3,400	89,660	215,105
Webster	- Elevation Ft.	1855.5	1860.0	1892.15	1923.7
	Total Acre-feet	2,184	5,300	76,235	260,740
	Net Acre-feet	2,184	3,116	70,935	184,505
Waconda Lake	- Elevation Ft.	1407.8	1425.0	1455.6	1488.3
	Total Acre-feet	1,520	25,800	239,100	976,000
	Net Acre-feet	1,520	24,280	213,300	736,900
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	312,307	1,475,108	3,658,039
Total Net Acre-feet		58,070	254,237	1,162,801	2,354,723

1/ Includes space for sediment storage.

TABLE 2
SUMMARY OF 1970 OPERATIONS

MIRAGE FLATS PROJECT
BOX BUTTE RESERVOIR AND MIRAGE FLATS CANAL

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.	1,946	29	70	.28	10,447	0	0
Feb.	2,356	42	87	.08	12,434	0	0
Mar.	3,047	60	172	.58	15,126	0	0
Apr.	3,495	69	334	1.94	19,354	0	0
May	1,539	68	530	1.95	20,017	0	0
June	784	67	617	3.55	20,054	0	0
July	563	10,120	393	2.45	9,365	9,701	4,810
Aug.	462	8,151	126	0	1,401	8,606	5,260
Sep.	410	674	102	.60	1,946	658	336
Oct.	1,016	39	172	1.06	3,548	0	0
Nov.	2,039	36	105	.20	5,735	0	0
Dec.	1,985	33	82	.12	8,054	0	0
TOTAL	19,642	19,388	2,790	12.81	---	18,965	10,406
NORMAL	22,100	23,600	3,900	15.27	31,060 1/	26,000	---

1/ Conservation Pool Capacity.

NOTE.--

Mirage Flats Canal:
Acres with service available -- 11,662
Acres irrigated 1970 -- 10,740
Gross Crop Value 1970 -- $947,502

SANDHILLS DIVISION
AINSWORTH UNIT
MERRITT RESERVOIR AND AINSWORTH CANAL

MONTH	Inflow (AF)	Outflow To River (AF)	Outflow To Canal (AF)	Evap. (AF)	Precip. (Inches)	End Of Month Content (AF)	AINSWORTH CANAL Diversions To Canal (AF)	AINSWORTH CANAL Delivered To Farms (AF)
Jan.	14,110	13,724	0	151	.02	60,411	0	0
Feb.	12,407	13,737	0	175	.09	60,161	0	0
Mar.	15,570	12,353	0	393	.44	64,004	0	0
Apr.	18,838	9,142	0	778	2.66	73,626	0	0
May	13,350	10,774	1,854	782	1.51	74,199	1,854	301
June	13,715	8,458	4,358	1,532	2.00	73,913	4,358	1,960
July	14,157	791	32,604	1,391	1.90	54,609	32,604	25,855
Aug.	14,650	760	28,081	1,233	.84	39,345	28,081	23,275
Sep.	14,160	704	8,674	757	.58	44,451	8,674	5,723
Oct.	14,630	1,612	21	905	.72	58,176	21	182
Nov.	14,129	9,794	0	575	.07	61,936	0	0
Dec.	13,831	14,656	0	202	.24	60,909	0	0
TOTAL	173,547	96,475	75,592	8,874	11.07	---	75,592	57,296
NORMAL	190,600	105,600	72,700	11,300	17.52	74,486 2/	72,700	---

2/ Conservation Pool Capacity.

NOTE.--

Ainsworth Canal:
Acres with service available -- 23,960
Acres irrigated 1970 -- 28,175
Gross Crop Value 1970 -- $3,333,430

MIDDLE LOUP DIVISION

	SARGENT UNIT SARGENT CANAL		MIDDLE LOUP UNIT 3/ MID. LOUP P. P. CANALS	FARWELL UNIT SHERMAN RESERVOIR AND FARWELL CANALS						
MONTH	Diversions To Canal (AF)	Delivered To Farms (AF)	Diversions To Canals (AF)	Inflow (AF)	Outflow To Canals (AF)	Evap. (AF)	Precip. (Inches)	End Of Month Content (AF)	Diversions To Canals (AF)	Delivered To Farms (AF)
Jan.	0	0	0	0	0	151	0	44,287	0	0
Feb.	0	0	0	0	0	169	.03	43,005	0	0
Mar.	0	0	0	0	0	165	.24	41,540	0	0
Apr.	0	0	0	9,023	0	673	2.25	49,650	0	0
May	0	0	3,230	16,113	0	1,452	1.79	64,311	0	0
June	3,470	213	3,930	14,111	16,310	1,626	1.08	61,607	16,310	2,049
July	9,840	5,512	12,070	12,512	46,520	985	1.19	26,820	46,520	19,684
Aug.	9,110	5,455	8,440	18,957	20,720	930	1.65	23,150	20,720	6,978
Sep.	3,110	1,181	2,610	24,203	2,470	897	2.88	43,639	2,470	829
Oct.	0	0	0	0	0	603	1.98	41,959	0	0
Nov.	0	0	0	0	0	391	.57	40,724	0	0
Dec.	0	0	0	0	0	158	.03	38,719	0	0
TOTAL	25,530	12,361	30,280	94,919	86,020	8,200	13.69	---.	86,020	29,540
NORMAL	23,800	---	---	94,900	64,500	11,500	20.80	66,246	64,500	---

3/ Non-Project.

4/ Conservation Pool Capacity.

NOTE.--

Sargent Canal:
Acres with service available -- 13,349
Acres irrigated 1970 -- 10,535
Gross Crop Value 1970 -- $1,504,118

Middle Loup P. P. Canals:
Acres with service available -- 11,800
Acres irrigated 1970 -- 12,094

Farwell Canals:
Acres with service available -- 47,925
Acres irrigated 1970 -- 36,970
Gross Crop Value 1970 -- $4,945,591

UPPER REPUBLICAN DIVISION
ARMEL UNIT
BONNY RESERVOIR

MONTH	Inflow (AF)	Outflow To River (AF)	Outflow To Hale Ditch (AF)	Warren Act Sales (AF)	Evap. (AF)	Precip. (Inches)	End Of Month Content (AF)
Jan.	2,190	346	0	0	181	.07	33,653
Feb.	2,000	319	0	0	222	.01	35,169
Mar.	2,120	375	0	0	284	.90	36,725
Apr.	2,670	382	27	0	446	1.33	38,210
May	2,380	394	577	0	1,090	2.35	38,445
June	2,220	407	610	0	1,207	3.76	38,445
July	800	360	229	61	1,147	3.12	37,485
Aug.	720	347	435	73	1,035	1.58	36,346
Sep.	480	328	314	33	860	.80	35,356
Oct.	1,710	516	207	0	804	1.82	35,927
Nov.	2,300	965	0	0	272	1.68	36,875
Dec.	1,530	352	0	0	251	.01	38,075
TOTAL	21,120	5,091 5/	2,399	167	7,799	17.43	---
NORMAL	27,000	11,700	3,800	---	6,300	16.35	41,340 6/

5/ Includes releases for industrial uses.

6/ Conservation Pool Capacity.

FRENCHMAN-CAMBRIDGE DIVISION
FRENCHMAN UNIT
ENDERS RESERVOIR, CULBERTSON CANAL, AND CULBERTSON EXTENSION CANAL

MONTH	Inflow (AF)	Outflow (AF)	Evap. (AF)	Precip. (Inches)	End Of Month Content (AF)	CULBERTSON CANAL Diversions To Canal (AF)	CULBERTSON CANAL Delivered To Farms (AF)	CULBERTSON EXT. CANAL Diversions To Canal (AF)	CULBERTSON EXT. CANAL Delivered To Farms (AF)
Jan.	4,220	450	79	.39	29,569	0	0	0	0
Feb.	3,080	451	110	T	32,261	0	0	0	0
Mar.	3,370	492	160	.87	35,010	0	0	0	0
Apr.	3,700	453	337	1.07	37,690	2,192	1,335	0	0
May	3,380	1,422	905	1.07	38,741	1,508	918	2,566	0
June	4,320	3,285	939	4.15	38,882	1,383	842	3,211	222
July	4,970	22,381	685	1.14	20,088	6,787	4,133	14,341	8,662
Aug.	4,520	13,896	427	.57	9,948	6,887	4,194	8,294	4,609
Sep.	4,200	1,148	328	.96	12,600	1,627	994	13	0
Oct.	3,990	320	322	1.53	15,983	0	0	0	0
Nov.	3,710	298	182	.88	19,260	0	0	0	0
Dec.	4,060	314	80	.15	22,954	0	0	0	0
TOTAL	50,520	44,910	4,554	12.78	---	20,384	12,416	28,425	13,493
NORMAL	59,400	29,500	4,600	18.76	44,480 1/	16,300	---	22,000	---

1/ Conservation Pool Capacity.

NOTE.--

Culbertson Canal:
Acres with service available -- 9,600
Acres irrigated 1970 -- 6,500
Gross Crop Value 1970 -- $967,592

Culbertson Extension Canal:
Acres with service available -- 11,490
Acres irrigated 1970 -- 10,752
Gross Crop Value 1970 -- $1,268,771

FRENCHMAN-CAMBRIDGE DIVISION (Continued)
MEEKER-DRIFTWOOD UNIT
SWANSON LAKE AND MEEKER-DRIFTWOOD CANAL

MONTH	Inflow (AF)	Outflow To River (AF)	Outflow To Meeker-Driftwood Canal (AF)	Evap. (AF)	Precip. (Inches)	End Of Month Content (AF)	MEEKER-DRIFTWOOD Diversions To Canal (AF)	MEEKER-DRIFTWOOD Delivered To Farms (AF)
Jan.	5,280	2,509	0	293	.32	116,270	0	0
Feb.	8,380	3,154	0	401	T	121,710	0	0
Mar.	8,130	8,055	0	600	.79	121,210	0	0
Apr.	10,600	9,045	0	996	1.37	120,460	0	0
May	5,430	438	2,803	2,929	1.77	119,810	2,803	250
June	9,360	2,898	2,633	3,093	5.82	120,760	2,633	353
July	1,670	8,301	18,889	2,918	2.06	91,510	18,889	14,316
Aug.	780	9,531	14,317	2,390	1.06	65,770	14,317	10,376
Sep.	370	1,785	4,254	1,657	1.40	58,100	4,254	2,172
Oct.	340	109	64	1,240	1.21	57,400	64	22
Nov.	4,280	105	0	599	1.34	61,200	0	0
Dec.	3,800	63	0	334	.04	64,950	0	0
TOTAL	58,420	45,993	42,960	17,450	17.18	---	42,960	27,489
NORMAL	103,300	125,900	28,800	13,300	19.38	120,160 2/	28,800	---

2/ Conservation Pool Capacity.

NOTE.--

Meeker-Driftwood Canal:
Acres with service available -- 16,440
Acres irrigated 1970 -- 13,125
Gross Crop Value 1970 -- $1,942,824

FRENCHMAN-CAMBRIDGE DIVISION (Continued)
RED WILLOW UNIT
HUGH BUTLER LAKE, RED WILLOW CANAL, AND BARTLEY CANAL

MONTH	Inflow (AF)	Outflow (AF)	Warren Act Sales (AF)	Evap. (AF)	Precip. (Inches)	End Of Month Content (AF)	RED WILLOW CANAL Diversions To Canal (AF)	RED WILLOW CANAL Delivered To Farms (AF)	BARTLEY CANAL Diversions To Canal (AF)	BARTLEY CANAL Delivered To Farms (AF)
Jan.	1,200	319	0	81	.06	37,743	0	0	0	0
Feb.	1,290	1,266	0	98	T	37,808	0	0	0	0
Mar.	1,740	1,316	0	180	.81	38,149	0	0	0	0
Apr.	2,200	2,214	0	375	.94	37,759	0	0	0	0
May	1,760	1,523	0	936	1.43	37,161	968	74	732	0
June	2,560	1,244	0	1,152	4.19	37,549	789	94	747	58
July	800	5,177	24	998	2.01	32,494	4,171	2,966	6,174	4,888
Aug.	1,220	3,271	0	969	.57	29,432	2,531	1,684	4,042	3,334
Sep.	1,020	815	0	632	2.03	29,051	435	164	659	412
Oct.	1,310	492	0	475	1.10	29,527	204	78	0	0
Nov.	1,590	274	0	193	1.00	30,755	0	0	0	0
Dec.	1,170	283	0	86	T	31,664	0	0	0	0
TOTAL	17,860	18,194	24	6,175	14.14	---	9,098	5,060	12,354	8,692
NORMAL	20,500	16,100	---	4,400	19.75	37,776 3/	6,400	---	10,600	---

3/ Conservation Pool Capacity.

NOTE.--

Red Willow Canal:
Acres with service available -- 4,150
Acres irrigated 1970 -- 3,588
Gross Crop Value 1970 -- $434,322

Bartley Canal:
Acres with service available -- 7,000
Acres irrigated 1970 -- 5,441
Gross Crop Value 1970 -- $826,829

FRENCHMAN-CAMBRIDGE DIVISION (Continued)
CAMBRIDGE UNIT
HARRY STRUNK LAKE AND CAMBRIDGE CANAL

MONTH	Inflow (AF)	Outflow (AF)	Warren Act Sales (AF)	Evap. (AF)	Precip. (Inches)	End Of Month Content (AF)	CAMBRIDGE CANAL Diversions To Canal (AF)	CAMBRIDGE CANAL Delivered To Farms (AF)
Jan.	3,360	342	0	75	.09	37,930	0	0
Feb.	3,760	4,349	0	111	.04	37,366	0	0
Mar.	4,370	4,169	0	223	.63	37,329	0	0
Apr.	4,780	3,826	0	353	.87	37,404	0	0
May	4,130	2,660	0	1,146	2.98	37,892	3,108	40
June	4,830	5,040	0	1,138	3.14	36,772	2,436	276
July	4,070	17,893	169	782	2.47	21,161	18,281	14,226
Aug.	2,420	7,256	0	597	1.81	15,611	11,844	9,254
Sep.	2,000	438	0	424	2.10	16,656	1,204	476
Oct.	2,860	81	0	358	.75	19,184	0	0
Nov.	3,230	26	0	201	.64	22,265	0	0
Dec.	2,860	197	0	95	T	24,942	0	0
TOTAL	42,670	46,277	169	5,503	15.52	---	36,873	24,272
NORMAL	52,800	48,700	---	4,900	19.20	37,141 4/	24,300	---

4/ Conservation Pool Capacity.

NOTE.--

Cambridge Canal:
Acres with service available -- 15,600
Acres irrigated 1970 -- 14,945
Gross Crop Value 1970 -- $2,032,507

KANASKA DIVISION
ALMENA UNIT
NORTON RESERVOIR AND ALMENA CANAL

MONTH	Inflow (AF)	Outflow To River (AF)	Outflow To City Of Norton (AF)	Evap. (AF)	Precip. (Inches)	End Of Month Content (AF)	ALMENA CANAL Diversions To Canal (AF)	ALMENA CANAL Delivered To Farms (AF)
Jan.	350	17	39	86	.31	16,396	0	0
Feb.	400	4	32	87	T	16,588	0	0
Mar.	450	6	36	126	.71	16,804	0	0
Apr.	770	7	48	291	.80	16,882	0	0
May	2,400	11	82	871	3.75	18,329	136	0
June	3,030	1,530	85	1,002	3.64	18,986	1,225	806
July	340	5,560	151	857	1.85	12,786	4,902	3,896
Aug.	30	3,950	139	582	1.13	8,013	3,828	3,044
Sep.	710	24	77	397	3.56	8,177	0	0
Oct.	390	24	52	259	1.13	8,239	0	0
Nov.	330	12	42	142	.15	8,325	0	0
Dec.	270	5	40	72	T	8,481	0	0
TOTAL	11,022	11,150	824	4,772	17.03	---	10,091	7,746
NORMAL	20,000	10,000	1,700	4,500	20.38	35,935 1/	10,000	---

1/ Conservation Pool Capacity.

NOTE.--
Almena Canal:
Acres with service available -- 5,350
Acres irrigated 1970 -- 5,233
Gross Crop Value 1970 -- $858,828

BOSTWICK DIVISION
FRANKLIN UNIT
HARLAN COUNTY RESERVOIR, FRANKLIN CANAL, AND NAPONEE CANAL

MONTH	Inflow (AF)	Outflow To River (AF)	Outflow To Canals (AF)	Evap. (AF)	Precip. (Inches)	End Of Month Content (AF)	FRANKLIN CANAL Diversions To Canal (AF)	FRANKLIN CANAL Delivered To Farms (AF)	NAPONEE CANAL Diversions To Canal (AF)	NAPONEE CANAL Delivered To Farms (AF)
Jan.	15,200	13,896	0	669	.22	346,554	0	0	0	0
Feb.	22,920	24,048	0	668	T	346,114	0	0	0	0
Mar.	27,590	31,297	0	1,190	.43	342,032	0	0	0	0
Apr.	34,080	25,765	0	1,465	1.77	345,079	0	0	0	0
May	19,940	22,017	2,045	7,355	2.03	332,907	2,045	18	0	0
June	29,000	10,234	5,240	8,945	3.45	340,321	4,720	1,418	520	369
July	8,620	55,154	18,089	8,472	1.43	267,313	15,538	9,654	2,551	1,728
Aug.	4,350	42,242	11,226	7,187	1.41	211,773	9,984	4,966	1,242	849
Sep.	11,240	1,547	494	4,719	4.56	216,593	494	99	0	0
Oct.	7,420	688	0	3,371	1.69	221,159	0	0	0	0
Nov.	7,600	666	0	1,333	.12	226,897	0	0	0	0
Dec.	7,220	668	0	620	T	233,574	0	0	0	0
TOTAL	195,180	228,222	37,094	45,994	17.11	---	32,781	16,155	4,313	2,946
NORMAL	308,100	292,900	26,300	38,600	20.91	342,560 2/	22,500	---	3,800	---

2/ Conservation Pool Capacity.

NOTE.--
Franklin Canal:
Acres with service available -- 11,267
Acres irrigated 1970 -- 8,840
Gross Crop Value 1970 -- $1,338,678

Naponee Canal:
Acres with service available -- 1,533
Acres irrigated 1970 -- 1,385
Gross Crop Value 1970 -- $218,115

BOSTWICK DIVISION (Continued)
SUPERIOR-COURTLAND UNIT
FRANKLIN PUMP CANAL, SUPERIOR CANAL, AND COURTLAND CANAL IN NEBRASKA

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 (Nebr.) Diversions To Canal (AF)	COURTLAND (Nebr.) Delivered To Farms (AF)
Jan.	0	0	0	0	0	0
Feb.	0	0	0	0	0	0
Mar.	0	0	0	0	0	0
Apr.	0	0	0	0	0	0
May	0	0	1,072	14	0	0
June	364	299	1,722	461	188	153
July	2,714	1,965	8,804	6,557	1,925	1,677
Aug.	1,173	626	5,004	2,714	932	798
Sep.	0	0	0	0	18	15
Oct.	0	0	0	0	0	0
Nov.	0	0	0	0	0	0
Dec.	0	0	0	0	0	0
TOTAL	4,251	2,890	16,602	9,746	3,063	2,643
NORMAL	4,400	---	11,800	---	3,300	---

NOTE.--
Franklin Pump Canal:
Acres with service available -- 2,125
Acres irrigated 1970 -- 1,950
Gross Crop Value 1970 -- $269,917

Superior Canal:
Acres with service available -- 6,021
Acres irrigated 1970 -- 4,778
Gross Crop Value 1970 -- $708,872

Courtland Canal in Nebraska:
Acres with service available -- 1,841
Acres irrigated 1970 -- 1,527
Gross Crop Value 1970 -- $190,850

BOSTWICK DIVISION (Continued)
COURTLAND UNIT
COURTLAND CANAL ABOVE LOVEWELL, LOVEWELL RESERVOIR, AND COURTLAND CANAL BELOW LOVEWELL

MONTH	COURTLAND (Above) Diversions To Canal (AF)	COURTLAND (Above) Delivered To Farms (AF)	Inflow Wh. Rock Creek (AF)	Inflow Courtland Canal (AF)	Outflow Wh. Rock Creek (AF)	Outflow To Canal (AF)	Evap. (AF)	Precip. (Inches)	End Of Month Content (AF)	COURTLAND (Below) Diversions To Canal (AF)	COURTLAND (Below) Delivered To Farms (AF)
Jan.	0	0	420	0	5	0	84	.07	24,500	0	0
Feb.	0	0	430	0	6	0	64	.01	24,880	0	0
Mar.	0	0	640	0	9	0	172	.65	25,280	0	0
Apr.	0	0	3,040	0	1,505	0	348	2.27	25,790	0	0
May	0	0	1,110	12,914	11	0	1,292	5.67	38,290	0	0
June	1,419	576	3,320	3,905	462	2,682	1,483	4.08	41,270	2,682	396
July	18,819	12,155	820	20,436	79	32,543	1,552	1.02	27,860	32,543	22,943
Aug.	8,598	5,218	9,240	25,672	10	18,859	1,569	2.06	33,080	18,859	11,234
Sep.	27	0	580	5,157	17	357	980	5.76	37,520	357	40
Oct.	0	0	280	561	7	0	638	2.46	37,680	0	0
Nov.	0	0	310	0	7	0	333	1.03	37,630	0	0
Dec.	0	0	0	0	6	0	110	.04	37,350	0	0
TOTAL	28,863	17,949	20,190	68,645	2,124	54,441	8,625	25.12	---	54,441	34,613
NORMAL	17,700	---	25,700	27,200	0	34,500	5,300	24.72	41,690 3/	34,500	---

3/ Conservation Pool Capacity.

NOTE.--
Courtland Canal Above Lovewell:
Acres with service available -- 12,400
Acres irrigated 1970 -- 9,456
Gross Crop Value 1970 -- $1,444,109

Courtland Canal Below Lovewell:
Acres with service available -- 26,988
Acres irrigated 1970 -- 18,280
Gross Crop Value 1970 -- $2,438,726

SOLOMON DIVISION
KIRWIN UNIT
KIRWIN RESERVOIR AND KIRWIN CANAL

MONTH	Inflow (AF)	Outflow To River (AF)	Outflow To Canal (AF)	Evap. (AF)	Precip. (Inches)	End Of Month Content (AF)	KIRWIN CANAL Diversions To Canal (AF)	KIRWIN CANAL Delivered To Farms (AF)
Jan.	1,202	281	0	304	.22	99,140	0	0
Feb.	1,974	247	0	306	0	100,560	0	0
Mar.	1,912	713	0	461	.63	101,280	0	0
Apr.	4,408	3,211	0	815	1.97	100,100	0	0
May	4,866	471	647	2,514	3.06	101,380	647	0
June	4,854	1,297	3,652	2,781	2.51	98,880	3,652	1,726
July	1,046	40	11,266	3,224	.55	85,220	11,266	9,324
Aug.	1,552	56	7,880	2,789	1.74	75,750	7,880	6,229
Sep.	2,276	24	545	1,587	5.57	75,670	545	324
Oct.	548	5	0	1,110	1.04	74,980	0	0
Nov.	490	8	0	639	.10	74,560	0	0
Dec.	300	9	0	255	T	74,560	0	0
TOTAL	25,428	6,362	23,990	16,785	17.39	---	23,990	17,673
NORMAL	38,100	13,700	17,800	14,300	22.34	99,445 1/	17,800	---

1/ Conservation Pool Capacity.

NOTE.--
Kirwin Canal:
Acres with service available -- 11,435
Acres irrigated 1970 -- 9,500
Gross Crop Value 1970 -- $1,403,418

SOLOMON DIVISION (Continued)
WEBSTER UNIT
WEBSTER RESERVOIR AND OSBORNE CANAL

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.	610	4	122	.18	26,911	0	0
Feb.	1,134	2	146	0	27,941	0	0
Mar.	1,580	1	257	1.40	29,310	0	0
Apr.	3,052	3	511	1.70	31,391	0	0
May	2,660	1,351	1,225	2.07	31,610	710	0
June	1,966	3,969	1,204	3.35	28,565	2,860	666
July	604	10,514	1,248	2.38	17,822	8,600	5,988
Aug.	304	7,194	788	1.22	9,734	6,161	4,104
Sep.	546	1,613	533	4.04	9,510	145	80
Oct.	146	3	443	.90	9,360	0	0
Nov.	74	3	151	T	9,217	0	0
Dec.	72	0	69	.01	9,148	0	0
TOTAL	12,748	24,657	6,697	17.25	---	18,476	10,838
NORMAL	34,700	19,000	7,100	23.87	76,235 2/	15,000	---

2/ Conservation Pool Capacity.

NOTE.--
Osborne Canal:
Acres with service available -- 8,500
Acres irrigated 1970 -- 7,132
Gross Crop Value 1970 -- $1,029,526

SOLOMON DIVISION (Continued)
GLEN ELDER UNIT
WACONDA LAKE

MONTH	Inflow (AF)	Outflow (AF)	Outflow For City Of Beloit (AF)	Evap. (AF)	Precip. (Inches)	End Of Month Content (AF)
Jan.	2,092	759	0	370	.18	71,213
Feb.	3,696	944	0	435	.19	73,598
Mar.	3,396	552	0	833	.92	75,991
Apr.	10,644	1,113	0	2,263	1.53	83,302
May	7,170	924	0	3,065	5.42	86,609
June	7,210	1,200	180	3,617	1.78	88,597
July	420	2,450	180	5,078	.31	81,230
Aug.	1,404	2,220	180	4,008	.73	76,047
Sep.	4,364	1,090	180	2,658	4.05	76,661
Oct.	2,716	672	0	1,858	2.42	77,385
Nov.	2,110	856	0	1,129	.28	77,776
Dec.	1,940	530	0	569	.01	78,445
TOTAL	47,162	13,310	720	25,883	17.82	---
NORMAL	122,000	1,500	---	36,800	25.50	238,251 3/

3/ Conservation Pool Capacity.

SMOKY HILL DIVISION
ELLIS UNIT
CEDAR BLUFF RESERVOIR AND CEDAR BLUFF CANAL

MONTH	Inflow (AF)	Outflow To River (AF) 5/	Outflow To Canal (AF)	Outflow To Fish Hatchery (AF)	Evap. (AF)	Precip. (Inches)	End Of Month Content (AF)	CEDAR BLUFF CANAL Diversions To Canal (AF)	CEDAR BLUFF CANAL Delivered To Farms (AF)
Jan.	366	58	0	131	516	.33	141,580	0	0
Feb.	380	19	0	71	516	0	141,580	0	0
Mar.	974	10	0	129	746	1.13	141,860	0	0
Apr.	3,590	27	0	191	1,554	1.72	142,440	0	0
May	2,430	37	1,572	269	3,742	1.66	139,470	1,572	863
June	9,206	65	903	271	3,829	5.59	143,940	903	87
July	570	49	6,906	321	4,157	.63	133,170	6,906	5,250
Aug.	1,228	49	5,302	432	4,029	2.08	124,880	5,302	4,109
Sep.	508	42	1,113	334	2,757	2.25	121,460	1,113	458
Oct.	26	28	0	245	1,641	.54	119,350	0	0
Nov.	18	39	0	141	891	T	117,970	0	0
Dec.	40	25	0	103	438	.04	116,400	0	0
TOTAL	19,336	448	15,796	2,638	24,816	15.97	---	15,796	10,767
NORMAL	42,600	6,000	12,800	---	19,800	22.03	185,090 4/	12,800	---

4/ Conservation Pool Capacity.
5/ No releases required for City of Russell, Kansas.

NOTE.--
Cedar Bluff Canal:
Acres with service available -- 6,600
Acres irrigated 1970 -- 5,423
Gross Crop Value 1970 -- $538,784

TABLE 3
BOX BUTTE RESERVOIR AND MIRAGE FLATS CANAL
OPERATION ESTIMATES - 1971
(UNITS IN 1,000 ACRE-FEET)

	Month	Hist. Inflow	Net Evap. AF	Total Release Req.	Canal Req.[1]	Prior Rights	Res. Change	Res. Cont. at End of Month	Res. Spill	Res. Elev. at End of Month	Req. Shortage
								8.1		3987.3	
Reas. Minimum	Jan	2.0	.1	.1	.0	.0	1.8	9.9	.0	3989.6	
	Feb	2.1	.1	.1	.0	.0	1.9	11.8	.0	3991.7	
	Mar	3.2	.2	.1	.0	.0	2.9	14.7	.0	3994.6	
	Apr	2.6	.5	.1	.0	.0	2.0	16.7	.0	3996.4	
	May	1.4	.9	.1	.0	.0	.4	17.1	.0	3996.8	
	Jun	.8	.9	3.4	3.5	.0	- 3.5	13.6	.0	3993.5	
	Jul	.5	.8	10.0	10.2	.1	- 10.3	3.3	.0	3979.1	
	Aug	.5	.3	10.1	10.2	.1	- 2.7	.6	.0	3969.0	7.2
	Sep	.5	.1	5.0	5.1	.0	.0	.6	.0	3969.0	4.6
	Oct	.7	.1	.1	.0	.0	.5	1.1	.0	3971.6	
	Nov	1.5	.1	.1	.0	.0	1.3	2.4	.0	3976.8	
	Dec	2.2	.0	.1	.0	.0	2.1	4.5	.0	3981.5	
	TOTAL	18.0	4.1	29.3	29.0	.2	- 3.6	.0	.0		
								8.1		3987.3	
Most Probable	Jan	2.3	.1	.1	.0	.0	2.1	10.2	.0	3989.9	
	Feb	2.4	.1	.1	.0	.0	2.2	12.4	.0	3992.3	
	Mar	3.4	.2	.1	.0	.0	3.1	15.5	.0	3995.4	
	Apr	2.9	.4	.1	.0	.0	2.4	17.9	.0	3997.5	
	May	1.5	.7	1.0	1.3	.0	- .2	17.7	.0	3997.3	
	Jun	1.4	.8	2.4	2.6	.0	- 1.8	15.9	.0	3995.7	
	Jul	1.1	.8	8.5	9.1	.1	- 8.2	7.7	.0	3986.8	
	Aug	1.0	.4	8.6	9.1	.1	- 7.1	.6	.0	3969.0	.8
	Sep	.7	.1	2.4	2.6	.0	.0	.6	.0	3969.0	1.8
	Oct	1.0	.1	.1	.0	.0	.8	1.4	.0	3973.1	
	Nov	1.9	.1	.1	.0	.0	1.7	3.1	.0	3978.6	
	Dec	2.5	.1	.1	.0	.0	2.3	5.4	.0	3983.2	
	TOTAL	22.1	3.9	23.6	24.7	.2	- 2.7	.0	.0		
								8.1		3987.3	
Reas. Maximum	Jan	2.6	.1	.1	.0	.0	2.4	10.5	.0	3990.3	
	Feb	2.7	.1	.1	.0	.0	2.5	13.0	.0	3992.9	
	Mar	4.7	.2	.1	.0	.0	4.4	17.4	.0	3997.1	
	Apr	3.7	.3	.6	1.1	.0	2.8	20.2	.0	3999.4	
	May	2.4	.7	.8	1.1	.0	.9	21.1	.0	4000.1	
	Jun	3.2	.6	1.6	2.2	.0	1.0	22.1	.0	4000.8	
	Jul	2.1	.9	6.5	7.5	.0	- 5.3	16.8	.0	3996.5	
	Aug	1.6	.7	6.4	7.5	.0	- 5.5	11.3	.0	3991.1	
	Sep	1.3	.4	1.7	2.2	.0	- .8	10.5	.0	3990.3	
	Oct	1.8	.2	.1	.0	.0	1.5	12.0	.0	3991.9	
	Nov	2.5	.2	.1	.0	.0	2.2	14.2	.0	3994.1	
	Dec	2.9	.1	.1	.0	.0	2.7	16.9	.0	3996.6	
	TOTAL	31.5	4.5	18.2	21.6	.0	8.8	.0	.0		

[1] BASED ON 10,800 ACRES TO BE IRRIGATED IN 1971.

TABLE 3
MERRITT RESERVOIR AND AINSWORTH CANAL OPERATION ESTIMATES - 1971
(UNITS IN 1,000 ACRE-FEET)

	Month	Hist. Inflow	Net Evap. AF	Ainsworth Canal Req. [1]	Release to River	Total Release Req.	Res. Change	Res. Cont. at End of Month	Res. Spill	Res. Elev. at End of Month
								60.9		2941.0
Reas. Minimum	Jan	14.5	.2	.0	1.0	1.0	.0	60.9	13.3	2941.0
	Feb	14.1	.2	.0	1.0	1.0	.0	60.9	12.9	2941.0
	Mar	16.6	.4	.0	1.0	1.0	13.6	74.5	1.6	2946.0
	Apr	15.3	1.5	.0	1.0	1.0	.0	74.5	12.8	2946.0
	May	15.8	1.9	11.0	1.0	12.0	.0	74.5	1.9	2946.0
	Jun	14.0	2.3	11.0	1.0	12.0	- .3	74.2	.0	2945.9
	Jul	13.3	2.3	38.6	1.0	39.6	- 28.6	45.6	.0	2934.2
	Aug	13.4	1.1	38.6	1.0	39.6	- 27.3	18.3	.0	2914.2
	Sep	13.3	.6	11.0	1.0	12.0	.7	19.0	.0	2915.0
	Oct	14.8	.4	.0	1.0	1.0	13.4	32.4	.0	2926.4
	Nov	14.6	.3	.0	1.0	1.0	13.3	45.7	.0	2934.2
	Dec	15.1	.2	.0	1.0	1.0	13.9	59.6	.0	2940.5
	TOTAL	174.8	11.4	110.2	12.0	122.2	- 1.3	.0	42.5	
								60.9		2941.0
Most Probable	Jan	16.2	.2	.0	1.0	1.0	.0	60.9	15.0	2941.0
	Feb	15.2	.2	.0	1.0	1.0	.0	60.9	14.0	2941.0
	Mar	17.4	.4	.0	1.0	1.0	13.6	74.5	2.4	2946.0
	Apr	16.9	1.1	.0	1.0	1.0	.0	74.5	14.8	2946.0
	May	17.2	1.6	4.0	1.0	5.0	.0	74.5	10.6	2946.0
	Jun	15.5	1.8	4.1	1.0	5.1	.0	74.5	8.6	2946.0
	Jul	14.8	2.0	32.5	1.0	33.6	- 20.8	53.7	.0	2938.0
	Aug	14.8	1.3	32.5	1.0	33.6	- 20.1	33.6	.0	2927.2
	Sep	14.8	.8	8.1	1.0	9.1	4.9	38.5	.0	2930.3
	Oct	15.9	.7	.0	1.0	1.0	14.2	52.7	.0	2937.6
	Nov	15.8	.5	.0	1.0	1.0	8.2	60.9	6.1	2941.0
	Dec	16.1	.2	.0	1.0	1.0	.0	60.9	14.9	2941.0
	TOTAL	190.6	10.8	81.2	12.0	93.4	.0	.0	86.4	
								60.9		2941.0
Reas. Maximum	Jan	17.3	.2	.0	1.0	1.0	.0	60.9	16.1	2941.0
	Feb	16.3	.2	.0	1.0	1.0	.0	60.9	15.1	2941.0
	Mar	18.7	.4	.0	1.0	1.0	13.6	74.5	3.7	2946.0
	Apr	18.8	.8	.0	1.0	1.0	.0	74.5	17.0	2946.0
	May	18.4	1.3	2.6	1.0	3.6	.0	74.5	13.5	2946.0
	Jun	16.6	1.5	2.6	1.0	3.6	.0	74.5	11.5	2946.0
	Jul	16.3	1.8	20.6	1.0	21.6	- 7.1	67.4	.0	2943.5
	Aug	15.8	1.5	20.6	1.0	21.6	- 7.3	60.1	.0	2940.7
	Sep	15.8	1.1	5.2	1.0	6.2	.8	60.9	7.7	2941.0
	Oct	16.9	.9	.0	1.0	1.0	.0	60.9	15.0	2941.0
	Nov	16.6	.5	.0	1.0	1.0	.0	60.9	15.1	2941.0
	Dec	17.5	.2	.0	1.0	1.0	.0	60.9	16.3	2941.0
	TOTAL	205.0	10.4	51.6	12.0	63.6	- .0	.0	131.0	

[1] BASED ON 29,000 ACRES TO BE IRRIGATED IN 1971.

TABLE 3
SHERMAN RESERVOIR AND FARWELL CANALS
OPERATION ESTIMATES - 1971
(UNITS IN 1,000 ACRE-FEET)

	Month	Hist. Inflow	Net Evap. AF	Canal Req.[1]	Total Release Req.	Seepage	Res. Change	Res. Cont. at End of Month	Res. Spill	Res. Elev. at End of Month
								38.7		2149.7
Reas. Minimum	Jan	.0	.1	.0	.0	1.5	- 1.6	37.1	.0	2148.9
	Feb	.0	.2	.0	.0	1.5	- 1.7	35.4	.0	2148.0
	Mar	.0	.1	.0	.0	1.5	- 1.6	33.8	.0	2147.1
	Apr	31.7	1.2	.0	.0	1.5	29.0	62.8	.0	2160.0
	May	16.4	1.8	9.7	9.7	1.5	3.4	66.2	.0	2161.3
	Jun	13.3	2.2	9.7	9.7	1.5	- .1	66.1	.0	2161.2
	Jul	20.0	2.3	34.6	34.6	1.5	- 18.4	47.7	.0	2154.0
	Aug	18.6	1.5	34.6	34.6	1.5	- 19.0	28.7	.0	2144.1
	Sep	31.5	1.2	9.7	9.7	1.5	19.1	47.8	.0	2154.0
	Oct	6.5	.9	.0	.0	1.5	4.1	51.9	.0	2155.8
	Nov	.0	.5	.0	.0	1.5	- 2.0	49.9	.0	2154.9
	Dec	.0	.2	.0	.0	1.5	- 1.7	48.2	.0	2154.2
	TOTAL	138.0	12.2	98.3	98.3	18.0	9.5	.0	.0	
								38.7		2149.7
Most Probable	Jan	.0	.1	.0	.0	1.5	- 1.6	37.1	.0	2148.9
	Feb	.0	.2	.0	.0	1.5	- 1.7	35.4	.0	2148.0
	Mar	.0	.1	.0	.0	1.5	- 1.6	33.8	.0	2147.1
	Apr	32.0	.9	.0	.0	1.5	29.6	63.4	.0	2160.3
	May	8.5	1.5	2.7	2.7	1.5	2.8	66.2	.0	2161.3
	Jun	6.0	1.8	2.7	2.7	1.5	.0	66.2	.0	2161.3
	Jul	26.0	2.1	26.6	26.6	1.5	- 4.2	62.0	.0	2159.7
	Aug	22.0	1.8	26.7	26.7	1.5	- 8.0	54.0	.0	2156.6
	Sep	7.7	1.3	6.5	6.5	1.5	- 1.6	52.4	.0	2156.0
	Oct	.0	.9	.0	.0	1.5	- 2.4	50.0	.0	2155.0
	Nov	.0	.5	.0	.0	1.5	- 2.0	48.0	.0	2154.1
	Dec	.0	.2	.0	.0	1.5	- 1.7	46.3	.0	2153.3
	TOTAL	102.2	11.4	65.2	65.2	18.0	7.6	.0	.0	
								38.7		2149.7
Reas. Maximum	Jan	.0	.1	.0	.0	1.5	- 1.6	37.1	.0	2148.9
	Feb	.0	.2	.0	.0	1.5	- 1.7	35.4	.0	2148.0
	Mar	.0	.1	.0	.0	1.5	- 1.6	33.8	.0	2147.1
	Apr	32.0	.7	.0	.0	1.5	29.8	63.6	.0	2160.3
	May	7.6	1.3	2.2	2.2	1.5	2.6	66.2	.0	2161.3
	Jun	5.1	1.4	2.2	2.2	1.5	.0	66.2	.0	2161.3
	Jul	21.3	1.8	18.0	18.0	1.5	.0	66.2	.0	2161.3
	Aug	13.5	1.5	18.0	18.0	1.5	- 7.5	58.7	.0	2158.5
	Sep	.0	1.0	4.3	4.3	1.5	- 6.8	51.9	.0	2155.8
	Oct	.0	.9	.0	.0	1.5	- 2.4	49.5	.0	2154.7
	Nov	.0	.5	.0	.0	1.5	- 2.0	47.5	.0	2153.9
	Dec	.0	.2	.0	.0	1.5	- 1.7	45.8	.0	2153.1
	TOTAL	79.5	9.7	44.7	44.7	18.0	7.1	.0	.0	

[1] BASED ON 36,000 ACRES TO BE IRRIGATED UNDER THE FARWELL CANAL SYSTEMS IN 1971.

TABLE 3
BONNY RESERVOIR AND HALE DITCH
OPERATION ESTIMATES - 1971
(UNITS IN 1,000 ACRE-FEET)

	MONTH	HIST. INFLOW	NET EVAP. AF	REL.TO HALE DITCH [1]	REL. TO RIVER	TOTAL RELEASE REQ.	RES. CHANGE	RES.CONT. AT END OF MONTH	RES. SPILL	RES.ELEV. AT END OF MONTH
								38.1		3670.4
REAS. MINIMUM	JAN	1.9	.2	.0	.4	.4	1.3	39.4	.0	3671.0
	FEB	1.9	.3	.0	.4	.4	1.2	40.6	.0	3671.6
	MAR	2.3	.4	.0	.4	.4	.7	41.3	.8	3672.0
	APR	2.0	.7	.3	.4	.7	.0	41.3	.6	3672.0
	MAY	1.9	.9	.9	4.1	5.0	- 4.0	37.3	.0	3670.0
	JUN	1.3	1.1	.9	.4	1.3	- 1.1	36.2	.0	3669.4
	JUL	.7	1.3	.9	.4	1.3	- 1.9	34.3	.0	3668.3
	AUG	.4	1.1	.8	.4	1.2	- 1.9	32.4	.0	3667.3
	SEP	.4	.8	.6	.4	1.0	- 1.4	31.0	.0	3666.5
	OCT	1.1	.7	.5	.4	.9	- .5	30.5	.0	3666.2
	NOV	1.6	.4	.3	.4	.7	.5	31.0	.0	3666.5
	DEC	1.8	.3	.0	.4	.4	1.1	32.1	.0	3667.1
	TOTAL	17.3	8.2	5.2	8.5	13.7	- 6.0	.0	1.4	
								38.1		3670.4
MOST PROBABLE	JAN	2.2	.2	.0	.4	.4	1.6	39.7	.0	3671.2
	FEB	2.2	.2	.0	.4	.4	1.6	41.3	.0	3672.0
	MAR	2.9	.3	.0	.4	.4	.0	41.3	2.2	3672.0
	APR	2.6	.5	.4	.4	.8	.0	41.3	1.3	3672.0
	MAY	3.0	.5	.6	4.2	4.8	- 3.9	37.4	1.6	3670.0
	JUN	3.1	.7	.6	3.4	4.0	- 1.6	35.8	.0	3669.2
	JUL	1.7	1.0	.4	.4	.8	- .1	35.7	.0	3669.1
	AUG	1.8	.9	.4	.4	.8	.1	35.8	.0	3669.2
	SEP	1.5	.7	.6	2.0	2.6	- 1.8	34.0	.0	3668.2
	OCT	1.7	.7	.6	.4	1.0	.0	34.0	.0	3668.2
	NOV	2.1	.4	.2	1.5	1.7	.0	34.0	.0	3668.2
	DEC	2.2	.2	.0	.4	.4	1.6	35.6	.0	3669.1
	TOTAL	27.0	6.3	3.8	14.3	18.1	- 2.5	.0	5.1	
								38.1		3670.4
REAS. MAXIMUM	JAN	2.7	.1	.0	.4	.4	2.2	40.3	.0	3671.5
	FEB	2.7	.2	.0	.4	.4	1.0	41.3	1.1	3672.0
	MAR	3.5	.2	.0	2.1	2.1	.0	41.3	1.2	3672.0
	APR	3.2	.4	.3	2.5	2.8	.0	41.3	.0	3672.0
	MAY	5.2	.3	.5	4.2	4.7	- 3.9	37.4	4.1	3670.0
	JUN	6.4	.4	.2	5.8	6.0	.0	37.4	.0	3670.0
	JUL	4.2	.8	.2	3.2	3.4	.0	37.4	.0	3670.0
	AUG	4.2	.6	.4	3.2	3.6	.0	37.4	.0	3670.0
	SEP	2.5	.5	.4	3.5	3.9	- 1.9	35.5	.0	3669.0
	OCT	2.3	.5	.3	1.5	1.8	.0	35.5	.0	3669.0
	NOV	2.4	.4	.3	1.7	2.0	.0	35.5	.0	3669.0
	DEC	2.5	.2	.0	.4	.4	1.9	37.4	.0	3670.0
	TOTAL	41.8	4.6	2.6	28.9	31.5	- .7	.0	6.4	

[1] BASED ON 700 ACRES TO BE IRRIGATED IN 1971.

TABLE 3
SWANSON LAKE, MEEKER-DRIFTWOOD AND BARTLEY CANALS
OPERATION ESTIMATES - 1971
(UNITS IN 1,000 ACRE-FEET)

	Month	Undepl. Inflow	Corr. For Upstr. Depl.	Depl. Inflow	Net Evap. AF	Meeker-Driftwood Canal Req.[1]	Total Release Req.	Bartley Canal Req.[2]	Res. Change	Res. Cont. at End of Month	Res. Spill	Res. Elev. at End of Month
										65.0		2739.3
Reas. Minimum	Jan	7.5	- 1.5	6.0	.3	.0	.1	.0	5.6	70.6	.0	2740.7
	Feb	9.5	- 1.5	8.0	.4	.0	.1	.0	7.5	78.1	.0	2742.6
	Mar	11.1	- 1.1	10.0	.7	.0	.1	.0	9.2	87.3	.0	2744.9
	Apr	8.5	- .7	7.8	1.4	.0	.1	.0	6.3	93.6	.0	2746.3
	May	7.7	3.1	10.8	1.5	4.1	5.9	1.5	3.4	97.0	.0	2747.1
	Jun	6.9	.0	6.9	1.9	4.1	6.0	1.5	- 1.0	96.0	.0	2746.9
	Jul	2.4	.5	2.9	2.7	12.3	19.8	4.4	- 19.6	76.4	.0	2742.2
	Aug	1.9	.7	2.6	2.2	12.3	19.7	4.4	- 19.3	57.1	.0	2737.1
	Sep	.5	.6	1.1	1.4	6.1	10.7	2.1	- 11.0	46.1	.0	2733.6
	Oct	2.6	- .2	2.4	1.1	2.1	3.5	.7	- 2.2	43.9	.0	2732.9
	Nov	5.7	- .9	4.8	.7	.0	.1	.0	4.0	47.9	.0	2734.2
	Dec	6.7	- 1.4	5.3	.3	.0	.1	.0	4.9	52.8	.0	2735.8
	TOTAL	71.0	- 2.4	68.6	14.6	41.0	66.2	14.6	- 12.2	.0	.0	
										65.0		2739.3
Most Probable	Jan	9.6	- 1.8	7.8	.2	.0	.1	.0	7.5	72.5	.0	2741.2
	Feb	12.0	- 1.8	10.2	.3	.0	.1	.0	9.8	82.3	.0	2743.7
	Mar	14.3	- .3	14.0	.5	.0	.1	.0	13.4	95.7	.0	2746.8
	Apr	12.0	- .5	11.5	.9	.0	.1	.0	10.5	106.2	.0	2749.1
	May	13.5	3.4	16.9	.8	1.4	1.4	.5	14.0	120.2	.7	2752.0
	Jun	15.7	.9	16.6	1.5	1.5	1.5	.5	.0	120.2	13.6	2752.0
	Jul	5.7	- 1.0	4.7	2.4	10.0	15.0	3.5	- 12.7	107.5	.0	2749.4
	Aug	6.0	- 1.1	4.9	2.2	11.6	17.0	4.0	- 14.3	93.2	.0	2746.2
	Sep	5.0	1.1	6.1	1.2	2.9	4.6	1.0	.3	93.5	.0	2746.3
	Oct	4.6	- .7	3.9	1.6	1.5	1.5	.5	.8	94.3	.0	2746.5
	Nov	8.1	- .4	7.7	.8	.0	.1	.0	6.8	101.1	.0	2748.0
	Dec	8.5	- 1.8	6.7	.4	.0	.1	.0	6.2	107.3	.0	2749.3
	TOTAL	115.0	- 4.0	111.0	12.8	28.9	41.6	10.0	42.3	.0	14.3	
										65.0		2739.3
Reas. Maximum	Jan	11.8	- 2.3	9.5	.2	.0	.1	.0	9.2	74.2	.0	2741.7
	Feb	14.5	- 2.2	12.3	.2	.0	.1	.0	12.0	86.2	.0	2744.6
	Mar	19.3	- .2	19.1	.2	.0	.1	.0	18.8	105.0	.0	2748.8
	Apr	16.3	- .4	15.9	.2	.0	.1	.0	15.2	120.2	.4	2752.0
	May	23.1	3.6	26.7	.3	.8	.8	.3	.0	120.2	25.6	2752.0
	Jun	27.4	- .4	27.0	.8	.9	.9	.3	.0	120.2	25.3	2752.0
	Jul	29.3	- .9	28.4	1.7	5.9	7.8	2.1	.0	120.2	18.9	2752.0
	Aug	18.3	- .7	17.6	2.1	6.8	9.4	2.3	.0	120.2	6.1	2752.0
	Sep	10.5	1.4	11.9	1.0	1.7	1.7	.6	.0	120.2	9.2	2752.0
	Oct	8.7	- .5	8.2	1.6	.9	.9	.3	.0	120.2	5.7	2752.0
	Nov	10.1	- .4	9.7	.7	.0	.1	.0	.0	120.2	8.9	2752.0
	Dec	10.7	- 2.1	8.6	.3	.0	.1	.0	.0	120.2	8.2	2752.0
	TOTAL	200.0	- 5.1	194.9	9.3	17.0	22.1	5.9	55.2	.0	108.3	

[1] BASED ON 15,200 ACRES TO BE IRRIGATED IN 1971.
[2] BASED ON 5,600 ACRES TO BE IRRIGATED IN 1971.

TABLE 3
ENDERS RESERVOIR, CULBERTSON AND CULBERTSON EXTENSION CANALS
OPERATION ESTIMATES - 1971
(UNITS IN 1,000 ACRE-FEET)

	MONTH	HIST. INFLOW	NET EVAP. AF	TOTAL RELEASE REQ.	CULBERTSON CANAL REQ.[1]	CULB. EXT. CANAL REQ. [2]	RES. CHANGE	RES. CONT. AT END OF MONTH	RES. SPILL	RES. ELEV. AT END OF MONTH	REQ. SHORTAGE
								23.0		3097.0	
REAS. MINIMUM	JAN	4.5	.1	.6	.0	.0	3.8	26.8	.0	3100.2	
	FEB	4.0	.1	.6	.0	.0	3.3	30.1	.0	3102.8	
	MAR	4.0	.2	.6	.0	.0	3.2	33.3	.0	3105.1	
	APR	3.6	.5	.6	.0	.0	2.5	35.8	.0	3106.8	
	MAY	4.0	.6	2.0	2.3	3.1	1.4	37.2	.0	3107.8	
	JUN	4.2	.7	3.0	2.3	3.1	.5	37.7	.0	3108.1	
	JUL	3.9	1.0	17.3	6.9	9.3	- 14.4	23.3	.0	3097.3	
	AUG	4.1	.5	16.2	6.9	9.3	- 12.6	10.7	.0	3083.5	
	SEP	3.8	.3	6.9	3.4	4.6	- .3	10.4	.0	3083.0	3.1
	OCT	4.2	.3	.6	1.2	1.6	3.3	13.7	.0	3087.5	
	NOV	4.2	.2	.6	.0	.0	3.4	17.1	.0	3091.4	
	DEC	4.3	.1	.6	.0	.0	3.6	20.7	.0	3095.0	
	TOTAL	48.8	4.6	49.6	23.0	31.0	- 2.3	.0	.0		
								23.0		3097.0	
MOST PROBABLE	JAN	5.5	.1	.6	.0	.0	4.8	27.8	.0	3101.0	
	FEB	5.1	.1	.6	.0	.0	4.4	32.2	.0	3104.3	
	MAR	5.2	.2	.6	.0	.0	4.4	36.6	.0	3107.4	
	APR	4.9	.3	.6	.0	.0	4.0	40.6	.0	3110.0	
	MAY	5.0	.4	.6	.8	1.1	3.9	44.5	.1	3112.3	
	JUN	5.1	.5	.6	.8	1.1	.0	44.5	4.0	3112.3	
	JUL	4.7	.8	12.1	5.6	7.6	- 8.2	36.3	.0	3107.2	
	AUG	4.5	.7	14.0	6.4	8.6	- 10.2	26.1	.0	3099.6	
	SEP	4.5	.4	1.3	1.6	2.2	2.8	28.9	.0	3101.9	
	OCT	4.7	.5	.6	.8	1.1	3.6	32.5	.0	3104.5	
	NOV	5.0	.3	.6	.0	.0	4.1	36.6	.0	3107.4	
	DEC	5.2	.1	.6	.0	.0	4.5	41.1	.0	3110.3	
	TOTAL	59.4	4.4	32.8	16.0	21.7	18.1	.0	4.1		
								23.0		3097.0	
REAS. MAXIMUM	JAN	6.1	.1	.6	.0	.0	5.4	28.4	.0	3101.5	
	FEB	5.7	.0	.6	.0	.0	5.1	33.5	.0	3105.3	
	MAR	6.0	.1	.6	.0	.0	5.3	38.8	.0	3108.8	
	APR	5.6	.1	.6	.0	.0	4.9	43.7	.0	3111.8	
	MAY	6.1	.2	.6	.5	.6	.8	44.5	4.5	3112.3	
	JUN	6.6	.3	.6	.5	.6	.0	44.5	5.7	3112.3	
	JUL	5.5	.6	3.2	3.5	4.8	.0	44.5	1.7	3112.3	
	AUG	5.5	.6	6.0	4.0	5.4	- 1.1	43.4	.0	3111.7	
	SEP	5.7	.3	.6	1.0	1.4	1.1	44.5	3.7	3112.3	
	OCT	5.5	.5	.6	.5	.6	.0	44.5	4.4	3112.3	
	NOV	5.6	.3	.6	.0	.0	.0	44.5	4.7	3112.3	
	DEC	5.8	.1	.6	.0	.0	.0	44.5	5.1	3112.3	
	TOTAL	69.7	3.2	15.2	10.0	13.4	21.5	.0	29.8		

[1] BASED ON 8,000 ACRES TO BE IRRIGATED IN 1971.
[2] BASED ON 10,800 ACRES TO BE IRRIGATED IN 1971.

TABLE 3
HUGH BUTLER LAKE AND RED WILLOW CANAL
OPERATION ESTIMATES - 1971
(UNITS IN 1,000 ACRE-FEET)

	Month	Hist. Inflow	Net Evap. AF	Total Release Req.	Canal Req.[1]	Res. Change	Res.Cont. at End of Month	Res. Spill	Res.Elev. at End of Month
							31.7		2577.9
Reas. Minimum	Jan	1.2	.1	.2	.0	.9	32.6	.0	2578.5
	Feb	1.4	.1	.2	.0	1.1	33.7	.0	2579.2
	Mar	1.7	.3	.2	.0	1.2	34.9	.0	2580.0
	Apr	1.5	.6	.2	.0	.7	35.6	.0	2580.4
	May	1.7	.6	1.3	1.1	- .2	35.4	.0	2580.3
	Jun	1.5	.9	1.3	1.1	- .7	34.7	.0	2579.9
	Jul	1.1	1.0	3.4	3.4	- 3.3	31.4	.0	2577.6
	Aug	.8	.8	3.4	3.4	- 3.4	28.0	.0	2575.2
	Sep	.7	.6	1.9	1.8	- 1.8	26.2	.0	2573.7
	Oct	.8	.5	.8	.6	- .5	25.7	.0	2573.3
	Nov	1.0	.3	.2	.0	.5	26.2	.0	2573.7
	Dec	1.1	.1	.2	.0	.8	27.0	.0	2574.4
	TOTAL	14.5	5.9	13.3	11.4	- 4.7	.0	.0	
							31.7		2577.9
Most Probable	Jan	1.5	.1	.2	.0	1.2	32.9	.0	2578.7
	Feb	1.6	.1	.2	.0	1.3	34.2	.0	2579.5
	Mar	2.0	.2	.2	.0	1.6	35.8	.0	2580.6
	Apr	1.9	.4	.2	.0	1.3	37.1	.0	2581.4
	May	2.4	.4	.6	.4	.7	37.8	.7	2581.8
	Jun	3.1	.4	.6	.4	.0	37.8	2.1	2581.8
	Jul	1.9	.8	2.7	2.8	- 1.6	36.2	.0	2580.8
	Aug	1.1	.7	3.1	3.1	- 2.7	33.5	.0	2579.1
	Sep	1.0	.5	.9	.8	- .4	33.1	.0	2578.8
	Oct	1.1	.5	.6	.4	.0	33.1	.0	2578.8
	Nov	1.4	.2	.2	.0	1.0	34.1	.0	2579.5
	Dec	1.5	.1	.2	.0	1.2	35.3	.0	2580.3
	TOTAL	20.5	4.4	9.7	7.9	3.6	.0	2.8	
							31.7		2577.9
Reas. Maximum	Jan	1.8	.0	.2	.0	1.6	33.3	.0	2578.9
	Feb	1.9	.1	.2	.0	1.6	34.9	.0	2580.0
	Mar	2.5	.1	.2	.0	2.2	37.1	.0	2581.4
	Apr	2.4	.2	.2	.0	.7	37.8	1.3	2581.8
	May	2.9	.2	.2	.0	.0	37.8	2.5	2581.8
	Jun	5.4	.2	.2	.0	.0	37.8	5.0	2581.8
	Jul	3.0	.5	1.7	1.6	.0	37.8	.8	2581.8
	Aug	1.8	.6	1.9	1.9	- .7	37.1	.0	2581.4
	Sep	2.3	.4	.6	.5	.7	37.8	.6	2581.8
	Oct	1.5	.4	.2	.0	.0	37.8	.9	2581.8
	Nov	1.6	.2	.2	.0	.0	37.8	1.2	2581.8
	Dec	1.6	.1	.2	.0	.0	37.8	1.3	2581.8
	TOTAL	28.7	3.0	6.0	4.0	6.1	.0	13.6	

[1] BASED ON 4,000 ACRES TO BE IRRIGATED IN 1971.

TABLE 3
HARRY STRUNK LAKE AND CAMBRIDGE CANAL
OPERATION ESTIMATES - 1971
(UNITS IN 1,000 ACRE-FEET)

	MONTH	HIST. INFLOW	NET EVAP. AF	TOTAL RELEASE REQ.	CANAL REQ.[1]	RES. CHANGE	RES. CONT. AT END OF MONTH	RES. SPILL	RES. ELEV. AT END OF MONTH
							24.9		2358.4
REAS. MINIMUM	JAN	3.0	.1	.3	.0	2.6	27.5	.0	2360.3
	FEB	3.3	.1	.3	.0	2.9	30.4	.0	2362.2
	MAR	3.8	.3	.3	.0	3.2	33.6	.0	2364.1
	APR	3.6	.6	.3	.0	2.7	36.3	.0	2365.6
	MAY	3.5	.6	2.3	3.8	.6	36.9	.0	2366.0
	JUN	3.9	.8	2.3	3.8	.2	37.1	.6	2366.1
	JUL	2.8	1.2	9.9	11.4	- 8.3	28.8	.0	2361.1
	AUG	2.8	.8	10.1	11.6	- 8.1	20.7	.0	2355.1
	SEP	2.2	.4	4.3	5.8	- 2.5	18.2	.0	2352.9
	OCT	2.5	.4	.7	2.0	1.4	19.6	.0	2354.2
	NOV	2.9	.3	.3	.0	2.3	21.9	.0	2356.1
	DEC	2.9	.1	.3	.0	2.5	24.4	.0	2358.1
	TOTAL	37.2	5.7	31.4	38.4	- .5	.0	.6	
							24.9		2358.4
MOST PROBABLE	JAN	3.6	.1	.3	.0	3.2	28.1	.0	2360.7
	FEB	3.8	.1	.3	.0	3.4	31.5	.0	2362.9
	MAR	4.4	.2	.3	.0	3.9	35.4	.0	2365.1
	APR	4.7	.3	.3	.0	1.7	37.1	2.4	2366.1
	MAY	6.1	.4	.3	1.2	.0	37.1	5.4	2366.1
	JUN	7.6	.6	.3	1.4	.0	37.1	6.7	2366.1
	JUL	6.1	.9	7.6	9.1	- 2.4	34.7	.0	2364.7
	AUG	3.6	.7	8.8	10.3	- 5.9	28.8	.0	2361.1
	SEP	3.1	.5	1.1	2.6	1.5	30.3	.0	2362.1
	OCT	3.1	.6	.3	1.2	2.2	32.5	.0	2363.5
	NOV	3.3	.3	.3	.0	2.7	35.2	.0	2365.0
	DEC	3.4	.1	.3	.0	1.9	37.1	1.1	2366.1
	TOTAL	52.8	4.8	20.2	25.8	12.2	.0	15.6	
							24.9		2358.4
REAS. MAXIMUM	JAN	4.2	.0	.3	.0	3.9	28.8	.0	2361.1
	FEB	4.6	.1	.3	.0	4.2	33.0	.0	2363.8
	MAR	5.7	.1	.3	.0	4.1	37.1	1.2	2366.1
	APR	6.1	.1	.3	.0	.0	37.1	5.7	2366.1
	MAY	8.3	.1	.3	.8	.0	37.1	7.9	2366.1
	JUN	20.4	.2	.3	.8	.0	37.1	19.9	2366.1
	JUL	9.5	.8	3.8	5.3	.0	37.1	4.9	2366.1
	AUG	5.8	.6	4.6	6.1	.0	37.1	.6	2366.1
	SEP	6.4	.4	.3	1.5	.0	37.1	5.7	2366.1
	OCT	4.0	.6	.3	.8	.0	37.1	3.1	2366.1
	NOV	3.8	.1	.3	.0	.0	37.1	3.4	2366.1
	DEC	4.1	.1	.3	.0	.0	37.1	3.7	2366.1
	TOTAL	82.9	3.2	11.4	15.3	12.2	.0	56.1	

[1] BASED ON 15,200 ACRES TO BE IRRIGATED IN 1971.

TABLE 3
NORTON RESERVOIR AND ALMENA CANAL
OPERATION ESTIMATES - 1971
(UNITS IN 1,000 ACRE-FEET)

	Month	Hist. Inflow	Net Evap. AF	City of Norton Req.	Total Release Req.	Canal Req.[1]	Res. Change	Res. Cont. at End of Month	Res. Spill	Res. Elev. at End of Month	Req. Shortage
								8.5		2285.0	
Reas. Minimum	Jan	.2	.1	.1	.1	.0	.0	8.5	.0	2285.0	
	Feb	.4	.1	.1	.1	.0	.2	8.7	.0	2285.2	
	Mar	.5	.1	.1	.1	.0	.3	9.0	.0	2285.6	
	Apr	.5	.3	.1	.1	.0	.1	9.1	.0	2285.7	
	May	.9	.3	.1	2.2	1.6	- 1.6	7.5	.0	2283.7	
	Jun	2.2	.5	.1	2.6	1.6	- .9	6.6	.0	2282.5	
	Jul	1.1	.4	.2	6.5	4.8	- 3.0	3.6	.0	2277.1	2.8
	Aug	.8	.3	.2	6.2	4.8	.0	3.6	.0	2277.1	5.7
	Sep	.3	.2	.1	3.2	2.4	.0	3.6	.0	2277.1	3.1
	Oct	.1	.2	.1	1.4	.8	- .1	3.5	.0	2276.9	1.4
	Nov	.2	.1	.1	.1	.0	.0	3.6	.0	2277.1	.0
	Dec	.2	.0	.1	.1	.0	.1	3.7	.0	2277.3	
	TOTAL	7.4	2.6	1.4	22.7	16.0	- 4.8	.0	.0		
								8.5		2285.0	
Most Probable	Jan	.4	.1	.1	.1	.0	.2	8.7	.0	2285.2	
	Feb	.7	.1	.1	.1	.0	.5	9.2	.0	2285.9	
	Mar	.8	.1	.1	.1	.0	.6	9.8	.0	2286.6	
	Apr	.9	.2	.1	.1	.0	.6	10.4	.0	2287.2	
	May	2.4	.2	.1	.2	.5	2.0	12.4	.0	2289.3	
	Jun	6.7	.4	.1	.1	.5	6.2	18.6	.0	2294.5	
	Jul	4.4	.7	.1	4.2	3.5	- .5	18.1	.0	2294.1	
	Aug	1.8	.6	.1	4.7	4.0	- 3.5	14.6	.0	2291.3	
	Sep	.8	.4	.1	1.2	1.0	- .8	13.8	.0	2290.5	
	Oct	.4	.4	.1	.7	.5	- .7	13.1	.0	2289.9	
	Nov	.3	.2	.1	.1	.0	.0	13.1	.0	2289.9	
	Dec	.4	.1	.1	.1	.0	.2	13.3	.0	2290.1	
	TOTAL	20.0	3.5	1.2	11.7	10.0	4.8	.0	.0		
								8.5		2285.0	
Reas. Maximum	Jan	.8	.0	.1	.1	.0	.7	9.2	.0	2285.9	
	Feb	1.2	.0	.1	.1	.0	1.1	10.3	.0	2287.1	
	Mar	1.8	.0	.1	.1	.0	1.7	12.0	.0	2288.9	
	Apr	1.4	.1	.1	.1	.0	1.2	13.2	.0	2290.0	
	May	9.1	.1	.1	.1	.3	8.9	22.1	.0	2296.8	
	Jun	16.2	.4	.1	.1	.3	13.8	35.9	1.9	2304.3	
	Jul	10.7	.8	.1	.6	2.1	.0	35.9	9.3	2304.3	
	Aug	5.2	1.0	.1	1.7	2.4	.0	35.9	2.5	2304.3	
	Sep	3.1	.6	.1	.1	.6	.0	35.9	2.4	2304.3	
	Oct	1.9	.5	.1	.4	.3	.0	35.9	1.0	2304.3	
	Nov	.8	.2	.1	.1	.0	.0	35.9	.5	2304.3	
	Dec	.8	.1	.1	.1	.0	.0	35.9	.6	2304.3	
	TOTAL	53.0	3.8	1.2	3.6	6.0	27.4	.0	18.2		

[1] BASED ON 5,350 ACRES TO BE IRRIGATED IN 1971.

TABLE 3

HARLAN COUNTY RESERVOIR, FRANKLIN, NAPONEE, FRANKLIN PUMP, SUPERIOR, COURTLAND (NEBRASKA) AND COURTLAND ABV. LOVEWELL (KANSAS) CANALS
OPERATION ESTIMATES - 1971
(UNITS IN 1,000 ACRE-FEET)

	Month	Undepl. Inflow	Corr. For Upstr. Depl.	Depl. Inflow	Net Evap. AF	Franklin Canal Req.[1]	Naponee Canal Req.[2]	Franklin Total Release Req.	Franklin Pump Canal Req.[3]	Superior Canal Req.[4]	Courtland Canals In Nebr. Req.[5]	Courtland Canals In Kansas Above Lovewell[6]	Res. Change	Res. Cont. at End of Month	Res. Spill	Res. Elev. at End of Month
														233.6		1936.6
Reas. Minimum	Jan	19.2	- 13.8	5.4	.8	.0	.0	.6	.0	.0	.0	.0	4.0	237.6	.0	1937.0
	Feb	24.3	- 16.2	8.1	.7	.0	.0	.6	.0	.0	.0	.0	6.8	244.4	.0	1937.6
	Mar	32.1	- 18.7	13.4	1.5	.0	.0	.6	.0	.0	.0	.0	11.3	255.7	.0	1938.7
	Apr	28.0	- 15.3	12.7	4.2	.0	.0	.6	.0	.0	.0	.0	7.9	263.6	.0	1939.4
	May	36.5	- 17.3	19.2	4.0	3.2	.5	7.4	.7	1.6	.4	2.5	7.8	271.4	.0	1940.1
	Jun	42.0	- 16.5	25.5	6.2	3.2	.5	7.8	.7	1.6	.4	2.5	11.5	282.9	.0	1941.1
	Jul	15.4	3.3	18.7	9.0	9.6	1.5	35.3	2.1	4.6	1.3	7.3	- 25.6	257.3	.0	1938.8
	Aug	13.6	3.2	16.8	7.3	11.3	1.8	40.4	2.5	5.4	1.6	8.6	- 30.9	226.4	.0	1935.9
	Sep	6.2	.2	6.4	4.7	4.8	.8	13.6	1.1	2.2	.6	3.7	- 11.9	214.5	.0	1934.7
	Oct	5.6	- 8.2	.0	3.7	.0	.0	.7	.0	.0	.0	.0	- 4.4	210.1	.0	1934.3
	Nov	13.2	- 10.6	2.6	2.1	.0	.0	.6	.0	.0	.0	.0	- .1	210.0	.0	1934.2
	Dec	16.9	- 12.1	4.8	.9	.0	.0	.6	.0	.0	.0	.0	3.3	213.3	.0	1934.6
	TOTAL	253.0	-122.0	133.6	45.1	32.1	5.1	108.8	7.1	15.4	4.3	24.6	- 20.3	.0	.0	
														233.6		1936.6
Most Probable	Jan	22.4	- 18.0	4.4	.6	.0	.0	.6	.0	.0	.0	.0	3.2	236.8	.0	1936.9
	Feb	31.2	- 20.8	10.4	.5	.0	.0	.6	.0	.0	.0	.0	9.3	246.1	.0	1937.8
	Mar	38.0	- 24.3	13.7	1.0	.0	.0	.6	.0	.0	.0	.0	12.1	258.2	.0	1938.9
	Apr	38.8	- 19.6	19.2	1.2	.0	.0	.6	.0	.0	.0	.0	17.4	275.6	.0	1940.5
	May	59.9	- 20.9	39.0	3.2	1.1	.2	2.1	.2	.6	.2	.9	33.7	309.3	.0	1943.4
	Jun	106.6	- 13.6	93.0	5.8	1.1	.2	2.8	.3	.6	.2	.9	33.3	342.6	51.1	1946.0
	Jul	42.1	- 12.3	29.8	8.4	8.5	1.3	26.3	1.9	4.4	1.2	7.0	- 4.9	337.7	.0	1945.6
	Aug	26.6	- 5.7	20.9	6.5	8.5	1.3	25.8	1.9	4.5	1.2	7.1	- 11.4	326.3	.0	1944.7
	Sep	19.7	- 10.7	9.0	4.7	2.1	.3	4.5	.5	1.0	.3	1.8	- .2	326.1	.0	1944.7
	Oct	16.4	- 12.0	4.4	3.6	.0	.0	.6	.0	.0	.0	.0	.2	326.3	.0	1944.7
	Nov	20.8	- 14.7	6.1	1.6	.0	.0	.6	.0	.0	.0	.0	3.9	330.2	.0	1945.1
	Dec	23.5	- 14.8	8.7	.8	.0	.0	.6	.0	.0	.0	.0	7.3	337.5	.0	1945.6
	TOTAL	446.0	-187.4	258.6	37.9	21.3	3.3	65.7	4.8	11.1	3.1	17.7	103.9	.0	51.1	
														233.6		1936.6
Reas. Maximum	Jan	28.1	- 22.1	6.0	.0	.0	.0	.6	.0	.0	.0	.0	5.4	239.0	.0	1937.1
	Feb	42.6	- 25.5	17.1	.0	.0	.0	.6	.0	.0	.0	.0	16.5	255.5	.0	1938.6
	Mar	57.1	- 31.7	25.4	.0	.0	.0	.6	.0	.0	.0	.0	24.8	280.3	.0	1940.9
	Apr	55.8	- 22.0	33.8	.2	.0	.0	.6	.0	.0	.0	.0	33.0	313.3	.0	1943.7
	May	105.5	- 8.2	97.3	1.9	.6	.1	1.4	.1	.2	.1	.4	29.3	342.6	64.7	1946.0
	Jun	166.5	- 17.2	149.3	1.7	.6	.1	1.4	.1	.2	.1	.5	.0	342.6	146.2	1946.0
	Jul	105.4	- 24.6	80.8	7.2	4.3	.7	7.2	1.0	2.2	.6	3.4	.0	342.6	66.4	1946.0
	Aug	63.8	- 25.5	38.3	3.8	4.3	.7	7.2	1.0	2.2	.6	3.4	.0	342.6	27.3	1946.0
	Sep	75.0	- 6.4	68.6	4.2	1.0	.2	1.4	.2	.6	.1	.9	.0	342.6	63.0	1946.0
	Oct	34.4	- 4.4	30.0	2.5	.0	.0	.6	.0	.0	.0	.0	.0	342.6	26.9	1946.0
	Nov	31.4	.2	31.6	1.1	.0	.0	.6	.0	.0	.0	.0	.0	342.6	29.9	1946.0
	Dec	30.4	- 1.0	29.4	.4	.0	.0	.6	.0	.0	.0	.0	.0	342.6	28.4	1946.0
	TOTAL	796.0	-188.4	607.6	23.0	10.8	1.8	22.8	2.4	5.4	1.5	8.6	109.0	.0	452.8	

[1] BASED ON 9,550 ACRES TO BE IRRIGATED IN 1971.
[2] BASED ON 1,500 ACRES TO BE IRRIGATED IN 1971.
[3] BASED ON 2,110 ACRES TO BE IRRIGATED IN 1971.
[4] BASED ON 5,190 ACRES TO BE IRRIGATED IN 1971.
[5] BASED ON 1,650 ACRES TO BE IRRIGATED IN 1971.
[6] BASED ON 9,500 ACRES TO BE IRRIGATED IN 1971.

TABLE 3
LOVEWELL RESERVOIR AND COURTLAND CANAL
OPERATION ESTIMATES - 1971
(UNITS IN 1,000 ACRE-FEET)

	Month	Inflow From W.R.Cr.	Inflow From Court.	Total Inflow	Net Evap. AF	Canal Req.[1]	Total Release Req.	Res. Change	Res.Cont. at End of Month	Res. Spill	Res.Elev. at End of Month
									37.4		1581.1
Reas. Minimum	Jan	.1	.0	.1	.2	.0	.0	- .1	37.3	.0	1581.1
	Feb	.1	.0	.1	.2	.0	.0	- .1	37.2	.0	1581.0
	Mar	.2	.0	.2	.4	.0	.0	- .2	37.0	.0	1581.0
	Apr	.2	3.5	3.7	.9	.0	.0	2.8	39.8	.0	1582.0
	May	.9	1.2	2.1	.8	4.8	4.8	- 3.5	36.3	.0	1580.7
	Jun	1.6	2.4	4.0	1.3	4.8	4.8	- 2.1	34.2	.0	1579.9
	Jul	.7	9.7	10.4	1.6	14.2	14.2	- 5.4	28.8	.0	1577.7
	Aug	.4	9.7	10.1	1.1	16.7	16.7	- 7.7	21.1	.0	1574.1
	Sep	.3	1.2	1.5	.8	7.2	7.2	- 6.5	14.6	.0	1570.4
	Oct	.1	.0	.1	.5	.0	.0	- .4	14.2	.0	1570.1
	Nov	.0	.0	.0	.3	.0	.0	- .3	13.9	.0	1569.9
	Dec	.0	.0	.0	.1	.0	.0	- .1	13.8	.0	1569.9
	TOTAL	4.6	27.7	32.3	8.2	47.7	47.7	- 23.6	.0	.0	
									37.4		1581.1
Most Probable	Jan	.3	.0	.3	.1	.0	.0	.2	37.6	.0	1581.2
	Feb	.7	.0	.7	.1	.0	.0	.6	38.2	.0	1581.4
	Mar	1.1	.0	1.1	.2	.0	.0	.9	39.1	.0	1581.7
	Apr	1.2	.0	1.2	.5	.0	.0	.7	39.8	.0	1582.0
	May	4.2	5.3	9.5	.4	1.7	1.7	1.9	41.7	5.5	1582.6
	Jun	9.7	.0	9.7	.4	1.7	1.7	.0	41.7	7.6	1582.6
	Jul	2.6	9.8	12.4	1.3	13.7	13.7	- 2.6	39.1	.0	1581.7
	Aug	1.3	6.3	7.6	.9	13.9	13.9	- 7.2	31.9	.0	1579.0
	Sep	2.6	.0	2.6	.7	3.5	3.5	- 1.6	30.3	.0	1578.3
	Oct	1.2	.0	1.2	.4	.0	.0	.8	31.1	.0	1578.7
	Nov	.5	.0	.5	.3	.0	.0	.2	31.3	.0	1578.8
	Dec	.3	.0	.3	.1	.0	.0	.2	31.5	.0	1578.8
	TOTAL	25.7	21.4	47.1	5.4	34.5	34.5	- 5.9	.0	13.1	
									37.4		1581.1
Reas. Maximum	Jan	.6	.0	.6	.0	.0	.0	.6	38.0	.0	1581.3
	Feb	1.7	.0	1.7	.1	.0	.0	1.6	39.6	.0	1581.9
	Mar	3.3	.0	3.3	.1	.0	.0	2.1	41.7	1.1	1582.6
	Apr	3.6	.0	3.6	.1	.0	.0	.0	41.7	3.5	1582.6
	May	8.5	.0	8.5	.1	.7	.7	.0	41.7	7.7	1582.6
	Jun	20.8	.0	20.8	- .3	.9	.9	.0	41.7	20.2	1582.6
	Jul	11.8	.0	11.8	1.1	6.7	6.7	.0	41.7	4.0	1582.6
	Aug	4.0	.0	4.0	.7	6.7	6.7	- 3.4	38.3	.0	1581.4
	Sep	8.3	.0	8.3	.4	1.7	1.7	3.4	41.7	2.8	1582.6
	Oct	3.9	.0	3.9	.4	.0	.0	.0	41.7	3.5	1582.6
	Nov	1.1	.0	1.1	.2	.0	.0	.0	41.7	.9	1582.6
	Dec	.9	.0	.9	.0	.0	.0	.0	41.7	.9	1582.6
	TOTAL	68.5	.0	68.5	2.9	16.7	16.7	4.3	.0	44.6	

[1] BASED ON 18,500 ACRES TO BE IRRIGATED IN 1971.

TABLE 3
KIRWIN RESERVOIR AND KIRWIN CANAL
OPERATION ESTIMATES - 1971
(UNITS IN 1,000 ACRE-FEET)

	Month	Hist. Inflow	Net Evap. AF	Canal Req.[1]	Total Release Req.	Res. Change	Res. Cont. at End of Month	Res. Spill	Res. Elev. at End of Month
							74.6		1723.9
Reas. Minimum	Jan	.2	.3	.0	.0	- .1	74.5	.0	1723.9
	Feb	.9	.4	.0	.0	.5	75.0	.0	1724.0
	Mar	1.4	.6	.0	.0	.8	75.8	.0	1724.2
	Apr	1.7	1.6	.0	.0	.1	75.9	.0	1724.2
	May	2.2	1.7	2.7	2.7	- 2.2	73.7	.0	1723.7
	Jun	4.2	2.2	2.7	2.7	- .7	73.0	.0	1723.5
	Jul	2.8	3.0	8.0	8.0	- 8.2	64.8	.0	1721.5
	Aug	1.8	2.4	9.3	9.3	- 9.9	54.9	.0	1718.9
	Sep	.7	1.6	4.0	4.0	- 4.9	50.0	.0	1717.5
	Oct	.2	1.3	.0	.0	- 1.1	48.9	.0	1717.2
	Nov	.3	.7	.0	.0	- .4	48.5	.0	1717.0
	Dec	.3	.3	.0	.0	.0	48.5	.0	1717.0
	TOTAL	16.7	16.1	26.7	26.7	- 26.1	.0	.0	
							74.6		1723.9
Most Probable	Jan	.8	.3	.0	.0	.5	75.1	.0	1724.0
	Feb	1.8	.3	.0	.0	1.5	76.6	.0	1724.4
	Mar	2.1	.4	.0	.0	1.7	78.3	.0	1724.8
	Apr	2.7	.7	.0	.0	2.0	80.3	.0	1725.2
	May	4.3	1.3	.9	.9	2.1	82.4	.0	1725.7
	Jun	10.2	1.8	.9	.9	7.5	89.9	.0	1727.3
	Jul	6.4	2.5	7.2	7.2	- 3.3	86.6	.0	1726.6
	Aug	4.0	2.1	7.2	7.2	- 5.3	81.3	.0	1725.4
	Sep	2.4	1.6	1.8	1.8	- 1.0	80.3	.0	1725.2
	Oct	1.3	1.3	.0	.0	.0	80.3	.0	1725.2
	Nov	1.2	.7	.0	.0	.5	80.8	.0	1725.3
	Dec	.9	.3	.0	.0	.6	81.4	.0	1725.5
	TOTAL	38.1	13.3	18.0	18.0	6.8	.0	.0	
							74.6		1723.9
Reas. Maximum	Jan	2.0	.2	.0	.0	1.8	76.4	.0	1724.3
	Feb	2.6	.2	.0	.0	2.4	78.8	.0	1724.9
	Mar	3.3	.2	.0	.0	3.1	81.9	.0	1725.6
	Apr	5.2	.2	.0	.0	5.0	86.9	.0	1726.7
	May	15.3	.7	.5	.5	12.5	99.4	1.6	1729.2
	Jun	30.9	.7	.6	.6	.0	99.4	29.6	1729.2
	Jul	15.2	2.3	4.5	4.5	.0	99.4	8.4	1729.2
	Aug	11.6	2.0	4.5	4.5	.0	99.4	5.1	1729.2
	Sep	12.6	1.2	1.1	1.1	.0	99.4	10.3	1729.2
	Oct	5.0	1.0	.0	.0	.0	99.4	4.0	1729.2
	Nov	2.6	.4	.0	.0	.0	99.4	2.2	1729.2
	Dec	2.0	.2	.0	.0	.0	99.4	1.8	1729.2
	TOTAL	108.3	9.3	11.2	11.2	24.8	.0	63.0	

[1] BASED ON 10,000 ACRES TO BE IRRIGATED IN 1971.

TABLE 3
WEBSTER RESERVOIR AND OSBORNE CANAL
OPERATION ESTIMATES - 1971
(UNITS IN 1,000 ACRE-FEET)

	MONTH	HIST. INFLOW	NET EVAP. AF	TOTAL RELEASE REQ.	CANAL REQ.[1]	RES. CHANGE	RES. CONT. AT END OF MONTH	RES. SPILL	RES. ELEV. AT END OF MONTH	REQ. SHORTAGE
							9.1		1863.7	
REAS. MINIMUM	JAN	.3	.1	.0	.0	.2	9.3	.0	1863.8	
	FEB	.8	.1	.0	.0	.7	10.0	.0	1864.4	
	MAR	1.3	.2	.0	.0	1.1	11.1	.0	1865.3	
	APR	1.7	.6	.0	.0	1.1	12.2	.0	1866.1	
	MAY	1.9	.5	3.0	2.2	- 1.6	10.6	.0	1864.9	
	JUN	3.5	.8	3.9	2.2	- 1.2	9.4	.0	1863.9	
	JUL	1.7	.7	8.3	6.5	- 6.7	2.7	.0	1856.5	.6
	AUG	.6	.4	9.4	7.6	.0	2.7	.0	1856.5	9.2
	SEP	.8	.3	5.0	3.3	.0	2.7	.0	1856.5	4.5
	OCT	.1	.2	.0	.0	- .1	2.6	.0	1856.3	
	NOV	.2	.1	.0	.0	.1	2.7	.0	1856.5	
	DEC	.2	.1	.0	.0	.1	2.8	.0	1856.7	
	TOTAL	13.1	4.1	29.6	21.8	- 6.3	.0	.0		
							9.1		1863.7	
MOST PROBABLE	JAN	.8	.1	.0	.0	.7	9.8	.0	1864.3	
	FEB.	1.7	.1	.0	.0	1.6	11.4	.0	1865.5	
	MAR	2.1	.2	.0	.0	1.9	13.3	.0	1866.9	
	APR	2.9	.3	.0	.0	2.6	15.9	.0	1868.6	
	MAY	4.2	.4	.8	.7	3.0	18.9	.0	1870.5	
	JUN	10.0	.7	1.0	.8	8.3	27.2	.0	1874.9	
	JUL	4.5	1.1	7.5	6.0	- 4.1	23.1	.0	1872.8	
	AUG	3.2	.8	7.5	6.0	- 5.1	18.0	.0	1869.9	
	SEP	2.4	.6	2.2	1.5	- .4	17.6	.0	1869.7	
	OCT	1.0	.5	.0	.0	.5	18.1	.0	1870.0	
	NOV	1.0	.2	.0	.0	.8	18.9	.0	1870.5	
	DEC	.9	.1	.0	.0	.8	19.7	.0	1870.9	
	TOTAL	34.7	5.1	19.0	15.0	10.6	.0	.0		
							9.1		1863.7	
REAS. MAXIMUM	JAN	2.2	.1	.0	.0	2.1	11.2	.0	1865.4	
	FEB	3.3	.1	.0	.0	3.2	14.4	.0	1867.7	
	MAR	4.1	.1	.0	.0	4.0	18.4	.0	1870.2	
	APR	6.5	.2	.0	.0	6.3	24.7	.0	1873.6	
	MAY	14.1	.3	.0	.4	13.8	38.5	.0	1879.9	
	JUN	25.9	.2	.0	.5	25.7	64.2	.0	1888.7	
	JUL	17.2	1.7	3.8	3.7	11.7	75.9	.0	1892.1	
	AUG	12.9	1.3	3.9	3.7	.3	76.2	7.4	1892.1	
	SEP	9.6	1.2	.3	.9	.0	76.2	8.1	1892.1	
	OCT	5.6	.9	.0	.0	.0	76.2	4.7	1892.1	
	NOV	3.8	.3	.0	.0	.0	76.2	3.5	1892.1	
	DEC	2.8	.2	.0	.0	.0	76.2	2.6	1892.1	
	TOTAL	108.0	6.6	8.0	9.2	67.1	.0	26.3		

[1] BASED ON 7,000 ACRES TO BE IRRIGATED IN 1971.

TABLE 3
WACONDA LAKE
OPERATION ESTIMATES - 1971
(UNITS IN 1,000 ACRE-FEET)

	MONTH	UNDEPL. INFLOW	CORR.FOR UPSTR. DEPL.	DEPL. INFLOW	NET EVAP. AF	TOTAL RELEASE REQ. [1]	RES. CHANGE	RES.CONT. AT END OF MONTH	RES. SPILL	RES.ELEV. AT END OF MONTH
								78.4		1437.9
REAS. MINIMUM	JAN	1.8	- .5	1.3	.4	.1	.8	79.2	.0	1438.0
	FEB	3.2	- 1.7	1.5	.5	.1	.9	80.1	.0	1438.2
	MAR	4.4	- 2.7	1.7	.9	.1	.7	80.8	.0	1438.3
	APR	5.3	- 3.4	1.9	2.2	.1	- .4	80.4	.0	1438.2
	MAY	8.0	- .6	7.4	2.2	.1	5.1	85.5	.0	1439.1
	JUN	15.1	- 3.3	11.8	3.4	.2	8.2	93.7	.0	1440.4
	JUL	11.1	5.3	16.4	4.6	.3	11.5	105.2	.0	1442.1
	AUG	6.0	8.7	14.7	5.3	.4	9.0	114.2	.0	1443.3
	SEP	4.5	4.2	8.7	4.0	.2	4.5	118.7	.0	1443.8
	OCT	2.0	- .2	1.8	2.9	.2	- 1.3	117.4	.0	1443.7
	NOV	1.9	- .5	1.4	1.6	.1	- .3	117.1	.0	1443.6
	DEC	2.2	- .5	1.7	.8	.1	.8	117.9	.0	1443.7
	TOTAL	65.5	4.8	70.3	28.8	2.0	39.5	.0	.0	
								78.4		1437.9
MOST PROBABLE	JAN	4.4	- 1.6	2.8	.3	.1	2.4	80.8	.0	1438.3
	FEB	6.3	- 3.5	2.8	.3	.1	2.4	83.2	.0	1438.7
	MAR	7.5	- 4.2	3.3	.4	.1	2.8	86.0	.0	1439.2
	APR	11.6	- 5.6	6.0	1.5	.1	4.4	90.4	.0	1439.9
	MAY	27.5	- 7.5	20.0	1.7	.1	18.2	108.6	.0	1442.5
	JUN	49.0	- 19.1	29.9	2.2	.1	27.6	136.2	.0	1445.9
	JUL	24.1	- 2.2	21.9	4.6	.2	17.1	153.3	.0	1447.8
	AUG	13.0	1.5	14.5	3.6	.2	10.7	164.0	.0	1448.9
	SEP	13.8	- 2.3	11.5	3.3	.2	8.0	172.0	.0	1449.7
	OCT	6.0	- 2.3	3.7	2.7	.1	.9	172.9	.0	1449.8
	NOV	4.8	- 2.2	2.6	1.6	.1	.9	173.8	.0	1449.9
	DEC	5.0	- 1.8	3.2	.6	.1	2.5	176.3	.0	1450.2
	TOTAL	173.0	- 50.8	122.2	22.8	1.5	97.9	.0	.0	
								78.4		1437.9
REAS. MAXIMUM	JAN	9.5	- 4.2	5.3	.2	.1	5.0	83.4	.0	1438.7
	FEB	15.5	- 5.9	9.6	.1	.1	9.4	92.8	.0	1440.2
	MAR	19.0	- 7.4	11.6	.2	.1	11.3	104.1	.0	1441.9
	APR	36.4	- 11.7	24.7	.9	.1	23.7	127.8	.0	1445.0
	MAY	56.6	- 27.7	28.9	.6	.1	28.2	156.0	.0	1448.1
	JUN	165.9	- 27.1	138.8	- .2	.1	83.1	239.1	55.8	1455.7
	JUL	69.8	- 19.4	50.4	4.7	.1	.0	239.1	45.6	1455.7
	AUG	41.8	- 7.3	34.5	3.4	.1	.0	239.1	31.0	1455.7
	SEP	53.5	- 3.3	50.2	2.4	.1	.0	239.1	47.7	1455.7
	OCT	28.5	- 1.9	26.6	2.5	.1	.0	239.1	24.0	1455.7
	NOV	14.9	- .7	14.2	1.0	.1	.0	239.1	13.1	1455.7
	DEC	9.6	- .4	9.2	.4	.1	.0	239.1	8.7	1455.7
	TOTAL	521.0	-117.0	404.0	16.2	1.2	160.7	.0	225.9	

[1] INCLUDES RELEASE TO CITY OF BELOIT, KANSAS.

TABLE 3
CEDAR BLUFF RESERVOIR AND CEDAR BLUFF CANAL
OPERATION ESTIMATES - 1971
(UNITS IN 1,000 ACRE-FEET)

	Month	Hist. Inflow	Net Evap. AF	Canal Req.[1]	Fish Hatchery Req.	Total Release Req. [2]	Res. Change	Res. Cont. at End of Month	Res. Spill	Res. Elev. at End of Month
								116.4		2132.4
Reas. Minimum	Jan	.3	.5	.0	.3	.5	- .7	115.7	.0	2132.2
	Feb	.6	.6	.0	.2	.4	- .4	115.3	.0	2132.1
	Mar	.8	1.0	.0	.4	.6	- .8	114.5	.0	2132.0
	Apr	1.1	2.1	.0	.2	.4	- 1.4	113.1	.0	2131.7
	May	2.1	2.0	1.9	.4	2.5	- 2.4	110.7	.0	2131.2
	Jun	4.0	3.0	1.9	.3	2.4	- 1.4	109.3	.0	2130.9
	Jul	2.6	3.4	5.9	.3	6.4	- 7.2	102.1	.0	2129.3
	Aug	1.5	3.2	5.9	.3	6.7	- 8.4	93.7	.0	2127.3
	Sep	.8	2.2	2.9	.3	4.1	- 5.5	88.2	.0	2125.9
	Oct	.4	1.6	1.0	.3	1.7	- 2.9	85.3	.0	2125.2
	Nov	.4	.9	.0	.2	.4	- .9	84.4	.0	2125.0
	Dec	.4	.5	.0	.2	.4	- .5	83.9	.0	2124.8
	TOTAL	15.0	21.0	19.5	3.4	26.5	- 32.5	.0	.0	
								116.4		2132.4
Most Probable	Jan	.7	.4	.0	.3	.5	- .2	116.2	.0	2132.3
	Feb	1.2	.5	.0	.2	.4	.3	116.5	.0	2132.4
	Mar	1.6	.7	.0	.4	.6	.3	116.8	.0	2132.4
	Apr	2.7	1.5	.0	.2	.4	.8	117.6	.0	2132.6
	May	5.4	1.3	.7	.4	1.3	2.8	120.4	.0	2133.2
	Jun	10.6	1.8	.7	.3	1.2	7.6	128.0	.0	2134.6
	Jul	8.0	3.2	4.9	.3	5.4	- .6	127.4	.0	2134.5
	Aug	4.6	2.6	5.5	.3	6.1	- 4.1	123.3	.0	2133.7
	Sep	4.4	1.9	1.4	.3	2.0	.5	123.8	.0	2133.8
	Oct	1.5	1.6	.7	.3	1.2	- 1.3	122.5	.0	2133.6
	Nov	1.1	1.0	.0	.2	.4	- .3	122.2	.0	2133.5
	Dec	.8	.5	.0	.2	.4	- .1	122.1	.0	2133.5
	TOTAL	42.6	17.0	13.9	3.4	19.9	5.7	.0	.0	
								116.4		2132.4
Reas. Maximum	Jan	2.0	.4	.0	.3	.5	1.1	117.5	.0	2132.6
	Feb	2.5	.4	.0	.2	.4	1.7	119.2	.0	2132.9
	Mar	3.3	.5	.0	.4	.6	2.2	121.4	.0	2133.4
	Apr	6.7	1.0	.0	.2	.4	5.3	126.7	.0	2134.4
	May	22.3	.9	.4	.4	1.0	20.4	147.1	.0	2138.1
	Jun	37.4	.7	.4	.3	.9	35.8	182.9	.0	2143.7
	Jul	20.2	3.0	3.1	.3	3.6	2.2	185.1	11.4	2144.0
	Aug	21.7	2.4	3.5	.3	4.0	.0	185.1	15.3	2144.0
	Sep	12.2	2.2	1.0	.3	1.5	.0	185.1	8.5	2144.0
	Oct	7.1	1.5	.4	.3	.9	.0	185.1	4.7	2144.0
	Nov	2.6	.9	.0	.2	.4	.0	185.1	1.3	2144.0
	Dec	2.1	.5	.0	.2	.4	.0	185.1	1.2	2144.0
	TOTAL	140.1	14.4	8.8	3.4	14.6	68.7	.0	42.4	

[1] BASED ON 6,300 ACRES TO BE IRRIGATED IN 1971.
[2] INCLUDES RELEASES TO CITY OF RUSSELL, KANSAS.

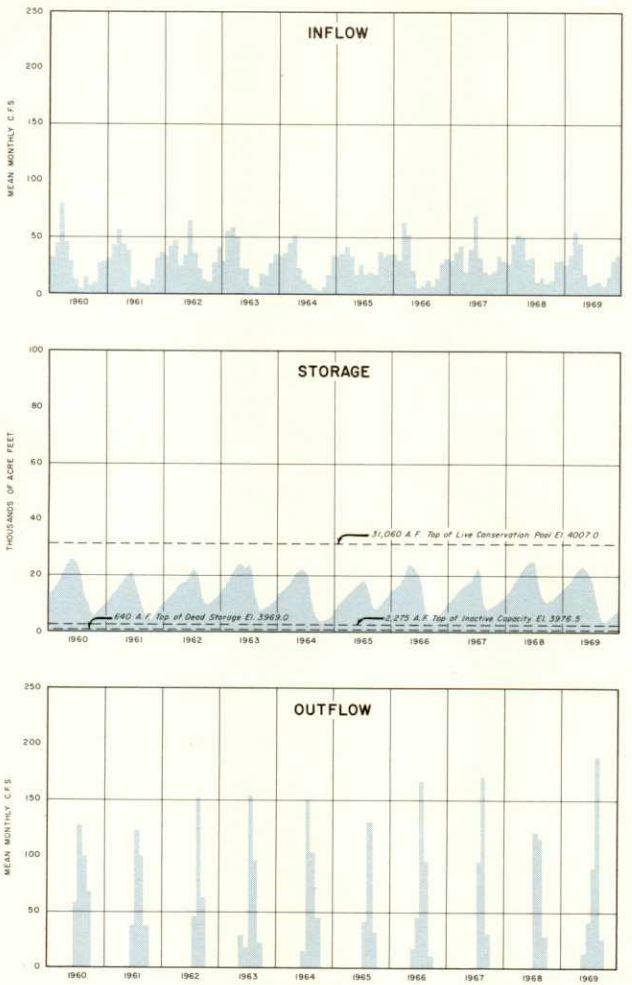
TABLE 4
OTHER USES AT FEDERALLY CONSTRUCTED STORAGE AND DIVERSION DAMS
NIOBRARA, LOWER PLATTE AND KANSAS RIVER BASINS
During 1970
Annual Totals

Features	Visitors	Cars In Area	Water Craft	Sport Fish Caught	Season Take Ducks	Season Take Geese
Colorado						
Bonny Reservoir	253,960	72,560	5,666	65,000	1,750	125
Kansas						
Norton Reservoir	136,232	23,063	2,600	80,000	300	35
Almena Diversion Dam	1,910	650	0	335	10	0
Lovewell Reservoir	154,660	36,795	3,500	20,000	500	80
Kirwin Reservoir	219,619	70,696	7,520	73,000	320	1,250
Webster Reservoir	95,242	27,212	465	8,000	200	125
Woodston Diversion Dam	1,985	710	0	250	0	0
Waconda Lake	106,911	38,000	520	35,000	1,500	120
Cedar Bluff Reservoir	153,435	43,838	300	10,000	225	85
Nebraska						
Box Butte Reservoir	29,785	7,525	1,335	8,250	Not Reported	
Merritt Reservoir	40,950	12,100	2,990	20,000	Not Reported	
Milburn Diversion Dam	3,500	750	0	1,500	Not Reported	
Arcadia Diversion Dam	14,150	4,500	0	20,000	Not Reported	
Sherman Reservoir	130,600	52,240	16,000	60,000	Not Reported	
Swanson Lake	142,152	36,650	4,590	149,430	500	20
Enders Reservoir	19,697	5,419	1,024	11,694	200	10
Hugh Butler Lake	182,039	45,608	8,585	100,089	50	0
Harry Strunk Lake	48,493	14,109	1,917	42,885	110	3
Harlan County Reservoir	907,376	300,997	---	200,000	300	39
TOTAL REPORTED	2,642,696	792,772	57,012	905,433	5,965	1,892

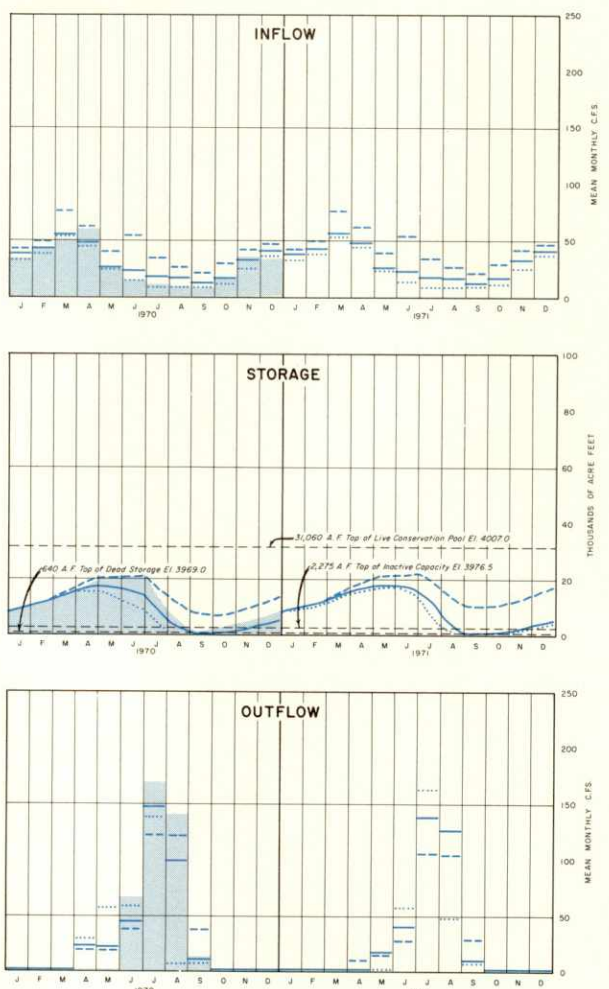
Visitors = Total visitor days which includes fishing, hunting, boating, skiing, camping, picnicking and sightseeing.

Water Craft = Boating days which includes rentals, inboards, outboards, rowboats and sailboats.

BOX BUTTE RESERVOIR
HISTORICAL OPERATION

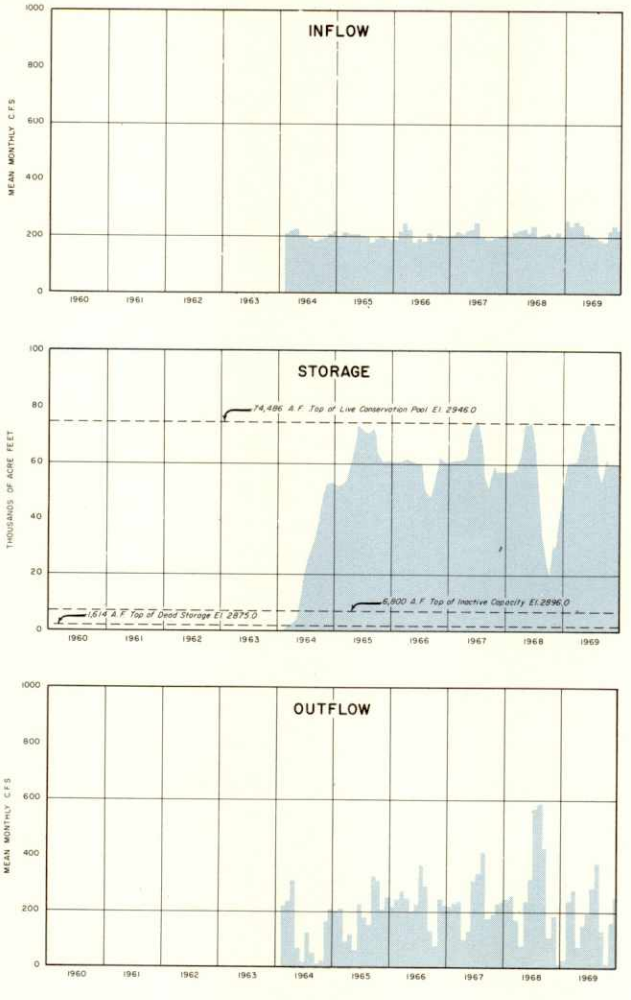


BOX BUTTE RESERVOIR
OPERATING PLANS

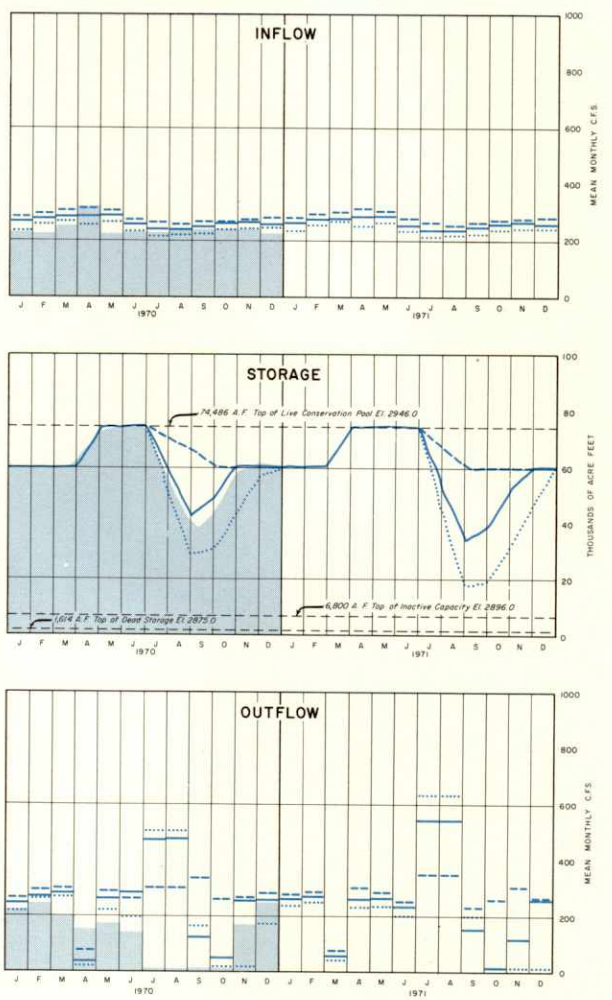


MOST PROBABLE
REASONABLE MAXIMUM
REASONABLE MINIMUM
ACTUAL

MERRITT RESERVOIR
HISTORICAL OPERATION

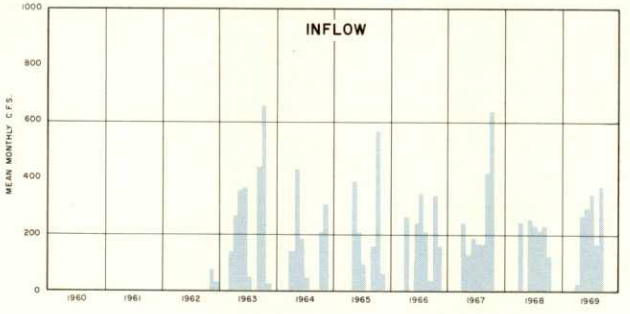


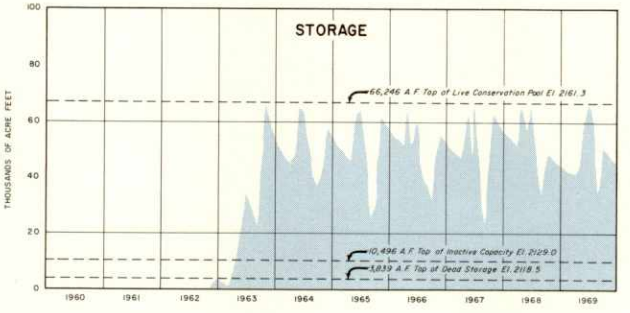
MERRITT RESERVOIR
OPERATING PLANS

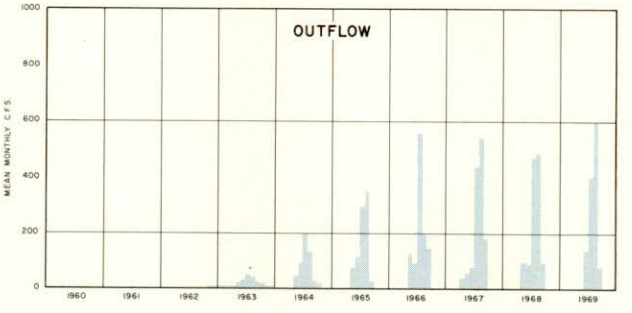


MOST PROBABLE
REASONABLE MAXIMUM
REASONABLE MINIMUM
ACTUAL

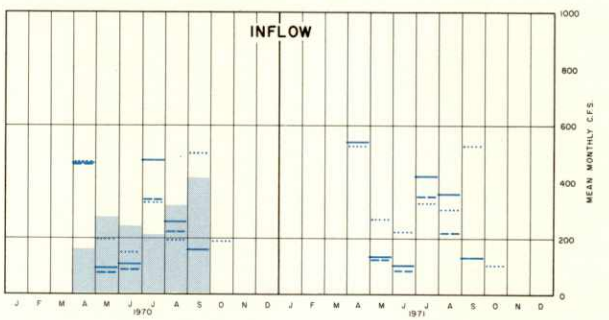
SHERMAN RESERVOIR
HISTORICAL OPERATION

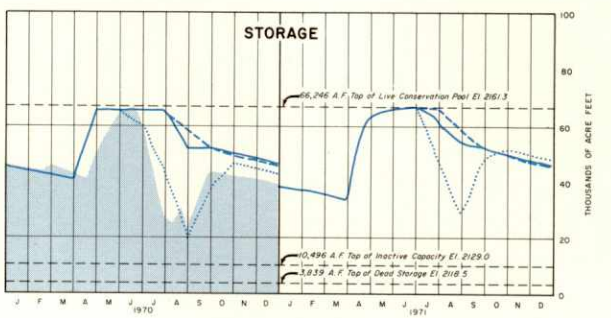


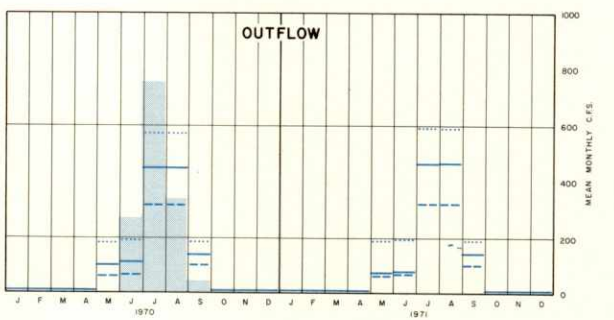




SHERMAN RESERVOIR
OPERATING PLANS

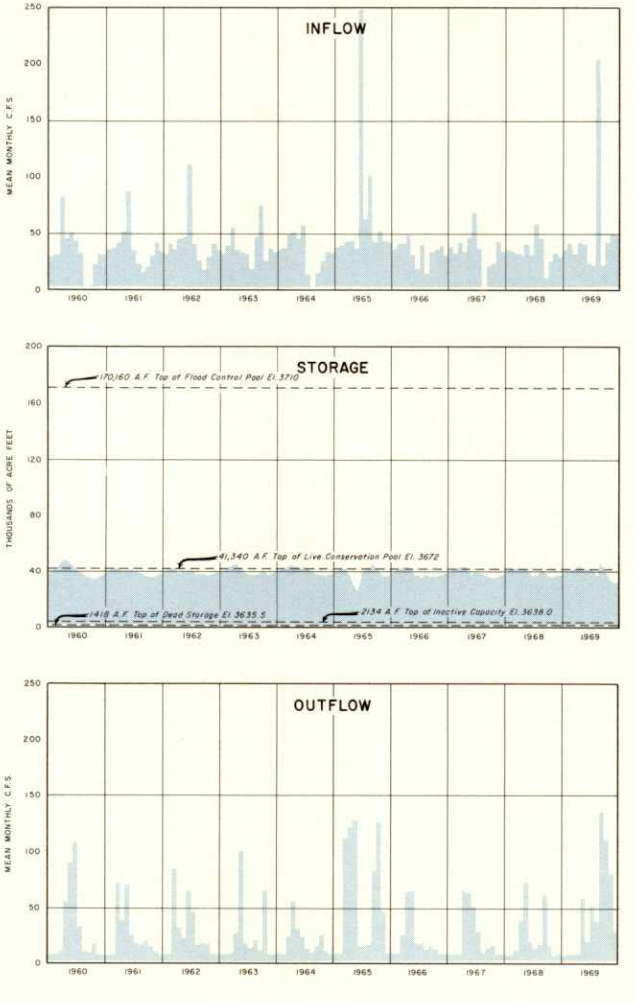




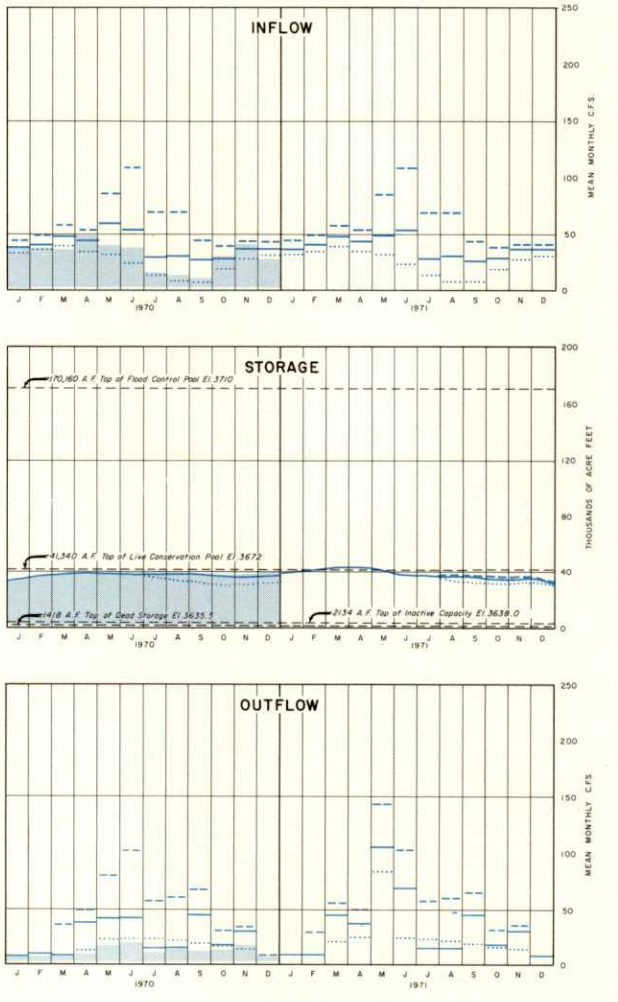


MOST PROBABLE
REASONABLE MAXIMUM
REASONABLE MINIMUM
ACTUAL

BONNY RESERVOIR
HISTORICAL OPERATION

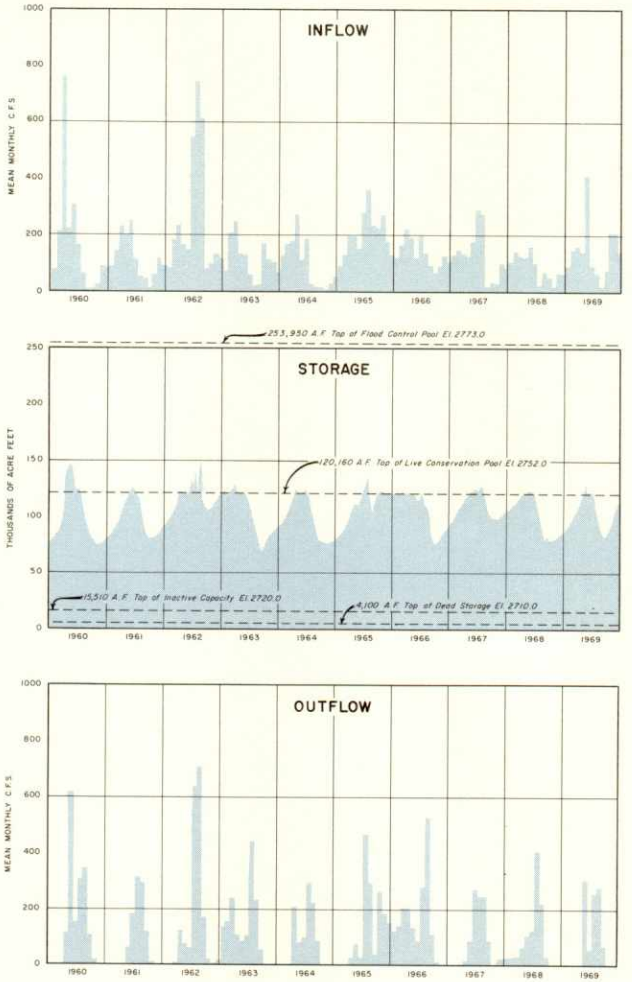


BONNY RESERVOIR
OPERATING PLANS

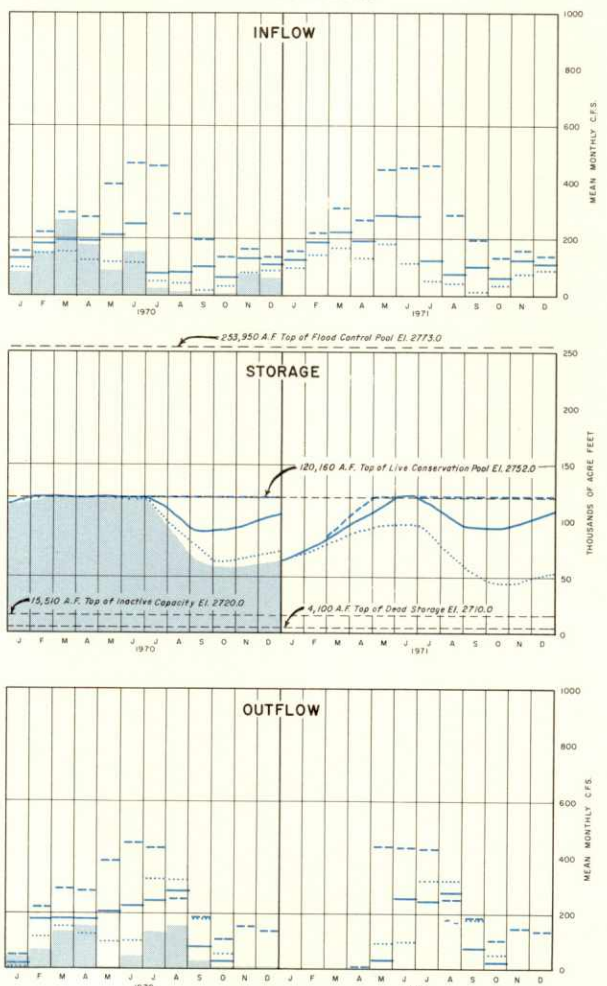


MOST PROBABLE
REASONABLE MAXIMUM
REASONABLE MINIMUM
ACTUAL

SWANSON LAKE
HISTORICAL OPERATION

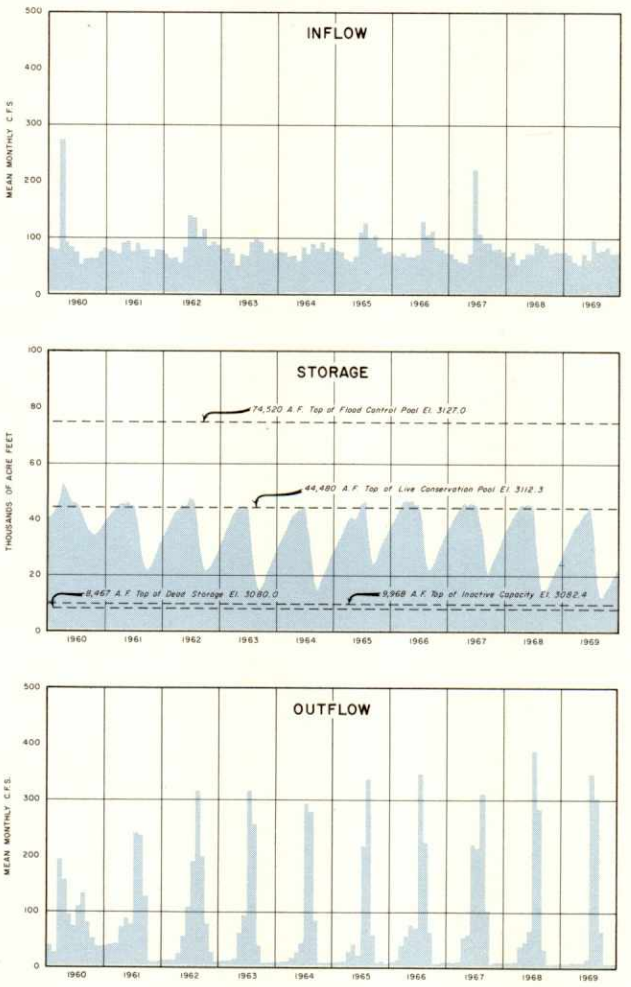


SWANSON LAKE
OPERATING PLANS

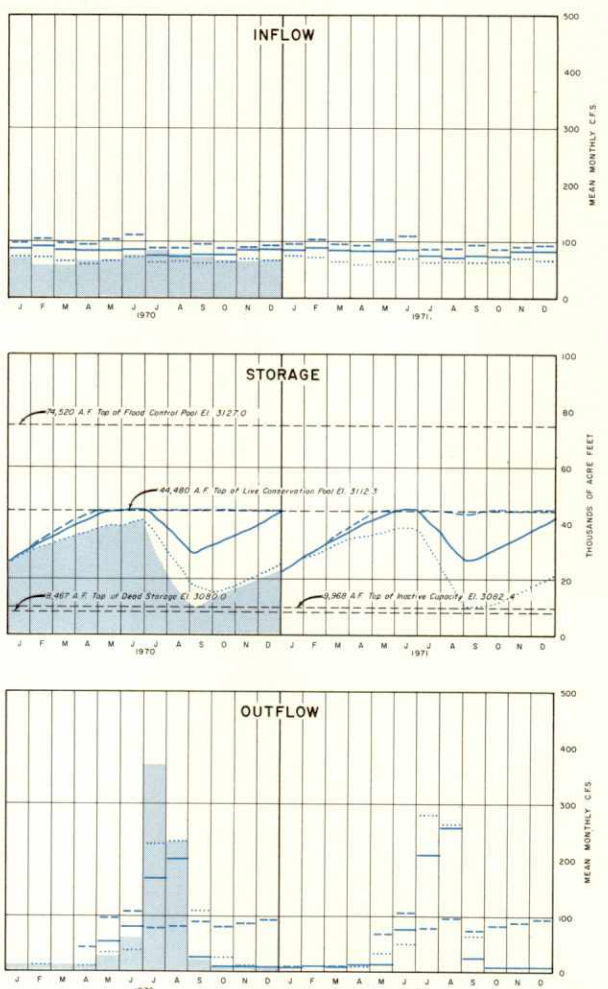


MOST PROBABLE
REASONABLE MAXIMUM
REASONABLE MINIMUM
ACTUAL

ENDERS RESERVOIR
HISTORICAL OPERATION



ENDERS RESERVOIR
OPERATING PLANS



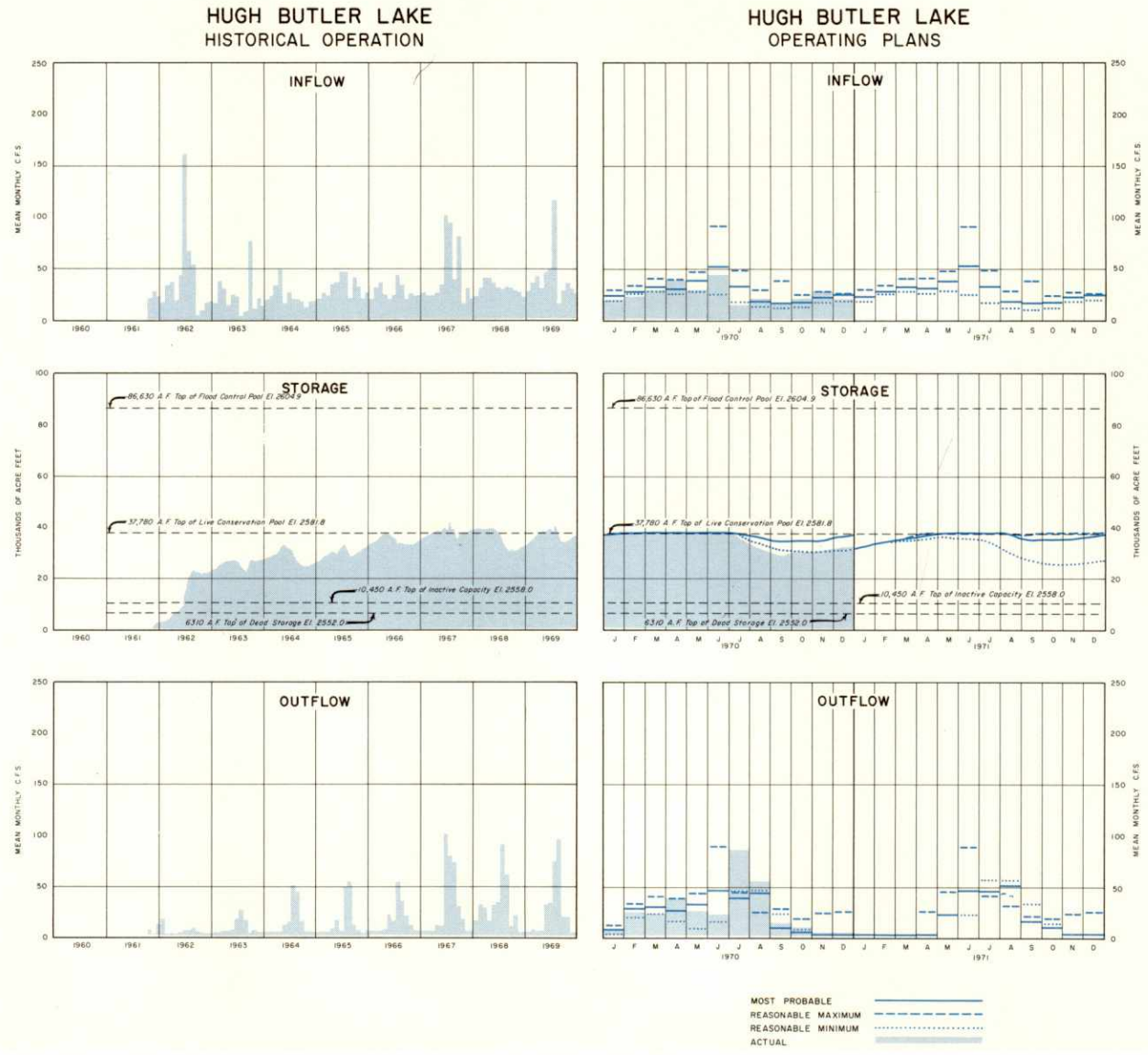
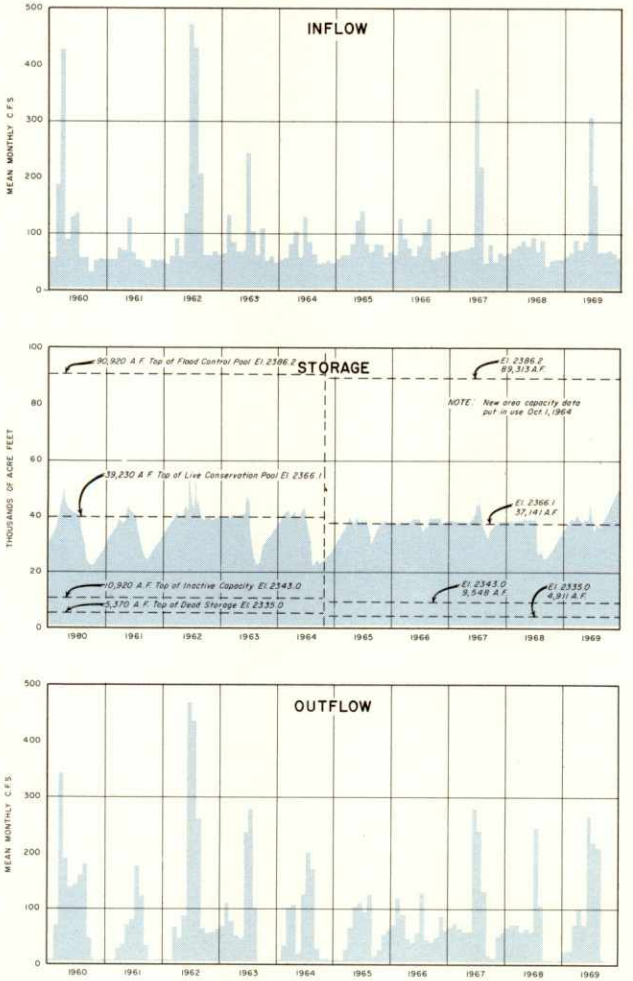
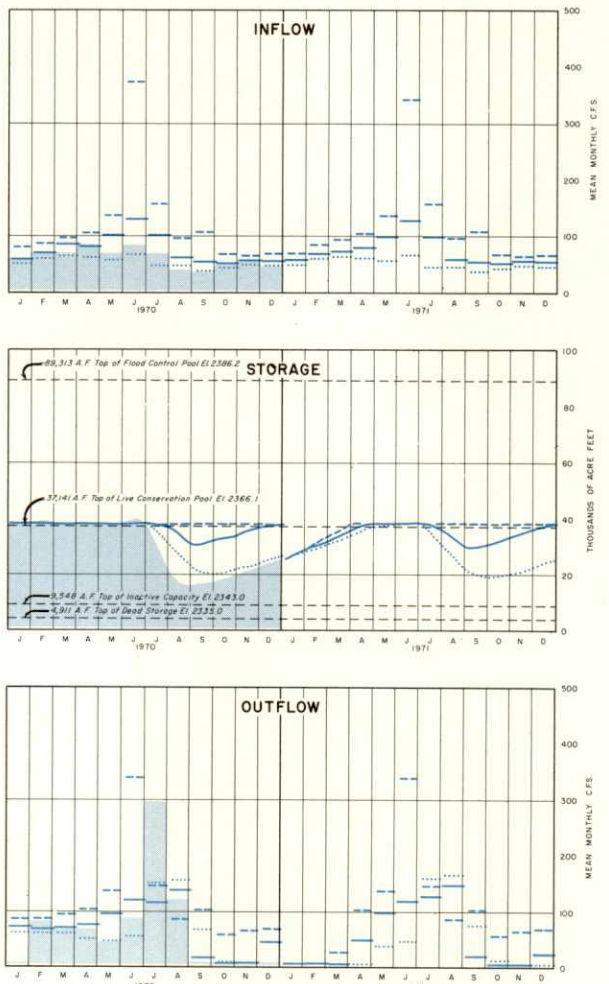

HUGH BUTLER LAKE
HISTORICAL OPERATION
HUGH BUTLER LAKE
OPERATING PLANS
INFLOW
INFLOW
MEAN MONTHLY C.F.S.
STORAGE
STORAGE
86,630 A.F. Top of Flood Control Pool El. 2604.9
37,780 A.F. Top of Live Conservation Pool El. 2581.8
10,450 A.F. Top of Inactive Capacity El. 2558.0
6310 A.F. Top of Dead Storage El. 2552.0
THOUSANDS OF ACRE FEET
OUTFLOW
OUTFLOW
1960
1961
1962
1963
1964
1965
1966
1967
1968
1969
1970
1971
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

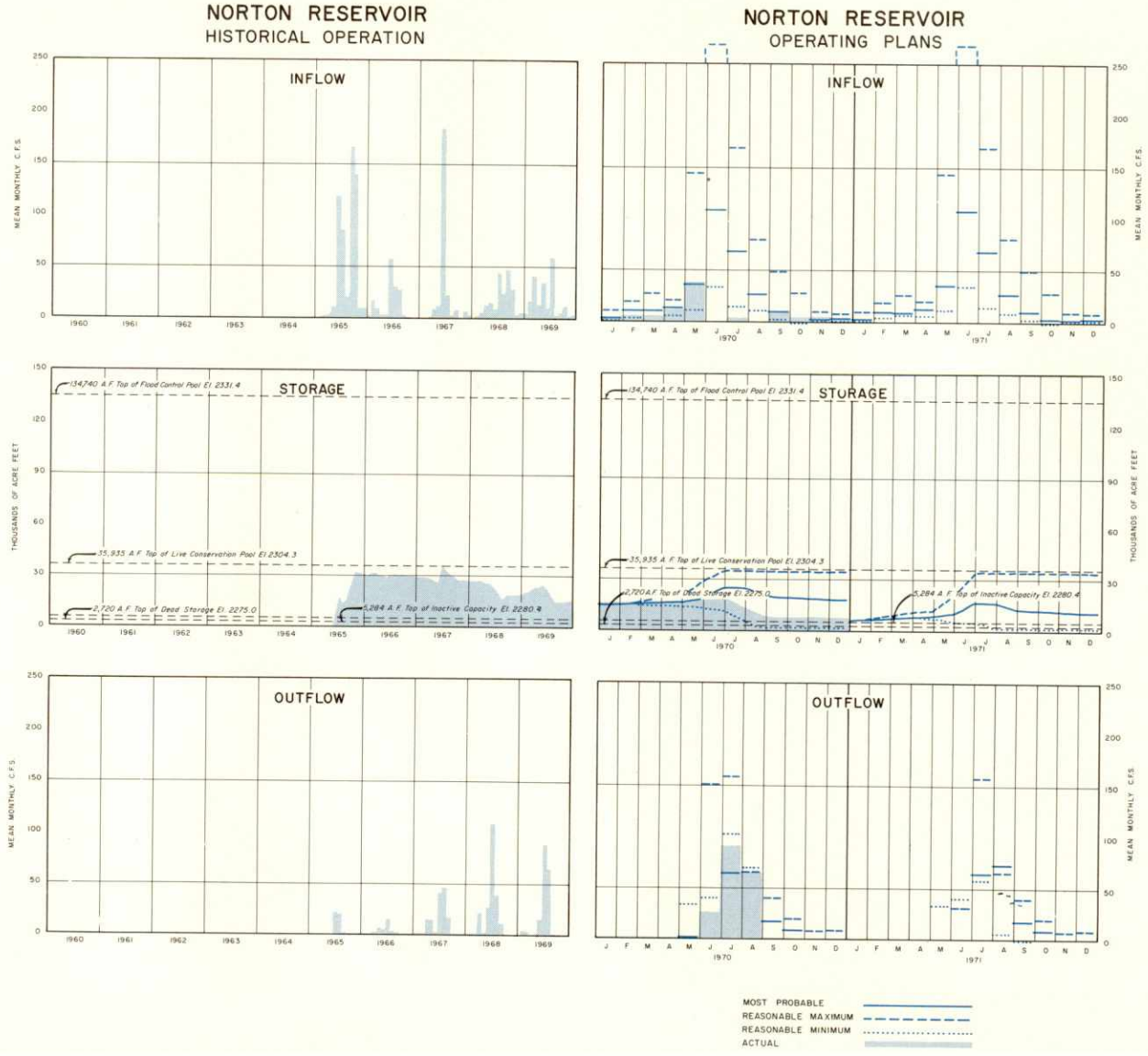
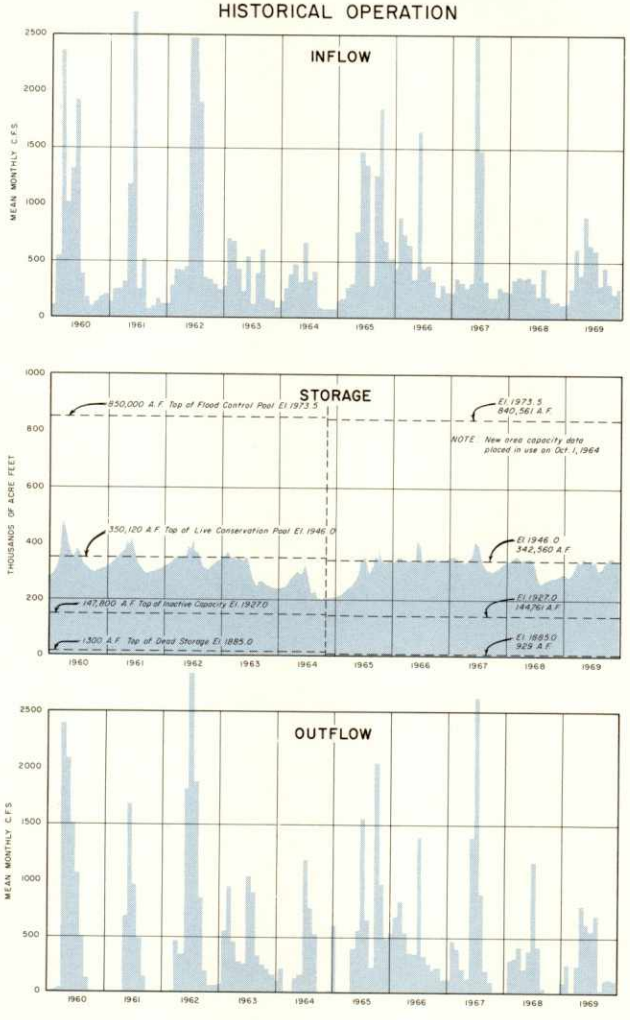
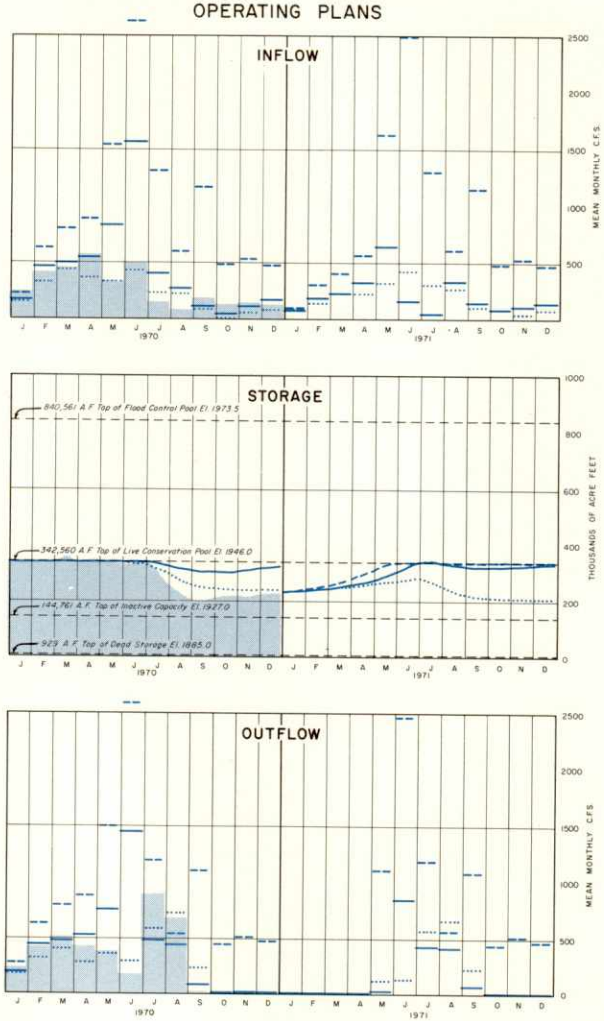

NORTON RESERVOIR
HISTORICAL OPERATION
INFLOW
MEAN MONTHLY C.F.S.
250
200
150
100
50
0
1960
1961
1962
1963
1964
1965
1966
1967
1968
1969
STORAGE
THOUSANDS OF ACRE FEET
134,740 A.F. Top of Flood Control Pool El. 2331.4
35,935 A.F. Top of Live Conservation Pool El. 2304.3
2,720 A.F. Top of Dead Storage El. 2275.0
5,284 A.F. Top of Inactive Capacity El. 2280.4
150
120
90
60
30
0
OUTFLOW
NORTON RESERVOIR
OPERATING PLANS
INFLOW
MEAN MONTHLY C.F.S.
J F M A M J J A S O N D J F M A M J J A S O N D
1970
1971
STORAGE
134,740 A.F. Top of Flood Control Pool El. 2331.4
35,935 A.F. Top of Live Conservation Pool El. 2304.3
2,720 A.F. Top of Dead Storage El. 2275.0
5,284 A.F. Top of Inactive Capacity El. 2280.4
THOUSANDS OF ACRE FEET
OUTFLOW
MEAN MONTHLY C.F.S.
MOST PROBABLE
REASONABLE MAXIMUM
REASONABLE MINIMUM
ACTUAL

Exhibit 9

HARLAN COUNTY RESERVOIR
HISTORICAL OPERATION



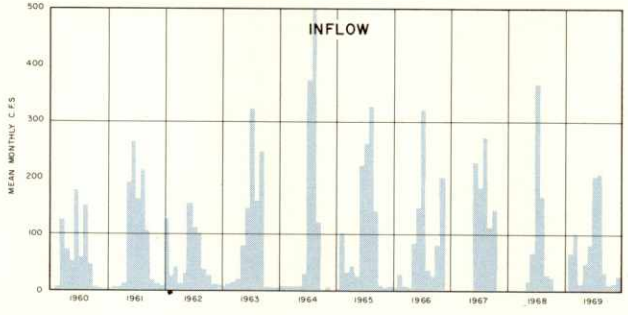
HARLAN COUNTY RESERVOIR
OPERATING PLANS

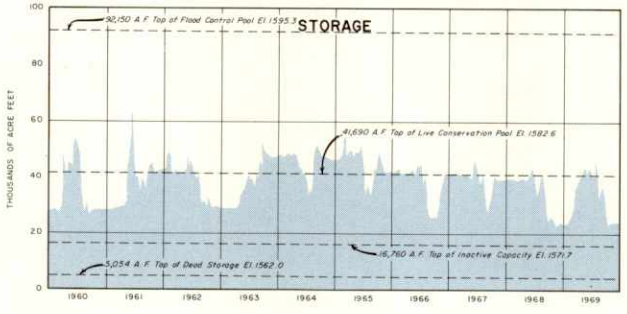


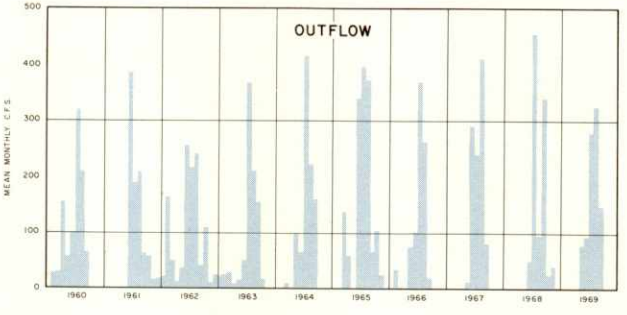
MOST PROBABLE
REASONABLE MAXIMUM
REASONABLE MINIMUM
ACTUAL

Exhibit 10

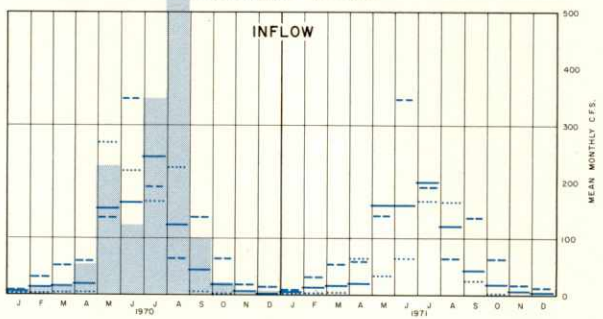
LOVEWELL RESERVOIR
HISTORICAL OPERATION

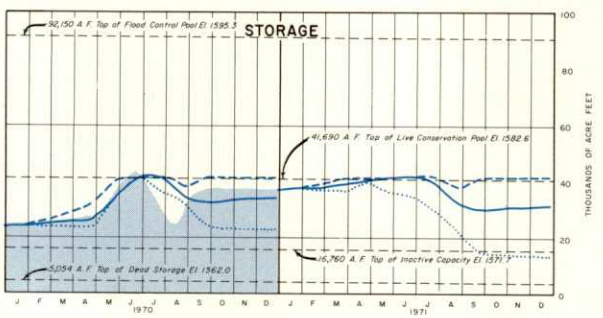


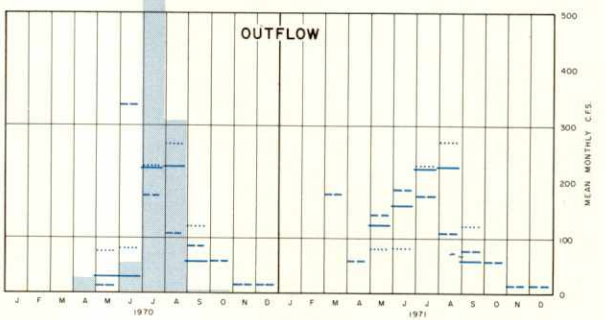




LOVEWELL RESERVOIR
OPERATING PLANS







MOST PROBABLE
REASONABLE MAXIMUM
REASONABLE MINIMUM
ACTUAL

Exhibit 11

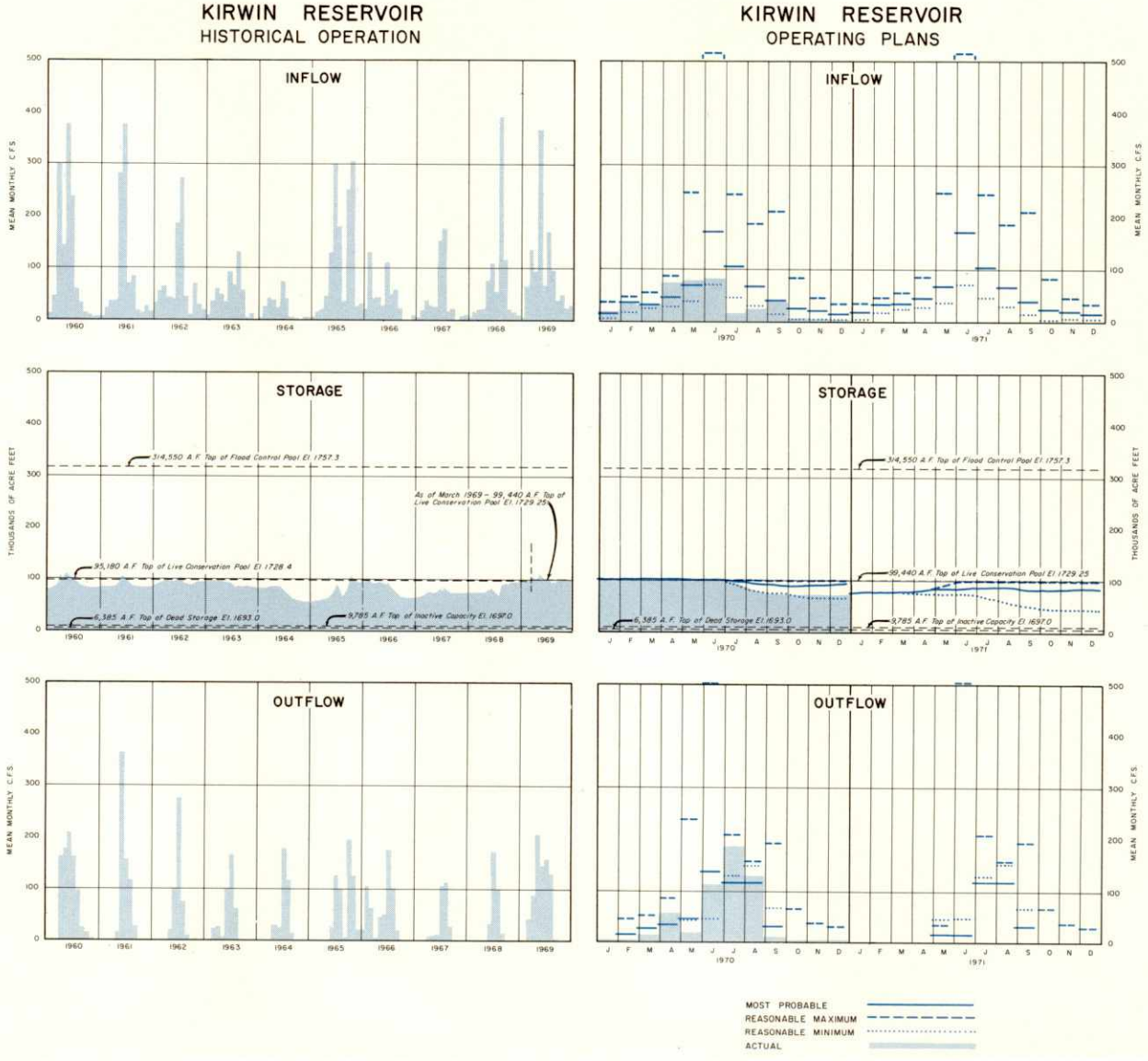
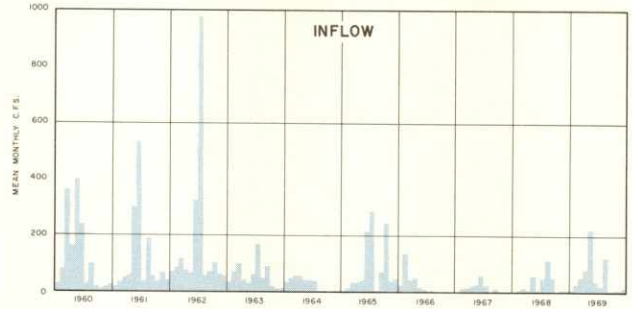
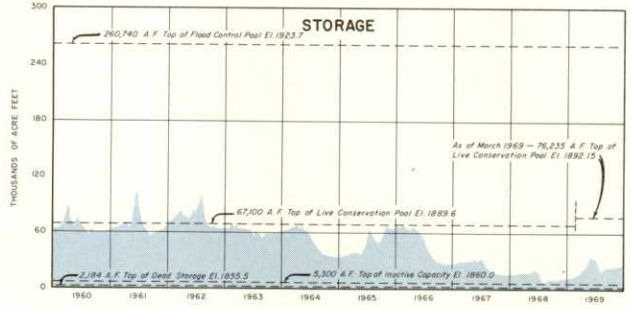
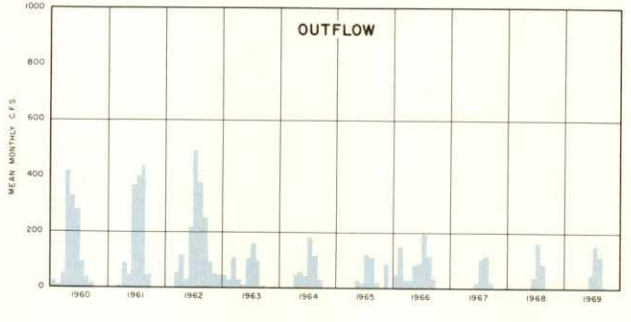

KIRWIN RESERVOIR
HISTORICAL OPERATION
KIRWIN RESERVOIR
OPERATING PLANS
INFLOW
STORAGE
OUTFLOW
MEAN MONTHLY C.F.S.
THOUSANDS OF ACRE FEET
314,550 A.F. Top of Flood Control Pool El. 1757.3
As of March 1969 – 99,440 A.F. Top of Live Conservation Pool El. 1729.25
95,180 A.F. Top of Live Conservation Pool El. 1728.4
6,585 A.F. Top of Dead Storage El. 1693.0
9,785 A.F. Top of Inactive Capacity El. 1697.0
99,440 A.F. Top of Live Conservation Pool El. 1729.25
1960
1961
1962
1963
1964
1965
1966
1967
1968
1969
1970
1971
MOST PROBABLE
REASONABLE MAXIMUM
REASONABLE MINIMUM
ACTUAL

Exhibit 12

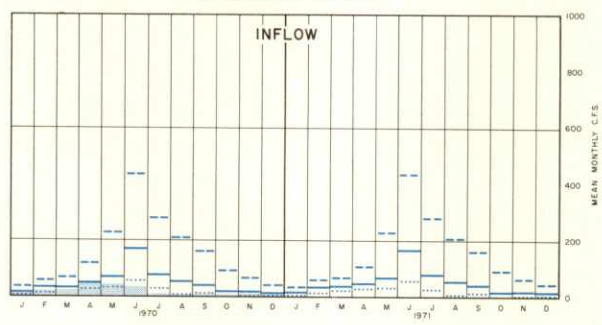
WEBSTER RESERVOIR
HISTORICAL OPERATION

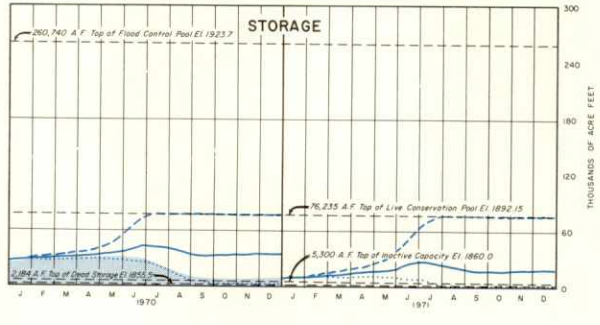


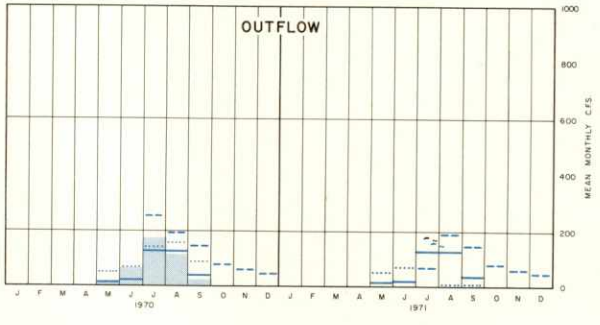




WEBSTER RESERVOIR
OPERATING PLANS







MOST PROBABLE
REASONABLE MAXIMUM
REASONABLE MINIMUM
ACTUAL

Exhibit 13

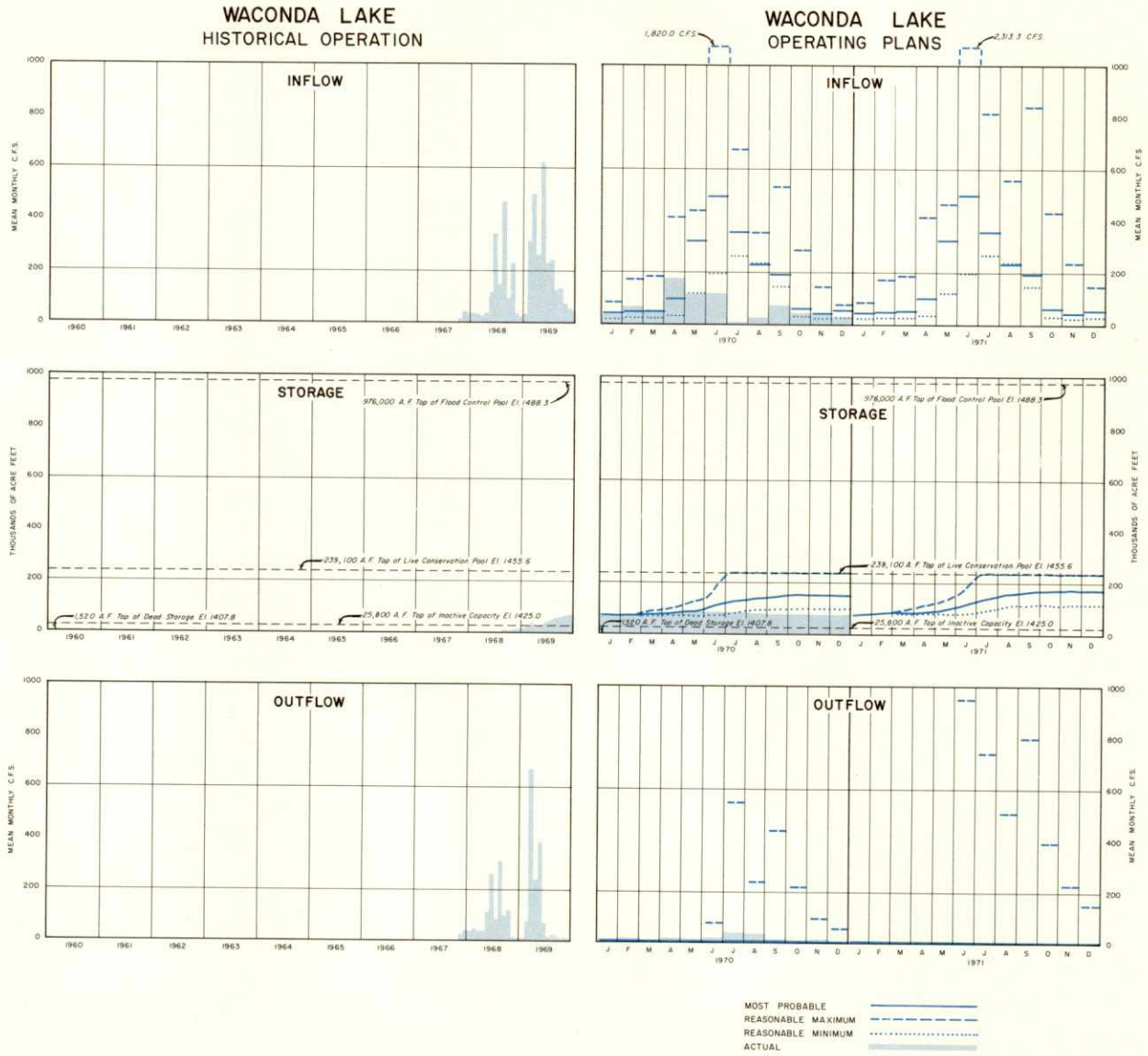
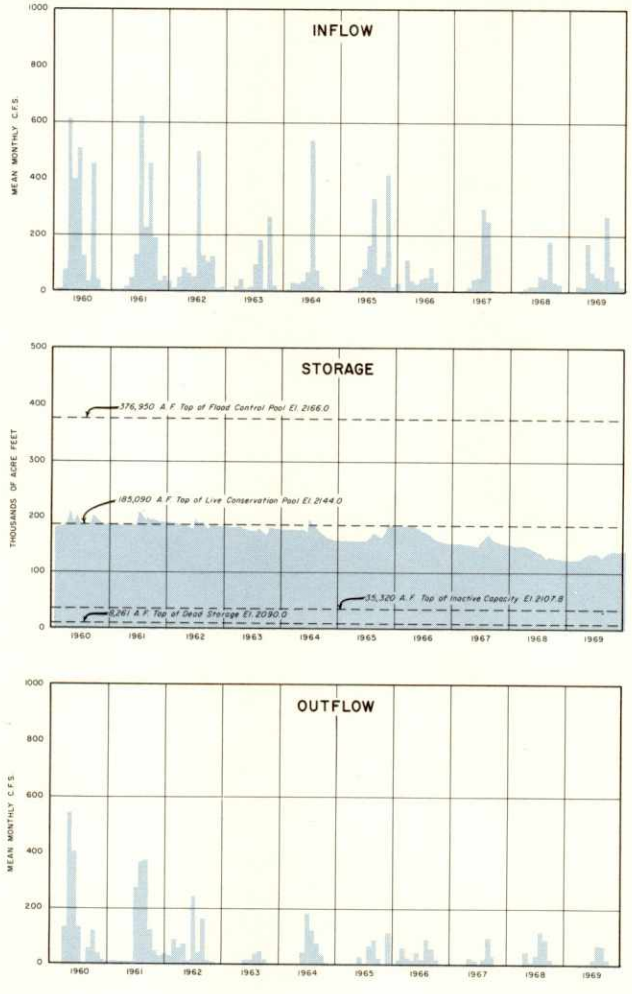
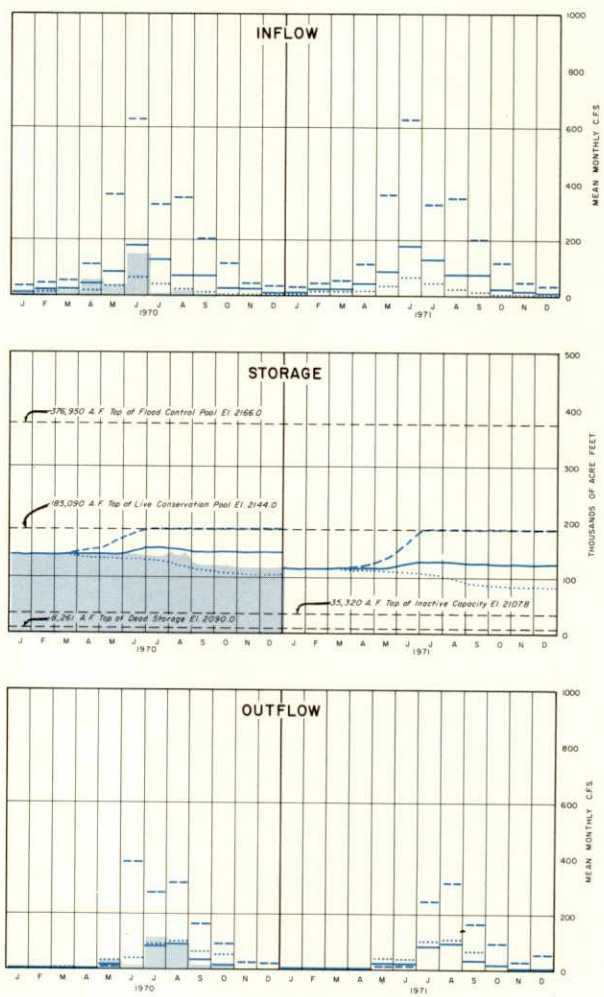

WACONDA LAKE
HISTORICAL OPERATION
INFLOW
MEAN MONTHLY C.F.S.
1000
800
600
400
200
0
1960
1961
1962
1963
1964
1965
1966
1967
1968
1969
STORAGE
976,000 A.F. Top of Flood Control Pool El. 1488.3
239,100 A.F. Top of Live Conservation Pool El. 1455.6
1,520 A.F. Top of Dead Storage El. 1407.8
25,800 A.F. Top of Inactive Capacity El. 1425.0
THOUSANDS OF ACRE FEET
OUTFLOW
MEAN MONTHLY C.F.S.
WACONDA LAKE
OPERATING PLANS
1,820.0 C.F.S.
2,313.3 C.F.S.
INFLOW
MEAN MONTHLY C.F.S.
J F M A M J J A S O N D J F M A M J J A S O N D
1970
1971
STORAGE
976,000 A.F. Top of Flood Control Pool El. 1488.3
239,100 A.F. Top of Live Conservation Pool El. 1455.6
1,520 A.F. Top of Dead Storage El. 1407.8
25,800 A.F. Top of Inactive Capacity El. 1425.0
THOUSANDS OF ACRE FEET
OUTFLOW
MEAN MONTHLY C.F.S.
MOST PROBABLE
REASONABLE MAXIMUM
REASONABLE MINIMUM
ACTUAL

Exhibit 14

CEDAR BLUFF RESERVOIR
HISTORICAL OPERATION



CEDAR BLUFF RESERVOIR
OPERATING PLANS

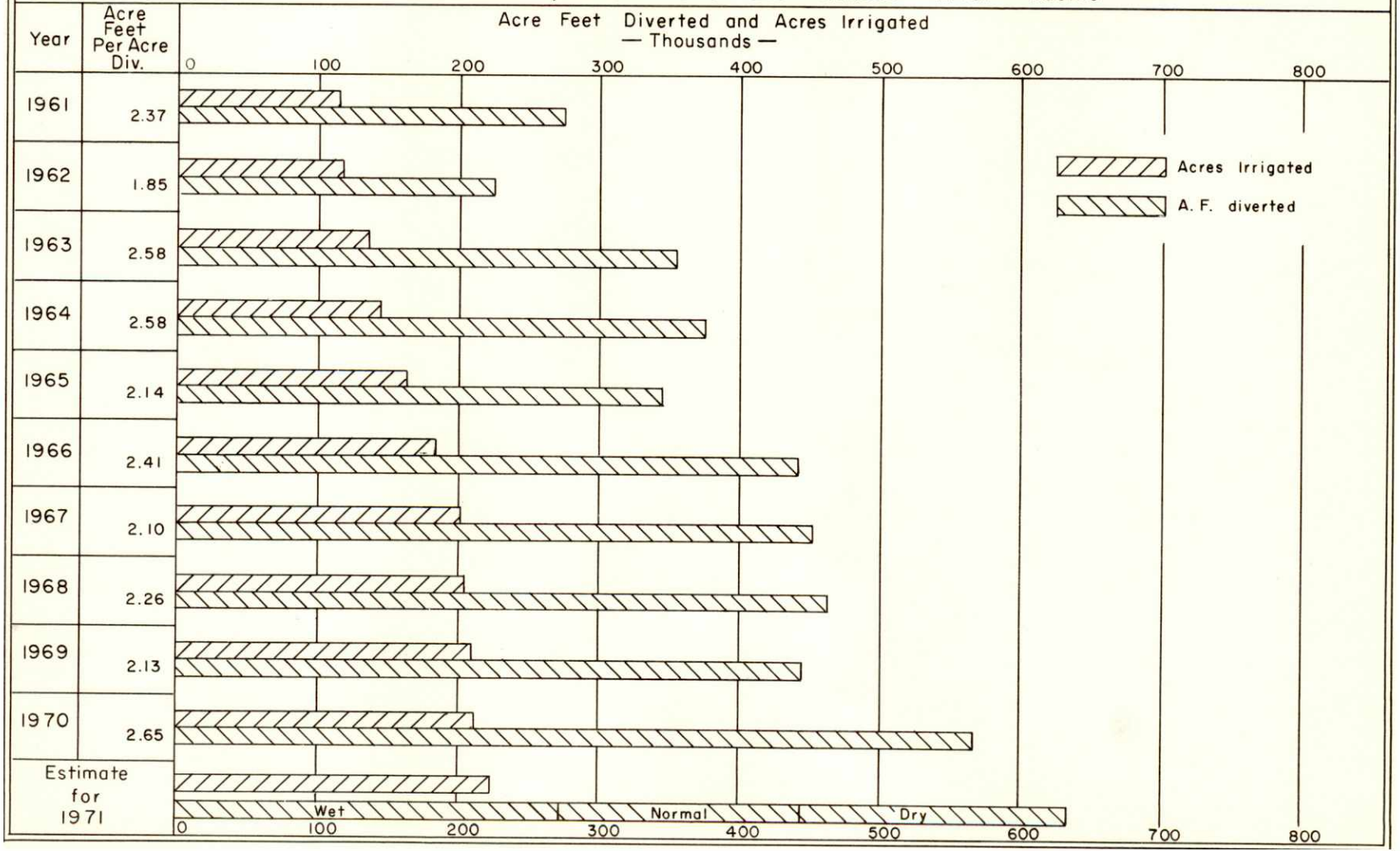


MOST PROBABLE
REASONABLE MAXIMUM
REASONABLE MINIMUM
ACTUAL

Exhibit 15

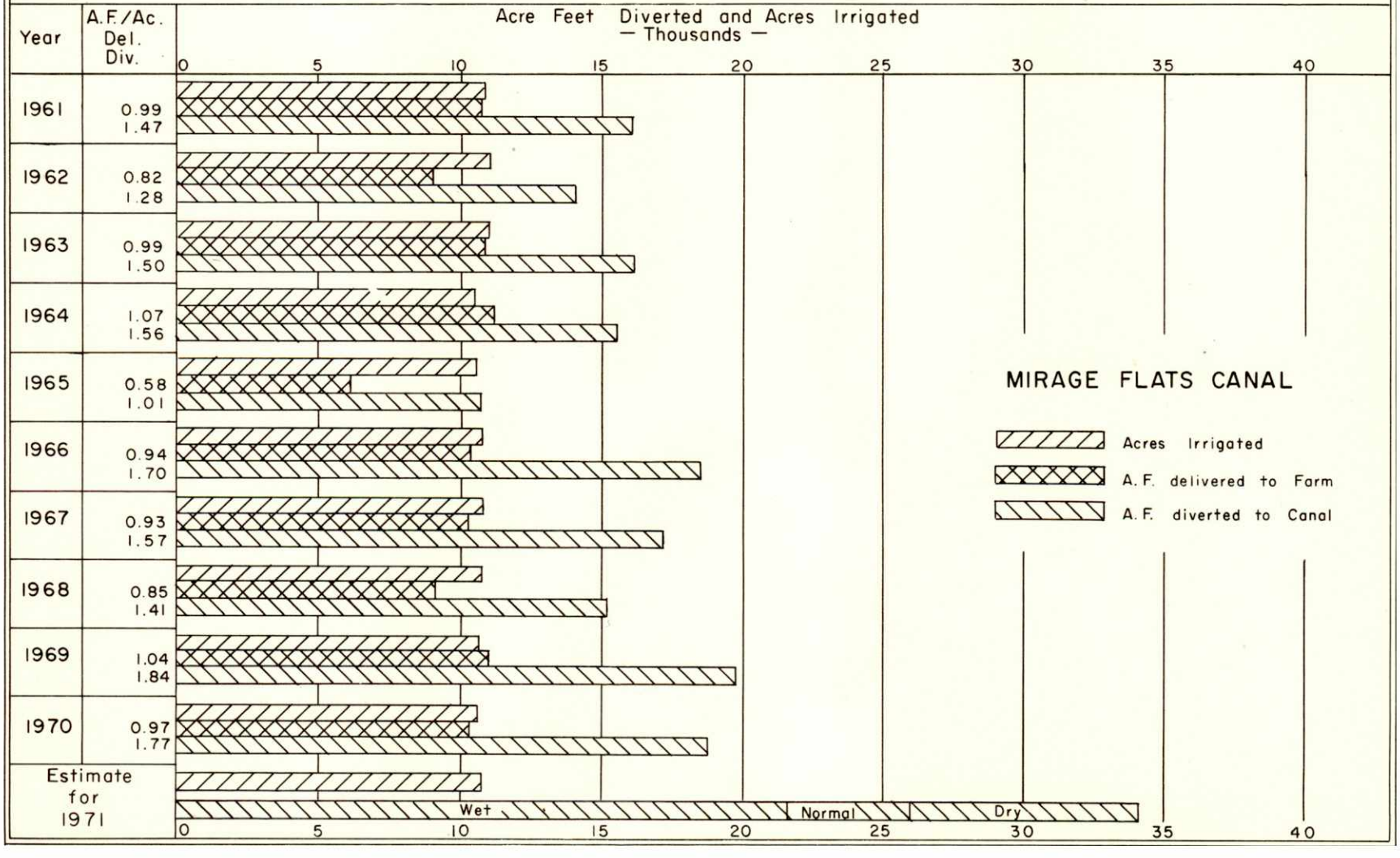
CANAL DIVERSIONS AND ACRES IRRIGATED

All Districts in Niobrara, Lower Platte and Kansas River Basins



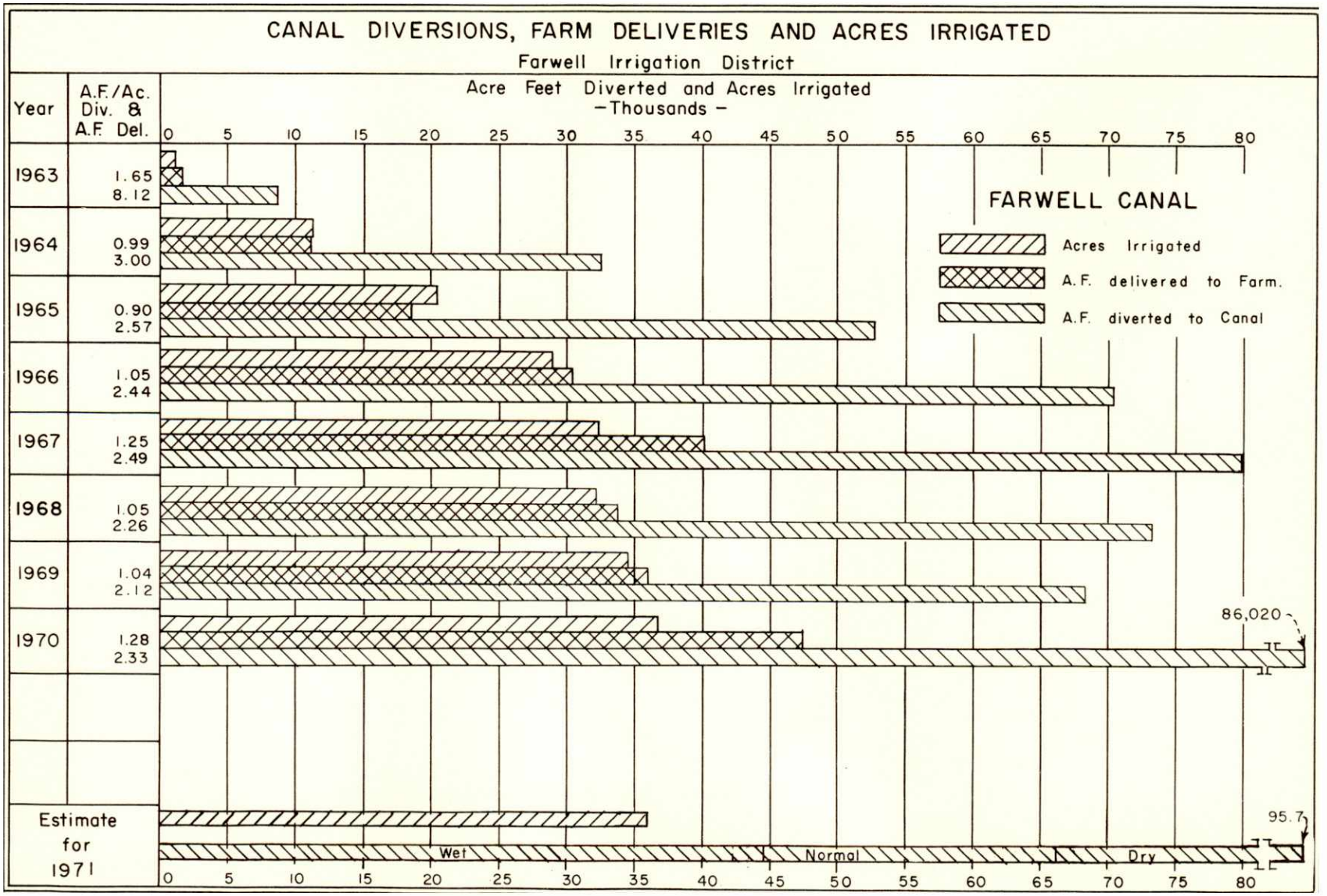
CANAL DIVERSIONS, FARM DELIVERIES AND ACRES IRRIGATED

Mirage Flats Irrigation District



CANAL DIVERSIONS, FARM DELIVERIES AND ACRES IRRIGATED

Farwell Irrigation District



CANAL DIVERSIONS, FARM DELIVERIES AND ACRES IRRIGATED

Ainsworth Irrigation District

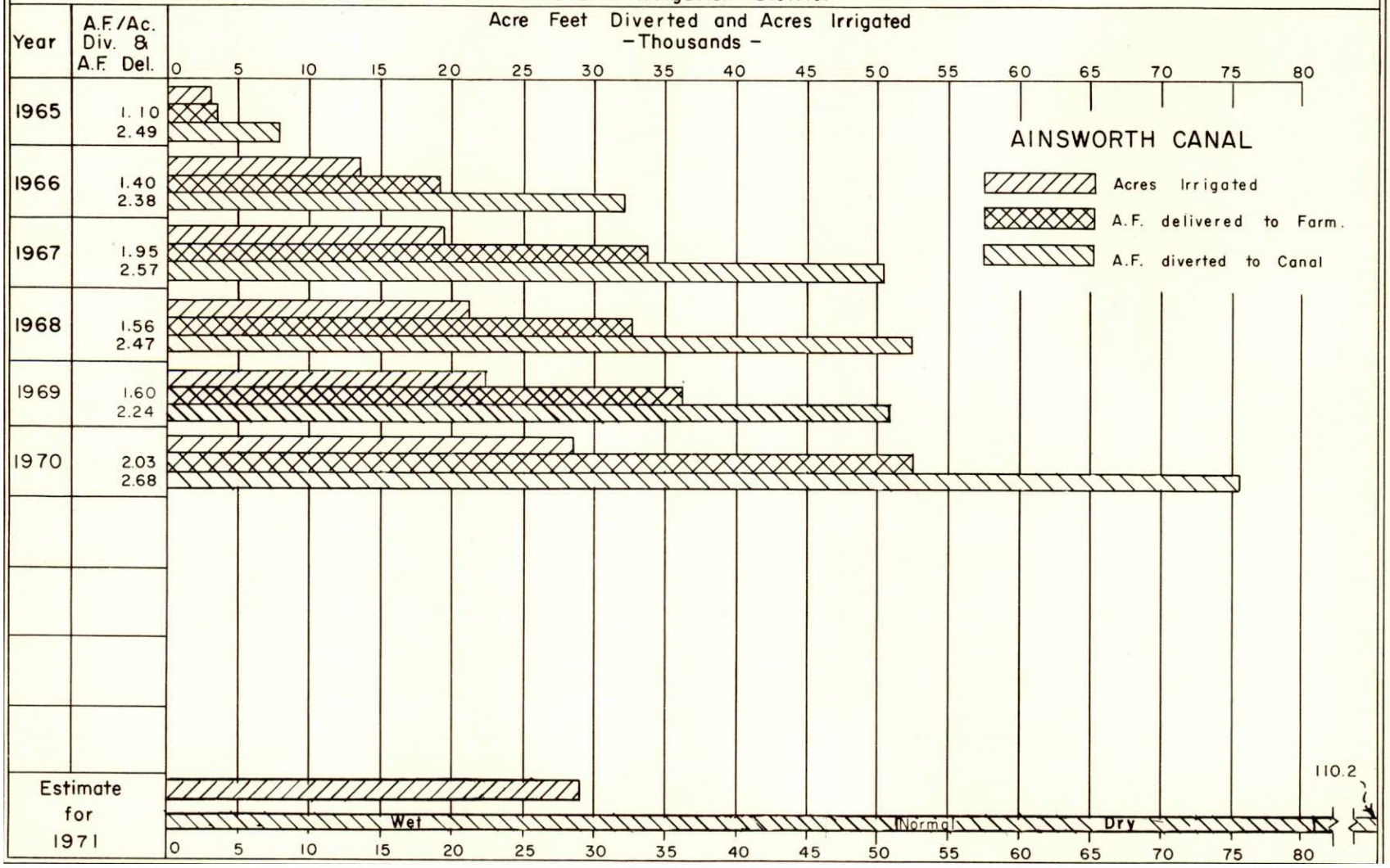
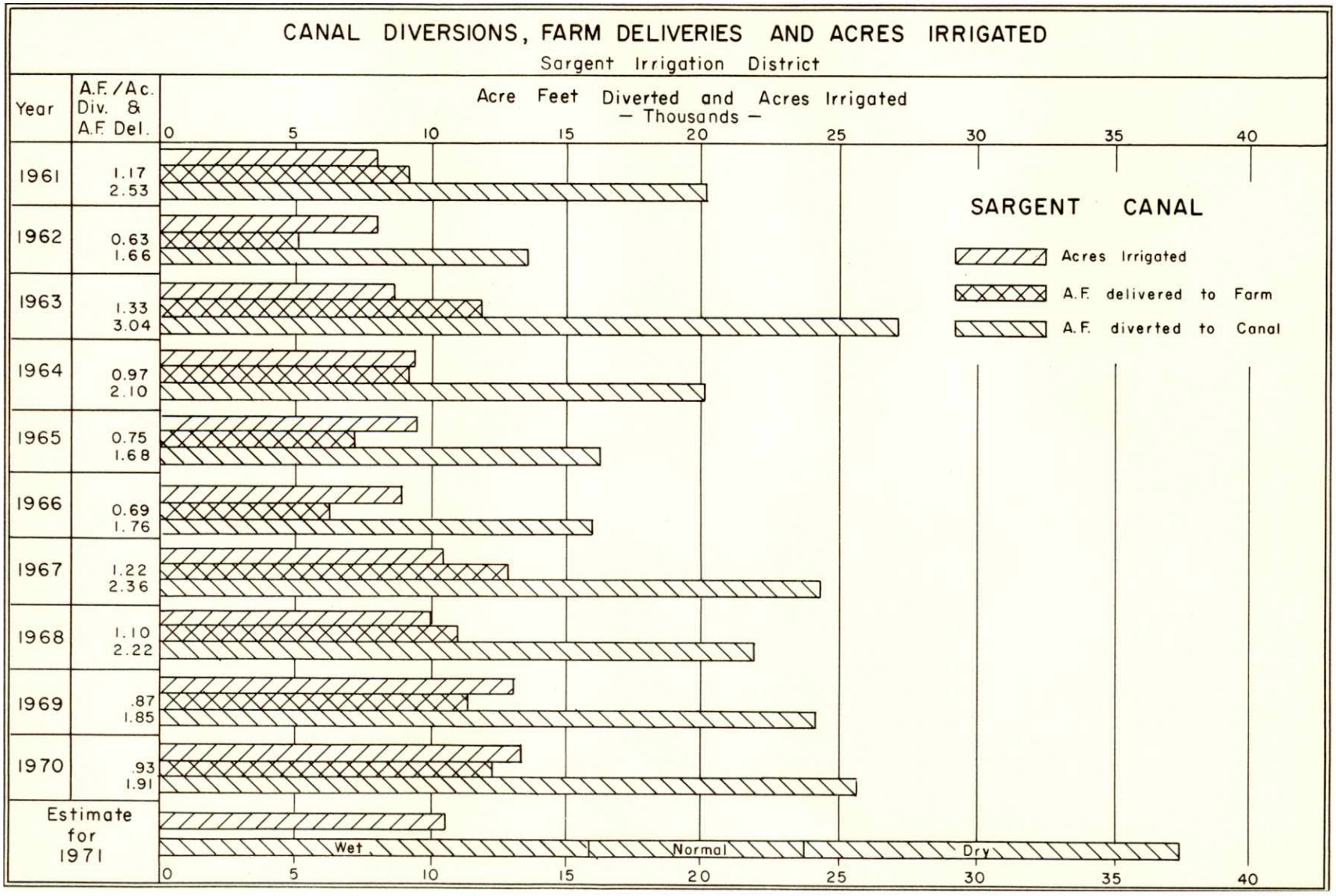


Exhibit 19

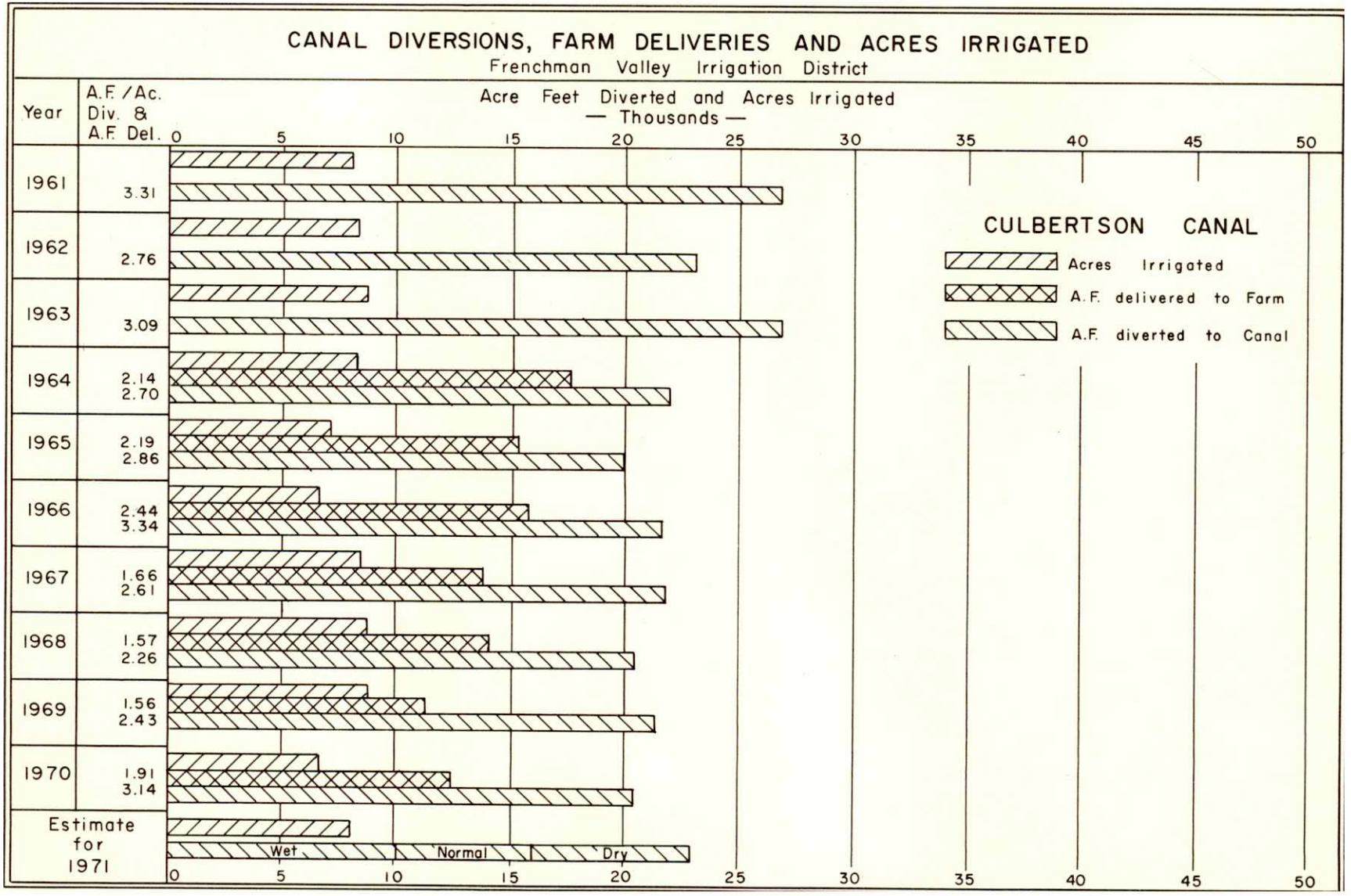
CANAL DIVERSIONS, FARM DELIVERIES AND ACRES IRRIGATED

Sargent Irrigation District



CANAL DIVERSIONS, FARM DELIVERIES AND ACRES IRRIGATED

Frenchman Valley Irrigation District



CANAL DIVERSIONS, FARM DELIVERIES AND ACRES IRRIGATED

H. and R. W. Irrigation District

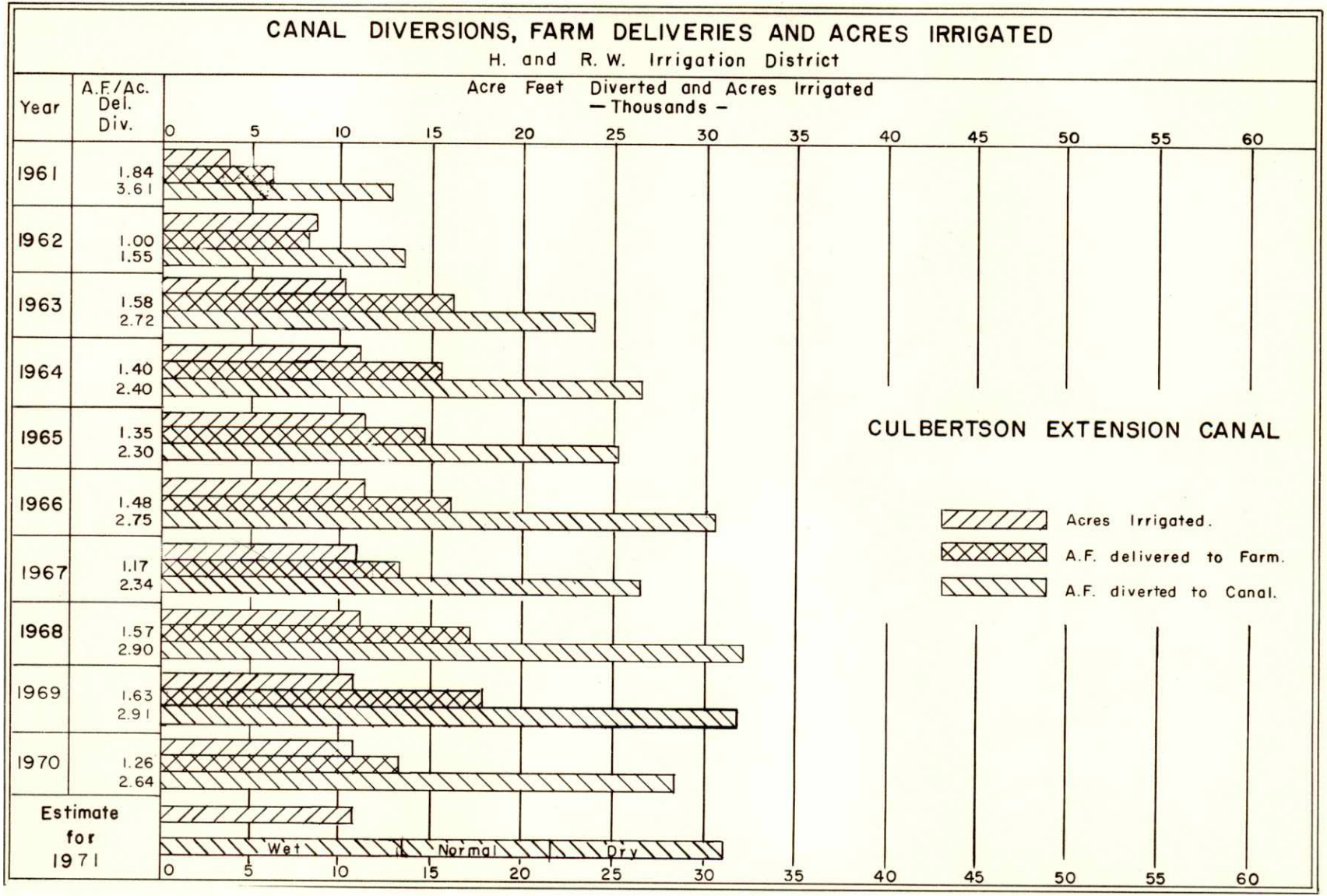
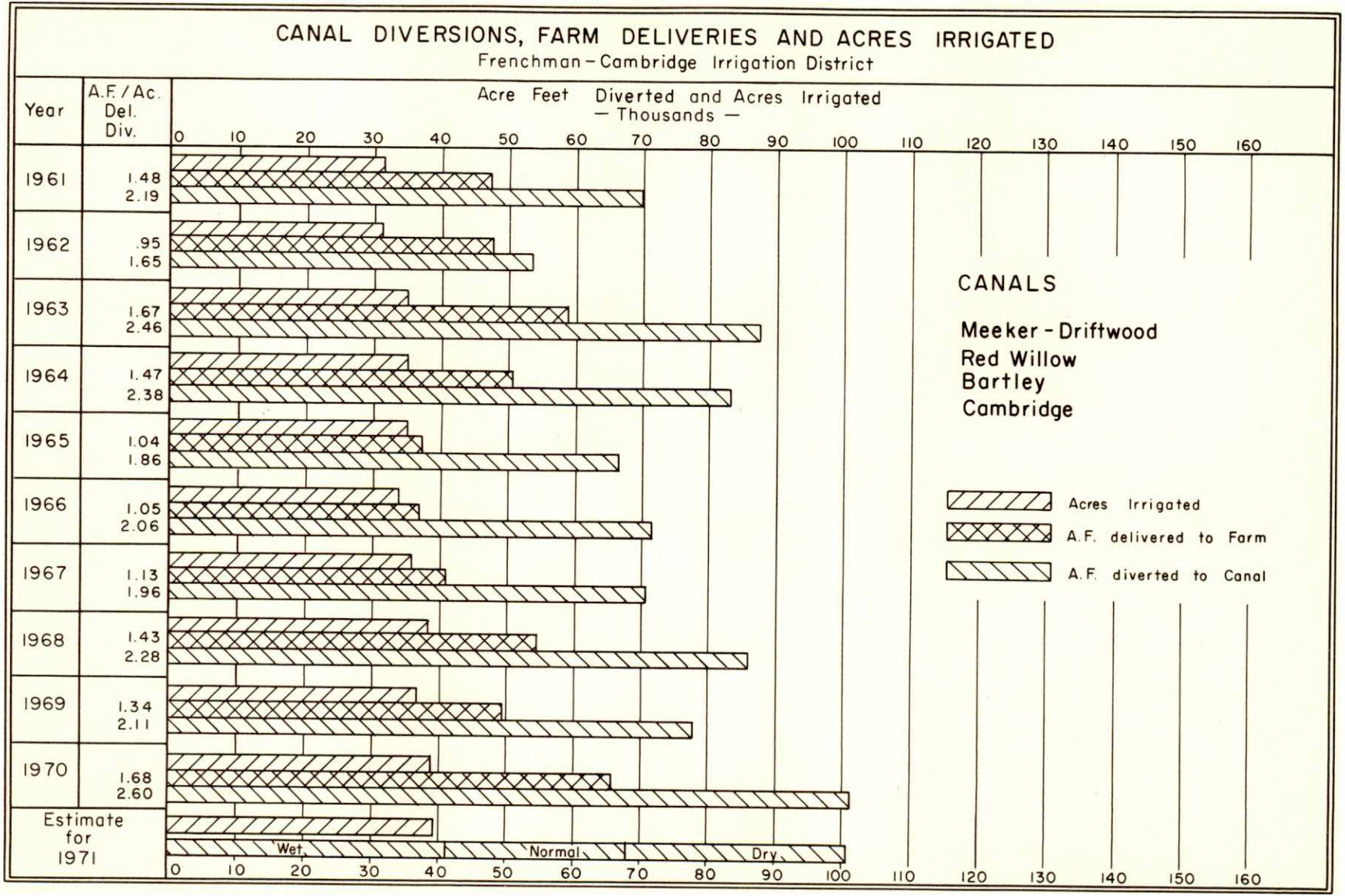


Exhibit 22

CANAL DIVERSIONS, FARM DELIVERIES AND ACRES IRRIGATED

Frenchman - Cambridge Irrigation District



CANAL DIVERSIONS, FARM DELIVERIES AND ACRES IRRIGATED

Almena Irrigation District

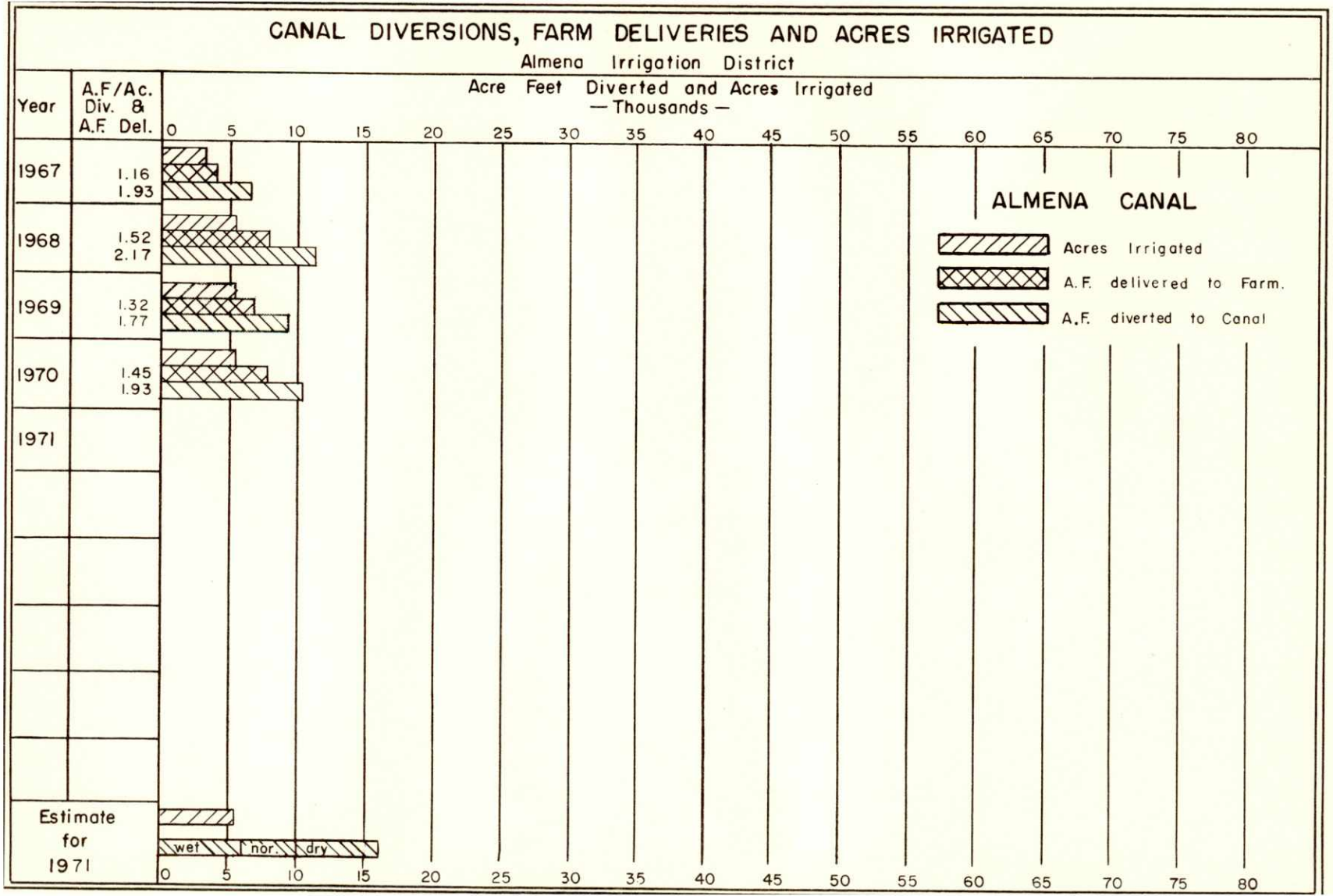


Exhibit 24

CANAL DIVERSIONS, FARM DELIVERIES AND ACRES IRRIGATED

Bostwick Irrigation District in Nebraska

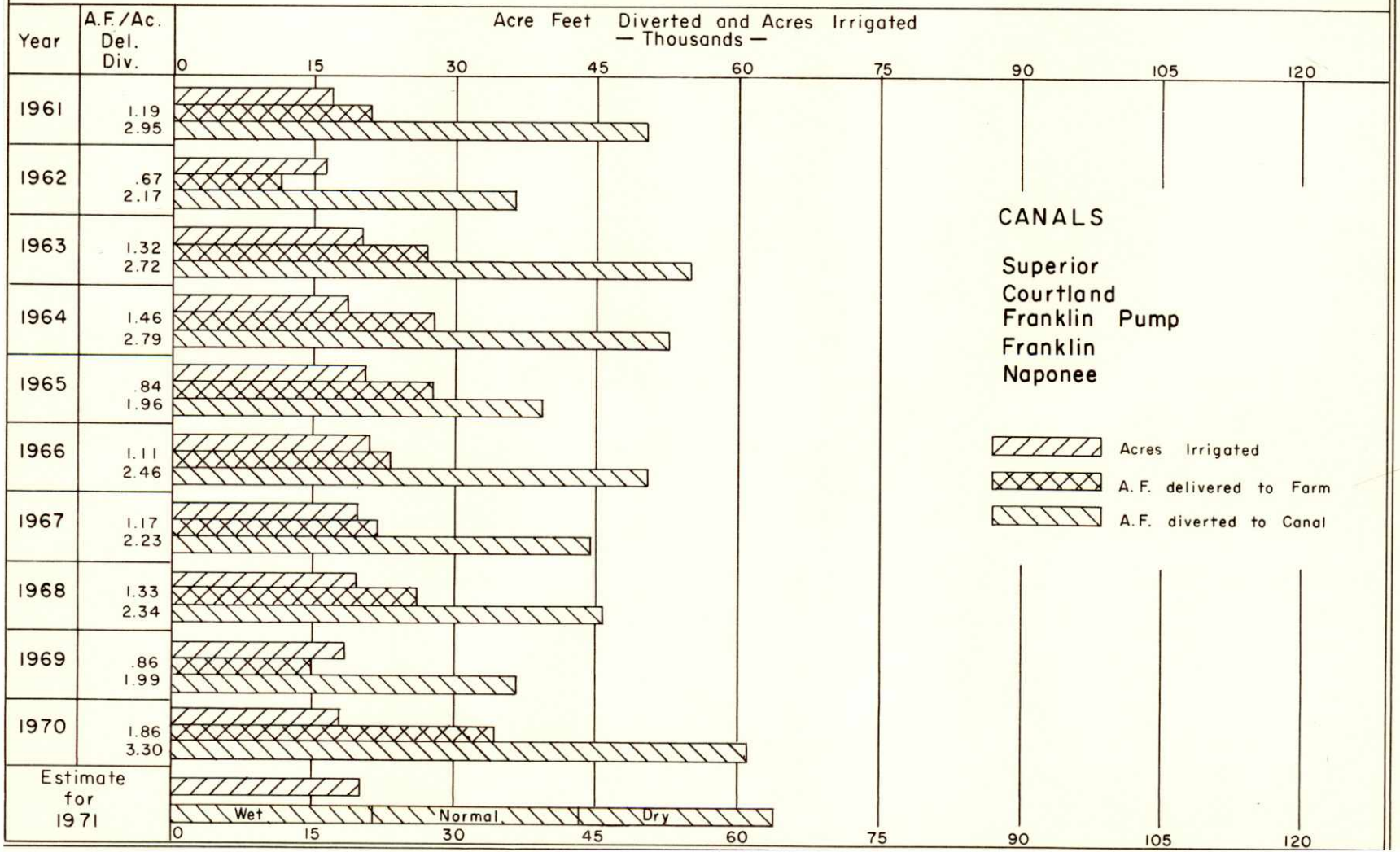


Exhibit 25

CANAL DIVERSIONS, FARM DELIVERIES AND ACRES IRRIGATED

Kansas — Bostwick Irrigation District

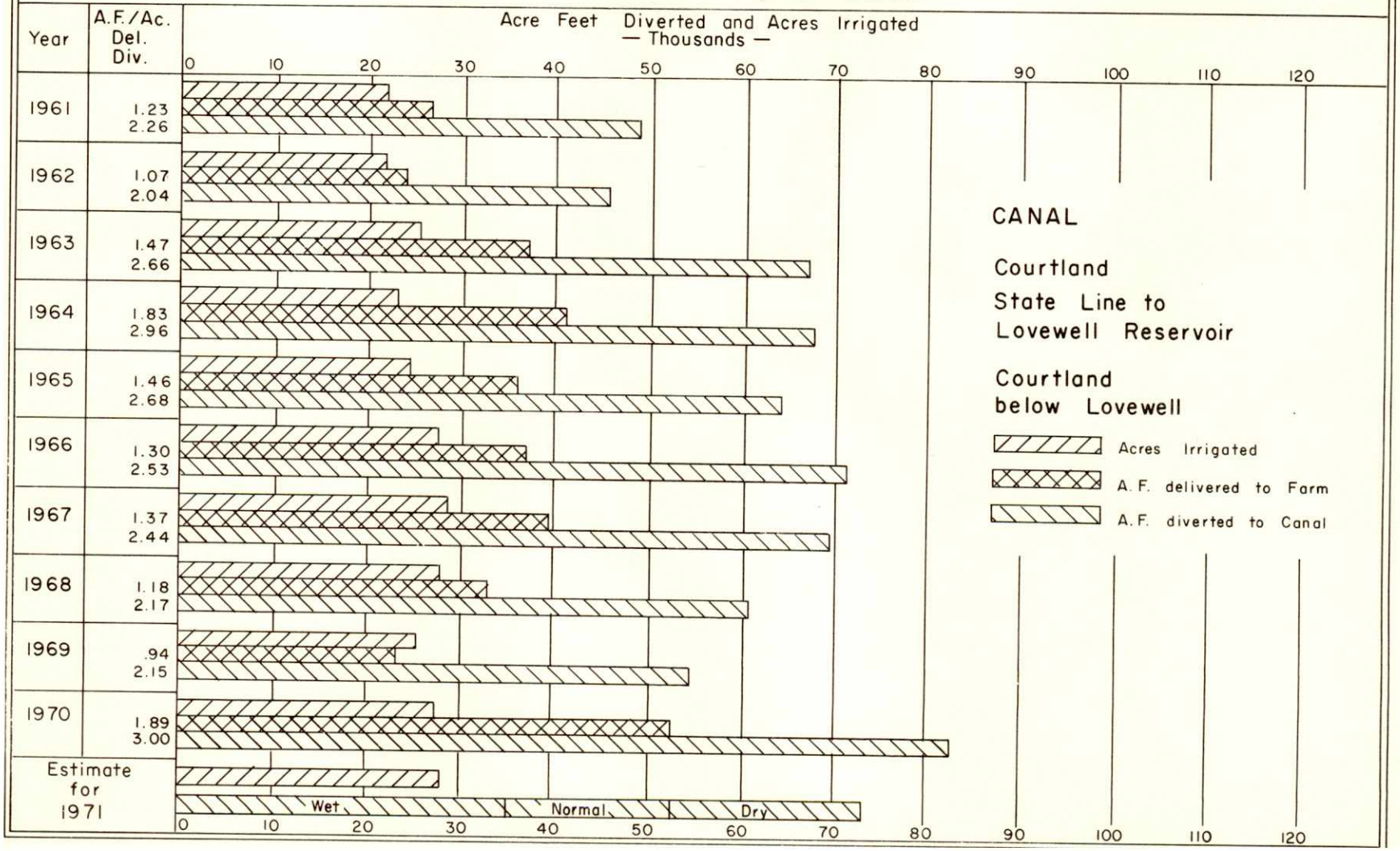
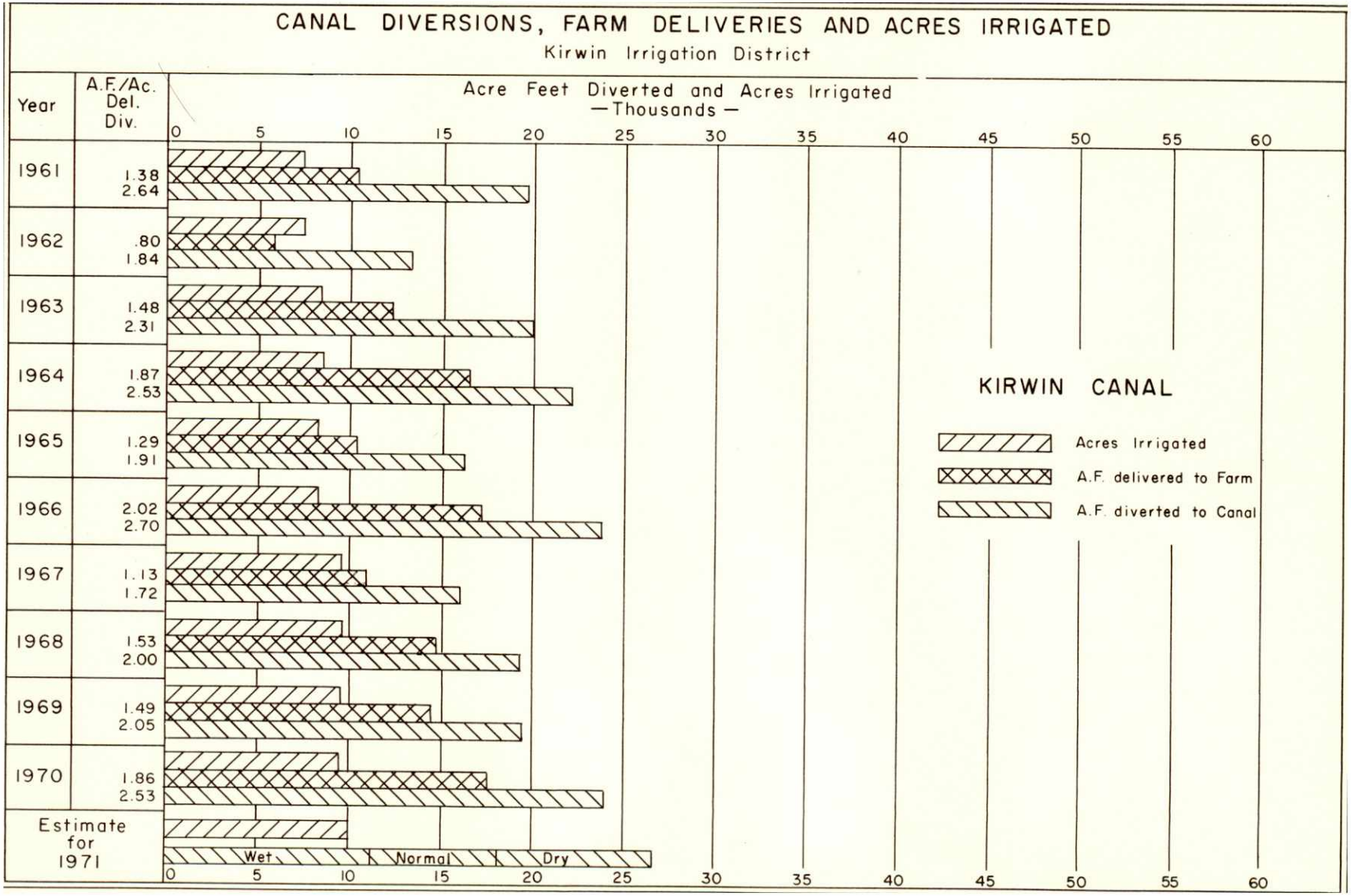


Exhibit 26

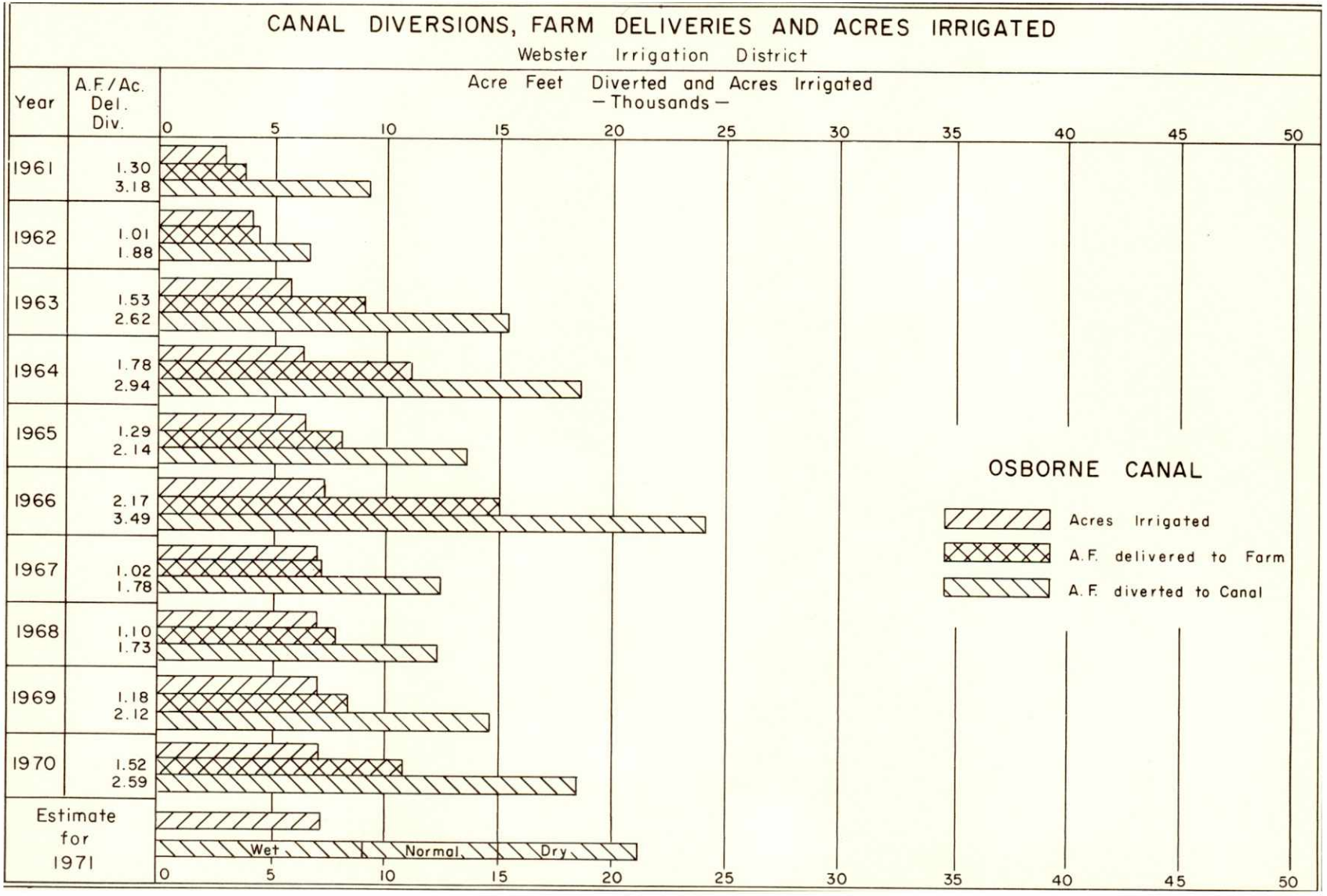
CANAL DIVERSIONS, FARM DELIVERIES AND ACRES IRRIGATED

Kirwin Irrigation District



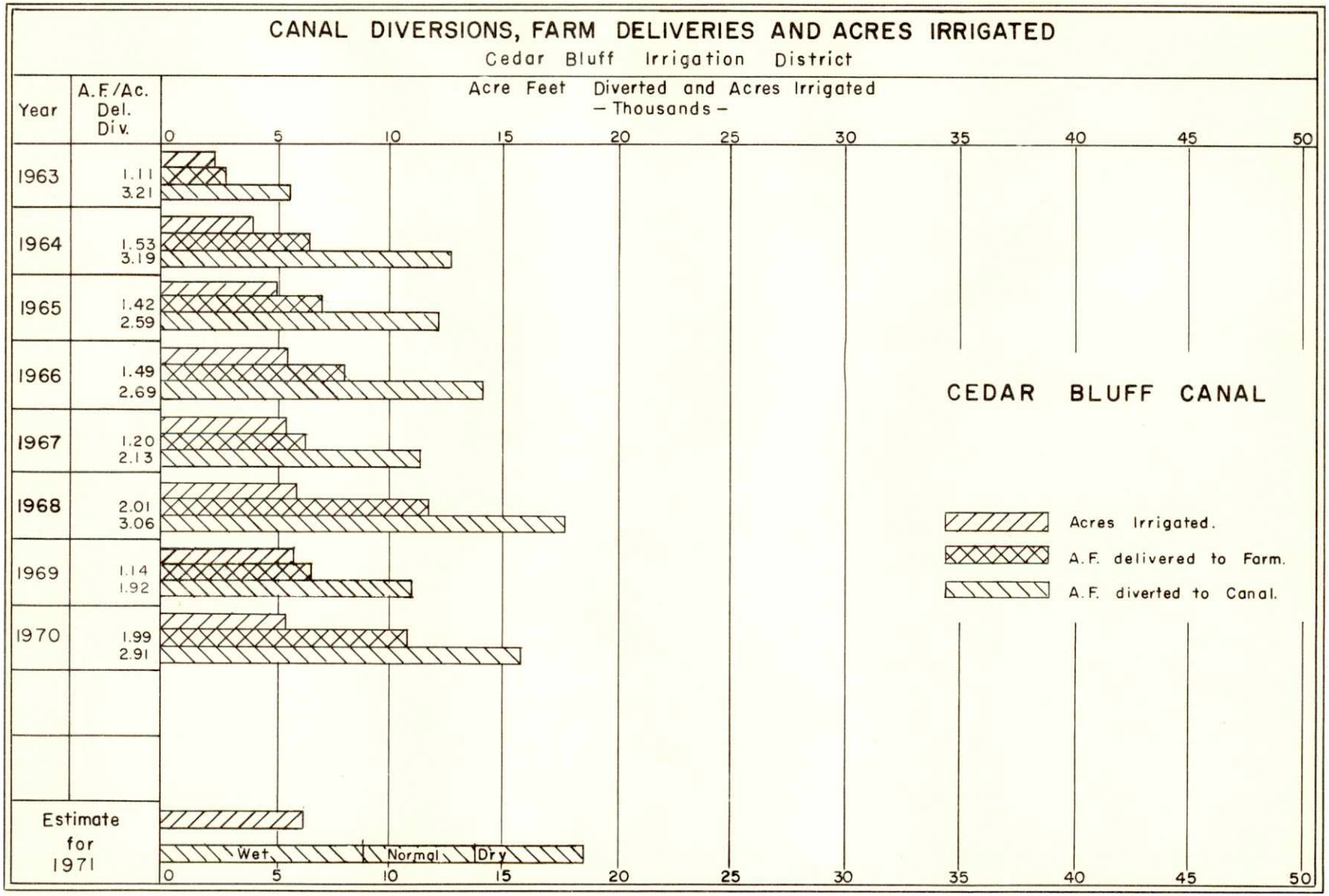
CANAL DIVERSIONS, FARM DELIVERIES AND ACRES IRRIGATED

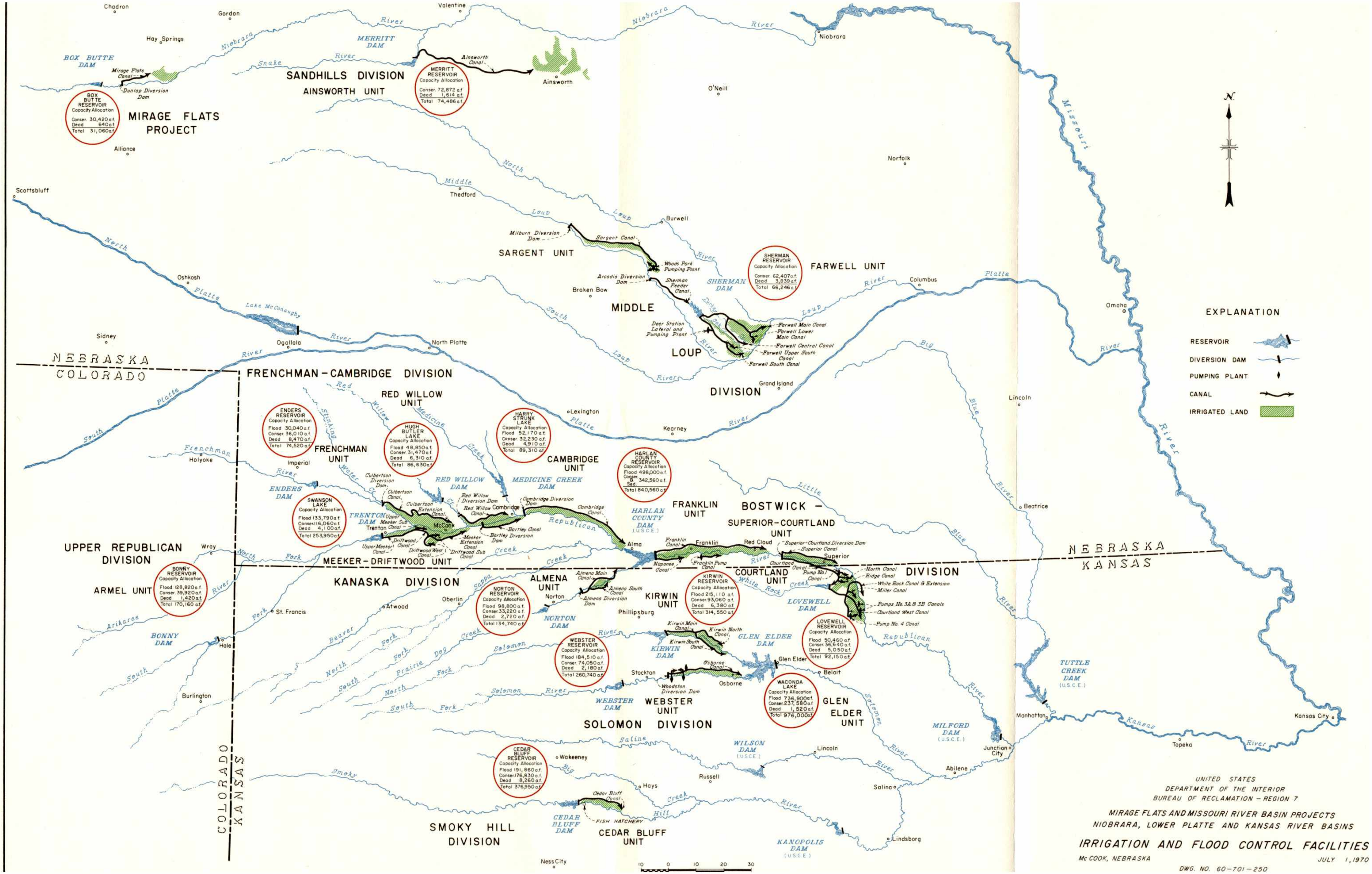
Webster Irrigation District



CANAL DIVERSIONS, FARM DELIVERIES AND ACRES IRRIGATED

Cedar Bluff Irrigation District





MIRAGE FLATS PROJECT
BOX BUTTE DAM
Mirage Flats Canal
Dunlap Diversion Dam
BOX BUTTE RESERVOIR Capacity Allocation Conser. 30,420 a.f. Dead 640 a.f. Total 31,060 a.f.
SANDHILLS DIVISION
AINSWORTH UNIT
MERRITT DAM
Ainsworth Canal
MERRITT RESERVOIR Capacity Allocation Conser. 72,872 a.f. Dead 1,614 a.f. Total 74,486 a.f.
SARGENT UNIT
Milburn Diversion Dam
Sargent Canal
Woods Park Pumping Plant
Arcadia Diversion Dam
Sherman Feeder Canal
SHERMAN DAM
SHERMAN RESERVOIR Capacity Allocation Conser. 62,407 a.f. Dead 3,839 a.f. Total 66,246 a.f.
FARWELL UNIT
MIDDLE LOUP DIVISION
Deer Station Lateral and Pumping Plant
Farwell Main Canal
Farwell Lower Main Canal
Farwell Central Canal
Farwell Upper South Canal
Farwell South Canal
NEBRASKA
COLORADO
KANSAS
FRENCHMAN-CAMBRIDGE DIVISION
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.
FRENCHMAN UNIT
CAMBRIDGE UNIT
HARLAN COUNTY RESERVOIR Capacity Allocation Flood 498,000 a.f. Conser. & Sed. 342,560 a.f. Total 840,560 a.f.
ENDERS DAM
RED WILLOW DAM
MEDICINE CREEK DAM
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
Culbertson Diversion Dam
Culbertson Canal
Culbertson Extension Canal
Red Willow Diversion Dam
Red Willow Canal
Cambridge Diversion Dam
Cambridge Canal
Bartley Canal
Bartley Diversion Dam
Meeker Extension Canal
Upper Meeker Sub Canal
Upper Meeker Canal
Driftwood Canal
Driftwood West Canal
Driftwood Sub Canal
HARLAN COUNTY DAM (U.S.C.E.)
FRANKLIN UNIT
BOSTWICK - SUPERIOR-COURTLAND UNIT
Franklin Canal
Franklin Pump Canal
Naponee Canal
Superior-Courtland Diversion Dam
Superior Canal
Courtland Canal
COURTLAND UNIT
DIVISION
North Canal
Ridge Canal
Pump No. 1 Canal
White Rock Canal & Extension
Miller Canal
Pumps No. 3A & 3B Canals
Courtland West Canal
Pump No. 4 Canal
UPPER REPUBLICAN DIVISION
MEEKER-DRIFTWOOD UNIT
KANASKA DIVISION
ARMEL UNIT
BONNY RESERVOIR Capacity Allocation Flood 128,820 a.f. Conser. 39,920 a.f. Dead 1,420 a.f. Total 170,160 a.f.
BONNY DAM
ALMENA UNIT
Almena Main Canal
Almena South Canal
Almena Diversion Dam
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 UNIT
KIRWIN RESERVOIR Capacity Allocation Flood 215,110 a.f. Conser. 93,060 a.f. Dead 6,380 a.f. Total 314,550 a.f.
LOVEWELL DAM
LOVEWELL RESERVOIR Capacity Allocation Flood 50,460 a.f. Conser. 36,640 a.f. Dead 5,050 a.f. Total 92,150 a.f.
Kirwin Main Canal
Kirwin North Canal
Kirwin South Canal
KIRWIN DAM
GLEN ELDER DAM
WEBSTER RESERVOIR Capacity Allocation Flood 184,510 a.f. Conser. 74,050 a.f. Dead 2,180 a.f. Total 260,740 a.f.
Osborne Canal
Woodston Diversion Dam
WEBSTER DAM
WEBSTER UNIT
WACONDA LAKE Capacity Allocation Flood 736,900 a.f. Conser. 237,580 a.f. Dead 1,520 a.f. Total 976,000 a.f.
GLEN ELDER UNIT
SOLOMON DIVISION
WILSON DAM (U.S.C.E.)
MILFORD DAM (U.S.C.E.)
TUTTLE CREEK DAM (U.S.C.E.)
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.
Cedar Bluff Canal
CEDAR BLUFF DAM
FISH HATCHERY
SMOKY HILL DIVISION
CEDAR BLUFF UNIT
KANOPOLIS DAM (U.S.C.E.)
Chadron
Gordon
Valentine
Hay Springs
Niobrara
Ainsworth
O'Neill
Alliance
Norfolk
Scottsbluff
Thedford
Burwell
Oshkosh
Broken Bow
Columbus
Omaha
Sidney
Ogallala
North Platte
Grand Island
Lincoln
Lexington
Kearney
Holyoke
Imperial
McCook
Trenton
Cambridge
Alma
Franklin
Red Cloud
Superior
Beatrice
Wray
St. Francis
Atwood
Oberlin
Norton
Phillipsburg
Hale
Burlington
Stockton
Osborne
Glen Elder
Beloit
Manhattan
Junction City
Topeka
Kansas City
Wakeeney
Hays
Russell
Lincoln
Abilene
Salina
Lindsborg
Ness City
Niobrara River
Snake River
Missouri River
North Loup River
Middle Loup River
South Loup River
Dismal River
Loup River
North Platte River
Lake McConaughy
South Platte River
Platte River
Big Blue River
Little Blue River
Blue River
Frenchman River
Stinking Water Cr.
Red Willow Creek
Medicine Creek
Republican River
Arikaree River
North Fork
South Fork
Sappa Creek
Beaver Creek
Prairie Dog Creek
White Rock Creek
North Fork Solomon River
South Fork Solomon River
Solomon River
Saline River
Big Creek
Smoky Hill River
Kansas River
N.
EXPLANATION
RESERVOIR
DIVERSION DAM
PUMPING PLANT
CANAL
IRRIGATED LAND
10 0 10 20 30
UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF RECLAMATION - REGION 7
MIRAGE FLATS AND MISSOURI RIVER BASIN PROJECTS
NIOBRARA, LOWER PLATTE AND KANSAS RIVER BASINS
IRRIGATION AND FLOOD CONTROL FACILITIES
Mc COOK, NEBRASKA
JULY 1, 1970
DWG. NO. 60-701-250