

INTRODUCTORY STATEMENT

ANNUAL DIVISION ENGINEERS REPORT  
IRRIGATION DIVISION NO. 2

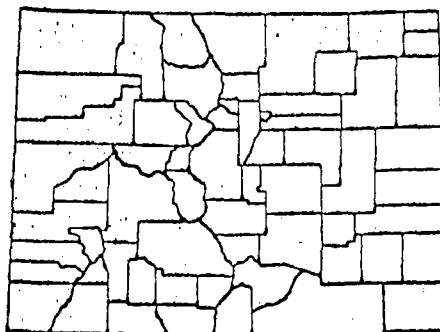
1973

IRRIGATION DIVISION NUMBER 2 CONSISTS OF ALL LANDS IRRIGATED FROM DITCHES AND CANALS DIVERTING WATER FROM THE ARKANSAS RIVER AND ITS TRIBUTARIES. THE DIVISION IS COMPOSED OF ELEVEN WATER DISTRICTS (10,11,12, 13, 14, 15, 16, 17, 18, 19, 66 and 67) COMPRISING THE COUNTIES OF EL PASO, CHAFFEE, LAKE, FREMONT, CUSTER, PUEBLO, PARK, LAS ANIMAS, TELLER, CROWLEY, OTERO, BENT, PROWERS, BACA AND KIOWA. THE AREA THAT IS ENCOMPASSED BY IRRIGATION DIVISION NUMBER 2 MAY BE BEST DESCRIBED BY THE FOLLOWING SUMMARIZED TABLES.

IRRIGATION DIVISION II

BACA COUNTY

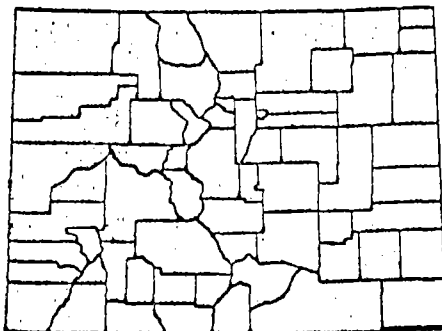
MAJOR CITY	SPRINGFIELD
1970 POPULATION	5,516
URBAN POPULATION	NO CITY OVER 2500
RURAL POPULATION	5,516
COUNTY AREA	2,565 SQ. MILES
TERRAIN	PLAINS
ELEVATION (MAJOR CITY)	4,356
MAJOR STREAM	CARRIZO
MAJOR TRIBUTARY	NONE
MAJOR WATER USE	IRRIGATION
IRRIGATED ACRES	56,910
AVERAGE GROWING SEASON	169 DAYS
ANNUAL MEAN TEMPERATURE	52.20
AVERAGE ANNUAL RAINFALL	14.73 INCHES
AVERAGE ANNUAL SNOWFALL	27.7 INCHES
MAJOR SOURCE INCOME	AGRICULTURE
NUMBER OF FARMS	750
WATER RESOURCE PROJECTS	UNDERGROUND WATER DISTRICT
LAND OWNERSHIP	
PRIVATE	1,736,612 ACRES
FEDERAL	205,500 ACRES
STATE	42,928 ACRES
COUNTY AND MUNICIPAL	86 ACRES



IRRIGATION DIVISION II

BENT COUNTY

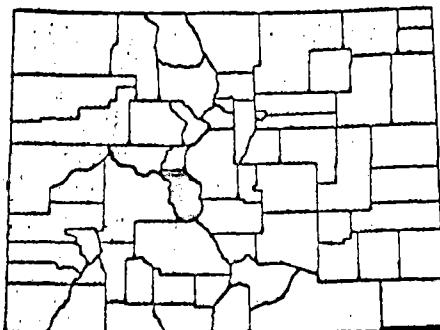
MAJOR CITY	LAS ANIMAS
1970 POPULATION	6,343
URBAN POPULATION	2,955
RURAL POPULATION	3,388
COUNTY AREA	1,517 SQ. MILES
TERRAIN	PLAINS
ELEVATION (MAJOR CITY)	3,901
MAJOR STREAM	ARKANSAS
MAJOR TRIBUTARY	PURGATOIRE
MAJOR WATER USE	IRRIGATION
IRRIGATED ACRES	45,292
AVERAGE GROWING SEASON	158 DAYS
ANNUAL MEAN TEMPERATURE	51.3°
AVERAGE ANNUAL RAINFALL	12.25 INCHES
AVERAGE ANNUAL SNOWFALL	21.0 INCHES
MAJOR SOURCE INCOME	AGRICULTURE
NUMBER OF FARMS	450
WATER RESOURCE PROJECTS	FRYING-PAN
LAND OWNERSHIP	
PRIVATE	939,722 ACRES
FEDERAL	10,233 ACRES
STATE	142,673 ACRES
COUNTY AND MUNICIPAL	147 ACRES



IRRIGATION DIVISION II

CHAFFEE COUNTY

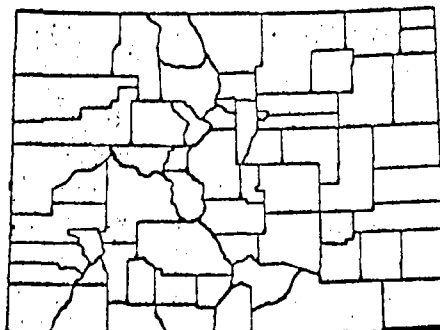
MAJOR CITY	SALIDA
1970 POPULATION	9,663
URBAN POPULATION	4,322
RURAL POPULATION	5,341
COUNTY AREA	1,039 SQ. MILES
TERRAIN	MOUNTAINOUS
ELEVATION (MAJOR CITY)	7,036
MAJOR STREAM	ARKANSAS
MAJOR TRIBUTARY	SOUTH ARKANSAS
MAJOR WATER USE	IRRIGATION
IRRIGATED ACRES	16,216
AVERAGE GROWING SEASON	112 DAYS
ANNUAL MEAN TEMPERATURE	46.3°
AVERAGE ANNUAL RAINFALL	10.87 INCHES
AVERAGE ANNUAL SNOWFALL	46.2 INCHES
MAJOR SOURCE INCOME	AGRICULTURE
NUMBER OF FARMS	170
WATER RESOURCE PROJECTS	FRYING-PAN
LAND OWNERSHIP	
PRIVATE	128,736 ACRES
FEDERAL	502,651 ACRES
STATE	20,103 ACRES
COUNTY AND MUNICIPAL	3,511 ACRES



IRRIGATION DIVISION II

CROWLEY COUNTY

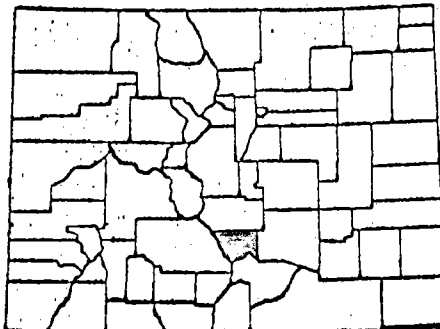
MAJOR CITY	ORDWAY
1970 POPULATION	2,947
URBAN POPULATION	NO CITY OVER 2500
RURAL POPULATION	2,947
COUNTY AREA	803 SQ. MILES
TERRAIN	PLAINS
ELEVATION (MAJOR CITY)	4,312
MAJOR STREAM	HORSE CREEK
MAJOR TRIBUTARY	NONE
MAJOR WATER USE	IRRIGATION
IRRIGATED ACRES	25,010
AVERAGE GROWING SEASON	162 DAYS
ANNUAL MEAN TEMPERATURE	51.4°
AVERAGE ANNUAL RAINFALL	12.31 INCHES
AVERAGE ANNUAL SNOWFALL	21.2 INCHES
MAJOR SOURCE INCOME	AGRICULTURE
NUMBER OF FARMS	400
WATER RESOURCE PROJECTS	FRYING-PAN
LAND OWNERSHIP	
PRIVATE	531,034 ACRES
FEDERAL	5,054 ACRES
STATE	62,711 ACRES
COUNTY AND MUNICIPAL	897 ACRES



IRRIGATION DIVISION II

CUSTER COUNTY

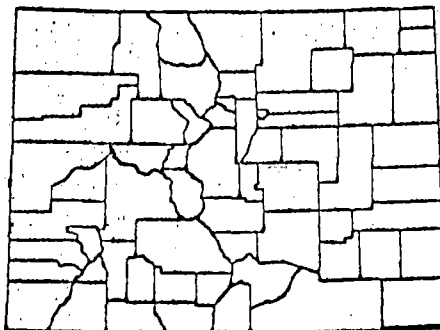
MAJOR CITY	WESTCLIFFE
1970 POPULATION	1,028
URBAN POPULATION	NO CITY OVER 2500
RURAL POPULATION	1,028
COUNTY AREA	737 SQ. MILES
TERRAIN	MOUNTAIN VALLEY
ELEVATION (MAJOR CITY)	7,888
MAJOR STREAM	GRAPE
MAJOR TRIBUTARY	TEXAS
MAJOR WATER USE	IRRIGATION
IRRIGATED ACRES	15,930
AVERAGE GROWING SEASON	86 DAYS
ANNUAL MEAN TEMPERATURE	43.7°
AVERAGE ANNUAL RAINFALL	16.47 INCHES
AVERAGE ANNUAL SNOWFALL	88.1 INCHES
MAJOR SOURCE INCOME	AGRICULTURE
NUMBER OF FARMS	180
WATER RESOURCE PROJECTS	U.S.G.S. UNDERGROUND STUDY
LAND OWNERSHIP	
PRIVATE	298,001 ACRES
FEDERAL	186,695 ACRES
STATE	11,989 ACRES
COUNTY AND MUNICIPAL	452 ACRES



IRRIGATION DIVISION II

EL PASO COUNTY

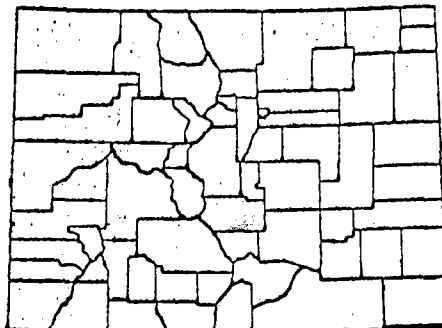
MAJOR CITY	COLORADO SPRINGS
1970 POPULATION	229,113
URBAN POPULATION	200,145
RURAL POPULATION	27,968
COUNTY AREA	2,158 SQ. MILES
TERRAIN	FOOTHILLS
ELEVATION (MAJOR CITY)	6,012
MAJOR STREAM	FOUNTAIN
MAJOR TRIBUTARY	MONUMENT
MAJOR WATER USE	COMMERCIAL/IRRIGATION
IRRIGATED ACRES	13,630
AVERAGE GROWING SEASON	148 DAYS
ANNUAL MEAN TEMPERATURE	48.0°
AVERAGE ANNUAL RAINFALL	14.49 INCHES
AVERAGE ANNUAL SNOWFALL	35.0 INCHES
MAJOR SOURCE INCOME	MILITARY, MANUFACTURING
NUMBER OF FARMS	750
WATER RESOURCE PROJECTS	Blue River; FRYING-PAN ; HOMESTAKE
LAND OWNERSHIP	
PRIVATE	981,504 ACRES
FEDERAL	187,866 ACRES
STATE	192,482 ACRES
COUNTY AND MUNICIPAL	14,839 ACRES



IRRIGATION DIVISION II

FREMONT COUNTY

MAJOR CITY	CANON CITY
1970 POPULATION	20,220
URBAN POPULATION	11,917
RURAL POPULATION	8,303
COUNTY AREA	1,562 SQ. MILES
TERRAIN	FOOTHILLS
ELEVATION (MAJOR CITY)	5,332
MAJOR STREAM	ARKANSAS
MAJOR TRIBUTARY	GRAPE
MAJOR WATER USE	IRRIGATION
IRRIGATED ACRES	14,920
AVERAGE GROWING SEASON	164 DAYS
ANNUAL MEAN TEMPERATURE	54.1°
AVERAGE ANNUAL RAINFALL	12.66 INCHES
AVERAGE ANNUAL SNOWFALL	35.6 INCHES
MAJOR SOURCE INCOME	AGRICULTURE, INDUSTRY
NUMBER OF FARMS	421
WATER RESOURCE PROJECTS	FRYING-PAN
LAND OWNERSHIP	
PRIVATE	523,202 ACRES
FEDERAL	441,445 ACRES
STATE	65,326 ACRES
COUNTY AND MUNICIPAL	7,785 ACRES

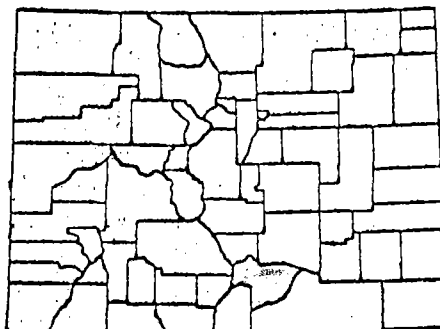




IRRIGATION DIVISION II

HUERFANO COUNTY

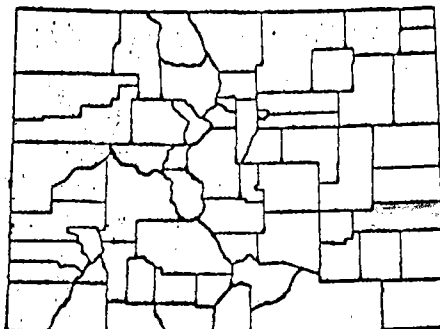
MAJOR CITY	WALSENBURG
1970 POPULATION	6,410
URBAN POPULATION	4,277
RURAL POPULATION	2,133
COUNTY AREA	1,578 SQ. MILES
TERRAIN	MESA, TABLELAND
ELEVATION (MAJOR CITY)	6,185
MAJOR STREAM	HUERFANO
MAJOR TRIBUTARY	CUCHARA
MAJOR WATER USE	IRRIGATION
IRRIGATED ACRES	11,453
AVERAGE GROWING SEASON	151 DAYS
ANNUAL MEAN TEMPERATURE	50.2°
AVERAGE ANNUAL RAINFALL	14.13 INCHES
AVERAGE ANNUAL SNOWFALL	69.0 INCHES
MAJOR SOURCE INCOME	AGRICULTURE
NUMBER OF FARMS	280
WATER RESOURCE PROJECTS	NONE
LAND OWNERSHIP	
PRIVATE	747,900 ACRES
FEDERAL	211,670 ACRES
STATE	43,525 ACRES
COUNTY AND MUNICIPAL	320 ACRES



IRRIGATION DIVISION II

KIOWA COUNTY

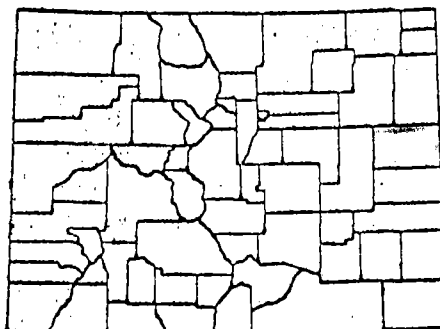
MAJOR CITY	EADS
1970 POPULATION	2,006
URBAN POPULATION	NO CITY OVER 2500
RURAL POPULATION	2,006
COUNTY AREA	1,792 SQ.MILES.
TERRAIN	PLAINS
ELEVATION (MAJOR CITY)	4,213
MAJOR STREAM	BIG SANDY
MAJOR TRIBUTARY	NONE
MAJOR WATER USE	IRRIGATION
IRRIGATED ACRES	5,127
AVERAGE GROWING SEASON	156 DAYS
ANNUAL MEAN TEMPERATURE	51.0°
AVERAGE ANNUAL RAINFALL	13.78 INCHES
AVERAGE ANNUAL SNOWFALL	22.3 INCHES
MAJOR SOURCE INCOME	AGRICULTURE
NUMBER OF FARMS	350
WATER RESOURCE PROJECTS	NONE
LAND OWNERSHIP	
PRIVATE	1,413,911 ACRES
FEDERAL	3,975 ACRES
STATE	70,893 ACRES
COUNTY AND MUNICIPAL	365 ACRES



IRRIGATION DIVISION II

KIT CARSON COUNTY

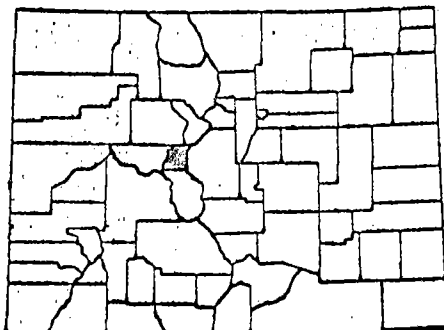
MAJOR CITY	BURLINGTON
1970 POPULATION	7,379
URBAN POPULATION	2,784
RURAL POPULATION	4,595
COUNTY AREA	2,171 SQ. MILES
TERRAIN	PLAINS
ELEVATION (MAJOR CITY)	4,163
MAJOR STREAM	REPUBLICAN
MAJOR TRIBUTARY	NONE
MAJOR WATER USE	IRRIGATION
IRRIGATED ACRES	56,576
AVERAGE GROWING SEASON	154 DAYS
ANNUAL MEAN TEMPERATURE	50.3°
AVERAGE ANNUAL RAINFALL	16.35 INCHES
AVERAGE ANNUAL SNOWFALL	22.7 INCHES
MAJOR SOURCE INCOME	AGRICULTURE
NUMBER OF FARMS	840
WATER RESOURCE PROJECTS	NONE
LAND OWNERSHIP	
PRIVATE	1,324,600 ACRES
FEDERAL	292 ACRES
STATE	56,486 ACRES
COUNTY AND MUNICIPAL	985 ACRES



IRRIGATION DIVISION II

LAKE COUNTY

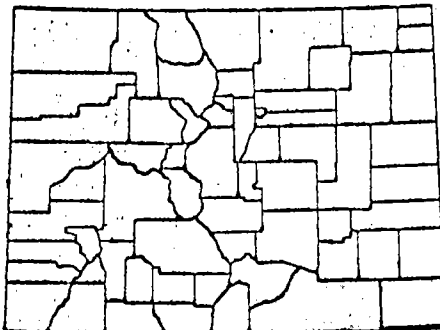
MAJOR CITY	LEADVILLE
1970 POPULATION	8,138
URBAN POPULATION	4,265
RURAL POPULATION	3,873
COUNTY AREA	380 SQ. MILES
TERRAIN	MOUNTAINOUS
ELEVATION (MAJOR CITY)	10,152
MAJOR STREAM	ARKANSAS
MAJOR TRIBUTARY	LAKE FORK
MAJOR WATER USE	IRRIGATION
IRRIGATED ACRES	6,036
AVERAGE GROWING SEASON	82 DAYS
ANNUAL MEAN TEMPERATURE	37.3°
AVERAGE ANNUAL RAINFALL	18.45 INCHES
AVERAGE ANNUAL SNOWFALL	124.7 INCHES
MAJOR SOURCE INCOME	MINING
NUMBER OF FARMS	17
WATER RESOURCE PROJECTS	FRYING-PAN
LAND OWNERSHIP	
PRIVATE	71,342 ACRES
FEDERAL	198,844 ACRES
STATE	1,795 ACRES
COUNTY AND MUNICIPAL	1,620 ACRES



IRRIGATION DIVISION II

LAS ANIMAS COUNTY

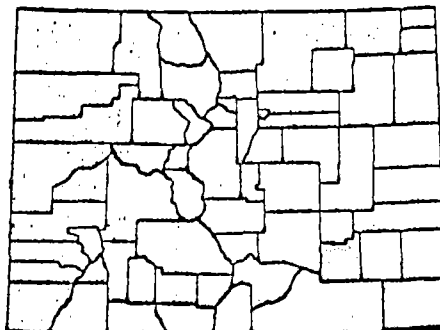
MAJOR CITY	TRINIDAD
1970 POPULATION	15,291
URBAN POPULATION	9,721
RURAL POPULATION	5,570
COUNTY AREA	4,794 SQ. MILES
TERRAIN	FOOTHILLS
ELEVATION (MAJOR CITY)	6,025
MAJOR STREAM	PURGATOIRE
MAJOR TRIBUTARY	NONE
MAJOR WATER USE	IRRIGATION
IRRIGATED ACRES	19,463
AVERAGE GROWING SEASON	156 DAYS
ANNUAL MEAN TEMPERATURE	50.4°
AVERAGE ANNUAL RAINFALL	15.03 INCHES
AVERAGE ANNUAL SNOWFALL	47.7 INCHES
MAJOR SOURCE INCOME	AGRICULTURE, COAL MINING
NUMBER OF FARMS	200
WATER RESOURCE PROJECTS	TRINIDAD DAM
LAND OWNERSHIP	
PRIVATE	3,179,204 ACRES
FEDERAL	151,214 ACRES
STATE	163,997 ACRES
COUNTY AND MUNICIPAL	3,482 ACRES



IRRIGATION DIVISION II

OTERO COUNTY

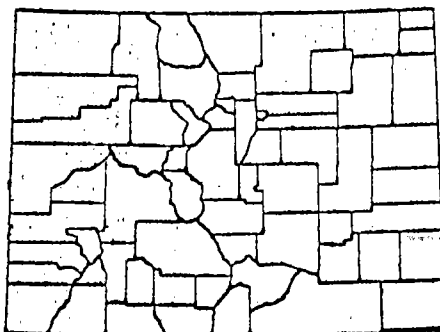
MAJOR CITY	LA JUNTA
1970 POPULATION	22,824
URBAN POPULATION	12,514
RURAL POPULATION	10,310
COUNTY AREA	1,267 SQ. MILES
TERRAIN	PLAINS
ELEVATION (MAJOR CITY)	LA JUNTA
MAJOR STREAM	ARKANSAS
MAJOR TRIBUTARY	HORSE
MAJOR WATER USE	IRRIGATION
IRRIGATED ACRES	57,675
AVERAGE GROWING SEASON	162 DAYS
ANNUAL MEAN TEMPERATURE	52.0°
AVERAGE ANNUAL RAINFALL	12.31 INCHES
AVERAGE ANNUAL SNOWFALL	26.7 INCHES
MAJOR SOURCE INCOME	AGRICULTURE
NUMBER OF FARMS	690
WATER RESOURCE PROJECTS	FRYING-PAN
LAND OWNERSHIP	
PRIVATE	506,310 ACRES
FEDERAL	169,004 ACRES
STATE	120,572 ACRES
COUNTY AND MUNICIPAL	2,050 ACRES



IRRIGATION DIVISION II

PROWERS COUNTY

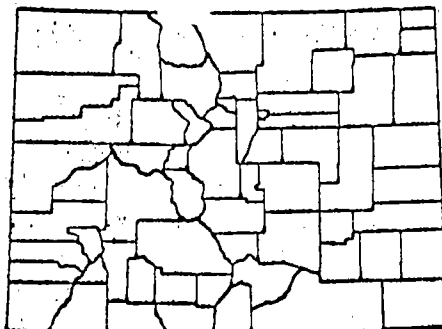
MAJOR CITY	LAMAR
1970 POPULATION	12,877
URBAN POPULATION	7,510
RURAL POPULATION	5,367
COUNTY AREA	1,626 SQ. MILES
TERRAIN	PLAINS
ELEVATION (MAJOR CITY)	3,622
MAJOR STREAM	ARKANSAS
MAJOR TRIBUTARY	NONE
MAJOR WATER USE	IRRIGATION
IRRIGATED ACRES	93,044
AVERAGE GROWING SEASON	163 DAYS
ANNUAL MEAN TEMPERATURE	52.0°
AVERAGE ANNUAL RAINFALL	14.20 INCHES
AVERAGE ANNUAL SNOWFALL	26.0 INCHES
MAJOR SOURCE INCOME	AGRICULTURE
NUMBER OF FARMS	469
WATER RESOURCE PROJECTS	NONE
LAND OWNERSHIP	
PRIVATE	996,952 ACRES
FEDERAL	1,064 ACRES
STATE	44,667 ACRES
COUNTY AND MUNICIPAL	1,794 ACRES



IRRIGATION DIVISION II

PUEBLO COUNTY

MAJOR CITY	PUEBLO
1970 POPULATION	117,212
URBAN POPULATION	106,656
RURAL POPULATION	10,556
COUNTY AREA	2,401 SQ. MILES
TERRAIN	PLAINS
ELEVATION (MAJOR CITY)	4,595
MAJOR STREAM	ARKANSAS
MAJOR TRIBUTARY	FOUNTAIN
MAJOR WATER USE	IRRIGATION, INDUSTRIAL
IRRIGATED ACRES	35,749
AVERAGE GROWING SEASON	169 DAYS
ANNUAL MEAN TEMPERATURE	51.2°
AVERAGE ANNUAL RAINFALL	12.14 INCHES
AVERAGE ANNUAL SNOWFALL	31.3 INCHES
MAJOR SOURCE INCOME	INDUSTRY
NUMBER OF FARMS	469
WATER RESOURCE PROJECTS	FRYING-PAN
LAND OWNERSHIP	
PRIVATE	1,173,398 ACRES
FEDERAL	76,712 ACRES
STATE	232,519 ACRES
COUNTY AND MUNICIPAL	3,045 ACRES

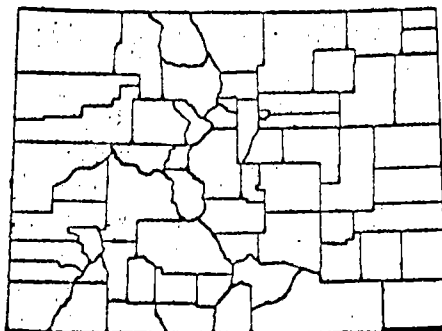




IRRIGATION DIVISION II

TELLER COUNTY

MAJOR CITY	CRIPPLE CREEK
1970 POPULATION	3,033
URBAN POPULATION	NO CITY OVER 2500
RURAL POPULATION	3,033
COUNTY AREA	554 SQ. MILES
TERRAIN	MOUNTAINOUS
ELEVATION (MAJOR CITY)	9,949
MAJOR STREAM	FOUR MILES
MAJOR TRIBUTARY	NONE
MAJOR WATER USE	IRRIGATION, COMMERCIAL
IRRIGATED ACRES	865
AVERAGE GROWING SEASON	68 DAYS
ANNUAL MEAN TEMPERATURE	NA
AVERAGE ANNUAL RAINFALL	NA
AVERAGE ANNUAL SNOWFALL	NA
MAJOR SOURCE INCOME	AGRICULTURE, TOURISM
NUMBER OF FARMS	10
WATER RESOURCE PROJECTS	NONE
LAND OWNERSHIP	
PRIVATE	195,257 ACRES
FEDERAL	156,671 ACRES
STATE	8,755 ACRES
COUNTY AND MUNICIPAL	5,598 ACRES



PRECIPITATION  
IRRIGATION DIVISION #2

STATION	APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER	DEPART FROM
	1973	1973	1973	1973	1973	1973	NORMAL
Lamar	1.38	.61	.64	3.52	.40	2.89	1.81
Leadville	1.61	1.34	.92	2.54	.75	.41	-.94
Pueblo	1.64	1.84	.38	3.23	1.13	1.19	.35
Trinidad	1.00	1.02	.34	3.75	.63	1.37	
Westcliffe	.84	1.35	.37	2.39	1.31	.83	
Colorado Springs	1.72	4.27	.47	3.31	.89	1.03	-.04

B. Precipitation:

Rainfall was generally adequate with a wet, cool spring and some reports of delays in planting due to wet fields.

The showers during the summer were well distributed and no major floods due to rainfall were reported.

The wet spring caused some difficulty in the first cutting of Alfalfa, in the area east of Pueblo, with some farms experiencing a considerable loss, and a considerable loss in the quality of the hay.

Only one hail storm causing extensive damage was reported. It, again, was in the area just east of Pueblo, and in the center of the storm damage was considerable with losses of up to 100% in the melons, and truck crops. As a whole the acres damaged were not too great, but where the storm was damage was nearly total.

There were no records of any hail suppression in Division 2.

C. Floods:

There were no reports of major floods. The unusually high run off caused some peaks of record at the Cucharas, and Huerfano gages, but no reports of damage due to the run off. The usual isolated incidents of roads being inundated by summer rain showers again prevailed this year.

D. Dams:

The distress of the Woodmoor Dam near Monument, Colorado required the lowering of the lake level, by pumping over the spillway. There was considerable erosion below the pump outlet, the toe area was excavated and new drains installed, the dam was able to refill from their wells during the summer and appears stable.

The Monument Dam created some publicity during the runoff when the outlet was unable to pass stream flow and spillways, unused for years, became operative. The inflow has fallen below the capacity of the outlet works and a reduction in storage order was issued by the Dam Section and is being enforced by the Water Commissioner.

The Denver Dam Section has issued a stop storage order to the DeWeese Reservoir, near Westcliffe, the dam is of solid masonry construction and is occasionally over topped by high spring runoff. The stop order was prompted by newspaper accounts of this event.

The "Parsons" Dams, near Trinidad, are still not in the Water Court.

ARKANSAS RIVER COMPACT  
Irrigation Division #2

- A. The general principle of this Compact is the division of the benefits of the reservoir storage on the basis of the maximum rates of flow, 750 c.f.s. or 60% to Colorado and 500 c.f.s. or 40% to Kansas, out of available storage water in the reservoir. Colorado having an advantage of using all accretions and return flow at the State line to make up Kansas' 40% share at the State line (i.e., assuming Kansas called for 500 c.f.s. release of stored water and there was 250 c.f.s of other water crossing the State line, then only a sufficient flow necessary to develop a flow of 500 c.f.s need be released from storage. Consequently, if each state continued to call for maximum releases at the same time, Colorado would always have the advantage of such return flow and accretions at the state line, which would actually result in Colorado's share being larger than 60% and Kansas less than 40%.
- B. Reservoir operation is divided into two general periods:
- 1.) Winter storage from November 1 to March 31, period during which all water flowing into the reservoir shall be stored up to the conservation capacity limit. Exception is that Colorado may call up to 100 c.f.s. limited to the river flow entering the reservoir for stock pond and other winter uses.
  - 2.) Summer storage from April 1 to October 31, when all water entering the reservoir up to conservation capacity limit shall be stored, provided that if river volume flow is sufficient, Colorado can call the first 500 c.f.s. but Kansas is limited to what river flow may be available in excess of Colorado's maximum, but in no event more than 250 c.f.s. Again, Colorado has the advantage of using return flow and accretions at the State line to make up Kansas share of such river flow.
- C. Releases of stored water are limited to the summer storage period of April 1 to October 31 and the following criteria is to be observed:
- 1.) Releases may be made simultaneously upon the demands of either/or both States.
  - 2.) Water released upon concurrent/separate demands shall be applied promptly to beneficial use unless downstream storage is authorized.
  - 3.) There shall be no allowance or accumulation of credits or debts for or against either State.
  - 4.) Releases, excepting periods when all Colorado water users are operating under decreed priorities, shall not impose any call on Colorado water users that divert from the river above the Reservoir.

- D. When storage water is available in the reservoir, Colorado shall not administer diversions on a decreed priority basis, but users above the reservoir may divert without regard to the decreed priorities in Colorado below the reservoir and at the same time users in Colorado below the reservoir may divert in accordance with any distribution agreement in effect at that time.
- E. Whenever the reservoir becomes empty, the river administration will revert back to the decreed priority basis as though the reservoir had never been constructed. Kansas shall not be entitled to any portion of the river flow entering the reservoir.
- F. If usable quantity and availability for use of the Arkansas River waters in Colorado Water District No. 67 and Kansas will be materially depleted or adversely affected then;
  - 1. Present decreed priority rights in Water District No. 67 shall not be transferred to other water districts or to any points of diversion above the reservoir.
  - 2. Present ditch diversions in Water District No. 67 and Kansas shall not be increased beyond the total present rights without administration findings of fact that no depletion or adverse effect will result from such proposed transfer or increase.
- G. The practice of the Secretary, of passing only the measured inflow of the two gaging stations, (as defined in the compact as "inflow") instead of the total inflow does cause winter storage to occur. The Compact provides, in part, that the inflow up to 100 c.f.s. be passed during the winter, if called by downstream ditches, which they have done. Since the total inflow is very seldom over 100 c.f.s. if the total inflow was passed there would be no storage in ordinary years.

Some of the downstream ditches take the position all inflow should be passed, the Secretary takes the position only the measured inflow at the two gages be passed, this was heard before Mr. Kuiper, State Engineer and he concurred with the Secretary.

WATER RIGHTS  
TABULATION

Tabulation of water rights in Irrigation Division II (Water Districts 10, 11, 12, 13, 14, 15, 16, 17, 18, 19 66 and 67) have, for all practical purposes, been completed. The Division II office has received computer print out copies of all Water Districts and the number of corrections is insignificant since all required corrections can be completed within a very short time.

There are several items within the tabulation that will require special attention and in some cases, a decision of the Water Court. The items are as follows;

1. In many instances, and in some water districts, water has been delivered, not only out of priority, but out of adjudication. These decrees have been tabulated strictly according to adjudication and within the adjudication, according to appropriation date. They have not been tabulated as to the method of present administration. I am of the opinion that we should select an ideal situation within a view towards a possible court test.
2. With respect to the first adjudication for purposes other than irrigation, I am of the opinion that any such adjudication that did not occur specifically in 1903 then the position of that adjudication in the overall tabulation is determined strictly by its adjudication date with respect to all other adjudications.

DAMS  
IRRIGATION DIVISION #2

WATER DISTRICT	NAME OF RESERVOIR	STREAM	DAM HEIGHT	INSPECTION
10	Fountain Valley #2	Fountain	Over 35'	None
	Fountain Valley #3	Fountain	Over 35'	None
	Monument	Monument Creek	Over 35'	None
	Manitou	French Creek	Over 35'	None
	Mesa #1	North Cheyenne	Over 35'	None
	Mesa #2	North Cheyenne	Over 35'	None
11	Sugar Loaf	Lake Fork	Over 35'	None
	Twin Lakes	Lake Creek	Over 35'	None
	Clear Creek	Clear Creek	Over 35'	Yes
12	Mt. Pisgah	Four Mile	Over 35'	None
	Skaguay	Beaver Creek	Over 35'	None
	Brush Hollow	Brush Hollow	Over 35'	None
13	DeWeese Dye	Grape Creek	Over 35'	Yes
14	*See Water District No. 17			
15	Hayden	Greenhorn	Over 35'	None
	Beckwith	Greenhorn	Over 35'	None
16	Cucharas	Cucharas	Over 35'	None
	Coler	Cucharas	10' - 20'	None
	Holita	Cucharas	10' - 20'	None
	Horseshoe	Cucharas	20' - 35'	None
	Orlando	Huerfano	10' - 20'	Yes
	Huerfano Valley	Huerfano	10' - 20'	None
	Dotson	Huerfano	10" - 20'	None
17	Henry	Arkansas	10' - 20'	Yes
	Meridith	Arkansas	Over 35'	None
	Horse Creek	Arkansas	Over 35'	None
	Adobe	Arkansas	20' - 35'	None
	Dye	Arkansas	20' - 35'	None
	Holbrook	Arkansas	20' - 35'	None
18	*There are none			
19	Model	Las Animas	20' - 35'	None
	North	North Fork	20' - 35'	None
67	John Martin	Arkansas	Over 35'	None
	Nee No She	Arkansas	Over 35'	None
	Nee Skah	Arkansas	Over 35'	None
	Thurston	Arkansas	10' - 20'	None
	Two Buttes	Two Buttes Cr.	Over 35'	None

SUMMARY OF WELLS  
IRRIGATION DIVISION #2

TYPE OF USE

<u>WATER DISTRICT</u> <u>NO.</u>	1	2	3	4	5	6	7	8	TOTAL
10	2000	79	54	51	11	197	7	83	2482
11	609	8	0	44	6	25	5	14	711
12	289	47	18	13	13	40	2	7	426
13	57	26	6	--	--	30	10	--	129
14	1070	290	82	46	35	804	61	37	2425
15	345	38	17	3	1	105	13	13	535
16	102	128	12	4	21	61	3	--	331
17	378	483	87	32	24	953	38	55	2050
18	13	37	2	--	--	10	12	7	81
19	40	144	12	--	12	16	7	3	234
66	64	207	24	7	11	451	7	12	783
67	108	1089	387	29	9	1257	8	92	2979
TOTAL	5,075	2,576	701	226	143	3,949	173	323	13,166

Type of Use

- (1) DOMESTIC
- (2) STOCK
- (3) DOMESTIC & STOCK
- (4) COMMERCIAL
- (5) INDUSTRIAL
- (6) IRRIGATION
- (7) IRRIGATION & STOCK
- (8) MUNICIPAL



LIVESTOCK WATER TANKS

APPLICATIONS FILED AND APPROVED:

Water District 10-----	3
Water District 11-----	1
Water District 12-----	1
( As built; not inspected-----	(111)
Water District 13-----	0
Water District 14-----	1
Water District 15-----	2
Water District 16-----	0
(As built; not inspected-----	(16)
Water District 17-----	0
Water District 18-----	26
Water District 19-----	33
Water District 66-----	0
Water District 67-----	5
 TOTAL-----	 69
TOTAL AS BUILT-----	127

All stock pond permits or applications are forwarded to our district Water Commissioners for site investigation and then, approval.

Problems encountered in issuing stock tank permits are;

1. In many instances, stock ponds are being constructed under the "Stock Pond Act" and are really being utilized as fish ponds and in some cases are actually being adjudicated.
2. Last year (1972) 206 applications; this year (1973) 69 applications.

SNOW PACK

IRRIGATION DIVISION NO. 2

STATION	WATER CONTENT % NORMAL - MAY 1973	SNOW DEPTH	WATER CONTENT MAY 1, 1973	AVERAGE INCHES
BIGELOW DIVIDE	600%	45"	13.1	2.2
COOPER HILL	99%	51"	11.0	11.1
EAST FORK	117%	32"	8.7	7.4
FOUR MILE PARK	190%	7"	1.9	1.0
FREMONT PASS	98%	56"	17.4	17.9
GARFIELD	209%	47"	17.8	8.5
MONARCH PASS	125%	59"	20.6	16.5
TENNESSEE PASS	92%	39"	7.1	7.7
TWIN LAKES TUNNEL	148%	36"	12.9	8.7
WESTCLIFFE		23"	6.2	1.0
BLUE LAKES		27"	11.3	0.5
CUCHARAS PASS		48"	17.4	-
LA VETA PASS		43"	17.5	1.6
BOURBON		40"	9.2	1.7

There have been no reports of weather modification attempts in Div. 2.

The U.S. Forest Service Lake Creek water shed improvement and snow fence avalanche control experiment is continuing from the previous year with no reports of results.

Water supplies were adequate with a range of 123% of normal on the main stream to 167% normal on the Cucharas. Flow in the Division, as a whole, was adequate. Soil moisture in the spring was excellent with some reports of too much for planting. Carry over storage was poor in 1973. But the excellent run off allows going into the winter with most lakes more than half full.

COUNTY	LAND AREA (1000 A)	NO. OF FARMS	LAND IN FARMS (1000 A)		LAND IRRIGATED FARMS ACRES		WHEAT		OATS	BARLEY
			TOTAL	CROP LAND	FARMS	ACRES	WINTER	SPRING		
Baca	1,642	750	1,430	847	171	56,910	42,000	250	--	600
Bent	971	450	917	145	301	45,292	9,000	50	230	370
Chaffee	665	170	160	24	121	16,126	--	--	200	100
Crowley	514	400	490	105	287	25,010	1,150	80	90	80
Custer	472	180	280	28	85	15,930	160	50	650	210
El Paso	1,381	750	1,050	200	121	13,630	17,000	450	1,800	600
Fremont	1,000	550	493	30	421	14,920	550	30	80	270
Huerfano	1,010	280	800	48	138	11,453	3,300	10	220	250
Kiowa	1,147	350	1,080	600	15	5,127	38,000	300	--	--
Kit Carson	1,389	840	1,340	776	213	56,576	165,000	300	900	1,400
Lake	243	17	28	6	10	6,036	--	--	--	--
Las Animas	3,068	600	2,781	130	227	19,463	3,940	70	290	140
Otero	811	690	630	87	539	57,675	3,400	100	460	720
Rowers	1,041	729	1,030	530	430	93,044	30,500	--	130	710
Pueblo	1,537	800	1,362	151	469	35,749	11,000	160	350	1,250
Teller	355	70	155	8	10	865	--	--	--	--

CORN GRAIN	CORN SILAGE		SORGHUMS GRAIN		SORGHUMS SILAGE		SUGAR BEETS	DRY BEANS	POTATOES	BROOM CORN	ALFALFA	WILD HAY	ALL HAY
10,500	200	90,000	49,500	1,640	100	35,700	2,100	100	7,900				
1,100	1,000	17,500	7,300	460	---	---	23,500	250	25,150				
---	---	---	---	---	---	---	5,800	480	9,280				
1,700	2,900	9,600	740	550	750	---	12,500	650	13,750				
---	50	---	130	---	---	---	2,300	---	28,300				
3,300	4,000	3,400	2,100	---	---	---	12,500	3,500	22,900				
280	280	100	170	---	---	---	5,000	850	8,350				
50	100	---	280	---	---	---	5,100	800	7,400				
190	110	38,000	15,600	50	---	---	800	500	10,000				
27,300	9,000	15,000	22,300	2,200	1,900	---	5,200	1,300	20,500				
---	---	---	---	---	---	---	---	1,300	1,900				
270	660	1,000	4,720	---	---	200	12,000	950	13,850				
4,600	5,700	3,000	1,660	1,100	660	---	14,500	50	15,150				
1,100	1,500	95,600	41,010	2,430	50	100	35,500	---	37,200				
4,900	1,800	7,400	4,790	1,390	12,600	---	13,500	350	17,950				
---	---	---	---	---	---	---	50	550	2,000				

<u>UNIT</u>	<u>THICKNESS</u>	<u>PHYSICAL CHARACTER</u>	<u>HYDROLOGIC CHARACTER</u>
Carlile Shale	0 - 200'	Calcareous shale, limestone, and sandstone.	Low-permeability confining bed; acts as a barrier to vertical movement of ground water. Not known to yield water to wells.
Greenhorn Limestone	0 - 150'	Limestone and chalky shale.	Low-permeability confining bed; acts as a barrier to vertical movement of ground water. A few stock wells tapping fractured limestone yield less than 5 gpm.
Graneros Shale	0 - 200'	Gypsiferous shale and sandstone.	Low-permeability confining bed; acts as a barrier to vertical movement of ground water. Not known to yield water to wells.
Dakota Sandstone	75 - 235'	Sandstone, sandy shale, siltstone and shale.	Important source of water for domestic, stock and public water. Restricts vertical movement of water to and from the valley-fill deposits. Wells yield as much as 100 gpm and average 20 gpm.

UNDERGROUND WATER  
IRRIGATION DIVISION NO. 2

Irrigation Division #2 composed of Water Districts 10, 11, 12, 13, 14, 15, 16, 17, 18, 19 and 66 and 67 has, of this date, 13, 166 wells of all types in operation. Types of use are domestic, stock, domestic and stock, commercial, industrial, irrigation, irrigation and stock, and lastly, municipal. Tabulation, showing the number of each type of well in each district is illustrated by a following table.

The principal aquifer area extends thru a 150 mile reach of the Arkansas River valley extending from Pueblo to the Kansas State line. This is a valley-fill aquifer which is adjacent to, underlies, and is in hydraulic connection with the Arkansas River. The aquifer consists of unconsolidated deposits of gravel, sand, silt and clay. It ranges from one to 14 miles in width and covers an area of about 500 square miles in parts of Pueblo, Otero, Crowley, Bent and Prowers Counties. The aquifer fills a "u-shaped" trough cut into the bedrock, which consists of shale, limestone, and sandstone of Cretaceous age. About two million acre feet of water is stored in the valley-fill deposits. Summary of the hydrologic character is shown below;

<u>UNIT</u>	<u>THICKNESS</u>	<u>PHYSICAL CHARACTER</u>	<u>HYDROLOGIC CHARACTER</u>
Dune Sand	0 - 100'	Very fine to coarse, poorly sorted sand.	Commonly not saturated, but transmits water readily from the surface to underlying aquifers. Source of water for a few domestic and stock wells.
Valley-fill deposits	0 - 300'	Boulders, cobbles, gravel, sand, silt, and clay. Generally grades from fine sand near the surface to coarse sand and gravel at the base.	Principal source of water for irrigation, public supply, and industrial wells. Irrigation-well yields are as much as 3,150 gpm and average 650 gpm. Aquifer furnishes water to 1,348 irrigation wells.
Pierre Shale	0 - 2,200'	Shale and sandy shale.	Low permeability confining bed; acts as a barrier to vertical movement of ground water. Not known to yield water to wells.
Niobrara Formation	0 - 700'	Chalky and marly limestone and calcareous shale.	Low permeability to confining bed; acts as a barrier to vertical movement of ground water. A few stock wells tapping fractured limestone yield less than 5 gpm.

SOUTHERN COLORADO  
WATER CONSERVANCY DISTRICT  
905 HIGHWAY 50 WEST  
P. O. BOX 440  
PUEBLO, COLORADO 81002

OFFICERS

Thomas W. McCurdy, President, Rt. 1 Box 165, Olney Springs, Colo. 81062  
Roy D. Cooper, Vice President, 1436 W. 6th. St., Las Animas, Colo. 81054  
Joe W. Purvis, Treasurer, Rt. 1 Box 3H, Las Animas, Colorado 81054  
Charles L. Thomson, General Manager, P. O. Box 440, Pueblo, Colorado 81002  
Charles J. Beise, Attorney for the District, 1536 First National Bank  
Building, Denver, Colo. 80201  
Harold H. Christy, Secretary, 511 Polk, Pueblo, Colorado 81005

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DIRECTORS

Dave Ciruli, Rt. 4 Box 793, Pueblo, Colorado 81004  
George E. Everett, 9750 County Road 160, Salida, Colorado 81201  
Dr. Wendell Hutchinson, D.V.M., Rainbow Blvd., Salida, Colorado 81201  
Leon C. Hook, 804 Rudd, Canon City, Colorado 81212  
John P. Huebsch, 27 Oak Ave., Colorado Springs, Colo. 80906  
John E. Javernick, 3205 Hale, Canon City, Colorado 81212  
Frank Milenski, RR 1, La Junta, Colorado 81050  
Raymond D. Nixon, 2519 Prairie Road, Colorado Springs, Colo. 80909  
Herbert Schroeder, Ordway, Colorado 81063  
James E. Wagner, 20025 Kearney, Denver, Colo. 80220  
Keith I. Webb, P. O. Box 482, La Junta, Colo. 81050

Rocky Ford Ditch Company, George A. Watson, Rt. 1, Manzanola, Colo. 81058  
Salt Creek Water & Sanitary District, Endelecio Garcia, 1022 Palo Alto St.,  
Pueblo, Colo. 81004  
Security Water District, Thomas K. Remple, 231 Security Blvd. Security, Colo.  
South Canon Ditch Company, John Griffin, President, P.O. Box 213, Canon City,  
Colorado 81212  
Southside Water Association, John Evers, President, RR 2, La Junta, Colo. 81050  
South Swink Water Company, Fred Trimble, Secretary, La Junta, Colo. 81050  
St. Charles Mesa Water Association, Lee Simpson, Manager, Roselawn Road,  
Pueblo, Colorado 81004  
Stratmoor Hills, J. Fred Abrahamson, 311 Catilima Drive, Stratmoor Hills, Colo.  
Sugar City Pipeline Company, Henry Herman, Jr., Secretary, Sugar City, Colo. 81076  
Twin Lakes Reservoir & Canal Company, Thomas McCurdy, Rt. 1 Box 165, Olney Springs,  
Colorado 81062  
Union Ditch Company, Erick A. Roberts, 105 E. Main, Florence, Colorado 81226  
Valley Water Company, Albert Stover, Secretary, Manzanola, Colorado 81058  
Broman Water Company, Albert Stover, Secretary, Manzanola, Colorado 81058  
West Grand Valley Water, Inc., Blaine Malott, Box 182, Rocky Ford, Colo. 81067  
West Holbrook Pipeline Company, Roy Wadleigh, Secretary, Rt. 2 Box 302, La Junta,  
Colorado  
West Pueblo Ditch Company, Bob Prendergast, Superintendent, Hyde Park Dairy,  
P O Box 397, Pueblo, Colorado 81002  
Widefield Homes Water & Sanitation, James C. Perry, Sr., 3 Widefield, Widefield  
Colorado 80911



WATER RELATED ORGANIZATIONS

IRRIGATION DIVISION NO. 2  
Pueblo, Colorado

A.J. Anderson Irrigation Company, Charles Haberman, Rt. 1, La Junta, Colo. 81050  
Avondale Water & Sanitation District, Mrs. Gloria Vialpando, President, P.O. Box 77  
Avondale, Colorado 81022  
Beaver Park Water Company, Nick Goodell, Penrose, Colorado 81240  
Beehive Water Association, John F. Watters, Cheraw, Colorado 81030  
Bent's Fort Water Association, Walter V. Enning, President, 105 Ash, La Junta,  
Colorado 81050  
Bessemer Irrigating Ditch Company, A.N. Dallimore, 711 Thatcher Building, Pueblo,  
Colorado 81003  
Canon City Oil Creek Ditch Company, L. Peterson, President, Canon City, Colo. 81212  
Canon City Heights Irrig. Co., E.B. Woodford, Sec. 609 River, Canon City, Colo.  
Canon City Hydraulic Irrig. Co., E. Carpenter, President, Harrison Bldg. Canon City,  
Colorado 81212  
Catlin Canal Co., Wayne W. Whittaker, P. O Box 352, Rocky Ford, Colo. 81067  
Collier Ditch Co., John Stahl, Rt. 1 Box 25, Boone, Colorado 81025  
Crowley County Water Assoc., Harley Ruscher, President, P. O. Box 487, Ordway,  
Colorado 81062  
DeWeese Dye Ditch Company, William McDermott, 1675 Chestnut, Canon City, Colo. 81212  
East End Water Company, Harry Froese, Secretary, Rt. 2, La Junta, Colo. 81050  
Eureka Water Company, Ralph Read, P. O. Box 5, Rocky Ford, Colorado 81067  
Excelsior Ditch Company, G.C. Van Galder, Superintendent, Rt. 2 Box 231, Pueblo,  
Colorado 81004  
Fayette Water Assoc, John Schweizer, Jr., Secretary, Rt. 1 Box 311, Rocky Ford,  
Colorado 81067  
Fort Lyons Canal Company, Perry Hill, Rt. 2 Las Animas, Colo. 81054  
Fremont County Ditch Company, Lola McBeth, 105 S. Pikes Peak Ave, Florence,  
Colo. 81226  
Hasty Water Company, Earl Eckerett, Hasty, Colorado 81044  
Highland Water & Supply Co., Frank Vance, President, Blende, Pueblo, Colo. 81004  
Hilltop Water Company, Jerry Clevenger, Secretary, Rocky Ford, Colo. 81067  
Holbrook Center Soft Water, J.B. Shenk, Secretary, Cheraw, Colo. 81030  
Holbrook Mutual Irrigation Company, Neal Marlin, Rt. 2 La Junta, Colo. 81050  
Las Animas Consolidated Ditch Company, Delbert Wallace, Rt. 1 Box 19, Las Animas,  
Colorado 81054  
Lombard Village Water Association, Levi Martinez, Attorney at Law, Thatcher Bldg.,  
Pueblo, Colo. 81003  
May Valley & Pleasant Valley Water Assoc., Leonard Courkamp, Wiley, Colo. 81092  
McClave Water Association, Harold Falconburg, McClave, Colorado 81057  
Newdale-Grand Valley Company, Ernest P. Campbell, President, Rt. 2 Box 292, Rocky  
Ford, Colorado 81067  
Otero Canal Company, Earl Beegles, Box 980, La Junta, Colo. 81050  
Oxford-Farmers Ditch Co., George Henrie, Fowler, Colo. 81039  
Park Center Water District, George Smith, P.O. Box 860, Canon City, Colo. 81212  
Patterson Valley Water Company, David E. Smith, Treasurer, Rt. 1 Rocky Ford, Colo.  
Penrose Water District, Orlin Fields, Sec. Treas. 1102 So. S. St. Penrose, Colo.  
96 Pipeline Company, Warren B. Arbutnot, President, Ordway, Colo. 81063  
Pueblo Board of Water Works, Foster Burba, Exec. Dir. P.O. Box 400, Pueblo, Colo.  
Riverside Water Company, Edward T. Jung, Secretary, Rt. 1 Box 100, Rocky Ford,  
Colorado 81067

GROUND-WATER WITHDRAWAL FROM THE  
VALLEY FILL AQUIFER BY IRRIGATION WELLS.

(acre feet per year)

County	1964	1965	1966	1967	1968
Pueblo	25,000	16,000	23,000	19,000	21,000
Otero-Crowley	53,000	36,000	50,000	48,000	50,000
Bent	33,000	15,000	23,000	23,000	26,000
Prowers	74,000	45,000	34,000	42,000	55,000
Total	185,000	112,000	130,000	132,000	152,000

AMOUNT OF ACRE FEET  
OCTOBER 31, 1973

AMOUNT OF ACRE FEET  
APRIL 1, 1973

AMOUNT OF ACRE FEET  
NOVEMBER 1, 1972

SOURCE

NAME OF RESERVOIR

NAME OF RESERVOIR	SOURCE	AMOUNT OF ACRE FEET NOVEMBER 1, 1972	AMOUNT OF ACRE FEET APRIL 1, 1973	AMOUNT OF ACRE FEET OCTOBER 31, 1973
Horse Creek	Arkansas River	-0-	-0-	-0-
Model	Purgatoire	-0-	40	-0-
North	Trinchera	3709	3709	3709
Monument	Middle Fork Purgatoire	1609	1511	1674
Russel	Chanley Arroya	-0-	60	40
Hermosa	San Francisco Creek	-0-	500	-0-
Nee Noshee	Arkansas River	-0-	24103	17436
Nee Skah	Arkansas River	-0-	9928	3630
Thurston	Arkansas River	1560	2030	1690
John Martin	Arkansas River	417	24090	-0-
Two Buttes	Two Butte Creek	14416	15415	15509

AMOUNT OF ACRE FEET  
OCTOBER 31, 1973

AMOUNT OF ACRE FEET  
APRIL 1, 1973

AMOUNT OF ACRE FEET  
NOVEMBER 1, 1972

SOURCE

NAME OF RESERVOIR

NAME OF RESERVOIR	SOURCE	AMOUNT OF ACRE FEET NOVEMBER 1, 1972	AMOUNT OF ACRE FEET APRIL 1, 1973	AMOUNT OF ACRE FEET OCTOBER 31, 1973
DeWeese Dye	Grape Creek	2074	4456	3520
Curiton	Springs	6.80	6.80	6.80
H.O.P.	Springs	40.0	40.0	40.0
Greenview	Fountain	-0-	19.7	-0-
Lake Minnequa	St. Charles	908	1170	968
Reservoir No. 2	St. Charles	2413	2392	2338
Reservoir No. 3	St. Charles	7074	7216	6976
Hayden (Beckwith)	Greenhorn	520	800	500
Arnold Flood Water	Santa Clara	70	30	30
Bressan No. 1	Unnamed Arroya	8.0	8.0	8.0
Bressan No. 2	Unnamed Arroya	6.0	6.0	6.0
Brunelli No. 1 & 2	Bear Creek	-0-	20	-0-
Butte	Cucharas	-0-	-0-	-0-
Chicosa No. 4 & 5	Huerfano	-0-	-0-	-0-
Coler (Martin Lake)	Cucharas	-0-	-0-	-0-
Cucharas Valley	Cucharas	-0-	-0-	-0-
Holita	Cucharas	-0-	540	540
Huerfano	Huerfano	-0-	522	-0-
La Joya	Cucharas	-0-	178	178
Maria-Stevens	Cucharas	-0-	282	447
Mosco	Poison Canon	-0-	100	350
Sharps Orchid	Cucharas	-0-	50	-0-
Sierra Blanca	Decker Creek	-0-	50	150
Sunnyside	Santa Clara	70	70	70
Valdez	Santa Clara	1500	1500	1500
Vories	Cucharas	12	12	12
Wilson	Sheep Creek	35	35	35
Zan	Apache Creek	150	-0-	-0-
Meredith	Arkansas River	-0-	21902	11562
Adobe Creek	Arkansas River	-0-	-0-	7053
Dye	Arkansas River	-0-	-0-	-0-
Henry	Arkansas River	-0-	6583	2575
Holbrook	Arkansas River	-0-	6766	4122

RESERVOIR STORAGE  
IRRIGATION DIVISION # 2

NAME OF RESERVOIR	SOURCE	AMOUNT OF ACRE FEET			
		NOVEMBER 1, 1972	APRIL 1, 1973	OCTOBER 31, 1973	
Amber Reservoir No. 2	Unnamed Springs	-0-	-0-	-0-	
Lake Moraine Storage	Ruxton Creek	667	636	689	
Crystal Creek Reservoir	Crystal Creek	1568	1540	2709	
Manitou Reservoir	No. Br. French Creek	446	853	853	
Mesa Reservoir	So. Fork Cheyenne	188	215	231	
North Catamount	No. Fork Catamount	8501	9139	9830	
North Field No. 1		215	208	199	
South Catamount	So. Catamount	2127	1391	2406	
Upper South Ruxton	So. Ruxton Creek	386	181	81	
Callahan Reservoir	Fountain	602	567	602	
Fountain Valley No. 2	Fountain	3303	5146	2446	
Fountain Valley No. 3	Fountain	-0-	-0-	-0-	
Spring Run 2	Spring Run	186	239	204	
Monument State	Monument Creek	225	225	225	
Sugar Loaf Reservoir	Lake Fork Creek	47167	50372	74789	
O'Haver	Grays Creek	No Diversion			
Twin Lakes Reservoir	Lake Creek	19084	31462	39186	
Clear Creek Reservoir	Clear Creek	3117	5407	4075	
Colorado Springs No. 2	Beaver Creek	541	541	541	
Colorado Springs No. 4	Beaver Creek	1761	1965	1965	
Colorado Springs No. 5	Beaver Creek	1738	1900	1770	
Colorado Springs No. 7	Beaver Creek	19	191	161	
Colorado Springs No. 8	Beaver Creek	41	669	669	
Lake Moraine	Beaver Creek	689	667	689	
Rosemont Penrose	Beaver Creek	1691	1734	2405	
Brush Hollow	Beaver Creek	714	2445	3083	



## DIVISION OF WATER RESOURCES

DEPARTMENT OF NATURAL RESOURCES  
RUDOLPH STYDUHAR P.E.  
IRRIGATION DIVISION ENGINEER  
1906 W. NORTHERN AVENUE  
PUEBLO, COLORADO 81004  
OFFICE: 542-3368 HOME: 738-2352

### MEMORANDUM OF AGREEMENT

On 5 July 1973 at a meeting in Pueblo attended by Division II Water Court personnel, including Judge William Gobin, Referee's Doe, Harrison and Garlington together with State Engineer C.J. Kuiper, William Mattern and Division II Engineer's Office staff of Styduhar, Jesse, Kasic and Perko. Purpose of the meeting was to clarify differences of opinions with respect to Division Engineer summaries of Water Court Applications. The following conclusions were reached by all in attendance that all applications processed after 5 July 1973 would;

1. Location of structure would be in the form of qtr. qtr., section, township, range and P.M.
2. Dates of appropriation if not completed by the applicant in the form of day, month and year would be completed by the referee giving the last day of the month (if day is omitted); the last month of the year (if month is omitted).
3. All claims for an underground appropriation of over 50 G.P.M. will be accompanied by data from a licensed well driller or professional engineer giving the type of test method employed and accompanying data from which the result is derived. All tests conducted by pumping the well should be carried out after the pump has been active at least 4 hours.
4. The amount of water claimed in the application must be correlated with the amount of land to be irrigated. A legal description of land to be irrigated is required along with the number of acres within the legal description. This should prevent speculation of underground water rights since excessive amounts will not be allowed by the Court.
5. Any storage by any municipality or subdivision, whether steel tank storage or ground reservoir storage, must be adjudicated by the Court.
6. Permits or evidence of denial of well permits shall accompany any and all applications for adjudication of new wells in the Water Court.

<u>MONTH</u>	<u>NUMBER OF CASES TERMINATED</u>
January 1973	95
February	110
March	151
April	81
May	104
June	<u>174</u>
Total.....	715

Cases Terminated 1970.....	50
Cases Terminated 1971.....	274
Cases Terminated 1972.....	581
Cases Terminated 1973 (6 months).....	715
 Total Cases Terminated to June 30, 1973....	1,620





<u>MONTH</u>	<u>CASE NUMBER</u>	<u>CASES</u>	<u>CLAIMS</u>
October	W-77 thru W-78	2	2
November	W-79 thru W-87	9	11
December	W-88 thru W-114	27	62
	Sub-total.....	92	272

1971

January	W-115 thru W-123	9	40
February	W-124 thru W-146	23	51
March	W-147 thru W-195	49	90
April	W-196 thru W-241	46	80
May	W-242 thru W-266	25	36
June	W-267 thru W-317	51	117
July	W-318 thru W-348	31	77
August	W-349 thru W-375	27	76
September	W-376 thru W-395	20	38
October	W-396 thru W-421	26	66
November	W-422 thru W-460	39	90
December	W-461 thru W-507	47	83
	Sub-total.....	393	844

1972

January	W-508 thru W-543	36	110
February	W-544 thru W-609	66	167
March	W-610 thru W-701	92	252
April	W-702 thru W-811	110	307
May	W-812 thru W-1144	333	680
June	W-1145 thru W-3440	2298	5385
July	W-3441 thru W-3679	239	467
August	W-3680 thru W-3780	101	202
September	W-3781 thru W-3815	35	86
October	W-3816 thru W-3852	37	97
November	W-3853 thru W-3875	25	49
December	W-3876 thru W-3893	23	53
	Sub-total.....	3395	7855

Total Cases 1969 thru 1972..... 3902

Total Claims 1969 thru 1972..... 8997

WATER COURT

I. The Division 2 Water Court is located at 308 Judicial Building, Pueblo, Colorado and is staffed by Water Clerks Priscilla Lucero and two assistants Carol Williams and Thelma Kochevar; Referee's Doe, Harrison and Garlington and Judge William Gobin.

II. Division Engineer Summaries.

The Water Court as of December 1 has received 4040 applications. The Division Engineer has completed 4000 summaries and has forwarded them to the Water Court. The process of furnishing the summaries to the Court's Referee's is at the present time, and has been in the past, a waste of time and money. The Water Judge does not see the summaries and the Referee's do not pay attention to the summaries.

On July 5, 1973 a meeting was held to attempt to resolve these these differences; however, the meeting proved that the Referee's pay no attention to the summaries. Attached is a "Memorandum of Agreement" which was desired by the Division Engineer's Office and we had believed that the Referees had accepted the provisions of the "Agreement"; however, they are continuing merily along, issuing decrees that cannot be administered.

III. Cases filed in the Water Court.

The following shows the number of cases filed from Nov., 1969 through December, 1972, and also the number of claims.

Note: The number of cases is an accurate figure; however the number of claims is an estimated figure as it is impossible to determine from some applications just how many claims are made, but I state that the figures are reasonably close.

	<u>1969</u>		
<u>MONTH</u>	<u>CASE NUMBERS</u>	<u>CASES</u>	<u>CLAIMS</u>
November	W-1 thru W-18	18	22
December	W-19 thru W-22	<u>4</u>	<u>4</u>
	Sub-total.....	22	26
	<u>1970</u>		
January	None	0	0
February	W-23	1	4
March	W-24 thru W-28	5	25
April	W-29 thru W-31	3	7
May	W-32 thru W-41	10	14
June	W-42 thru W-60	19	105
July	W-61 thru W-66	6	22
August	W-67 thru W-74	8	15
September	W-75 thru W76	2	5

PERSONNEL

Division No. 2

DIVISION OF WATER RESOURCES

Fiscal Year 7/1/72 to 6/30/73

<u>NAME</u>	<u>POSITION</u>	<u>DISTRICT</u>	<u>MONTHS WORKED</u>	<u>MILEAGE</u>
Rudy Styduhar	Division Engineer	Division No. 2	Full Time	18,453
Robert Jesse	Asst. Div. Engr.	Division No. 2	Full Time	16,928
Robert Ermel	Water Commissioner	District 10	Full Time	16,215
George Wichman	Deputy Water Commissioner	District 10	1 month	1,657
Jim Everett	Water Commissioner	District 11	Full Time	9,550
John Farwell	Deputy Water Commissioner	District 11	6 months	4,158
Larry Brown	Deputy Water Commissioner	District 11	5½ months	2,743
John McDonough	Water Commissioner	District 12	12 months	15,084
Byron Bean	Deputy Water Commissioner	District 12	3½ months	3,601
Thomas Young	Deputy Water Commissioner	District 12	4½ months	5,618
Neil McGee	Deputy Water Commissioner	District 12	1½ months	2,930

<u>NAME</u>	<u>POSITION</u>	<u>DISTRICT</u>	<u>MONTHS WORKED</u>	<u>MILEAGE</u>
Gayle Patterson	Water Commissioner	District 13	12 months	6,110
Casper Seybold	Deputy Water Commissioner	District 13	7 months	4,993
Ralph Barnhart	Water Commissioner	District 15	Full Time	16,991
Robert Brygoch	Water Commissioner	District 16	Full Time	13,729
Augustine Garcia	Water Commissioner	District 16	Full Time	10,875
William Pattie	Water Commissioner	District 17	Full Time	18,614
George Watson	Deputy Water Commissioner	District 17	5 days	None
George Stakich	Water Commissioner	District 18	11 months	7,336
Henry D. Marques	Water Commissioner	District 19	Full Time	10,178
John Cusimano	Deputy Water Commissioner	District 19	17 days	367
Manuel Vigil	Deputy Water Commissioner	District 19	6 days	195
Lane Hackett	Water Commissioner	District 67	Full Time	16,849
Robert Clodfelter	Deputy Water Commissioner	District 67	16 days	399
William F. Lewis	Water Commissioner (1042)	Wells, Div. 2	11 months	2,961
Frank Perko, Jr.	Administrative Assistant	District 14	Full Time	15,429
Kenneth Cooper, Jr.	Hydrographer	Division No. 2	Full Time	None
Daries Lile	Hydrographer	Division No. 2	6 months	None
Jim Kasic	Hydrographer	Division No. 2	Full Time	None
Larry Sanders	Hydrographer	Division No. 2	2 months	None
Juanita Jones	Senior Clerk Typist	Division No. 2	Full Time	None

Total Miles Water Commissioners: 183,021 Total Miles 1042 Man 2,961

Total Miles Division Engineer and Assistant: 35,381

TOTAL

Pertinent Basin Yield Statistics for Arkansas Drainage In Colorado, Div. 2.

Recorded Flow at Arkansas-Las Animas	73,810	A.F.
Estimated Depletion by Irrigation above Gage		
1.5 A.F./Acre x 412,000 Acres = 618,000 A.F.	618,000	A.F.
Recorded Flow at Purgatoire River-Las Animas	46,050	A.F.
Estimated Depletion by Irrigation Above Gage		
1.5 A.F./Acre x 36,000 Acres = 54,000 Acres	<u>54,000</u>	
Basin Yield including 106,000 A.F. Transmountain Import	791,860	A.F.
	Less.....	<u>106,000</u> A.F.
Native Basin Yield above Confluence of Arkansas And Purgatoire Rivers	685,860	A.F.
Total Diversion in Division Two; from Page 2	1,382,329.52	A.F.

Ratio of Basin Yield plus Transmountain Imported Water (791,860 A.F.)  
to Total Diverted Water(1,382,329.52 A.F.) indicates a use factor of  
1.76.

DIVERSION DATA

Recorded Diversion by Municipalities; Water Year 1972.

Municipal Diversion, Colorado Springs	6,664.54	A.F.
Municipal Diversion, Canon City (Includes substantial irrigation)	10,280.00	A.F.
Municipal Diversion, Pueblo (Includes some irrigation)	23,360.40	A.F.
Total Recorded Municipal Diversion	40,304.94	A.F.
Estimated Return Flow	23,000	A.F.
Estimated Depletion by Municipalities	16,304.94	A.F.

Recorded Diversion by Industrial Use.

Diversion by Minnequa Canal	83,820	A.F.
C.F. & I. Diversion from St. Charles	4,631.60	A.F.
Total Industrial Diversion	88,451.60	A.F.
Estimated Return Flow	67,000.00	A.F.
Estimated Depletion by Industry	21,451.60	

Recorded Diversion by Irrigation

Water District 10	56,585.87	A.F.
Water District 11	115,057.10	
Water District 12	140,008.00	
Water District 13	22,538.20	
Water District 14	246,642.00	
Water District 15	9,057.00	
Water District 16	8,724.74	
Water District 17	404,965.00	
Water District 18	2,299.4	
Water District 19	31,576.47	
Water District 66	1,800.0	
Water District 67	182,220.0	
Total Irrigation Diversion	1,253,572.98	A.F.

Commentary on Basin Yield and Water Budget Data.

In Water Year 1972 the native basin yield for the Arkansas Basin above the confluence of the Purgatoire (including the Purgatoire River) was 691,810 A.F. The average precipitation over the area (17,920 sq. miles of 11,468,800 acres) was 13.84 inches. This gives a total precipitation of 13,190,500 A.F. for the basin. Of this 13,190,500 A.F. only 691,810 A.F. (5.2%) is accounted for in streamflow; the remaining 94.8% is either evaporated, transpired or retained in the soil.

The diverted water of 1,382,329.52 A.F. when compared with native basin yield plus transmountain imported water of 791,860 A.F. indicates the water was used 1.75 times.

Comparitive Water Year 1971, 1972 Data.

	<u>1971</u>	<u>1972</u>
Basin Yield Including Transmountain	918,100 A.F.	791,860
Total Diverted	1,502,700	1,382,329.52 A.F.
Average Precipitation	14.05inch	13.84 inch

TRANSMOUNTAIN DIVERSION

Division No. 2

Tabulation 1973

<u>NAME</u>	<u>SOURCE</u>	<u>RECIPIENT</u>	<u>AMOUNT DIVERTED</u> <u>10/1/72 to 9/30/73</u>
Homestake Tunnel	Middle Fork Homestake Creek Division #5	Cities of Colorado Springs and Aurora	26,320 A.F.
Wurtz Ditch	Eagle River Division #5	City of Pueblo	3,230 A.F.
Ewing Ditch	Piney Creek	City of Pueblo	1,390 A.F.
Columbine Ditch	Eagle River Division #5	City of Pueblo	2,100 A.F.
Twin Lakes Tunnel	Roaring Fork River Division #5	Twin Lakes Reservoir and Canal Company	54,590 A.F.
Busk Ivanhoe Tunnel	Ivanhoe Creek Division #5	Highline Canal Co.	6,220 A.F.
Larkspur Ditch	Tomici Creek Division #4	Catlin Canal Co.	822 A.F.
Boustead Tunnel	Frying Pan River Division #5	U.S.B.R.	37,080 A.F.
		TOTAL	131,800 A.F.



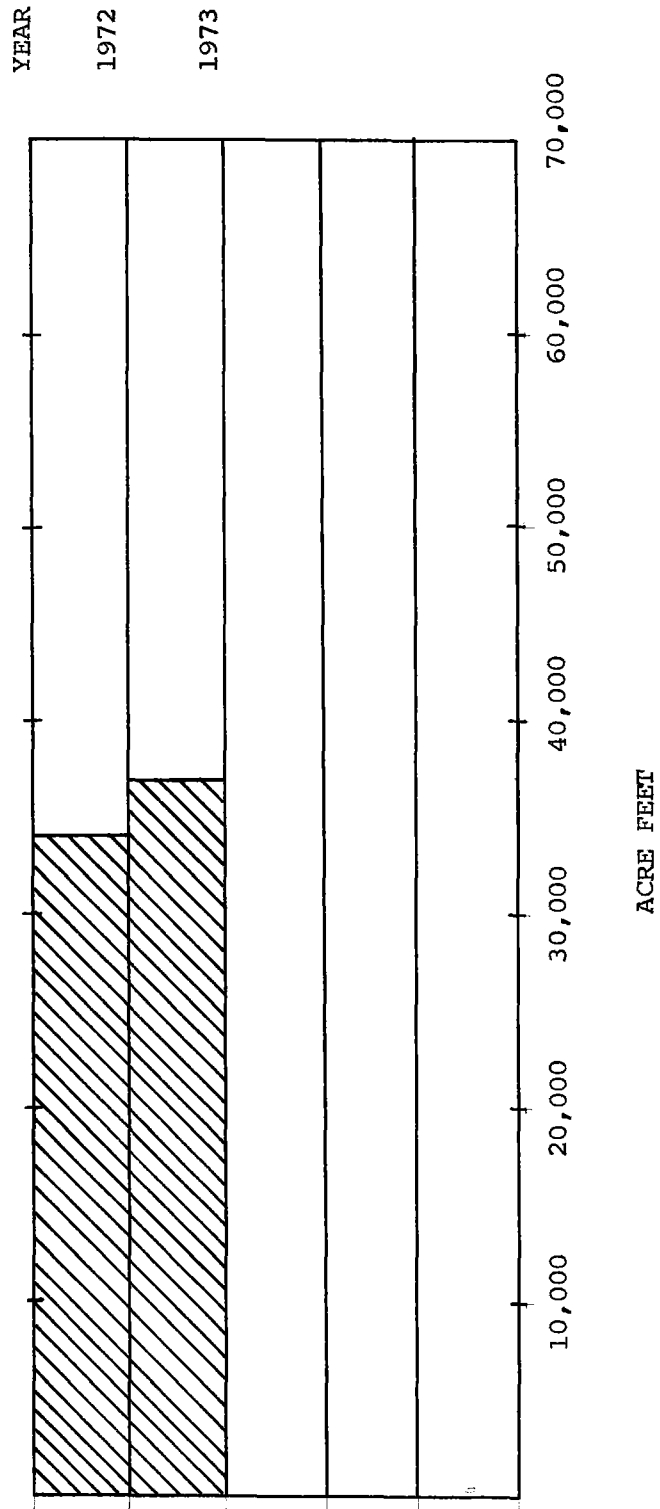
TRANSMOUNTAIN DIVERSION

Division No. 2

BOUSTEAD TUNNEL

Source: Frying Pan River Diversion #5

Recipient: U.S.B.R. - Southeastern Conservancy District



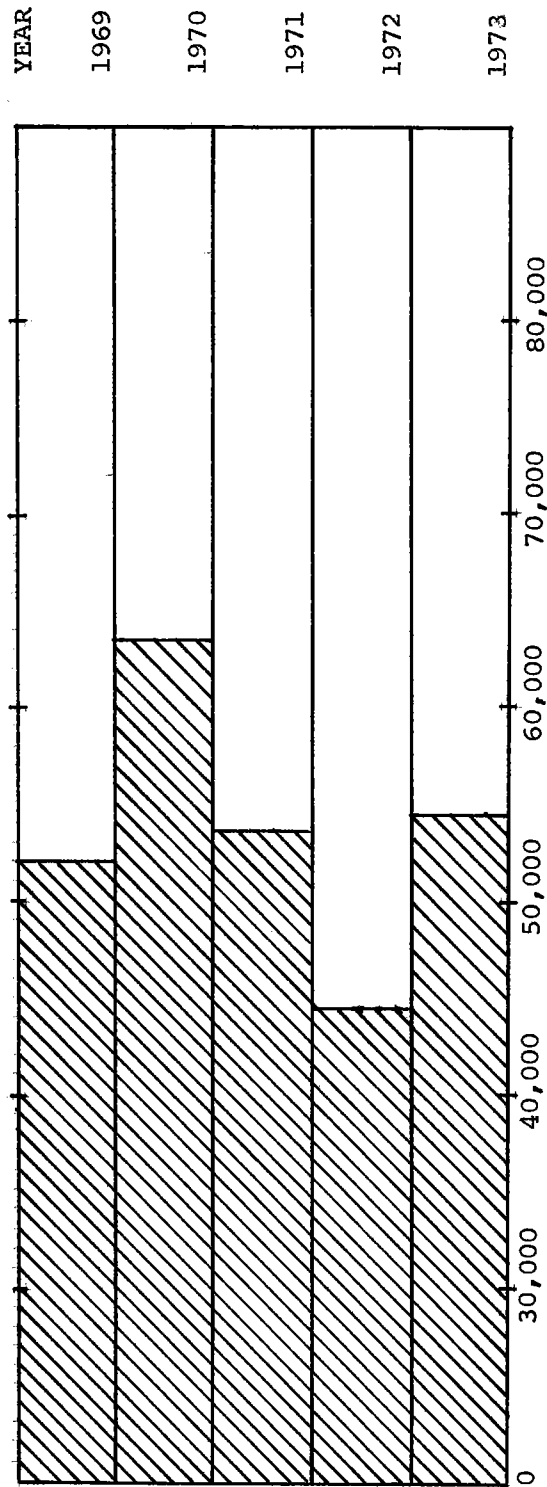
TRANSMOUNTAIN DIVERSION

Division No. 2

TWIN LAKES TUNNEL 1973

Source: Roaring Fork River Division #5

Recipient: Twin Lakes Reservoir and Canal Company



ACRE FEET

5 Year Comparison

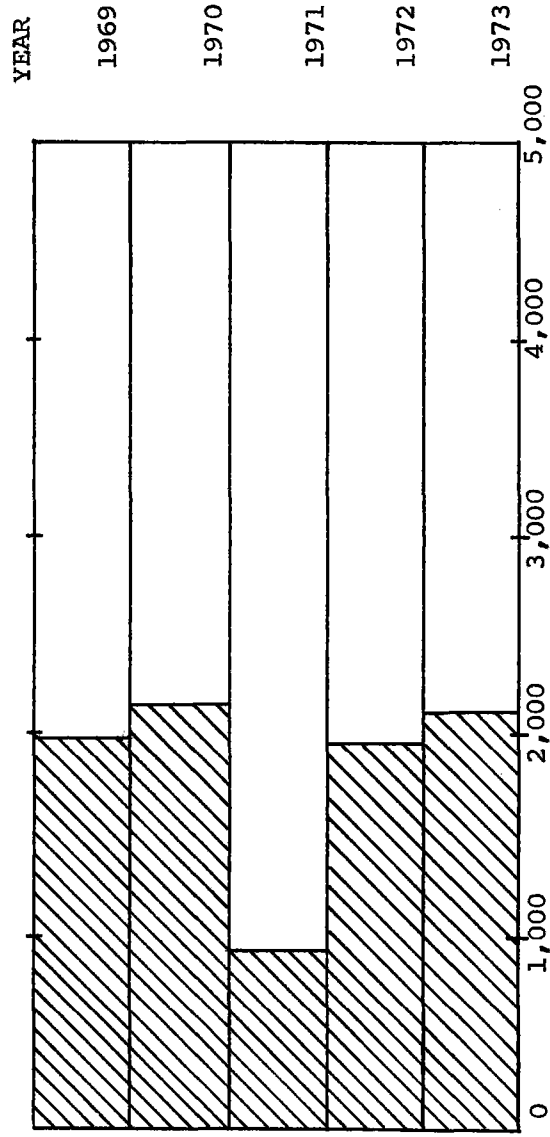
TRANSMOUNTAIN DIVERSION

Division No. 2

COLLUMBEINE DITCH 1973

Source: Eagle River, Division #5

Recipient: City of Pueblo

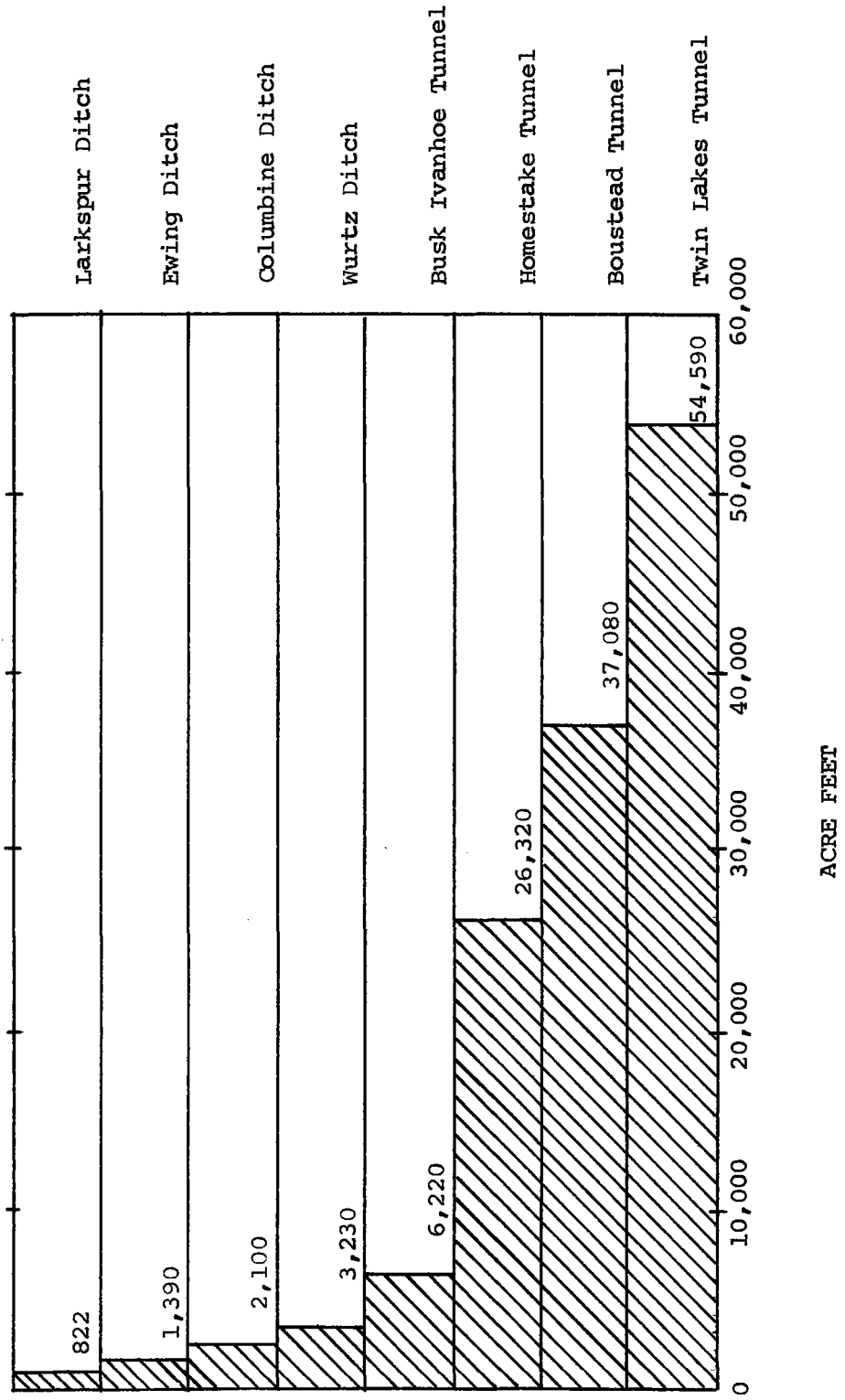


ACRE FEET

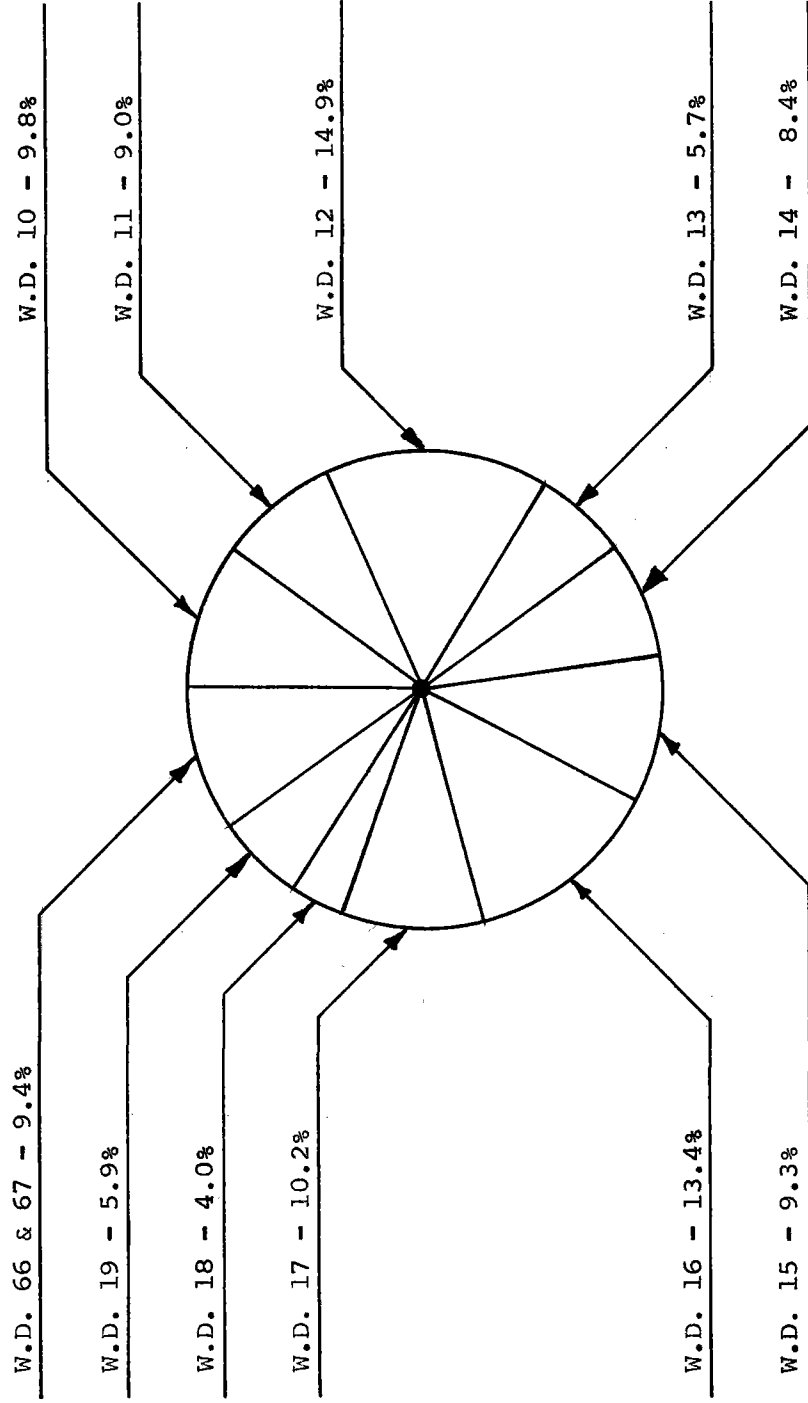
5 YEAR COMPARISON

TRANSMOUNTAIN DIVERSION  
DIVISION NO. 2

SUMMARY OF DIVERSION FOR  
WATER YEAR 1973



IRRIGATION DIVISION NO. 2  
Water District Mileage  
July 1, 1972 to June 30, 1973



Total Miles for Water Districts: 183,021 Miles.

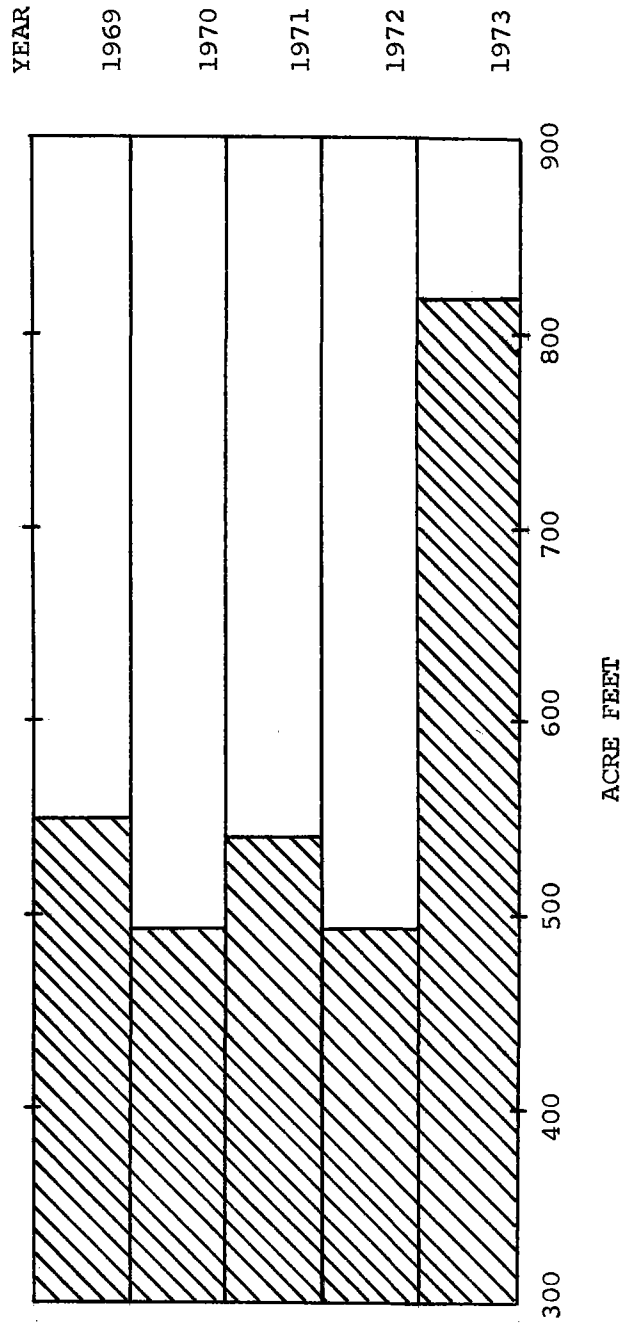
TRANSMOUNTAIN DIVERSION

Division No. 2

LARKSPUR DITCH 1973

Source: Tomici Creek Division #4

Recipient: Catlin Canal Company



5 YEAR COMPARISON

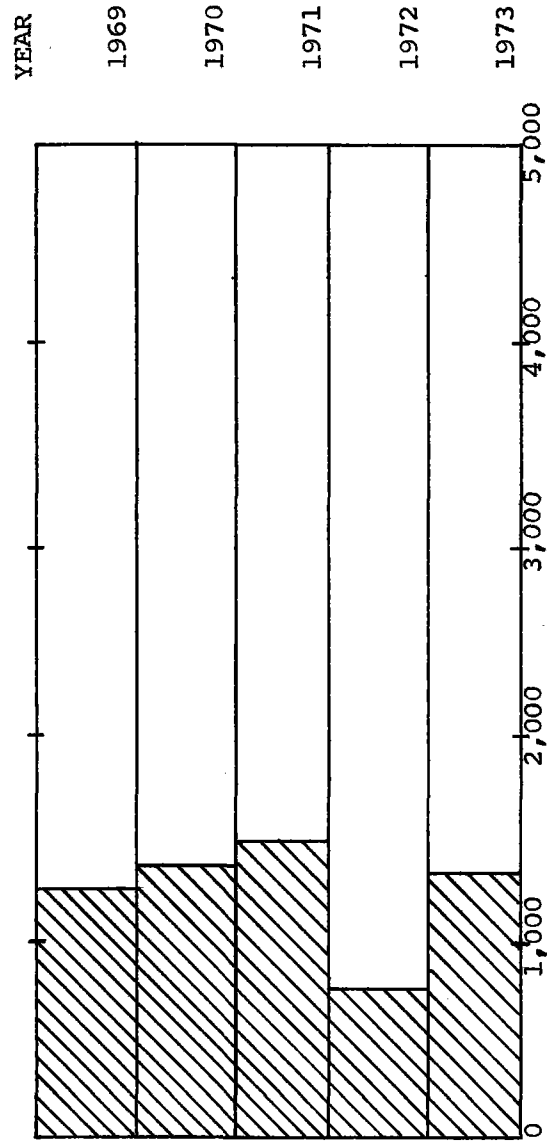
TRANSMOUNTAIN DIVERSION

Division No. 2

EWING DITCH 1973

Source: Piney Creek Division #5

Recipient: City of Pueblo



ACRE FEET

5 YEAR COMPARISON

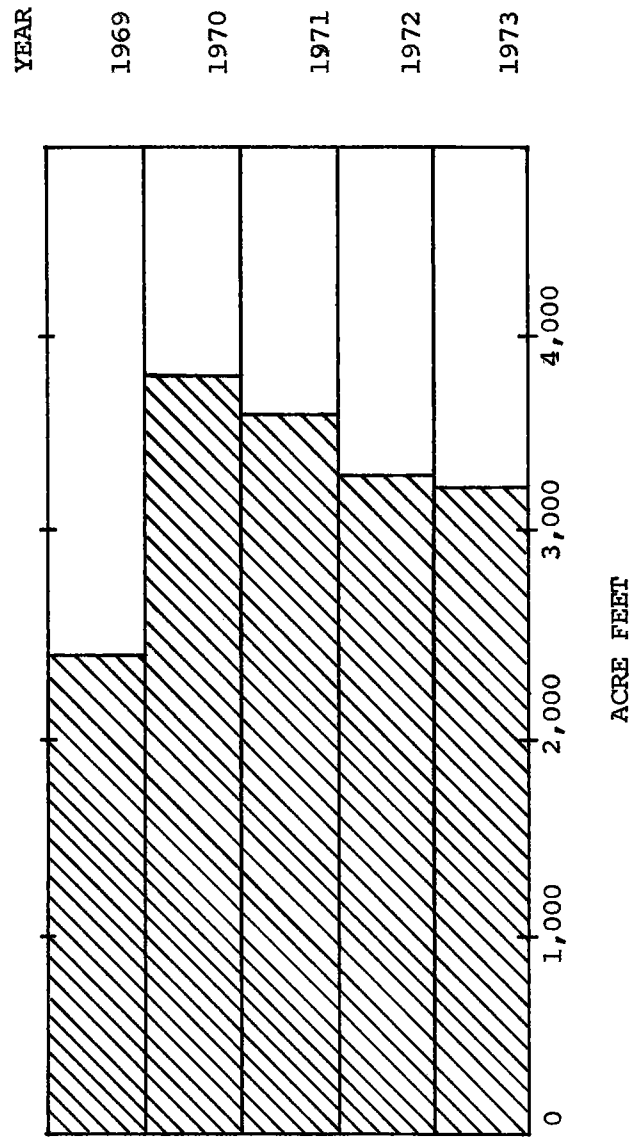
TRANSMOUNTAIN DIVERSION

Division No. 2

WURTZ DITCH 1973

Source: Eagle River Division #5

Recipient: City of Pueblo



5 YEAR COMPARISON



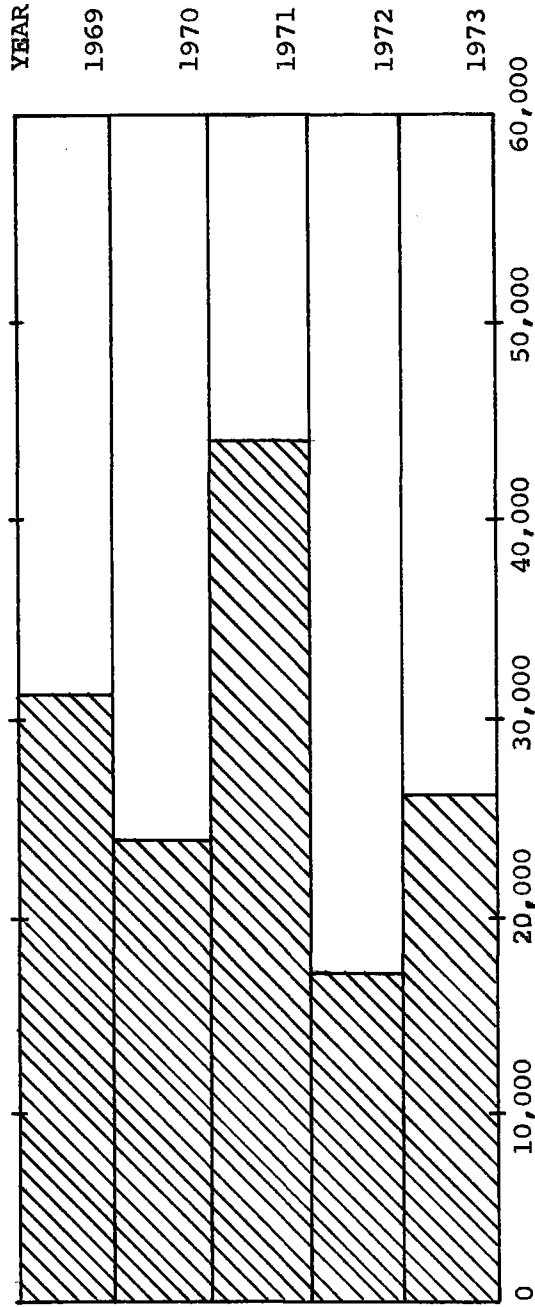
TRANSMOUNTAIN DIVERSION

Division No. 2

HOMESTAKE TUNNEL 1973

Source: Middle Fork Homestake Creek Division

Recipient: Cities of Colorado Springs and Aurora



ACRE FEET

5 YEAR COMPARISON

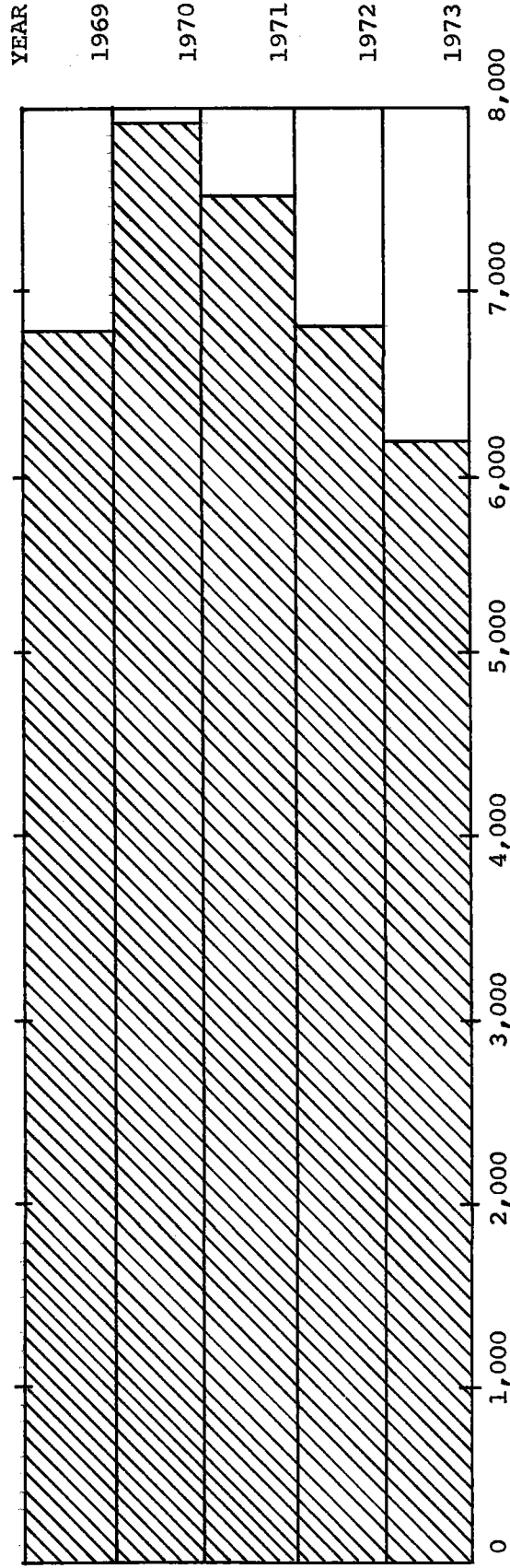
TRANSMOUNTAIN DIVERSION

Division No. 2

BUSK IVANHOE 1973

Source: Ivanhoe Creek Division #5

Recipient: Highline Canal Co.



ACRE FEET

5 YEAR COMPARISON

DIVISION SUMMARY - DIVISION NO. 2

Direct Flow Diversions 1973

WATER DIST.	TOTAL DITCHES			DIRECT DIVERSION A. FT.	NO. ACRES IRRIG.	A. FT. PER ACRE	INDUSTRIAL USE DIVER. A. FT.	MUNICIPAL USE DIVERSION A. FT.	TRANS. MTN. DIVERSION A. FT.	TOTAL DIVERSION ACRE FEET.
	ACTIVE	INACTIVE	NA							
10	45		205	52,193.73	10,275	5.08		11,316.17	131,759.68	63,509.90
11	167		138	150,125.60	21,356	7.03				150,125.60
12	239		93	186,106.00	20,001	9.30	88,828.00	9,844.00		284,778.00
13	500		53	77,165.30	31,420	2.46				77,165.30
14	40		25	290,887.78	104,469	3.02	1,431.00	23,768.20		316,086.98
15	82		42	23,395.61	5,170	4.52	15,850.50			39,246.21
16	244		169	63,313.76	29,458	2.15				63,313.76
17	44		62	796,183.00	287,441	2.77				796,183.00
18	27		24	13,151.00	7,550	1.74				13,151.00
19	105		137	111,422.00	10,345	10.77				111,422.00
66	7		8	2,228.00	924	2.41				2,228.00
67	38		108	205,940.00	72,633	2.84				205,940.00
TOTALS	1,538		1,064	1,972,111.78	601,042.00	3.28	106,109.60	44,928.37	131,759.68	2,123,149.75