

ANNUAL REPORT

DIVISION NO. I

1976 IRRIGATION YEAR

Nov. 1, 1975 - Oct. 31, 1976

By

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DIVISION OF WATER RESOURCES

DEPARTMENT OF NATURAL RESOURCES
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December 14, 1976

Mr. C. J. Kuiper, State Engineer
Division of Water Resources
Room 818 - Centennial Building
1313 Sherman Street
Denver, Colorado 80203

Dear Mr. Kuiper:

Please find submitted herewith the 1976 Annual Report for Irrigation Division No. 1, headquartered at Room 208, 8th and 8th Office Building, Greeley, Colorado 80631.

On behalf of the staff of Division 1, I would like to express our appreciation for the cooperation, guidance and courtesies extended by yourself and the members of your staff over the past year.

Sincerely,

W. G. Wilkinson
Division Engineer

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INDEX

		PAGE
I.	Introductory Statement	1
	South Platte River	1
	Republican River	6
	Laramie River	7
II.	Personnel	8
III.	Water Supply	
	A. Snow Pack	11
	B. Precipitation	12
	C. Floods	13
	D. Water Budget	19
	E. Underground Water	20
	F. Water Supply	
	Transmountain Diversions	24
	Hydrographic Report - Harold Coffey	25
	G. Reservoir Storage	32
IV.	Agricultural - Crop Report	44A
V.	Compacts, Court Stipulations, and Legislation	
	A. South Platte River Compact	53
	Laramie River Compact	54
	B. Court Stipulations, Litigation and Decreed	55
	Subdivision Plans	
	C. Legislation	57A
VI.	Dams	
	A. Reservoirs	
	1. Plans and Specifications	58
	2. Inspections	61
	B. Livestock Water Tanks - Erosion Control Dams	63
VII.	Water Rights	
	A. Tabulation and Abandonment	64
	B. Water Division I - Cases Filed	65
	C. Water Division I - Cases Decreed	66
VIII.	Organizations	
	A. Conservancy Districts	67
	B. Ditch and Reservoir Companies	68
	C. Groundwater Management Districts	92
IX.	Water Commissioner's Summary	
	A. Direct Flow Diversions	93
	B. Storage - Report	93
	C. 1976 Calls on South Platte River	94
X.	Suggestions and Recommendations	96
XI.	Miscellaneous	
	A. Water News	98
	B. Newspaper Clippings	105

1976 ANNUAL REPORT

I. INTRODUCTORY STATEMENT

Division 1 covers an area of some 28,068 square miles or approximately the northeast one-fourth of the State of Colorado. Of this, approximately 19,500 square miles is in the South Platte River Basin, 8,165 square miles in the Republican River Basin, and 403 square miles in the Laramie River Basin.

SOUTH PLATTE RIVER

The South Platte River starts at the Continental Divide, flows through South Park, down mountain canyons, out onto the plains in the Denver area, thence northeasterly and into Nebraska near the northeast corner of Colorado. The flow of the South Platte is augmented by a number of tributaries in the South Park area, the principal ones being the Middle and North Forks of the South Platte and Tarryall Creek. After leaving the mountains the South Platte is further augmented by several major tributaries arising at and east of the Continental Divide and flowing to the South Platte from the north and west. These major tributaries entering the South Platte in the Denver to Greeley area are Bear, Clear, Boulder and St. Vrain Creeks, and the Big Thompson and Cache la Poudre Rivers. Only normally minor and intermittent streams supplement the river flow from the south and east. However some of these, such as Plum, Cherry, Boxelder, Kiowa, Bijou, Badger, Beaver as well as Lone Tree, Coal, Wild Cat and Pawnee Creeks from the north and west are each capable of producing a major flood due to the extent and topography of their individual watersheds when subjected to intense precipitation.

In addition to the obvious tributary streams, the South Platte River is further supplemented very extensively, as are the tributaries themselves, by what is commonly referred to as return flow. This is water from springs, waste ditches, drains, seepage, etc., resulting generally from diversions for various uses, precipitation, and high water tables. These additional sources enter the streams in relatively small amounts at extremely numerous locations along the entire reaches of the streams.

The water supply is further supplemented by a number of diversions from transmountain sources. The water from these transmountain sources is controlled and used by specific ownership entities and, as such, the first use of it is not subject to appropriation as a part of the waters of the South Platte Basin. Although historically the return flows resulting from the initial use of transmountain water have historically been considered a part of the natural stream and, as such, subject to distribution under the priority system, successive uses of a specific foreign supply was made for the first time this year. The Denver Water Board instituted a program in mid-September whereby, as a result of detailed accounting of their various supply sources, and their sewage effluent, they were able to identify the amount of such effluent attributable to the Board's use of Blue River water imported into the South Platte Basin through Roberts Tunnel. This amount of water was then rediverted into their system by exchange to the extent flow conditions between their intake

and sewer outfall would permit without injury to intervening users. This policy of successive uses of Blue River water by the Board is considered by them to be mandatory under the terms of their Blue River decree from the Federal District Court.

Denver has further declared that as the demand for water supplied through their facilities increases they will necessarily have to look to all possible sources for increasing their supplies. Among these expanded sources will be additional imports from the Colorado River Basin, successive uses of other transmountain supplies and recirculation of their waste water after adequate treatment to make it acceptable for municipal uses.

There will no doubt be several legal problems to resolve before all of the expanded sources can be put into operation.

The elevations in the South Platte Basin vary from 14,000 feet at points along the Continental Divide to 3,400 feet at the Colorado-Nebraska line. The western one-third of the basin is mountainous in character and provides the principal source of water as the result of precipitation.

Of the 12,481,000 acres in the South Platte Basin, 9,469,470 acres are in farms and ranches. The balance of the area is owned by federal and state governments, public agencies, or included within municipalities. Within the farm areas are 1,137,000 irrigated acres and 7,557,000 acres of dry land according to the 1974 Agricultural Census.

The principal use of water in the mountain valleys is for meadow irrigation. Large volumes of water are released on meadows adjacent to the streams and, of this volume, a major proportion returns to the stream for reuse at lower elevations. The largest area of mountain valley irrigation is in South Park at elevations up to 11,000 feet. Other uses in the mountain areas include those of small municipalities, domestic, stock, power, mining, commercial and recreation needs.

The greatest use of water, by far, in the South Platte Basin is for agricultural purposes in the plains area at elevations between 3,500 and 5,000 feet. The water here supports a well developed, diversified agricultural economy that ranks high nationally in productivity. Much of the demand for water in areas downstream some 40 - 50 miles from the mountains is supplied from wells and by return flow from uses further upstream.

The 1976 irrigation year was generally much drier than normal. Precipitation for the year was approximately 20 percent below normal over the area. The winter snowpack in the mountains fell in the 85 - 90 percent normal range but, due to the dry soil moisture conditions the streamflows did not come up to the projected discharges. However, with reservoir carryovers from 1975 being reasonably good, most reservoirs were filled by July 1 and with this supplemental water and the use of wells an excellent yield was produced from most all irrigated crops in spite of greatly reduced stream flows.

The following tabulation reveals the percentage of the stream flows for 1976 as compared with the previous 10 years, both for the entire water year and for the April through September irrigation season at several of the principal stream gaging stations:

STATION	1966 THRU '75 ANNUAL ACREAGE AC. FT.	1976 AC.FT.	1976 % AVG.	APRIL THRU SEPT. '66 THRU '75 AVG. AC.FT.	1976 AC.FT.	1976 % AVG.
SOUTH PLATTE @ DENVER	144,166	73,607	51	112,423	47,880	43
SOUTH PLATTE @ HENDERSON	183,885	128,611	70	136,078	84,300	62
SOUTH PLATTE @ FT. LUPTON	191,365	113,390	59	134,387	68,121	51
SOUTH PLATTE @ KERSEY	384,145	216,013	56	243,758	85,252	35
SOUTH PLATTE @ WELDONA	270,956	126,181	47	155,772	47,526	31
SOUTH PLATTE @ BALZAC	217,576	74,716	34	151,096	35,237	23
SOUTH PLATTE @ JULESBURG	240,017	84,760	35	139,334	11,596	8
CLEAR CREEK @ GOLDEN	79,019	54,197	69	67,301	44,568	66
CLEAR CREEK @ DERBY	37,472	10,779	29	28,649	26,059	24
BOULDER CREEK @ ORDELL	28,485	18,901	66	22,622	14,409	60
ST. VRAIN CREEK @ LYONS	42,658	27,509	64	39,246	24,859	63
ST. VRAIN CREEK @ NR. PLATTEVILLE	88,767	54,348	61	84,788	27,886	32
BIG THOMPSON @ CANYON	30,431	23,999	79	24,689	19,515	79
BIG THOMPSON @ NR. LA SALLE	36,494	32,924	90	24,115	19,454	81
CACHE LA POUFRE @ CANYON	112,709	79,059	70	105,960	73,430	69
CACHE LA POUFRE NR. GREELEY	52,429	30,889	59	30,672	11,974	39

The irrigated area suffering the greatest shortage of water this season was downstream from Iliff to the state line. That area had only 70-75 percent of normal precipitation and was further adversely affected by extremely low stream flows. The flow at Julesburg for the April through September period was only

8.3 percent of the 1966 through 1975 average with June being less than 4 percent of the 10 year June average. In spite of diversion curtailment from the river by junior ditches and the delivery of reservoir water into the upper end of this reach, the river went dry before reaching the senior South Reservation calling right in the Ovid area. It is presumed that the draft on the underground supply, resulting from wells operating in the area exceeded the subsurface flow, which normally helps to sustain the surface flow, to the degree that ground water gradient was reversed and the surface flows were absorbed into the alluvial aquifer.

Several major well augmentation plans were in operation this year with a total of 21,408 acre feet being replaced to support the operation of the member wells for those plans. Replacement started on May 10th and continued through October 15th with a maximum of 118.6 cfs being delivered to the river on August 17th. Some of this replacement water was delivered in the South Platte River past the Harmony No. 1 headgate near Iliff to satisfy the call of the South Reservation Ditch to the extent of responsibility of GASP to make such replacement for their member wells operating in that area. As previously stated, this water did not reach South Reservation and resulted in a complaint from that company to the division engineer and subsequently on to the state engineer and their local senator. Although no immediate remedy could be made, plans have been perfected and are being implemented to construct wells in the alluvium near the South Reservation headgates to be used as alternate points of diversion for the South Reservation Ditch next year and thereafter. These wells will be beneficial to South Reservation and other ditches in the area who can obtain water by exchange through their use and should not cause any injury downstream due to the configuration of the aquifer and the limited downstream demand within Colorado.

Wells under several of the larger ditch systems below Kersey, as well as most of the wells in the Poudre Basin subject to regulation, operated as alternate points of diversion for surface rights thereby taking advantage of an expanded source without adding replacement responsibility.

The replacements under augmentation plans were quite minimal as compared to the total pumping under those plans but with the exception of the lower reach of the river as above mentioned generally was enough to supplement surface, reservoir and underground supplies for the production of another excellent crop. Although some inequities continue to exist, good progress has been made in the integration of all supplies, a fact which is evidenced by the continued high level of agricultural production in the area served by the South Platte River and its tributaries.

Although crop yields were high, the general condition of agriculture deteriorated this year. Grain, beans, beets, onion, potato and livestock prices declined while production costs continued to climb. Hay continues to command a good price.

Land prices generally appear to have leveled off as a result of the sluggish agricultural economy.

The most newsworthy event this year in this area concerning water was unfortunately the disastrous Big Thompson flood on July 31. This will be treated in greater detail in Section III C of this report.

REPUBLICAN RIVER

The Republican River Basin in Eastern Colorado covers 5,226,000 acres. Of this area 4,350,770 acres are in farm and ranch land with 226,109 acres under irrigation and 4,124,661 acres of dry land as reported in the 1969 Agricultural Census.

This area is relatively dry and the surface streams, many of which are intermittent, provide only enough water for some lands adjacent thereto. The normal precipitation in this area is about 17.1 inches of which 13.6 inches or 80 percent falls during the April through September period.

Precipitation in the Republican Drainage was again below normal in 1976 averaging only approximately 55 percent. Considerable wheat was lost in the dry land areas as a result of inadequate rainfall, however crop yields were surprisingly good considering the shortage of precipitation.

The total diversions allowable under the Republican River Compact again exceeded the available supply from surface sources in Colorado.

Ground water levels continue to fall as a result of increased pumping in many of the high plains areas. This condition has been predicted or perhaps it could be said that it was planned in the adoption of criteria for granting well permits in these areas. Land owners are aware that they are involved in a water mining operation and under normal conditions the recharge of the aquifer cannot keep pace with the withdrawals. For that reason, interest in the recharge of the aquifer by importation of water from the South Platte River as evidenced by the applications for water rights to the Water Court by the W-Y Corporation in December of 1975 has been generated among well and land owners in the designated groundwater basins. This is a very ambitious program and will no doubt raise considerable controversy before it is realized if indeed it ever is.

LARAMIE RIVER

The Laramie River Basin in North Central Colorado contains 258,000 acres of which 4,800 acres are irrigated and 15,000 acres are nonirrigated ranch land according to the 1964 Agricultural Census.

This basin is a mountain valley with the principal water use being for meadow irrigation and livestock purposes. There are no municipalities or villages in this basin so the domestic uses are minimal.

The Laramie River Basin had adequate water for irrigation this season to satisfy the allotments under the Laramie River Agreement and Federal Court order. The said court order provides that 19,875 acre feet of Laramie River water or its tributaries in Colorado may be annually diverted for use outside of the Laramie River Basin and that an additional 29,500 acre feet may be annually diverted for irrigation use within the Laramie River drainage with not more than 1,800 acre feet of such amount to be used after July 31 of each year. The Laramie River Agreement between the users of water in Colorado, being the meadowland users and the transmountain divertors, further provides for volumetric allotments to designated lands within the basin. This amounts of 6.0887 acre feet per acre for the season of which only 0.3715 acre feet may be diverted after July 31. The 1976 meadowland diversions were 17180 acre feet and transbasin diversions to Water District No. 3 totaled 19880 acre feet from those sources subject to the Federal Court order. Additionally, 790 acre feet of water were diverted into Water District No. 3 from Sand Creek Basin.

Most of the ranches on the Laramie River have changed ownership within the past 10 years. With cattle production being the principal activity in the valley, the economic well being of the ranch owners has suffered this year in reflection of the reduced prices for beef. Unfortunately, 1975 was the only good year for cattle producers in the past four years. Increasing production costs continue to add to the burdens of the livestock industry.

II. PERSONNEL

Two hard working, dependable employees of the division retired this year. They were Tony Heit, Deputy Water Commissioner in District 2 and Bill Gleason, Water Commissioner in District 48. Thanks for the help gentlemen.

New employees this year include:

Keith Delventhal	DWC Dist. 2
Mark Curry	DWC Dist. 23
Brent Mefford	DWC Dist. 23
Carolyn Vannorsdel	WC Dist. 48
Carolyn Durand	DWC Dist. 48
Kent Swedlund	DWC Dist. 64
Pat Archey	Hydro Greeley
Doug Aab	Engr. Tech. Greeley
Mike Liuzzi	Hydro Denver

NAME	WATER DIST.	CLASSIFICATION POSITION	OCT. 31, 1976 GRADE	STEP	DATE OF LAST CHANGE		MONTHS WORKED	1975-1976 MILEAGE	
					STEP	CHANGE		BUDGETED PER. VEH.	STATE VEH.
Dugan Wilkinson		Supv. WRE	68	7	7-73	12	12	22,343	
Jim Clark		Sen. WRE	62	7	10-75	12	12		
Ray Liesman		WRE C	57	5	7-76	12	12		
Don Brazelton		Wtr. Comm. C	43	5	9-76	12	12	9,019	
George Sievers		Wtr. Comm. B	37	2	9-76	12	12		
Dorothy Neutze		Sec. 1B	36	5	3-76	12	12		
Babette Harman		Typist B	22	5	11-75	12	12		
Bob Samples	1	Sen. Wtr. Comm.	47	6	4-72	12	12	417	25,996
Paul Meehl	2	Sen. Wtr. Comm.	47	7	1-74	12	12	16,722	
Jack Neutze	3	Prin. Wtr. Comm.	51	6	10-76	12	12	1,238	7,445
Lloyd Blewitt	4	Sen. Wtr. Comm.	47	7	12-73	12	12	5,682	
Stix Palmer	5	Wtr. Comm. C	43	7	12-74	12	12	12,987	
Ernie Ward	6	Wtr. Comm. C	43	7	6-76	12	12	17,444	
Arlyn Davison	7	Wtr. Comm. C	43	7	1-75	12	12	7,439	
Joe Clayton	8	Sen. Wtr. Comm.	47	7	11-71	12	12	12,361	
Ralph VanGorden	9	Wtr. Comm. B	37	7	7-70	12	12	10,654	
Wes Hayman	23	Wtr. Comm. B	37	6	6-75	12	12	18,359	
Carolyn Vannorsdel	48	Wtr. Comm. B	37	1	6-76	5	5	2,359	Gleason
Jack Fisher	49-65	Wtr. Comm. B	37	5	2-76	4	4	4,083	Vannorsdel
Bob Littler	64	Sen. Wtr. Comm.	47	7	7-70	12	12	4,720	
Terry Covelli	1	Wtr. Comm. A	31	3	6-76	8	8	18,084	
Keith Delventhal	2	Wtr. Comm. A	31	1	5-76	7	7	20,647	
Bruce Smith	3	Wtr. Comm. A	31	3	5-76	7	7	3,925	Heit
Wayne Lee	4	Wtr. Comm. A	31	5	10-76	8	8	7,719	Delventhal
Mel Hodgson	5	Wtr. Comm. A	31	2	4-76	7	7	10,663	
Dale Anderson	6	Wtr. Comm. A	31	3	8-76	7	7	6,921	
Ken Salser	8	Wtr. Comm. A	31	2	5-76	7	7	7,959	
Brent Mefford	23	Wtr. Comm. A	31	1	5-76	3	3	9,470	
Mark Curry	23	Wtr. Comm. A	31	1	5-76	4	4	14,016	
Carolyn Durand	48	Wtr. Comm. A	31	1	6-76	3	3	6,035	
Kent Swedlund	64	Wtr. Comm. A	31	1	4-76	4	4	4,298	
						3	3	1,802	
						4	4	2,016	

NAME	POSITION	OCT. 31, 1976		DATE OF LAST STEP CHANGE	MONTHS 1975-1976		MILEAGE
		GRADE	STEP		WORKED	BUDGETED	
Harold Coffey	WRE C	57	4	7-76	12	12	12,490
Ted Bell	WRE B	52	6	7-75	12	12	12,117
Bob Cooper	WRE B	52	4	1-76	12	12	22,453
Pat Archey	WRE A	47	1	7-76	12	12	
Chuck David	WRE	52	2				12,247
*Bud Walcher	SUP. WRE	68					6,240
Mike Liuzzi	WRE						12,370
Randy Seaholm	WRE B	52					18,217
Doug Aab	ENGR. AIDE A	29	1			3	
	ENGR. AIDE A	29	1			3	
	ENGR. AIDE A	29	1			3	

*Bud Walcher is not attached to our Division. His name is only listed to show mileage driven in a vehicle that is attached to our Division.

III. WATER SUPPLY

A. SNOW PACK

On April 1st the snowpack on the headwaters of Clear Creek, Boulder, St. Vrain and Big Thompson was considerably below normal. Reservoir storage was about normal for most of Division 1. May 1st was found to be as tabulated below:

WATER SUPPLY OUTLOOK*

STREAM OR AREA	FLOW PERIOD	
	SPRING SEASON	LATE SEASON
Bear Creek	Avg.	Fair
Coal Creek	Avg.	Fair
N. Fork S. Platte	Avg.	Fair
N. Fork Cache la Poudre	Avg.	Fair
Ralston Creek	Avg.	Fair
Rock Creek	Avg.	Fair
South Platte from Greeley to Fort Morgan	Fair	Poor
South Platte from Fort Morgan to Sterling	Fair	Poor
South Platte below Sterling	Fair	Poor

*Expressed as POOR, FAIR, AVERAGE, EXCELLENT, with respect to Usual Supply.

SUMMARY OF SNOW MEASUREMENTS

RIVER BASIN AND/OR SUB-WATERSHED	NO. OF COURSES AVERAGED	THIS YEAR'S SNOW WATER AS PERCENT OF:	
		LAST YEAR	AVERAGE*
Big Thompson	5	71	81
Boulder	3	81	83
Cache la Poudre	7	89	99
Clear Creek	6	77	85
Saint Vrain	3	68	90
South Platte	3	62	88

*1958 to 1972 period

WATER SUPPLY

1976

B. PRECIPITATION

LOCATION	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
	PRECIP. AVERAGE	% OF AVERAGE	PRECIP. AVERAGE	% OF AVERAGE	PRECIP. AVERAGE	% OF AVERAGE	PRECIP. AVERAGE	% OF AVERAGE	PRECIP. AVERAGE	% OF AVERAGE	PRECIP. AVERAGE	% OF AVERAGE
BOULDER	1.99	86	2.14	121	1.25	9	1.62	93	1.43	103	2.73	176
CHEESMAN	1.99	112	2.32	121	1.58	116	2.38	93	2.42	103	1.90	176
CHEYENNE WELLS	1.13	86			0.22	9	1.57	55	1.18	47	3.85	267
DENVER AP WSFD	1.27	82	1.34	60	0.63	39	2.31	151	2.50	245	1.88	200
ESTES PARK	0.81	47	1.44	67	1.35	66	2.61	114	5.79	300	2.32	193
FORT COLLINS	1.64	90	1.13	39	0.95	44	1.03	70	1.88	121	1.94	202
FORT MORGAN	1.12	88	1.95	76	0.73	34	1.35	71	1.33	92	2.13	197
GREELEY	1.76	119	3.69	153	0.74	41	1.36	103	0.90	86	1.92	198
KASSLER	1.56	65	1.19	40	1.15	60	5.05	310	1.87	128	2.90	242
LAKWOOD	1.88	95	0.49	19	1.90	103	0.72	45	1.06	87	6.87	625
LONGMONT	1.90	123	1.80	71	1.38	73	1.53	126	1.27	123	3.36	343
PARKER			0.63	28	0.94	51	5.68	293	1.89	106	2.80	308
RED FEATHER LAKE	1.59		1.02		0.95		2.50		1.27		1.83	
STERLING	1.01	77	3.51	122	0.58	21	1.44	58	1.39	86	1.21	111
WRAY	1.65	87	1.84	58	1.31	42	2.37	81	0.49	20	1.10	75

AVERAGES ARE FOR THE 29 YEAR PERIOD 1941 - 1970

III. WATER SUPPLY

C. FLOODS

The worst flood to strike the Big Thompson River in the some 130 years of white man's knowledge of the area occurred on the night of July 31.

The storm was the result of a rare combination of three air masses converging over the Estes Park area on that date. A mass of moist tropical air moved into the Colorado mountains from Arizona where it was joined by another system carrying moist tropical air from the Gulf of Mexico upslope along the front range of the Rockies. A cold front of Canadian air met these combined masses and triggered a storm that dropped up to approximately 12 inches of rain in a 6 hour period on the Big Thompson drainage before it moved on northeast to also cause some serious flooding on the Cache la Poudre and its tributaries. The heaviest concentration of rain was in the area of Glen Comfort, downstream of Estes Park, while another downpour of nearly equal severity was centered in the Glen Haven area on the North Fork of the Big Thompson. In this mountainous terrain the runoff was rapidly concentrated in the draws and gullies which fed into the main rivers, turning those normally low, clear, picturesque streams into destructive raging torrents sweeping motels, homes, trailers, cars, trees, bridges and, most tragically people, to their destruction.

The known loss of life has reached a total of 139 and property damages are estimated at 70 million dollars. The toll of human life was extended by an unfortunate combination of circumstances. July 31st was on the Saturday of a long holiday weekend on which Coloradoans were celebrating the State's Centennial and the Big Thompson Canyon was filled with vacationers out to enjoy the midsummer break in addition to the normal accumulation of tourists at the height of the tourist season in this popular resort area. Darkness fell soon after the rain started and many people apparently attempted to reach shelter and safety in streamside buildings or in vehicles on the roads where they were swept into the streams when the roads were inundated and destroyed.

If any satisfaction can be gained from recognizing how circumstances might have been worse, perhaps it was fortunate that the main storm location was split over the two drainages of the Big Thompson River and the North Fork of the Big Thompson and that the North Fork crest apparently lagged the crest on the Big Thompson at their confluence at Drake by approximately one hour. Otherwise the destruction downstream of Drake could conceivably have been worse. Further, had the storm been concentrated eight or ten miles upstream at or above the town of Estes Park the loss of life and property could have been much worse since the town was full of people. Additionally, had inflows to Lake Estes been the equivalent of those generated a short distance downstream, together with the debris carried by those flows, there is serious concern as to the adequacy of the spillway facilities of Olympus Dam to meet those circumstances and subsequently as to the ultimate safety of the structures.

As it was, Lake Estes served well as a retardant for flows at that point and as a means of diverting flows from the Big Thompson River through the Olympus, Pole Hill, and Flatiron system into Carter Lake, thereby relieving the pressure on the river to the extent of the capacity of that system.

The peak flow at the mouth of the Big Thompson Canyon was estimated by the U.S.G.S. to be 31,200 cfs. The estimated discharges at other points, together with the contributing drainage areas, are shown in the tabulation following this flood report. Attention is directed to Site No. 9 which shows an estimated flow of approximately 9,000 cfs per square mile of drainage. One can only speculate as to the magnitude of the forces of nature which carved these mountain canyons as they are seen today. Unfortunately, man finds it difficult, and often refuses, to properly consider those forces as they relate to his own activities.

Upon the application of the Governor, Larimer County and ultimately Weld County were designated by President Ford as flood disaster areas and eligible for federal assistance. Disaster headquarters were established in Loveland and the work of damage assessment, debris clearance, relief and rehabilitation was started immediately. The State Engineer designated the Deputy State Engineer for the Ground Water Section and the Division Engineer to assist in the survey of flood damages. They, together with federal representatives of the Reclamation Bureau and Soil Conservation Service inspected damaged irrigation facilities, made repair cost estimates and completed the damage survey reports necessary to obtain the federal funding assistance provided as a result of the disaster designation. Most of the damage survey work was done in August. Final inspection to verify the use of the funds and the completion of the repairs will be made later as work progress indicates.

During the month of August, Division I personnel spent 38 man days and traveled 2,372 miles in State Vehicles in flood related activities. The computed cost in salaries for this time spent was \$3,346 and the estimated travel costs are \$120. Personnel from the State office in Denver were also engaged in flood related activity for 16.5 man days and traveled 947 miles at an estimated additional cost of \$2,000 for salary and \$80 for travel. Additional state time and mileage has been and will later be incurred before all repairs and final inspections are completed. It is estimated that such total past and future costs will approximate \$10,000.

The State lost two Big Thompson stream gaging stations completely at the mouth of the canyon and below the old Loveland Powerplant. Structural damage was moderate at the Buckhorn Station and minor at the Greeley-Loveland Station. Extensive channel work is necessary to get the North Fork at Drake Station back in operation and will also be required in conjunction with the rebuilding of the station below the Loveland Power Plant. The estimated costs for rebuilding and repair of these facilities is \$18,400. No appreciable damage was suffered by the State stations on the Cache la Poudre.

The damage to irrigation structures along the Big Thompson River was extensive with the degree of damage being the greatest in the vicinity of the mouth of the canyon and gradually decreasing as the force of the flood was dissipated in the valley to the east.

Facilities constructed by the Bureau of Reclamation near the mouth of the canyon caught the brunt of the flood. The biggest loss in terms of both cost and severity of effect was the destruction of the Big Thompson siphon, a vital link in the Hansen Feeder Canal system between the Flat-iron Power Plant and Horsetooth Reservoir.

Fortunately Horsetooth Reservoir had adequate water in storage to supply all allocations served therefrom for the balance of the season. Emergency facilities to pump water from the river into the feeded canal north of the siphon were operating within a few days through the cooperative efforts of the Northern Colorado Water Conservancy District, the Bureau of Reclamation and a pump contractor. These facilities provided water for the basic domestic and irrigation needs of those users between the river and Horsetooth.

Bureau officials immediately developed plans and specifications for replacement of the siphon and with the cooperation of suppliers and contractors were able to have the siphon rebuilt and in operation by October 27.

Other Bureau structures and related facilities such as the diversion structure for Dille Tunnel, the wasteway at the mouth of the canyon and the tailrace for the Big Thompson Powerplant all suffered damage in the flood but were soon cleaned up, repaired and put back in operation. The soundness of those structures in withstanding the destructiveness of the flood as well as they did speaks well for the design and construction requirements of the Bureau. The estimated damage to Bureau facilities was \$500,000.

Fortunately, the two largest and visually interesting irrigation diversion dams on the Big Thompson River came through the flood with only minor damage. The old stepped concrete dam for the Handy Ditch at the mouth of the canyon immediately downstream from the Bureau Siphon and the spectacular masonry Home Supply Dam downstream near the Loveland Water Works both stand in tribute to the design and workmanship of pioneers in irrigation.

The headgates of the Handy Ditch were severely damaged when a section of the Big Thompson siphon struck and lodged at that point. A substantial section of the bench flume immediately downstream of the Handy Gates was destroyed. Temporary repairs were made through the use of two 30 inch pipes laid from the headgates across the breach and into the section downstream.

While the flood on the Big Thompson was by far the most severe and costly the Cache la Poudre and its tributaries also experienced some excessive precipitation and streamflows. As the storm drifted northeast from the Big Thompson, smaller tributary streams such as the Buckhorn and Redstone Creeks rose to flood stages. Youngs Gulch and Fall Creek as well as most of the other tributary draws in the lower reaches of the Poudre reached flood stage during the night of July 31 to contribute to a peak flow of an estimated 7340 cfs at the mouth of Poudre Canyon. Pine, Stonewall, Rabbit, Deadman, Dale and Fish Creeks all contributed heavily to the flood flows on the North Fork of the Cache la Poudre River to reach an estimated discharge of 9460 cfs at Livermore. This peak lagged behind the crest on the main stream and was further dissipated in its flow through Seaman Reservoir. Otherwise it would have materially added to the damage suffered on the Poudre.

Additional precipitation in the upper reaches of Boxelder Creek in Larimer County on the evening of August 1 caused significant damage to equipment and the unfinished construction of a flood control dam on Sand Creek, a tributary of the Boxelder and to the facilities of the North Poudre Irrigation and the Water Supply and Storage Companies in the Wellington area.

Even though the water was still running high, all of the irrigation systems which were damaged by the flood on both the Big Thompson and Cache la Poudre had men and equipment working on their facilities immediately to clean out debris, make emergency repairs and get water back into their delivery systems as soon as possible. In spite of the flood conditions, very little precipitation had fallen in irrigated areas either in this storm or for week previous to it. Since it was the first of August, water demands remained high and it was imperative that irrigation deliveries be made to prevent damage to the growing crops. An excellent spirit of cooperation prevailed among administrative officials and everyone affected by the flood and as a result of that cooperation, extraordinary individual efforts and mutual understanding very little damage was realized from lack of water. Certainly all of those individuals, companies, contractors and agencies who were involved in that concerted effort are to be commended.

It is interesting to note how rapidly the peak flows on both the Big Thompson and the Cache la Poudre were dissipated as they continued downstream. The 31,200 cfs flow at the mouth of the Big Thompson Canyon was reduced to 2,500 cfs at the mouth of the Big Thompson River near LaSalle, some thirty-five miles downstream. The Cache la Poudre flow of 7,340 at the mouth of the canyon decreased to approximately 1,700 cfs at the mouth near Greeley, fifty miles downstream. The combined volume of the short lived flood flows on both streams was calculated to be approximately 14,000 acre feet.

The following tabulation of flows at various points is the result of studies and observations made by the U.S.G.S. and furnished to the Division of Water Resources by that agency.

Additional flood information and pictures may be found in Section XI B of this report.

Site No.	Station		Drainage area (sq mi)	Date	Discharge (ft ³ /s)
	Number	Name			
1	06735500	Big Thompson River near Estes Park (lat 40°22'35", long 105°29'06")	155	7-31-76	(1/)
2	-----	Dry Gulch near Estes Park (lat 40°24'22", long 105°28'37")	2.00	7-31-76	3,210
3	-----	Dry Gulch at Estes Park (lat 40°22'42", long 105°29'15")	6.12	7-31-76	4,460
4	-----	Big Thompson River below Estes Park (lat 40°22'59", long 105°28'11")	164	7-31-76	4,330
5	-----	Big Thompson Tributary below Loveland Heights (lat 40°23'44", long 105°27'34")	1.37	7-31-76	8,700
6	-----	Dark Gulch at Glen Comfort (lat 40°23'44", long 105°26'17")	1.00	7-31-76	7110 6,090
7	-----	Noels Draw at Glen Comfort (lat 40°23'25", long 105°26'00")	3.37	7-31-76	6,910
8	-----	Rabbit Gulch near Drake (lat 40°24'23", long 105°24'17")	3.41	7-31-76	3,540
9	-----	Long Gulch near Drake (lat 40°23'46", long 105°24'04")	1.99	7-11-76	5500 18,400 28,200 31,200
10	-----	Big Thompson River above Drake (lat 40°25'39", long 105°20'37")	189	7-31-76	888
11	-----	North Fork Big Thompson River at Glen Haven (lat 40°27'17", long 105°27'05")	18.5	7-31-76	1,300
12	-----	Fox Creek at Glen Haven (lat 40°27'17", long 105°27'13")	7.18	7-31-76	2,810
13	-----	Devils Gulch near Glen Haven (lat 40°26'24", long 105°27'31")	.91	7-31-76	2,320
14	-----	West Creek near Glen Haven (lat 40°26'32", long 105°27'40")	23.1	7-31-76	9,670
15	-----	North Fork Big Thompson Tributary near Glen Haven (lat 40°27'14", long 105°26'04")	1.33	7-31-76	1,790
16	-----	Black Creek near Glen Haven (lat 40°27'04", long 105°25'28")	3.17	7-31-76	2,060
17	-----	Miller Fork near Glen Haven (lat 40°27'47", long 105°25'13")	13.9	7-31-76	3,240
18	-----	North Fork Big Thompson Tributary near Drake (lat 40°26'55", long 105°24'11")	1.26	7-31-76	8,710
19	-----	North Fork Big Thompson River above Drake (lat 40°26'20", long 105°21'52")	80.2	7-31-76	30,100
20	-----	Big Thompson River below Drake (lat 40°25'52", long 105°19'37")	276	7-31-76	31,200
21	06738000	Big Thompson River at mouth of canyon, near Drake (lat 40°25'13", long 105°13'34")	305	7-31-76	27,000
22	-----	Big Thompson River below Green Ridge Glade (lat 40°25'03", long 105°12'02")	311	7-31-76	2,640
23	-----	Redstone Creek near Masonville (lat 40°30'19", long 105°11'49")	29.1	7-31-76	1,940
24	-----	Little Thompson River near Estes Park (lat 40°20'06", long 105°25'48")	2.77	7-31-76	2,500
25	06744000	Big Thompson River at mouth, near LaSalle (lat 40°21'00", long 104°47'04")	828	8-1-76	727
26	-----	Dale Creek Tributary at Virginia Dale (lat 40°57'36", long 105°21'39")	.68	7-31-76	7,400
27	-----	Deadman Creek near Virginia Dale (lat 40°55'50", long 105°20'57")	23.7	7-31-76	3,470
28	-----	Stonewall Creek near Livermore (lat 40°48'37", long 105°15'01")	31.9	7-31-76	2,390
29	-----	Lone Pine Creek near Livermore (lat 40°47'44", long 105°17'24")	86.3	7-31-76	9,460
30	-----	North Fork Cache la Poudre River at Livermore (lat 40°47'15", long 105°15'08")	939	7-31-76	7,340
31	06752000	Cache la Poudre River at mouth of canyon, near Fort Collins (lat 40°39'52", long 105°13'26")	1,056	7-31-76	2,710
32	-----	Rint Canyon near Bellvue (lat 40°37'41", long 105°12'44")	5.27	7-31-76	5,700
33	06752260	Cache la Poudre River at Fort Collins (lat 40°35'17", long 105°04'04")	1,129	7-31-76	

* Revised

No flow out of lake below

111. FLOODS

The following tabulation shows the annual flows in acre feet at the major control gaging stations in the Division and the highest instantaneous peak flow during the period. Note that some of the flows are for the Water Year, October 1 - September 30, and others are for the Irrigation Year, November 1 - October 31.

Most figures are preliminary reports and subject to revision.

STATION	WATER YEAR (A.F.)		IRRIGATION YEAR (A.F.) Nov. 1, 1975 to Nov. 1, 1976	INSTANTANEOUS PEAK FLOWS	
	Oct. 1, 1975 to Oct. 1, 1976			DATE	C.F.S.
South Platte below Cheesman	126,100			8-7	667
North Fork at South Platte	143,100			8-3	920
South Platte at South Platte	285,900			8-3	1,270
Bear Creek at Morrison	21,560			8-3	139
Bear Creek at Sheridan	15,180			7-25	178
South Platte at Denver	146,000			9-26	2,150
Clear Creek Nr. Golden (Upper Station)	107,500			6-10	888
Clear Creek at Derby	21,380			9-27	756
South Platte at Henderson	255,100			8-1	5,490
Middle Boulder Creek at Orodell	37,490			8-3	249
South Boulder Creek at Eldorado	34,110			6-9	286
Coal Creek at Plainview	1,440			5-25	28
St. Vrain Creek at Lyons	54,560		54,640	8-1	778
St. Vrain at Platteville	107,800		106,000	8-3	773
Big Thompson at Canyon (1)	46,120		47,600	7-31	31,200
Big Thompson at LaSalle (2)	65,310		65,370	8-1	2,240
Cache la Poudre at Canyon	156,800		158,000	8-1	7,340
Cache la Poudre at Greeley	61,260		60,620	8-2	1,580
South Platte at Kersey	428,500		431,800	8-2	3,530
South Platte at Balzac	148,200		143,500	7-3	2,540
South Platte at Julesburg	168,100		164,200	11-20	985

(1) Does not include 50,050 A.F. which was diverted via Foothills Canal and Dille Tunnel and returned to the river below Station.

III.

D. WATER BUDGET

Not submitted due to lack of verified data.

III. WATER SUPPLY

E. UNDERGROUND WATER

The conjunctive use and distribution of surface and ground water supplies continues to be one of the primary concerns of both water users and administrative officials. The statutory concept is gradually gaining wider acceptance with the result that more wells are voluntarily enrolled in some augmentation plan which allows continued, unregulated pumping. Not only do wells rely upon augmentation plans to support their diversions but large numbers of them have also sought to operate as alternate points of diversion for surface rights.

Although the number of wells included under augmentation plans decreed by the Water Court would run into the thousands, only a small percentage of them have been drilled and put to use at this time. Most of these wells will be of small capacity for in-house use purposes and consequently, in spite of their numbers, will not create the impact on stream supplies as is presently felt from the seasonal operation of irrigation wells and the continuous use of municipal wells.

Most irrigation and municipal wells are included in plans of augmentation, operating as alternate points of diversion, decreed as nontributary. Although several wells continue to operate without benefit of any of the above protectors, the administrative officials are diligently attempting to locate them and upon discovery either the curtailment of their use or requiring replacement to the stream in compliance with the Court approved rules and regulations.

Most augmentation plans involving irrigation and municipal wells are operating under the temporary approval of the state and division engineers. While some augmentation groups have applications filed with the water courts which have been decreed or are awaiting action, it is expected that it will be considerable time before all of them receive final court action. This is due to the temporary nature of some plans and also to the range of membership and flexibility in others.

Under plans of augmentation involving wells drilled prior to the adoption of Senate Bill 81 in July 1969, or for replacement or supporting wells for such pre '69 wells, the division engineer requires replacement water delivered to the stream under augmentation plans in the amount of the stream depletion caused by those wells or such lesser amount as is necessary to satisfy valid senior calls. For wells drilled subsequent to the aforesaid 1969 date, or diversions made from existing wells for extended or increased uses, replacement may be made by one of two primary means, either by a full exchange on a foot for foot basis or upon a depletion basis where the proposed depletion is balanced by the historic depletion of the water used as replacement. This requirement is made in recognition of the declaration of policy as statutorily expressed in 37-92-102, Colorado Revised Statutes 1973.

An increasing number of established surface irrigation systems have already or are presently seeking to have the wells owned by the stockholders under their systems to be included as alternate points of diversion for their existing surface rights. By this means they are able to enhance the supply of water available to them under their priorities at times when there is inadequate water at their stream headgates to supply their demands. This alternate point of diversion concept provides an additional benefit to other junior water rights who are unable to have wells by establishing a means for the satisfaction of senior rights from a source other than the immediate surface stream, thereby relieving the demand on those surface flows.

Some municipal and nonexempt domestic users are looking to deep, nontributary aquifers as a source of supply for their wells. Even though the initial cost of construction is much more than that for a shallow well they feel that it is more dependable and less expensive over a long period. Some wells which today would probably be classified as tributary under existing laws were in past years decreed as nontributary and are consequently not subject to regulation as in the case for tributary structures. The most of such structures with such a fortunate designation were adjudicated in the District Court of Larimer County in 1953, a time before the interrelationship of underground and surface waters was understood as it is today and also before the intensive construction of wells as occasioned by the drought of the mid-50's.

The following list summarizes the number of wells included in augmentation plans, as alternate points of diversion and as nontributary sources. The list is limited to irrigation, municipal, commercial and industrial wells and does not include any of the so called exempt wells nor subdivision wells permitted under individual court approved subdivision augmentation plans:

A. AUGMENTATION PLANS

1. GASP		2725
a. Commercial	136	
b. Industrial	15	
c. Irrigation	2425	
d. Municipal	149	
2. CENTRAL		799
a. Irrigation	785	
b. Other Uses	14	
3. SONNENBERG		48
*4. BIJOU		200
5. PUBLIC SERVICE		56
6. GREAT WESTERN		28
7. MONFORT		56
8. CSU		4
9. FRED GIBBS		1
10. BOSTROM		1

B. ALTERNATE POINTS OF DIVERSION

1. LARIMER CO. UNDERGROUND	520
2. UPPER PLATTE AND BEAVER	104
3. LOWER PLATTE AND BEAVER	98
4. FORT MORGAN	100
5. TREMONT	19
6. JOHNSON AND EDWARDS	13
7. A.A. SMITH	22

C. NON TRIBUTARY

1. 1953 ADJUDICATIONS	458
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*THE BIJOU PLAN OPERATES BOTH AS AN AUGMENTATION PLAN AND AS AN ALTERNATE POINT OF DIVERSION.

A NUMBER OF THE WELLS REPRESENTED IN THE ABOVE TABULATION ARE IN MORE THAN ONE PLAN, THE TOTAL NUMBER OF WELLS PROTECTED IN A PLAN OF AUGMENTATION OR AS AN ALTERNATE POINT OF DIVERSION IS 4812.

Total replacements from augmentation plans shown in the foregoing tabulation amounted to 21,408 acre feet during 1976. The first replacement was made on May 10th and the last replacement from controlled sources was made upon October 15. Uncontrolled and unclaimed replacement from a ground water recharge project continued after that date, however no credit has been assigned for such replacement.

The maximum daily replacement occurred upon August 17 when said replacement was made at the rate of 118.57 cfs.

For information on decreed subdivision augmentation plans please refer to Section V B.

Drilling of new wells into the tributary aquifers has been largely confined to those defined as exempt wells. The largest number of permits have been issued for in-house use only wells. Owners of lots in subdivisions which have been approved by the various county commissions prior to May 8, 1972 are ordinarily eligible for an in-house use well on that tract. Domestic well permits are issued for tracts of 35 acres or more on which that would be the only well.

Permits were usually granted for the drilling of replacement wells in those situations where the original well had failed in some manner. Limitations are imposed on replacement wells in regard to their location, production, and abandonment of the replaced structure.

New permits have been granted for irrigation wells in the designated ground water basins when they comply with the established guidelines for the particular area. Naturally, the physical opportunities for such compliance are reduced with the issuance of each new permit.

The drilling of wells which tap the deep, so called nontributary formations came under more restrictive regulation with the legislative adoption of

criteria for such ground water removal. Under the statute, a permit limits the withdrawal to a rate capable of extracting the known supply under the surface property of the owner over a one hundred year period.

111. WATER SUPPLY

F.

TRANSMOUNTAIN DIVERS:

OCTOBER 1, 1975 - SEPTEMBER

DIVERTING STRUCTURE	SOURCE	SOURCE DISTRICT	RECEIVING DISTRICT	CONTROLLING DISTRICT
Wilson Supply Ditch	Sand & Deadman Creek	48	3	Divide Canal
*Deadman Ditch (Incl. in Wilson Supply)	Deadman Creek	48	3	Divide Canal
Bob Creek Ditch	Nunn Creek	48	3	City of Gree
Columbine Ditch	Deadman Creek	48	3	City of Gree
Laramie Poudre Tunnel	Laramie River	48	3	Water Supply
Skyline Ditch	West Fork Laramie River	48	3	Water Supply
Cameron Pass Ditch	Michigan River	47	3	Water Supply
Michigan Ditch	Michigan River	47	3	North Poudre
Grand River Ditch	Colorado River	51	3	Water Supply
Eureka	Colorado River	51	4	City of Love
Alva B. Adams Tunnel	Colorado River	51	4	U.S.B.R.-N.C
Moffat Tunnel	Fraser River	51	6	City of Denv
Jones Pass Tunnel	Williams Fork	51	6	City of Denv
AKA August P. Gumlich or Williams Fork Tunnel	(Incl. in Moffat Tunnel)			
Berthoud Pass Ditch	Fraser River	51	7	Farmers Res.
Vidler Tunnel	Montezuma Creek	36	7	Hebert Young
Roberts Tunnel	Blue River	36	23-8	City of Denv
Boreas Pass Ditch	Indiana Creek	36	23	City of Auro
Hoosier Pass Tunnel	Blue River	36	23	City of Colo
Aurora Homestake	Homestake Creek	37	23	City of Auro

* INCLUDED IN WILSON SUPPLY DITCH

** CORRECTED FOR DEADMAN IN WILSON SUPPLY

III.

F.

HYDROGRAPHIC REPORT
DIVISION ONE
1976

GENERAL

On July 31, 1976, disastrous flooding occurred on the Big Thompson River, and to a lesser extent on the Cache La Poudre River. Considerable hydrographic effort was expended in flood related activities. Included activities were measurement, reconnaissance, cleanup and repair.

Indirect peak discharge determination by the U.S. Geological Survey indicate a peak flow of 31,200 cfs at the Mouth of the Big Thompson Canyon which occurred about 11:00 P.M. on July 31, 1976. Elevation of the high water mark on the canyon wall was 19.86 feet. This compares to a previous maximum discharge of 7600 cfs at a maximum gage height of 7.55 feet during the period of record (intermittent since August 1887, continuous since March 1951). As an indication of the magnitude of the flood crest, it could be noted that the highway elevation at that point was about 12 feet. Peak discharge on the Cache La Poudre at the Mouth of the Canyon was 7340 cfs, corresponding to 7.86 feet gage height. This was well below the historic high of 21,000 cfs for the period of record.

Two stations were completely lost. These were Big Thompson River Station at the Mouth of the Canyon and the Big Thompson River Station below the Loveland Power Plant farther up the canyon. The station on the North Fork of the Big Thompson River at Drake was rendered inoperative because of channel fill. Our Buckhorn Creek Station suffered extensive erosion damage to fill which had been installed when the station was recently moved. No damage was incurred at the Cache La Poudre Station at the Mouth of the Canyon.

Repair work has been completed on the North Fork Station (largely channel cleanout) and the Buck horn Creek Station (replacement of previous fill with concrete). A temporary station at the Mouth of Big Thompson Canyon is planned before spring runoff time. Permanent replacement of the two lost stations will await completion of plans for a permanent highway and the replacement of the Loveland Power Plant in the Canyon.

Other activities included major alterations of the South Platte Station at Balzac and moving of the Buckhorn Creek Station (before the flood). At Balzac Channel 1, the 36 inch station was replaced with 48 inch upper and lower. The wooden upper structure at Channel 2 was replaced with a 36 inch upper structure. Buckhorn Creek Station was moved at the request of the new land owner.

HYDROGRAPHIC ACTIVITY

STREAM FLOW MEASUREMENTS
1976 IRRIGATION WATER YEAR
November 1, 1975 to October 31, 1976

The following number of measurements were made by Division One Hydrographers:

<u>HYDROGRAPHER</u>	<u>NUMBER OF MONTHS</u>	<u>NUMBER OF MEASUREMENTS</u>
Aab, D. R.	3	
Akers, D. A.	3	
Andesha, A. Z.	4	0
Archev, P. J.	4	58
Bell, T. S.	12	179
Coffer, H. R.	12	173
Cooper, R. E.	12	272
David, C. G.	12	248
Freed, P. H.	3	
Liuzzi, M. J.	6	161
Seaholm, D. R.	12	292
Walcher, R. D. Jr.	7	<u>169</u>
	TOTAL	1552

Total hydrographic mileage was 96,134. Some of the above measurements were made by the three summer employers, who have greatly helped our hydrographic effort. Measurements or mileage by Glen Brees or Bud Walcher in Division One are not included above.

SUPPLEMENTAL HYDROGRAPHIC REPORTS

ANNUAL REPORT
COLORADO-BIG THOMPSON PROJECT
1976

This is a cooperative effort between the U.S. Bureau of Reclamation, the Northern Colorado Water Conservancy District and the Division of Water Resources. Water is diverted from the Western Slope through Alva B. Adams Tunnel. Power is generated in a series of five power plants by the Bureau, then the water is distributed to East Slope users by the Conservancy District.

ACTIVE PROJECT STORAGE

<u>Western Slope</u>	<u>Nov. 1, 1975</u>	<u>Nov. 1, 1976</u>	<u>Diff.</u>
Willow Creek	6,400	6,080	-320
Granby	399,060	298,450	-100,610
Shadow Mountain- Grand Lake	17,360	17,300	-60
Total Acre Feet	<u>422,820</u>	<u>321,830</u>	<u>-100,990</u>
 <u>Eastern Slope</u>			
Carter	54,330	39,150	-15,180
Horsetooth	60,460	15,310	-45,150
Boulder	2,000	2,240	+240
Total Acre Feet	<u>116,790</u>	<u>56,700</u>	<u>-60,090</u>

DISTRIBUTION OF PROJECT WATER

<u>WATER DISTRICT</u>	<u>CARRIER</u>	<u>TOTAL ACRE FEET</u>
1	Hansen Feeder Canal via Big Thompson	17,460
3	Hansen Supply Canal via Cache la Poudre Direct Delivery	116,300 13,230
4	Hansen Feeder Canal via Big Thompson St. Vrain Supply via Little Thompson Direct Delivery	57,630 11,080 6,500
5	St. Vrain Supply Canal via St. Vrain Direct Delivery	33,670 17,650
6	Boulder Cr. Supply Canal via Boulder Cr. Direct Delivery	26,250 8,210
	Total to all districts, including replacement water	297,980

Quota water declared available - 100% or 309,870 ac.ft.
Replacement water - 1640 ac.ft.

MATERIAL BALANCE - PROJECT WATER DISTRIBUTION

<u>INFLOW</u>	<u>NOV. 1, 1975 - NOV. 1, 1976</u>	<u>TOTAL ACRE FEET</u>
<u>WESTERN SLOPE WATER</u>		
Alva B. Adams Tunnel	263,530	
<u>EASTERN SLOPE WATER</u>		
Wind River	520	
Big Thompson River	65,750	
Fish Creek	1,050	
Storage Nov. 1, 1975	2,700	333,550

OUTFLOWNOV. 1, 1975 - NOV. 1, 1976TOTAL ACRE FEET

Estes Park Water District	230	
Town of Estes Park	610	
Estes-Foothills Canal	313,790	
Big Thompson River	21,680	
Storage Nov. 1, 1976	<u>2,430</u>	338,740

Apparent Gain 5,190 acre feet

CARTER LAKE AREAINFLOW

Estes-Foothills Canal	313,790	
Storage Pinewood, Flatiron	1,990	
Storage Carter Nov. 1, 1975	54,330	
Dille Tunnel	<u>7,730</u>	377,840

OUTFLOW

Hansen Feeder Canal	95,060	
Big Thompson River	127,210	
St. Vrain Supply Canal	96,970	
Little Thompson Water District	3,370	
Storage Carter Nov. 1, 1976	39,150	
Storage Pinewood, Flatiron	<u>1,810</u>	363,570

Apparent Loss 14,270 acre feet

HORSETOOTH AREAINFLOW

Hansen Feeder Canal	95,060	
Storage Nov. 1, 1975	60,460	155,520

OUTFLOW

Hansen Supply Canal	116,300	
Direct Delivery	13,230	
Storage Nov. 1, 1976	15,310	144,840

Apparent Loss 10,680 acre feet

BOULDER AREA

INFLOW

NOV. 1, 1975 - NOV. 1, 1976

TOTAL ACRE FEET

Boulder Feeder Canal
Storage Nov. 1, 1975

38,850
2,000

40,850

OUTFLOW

Boulder Cr. Supply Canal
Dry Cr. Replacement
Storage Nov. 1, 1976

34,460
640
2,240

37,340

Apparent loss 3,510 acre feet

SUMMATIONS

Estes Park Area
Carter Lake Area
Horsetooth Area
Boulder Area

+5,190
-14,270
-10,680
-3,510

Total Apparent Project Loss 23,270 acre feet

OPERATION SKIM

In conjunction with the Colorado-Big Thompson Project, Operation Skim diverts Big Thompson River water for power generation purposes and returns it to the river. Upper Big Thompson River water is diverted through Estes Foothills Canal into Olympus Tunnel for power generation at Polehill and Flatiron Power Plants. Near the mouth of Big Thompson Canyon, river water is diverted through Dille Tunnel. River water from both diversions is then returned to the river through the Big Thompson Power Plant.

Skim operations were conducted from May 6, through the end of the water year as follows:

<u>MONTH</u>	<u>WATER DIVERTED</u> <u>ACRE-FEET</u>
May	8,570
June	17,710
July	9,760
August	8,670
September	5,270
	<u>49,980</u>

Harold R. Coffey
Harold R. Coffey
Water Resources Engineer

111.

G. RESERVOIR STORAGE DISTRICT NO. 1

NAME	SOURCE	AMOUNT - A.F.		
		10-31-75	4-31-76	10-31-76
Empire	South Platte	9240	34930	
Riverside	South Platte	21685	58264	
Jackson	South Platte	8977	32195	
Bijou No. 2	South Platte	2660	4140	
North Sterling	South Platte	20158	71589	
Prewitt	South Platte	22500	27125	
Klug	Boxelder Creek	0	0	
Bootleg	Boxelder Creek	0	0	
Heart	Little Crow Creek	0	79	
Giffin No. 1	Lone Tree Creek	17	14	
Giffin No. 2	Lone Tree Creek	10	56	
Adams & Bunker No. 1	Little Crow Creek		448	
Adams & Bunker No. 2	Little Crow Creek		172	
	TOTAL	85247	229012	

13

111.

G. RESERVOIR STORAGE DISTRICT NO. 2

NAME	SOURCE	AMOUNT - A.F.		
		10-31-75	4-31-76	10-31-76
Barr	South Platte	13117	27156	
Horsecreek	South Platte	6848	15406	
Prospect	South Platte	1415	5700	
Lord	South Platte	73	556	
Milton	South Platte	10264	17628	
Lower Latham	South Platte	4702	5457	
Standley	Clear Creek	23516	33758	
Behrns	South Platte	25	10	
Beulah	South Platte	3	25	
Bowles No. 1	South Platte	40	0	
Bowles No. 2	South Platte	130	40	
Brantner No. 2	Brantner Gulch	11	11	
Carlin	South Platte	12	0	
Church Lower Lake	Dry Creek	100	102	
Coal Ridge	Little Dry Creek	528	411	
Fulton Waste	South Platte	225	420	
German No. 2	Big Dry Creek	70	92	
German No. 3	Big Dry Creek	2	2	
German No. 4	Big Dry Creek	30	36	
German No. 6	Big Dry Creek	20	21	
German No. 8	Big Dry Creek	10	5	
German No. 9	Big Dry Creek	0	1	
German No. 12	Big Dry Creek	80	69	
H.A. Smith	South Platte	50	72	
Great Western	Clear Creek	2655	2008	
Henry	South Platte	2	0	
J.B. Smith	Todd Creek	120	140	
Ireland No. 1	South Platte	35	118	
Ireland No. 5	South Platte	20	40	
La Dore	Seepage	360	360	
Loloff	South Platte	120	100	
Marshall	Brantner Gulch	30	32	
Maul	First Creek	33	33	
Meek No. 1	South Platte	30	18	
Meek No. 2	South Platte	9	1	
Mose Davis No. 2	South Platte	100	62	
North Star	Big Dry Creek	100	129	
Olds	South Platte	0	0	
Parson-Holms	Second Creek	9	0	
Thompson	Big Dry Creek	225	225	

40

111.

G. RESERVOIR STORAGE DISTRICT NO. 2 (CONTINUED)

NAME	SOURCE	AMOUNT - A.F.		
		10-31-75	4-31-76	10-31-76
Mathison	Big Dry Creek	10	15	
Karsh	Big Dry Creek	0	0	
Hamilton	Seepage	1	1	
Francis	Gulch	6	6	
Brunner	Seepage	20	53	
Burnett-Deisher	Seepage	25	17	
	TOTAL	65181	110336	

111.

G.

RESERVOIR STORAGE DISTRICT NO. 3

NAME	SOURCE	AMOUNT - A.F.		
		10-31-75	4-31-76	10-31-76
Fossil Creek	Cache la Poudre	874		8781
Halligan	N Fk Cache la Poudre	718		3427
Clarks Lake	N Fk Cache la Poudre	247		425
Indian Creek	N Fk Cache la Poudre	1707		1673
N. Poudre No. 2	N Fk Cache la Poudre	1856		3336
N. Poudre No. 3	N Fk Cache la Poudre	1892		1843
N. Poudre No. 4	N Fk Cache la Poudre	474		846
N. Poudre No. 5	Cache la Poudre	3872		2663
N. Poudre No. 6	Cache la Poudre	4309		4490
N. Poudre No. 15	N Fk Cache la Poudre	1845		3921
Park Creek	N Fk Cache la Poudre	5086		6930
N. Poudre Minor	N Fk Cache la Poudre	1237		1579
Cobb	Cache la Poudre	15560		15210
Douglas	Cache la Poudre	6320		6818
Res. No. 8	Cache la Poudre	6840		6137
Res. No. 8 Annex	Cache la Poudre	1661		1906
Windsor Res.	Cache la Poudre	7631		15430
Chambers	Wright, Trap & Fall	974		3070
Long Draw	Long Draw	8725		8761
Black Hollow	Cache la Poudre	4716		5258
Curtis	Cache la Poudre	936		862
Kluver	Cache la Poudre	836		727
Lindenmeier	Cache la Poudre	513		348
Long Pond	Cache la Poudre	2909		2969
Richards	Cache la Poudre	670		705
Rocky Ridge	Cache la Poudre	3443		3523
W S & S No.3	Cache la Poudre	3802		3666
W S & S No.4	Cache la Poudre	881		866
Terry Lake	Cache la Poudre	5105		5770
Worster Res.	Sheep Creek	49		622
Tinnath Res.	Cache la Poudre	2755		6670
Windsor Lake	Cache la Poudre	849		1023
Barnes Meadow	Barnes Meadow	118		118
Big Beaver	Big Beaver Creek	0		0
Comanche	Big Beaver Creek	111		430
Peterson	Unnamed Creek	0		0
Seaman	N Fk Cache la Poudre	2994		2964
Twin Lake	Trib. of Pennock	0		0
Claymore	Cache la Poudre	692		642
Dowdy	Pine Creek	9		0
Joe Wright	Joe Wright Creek	0		0
Eaton Law Res.	Cache la Poudre	150		150

42

111.

G.

RESERVOIR STORAGE DISTRICT NO. 3 (CONTINUED)

AMOUNT - A.F.

NAME	SOURCE	10-31-75	4-31-76	10-31-76
Gray Lakes	Boxelder Creek	372	910	
Panhandle Creek	Panhandle Creek	841	841	
Portner	Fossil Creek	228	166	
Seeley	Cache la Poudre	1090	895	
Warren Lake	Cache la Poudre	570	467	
Woods Lake	Cache la Poudre	1786	2115	
Horsetooth	Colo. Big Thompson	68724	133837	
	TOTAL	176977	273790	

111.

G. RESERVOIR STORAGE DISTRICT NO. 4

NAME	SOURCE	AMOUNT - A.F.		
		10-31-75	4-31-76	10-31-76
Boulder & Larimer	Little Thompson	1832	1736	
Boyd Lake	Big Thompson	38741	39507	
Carter	Colo. Big Thompson	57638	109495	
Cemetery Lake	Big Thompson	340	317	
Donath	Big Thompson	407	351	
Fairport	Big Thompson	75	73	
Geo. Rist (Buckingham)	Big Thompson	188	158	
Hertha Res.	Dry Creek	326	1410	
Horseshoe Res.	Big Thompson	5877	6104	
Lake Loveland	Big Thompson	3763	9101	
Lawn Lake	Roaring Fork	0	0	
Lon Hagler	Big Thompson	5049	4951	
Lone Tree Res.	Big Thompson	3002	5870	
Loveland Lake	Big Thompson	1125	1323	
Mariano	Big Thompson	3364	4917	
Oklahoma	Big Thompson	312	324	
Rist Benson Res.	Big Thompson	421	356	
Ryan Gulch Res.	Ryan Gulch	589	796	
South Side Res.	Big Thompson	399	442	
Welch	Big Thompson	6192	5620	
	TOTAL	129640	192851	

70

111.

G. RESERVOIR STORAGE DISTRICT NO. 5

NAME	SOURCE	AMOUNT - A.F.		
		10-31-75	4-31-76	10-31-76
Beaver Lake	Beaver Creek	1494	1741	
Foothills	St. Vrain	2103	2139	
Highland No. 1	St. Vrain	874	874	
Highland No. 2	St. Vrain	3014	3014	
Highland No. 3	St. Vrain	801	801	
McIntosh	St. Vrain	530	1575	
Pleasant Valley	St. Vrain	2428	2428	
Oligarchy No. 1	St. Vrain	1121	1601	
Union	St. Vrain	10920	10920	
Left Hand Park	Left Hand	1137	1227	
Left Hand Valley	Left Hand	1925	3783	
Button Rock	N. St. Vrain	11891	9710	
	TOTAL	38238	39813	

12

111.

RESERVOIR STORAGE DISTRICT NO. 6

NAME	SOURCE	AMOUNT - A.F.		
		10-31-75	4-31-76	10-31-76
Marshall	South Boulder Creek	3609	6441	
Great Western	Clear & Coal Creeks	2673	1990	
Baseline	S. & M. Boulder Creek	3324	3430	
McKay	South Boulder Creek	205	181	
Albion	Albion Creek	1111	274	
Barker	M. Boulder Creek	10279	4391	
Boulder	Big Thompson Project	3301	5007	
Goose Lake	North Boulder Creek	1036	1036	
Gross	S. Boulder & M. Bldr	26659	13682	
Hillcrest	S. Boulder Creek & M. Bldr	1869	1664	
Leggett	S. & M. Boulder Creek	1349	1197	
Valmont	S. & M. Boulder Creek	6650	6163	
Six Mile	Middle Boulder Creek	745	1088	
Silver	North Boulder Creek	3233	412	
Panama No. 1	Middle Boulder Creek	1188	4434	
	TOTAL	67231	51390	

15

111.

G.

RESERVOIR STORAGE DISTRICT NO. 7

AMOUNT - A.F.

NAME	SOURCE	10-31-75	4-31-76	10-31-76
Maple Grove	South Clear Creek			
Ralston	Moffat via Gross			
Tucker	Ralston			
Long Lake	Ralston Creek			
Standley	Clear Creek			
	TOTAL			

111.

G.

RESERVOIR STORAGE DISTRICT NO. 8

AMOUNT - A.F.

NAME	SOURCE	10-31-75	4-31-76	10-31-76
Aurora Rampart	South Platte	1162	461	
Chatfield	South Platte	8257	10042	
Cherry Creek	Cherry Creek	14420	15023	
Marston	South Platte	10565	15369	
McLellen	South Platte	4867	4600	
Platte Canyon	South Platte	928	930	
	TOTAL	40199	46425	

6

III.

G. RESERVOIR STORAGE DISTRICT NO. 9

NAME	SOURCE	AMOUNT - A.F.		
		10-31-75	4-31-76	10-31-76
Soda No. 1 (West)	Bear Creek	246	230	
Soda No. 2 (East)	Bear Creek	666	1496	
Kendrick	Bear Creek	136	80	
Patrick	Bear Creek	768	930	
Deane	Turkey Creek	312	396	
Bergen No.1 (East)	Turkey Creek	354	372	
Bergen No.2 (West)	Turkey Creek	390	527	
Ward	Bear Creek	650	870	
Henry Lake	Bear Creek	161	134	
Harriman	Bear Creek	15	525	
Bowles	Bear Creek	2113	2280	
Johnston	Bear Creek	783	700	
Tule No.1 (Upper)	South Platte	80	63	
Tule No.2 (Lower)	South Platte	90	74	
Grant A (West)	Bear Creek	58	48	
Grant B (South)	Bear Creek	237	193	
Grant C (East)	Bear Creek	75	60	
Kingfisher Lake	Turkey Creek	50	40	
Willow Sp. No.1	Turkey Creek	120	35	
	TOTAL	7304	9053	

19

111.

G.

RESERVOIR STORAGE DISTRICT NO. 23

NAME	SOURCE	AMOUNT - A.F.		
		10-31-75	4-31-76	10-31-76
Antero	So.Fk. South Platte	15917	15838	
Eleven Mile	So.Fk. South Platte	95454	99120	
Jefferson	Jefferson Lake			
Montgomery	Md.Fk. South Platte and Hoosier Tunnel	3025	894	
	TOTAL	114396	115852	

4

111.

G.

RESERVOIR STORAGE DISTRICT NO. 64

NAME	SOURCE	AMOUNT - A.F.		
		10-31-75	4-31-76	10-31-76
Julesburg Res.	South Platte	18685	24893	
North Sterling	South Platte	20158	71589	
Prewitt	South Platte	22500	27125	
	TOTAL	61343	123607	

3

IV. AGRICULTURAL

CROP REPORT

BARLEY

1974 FINAL

IRRIGATED

NON IRRIGATED

1975 PRELIMINARY

COUNTY	PORTION OF COUNTY IN DIVISION I	IRRIGATED			NON IRRIGATED			1975 PRELIMINARY		
		ACRES HARVESTED	YIELD bu/acre	PRODUCTION BUSHELS X 1000	ACRES HARVESTED	YIELD bu/acre	PRODUCTION BUSHELS X 1000	ACRES HARVESTED	YIELD bu/acre	PRODUCTION BUSHELS X 1000
ADAMS		10000	54	81	6300	26	163.8	13000	41.9	544.3
ARAPAHOE		3700	46	9.2	3000	25	75.0	10500	31.6	332.3
BOULDER		7500	55	308	1700	15	25.5	5200	60.4	314.0
CHEYENNE	39	312	37	4.3	195	25	4.9	234	40.2	9.4
CLEAR CREEK										
DENVER										
DOUGLAS		1500								
ELBERT	69	966	45	9	1200	19	22.8	1600	34.1	54.6
GILPIN			46	3.2	690	27	18.6	3036	32.3	98.1
JEFFERSON		1600	50	10	1000	21.5	21.5	1800	42.9	77.2
KIT CARSON		1600	42	4.2	900	20	18.0	3100	32.1	99.6
LARIMER		14500	60	660	3000	33	99.0	14000	64.8	907.0
LINCOLN	26.5	345	43	1.2	212	18	3.8	345	35.3	12.2
LOGAN		3000	57	79.8	900	30	27.0	2100	36.7	77.0
MORGAN		6500	51	188.7	900	25	22.5	9600	50.0	480.3
PARK	87.4									
PHILLIPS		1000	45	31.5	200	21	4.2	1500	36.9	55.3
SEDGWICK		1400	55	5.5	1000	35	35	2300	34.6	79.5
TELLER	47.5									
WASHINGTON		2800	44	30.8	1500	25	37.5	10500	29.9	313.8
WELD		34500	66	1188.0	9500	25	237.5	47000	43.6	2050.0
YUMA		500	43	4.3	400	32	12.8	800	35.9	28.7
TOTALS		91723		2618.7	32597		829.4	126615		5533.3

IV. AGRICULTURAL

CORN FOR GRAIN

1974 FINAL

IRRIGATED

NON IRRIGATED

1975 PRELIMINARY

COUNTY	PORTION OF COUNTY IN DIVISION I	IRRIGATED			NON IRRIGATED			1975 PRELIMINARY		
		ACRES HARVESTED	YIELD BU/ACRE	PRODUCTION BUSHELS X 1000	ACRES HARVESTED	YIELD BU/ACRE	PRODUCTION BUSHELS X 1000	ACRES HARVESTED	YIELD BU/ACRE	PRODUCTION BUSHELS X 1000
ADAMS		6200	114	706.8				2800	100	280
ARAPAHOE		800	90	72.0				1200	90	108
BOULDER		4800	95	456.0				5800	88	510.4
CHEYENNE	39	1950	80	156.0				2145	90	193
CLEAR CREEK										
DENVER										
DOUGLAS										
ELBERT	69	276	83	22.9	207	14	2.9			
GILPIN										
JEFFERSON		200	95	19.0				200	88	17.6
KIT CARSON		54500	109	5941.0	500	22	11.0	58000	77.9	4519.0
LARIMER		9000	100	900.0				11000	91.0	1001.0
LINCOLN	26.5	53	84	4.5	80	20.7	1.7	398	90.0	35.8
LOGAN		26500	119.9	3178.0	4000	18.1	72.5	42500	103.1	4380.0
MORGAN		43000	118.0	5074.0				41500	107.0	4440.0
PARK	87.4									
PHILLIPS		25500	120	3060	9000	22	198	39500	82.0	3237.5
SEDGWICK		14500	110	1595	2500	19	47.5	24500	93.5	2290
TELLER	47.5									
WASHINGTON		9500	104	988	500	26	13.0	13500	77	1040
WELD		66000	113	7458	1500	16	24.0	84500	99.6	8414
YUMA		125000	108.5	11502	8000	20	160.0	113000	99.1	11199
TOTALS		368779		41133.2	26287		530.6	440543		41665.3

IV. AGRICULTURAL

1974 FINAL

POTATOES

CORN FOR SILAGE

HAY

COUNTY	PORTION OF COUNTY IN DIVISION I	POTATOES		CORN FOR SILAGE		HAY				
		ACRES	YIELD cwt./acres	PRODUCTION CWT X 1000	ACRES	YIELD tons/acre	PRODUCTION TONS X 1000	ACRES	YIELD tons/acre	PRODUCTION TONS X 1000
ADAMS					4400	16	70.4			
ARAPAHOE					600	15	9.0	18000	2.38	42.9
BOULDER					6200	17	105.4	8000	1.70	13.6
CHEYENNE	39				860	16	13.8	3432	1.24	4.3
CLEAR CREEK										
DENVER										
DOUGLAS										
ELBERT	69				1175	11	12.9	11800	1.61	19.0
GILPIN								18975	1.76	33.4
JEFFERSON										
KIT CARSON					300	14	4.2	8300	1.92	15.9
LARIMER					13700	17.8	244.1	23000	1.84	42.4
LINCOLN	26.5				23000	20	460.0	53000	2.39	126.8
LOGAN					3200	11	35.2	15100	1.42	21.5
MORGAN					17500	20	350	46000	2.13	98.0
PARK	87.4	2400	113	271.2	12000	20	240	22500	2.88	64.8
PHILLIPS					500	12	6	21000	.80	16.8
SEDGWICK					8400	21	176.4	10700	1.96	21.0
TELLER	47.5							10900	2.10	22.9
WASHINGTON					2700	19	51.3	1380	1.48	2.0
WELD		3500	272	952	89600	20.8	1867	23800	1.48	35.3
YUMA					7300	19	138.7	100000	2.87	287.0
TOTALS		5900		1223.2	191435		3784.4	427887		930.8

IV. AGRICULTURAL

DRY BEANS

1974 FINAL

IRRIGATED

NON IRRIGATED

1975 PRELIMINARY

COUNTY	PORTION OF COUNTY IN DIVISION I	ACRES PLANTED	IRRIGATED			NON IRRIGATED			1975 PRELIMINARY		
			ACRES HARVESTED	YIELD LBS/ACRE	PRODUCTION CWT X 1000	ACRES HARVESTED	YIELD LBS/ACRE	PRODUCTION CWT X 1000	ACRES	YIELD LBS/ACRE	PRODUCTION CWT X 1000
ADAMS		500	500	1500	7.5			900	800	16	
ARAPAHOE											
BOULDER		1200	1200	2100	25.2			1500	2200	33	
CHEYENNE	39	39	39	1600	.6			78	1500	1.2	
CLEAR CREEK											
DENVER											
DOUGLAS											
ELBERT	69	414				414	300	690	150	1.0	
GILPIN											
JEFFERSON											
KIT CARSON		7700	7300	1500	109.5	200	350	10000	844	84.4	
LARIMER		3900	3800	1900	72.2			4500	2100	94.5	
LINCOLN	26.5	106	106	1000	10.6			265	680	1.8	
LOGAN		4200	3700	1850	68.4	300	300	5500	1676	92.2	
MORGAN		6600	6100	2000	122.0	400	300	7400	1681	124.4	
PARK	87.4										
PHILLIPS		6700	5500	1820	100.1	1000	350	7500	1449	108.7	
SEDGWICK		6100	5500	2100	115.5	500	380	7600	1759	133.7	
TELLER	47.5										
WASHINGTON		1400	1300	1900	24.7	100	300	3000	1210	36.3	
WELD		20000	18700	1900	355.2	800	500	23500	1816	426.7	
YUMA		4600	3800	2200	83.6	200	450	6000	1297	77.8	
TOTALS		63459	57545		1095.1	3914		78433		1231.7	

IV. AGRICULTURAL

OATS

1974 FINAL

IRRIGATED

NON IRRIGATED

COUNTY	PORTION OF COUNTY IN DIVISION I %	IRRIGATED		NON IRRIGATED		TOTAL PRODUCTION BUSHEL X 1000
		ACRES	YIELD BU/ACRE	ACRES	YIELD BU/ACRE	
ADAMS		300	50	200	21	19.2
ARAPAHOE						
BOULDER		800	63.1	400	27	61.3
CHEYENNE	39					
CLEAR CREEK						
DENVER						
DOUGLAS						
ELBERT	69	69	52	200	15	3.0
GILPIN				621	29	16.0
JEFFERSON						
KIT CARSON		100	42	100	11	1.1
LARIMER		1000	70	100	30	3.0
LINCOLN	26.5					
LOGAN		900	81.0	600	23	86.7
MORGAN		700	77	300	18	59.3
PARK	87.4					
PHILLIPS		100	50	400	28	16.2
SEDGWICK		100	72	700	31	28.9
TELLER	47.5					
WASHINGTON		200	54	400	28	22.0
WELD		2500	75	3800	25.2	283.1
YUMA		200	54	300	26.2	18.6
TOTALS		6969		8121		692.6

IV. AGRICULTURAL

SORGHAM FOR GRAIN

1974 FINAL

IRRIGATED

NON IRRIGATED

1975 PRELIMINARY

COUNTY	PORTION OF COUNTY IN DIVISION I	IRRIGATED			NON IRRIGATED			1975 PRELIMINARY		
		ACRES HARVESTED	YIELD BU/ACRE	PRODUCTION BUSHEL X 1000	ACRES HARVESTED	YIELD BU/ACRE	PRODUCTION BUSHEL X 1000	ACRES HARVESTED	YIELD BU/ACRE	PRODUCTION BUSHEL X 1000
ADAMS		600	64	38.4						
ARAPAHOE		4500								
BOULDER										
CHEYENNE	39	78	61	4.8	2847	26	74.0	2886	15.7	45.3
CLEAR CREEK										
DENVER										
DOUGLAS										
ELBERT	69							483	12.0	5.8
GILPIN										
JEFFERSON										
KIT CARSON		18500	73	73	3300	16	52.8	6500	48	312.0
LARIMER										
LINCOLN	26.5	53	60	3.2	1537	12.8	19.7	1166	9.6	11.2
LOGAN								2400	30.5	73.1
MORGAN		400	75	30.0	300	18.0	5.4	3000	29.9	89.8
PARK	87.4									
PHILLIPS		200	77	15.4	2200	14.0	30.8	2900	25.7	74.4
SEDGWICK										
TELLER	47.5									
WASHINGTON		300	60.0	18.0	1500	12.0	18.0	6200	16.2	100.6
WELD		500	75.0	37.5	400	18.0	301.0	2000	31.6	63.2
YUMA		800	65.0	52.0	16700	18.0	7.2	16000	25.1	401.5
TOTALS		3931		272.3	28784		508.9	43535		1176.9

IV. AGRICULTURAL

SPRING WHEAT

1974 FINAL

IRRIGATED

NON IRRIGATED

COUNTY	PORTION OF COUNTY IN DIVISION I %	ACRES		YIELD BU/ACRE		PRODUCTION BUSHELS X 1000		ACRES	YIELD BU/ACRE		PRODUCTION BUSHELS X 1000		TOTAL PRODUCTION BUSHELS X 1000
ADAMS													
ARAPAHOE													
BOULDER		100		34		3.4		100	28		2.8		6.2
CHEYENNE	39												
CLEAR CREEK													
DENVER													
DOUGLAS													
ELBERT	69												
GILPIN													
JEFFERSON													
KIT CARSON		200		27		5.4		200	15		3.0		8.4
LARIMER		800		33		26.4		300	17		5.1		31.5
LINCOLN	26.5												
LOGAN													
MORGAN		200		30		6.0		200	24.5		4.9		10.9
PARK	87.5												
PHILLIPS													
SEDGWICK													
TELLER	47.5												
WASHINGTON		300		35		10.5		500	15		7.5		18.0
WELD		800		36		28.8		400	23		9.2		38.0
YUMA		400		34		13.6		500	25		12.5		26.1
TOTALS		2800				94.1		2200			45.0		139.1

IV. AGRICULTURAL

SUGAR BEETS

1974 FINAL 1975 PRELIMINARY

COUNTY	PORTION OF COUNTY IN DIVISION I %	1974 FINAL			1975 PRELIMINARY		
		ACRES	YIELD TONS/ACRE X 1000	PRODUCTION TONS X 1000	ACRES	YIELD TONS/ACRE X 1000	PRODUCTION TONS X 1000
ADAMS		1700	15.3	26.0	2500	15.3	38.3
ARAPAHOE							
BOULDER		2200	21.0	46.4	2700	17.4	47.1
CHEYENNE	39	546	15.0	8.2	663	13.2	8.8
CLEAR CREEK							
DENVER							
DOUGLAS							
ELBERT	69						
GILPIN							
JEFFERSON							
KIT CARSON		16300	17.3	282.5	18000	15.8	285.5
LARIMER		5900	19.7	116.0	8300	17.0	141.0
LINCOLN	26.5						
LOGAN		10700	16.9	180.6	12900	16.7	216.0
MORGAN		11700	16.8	196.0	15400	16.8	258.7
PARK	87.5						
PHILLIPS		5260	16.7	88.0	6000	18.1	108.5
SEDGWICK		2200	19.5	43.0	3100	17.2	53.2
TELLER	47.5						
WASHINGTON		2200	15.7	34.5	3230	15	48.3
WELD		40300	19.9	803.0	50500	18.7	943.0
YUMA		11000	16.2	177.7	12800	16.3	208.0
TOTALS		110006		2001.9	136093		2356.4

IV. AGRICULTURAL

WINTER WHEAT

1974 FINAL

IRRIGATED

NON IRRIGATED

1975 PRELIMINARY

COUNTY	PORTION OF COUNTY IN DIVISION I %			IRRIGATED			NON IRRIGATED			1975 PRELIMINARY			
	ACRES PLANTED	ACRES HARVESTED	YIELD bu/acre	PRODUCTION BUSHEL X 1000	ACRES HARVESTED	YIELD bu/acre	PRODUCTION BUSHEL X 1000	ACRES	YIELD bu/acre	PRODUCTION BUSHEL X 1000	ACRES	YIELD bu/acre	PRODUCTION BUSHEL X 1000
ADAMS	169000	22000	47.0	103.4	143800	24.0	3451.0	135000	27.4	3697.4			
ARAPAHOE	76000				63000	17.0	1071.0	61000	24.0	1464.0			
BOULDER	7700	1200	31.0	37.2	6200	24.0	148.8	7200	23.3	168.0			
CHEYENNE	65910	741	42.0	31.1	62049	24.0	1489.1	34125	15.4	525.5			
CLEAR CREEK													
DENVER													
DOUGLAS	6800				6400	17.0	109.0	12000	25.0	300.0			
ELBERT	39675	759	41.0	31.1	36156	22.0	795.4	35190	21.1	742.5			
GILPIN													
JEFFERSON	3800	100	43.0	4.3	3000	25.0	75.0	3800	28.0	106.4			
KIT CARSON	262000	9500	41.0	389.5	244500	27.0	6602.0	191000	20.7	3957.5			
LARIMER	14500	1300	47.0	61.1	12200	26.0	317.2	17000	31.0	527.5			
LINCOLN	39750	500	41.5	20.8	37390	23.0	860.0	33920	20.3	688.6			
LOGAN	166000	900	51.0	45.9	160100	28.5	4563.0	154000	26.5	4074.8			
MORGAN	50500	3200	52.3	167.3	44800	28.0	1254.0	45000	25.1	1131.0			
PARK													
PHILLIPS	126000	800	42.0	33.6	123200	30.0	3696.0	116000	22.1	2566.8			
SEDGWICK	81500	900	48.0	43.2	77100	30.0	2313.0	78000	36.1	2813.1			
TELLER													
WASHINGTON	315000	2700	38.0	102.6	306300	31.0	9495.0	279000	26.9	7518.0			
WELD	206000	3400	40.0	136.0	195600	22.0	4303.0	175000	24.1	4219.2			
YUMA	136000	1900	48.0	91.2	131000	31.7	4150.0	108000	28.2	3042.5			
TOTALS	1766135	49900		1298.3	1652795		44692.5	1465235		37542.8			

V. COMPACTS

A. SOUTH PLATTE RIVER COMPACT

The South Platte River Compact, Colorado and Nebraska being the signatory states, specifies that the flow of the river at the state line between April 1st and October 15th of each year shall be at least 120 cfs. Otherwise, diversions below the Washington-Morgan County line, junior to June 14, 1897, will be curtailed sufficiently to provide said 120 cfs or such portion thereof as might be produced by suspending those diversions.

Preliminary computations indicate that the river flow at the Julesburg station for the compact period in 1976 totaled 22,430 acre-feet. That amount would be 25,090 acre-feet less than the 47,520 acre-feet minimum compact requirement for the 198 day period had water been available under the regulatory terms of the compact.

Stream flows first fell below the 120 cfs limitation on April 14 and were also below that figure on October 15. Daily flows of less than 120 cfs were experienced on 134 days or nearly 68 percent of the compact period. The lowest flow during that time was on September 11 when 10 cfs was recorded.

The river channel upstream of the Julesburg gage in the vicinity of the South Reservation Ditch was observed to be completely dry on several occasions during the summer months.

REPUBLICAN RIVER COMPACT

The Republican River Compact allocates water to the signatory states, Colorado, Kansas and Nebraska, on the basis of beneficial consumptive use. Colorado's total allocation of 54,100 acre-feet is broken down as follows:

North Fork of the Republican River Drainage Basin	10,000 ac.ft.
Arikaree River drainage Basin	15,400 ac.ft.
South Fork of the Republican River Drainage Basin	25,400 ac.ft.
Beaver Creek Drainage Basin	3,300 ac.ft.

and IN additon, for beneficial consumptive use in Coloarado annually, the entire water supply of the Frenchman Creek (River) Drainage Basin in Colorado and the Red Willow Creek Drainage Basin in Colorado.

TOTAL 54,100 ac.ft.

The computed annual consumptive use in Colorado in the Republican River Basin for the 1974 water year, the last year for which official compact figures are availabe was as follows:

<u>STREAM</u>	<u>CONSUMPTION</u>	<u>% OF ALLOCATION</u>
North Fork of Republican River	4250	42.5%
South Fork of Republican River	9050	35.6
Arikaree River	3160	20.5
Beaver Creek	0	
	<u>16460</u>	<u>30.4%</u>

LARAMIE RIVER COMPACT

The decree of the United States Supreme Court, in the case of Wyoming vs. Colorado, limits Colorado allocations to 49,375 acre-feet per calendar year. Of this amount 19,875 acre-feet is allocated to the Transmountain Users. The Meadowland Users are entitled to the remaining 29,500 acre-feet, with the restriction that not more than 1,800 acre-feet shall be diverted after July 31 in any calendar year. The Meadowland Users are also entitled to use any non-diverted Transmountain water.

Diversions to the meadowlands users in Colorado for 1976 totaled 17,180 acre-feet or 58.2 percent of the amount allowable under the compact.

Transbasin diversions from the Laramie River into Water District No. 3 were calculated to be 19,880 acre-feet which was 5 acre-feet in excess of the federal court decree allocation. The combined meadowlands and transbasin diversions of 37,060 acre-feet were 12,315 acre-feet or some 25 percent short of the total Colorado allotment as provided by 1957 decree.

V.

B. COURT STIPULATIONS, LITIGATION AND DECREED SUBDIVISION PLANS

The Rules and Regulations governing the use of groundwater as adopted by the Water Court on March 15, 1974 remained in effect. This was the first year of total curtailment. These regulations were enforced in 1976 to the degree necessary to satisfy valid senior demands. Several well owners were cited in to court for refusal to comply with the regulation orders; however, all those cited joined augmentation plans prior to a court hearing.

The most significant litigation for 1976 was the Supreme Court opinion on two subdivision augmentation cases. The Kelly Ranch and Glacier View Meadows. Kelly Ranch is located in Water Division No. 2 and Glacier View Meadows in Water Division No. 1. Comments here will be directed to the opinion delivered on the Glacier View Meadows case.

Glacier View Meadows is a developer of residential lots in the mountains northwest of Fort Collins, Colorado. Two applications for approval of a plan of augmentation were filed in the Water Court. The plans would provide future owners of presently unimproved lots with in-house use only water from wells to be drilled in the future. The two applications involved 1892 residential units. Two additional applications filed for another 1344 residential units were held in abeyance, awaiting the outcome of this appeal.

The objector, North Poudre Irrigation Company, is a ditch and reservoir company. The other objector, Cache la Poudre Water Users Association, is a nonprofit protective association whose members own substantial reservoir and direct flow decrees on the Cache la Poudre River.

Following are selected quotes from the opinion which are felt to be significant to the Division of Water Resources:

. . . IN CONTRAST TO THE WATER COURT'S RELIANCE ON EXEMPT WELL STATUS, IT RULED THAT THE STATE ENGINEER MAY LAWFULLY BE REQUIRED TO ADMINISTER THESE WELLS AS A CONDITION OF ISSUANCE OF THE WELL PERMITS THEREFOR.

UNDER THE ACT, AN EXEMPT WELL, STANDING ALONE, WAS AND IS FREE FROM REGULATION BY EITHER A WATER COURT OR THE STATE ENGINEER. WHEN, HOWEVER, ONE STUDIES THE PORTION OF THE ACT RELATING TO A PLAN FOR AUGMENTATION (SECTION 37-92-302, C.R.S. 1973), THE CONCLUSION IS INESCAPABLE THAT ALL WELLS INVOLVED IN THE PLAN MUST BE TREATED AS IF THEY WERE NON-EXEMPT. OF NECESSITY, THE ISSUANCE OF WELL PERMITS, THE ADJUDICATION OF A PLAN FOR AUGMENTATION INVOLVING WELLS, AND THE ENFORCEMENT OF THAT PLAN AND REGULATIONS INVOLVING WELLS, MUST RELATE TO WELLS WHICH ARE SUBJECT TO ADMINISTRATION. IN OTHER WORDS, UNDER THE PLAN WELLS, WHICH MIGHT BE EXEMPT OTHERWISE, MUST BE TREATED AS NON-EXEMPT. . . .

. . . WE DO NOT AGREE WITH THE WATER COURT'S REQUIREMENT THAT THE STATE ENGINEER FIX AN APPROPRIATION DATE OF EACH WELL FOR WHICH A PERMIT IS ISSUED. . . .

. . .IN ANY EVENT, ONE OF THE FUNDAMENTALS OF THE PLAN IS THAT THERE WILL BE EQUAL PRIORITIES BETWEEN WELL OWNERS. IF THE USE OF THE WELL WATER UNDER THE PLAN CAUSES UNLAWFUL INJURY, IT MEANS THAT THE PROVISIONS OF THE PLAN ARE BEING VIOLATED. . .

. . .FURTHER, WE VISUALIZE THAT, AFTER SOME WELLS HAVE BEEN CONSTRUCTED AND ARE OPERABLE, ON SUBSEQUENT APPLICATIONS FOR WELLS UNDER THE PLAN, THE STATE ENGINEER AMONG OTHER THINGS MAY CONSIDER WHETHER THE PLAN ACTUALLY IS OPERATING AS CONTEMPLATED AND DECREED. . .

The Supreme Court also found that consumptive use must be replaced with historical consumptive use even if the replacement source is a reservoir.

. . .THE PLAIN AND SIMPLE ANSWER IS THAT THE RESERVOIR WATER WHICH THE APPLICANT ACQUIRED HISTORICALLY HAD BEEN USED IN SUCH A WAY THAT ONLY 25% OF THAT WATER RETURNED TO THE STREAM AFTER USE. AS HAS BEEN ALREADY SET FORTH, THE APPLICANT IS RETURNING ALL OF THIS 25% FLOW, PLUS TRANSPORTATION LOSSES, DIRECTLY TO THE STREAM. THE RESERVOIR WATER USED FOR REPLACEMENT OF WELL WATER CONSUMPTIVELY USED IS IN ADDITION TO THE REPLACEMENT OF 25%. . .

Another case which has been taken to the Supreme Court is the Wadsworth case. This is scheduled for oral arguments on December 15, 1976. Briefly, this case deals with the right of the State Engineer to be a party in a water case. Specifically, if the State Engineer has the right to file a protest to the findings and ruling of the water referee. Needless to say, the opinion delivered in this case will have significant impact on findings and rulings of the Water Court.

The Water Court is still trying to finish adjudication on the large number of cases filed before July 1, 1972. Looking at the tables in Section VII B, one can see significant progress is being made with only 304 applications filed during water year 1976 and 1401 cases being decreed. The Water Court currently has about 2000 cases pending adjudication.

The following augmentation plans have been decreed by the Water Court and are primarily for the purpose of supplying domestic water to homes in subdivisions. Most of the approved wells have not yet been the subject of applications for permits. Many of them will not be constructed for several years, if ever, because of location, lack of need or economic reasons.

SEE FOLLOWING PAGE

V.

C. LEGISLATION

No water legislation was adopted in 1976.

V.
B.

DECREED SUBDIVISION AUGMENTATION PLANS

W-NUMBER	APPLICANT	DEGREE DATE	NUMBER OF SINGLE FAMILY EQUIVALENT UNITS	SOURCE OF REPLACEMENT	TOTAL ACRES IN SUBDIVISION	ANNUAL ANTICIPATED DEPLETIONS A.F.
7548	Fitzsimmons and Ficklin (Elk Ridge Subdivision)	1- 3-76	6	Mack Ditch No. 2	60	2.15
7590	Arnold C. Harms (Ravenswood No. 1 Subdivision)	3-12-75	137	Guiraud 3T	850	8.63
7833	Braecher Ranch Company	12-17-75	4 15 Comm.	Oulette Ditch		.88
7957	Box Elder Investment Company	6-21-76	10,099	Nontributary Wells	4000	5044.00
8001	Pinewood Springs Corporation	2-24-76	350	Culver Ditch Pinewood Springs Resv.	700	9.86
8107	Elkhorn Ranch No. 485	7-29-76	460	Guiraud 3T Tarryall Ranch Resv.	1320	14.66
8108	Stage Stop No. 1 and 2	7- 8-76	500	Crosier Ditch Stage Stop Resv.	1460	16.60
8116	Eugene V. Doty (144 Ranchette Subdivision)	4-19-76	22 (lawns)	Jackson Lake	45	11.58
8122	Edward K. Warren (Ridgewood No. 485 Subdivision)	6- 7-76	45	Woodland Park Sewerage from Homestake		1.98

VI. DAMS

A. RESERVOIRS

1. PLANS AND SPECIFICATIONS

The following list includes the dams for which plans and specifications have been approved this year. The list is arranged by water district and in order of approval within districts.

PLANS AND SPECIFICATIONS APPROVED

<u>NAME</u>	<u>WD</u>	<u>OWNER</u>	<u>TYPE</u>	<u>DATE APPROVED</u>
Cozart ECD C-1493	1	C. G. Cozart Denver, CO	New	7-15-76
Edward Madigan ECD #1 C-1499	1	Edward Madigan Denver, CO	New	9-13-76
Signal Reservoir #1 C-1476	2	Signal Ditch & Res. Co. Brighton, CO	Repair	12-18-75
Hyland G. C. Dam #4	2	Hyland Hills Recr. Dist.	Repair	3-30-76
Floodwater Retard- ing Dam B-4 C-1484	3	North Poudre Irr. Co. Wellington, CO	New	5-17-76
Floodwater Retard- ing Dam B-3 C-1488	3	North Poudre Irr. Co.	New	6-18-76
Gray #3 C-1489	3	Lake Canal & Res. Co. Fort Collins, CO	Imp.	6-22-76
South Gray C-631A	3	Lake Canal & Res. Co.	Imp.	6-22-76
North Gray C-1490	3	Lake Canal & Res. Co.	Imp.	6-23-76
Windsor Reservoir C-1295A	3	Windsor Res. & Canal Co.	SW	7-30-76
Cache La Poudre (AKA Timnath) C-1447A)	3	Cache La Poudre Res. Co.	Imp.	8-13-76
Cattail Pond C-1475	4	Amos Allard 1609 14th Street SW Loveland, CO	Outlet Repair	12-18-75
Handy Dam (Welch Reservoir) C-535N	4	Handy Ditch Company Berthoud, CO	Repair	4-5-76
Lone Tree Dam C-1482	4	Consolidated Reservoir & Supply Co.	Imp.	4-30-76

PLANS AND SPECIFICATIONS APPROVED (CONTINUED)

<u>NAME</u>	<u>WD</u>	<u>OWNER</u>	<u>TYPE</u>	<u>DATE APPROVED</u>
Culver Reservoir C-1487	4	Esther Frazier Berthoud, CO	Engl. Repair	6-4-76
Handy Dam (Welch Reservoir) C-535B	4	Handy Ditch Company Berthoud, CO	Outlet Renovation	9-13-76
Margaret Spurgeon #1 C-986A	5	Lefthand Water Supply Co. P.O. Box 146 Niwot, CO	Engl.	2-19-76
New Thomas Dam C-1480	5	Public Service Company	New	4-15-76
Erie Reservoir C-800A	6	Town of Erie	Repair	10-12-76
Upper Long Lake C-1460A	7	Denver Water Board	Repair Imp.	6-4-76
Gayno Reservoir C-1495	7	Gayno, Inc. Denver, CO	New	8-4-76
Maple Grove C-757B	7	Consolidated Mutual Water Company	SW	10-14-76
Newton Pond C-1498	9	Seracuse - Lawler Denver, CO	Imp.	8-13-76
Tarryall #1 C-1473	23	Park Development Co. Denver, CO	New	12-2-75
J. O. Hill C-1038A	80	West Creek Lakes Water District	SW	10-14-76

VI. DAMS

A. RESERVOIRS

2. INSPECTIONS

Our dam inspectors checked a number of structures this past year. A number of these inspections are included in the following list. The men making these inspections were Louis DeGrave, Eric Wilkinson, Clint Huntington, John VanSciver and Lou Reyes.

DISTRICT NO. 1

<u>NAME</u>	<u>CONSTR. PLAN NO.</u>	<u>DATE ACCEPTED/COMMENTS</u>
Johnson Erosion Control Dam	(C-1467)	Not Accepted
Heart Reservoir Dam	(C-1470)	12/29/76 Temporary 5/10/76 Final
Irland No. 5	(C-424 A)	Not Accepted - Incomplete 10/27/76
C.G. Cozart Erosion Control Dam No. 1		Repair Without Approval of Plans 10/16/76
Klug No. 3		

DISTRICT NO. 2

Barr Lake	(C-1412 A)	Under Repair
Stanley	(C-1070 D)	Repairs Completed - Final
Milton	(C-1471)	Under Repair
Signal No. 2	(C-1476)	Approved - Final

DISTRICT NO. 3

Black Hollow	(OC-10)	Submit Hydro
Chambers	(C-173)	Work on Hydro
Claymore	(-)	Work on Plans
College No. 3	(-)	Work on Plans
Dixon	(-)	Work on Plans
Gray No. 3	(C-1489)	Almost Finished
North Gray	(C-1490)	Partially Finished
South Gray	(C-631)	Almost Finished
Seeley	(-)	Hydro Study Submitted
Timnath	(C-1447)	Under Construction
Warren Lake	(C-500)	Plans Almost Finalized
Windsor	(L-1295)	Spillway Under Construction
Windsor	(-)	Repair Plan Submitted
Wood	(-)	Retained Engineer
Worster	(C-56)	Hydro Study Submitted
Joe Wright	(OC-12)	Engineer Redesigning a Little
Boxelder B-6	(C-1451)	Under Construction
Boxelder B-5	(C-1459)	Under Construction
Lone Pine	(C-1279)	9/ 9/76 Final Approval

DISTRICT NO. 4

<u>NAME</u>	<u>CONSTR. PLAN NO.</u>	<u>DATE ACCEPTED/COMMENTS</u>
Welch Ish Reservoir	(C-535)	Under Repair Approved - Final

DISTRICT NO. 5

Lagerman Dam	(C-1452)	12/30/76
Cloner Basin	(C-48 A)	12/16/76
Copeland Lake	(C-1457)	11/12/76
New Thomas Reservoir	(C-1480)	11/19/76 Temporary Incomplete
Margaret Spurgeon No. 1	(C-986 A)	8/11/76
Branith Reservoir Dam	(C-1462)	10/12/76

DISTRICT NO. 6

Panama No. 1 Reservoir Dam	(C-1469)	2/ 4/76
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DISTRICT NO. 7

Chicago Creek	(OC-60)	Hydro Study Submitted
Maple Grove	(C-757)	Under Construction
Long Lake	(C-1460)	Under Construction
Gayno	(C-1495)	10/ 5/76 Final Inspection

DISTRICT NO. 8

Kendrick	(C-166 A)	6/ 7/76 Final
Englewood Dam	(C-291 A)	5/ 3/76 Final
Skeel	(C-1450)	Dam Finished - Canal Dike Not Finished
Arapahoe	(C-1427)	11/22/76 Final
Waucondah	(C-1273 D)	Restart Work Soon

DISTRICT NO. 80

None

RESERVOIRS OVER 400 AC.FT. CAPACITY

Number in Division	200
Inspected in 1976	178
Letters sent to owners	174

JURISDICTIONAL RESERVOIRS LESS THAN 400 AC.FT. CAPACITY

Number in Division	596
1976 Water Commissioner Inspection Reports	173

VI.

B. LIVESTOCK WATER TANKS - EROSION CONTROL DAMS

The total number of livestock water tanks and erosion control dams approved between November 1, 1975 and October 31, 1976 are presented below in tabular form:

DISTRICT	NO. OF LIVESTOCK TANKS	TOTAL CAPACITY (AF)	NO. OF EROSION CONTROL DAMS	TOTAL CAPACITY (AF)
1	36	138.97	24	32.15
2				
3	1	10		
4				
5				
6				
7	1	0.7		
8			6	6.5
9				
23	1	9.5		
48				
49	5	22.84	5	22.22
64			10	21.3
65			2	3.95
79			2	3.65
	44	182.01	49	89.77

VII.

WATER RIGHTS

A. TABULATION AND ABANDONMENT

The water commissioners have continued to gather data this past year on water rights which may be candidates for abandonment. This is being done in anticipation of the list to be provided to the Water Court in 1978.

We are also continuing to correct errors in the tabulation as they are discovered. An updated tabulation including all cases decreed since 1969 is making good progress and will also be presented to the Water Court in 1978.

These lists are being prepared pursuant to 37-92-401 and 37-92-402 Colorado Revised Statutes 1973.

VII. WATER RIGHTS

B. WATER DIVISION - CASES FILED

WATER DIVISION I - CASES FILED

1975	FILINGS	AMENDED FILINGS	TOTAL # OF STRUCTURES	WELLS	SPRINGS	STORAGE	SURFACE	SUMPS	CHANGE OF WATER RIGHTS	QUADRENNIALS	OTHER
NOVEMBER	14	0	17	7	0	1	9	0	0	0	0
DECEMBER	42	2	78	11	3	29 (1-Aug)	17	0	2 (15-Aug)	0	72-exch
<u>1976</u>											
JANUARY	30	0	85	18 (57-Aug)	3	1	2	0	4	1	0
FEBRUARY	27	6	63	45 (6-Aug)	3	4	2 (2-Aug)	0	1	3	2-abs
MARCH	25	8	78	11 (53-Aug)	8	3	3	0	0	0	1
APRIL	31	0	40	25	1	1	9	0	4	1	2-alt
MAY	51	0	377	8 (326-Aug)	0	3	35	0	5	9	0
JUNE	23	0	23	10	0	3	3	0	2	3	0
JULY	23	4	33	14	7	1	6 (5-Aug)	0	4	1	0
AUGUST	8	4	21	3	14	0 (1-Aug)	3	0	1	0	0
SEPTEMBER	19	3	24	12	1	5	4	1	1	0	0
OCTOBER	11	0	16	3	1	7	4	0	1	0	0
TOTAL WATER YEAR	304	27	855	167 (442-Aug)	41	58 (2-Aug)	97 (7-Aug)	1	25 (15-Aug)	18	1 72-exch 2-abs 2-alt 269
TOTAL TO DATE	8399	195	37218	34779	1044	620	613	71	383	74	

VII. WATER RIGHTS

C. WATER DIVISION - CASES DECREED

WATER DIVISION I - CASES DECREED

<u>1975</u>	DECREES	WELLS	SURFACE	SPRINGS	SUMPS	STORAGE	OTHER	TOTAL
NOVEMBER	122	241	5	5	0	10	14	275
	2 Dismissals	(5-Aug)						(5-Aug)
DECEMBER	197	480	8	26	0	8	6	528
	1 Dismissal	(6-Aug)						(6-Aug)
<u>1976</u>								
JANUARY	31	58	2	22	1	0	0	83
	3 Dismissals	(143-Aug)						(143-Aug)
FEBRUARY	70	159	2	28	0	4	0	193
	4 Dismissals							
MARCH	192	400	4	17	1	10	2	434
	4 Dismissals	(396-Aug)						(396-Aug)
APRIL	224	342	17	31	3	27	5	425
	8 Dismissals	(35-Aug)						(35-Aug)
MAY	139	297	1	28	2	2	0	330
	2 Dismissals							
JUNE	61	96	1	13	4	4	0	118
JULY	124	230	7	12	1	3	10	387
	3 Dismissals	(960-Aug)						(960-Aug)
AUGUST	98	156	8	4	3	8	2	181
	1 Dismissal							
SEPTEMBER	103	175	13	3	0	4	3	198
	1 Dismissal							
OCTOBER	40	76	6	6	0	28	4	120
	4 Dismissals	(1362-Aug)						(1362-Aug)
	1 Transfer							
TOTAL WATER YEAR	1401	2710	74	195	15	108	46	3272
	33 Dismissals	(2907-Aug)						(2907-Aug)
	1 Transfer							



WATER DISTRICT NO. 2

DITCH AND RESERVOIR COMPANIES

Big Dry Creek Ditch & Reservoir Decree	Mrs. G. R. Norden	Secy.	Rt. 1, Box 196 Ft. Lupton
Burlington Ditch, Reservoir & Land Company	Adolph Bohlender	Pres.	LaSalle
Brighton Ditch Company	George Stieber	Pres.	Rt. 1, Box 104 Ft. Lupton
Coal Ridge Ditch Company	Harold Bohn	Pres.	Ft. Lupton
Delta Ditch Company	Stanley Davis (352-3496)		712 10th Street Greeley
Denver Water Board	James Ogilvie	Manager	144 W. Colfax Denver
Farmers Independent Ditch Co.	John Briggs	Pres.	17787 Weld County Rd. 25 Platteville
Farmers Reservoir & Irrigation Company	Tom Fisher	Supt.	LaSalle
Fulton Ditch Company	W. W. Gaunt	Secy.	25 South 4th Ave. Brighton
Gardners Ditch Company	Sylvester DiGiacomo	Pres.	6820 York Street Denver
German Ditch Company	Casper Sack	Pres.	Brighton
Godfrey Ditch Company	Jerome Loeffler	Pres.	LaSalle
Henrylyn Irrigation District	Lawrence Gerkin	Manager	Box 141 Hudson
Highland Ditch Company	Mrs. George Jurgens	Pres.	Rt. 4, Box 209B Greeley
Lower Latham Ditch Company	Victor R. Klein	Pres.	Kersey
Lupton Bottom Ditch Company	Roy Miller	Pres.	Platteville
McCanne Ditch & Reservoir Co.	Al Robertson	Pres.	P.O. Box 38 Brighton
Meadow Island No. 1 Irrigation Company	Wm. Mayer	Secy.	Rt. 2, Box 74 Platteville
Meadow Island Irrigation Co.	Ruben Gustafson	Pres.	Rt. 2, Box 145 Ft. Lupton
New Brantner Ditch Company	W. W. Gaunt	Secy.	25 South 4th Ave. Brighton
North Star Reservoir Company	G. R. Norden	Pres.	Rt. 1 Ft. Lupton
Platte Valley Irrigation Co.	Delbert Shable	Pres.	Platteville
Platteville Irrigation & Milling Company	John Kunzman	Secy.	Rt. 2, Box 120 Ft. Lupton
Slate Ditch Company	Robert Doubty	Pres.	Ft. Lupton
Union Ditch Company	Mrs. Frances Hill	Secy.	LaSalle
Walter & Roberts Ditch Company	Roy Lunvall	Pres.	Greeley
Western Mutual Ditch Company	Ed. Fritgler	Pres.	LaSalle
Wellington Reservoir Company	Ron Heitman	Pres.	Brighton
Yoxall Ditch Company	Louis Karsh	Pres.	Brighton

WATER DISTRICT NO. 3

DITCH AND RESERVOIR COMPANY

Arthur Irrigation Company	Wm. Stover	Secy.	United Bank Building Ft. Collins 80521
B.H. Eaton Ditch Company	Wayne Miller	Pres.	Kodak - P.O. Box 98
	Louise Kane	Secy.	Windsor 80550
Boxelder Ditch Company	Wm. Stover	Secy.	United Bank Building Ft. Collins 80521
Boyd Irrigation Company	Rodger Houtchens	Secy.	1007 9th Avenue Greeley 80631
Cache la Poudre Irrigation Company	Greg Jesson	Secy.	Rt. 3 - Box 772 Ft. Collins 80521
Crystal Lakes	Don Weixelman		P.O. Box 2167 3200 E. Mulberry Ft. Collins 80521
Divide Canal & Reservoir Company	Don E. Engel	Secy.	106 Elm, Box 206 Eaton 80615
Dixon Canyon Ditch & Reservoir Company	Wm. Stover	Secy.	United Bank Building Ft. Collins 80521
Greeley, City of	Darrel Aleman		Greeley City Hall Greeley 80631
Greeley Irrigation Company	Edgar Bartels	Secy.	1301 9th Street Greeley 80631
Jackson Ditch Company	Vivienne Woodward	Secy.	P.O. Box 1584 2319 E. Mulberry Ft. Collins 80521
Kern Reservoir & Ditch Company	C.W. Kirby	Pres.	P.O. Box 220 Windsor 80550
Kitchell Reservoir Company	Alice Fisher	Secy.	Rt. 4 Ft. Collins 80521
Lake Canal Company	John Hartman	Secy.	United Bank Building Ft. Collins 80521
Lake Canal Reservoir Company	John Hartman	Secy.	United Bank Building Ft. Collins 80521
Larimer County Canal No. 2 Irrigation Company	Wm. Stover	Secy.	United Bank Building Ft. Collins 80521
Larimer & Weld Irrigation Company	Don E. Engel	Secy.	106 Elm, Box 206 Eaton 80615
Larimer & Weld Reservoir Company	Don E. Engel	Secy.	106 Elm, Box 206 Eaton 80615
Mail Creek Ditch Company	Wm. Stover	Secy.	United Bank Building Ft. Collins 80521
New Cache la Poudre Irrigation Company	Jim Muroya	Secy.	708 8th Street, Box 356 Greeley 80631
New Mercer Ditch Company	Wm. Stover	Secy.	United Bank Building Ft. Collins 80521
North Poudre Irrigation Company	Ben Dumler	Secy.	North Poudre Irrigation Office, Box 4, Wellington 80549
No. 10 Ditch Company	Alden Hill	Secy.	160 W. Mountain Avenue Ft. Collins 80521

WATER DISTRICT NO. 3 (Continued)

Ogilvy Land & Irrigation Company	Shirley Wayman	Secy.	1007 9th Avenue Greeley 80631
Pleasant Valley & Lake Canal Company	Ward Fischer	Secy.	1st National Bank Bldg. Ft. Collins 80521
Taylor & Gill Canal Company	Wm. Seaworth	Pres.	2305 N. Taft Hill Road Ft. Collins 80521
Tunnel Water Company	Vivienne Woodward	Secy.	2319 E. Mulberry P.O. Box 1584 Ft. Collins 80521
Warren Lake Reservoir Company	Wm. Stover	Secy.	United Bank Building Ft. Collins 80521
Water Supply & Storage Company	Vivienne Woodward	Secy.	2319 E. Mulberry P.O. Box 1584 Ft. Collins 80521
Whitney Irrigation Company	Robert Tigges Carrol Camfield	Pres. Secy.	Box 1146 Windsor 80550
Wm. Jones Irrigation Company	Geo. Firestien	Pres.	Farmers Spur Greeley 80631
Windsor Reservoir & Canal Company	Don Engel	Secy.	106 Elm Box 206 Eaton 80615

DISTRICT 3 SUPERINTENDENTS

Arthur Irrigation Company	John Meyers	482-3175
B.H. Eaton Ditch Company	George Rosenoff	482-2532
Boxelder Ditch Company	Wayne Zink	482-0706
Cache la Poudre Irrigation Company (Little Cache)	Greg Jesson	482-7635
Cache la Poudre Irrigation Company (New Cache)	Charles Edgar (Supt.)	352-0222 352-4025
	George Boraker (Headgate)	482-1632
	Dick Rayburn (Windsor Lake)	686-2807
	Dale Simpson (Timnath Res.)	482-0732
Canal Number 3 Ditch Company	A.G. Brenkle	353-6014
Canon Canal	Tom Simpson	493-6632
Chaffee Ditch Company	John Meyers	482-3175
Coy Ditch Company	James Hoffman	482-4356
Fort Collins Filters	Ben Alexander (Supt.)	482-2231
	Vern Mobley (Operator)	
	Terry VanCleave (Operator)	
	Fred Jones (Operator)	
Gray Lakes	Dave Becker	482-3649
Greeley Filters	Verlyn Richardson (Supt.)	482-2446 484-1592
	Norman Magnuson (Operator)	
	Dan McCartney (Operator)	
	Jack Greer (Reservoirs)	
Jackson Ditch Company	Abner Tamlin	482-8100
Jones Ditch Company	Reynold Herbst	352-2293
Lake Canal	Dave Becker	482-3649

DISTRICT 3 SUPERINTENDENTS (CONTINUED)

Larimer County Number 2 Ditch Company	George Hoff	482-8688
Larimer and Weld Irrigation Company	(Eaton)	454-3377
	John A. Johnson	482-7671
	(Supt.)	
	Clarence Hutchinson	482-7701
	(Hdgt.)	
	John Lindenberg	686-2952
	Lake Lee	
Larimer and Weld Reservoir Company	Greg Jesson	482-7635
New Mercer Ditch Company	George Hoff	482-8688
North Poudre Irrigation Company		568-3612
	Ben Dumler	482-8398
	(Supt.)	
	Bert Martz	493-6108
	(Hdgt.)	
Ogilvy Ditch Company	Virgil Potts	352-4468
Pleasant Valley and Lake	Don Brewster	482-8645
	(Supt.)	
	Art Wendel	221-0335
	(Ditch Rider)	
Taylor and Gill Ditch Company	Greg Jesson	482-7635
Water Supply and Storage		482-3433
	Jim McFall	482-7083
	(Supt.)	
	Kenneth Wolf	482-3699
	(Hdgt.)	
	George Yost	
	(Black Hollow Res.)	
Whitney Ditch Company	Allen Lamb	686-2441
Windsor Reservoir and Canal	(Eaton)	454-3377
	John A. Johnson	482-7671
	(Supt.)	
	Jim Johnson	482-3290
	(Hdgt.)	
	Victor Reynolds	686-2636
	(Windsor Res.)	

WATER DISTRICT NO. 4

DITCH AND RESERVOIR COMPANIES

Arkins Water Association	Mrs. Joy Cross	Secy.	P.O. Box 6 Masonville
Bald Mountain Water Association	Charles McAfee	Secy.	Rt. 2, Box 319N Loveland
Beeline Ditch Company	Guy A. Shable	Secy.	Rt. 1, Box 65 Milliken
Big Thompson Manufacturing Ditch Company	Robert Christensen	Secy.	P.O. Box 642 Loveland
Big Thompson & Platte River Ditch Company	Guy A. Shable	Secy.	Rt. 1, Box 65 Milliken
Blower Ditch Company	Henry Pope, Jr.	Supt.	Rt. 1, Box 138 Longmont
Boulder & Larimer County Irrigation & Manufacturing Ditch Company (Ish)	L. V. French	Secy.	Rt. 2, Box 23 Berthoud
Buckhorn Highline Ditch Company	Mrs. Zella R. Soder- burg	Secy.	Star Route, Box 317 Loveland
Buckhorn Water Users Asscociation	Mrs. Helen L. Mettlen	Secy.	Masonville
Central Weld County Water District	Dale D. Olhausen	Secy.	115 18th Street Greeley
Consolidated Hillsborough Ditch Company	Don Davis	Secy.	1st National Bank Bldg Johnstown
Consolidated Home Supply Ditch and Reservoir Company	W.R. Keirnes	Secy.	Star Route, Box 450 Loveland
Culver Irrigation Company	George Landers	Secy.	P.O. Box 209 Longmont
Diagonal Water & Sanitation District	Jim Hudson	Secy.	1200 28th Street Boulder
Eagle Ditch Company	Mrs. Donald H. Lemmon	Secy.	Rt. 2, Box 120 Berthoud
Eglin Ditch Company	Wayne Hicks	Secy.	Rt. 2, Box 127 Berthoud
Evans Ditch Company	Town Clerk of Evans	Secy.	Evans
Fairport Reservoir Company	Nellie VerStraten	Secy.	Rt. 1 Ft. Collins
Farmers Irrigation Ditch and Reservoir Company	F. Ray DeGood	Secy.	P.O. Box 657 Loveland
Greeley-Lovealnd Irrigation Company	Ron Brinkman	Secy.	803 23rd Avenue Greeley
George Rist Ditch Company	W.R. Kiernes	Secy.	Star Route, Box 450 Loveland
Handy Ditch Comapany	Louis Bein	Secy.	Box 460 Berthoud
Hill & Brush Ditch Company	Jim Nelson	Secy.	Rt. 1 Milliken
Kershner Ditch Company	Harry Soderberg	Secy.	Star Rt., Box 317 Loveland
Little Thompson Valley Water District	Lovilo Fagan	Mgr.	307 Welch Avenue Berthoud
Longs Peak Water Users Assn.	Mrs. Joanne Macy	Secy.	P.O. Box 714 Longmont

WATER DISTRICT NO. 4 (Continued)

Louden Irrigation Reservoir and Canal Company	Ralph Benson		925 West 29th Loveland
Loveland & Greeley Reservoir Company	Ron Brinkman	Secy.	808 23rd Avenue Greeley
Lykins Ditch	Mrs. Tressie Debuse	Secy.	Rt. 3 Box 211A Longmont
Mariana Water District	Lovilo Fagan	Secy.	307 Welch Avenue Berthoud
Masonville Union Ditch & Reservoir Company	Ben Milner	Secy.	Star Route Loveland
Minor Longdon Ditch Company	Mrs. Elmer Rutt		Rt. 1, Box 3 Berthoud
New Ish Ditch & Reservoir Co.	Horace G. McCarty	Secy.	P.O. Box 658 Longmont
North Carter Lake Water District	Lovilo Fagan	Secy.	307 Welch Avenue Berthoud
Osborn & Caywood Ditch Co.	Donald J. Befus	Secy.	716 S. County Rd. 15 Berthoud
Perkins Ditch Company	Arnold Friend	Owner	Star Route Loveland
Rist & Benson Reservoir Co.	Ralph Benson	Supt.	925 West 29th Loveland
Rockwell Ditch Company	Max H. Schaal	Secy.	Rt. 1, Box 50 Berthoud
Ryan Gulch Reservoir Co.	Lavilo Fagan	Secy.	307 Welch Avenue Berthoud
Seven Lakes Reservoir Co.	Ron Brinkman	Secy.	808 23rd Avenue Greeley
South Side Irrigation and Reservoir Company	Robert Ausenhus	Secy.	203 East 5th Street Loveland
Victory Irrigating Canal Co.	Cal Carter	Secy.	Star Route Loveland
Wind Cliff Water Association Inc.	Mrs. Vivien Wylene Buser	Secy.	62 Elmhurst Lane, Riverdale Bettendorf, Iowa

WATER DISTRICT NO. 5

DITCH AND RESERVOIR COMPANIES

Allen Lake Reservoir Company	Frank Gould	Supt.	Foothills Highway Boulder (442-2546)
Baker & Weese	Western Paving Co.	Owner	Denver (772-7864)
Weese Pvt.	Western Paving Co.	Owner	Denver (772-7864)
Beckwith	Mark Benson	Secy.	1500 Florida Avenue Longmont 80501 (776-2670)
Bonus Ditch Company	Sam Tanaka	Secy.	Rt. 2 Longmont 80501 (776-3495)
Boulder & Left Hand Irrigation Company	Nels Jensen	Secy.	436 Coffman Street Longmont 80501
Chapman & McCaslin	Charles Ramey	Secy.	Rt. 3 Longmont 80501 (776-1945)
Clough Private	Friz Bartley	Owner	Rt. 3 Longmont 80501 (776-1437)
Clough & True	Public Service Co.	Owner	Denver
Clover Basin Ditch & Reservoir Company	Wayne Jurgens	Secy.	512 4th Avenue Longmont 80501 (776-5122)
Cushman	Vernon Golden	Owner	12911 Hillcrest Drive Longmont 80501 (776-5880)
Davis & Downing	Gordon Kennedy	Secy.	Rt. 3 Longmont 80501 (776-1161)
Denio & Taylor	Harold Dawson	Secy.	1st National Bank Longmont 80501 (776-5800)
Dickens Pvt.	Lloyd Dickens	Owner	136 S. Main Longmont 80501 (776-0325)
Dixon Mill	G.W. Sugar Company	Owner	Longmont 80051 (776-5070)
Goss Pvt. 1 & 2	Western Paving Co.	Owner	Denver (772-7864)
Hager Meadow	Russell Zweck	Owner	Longmont 80501 (776-5198)
Hayseed	Louis Rademacher	Owner	Longmont 80501 (535-4345)
Highland	George Landers	Secy.	First National Bank Longmont 80501 (776-5800)
Ide & Starbird Reservoir Co.	L.A. Biddle	Secy.	Mead 80542
Independent Reservoir Co.	George Reynolds	Secy.	Longmont 80501
Island	Vernon Golden	Owner	12911 Hillcrest Drive Longmont 80501 (776-5880)

WATER DISTRICT NO. 5 (Continued)

James Ditch Company	Clarence Johnson	Secy.	8090 Nelson Road Longmont 80501 (776-3273)
John Rice	Bob Seewald	Owner	Longmont 80501 (776-0744)
Last Chance Ditch Company	Harold Nelson	Secy.	Longmont 80501 (776-2336)
Left Hand Ditch Company	Frank Gould	Secy.	Foothills Highway Boulder (442-2546)
Lyons, Town of	Loyal Austin	Supt.	Lyons 80540 (823-6252)
Longmont, City of	Frank Humphry		Longmont 80501 (776-6050)
Longmont Supply Ditch Company	George Landers	Secy.	Longmont 80501 (776-5800)
Lower Baldwin Ditch Company	Dean Prieskorn	Secy.	Rt. 2 Longmont 80501 (776-2916)
Mason Meadow	Vernon Golden		12911 Hillcrest Drive Longmont 80501 (776-2135)
Mead, Town of	Harvey Potts	Supt.	Mead 80542 (535-4557)
Montgomery Pvt.	Public Service Co.	Owner	Denver (442-2776)
Nelson	Jay Moody	Owner	10139 N. 75th Longmont 80501
Niwot	Bob Seewald	Secy.	Rt. 2 Longmont 80501 (776-0744)
North Mutual Life Insurance Company	Robert Hazelbush		Longmont 80501 (776-2832)
Oligarchy	George Landers	Secy.	1st National Bank Longmont 80501 (776-5800)
Palmerton Consolidated Ditch Company	James Goss	Secy.	Rt. 3 Longmont 80501 (776-4984)
Peck	George Wagner	Secy.	Longmont 80501 (776-5628)
Pella Ditch Company	Sidney Fredstrom	Secy.	Rt. 3 Longmont 80501 (776-3057)
Pleasant Valley Reservoir and Company	Russell Palmer	Secy.	1264 6th Avenue Longmont 80501 (776-5625)
Rice	Brian Rundle	Owner	Longmont 80501 (776-5098)
Rough and Ready	Russell Palmer	Secy.	1264 6th Avenue Longmont 80501 (776-5625)

WATER DISTRICT NO. 5 (Continued)

Runyon	Willis Marlatt	Owner	Longmont 80501 (776-0791)
Smead Ditch Company	Warren Bashor	Secy.	Rt. 3 Longmont 80501 (823-6474)
South Flat Ditch Company	David Wagner	Secy.	Longmont 80501 (776-0865)
South Ledge Ditch Company	Reinhold Loukonen	Secy.	Lyons 80540 (823-6268)
St. Vrain and Palmerton	Orville Gose	Supt.	34 Gay Street Longmont 80501 (776-0350)
Supply Ditch Company	George Landers	Secy.	1st National Bank Longmont 80501
Swede	Charles Bliss	Pres.	Longmont 80501 (776-4865)
True and Webster	Henry Zapf	Secy.	Longmont 80501 (776-4623)
Upper Baldwin	Dean Prieskorn	Secy.	Longmont 80501 (776-2916)
Union Ditch Company	Frances Hill	Secy.	LaSalle 80645
Union Reservoir Company	Frances Hill	Secy.	LaSalle 80645
Webster and McCaslin	Wallace Gage (Mrs.)	Owner	Longmont 80501 (776-9301)
Weese Pvt.	Western Paving Company	Owner	Denver (772-7864)
Zweck and Turner Ditch Company	Russel Zweck	Secy.	Rt. 3 Longmont 80501 (776-5198)

WATER DISTRICT NO. 6

DITCH AND RESERVOIR COMPANIES

Andrews & Farwell Ditch Co.	Forest White	Secy.	2994 North 75th Boulder
Autrey Eggleston	Stanley Medsker		5050 South Emporia Denver
Baseline Land & Reservoir Co.	Margaret Nelson	Secy.	Rt. 1, Box 218 Erie 80516
Boulder Ditch (Town of)	City of Boulder	Owner	City Hall Building Boulder
Boulder & Left Hand Irrigation Company	Richard Frisk	Secy.	735 Bowen Longmont 80501
Boulder U Weld County Ditch Company	Ethel Ziegler	Secy.	831-17th Longmont 80501
Boulder & White Rock Ditch and Reservoir Company	Chas. Haley	Secy.	401-Main Street Longmont 80501
Butte Irrigation and Milling Company	Gene Sawhill	Secy.	6967 Valmont Drive Boulder
Carr and Tyler Ditch Company	Milton Nelson	Secy.	2040 West Longs Peak Longmont 80501
Church Ditch Company	Marcus Church	Pres.	Broomfield 80020
City of Lafayette	City Manager		Lafayette 80026
City of Louisville	City Manager		Louisville 80027
Coal Ridge Ditch	Mildred Sarchet	Secy.	Rt. 2, Box 162 Ft. Lupton
Community Ditch	M.L. Sarchet	Pres.	10107 Melody Drive Northglenn 80233
Consolidated Lower Boulder Reservoir and Ditch Company	Ms. Ray Nelson	Secy.	Rt. 1, Box 218 Erie 80516
Davidson Ditch and Reservoir Company	Helen Domenico	Secy.	10315 Baseline Lafayette 80026
Dry Creek Davidson	Ralph Bixler	Pres.	9849 Isabelle Road Lafayette 80026
Dry Creek No. 2 Ditch Company	C.B. Beitelshes	Secy.	Rt. 1, Box 322 Boulder
East Boulder Ditch Comapny	Public Service Company of Colorado %Leonard Reichwein		P.O. Box 840 Denver
Eggleston No. 1	Stanley Medsker		5050 South Emporia Denver
Eggleston No. 2	Stanley Medsker		5050 South Emporia Denver
Enterprise Irrigation Ditch Company	Leonard Reichwein		P.O. Box 840 Denver
Erie Coal Creek Ditch and Reservoir Company	Dave Oscarson	Pres.	Rt. 1 Erie 80516
Farmers Ditch Company	Boyd Sheets	Secy.	3016 Kalmia Boulder

DISTRICT NO. 6 (Continued)

Goodhue Ditch and Reservoir Company	Mrs. Gale Harmon	Secy.	Lafayette 80026
Godding Daily and Plumb Ditch	Richard Frisk	Secy.	735 Bowen Longmont 80501
Godding Ditch Company Highland South Side	Richard Frisk	Secy.	735 Bowen Longmont 80501
Green Ditch Company	Roger Fell	Secy.	7861 Valmont Boulder
Harden	City of Boulder	Owner	Boulder
Harris	K. Waremburg	Owner	Louisville 80027
Houck No. 2 Ditch	Milton Nelson	Owner	2040 W. Longs Peak Longmont 80501
Howard Ditch Company	Bill Suittes	Secy.	65 Manhattan Drive Boulder
Jones & Donnelly Ditch Company	Gene Sawhill	Secy.	6967 Valmont Boulder
Kerr No. 1 and 2	Mrs. J.D. Mayhoffer	Owner	Louisville 80027
Kinnear Ditch and Reservoir	M.L. Sarchet	Pres.	10107 Melody Drive Northglenn 80233
Last Chance Ditch Company	City of Westminister	P.Owner	Westminister 80030
Leggett Ditch and Reservoir Company	Richard Frisk	Secy.	735 Bowen Longmont 80501
Lyner-Cottonwood Consolidated Ditch Company	Walter Wise	Secy.	11587 Jasper Road Canfield, Erie 80516
Lower Boulder Ditch Company	Mrs. Margaret Nelson	Secy.	Rt. 1, Box 218 Erie 80516
Martha M. Mathews	A.S. Bailey	P.Owner	Broomfield 80020
Marshall Reservoir	M.L. Sarchet	Pres.	10107 Melody Drive Northglenn 80233
Marshallville Ditch Company	Ewalt Anderson	Secy.	Rt. 3, Box 325 Boulder
McGinn Ditch Company	Alice Clyncke	Secy.	7123 Baseline Road Boulder
McKay Reservoir	M.L. Sarchet	Pres.	10107 Melody Drive Northglenn 80233
N.K. Smith & Tyler Ditch	Max Serafina	Owner	Rt. 4 Longmont 80501
New Anderson Ditch Company	Wm. Light	Pres.	City Hall Boulder
North Boulder Farmers Ditch Company	John Reich	Secy.	P.O. Box 227 Boulder
Original Cottonwood No. 2 Ditch Company	Albert Kolb	Secy.	Rt. 3, Box 316 Boulder
Rural Ditch Company	Richard Frisk	Secy.	735 Bowen Longmont 80501
Silver Lake Ditch Company	Everette Long	Secy.	3240 Broadway Boulder
Schearer Ditch Company	L.W. Van Fleet	Owner	Denver
Smith and Emmons Ditch Company	Ward Burrett	Secy.	Rt. 4, Box 54 Longmont 80501
Smith and Goss Ditch Company	City of Boulder	P.Owner	Boulder
South Boulder Canon Ditch Company	Joe Beauprez	Pres.	1042 North 95th Lafayette 80026

WATER DISTRICT NO. 6 (Continued)

South Boulder and Bear Creek Ditch	City Clerk Lafayette	Secy.	201 East Simpson Lafayette 80026
South Boulder and Coal Creek Irrigating Ditch Company	Ruth Bowes	Secy.	9182 Dillon Road Louisville 80027
Tom Delehant Ditch	Milton Nelson	Pres.	2040 W. Longs Peak Longmont 80501
William C. Hake	Mrs.J.D. Mayhoffer	Owner	Louisville 80027

WATER DISTRICT NO. 6 OFFICIALS

Anderson Ditch
Al Bloom
494-7433

Andrews & Farwell
John Hartnagle

Boulder & Left Hand
Wilson Van Flosen
772-2368

Butte Mill
Clifford Hodgson
665-9712

Church Ditch
Harry Thomas
466-5052

Community Ditch
Maynard Ludwig
499-1249

Cottonwood #2
Dutch Waneka
422-5321

Davidson
Floyd O'Connor
499-6184

Dry Creek #2
Bob Pherson
494-7036

Dry Creek Davidson
Harold Eddy
665-4010

Eggleston #1
Ed Serr 444-3051
Stan Medsker 771-5689

Enterprize
Dutch Waneka
442-5321

Farmers Ditch
Bob Ellison
443-8004

Godding (Lower End)
Ervin Olson
776-5154

Godding-Daily & Plumb
Ervin Olson
776-5154

Goodhue
Floyd O'Connor
499-6184

Green Ditch
Drake Sullivan Supt
665-9711

W. C. Hake
Mrs. Mayhoffer
666-6180

Harden Ditch
Annie Joratz
442-0245
Ron Keith--442-3713

Howard Ditch
Bob Pherson
494-7036

Howell Ditch
Arlie Bailey
828-3350

Kerr #1 & 2
Mrs. J. Mayhoffer
Louisville

Leggett
Bob Bloom
449-4490

Lyner Cottonwood
Vernon Young
571-0145

Lower Boulder
Al Bloom
494-7433

Marshalville
Fred Stengel
494-7205

McGinn
Louis Stengel
494-6854

DISTRICT NO. 6 OFFICIALS (CONTINUED)

North Boulder Farmers
Ralph Nielsen
444-3528

Rural (Lower End)
Ervin Olson
776-5154

Schearer
Russ Hawkins
494-7592

Silver Lake Ditch
Everett Long
442-2353

Smith & Emmons
Ervin Olson
776-5154

Smith & Goss
Bill Stafford
492-8171

South Boulder & Bear Creek
Tim Shannahan
494-7121

South Boulder Canyon
Don De Bruyne
665-6174

White Rock
Jim Steel
776-5523

WATER DISTRICT NO. 7

DITCH AND RESERVOIR COMPANIES

Bayou Association of Ditches	Earnest R. Schultz	Secy.	4315 Xenon Street WheatRidge
Boyle	A.T. DeBell		3951 W. 56 Way Denver
Church (Golden City and Ralston Creek) and Croke Canal	G.A. Pelz	Secy.	Farmers Reservoir Irrigation Company Denham Building 1845 California Denver
Colorado Agricultural	Louis Rullo	Secy.	Rt. 1, Box 043 Denver
Cort Graves and Hughes	Sam Spano		6640 West 52 Avenue Arvada
Denver View Water Company	Wayne Harkness	Secy.	Rt. 1, Box 590 Golden
Farmers Highline	Mrs. Virginia Collins	Secy.	Farmers Highline Canal and Reservoir Company 8889 Washington Avenue Denver
Fisher	John DiTirro, Jr.	Secy.	4400 Wynkoop Denver
Kershaw	Jack Calabrese		5801 Lowell Denver
Lee Stewart & Eskins	Albert F. Ervin	Secy.	12703 W. 52nd Avenue Arvada 80002
Lower Clear Creek Company (Clear Creek & Platte River Ditch) Manhart	Frank Wooley	Secy.	Rt. 1, Box 515 Denver
Ouelette	George Ditolla		6030 Wolff Arvada 80002
Reno Juchem & Swadley Longan	Mrs. Ernest Delva	Secy.	Consolidated Juchem Ditch & Reservoir Company 6501 W. 60th Avenue Arvada
Rocky Mountain, Miles & Eskins and South Side	W.F. Moses	Secy.	Adolph Coors Co. Golden
United Water Company	Henry J. Johnson	Secy.	Box 840 Denver
Wannemaker	Joe Griggs	Secy.	Golden
Welch and Agricultural	Wilson B. Roup	Secy.	Agricultural Ditch and Reservoir Company 10080 W. 27th Avenue Lakewood

CLEAR CREEK DITCHES AND SUPERINTENDENTS

Welch	Eugene Cress	922-2815
Church	Shorty Holmes	424-6636 - 278-0755
Agricultural	Eugene Cress	922-2815
Coors Industrial		279-8060
Farmers High Line	Bill Baker	422-4658
Wannemaker	Pete Kramer	279-1848
Lee Stewart Eskins	J.O. Greenfield	279-2974
Croke	Shorty Holmes	424-6636 - 278-0755
Rocky Mt.	Coors	279-8060
Reno Juchem	John D.	424-6228
Slough	Earnie Schultz	422-2801
South Side	Coors	279-8060
Ouelette	Robert Claxton	455-1231
Boyles	Vincent DeBell	429-0210
Kershaw	Jack Calabrese	429-1036
Fisher	Sandy LaRusso	477-7550
Clear Creek & Platte	F. Wooley - 452-8238	452-8208 - J. Fukaye
Colorado Agricultural	Roy McIntosh - 452-8275	452-8208 - J. Fukaye
*Manhart	George Ditolla	429-0139 - 429-1839

Standley Reservoir 424-6636
Ralston Reservoir 279-4222
Consolidated Reservoir 233-5945

DITCH RIDERS

Neil Jaquet	Coors	237-3092
Bob Adams	Farmers High Line	279-3747
Art Morgan	Colorado Agricultural	452-4732
Wade Isham	Rocky Mt.	423-5243
Joe Griggs	Rocky Mt.	278-3870

*Ralston Creek

WATER DISTRICT NO. 8

DITCH AND RESERVOIR COMPANIES

City and County of Denver	Wm. Schuler		Board of Water Commissioners 144 West Colfax Denver
F. L. Green Ditch Company	Edith Jurgens	Secy.	5480 West Arizona Place Denver
Last Chance Ditch Company No. 2	Wm. Schuler	Secy.	Board of Water Commissioners 144 West Colfax Denver
Nevada Ditch Holding Company	Wm. Schuler	Secy.	Board of Water Commissioners 144 West Colfax Denver
Northern Colorado Irrigation Company	Robert Rosendale	Supt.	Board of Water Commissioners 144 West Colfax Denver
Tri City Trust	Wm. Schuler	Secy.	Board of Water Commissioners 144 West Colfax Denver

DISTRICT 8 SUPERINTENDENTS

NORTHERN COLORADO HIGHLINE:

(Day) Carl Carlson
222-5511 Ext. 273

(Night) Bob Rosendale
733-4292

LAST CHANCE NO. 2:
Don Roberts
979-4050

Bill Schuler
222-5511 Ext. 270

CITY - NEVADA DITCHES - BROWN:

(Day) Charles Carol
761-1140 Ext. 245

(Night) Al Travis Will Carr
789-0311 798-5912

EPPERSON DITCH:

(Day) Hector Berucca
297-2702

(Night) Bill Schuler
722-6998

WATER DISTRICT NO. 9

DITCH AND RESERVOIR COMPANIES

Bergen Ditch & Reservoir Co.	Wm. Grant	Owner	Western Federal Savings Building Denver
Bowles Ditch Company	Wm. Grant	Owner	Western Federal Savings Building Denver
Colorado Central Power Co. Harriman Ditch Company (AKA Arnett Ditch)	Leonard Reichwein	Engr.	Evergreen Denver Water Board
Hodgson Ditch Operating Ass'n	B. F. Lowell	Pres.	Mt. Morrison
Independent Highline Ditch Co.	Stan Harwood	Owner	Mt. Morrison
Pioneer Union Ditch Company	Jack McCoy	Pres.	Mt. Morrison
Ward Ditch Company	Wm. V. Hodges, Jr.	Secy.	Denver Club Bldg. Denver
Warrior Ditch Company	Gordon Koon		Mt. Morrison

WATER DISTRICT NO. 23

Jefferson Lake Ditch Company	Paul Anschutz	Pres.	Jefferson
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WATER DISTRICT NO. 23

Tunnel Water Company	Viviene Woodward	Secy.	P.O. Box 1584 2319 East Mulberry Ft. Collins
Water Supply & Storage Co.	Viviene Woodward	Secy.	P.O. Box 1584 2319 East Mulberry Ft. Collins

WATER DISTRICT NO. 49

Hale Ditch Company			Hale
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WATER DISTRICT NO. 64

DITCH AND RESERVOIR COMPANIES

Batton Ditch Company	Clifford Sherwin	Owner	P.O. Box 63 Sterling
Bravo Ditch	Ivan Barden	Secy.	Iliff
Carlson Ditch Company	Hulbert Reichelt	Secy.	Julesburg
Chambers Ditch	Wm. Condon	Owner	916 Fairhurst Street Sterling
Davis Brothers Ditch Company	Paris Accomasso	Secy.	Atwood
Farmers Pawnee Ditch Company	Robert Roberts	Secy.	P.O. Box 70 Sterling
Harmony Ditch Company No. 1	Mrs. Howard Hamilton	Secy.	P.O. Box 205 Crook
Henderson & Smith Ditch Company	Scalva Brothers	Owner	R.R. Sterling
Iliff & Platte Valley Ditch Company	Earl E. Reynolds	Secy.	205 1/2 Main Street. Sterling
J. B. Ditch Company	Frank Manuello	Owner	Iliff
Julesburg Irrigation District	Herbert Bonesteel	Secy.	Julesburg
Liddle Ditch Company	Don Liddle	Pres.	Ovid
Lone Tree Ditch Company	Kent L. Reynolds	Secy.	P.O. Box 111 Sterling
Long Island Ditch	State Game, Fish & Parks	Part Owner	Crook
Low Line Ditch Company	Earl E. Reynolds	Secy.	205 1/2 Main Street Sterling
North Sterling Irrigation District	Alex Michel	Secy.	205 1/2 Main Street Sterling
Peoples Ditch Company	Sam Karg	Secy.	Rt. 2 Sterling
Peterson Canal & Reservoir Company	Jacob Sanger	Pres.	Ovid
Powell & Blair Ditch	Proctor Water Co. Kent L. Reynolds	Secy.	P.O. Box 111 Sterling
Prewitt Reservoir Company	Alex Michel	Secy.	205 1/2 Main Street Sterling
Proctor Water	Kent L. Reynolds	Secy.	P.O. Box 111 Sterling
Ramsey Ditch Company	Don DeMers	Secy.	708 Elm Street Sterling
Red Lion Ditch Company	Maynard Sonnenberg	Secy.	P.O. Box 1271 Sterling
Schneider Ditch Company	James Williamson	Secy.	Atwood
Settlers Ditch Company	Charles Atkinson		Crook
South Platte Ditch Company	Charles Bartlett	Secy.	Merino
South Reservation Ditch Co.	James Parker	Secy.	Ovid
Springdale Ditch Company	Robert Roberts	Secy.	P.O. Box 70 Sterling
Sterling Hereford Cattle Company Ditch	Cliff Sherwin	Owner	Sterling

WATER DISTRICT NO. 64 (continued)

Sterling Irrigation Company	Lawrence Giacomini	Secy.	P.O. Box 1013 Sterling
Sterling No. 2 Ditch Company	Maynard Sonnenberg	Secy.	P.O. Box 1271 Sterling
Tamarack Ditch	State Game, Fish & Parks	Owner	Crook
Upper Harmony Ditch Company	Garold Marick	Secy.	Crook

DISTRICT 64 OFFICIALS

BRAVO

Pres. - Victor Ramey 17340 Co. Rd. 370 Sterling, Colo. 522-0477
Secy. - Ivan Barden 19679 Co. Rd. 55 Iliff, Colo. 522-8002
Rider - John Held 17915 Co. Rd. 370 Sterling, Colo. 522-2416

CARLSON

Owner - Hub Reichelt Julesburg, Colo. 474-4300

DAVIS BROS. DITCH

Pres. - Justin Jones 4304 Co. Rd. 31 Atwood, Colo. 522-2706
Secy. - Paris Accomasso 15465 Co. Rd. 12 Atwood, Colo. 522-6429
Rider - Riney Wolf 5033 Highway 63 Atwood, Colo. 522-3757

FARMERS PAWNEE CANAL

Pres. - Herb Vandemoer 225 Country Club, Sterling, Colo. 522-3372
Secy. - Robert Roberts 717 So. 7th. Ave. Sterling, Colo. 522-4343
Rider - David Littler 13698 Corrine Rd. Sterling, Colo. 522-3101

HARMONY #1

Pres. - Larry Lauer Crook, Colo. 886-2715
Secy. - Mrs. Howard Hamilton Crook, Colo. 886-2833
Rider - Lorrin Lowery Crook, Colo. 886-3665

HARMONY #2

Pres. - Alvin Brunkhardt Crook, Colo. 886-2682
Secy. - Garold Marick Crook, Colo. 886-3641

HENDERSON SMITH

Scalva Bros. - 13407 Co. Rd. 370 Sterling, Colo. 522-2539
522-4577

ILIFF AND PLATTE VALLEY

Pres. - Allen Freeman 26774 Co. Rd. 385 Iliff, Colo. 522-8038
Secy. - Kent Reynolds 209 Main St. Sterling, Colo. 522-1015
Rider - William Huey 24081 Highway 138 Iliff, Colo. 522-8302

JULESBURG IRRIGATION DISTRICT AND PETERSON DITCH

Julesburg Irrigation Office Julesburg, Colo. 474-3737
Pres. - Clarence Jenik Ovid, Colo. 463-5732
Supt. - Tom Frame Sedgwick, Colo. 563-5737
Coordinator - Bud Bonesteel Julesburg, Colo. 474-2189

LIDDLE

Pres. - Don Liddle Ovid, Colo. 474-2300
Secy. - Hub Reichelt Ovid, Colo. 474-3400

LONE TREE

Pres. - Maynard Sonnenberg 406 Highland Drive Sterling, Co. 522-1390
Secy. - " " " " " " " " " "
Rider - Ralph Freeman 101 E. 1st Ave. Iliff, Colo. 522-8088

DISTRICT 64 OFFICIALS (CONTINUED)

LOWLINE

Pres. - Ray Parsons 22920 Co. Rd. 36.6 Sterling, Colo. 522-1675
Secy. - Kent Reynolds 209 West Main St. Sterling, Colo. 522-1015
Rider - Albert Workman - 13524 Co. Rd. 37 Sterling, Colo. 522-7198

PEOPLES

Pres. - Tom DeSoto 24355 Co. Rd. 40 Sterling, Colo. 522-2609
Secy. - Sam Karg 23690 Co. Rd. 40 Sterling, Colo. 522-1469
Rider - Tom DeSoto 24355 Co. Rd. 40 Sterling, Colo. 522-2609

POWELL

Pres. - Clay Lembeth 14175 Greenway Drive Sterling, CO 522-2770
Secy. - Kent Reynolds 209 Main St. Sterling, Colo. 522-1015
Rider - William Huey 24081 Highway 138 Iliff, Colo. 522-8302

SCHNEIDER

Pres. - Elmer Rasmussen 8917 Co. Rd. 370 Sterling, Colo. 522-2322
Secy. - James Williamson 17880 Co. Rd. 16 Atwood, Colo. 522-1910
Rider - Perry Accomasso 15465 Co. Rd. 12 Atwood, Colo. 522-6429

SOUTH PLATTE DITCH

Pres. - Keith Propst 2464 Co. Rd. 25 Merino, Colo. 522-0090
Secy. - Charles Barttlett 13244 Co. Rd. 6 Merino, Colo. 522-7586
Rider - Elmer Higgason 419 Park St. Merino, Colo. 522-3314

SOUTH RESERVATION

Pres. - Jim Parker 111 Ovid, Colo. 463-5382
Rider - Jim Parker 111 Ovid, Colo. 463-5382

SPRINGDALE

Pres. - George Samber 19177 Co. Rd. 34 Sterling, Colo. 522-5286
Secy. - Robert Roberts 717 So. 7th Ave. Sterling, Colo. 522-4343
Rider - Alfred Leckler 13614 Co. Rd. 37 Sterling, Colo. 522-1460

STERLING IRRIGATION COMPANY 1

Pres. - Richard Ramey 1005 Co. Rd. 39 Sterling, Colo. 522-5705
Secy. Lawrence Giacomini 131 Hamilton St. Sterling, CO 522-522-0751
Rider - Glen Meyerholz 13572 Rd. 37 Sterling, Colo. 522-5719

VIII.

C.

GROUNDWATER MANAGEMENT DISTRICTS

Although some consideration was given to forming management districts under the Basin Authority Bill adopted in 1969, no such districts were formed.

The ground water management districts in the non-tributary areas continue to function as they have in the past. These districts are shown in the following tabulation:

GROUND WATER MANAGEMENT DISTRICTS

NORTHERN HIGH PLAINS

Frenchman Management District	Ben Saunders	Mngr.	Holyoke
Sandhills Management District	Ben Saunders	Mngr.	
Central Yuma Management District	Ben Saunders	Mngr.	
W - Y Management District	Fred Wurtsmith	Secy.	Yuma 220 South Main
Arikaree Management District	Fred Wrate	Secy.	Cope
Plains Management District	Cliff Hawthorne		Burlington 1454 Martin Ave.

KIOWA-BIJOU

North Kiowa-Bijou

Don McClary Attny. Ft. Morgan

LOST CREEK

George Bush

Keenesburg

CAMP CREEK

IX. WATER COMMISSIONER'S SUMMARY

WATER TABULATION FOR 1976 BY SOURCE AND USE

ALL FIGURES IN ACRE FEET

- A. Direct Flow Diversions
- B. Storage - Report

WATER DISTRICT	1 - 0	1 - 1	1 - 2	1 - 3	1 - 4	2 - 0	2 - 1	2 - 2	4 - 0	4 - 1	4 - 2	5 - 1	5 - 3	AUGMENTATION
1	333876	168530			17006	9498	47796					518		948
2	96820	303849		14286								7770	966	353
3***	105552	84674	57084				9372	6282	3040		250			4716
4	17790	101188	5006		2640	48	33242		21850	43444	2896			1840
5	6912	75141				227	11979	112	6682	31601				33
6	9424	84228	8938			6752	26016	39757	27165		40108			4378
7	15330	112978	2595		35033					449				
8*	170000													
9	4156	12588												
23*	75000													
48	17180													
49		5750												
64	13152	151562												7718
65		6201												
80*	14000													
		1,105,687	7,3623	14286	23149	154,687	46151		75494	43254	8288	966		

SOURCE USE
 1. River 0. Storage
 2. Reservoir 1. Irr.
 3. GW 2. Mun.
 4. TB 3. Comm.
 5. NS 4. Ind.
 6. Collective 6. Fish
 10. Other

***THE FOLLOWING TYPES OF WATER ARE FOR DISTRICT NO. 3 ONLY

SOURCE	USE
5 - 0	= 1738
6 - 0	= 252200
6 - 1	= 341470
4 - 10	= 24344
2 - 10	= 254596
1 - 10	= 143708

C. 1976 CALLS ON SOUTH PLATTE RIVER

DATE OF ISSUE	PRIORITY CALLING DISTRICT	NAME	APPROPRIATION DATE	DISTRICTS AFFECTED										
				1	2	3	4	5	6	7	8	9		
1. 3-25-1976	1	North Sterling	5-27-1914	X	X	X	X	X	X	X	X	X	X	X
2. 4-15-1976	1	Fort Morgan	10-18-1882	X	X	X	X	X	X	X	X	X	X	X
3. 4-16-1976	1	No Demand		X	X	X	X	X	X	X	X	X	X	X
4. 4-16-1976	2 (Ab. St. Vrain)	Burlington	11-20-1885											
5. 5-7-1976	64 (Written)	Pawnee	6-22-1882	X	X	X	X	X	X	X	X	X	X	X
5a. 5-13-1976	64 (Written)	South Reservation*	9-14-1892	X	X	X	X	X	X	X	X	X	X	X
6. 5-14-1976	2 (Bel. St. Vrain)	Lower Latham	11-14-1877											
6a. 5-18-1976	64 (Written)	Springdale*	7-19-1886											
7. 5-21-1976	2 (Call Off)	Lower Latham	11-14-1877											
8. 5-22-1976	64 (No Demand)	Pawnee	6-22-1882	X	X	X	X	X	X	X	X	X	X	X
9. 5-22-1976	1	Riverside	5-31-1907											
10. 5-22-1976	1 (No Demand)	Riverside	5-31-1907	X	X	X	X	X	X	X	X	X	X	X
11. 5-22-1976	2 (Ab. St. Vrain)	Barr Lake	1-13-1909	X	X	X	X	X	X	X	X	X	X	X
12. 6-8-1976	2 (Ab. St. Vrain)	Burlington	11-20-1885											
13. 6-8-1976	1	Duel and Snyder	5-7-1884	X	X	X	X	X	X	X	X	X	X	X
14. 6-9-1976	2 (Ab. St. Vrain)	Fulton	7-8-1876											
15. 6-11-1976	2 (Call Off)	Fulton	7-8-1876											
15a. 6-11-1976	64 (Written)	South Platte**	5-1-1872											
15b. 6-11-1976	64 (Written)	Sterling No. 1**	7-15-1873											
15c. 6-11-1976	64 (Written)	Schneider**	4-10-1873											
15d. 6-12-1976	64 (Weitten)	Pawnee**	9-17-1873											
16. 6-14-1976	64	Pawnee	6-22-1882	X	X	X	X	X	X	X	X	X	X	X
17. 6-14-1976	2 (Ab. St. Vrain)	Fulton	7-8-1876											
17a. 6-16-1976	1 (Written)	Duel and Snyder*	5-7-1884											
17b. 6-16-1976	1 (Written)	Weldon Valley**	10-26-1881											
18. 6-23-1976	2 (Ab. St. Vrain)	Farmers Independent	11-20-1876											
18a. 6-23-1976	1 (Written)	Ft. Morgan*	10-18-1882											
18b. 6-23-1976	1 (Written)	Upper Platte & Beaver**	4-20-1868											
18c. 6-23-1976	1 (Written)	Lower Platte & Beaver*	9-4-1882											
18d. 6-24-1976	64 (Written)	Harmony No. 1*	4-28-1895											
18e. 7-1-1976	64 (Written)	Liddle*	10-22-1890											

DATE OF ISSUE PRIORITY CALLING DISTRICT NAME APPROPRIATION DATE 1 2 3 4 5 6 7 8 9 23

DATE OF ISSUE	PRIORITY CALLING DISTRICT	NAME	APPROPRIATION DATE	1	2	3	4	5	6	7	8	9	23
19.	7- 6-1976	1	Fort Morgan	10-18-1882	x	x	x	x	x				
19a.	7-11-1976	64 (Written)	Ramsey*	8-3-1894									
20.	7-12-1976	2 (Ab. St. Vrain)	Brighton	11- 1-1871						x	x	x	x
21.	7-19-1976	1	Upper Platte & Beaver	6-20-1882	x	x	x	x	x				
22.	7-21-1976	2 (Ab. St. Vrain)	Fulton	7- 8-1876						x	x	x	x
23.	7-26-1976	2 (Call Off)	Fulton	7- 8-1876						x	x	x	x
24.	7-30-1976	2 (Ab. St. Vrain)	Farmers Independent	11-20-1876									
25.	8- 1-1976	1 (No Demand)	Upper Platte & Beaver)	6-20-1882	x	x	x	x	x				
26.	8- 1-1976	2 (Ab. St. Vrain)	Burlington	11-20-1885						x	x	x	x
27.	8- 3-1976	2 (Ab. St. Vrain)	Platte Valley	11-20-1885						x	x	x	x
28.	8- 5-1976	1	UP&B-IP&B	6- 9-1909						x	x	x	x
29.	8- 6-1976	2 (Ab. St. Vrain)	Farmers Independent	8-15-1888						x	x	x	x
30.	8- 8-1976	2 (Ab. St. Vrain)	Farmers Independent	11-20-1876	x	x	x	x	x				
31.	8-12-1976	64	Burlington	11-20-1885						x	x	x	x
32.	8-13-1976	2 (Ab. St. Vrain)	Pawnee	6-22-1882	x	x	x	x	x				
33.	8-25-1976	2 (Call Off)	Farmers Independent	11-20-1876						x	x	x	x
34.	8-26-1976	2 (Ab. St. Vrain)	Farmers Independent	11-20-1876						x	x	x	x
35.	9- 8-1976	2 (Call Off)	Farmers Independent	11-20-1876						x	x	x	x
36.	9-10-1976	64	Harmony No. 1	11-20-1895	x	x	x	x	x				
37.	9-10-1976	2 (Ab. St. Vrain)	Burlington	4-28-1895						x	x	x	x
38.	9-20-1976	64 (Call Off)	Harmony No. 1	11-20-1885	x	x	x	x	x				
39.	9-20-1976	1	Riverside	4-28-1895									
40.	9-27-1976	1	Prewitt	5-31-1907	x	x	x	x	x				
41.	9-28-1976	1	North Sterling	5-25-1910									
42.	9-28-1976	2 (Ab. St. Vrain)	Burlington	8- 1-1915	x	x	x	x	x				
43.	10-11-1976	2 (Ab. St. Vrain)	Burlington	11-20-1885						x	x	x	x
44.	10-28-1976	2 (Ab. St. Vrain)	Horse Creek	11-20-1885						x	x	x	x
45.	10-31-1976	64 (Verbal)	Julesburg Reservoir+	3-17-1911						x	x	x	x
				2-12-1904						x	x	x	x

* - SENIOR CALL IN EFFECT

** - SATISFIED LOCALLY - ANTICIPATORY CALL ONLY

+ - RESERVOIR GUARANTEED FILLING BY UPSTREAM RESERVOIRS

X. SUGGESTIONS AND RECOMMENDATIONS

A. PERSONNEL

1. Office Expenses

The administrative field personnel, namely the water commissioners and their deputies, maintain some type of an office in their own homes since they are on call at all times due to the nature of their work. The size, equipment and use of that office are, of course, not only related to their administrative responsibilities and functions but also to the availability and convenience of space. Nevertheless the need for office space in the home does exist and is provided by the individual at the expense of a reduction of space for the family. Further, most of those employees rely upon their telephones, a business necessity, for communication with the various water users and other staff members. Since these field people are out checking diversions, streamflow, and water use much of the time, their wives or other members of the family must take and relay calls as necessary. Secretarial help is additionally provided by family members, generally the wife, in the generation of diversion reports and other correspondence.

It is again proposed, as it has been in the past, that the budget include, and approval be granted for the payment of a minimum of \$50 per month in addition to the regular salary to each such person maintaining a field office in his own home. To provide some equity, the allowance suggested could be scaled according to the circumstances in each case with the maximum being \$100 per month.

Although such allowances would at least be a token payment for a long unrecognized responsibility of field personnel, in most cases it would scarcely cover the capital cost to the individual for space and utilities nor even approximate scale wages for the secretarial help he receives.

2. Mileage Allowance

All employees using their own vehicles in their work continue to subsidize the state indirectly. The reimbursement of 12 cents per mile does not cover the cost of owning and operating a vehicle. Due to the convenience of being able to use a vehicle for private as well as state use, most employees would prefer to use their own vehicle for transportation but, with rising costs, the out of pocket expense in excess of the reimbursement makes that preference a financial burden.

Studies by Department of Transportation, Federal Highway Administration, reveal that over the ten year expected life of a 1976 standard size car the cost of owning and operating the automobile will be 17.9 cents per mile as compared to 14.5 cents per mile for a 1976 compact over the same period.

It is suggested that the travel reimbursement be made upon the basis of 18 cents per mile for owner used vehicles. No doubt the unit cost in many areas of the state would exceed 18 cents due to the nature of the terrain.

B. Enforcement

The enforcement of orders made to water users through the injunctive procedures provided by the statutes is proving to be very slow and quite costly. Too often it is to the water users advantage to ignore orders, take water in violation of others rights and enjoy the benefits of that water use until the court takes action. The fine, if any, would be much less than the benefits gained from the extra water.

It is suggested that the law should be changed in a manner that would get the offender into court for immediate hearing. This could be done through the issuance of a citation for observed offenses similar to the procedures used by traffic control officers.

C. Water Court

Since the recodification of water law in 1969, many thousands of water rights have been adjudicated through the division water court and many more are awaiting such determination whenever the court is able to get to them. Due to the weight of numbers alone, the division staff cannot physically administer these myriad rights. The situation is further complicated by the complexity of many of the decrees, i.e. subdivision augmentation plans and alternate points of diversion.

The continuing application and adjudication process places an excessively expensive burden upon the owners of the old water rights, many of which may have been established and used more than 100 years ago. Although their rights were adjudicated properly in a timely manner, they must remain constantly alert to encroachment upon those rights by others seeking some court action which could conceivably cause injury to them such as some change in water right application. The individual relying upon an old established water right all too often does not recognize the possibility of injury even though he reads the published resumes, which he likely fails to do through oversight or lack of time. Even recognizing the potential danger he cannot afford to hire the legal assistance necessary to defend what is already his. In the absence of an objection the court is likewise unaware of the problems and, unless a strong consultation objection is raised by the division engineer, the court is likely to approve the application to the ultimate injury of existing water rights.

The above discussion upon the water court situation is included merely to point out some of the problems inherent in the present procedures. No remedy is suggested although some may exist.

XI. MISCELLANEOUS

A. WATER NEWS

We have included in this section the portion of the COLORADO WATER NEWS from the office of the State Engineer, which is put in by the Division Engineer. It is felt that inclusion of these excerpts from the Water News will help to present a more complete picture of Division 1 activities.

Division NO. 1, W.G. Wilkinson, Division Engineer

Crops have all been harvested with good yields being reported. The fall weather cooperated beautifully, with the first snow coming on October 23rd. Winter set in well with the storm of November 19th.

We replaced the old gaging station on the south channel at Balzac recently. We hope it will ultimately be equipped with a Telemark. This will help considerably with administration of the South Platte in the reach from Kersey to Julesburg.

Several days of testimony have been heard in the Water Court on the Bohn Case. This is W-7265 and concerns a well for which application was made to the State Engineer for a permit. The application was denied. Subsequently, on application to the Water Court, a water right was granted by a referee, subject to the Judge's approval. The hearing by the Water Court Judge resulted from the State Engineer's objection. We now await the filing of final briefs and the Judge's decision.

The Orr Case, W-7793, was another important case heard by the Judge recently. Mr. Orr applied for six wells as alternate points of diversion for an 1875 meadow right and 1886 full season right. The City and County of Denver, Weldon Valley Ditch and District 1 Irrigationists Association objected. The objectors contended that the ditch had been abandoned. The decision in this case will no doubt be used in future alternate point of diversion actions.

Central Colorado Water Conservancy District held public meetings in various towns during November. The primary purpose of the meetings was to explain Central's new assessment plan to members and interested neighbors.

Several members of the Division 1 Water Officials Association attended the annual meeting of the State organization in San Luis, Colorado, on November 21 - 22.

The Division Engineer attended a USBR Meeting in November. It was the summarization of annual operations in Western Division Pick Sloan Missouri Basin Program.

The Annual Division 1 Dinner will be held on December 6th in Denver.

All other events on the fall social calendar were eclipsed by the November 14th marriage of Dorothy Wankelman and Jack Neutze. We offer them our heartiest congratulations and best wishes!

The total amount of well replacement water run this year was 5213 acre-feet.

Division No. 1, W.G. Wilkinson, Division Engineer

The Cache la Poudre Water Users Association Plan of Augmentation was heard by the Water Court on January 27th. There was no opposition and Judge Carpenter ordered the decree to be entered. Ward Fischer, attorney for the Water Users is to have a copy of the decree filed with the Court by February 15th.

Arguments were heard on January 7th before the Supreme Court on the Kelly Ranch-Glacier View Consolidated Case. We are now awaiting the decision of the Court.

The GASP annual meeting was held in December and they set the 1976 assessments at \$25.00 per 100 acre-feet pumped.

Central Colorado Water Conservancy District had a booth at the Weld County Farm Show. They had a very nice display set up and reported some success in signing up new members.

Two members of our Greeley office staff became grandfathers again recently. Dugan's daughter, Greta, had a son on December 30th and Ted Bell's daughter, Glenna, had a son on January 6th. Our congratulations to the parents and grandparents!

Division No. 1, W.G. Wilkinson, Division Engineer

Division 1 remains drier than normal. Our first call on the river came in late March. With soil moisture low and the snowpack below normal, it could be a tough year.

We are busy right now getting well augmentation plans lined up for the coming irrigation season. Arrangements are nearly completed for several major plans for the 1976 operations.

The Badger-Beaver Water Conservancy District formation application was signed by the Morgan County Court on Monday, March 22nd. The primary purpose of the district is groundwater recharge.

Mr. Joe Howell retired recently from the Board of Directors of the Lower South Platte Water Conservancy District for health reasons. His sound judgment and wise counsel will be missed.

We welcomed Brenda Rae Liesman to Greeley on Saturday, February 21st. Congratulations to her parents, Ray and Wanda.

Division No. 1, W.G. Wilkinson, Division Engineer

The weather has been generally dry; however, this was broken by a couple of nice, timely rains that got crops going in pretty good shape.

Dates have been set for two additional hearings on damages resulting from the failure of Lower Latham Dam. These will be heard by the Court on November 8, 1976 and January 10, 1977.

Decisions have been handed down by the Supreme Court on the Kelly Ranch and Glacier View cases. These cases may have some long term implications in Colorado Water Law.

The staff has spent quite a bit of time in the field recently checking wells for compliance with augmentation requirements.

As reported in the Dams and Reservoir Section, considerable damage was done to the dams at Barr Lake and Standley Reservoir by high winds recently. Some repairs have already been accomplished and close surveillance will be continued for a while.

We would like to welcome the following new people to the staff: Doug Aab, Engineering Technician; Pat Archey, Hydrographer; Keith Delventhal, Deputy Water Commissioner; Mark Curry, Deputy Water Commissioner; Brent Mefford, Deputy Water Commissioner; Carolyn Vannorsdel, Water Commissioner; and Carolyn Durand, Deputy Water Commissioner.

We wish Tom Aaron a speedy recovery from his recent auto accident.

Our sympathy is extended to Babette Harman, our secretary, on the recent death of her stepfather, but on the other hand, we can also congratulate her on the birth of her second grandson on May 5th.

Division No. 1, W.G. Wilkinson, Division Engineer

The catastrophic Big Thompson flood is our primary news for this reporting period. Precipitation rates of up to 12 inches in a 4 hour period with a peak production of near 5 inches per hour around 8 P.M. on July 31st resulted in an estimated runoff from the 2 square mile Long Gulch drainage area of 18,400 cubic feet per second. Some other preliminary peak flows of interest as computed by the Geological Survey are as follows:

Big Thompson Drainage

Big Thompson below Estes Park	4,330 cfs
Big Thompson above Drake	31,200 cfs
North Fork Big Thompson	9,670 cfs
Tributary near Glen Haven	
North Fork Big Thompson above Drake	8,710 cfs
Big Thompson below Drake	30,100 cfs
Big Thompson at Mouth of Canyon	31,200 cfs

Cache la Poudre Drainage

Deadman Creek near Virginia Dale	7,400 cfs
Stonewall Creek near Livermore	3,470 cfs
North Fork Cache la Poudre at Livermore	9,460 cfs
Cache la Poudre at Mouth of Canyon	7,340 cfs

Although peak flows were at record levels in the mountain or canyon areas, they were of relatively short duration and consequently dissipated rapidly after leaving the mountains. Outflow of the Big Thompson into the South Platte River peaked at approximately 2,500 cfs and the Cache la Poudre outflow similarly was approximately 1700 cfs. None of the flood water escaped from Colorado into Nebraska.

In addition to the many millions of dollars of property damage wrought by the flood was the tragic loss of life. As of September 29th a total of 139 bodies have been recovered with several more reported missing. Among those who lost their lives were Merle and Eleanor Bell, brother and sister-in-law of Ted Bell. We extend our sympathy to the Bell family in this time of sorrow.

Damage estimates for irrigation companies on the Big Thompson and Cache la Poudre Rivers totaled approximately \$500,000.00. This included damage to their diversion works as well as trash and sediment removal from associated facilities. In addition, the cost of replacing the siphon across Big Thompson Canyon is estimated at \$459,000.00. Anticipated completion date of the siphon is October 15, 1976.

In spite of the extensive damage to diversion and ditch facilities, very little crop damage resulted from the flood. This was due to the quick action of the ditch companies and their personnel in effecting temporary repairs and to the cooperative efforts of the farmers, contractors, ditch companies, the Northern

October 1, 1976 (Continued)

Colorado Conservancy District, the Bureau of Reclamation and our Water Commissioners in taking the maximum advantage of exchanges, emergency facilities, alternate supplies and available equipment. Our sincere appreciation goes to all those whose tireless and unselfish efforts served to reduce the injury caused by the flood.

The water supply for a large part of this irrigation season was on the short side. Many farmers, however, are reporting the highest yields of their lives. Farm prices are down substantially on many crops this year and production costs continue to climb, which, in spite of record production, has tended to reduce farm income.

A complaint has been filed in Water Court as a result of noncompliance with an order for the regulation of ground water diversions. Hearing has been set for October 21, 1976.

Lamm suggests charging for mine, dam inspections

By CLAIRE COOPER

Gov. Dick Lamm proposed Tuesday that mine and dam operators be charged for their inspections by the state.

The fees would offset the state's cost of employing 12 mine inspectors and six dam inspectors.

The governor made the suggestion after reviewing the 1976-77 budget requests of the Department of Labor and Employment on Monday and the Department of Natural Resources on Tuesday.

In a budget meeting with Natural Resources officials, Lamm noted that the state employs just one public school inspector through the Labor Department. The mine and dam inspectors are employed through Natural Resources.

Looking at the dam inspection program, Lamm asked, "Is that a societal priority?" State Engineer Clarence Kuiper argued it was a priority because dam failures could

cause "millions of dollars of property damage and possibly loss of life." He pointed out that subdivisions have been built below some dams along Jewell Avenue. He said that with six inspectors the state now is able to inspect about 1,000 high-hazard dams out of 2,890 dams in the state.

Lamm said most of the dams are on private land and the state's inspections benefit the dam owners. "Why should we pay for it?" he asked. "How about charging fees?"

"I'd be very happy to," Kuiper answered. "Let's put it in the law."

Lamm made the same argument about the cost of mine inspections. "We provide a service to a mine by inspecting it," he said. He called the free state inspections a "subsidy" of an

industry that "isn't paying taxes," referring to the fact that mine operators in Colorado don't have to pay the state a severance tax on the minerals they extract.

"I'm intrigued about how many of these costs that benefit industry are being sloughed off on the taxpayers," the governor said. He directed Harris Sherman, director of the Department of Natural Resources, to look for a way to make the mine operators pick up the tab for inspections.

Sherman said the state mine inspection program was justified because mining is the most dangerous industry and mining activity in Colorado will "double, triple or quadruple in the next 10 years." He noted a 35 per cent increase in the mine accident rate in the last two years.

Sherman's proposed departmental budget includes requests for \$885,000 for new program or program expansions. The department's highest priority, he said, is improved mine reclamation.

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The 1975-76 budget includes \$60,000 for reclamation. Sherman is asking \$160,000 in 1977. He said that Wyoming, which has less mining activity than Colorado, has a reclamation budget of \$360,000.

Colorado has 600 mines "that we have control over whatsoever," Sherman said. There is no reclamation monitoring, he said. "We simply grind out permits."

The department's other high budget priorities are mine safety, improvement of the state system and the purchase of wildlife habitat.

Refilling of Lake Begins Today

Loveland - Reporter Hereby 12-5-75

Lake Loveland, which has taken on the appearance of a large pond during the fall months, will begin looking as it once did today at approximately 1 p.m. as 9,000 acre-feet of water will begin to flow into the lake.

Zenas C. Blevins, chief of water and land operations for the Bureau of Reclamation, said that the run of the water was made possible through close cooperation and planning between the Bureau of Reclamation, Northern Colorado Water Conservancy District and the Water Master. The Greeley-Loveland Irrigation Company has completed repairs on the

filled during the next two weeks as the 9,000 acre-feet are delivered.

He said that the running of this water represents a special condition. Arrangements for the run were made early last summer between the Bureau of Reclamation, Northern Colorado Water Conservancy District and water master Lloyd Blewitt.

The irrigation company had maintenance work to do on the lake's outlet works and by requesting assistance from the Bureau and the Conservancy District, they were able to evacuate Lake Loveland to do work and still get their lake refilled.

Cooperation

"Such cooperation as this is just wonderful. I would say that there is very good cooperation between the irrigation entities in this area and we are all for making it even better. We all recognize that if we are to keep these

To Be Filled

Blevins said that Lake Loveland is expected to be

irrigation systems running smoothly and keep irrigation waste to a minimum—we have installed some special icing to be sensitive to each other's problems and help each other out," Blevins said.

Blevins continued saying, "We are almost as excited about making this run to Lake Loveland as the residents around the shoreline are to see the lake refilled. A run at this time of the year is something new."

First Time
This is the first time since the project has become operative back in the 1950's that we have been requested to icing.

Blevins said that if problems occur, they usually do so early in the run but he said, "Once we get started, we don't anticipate any problems due to

Wed., Dec. 10, 1975 GREELEY (Colo.) TRIBUNE

Narrows impact statement is filed

DENVER (UPI) — A draft water in Sedgwick, Adams, wildlife resources. environmental impact statement on the Narrows Unit in northeastern Colorado has been filed with the Council on Environmental Quality, the regional director for the Bureau of Reclamation said today.

The project calls for construction of the Narrows Dam and Reservoir and other facilities to provide project environmental impact statement on the Narrows Unit in northeastern Colorado has been filed with the Council on Environmental Quality, the regional director for the Bureau of Reclamation said today. Officials said it would supply supplemental irrigation water and provide flood control, recreation and conservation and development of fish and

Reclamation regional director Joe Hall said the draft statement describes the Narrows Unit purposes and features and proposed projects. The project, which has been studied for several years, would be a multipurpose water resource development program. Officials said it would supply supplemental irrigation water and provide flood control, recreation and conservation and development of fish and

Public hearings will be held in Fort Morgan Jan. 13 and to receive comments.

Farmers protest 'harassment' from cities over Standley Lake

By LYNN HEINZE

Tribune Staff Writer 12-9-75

WESTMINSTER — A group of farmers representing shareholders under the Farmers Reservoir and Irrigation Company filled the city council chambers to capacity here Monday night to protest "repeated attempts of intimidation by public officials" of the city and to call for a cooperative attitude in the development of water resources.

The group, calling itself the Farmers Defending Our Rights Committee, was made up of farmer-shareholders of the Farmers Company's entire system, including users under the contested Standley Lake division.

The group decided to appear at the Monday night session in an effort "to make the citizenry of the city aware of where some of their money was being spent, prior to the sales tax election issue slated to go before the voters Tuesday."

The Standley Reservoir has been the subject of condemnation attempts by the cities of Westminster and Thornton since late 1973. Although Westminster has access to more than 12,000 acre feet of storage in the Standley under contractual agreements with the company, it "stands in line" behind the city of Thornton in the condemnation actions.

The condemnation action filed by Thornton was stayed earlier this year when a group of shareholders appealed to the Colorado Supreme Court to join all water users in the action. The high court upheld the appeal and ruled that all of the individual shareholders "are faced with having their farmlands denied a substantial source of water.

"No court can ignore the magnitude of disruption which would result in a successful condemnation action," the court said in its decision of Sept. 29.

"We come before you tonight as farmers under the irrigation system," committee chairman Bud Johnson told the Westminster officials. "We represent the entire system, not just the Standley users. We have prepared this statement; it was not the work of an attorney. We come before you to inform you and the citizens of this city," Johnson said as a preface.

In the prepared statement, the committee noted that while this area was first explored by trappers, miners and lumbermen, the first permanent settlers to come on the scene "were the nation's first conservationists: the farmers.

"The farmer lived on the land and is, of necessity, a part of the land. He recognized immediately his responsibility to his land and his environment and knew that if he upset that delicate balance, he would not survive," Johnson said.

Then Johnson outlined the development of the vast systems of irrigation which turned the arid lands of Colorado into one of the nation's leading producers of food.

"Water is the life blood of the agricultural community and as such those same water resources must meet the needs of all of Colorado's inhabitants with regard to necessity, economic impact, productivity, beneficial use and environmental considerations," Johnson said.

He said that Westminster and Thornton had seen fit to attempt to acquire more water through the condemnation actions, "apparently with the idea that the water they want is excess water, or water which is being wasted."

forced upon the citizens or your community, as well as we, the farmers, defending our rights.

"We are here to honestly state that we need our water to continue our vital occupation. We assure you that we will not succumb to your repeated attempts of intimidation," Johnson concluded in the prepared statement.

Then, during a questioning period which followed, the farmers group was told that the water was needed by the city.

In response, Johnson said, "The water is essential to us, as farmers, and to you. We are talking about water that is being used every year to produce food and fiber. And we realize it is essential to the future of both parties.

"It is a limited resource which must be used wisely. You have the land for growth, but you must realize that water is the limiting factor of growth. You cannot turn vast agricultural areas into arid dryland.

"Perhaps it is time to listen to those who say that we cannot have the populous state here which may exist in other parts of the country. But we can only hope to work toward a feasible solution in a spirit of cooperation.

"Fighting in the courts has been a waste of money and has accomplished nothing. But by working together, we may be able to find a solution to our mutual problems," Johnson concluded.

But he noted that the water "beneficially used by farmers to produce food and fiber to the benefit of all of the community.

"The parties to the suit expended in excess of \$1 million dollars in the litigation so far, Johnson said.

"We are concerned for those who wish to point out to you that we are upset with the tremendous legal costs

Court here rules

State engineer can't be party in adjudications

By FRANK COLOHAN
Tribune Staff Writer

Colorado's State Engineer has no statutory authority to appear as a party adversary in water adjudication cases, District Judge Donald A. Carpenter ruled in an order signed Monday.

As a result, Judge Carpenter, water judge for Water Division No. 1, granted a motion for dismissal of a protest filed by C.J. Kuiper, state engineer, and W. G. Wilkinson, division engineer, to a water referee's ruling.

Dismissal of the protest had been asked by attorneys George Vranesh and Stephen T. Williamson, representing the applicants in a water rights

adjudication case involving a well in Boulder county.

Attorney David J. Miller of Greeley, as counsel for the St. Vrain-Left Hand Conservancy District, an objector in the case, also had filed a motion for dismissal of the state engineer's protest.

Both Vranesh, of the law firm of Vranesh & Musick at Boulder, and Miller had contended in briefs filed with the court in support of their motions that the state engineer's authority is limited to administrative and executive functions.

In his order, Judge Carpenter found the state engineer is the officer designated by the laws of Colorado to administer

decrees adjudicated by the courts of the state.

Further, the order said, the state engineer is required by statute to act as investigator for the court concerning all applications for underground water decrees, and as an advisor to the court in relation to such matters.

"The court, after very careful review of all of the law pertaining to the state engineer's duties in matters relating to adjudication of underground water rights in particular, and water rights generally, finds that the state engineer has no standing in the court as party adversary in the adjudication of water rights, and to undertake to seek such a standing would

be in conflict with the other statutory duties heretofore set forth."

Judge Carpenter's order appeared to support contentions of Vranesh in his brief. These included that the Colorado General Assembly has not specifically delegated the power to the state engineer to file protests in water cases.

Vranesh argued additionally that it would be unconstitutional for the state engineer to appear in a case as an adversary party when he has a specific statutory mandate to appear in these matters as an advisor to the court.

Kuiper reportedly has filed protests as an adversary party in water cases in a number of instances since being appointed state engineer.

Judge dismisses condemnation

Condemnation action brought against the Farmers Reservoir and Irrigation Co. in Boulder and Southwest Weld County by the City of Thornton was dismissed in Jefferson County Court today.

In making the dismissal order, Judge Roscoe Pile said that procedures under a 1974 state law were not followed in filing

action involving shareholders of the company as ordered by the Colorado Supreme Court.

Following dismissal of the supplementary action, Pile then ruled that the original suit, naming only the Farmers company, could not be pressed because it did not involve individual shareholders.

Supreme Court ruling

Federal courts not barred from water suits

WASHINGTON (UPI) — The Supreme Court today unanimously held that federal courts have power to rule on water claims by the United States even though state agencies are considering the same claims. The ruling was a blow for Colorado and 16 other western states which argued that "water right determination is a paramount state concern" in the arid West and should "not be frustrated by the interference of the federal courts."

Although holding that federal courts have power to intervene to determine rights of the federal government to water supplies for national parks and Indian reservations, a six-man majority ruled that in the present case, involving only Colorado, a ruling on the government's claim should be made in the state courts.

But the majority opinion by Justice William J. Brennan Jr. emphasized that although federal law permits state courts to rule on water claims by the United States, the same law does not bar federal court jurisdiction.

Colorado had brought the high court appeal contending that water regulation in the West is traditionally a state matter. The U.S. Court of Appeals in Denver ordered a federal district court to hear the federal government's water claims despite a suit on the same water rights pending in Colorado courts.

Brennan's opinion reversed the appeals court decision, thus allowing the claims to be litigated in Colorado courts, but did so on narrow factual grounds peculiar to the Colorado case. Three justices — Potter Stewart, Harry A. Blackmun and John Paul Stevens — dissented from the final order but agreed with Brennan that there is no legal bar to federal court action in all water rights cases.

The United States initiated a suit in federal court in 1972 seeking to determine its rights to waters in the San Juan River, which feeds the Colorado River. It sued 1,000 water users on behalf of the Ute Indian Reservations, Mesa Verde National Park, Hovenweep National Monument and the San Juan National Forest.

Colorado, like most western states, has established special procedures for determining claims to precious water supplies, and when a similar lawsuit was filed in state court, the federal agency re-

framed the higher costs, a federal obligation now at \$144.36 million.

George Stapleton, information officer for the bureau's Lower Missouri regional office in Denver, said the congressional report showed a higher cost because of a different method of production by the project.

States in all cases. The justices unanimously agreed this was not the situation under federal law.

Today's decision allows the federal water claim to proceed in the state court, but Colorado and the other western states had hoped the justices would hold more broadly that states have primary jurisdiction over water claims by the United States.

Colorado Environmental Legal Services, which made the cost figure charges, said that the project should go back to Congress for new approval of the costs or spending should be reduced to stay within the limit. Despite the higher costs, a federal obligation now at \$144.36 million.

The Committee on Government Operations report to the U.S. House of Representatives lists the total authorization for the project at \$124.65 million which was appropriated by Congress. The report lists total federal obligation now at \$144.36 million.

Opponents charge Narrows under-funded

FORT MORGAN, Colo. (AP) — Opponents of construction of the Narrows Dam project near here charged Wednesday that the project is \$20 million over the amount Congress approved and should go back to Congress to be approved again.

A group of landowners claims the costs will be even higher because the Bureau of Reclamation, the federal agency re-

sponsible for construction of the dam, has miscalculated the costs. Colorado Environmental Legal Services, which made the cost figure charges, said that the project should go back to Congress for new approval of the costs or spending should be reduced to stay within the limit.

Despite the higher costs, a federal obligation now at \$144.36 million.

George Stapleton, information officer for the bureau's Lower Missouri regional office in Denver, said the congressional report showed a higher cost because of a different method of production by the project.

"cost indexing" used by the report and the one used by the bureau.

Cost indexing, he said, involves including inflation factors and cost increases since congressional authorization.

He said the bureau's cost indexing puts the cost at \$139 million, several hundred thousand below the authorization including cost indexing.

The landowners group opposing the project say the costs will be even higher because the bureau has miscalculated costs on railroad and highway relocations and the amount of irrigated land to be taken out of production by the project.

Irrigators hear effects of Narrows

GREELEY (Colo.) TRIBUNE Fri., March 12, 1976

By LYNN HEINZE
Tribune Staff Writer

HUDSON — The Narrows Reservoir project, long sought after by area irrigators and often hotly contested, was the main subject of discussion during a regular monthly board meeting of the Central Colorado Water Conservancy District here Thursday night.

Bureau of Reclamation officials appeared during the meeting to further explain the project, answer allegations concerning its benefits and construction and discuss the contracting procedures to be used by the federal government and the two water districts involved.

Both the CCWCD and the Lower South Platte Water Conservancy District would share the joint-use pool proposed for the project.

The Narrows project would be located about seven miles west of Fort Morgan on the South Platte river. With a total estimated capacity of about one million acre feet, the structure would be designed to meet irrigation, flood control and recreation criteria, the bureau officials said.

The project has come under fire during recent months by the Regional Landowners Group of Weldona. The group consists mostly of Weldon Valley residents whose land is included in the proposed "take" area of the project.

Answering objections posed by the landowners group, the bureau said:

—The total take area amounts to less than 43,000 acres of land, compared to the 57,000 acres estimated by the group. The bureau said the land consists of 13,990 acres of irrigated crop land, of which 6,500 acres would be permanently lost to production.

More than 7,400 acres, the bureau said, could continue in production, subject to Colorado Division of Wildlife leasing policies, with the chance of occasional flooding.

"The 6,500 acres of irrigated land which would be permanently inundated represents about 2.3 per cent of the 287,000 acres within the project service area," the bureau said. The 287,000-acre service figure includes lands both up and

downstream which would benefit from the project's storage.

Upstream lands would benefit under a plan of augmentation proposed by the CCWCD to allow the full use of wells under the district's groundwater sub-district. Water under the plan would be "exchanged" for well depletions upstream from the Narrows, CCWCD officials said.

—Lands classified by the landowners group as "prime agricultural lands," the bureau said, are actually considered as less than prime by the bureau's land classification surveys.

—Loss of income to the Morgan County area from the loss of agricultural lands would amount to about \$3.3 million, based on yield averages and crop returns, not the \$7.3 estimated by the landowners. The bureau further estimated that the net increase in gross farm income because of the assurance of supplemental water in the Narrows would amount to about \$15.4 million in the Morgan County area.

Continued on page 2

Continued from page 1

—The Hardin site would require more expensive construction because of differences in the soil strata which would require different construction techniques.

The bureau said a smaller dam at Hardin, as proposed by the landowner's group, would not decrease many of the costs associated with the Hardin site, because of the need to design a dam which is structurally safe from the infrequent large floods.

—The Monfort of Colorado feedlot facility would have to be relocated under either the bureau or landowner's criteria for a dam at Hardin. Under the bureau's plan, the area could be inundated under high flood conditions while pollution potential existed under both plans, the bureau said.

—A smaller dam at Hardin, the bureau said, would not meet the same needs as the Narrows dam. The large spillway required by such a structure would "negate any flood benefits and be exceedingly expensive."

—Total land acquisition for the Narrows site would include about 42,465 acres, compared to an estimated 48,000 acres for the Hardin site. The area permanently inundated by the Narrows would include about 6,500 acres of irrigated land, compared to 7,000 at Hardin. Some 7,400 acres could continue under production at Narrows, compared to 4,900 acres in continued production under the Hardin site.

—A dam at the Hardin site could affect pelican nesting areas at Riverside, since that area would be drawn down to create marsh habitat areas. The loss of Empire and Riverside to habitat, the bureau

said, also forces increased size for the Hardin site, while storage in the two reservoirs is continued under the Narrows plan.

The bureau now estimates an average annual water yield from the Narrows project of about 133,000 acre feet, based on extended hydrologic data. It said the data would indicate that 133,000 acre feet could be delivered in 66 per cent of the years, based on analysis of water flow at the site from 1947 until 1974.

In less than eight per cent of the years studied, would the deliverable water yield fall below 100,000 acre feet, the bureau's survey showed.

Another purpose of the meeting with the CCWCD board Thursday was to conduct "exploratory discussions" on potential contracting methods for the Narrows unit.

While these "discussions" are not to be considered binding at this time, the bureau noted, they did represent the "current thinking along the lines of a contractual agreement between the United States and the water conservancy districts."

The bureau said that updated estimates now indicate that the Narrows unit would provide a net benefit of about \$4.1 million annually, compared to the \$1.6 million estimated several years ago. As a result, the bureau is now recommending a water charge of \$5.93 per acre foot to cover the costs of construction and maintenance for irrigation use, compared to the \$4.57 previously recommended.

But even though the charge has been estimated upward, the total share of the project supported by irrigators would drop from 92 per cent to 42 per

cent, under the revised estimates, mainly because of a three-fold increase in the estimated cost of construction of the unit.

"One way of looking at this is that the remaining 53 per cent, or more than \$40 million will have to be imported into the state to cover costs," the bureau said. The amount would be imported, since the deficit usually comes from the power revenues which would be derived from other sites outside Colorado, the bureau noted.

In the exploratory discussion on contracting the bureau suggested to the districts that a flexible water service contract be drawn, instead of the usual fixed payment base used in such projects.

The proposed contract would be based on a 12.5-87.5 per centage split in water and costs between the two districts, with LSPWCD getting the larger share.

The suggested split, based on hydrologic data, would yield the CCWCD about 16,625 acre feet, compared to the 15,000 acre feet earlier estimated for the district.

The proposed contract would include a maintenance component and a construction component. Since such agreements are based on user ability to pay, the amount of payments each year could vary with adjustments at given increments.

It was suggested that the construction component could be adjusted downward prior to delivery of water, depending on the amount of Weldon Valley ditch rights obtained.

Then the annual payments could be altered after a certain period of time (to be determined later when the contract is drawn) to reflect changes because of: new hydrologic information; the net effect of

reservoir seepage; data verifying or adjusting river loss; salable return flows hydrologic factors based on operating experience, or significant change in the water user's ability to pay.

The bureau's current schedule calls for it to submit a proposed contract for approval by Washington, D.C. Bureau officials by mid-March negotiations with the district by early April and approval of the Secretary of the Interior by June 1.

Commissioner Has To Get Water To Rightful Owners

By BEVERLY BUTMAN
Camera Staff Writer

LONGMONT — Water is a precious commodity in the arid West. And the men who control its flow hold powerful positions.

Unless District water commissioners for the Colorado Division of Water Resources

open the gates to irrigation ditches, city water systems, or industrial water intakes, the water doesn't go in.

But there are some things a water commissioner can't do. For instance, when the St. Vrain River flooded in 1969, a woman called Donald Q. "Stix"

Palmer, the St. Vrain water commissioner, and asked him to shut down the river.

Her cattle were stranded on an island formed when the river split into two channels near Lyons, and she wanted to get them off, she told Palmer.

"The guy who caused this doesn't have a phone," Palmer replied.

"Who's that?" the caller asked angrily.

"The man upstaris," Palmer said. The woman hung up.

Lower Than Normal

This year, Palmer is dealing with the opposite problem. Runoff from mountain snowfields is expected to be only 80 per cent of "normal" (the average from 1958 to 1972).

About 94 per cent of the water in the St. Vrain River and Left Hand Creek, the drainage included in District 5 that Palmer controls, is used for agriculture.

Ditches like the Hayseed Ditch, which has water rights dating back to Jan. 1, 1860, will always receive the full amount of water in their allocations. But the Longmont Supply Ditch, with 1878 water rights, and the Highland Ditch system, with 1871 rights, may receive no "river water" at all in dry years.

"The last real, real dry year was 1954. Longmont Supply had water 20 minutes for the whole summer," Palmer said.

"Big T water was their salvation," he added. Longmont Supply, Highland, and other ditches with junior water rights have storage reservoirs and Colorado-Big Thompson Project (Big T) water diverted from the Western Slope to use in dry years, the water commissioner explained.

Giving the older ditch companies their full share of water while completely cutting off the newer ditches may seem unfair, but it's the way Colorado water law says it's to be done, Palmer explained.

Palmer speaks of water law almost with reverence, and he calls his worn book listing ditches, dates of water rights, and the amount of water they are entitled to as his "Bible."

Going By Law

No one disputes his decision when he shuts the water off from one ditch and turns it on for another, Palmer said. Farmers know the water law, and they know Stix Palmer is going by the law.

According to Colorado statues, water for municipal and domestic use receives top priority, followed by irrigation, manufacturing and industrial, and storage, in that order.

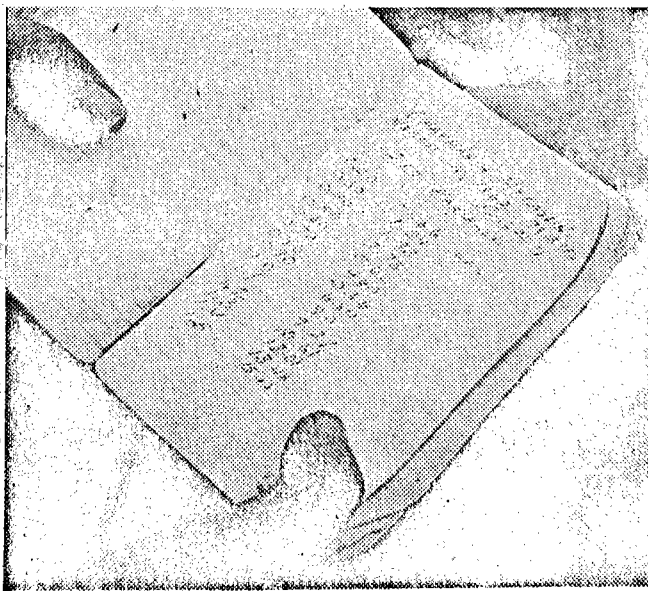
On the St. Vrain River, the City of Longmont takes water out at Buttonrock Dam and the Town of Lyons has its municipal water intake a couple of miles down from there. Between Lyons and Longmont, several ditches have diversion gates. The Great Western Sugar sugar beet processing factory east of Longmont is an example of a third priority user. It uses a great deal of water in the late fall, after farmers' crops are harvested.

Palmer has a deputy, Melvin Hodgson, who regulates water use on the St. Vrain below Longmont. Most of the water on the lower half of the river is "return" water that has flowed through irrigation ditches or the municipal water systems higher on the river, Palmer explained.

Water Purity

The U.S. Environmental Protection Agency (EPA) is considering implementing a 1972 federal water purity standards law that would require farmers to build holding ponds and remove dirt and agricultural chemicals from irrigation water before putting it back into the river for use by other ditches.

Costs of treating the water would be enormous, and holding



Water commissioner's "Bible" lists ditches, water rights and the amount of water those rights entitle the user.

cont'd next page

ponds would keep water from reaching users further down the river.

The law wouldn't affect farmers in the East who have enough rainfall to raise their crops without irrigation, even though rain water also runs off into streams.

"The EPA law will disrupt the whole system if it's enforced. A lot of ditches will never get any water," Palmer said.

There are 55 ditches and 85 lakes and reservoirs in Palmer's District 5. He checks them often to make sure the water is being used properly

and the dams are in good condition.

Power To Shut Water Off

If Palmer finds water standing in ditches, crops being watered too heavily, or some other abuse, he has the power to shut the water off from the ditch involved.

In the 12 years he has been working in District 5 (the first four as deputy commissioner), he has never had to take anyone's water away for "non-beneficial" use, he said.

"The farmers are really careful with the water," Palmer said.

Palmer knows almost all the farmers on the upper half of the St. Vrain and Left Hand drainage. He was born in Longmont and attended Longmont schools. He has always lived near Longmont and Lyons.

As a basketball and football player at Longmont High School, his 6 foot 3, 140 pound frame earned him the nickname of "Stix."

He isn't that skinny any more, but he still has the nickname.

Until 8:30 every morning, Palmer is home to take calls from ditch riders (employees of large ditch companies) and farmers requesting water for various ditches. Then he gets in his pickup and drives to the ditch headgates to turn the water on. On the way, he looks at ditches to make sure the water is being put to good use.

If someone needs to get a message to him while he is on the road, the City of Longmont will relay a message on the city radio in Palmer's truck.

"I'm on call all the time. It's no 8 to 5 deal," Palmer said.

During the winter, when the ditches aren't running, Palmer lets water into storage reservoirs, provides water, and does bookwork.

Palmer is often accompanied by his five-year-old grandson, Shane. Shane's mother was killed in an automobile accident when he was an infant, and he has lived with the Palmers since then.

Palmer's wife Marilyn is an artist and interior decorator. Their children are grown.



"Stix" Palmer has been looking after St. Vrain water for the past 12 years.

Wind damages second Denver area dam

DENVER (AP)—Wind-whipped waves have been blamed for major damage to a second dam in the Denver area, State

Engineer C.J. Kuiper said Wednesday.

Kuiper said waves ripped the rock facing off the top of an earthen dam at Stanley Lake northwest of here.

On Tuesday, waves smashed a concrete facing on a dam at Barr Lake northeast of here and eroded a hole 20 feet deep in the side of the earthen structure.

Kuiper classified the damage

to both facilities as serious, but said that no evacuations have been ordered. Crews have been dispatched to both sites and repair work is in progress, he said.

Kuiper said the damage at Stanley Lake was limited to the rock facing which shores up the earthen dam. The dam is about 30 feet thick at the point of the damage, he added.

At Barr Lake, up to 500 cubic feet of water per second is being released to drop the level of the lake several feet to accommodate repairs, Kuiper said.

Kuiper said a hole 30 feet

wide at the waterline resulted from erosion caused by waves on Monday night.

The hole is being filled with large rocks and other emergency fill material during the drainage, Kuiper said. After the level is dropped, the hole will be reinforced with concrete, he said.

Barr Lake holds 30,000 acre-feet of water and Stanley has a capacity of 42,000 acre-feet, but officials said it was not full.

Both dams are owned by the Farmers Irrigation & Reservoir Co.

NCWCD quotas may be raised

Unless there is above average rainfall in the district or on Eastern Slope watersheds, the supplemental water quota for Northern Colorado Water Conservancy District (NCWCD) irrigators will probably need to be increased, the NCWCD board of directors was told at its June meeting.

Bob Smith, operations and maintenance superintendent, reported that while the total May precipitation over the farm area of the district was 103 per cent of average, the precipitation on the watersheds was only in the 50 to 60 per cent

range. "Although the overall rainfall was above average," Smith said, "it came in one heavy rain that was spotty in the irrigated areas. The storm did not register significant snow or rain in the watershed areas."

The district forecast made on April 1 that district allottees would need to draw heavily on supplemental storage water is being borne out as the season progresses. A quota of 80 per cent was set at that time.

Earl Phipps, secretary-manager of the NCWCD, said the water demand will probably

deplete Big-T Project storage reserves by 100,000 acre-feet this season, if the weather remains dry. "But that's what the reserves are for," Phipps noted.

Heavy demand for supplemental water to date has mostly been in the southern areas of the district, according to Smith.

Stream peaks, reached by June 10 have been about half the volume of a year ago. With little snowpack left, the peak flow dates will probably stand for the season, Smith said.

Water storage in system

reservoirs on June 1 was 112 per cent of average, with a total of 548,985 acre-feet in the active reserve. This compares to 537,064 acre-feet on June 1, 1975. Project reservoirs are Granby, Horsetooth, Carter Lake and Boulder Reservoir.

Tributary reservoirs, those on these Eastern Slope streams, Cache La Poudre, Big and Little Thompson, St. Vrain and Left Hand, and Boulder Creek, have 105 per cent of average active storage, totaling 290,934 acre-feet. This is almost exactly what it was a year ago, Smith said.

Narrows study 'inadequate'

DENVER (AP)—A U.S. Bureau of Reclamation (BOR) environmental impact report on the proposed Narrows Dam in Morgan County has been rated "inadequate" by the U.S. Environmental Protection Agency (EPA).

An EPA letter made public Saturday by Colorado Environmental Legal Services, an organization opposing the project, said, "EPA feels that the draft EIS does not present enough information to adequately

analyze water quality issues or project alternatives."

The letter was written by John A. Green, regional EPA administrator, to E.F. Sullivan, acting Bureau of Reclamation commissioner.

The letter said some of the environmental statement's conclusions concerning water quality of the South Platte River once the project is completed "cannot be made on the basis of the data presented."

The letter also said the dis-

cussion of possible alternatives to the project "is rather cursory and subjective."

The proposed water project is opposed by a group of local landowners who claim its construction would reduce area agricultural farm income.

But BOR figures estimate the project would increase gross farm income in the area by \$15.4 million annually.

The estimated cost of the project, including a dam and reservoir near Fort Morgan, is \$139 million.

Water from canyon walls reportedly streamed into collapsed Teton Dam

TRIBUNE 7-21-76
BOISE, Idaho (AP)—Government photographs taken hours after eastern Idaho's Teton Dam collapsed June 5 show water streaming from the canyon wall into the area where the dam had been, the Idaho Statesman reported in a copyrighted story today.

The dam's failure loosed a wall of water that caused more than \$1 billion in damages in communities on the Teton and Snake rivers.

The Boise newspaper quoted officials of the Bureau of Reclamation, which operated the ill-fated dam, as saying the four-foot-wide stream consisted of water which had seeped from the filling reservoir into the porous canyon walls. Gravity was bringing the water back.

Harold Arthur, bureau design and construction director, said the agency did not think the stream and a dozen like it also seen flowing into the reservoir June 5 were unusual, the Statesman reported.

The paper said its reporters asked a spokesman for an independent investigating panel if water could have been flowing into the dam from the stream before the earthen structure collapsed.

Robert Jansen, executive director of the panel named by the federal government and the state of Idaho to probe the collapse, replied by saying the dam was built to take some water on its upstream side. That is where the stream appeared to come from, based on examination of the Bureau of Reclamation photo, the Statesman said.

The newspaper said the flow appeared to be coming from an area just upstream and below the dam's right abutment grout curtain, designed to keep water from seeping into the dam and eroding it.

Bureau officials say they

can't pinpoint the exact location of the stream and its flow per minute. Jansen said his panel is studying the significance of the watercourse.

He said he would have been more alarmed if water had been coming out downstream from the grout curtain, because that would have indicated water could have gotten into the dam's downstream side.

Approximately six per cent of the water flowing into the reservoir was "being lost to seepage or to bank storage" as of March 3, according to a memorandum to Arthur from dam

project manager Robert Robison. Six per cent of the 80 million gallons of water impounded before the dam broke, would be 4.8 million gallons that could have seeped into the canyon walls.

Bureau officials said before the dam was built that such seepage would occur because of cracks in the walls.

The Statesman said no estimates were available on how much water the springs noted June 5 returned to the reservoir area. But the newspaper said observation wells showed a sudden rise, up to seven feet per

day, two weeks before the dam collapsed.

Officials said the rise could be attributed to water leaking from the reservoir, the Statesman reported.

Three springs were found two days before the dam fell in, the newspaper said. One spring, on the canyon wall 300 feet from the toe of the dam, flowed 20 gallons per minute. Another leak was 2,000 feet from the bottom of the dam and flowed 60 gallons per minute. Another was 1,500 feet from the dam and released 40 gallons per minute.

RMN 6-23-76

Safety last

"NO WATER RESOURCE project in the history of Colorado has been more thoroughly evaluated."

— Gov. Dick Lamm, Feb. 26, 1976, urging "immediate" construction of the Narrows Dam Project.

SEEPAGE CONSTITUTES "a serious threat to the safety of Narrows Dam."

— State Engineer C.J. Kuiper
Memorandum, June 16, 1976

EVEN BEFORE the question of safety suddenly loomed large in everybody's mind, Gov. Dick Lamm would have to admit his endorsement of the Bureau of Reclamation's controversial project just up the South Platte from Fort Morgan was just a bit premature.

After all, three of his own administrative agencies had yet to report the results of their own critical studies of the project.

But at the time the aroma of federal porkbarrel dollars was threatening to fade, and Sugar City and Rexberg were nothing but two tranquil farm towns in Idaho, just downstream of Teton Dam.

We are disturbed that it took the June 5 disaster at Teton Dam to alert the Lamm administration to the possibility that a so-called "thorough evaluation" of the Narrows proposal had somehow overlooked a fundamental question of geological suitability of the site.

Only in retrospect, apparently, was that

question deemed worthy of serious investigation by the Colorado state engineer, and only then did he discover enough to deem the matter "serious."

To be sure, the BOR, which still hopes to build the dam, must have done the necessary studies, as it presumably did for the 250 earthen dams it has already built in the past 75 years. But one of its most recent such studies approved construction of the ill-fated Teton Dam.

Kuiper says he wants BOR's reassurance that its Narrows Dam design fully respects the site's geologic drawbacks. So do we. It's now obvious such matters can't be taken for granted.

Allard Cattle Co. files suit over alleged Riverside flooding

A complaint for damages and a mandatory injunction has been filed in District Court by the Allard Cattle Co., Rt. 1, Kersey, against the Riverside Reservoir and Land Co. as a result of alleged flooding.

The cattle company, a partnership composed of W. D. Farr of Greeley, George L. and Roxana E. Allard of Kersey and George L. Allard & Co., is owner and operator of a ranch of about 20,000 acres in the Hardin area.

Riverside Reservoir and Land Co. operates Riverside Reservoir and, according to the plaintiff's complaint, also operates an intake canal with its headgate on the South Platte River. The canal, which carries water to the reservoir north of Masters, traverses about seven miles of the plaintiff's ranch.

The complaint claims that on the evening of last Nov. 30 and the morning of Dec. 1, the reservoir company permitted a full head of water to run unsupervised in the canal which at the time was filled with ice in many areas.

As a result, two major ruptures occurred in the canal on the plaintiff's ranch, causing gross flooding and substantial damage to the ranch, it claims.

This included washing of sand

and debris over a large number of acres; ponding and eventual freezing of water in hay and grass land, resulting in a loss of production; destruction of roadways on the ranch; damage to and loss of fences; excessive moisture in calving areas, resulting in an abnormal death loss of livestock; substantial seep problems; loss of valuable duck hunting grounds, with an accompanying loss of income; and the expense of labor, material and seed needed to clean up and rehabilitate the flooded areas, the complaint states.

The cattle company seeks a judgment of \$50,000 plus an additional sum for loss of future income by reason of damage to farm ground which will be unable to adequately produce for several years, according to the complaint.

In a second claim for relief, the plaintiff alleges that large sections of the canal portion that traverses the ranch have received little maintenance or repair in past years.

As a result, it is claimed, there are areas of vulnerability to future damage that are adjacent to the residences occupied by the plaintiff and the plaintiff's employees, placing their per-

sonal safety and property in jeopardy.

The complaint asks the court to issue a mandatory injunction requiring the defendant reservoir company to stabilize the canal's embankment in all areas where the canal traverses the plaintiff's property.

For Allard use of Riverside Ditch

Commissioners OK

water delivery

fee hike

Exercising a rarely used board power under state law, the county commissioners have ruled that Allard Land and Cattle Co. should pay an annual water delivery fee of \$1,000 to Riverside Reservoir.

The commissioner action came on a 4-1 vote, with Commissioner Roy Moser dissenting. Action increased the fee due from Allard from an historic \$600 annually, but was less than an increase to \$6,000 annually sought by Riverside officials.

Moser later said he voted "no" because he felt the historic \$600 annual fee was adequate, and that previous continuity of that rate between the two parties substantiated it. Officials noted Allard uses about a mile of the 11-mile Riverside ditch from the South Platte for delivery of its water

Commissioner Glenn Billings later said the \$1,000 fee settlement appeared proper due to natural increase in ditch maintenance costs over the years, but that the larger amount proposed by Riverside did not.

Commissioners' 4-1 vote came after a brief executive session in an ante room adjacent to the board chambers. Billings later said he called the closed-door session so the commissioners could be clear on a written decision to be read by special counsel Sam Telcp before the final vote.

Commissioners had conducted a lengthy hearing in April on the water delivery rate dispute, hearing from counsel for both Allard and Riverside.

But situation not considered critical

Irrigation systems here see 7-19-76 higher-than-normal demand

By LYNN HEINZE
Tribune Staff Writer

Hot, dry weather has caused a higher-than-normal demand on the irrigation systems that serve Weld County irrigators, but spokesmen don't feel the situation has reached a critical stage.

Bob Smith, operations and maintenance supervisor for the Northern Colorado Water Conservancy District told the Tribune that a demand for 40,000 acre feet of supplemental water from the Colorado Big Thompson project last month established a record for the period.

"But we foresee no problems servicing our water customers through the end of this irrigation season," Smith said. "Although some of the smaller systems have reported water supplies dwindling, we should have no problem in our ability to provide the water needed."

Smith said that carry-over storage at the end of this summer would likely be somewhat lower than normal, but noted that carryover during the past few years has been especially good.

"We feel that we should be able to handle dry conditions like those we have this year for two to three seasons back to back, although we could have some problems if drought conditions continued beyond

that," Smith said.

Because of the higher-than-normal usage of water through June and with the likelihood that water use would continue at a high rate through July and August, the board of directors of the NCWCD recently released 100 per cent of the quota for supplemental water through the Colorado Big-T system.

The board earlier this year, based on normal precipitation levels expected for the region, released 80 per cent of the supplemental quota for the system.

The addition of the 20 per cent of quota will mean that 310,000 acre feet of supplemental water would be available to the irrigators under the system. Smith said that the district had delivered about 51,000 acre feet through the end of June, leaving a "balance" of about 259,000 acre feet for the remainder of the season.

"Although the full quota level of 310,000 acre feet is available, I would expect it more likely that we would deliver from 280,000 to 300,000 acre feet through the season."

"The amount delivered will depend to a degree on how much the reservoirs of the ditch company members are drawn down this summer. If the reservoirs are down, then it's likely they (the ditch com-

panies) will draw some of the supplemental water to regain their storage," Smith said.

Spokesmen for the board of NCWCD said that the additional release of water "gives farmers needed support in planning their remaining crop year and answers questions on how much water can be shared by renting to or from others."

Meanwhile, a spokesman for the District I office of the Colorado State Engineer in Greeley said storage in the district was "lower than normal, but not critical. Project water (Colorado Big-T) has kept this area in pretty good shape and I don't know of any irrigation companies planning shutdowns."

Engineer Jim Clark of the District I office said two written calls are presently in effect on the South Platte River: an 1876 call above Greeley and an 1882 call below.

"Although it's a pretty iffy situation, it now appears that we'll generally have lower carryover storage than in the past few years, and that could make next year a little more difficult," Clark said.

Two organizations are also supplying what Clark termed a "substantial amount" of augmentation water under the provisions of the Water Rights Determination Act of 1969 and the rules and regulations of the

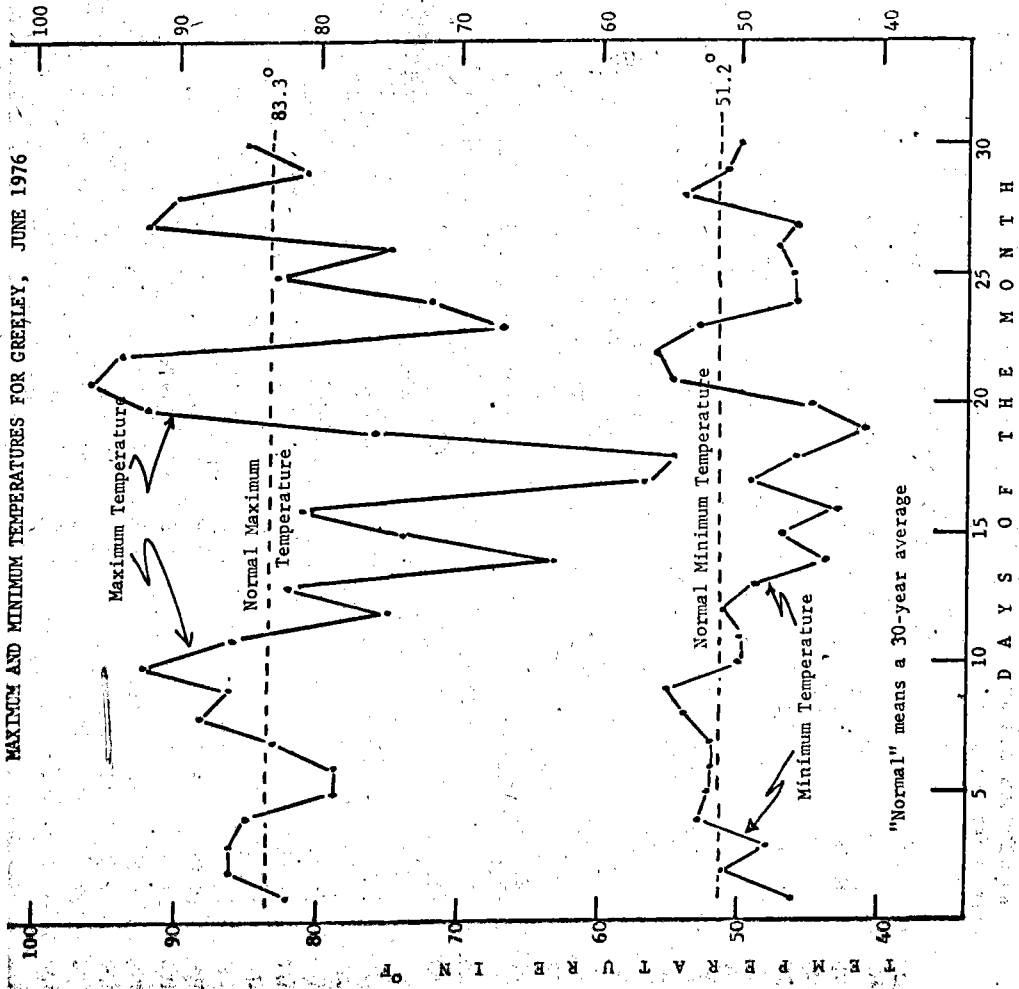
of the state engineer.

The Ground Water Appropriators of the South Platte (GASP) and the Central Colorado Water Conservancy District Groundwater Management Subdistrict as providing replacement water at the combined rate of more than 100 cubic feet per second, according to the engineer's office.

The replacement water is provided under augmentation plans called for by the rules and regulations of the state engineer to cover injuries to senior surface right holders caused by the pumping of the irrigation wells.

Smith reported Colorado Big-T storage at 78 per cent of average at the end of June, compared to 75 per cent a month ago. Local storage in farm and ditch company reservoirs was down to 67 per cent of average through the end of June, however, a continuing decline from last month's 70 per cent level.

MAXIMUM AND MINIMUM TEMPERATURES FOR GREELEY, JUNE 1976



Temperatures, precipitation both below average in June

TRIBUNE 7-2-76
 Cooler temperatures and less area also resulted in the than normal moisture levels sighting of at least four tor- dominated the June weather nadoes as precipitation varied picture here, according to Dr. widely in the county. On June 8 Glenn Cobb, University of .47 of an inch of moisture was Northern Colorado reported in north Greeley, while officially only a trace was meteorologist.
 The average high tem- perature for the month was 80.7 degrees, compared to the 30- year normal value of 83.3, or 2.6 degrees cooler than normal.

The average low tem- perature for the month was 51.2 degrees, compared to the 30- year normal value of 51.2 degrees cooler 49.4 recorded here last month.
 During the month, there were 13 days when the maximum temperature was above nor- mal, and 17 which saw below- normal temperatures. Highs during the month ranged from 55 on June 18 to 96 on the 21st.

Cobb said that the variation around the normal average low temperature wasn't as great as were still only 13 days when the lows were recorded at or above the norm figure.

Total moisture for the month amounted to only .74 inches, Cobb said, more than an inch behind the normal 1.81 inches of precipitation usually received during the month.

On June 4, a storm which dropped an official .07 of an inch of moisture in the Greeley

recorded up to 46 miles per hour. According to Cobb, more than 5,040 miles of wind passed over the county during the month.

Although rainfall during the month of June was below normal, the year's total continues ahead of the average according to Cobb, primarily because of storms during May this year. The total moisture to date amounts to 7.28 inches compared to the 7.10 normal expected.

Windsor board eyes Horsetooth project

TRIBUNE 7-2-76

WINDSOR — Town officials here are in the midst of what Administrator Ken Henschke calls a "long, hard look" at possible participation in the Horsetooth Water Commission.

If Windsor decides to continue with the estimated \$6 million project, it would be the town's biggest expenditure ever. And, it carries wide-ranging implications for the future of the town.

Discussion of the project began three years ago, with Fort Collins, Loveland, Windsor and Kodak-Colorado joining five water districts in planning.

Those three years have seen their share of snags in planning.

Originally, the group planned construction of an outlet structure at Horsetooth Reservoir in the Spring Canyon section, according to Duane Davis of the Fort Collins-Loveland Water District.

Along with the outlet tunnel, construction of a 40-million-gallon-a-day water treatment plant was planned. Each participant in the project would then be responsible for construction of transmission lines to its service area.

Those plans are now "in limbo," Davis said, while planners await word from possible participants.

Biggest bugaboo to the plan is cost, Davis said. Estimates set construction costs at about \$8 million, with each participant facing further costs in building transmission lines.

While participants in the project mull the Spring Canyon

plan, officials are also examining the possibility of expanding existing facilities at Soldier Canyon Dam at the reservoir.

That project would be less expensive, with an estimated price tag of \$3 million, Davis said.

At the same time, however, members of the water commission would face expensive problems purchasing easements for transmission lines in and around Fort Collins, he said.

Henschke said Windsor's interest in the project stems from two sources.

First, he said, the town council is attempting to determine if it can purchase water less expensively than that bought from Greeley.

And, he said, the council is interested in "self-determination."

Windsor now buys all its water from Greeley and town officials have sometimes expressed concern that the town's fate may rest partly in the hands of Greeley officials.

Henschke was quick to add, however, that Windsor hasn't run into problems with Greeley. "Greeley has been most cooperative," he said.

The Windsor council is studying various alternatives in the Horsetooth plan, but Henschke said a decision is still several months away.

A meeting has been scheduled by the council July 19 to discuss the plans.

Narrows could lose water, Thiel says

TRIBUNE 7-2-76

An extra Colorado use of stopped and the Hardin (in which has traditionally escaped Colorado unused," said the Fort Morgan man.

quality water would be lost if nation would reap enormous benefits from the switch. The project in Morgan County is carried out, according to independent congressional candidate Henry Thiel Jr.

"The same South Platte Valley hydrologists who have been warning of Narrows south bank problems have tried to explain why to anyone who will listen — they find few listeners among Colorado and Bureau of Reclamation officialdom," he said.

"It seems certain that if key people would take the time and trouble to examine what the river experts are talking about, the Narrows project would be

of the ditches can be served with this salvaged water, our front range can store and use the traditional agriculture water. It will, however, always return to the Platte for reuse," he added.

He said factors which relate to the extra Colorado use of the water are that the Hardin site could be "perfectly sealed. The Hardin site is 170 feet higher than Narrows and that four ditches with about 250,000 acre feet call on the river withdraw their water from the river in the vicinity of the Hardin site.

"The sealed reservoir at Hardin can serve these four ditches and others with water

Extra Copies Available

Today's edition of the Daily Reporter-Herald contains a 10-page section covering Saturday night's flood in the Big Thompson Canyon. The entire Daily Reporter-Herald news staff worked from the time the flood began about 9 p.m. Saturday until late Sunday night in preparing the section. News personnel were back on duty early this morning to complete the edition. The Reporter-Herald news staff was assisted by reporters from its sister newspaper, the Longmont Daily Times-Call.

Extra copies of today's edition will be available at the Daily Reporter-Herald, 450 Cleveland Ave., for those who desire to send copies to families and friends in other parts of the country. The editions will be ready for mailing.

LOVELAND DAILY

Reporter-Herald

SINGLE COPY 15c

97th YEAR

LOVELAND, COLORADO (80537)

MONDAY, AUGUST 2, 1976

NO. 184

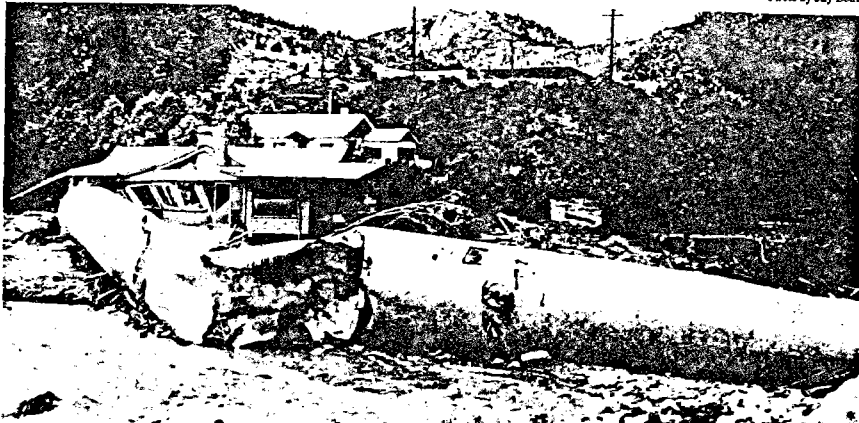
Flood Toll 64, Still Rising; National Disaster Area Declared



Larimer County Sheriff's Deputies, road workers and salvagers survey the damage done to U.S. Highway 14 west of Loveland. Just west of the Dam Store, entering the Narrows portion of the canyon, the road was demolished by the flood waters that

ripped through the canyon Saturday night. The flood also destroyed the Big Thompson Slip on pipe above the river road, and demolished a water diversion structure owned by the Handy Dick Co.

Photo by Jay Bostan



This house, located just behind the Dam Store on the Big Thompson River bank, caught the full force of the Big Thompson flood-diameter slip, which collapsed during the flood Saturday night. The owner of the house was unidentified at press

time, and whether or not the house was occupied is also unknown. The huge pipe slammed through the carport, and came to a rest inside the front porch.

Photo by Jay Bostan

By JOHN PFEIFENBERGER
Larimer County has been declared a national disaster area as the death toll nears 70 from the devastating flash flood that scoured the Big Thompson Canyon Saturday night and Sunday morning.

Ten inches of rain fell in the Estes Park area Saturday evening in a four-hour period. The rain and snowmelt poured into the river, causing the flash flood that began at 9 p.m.

The disaster declaration was announced this morning at 9:30 by the office of Congressman Jim Jobson. The declaration opens up considerable federal assistance programs involving general assistance to victims and government entities in the area.

Open Tuesday

Due to the considerable amount of organization involved most federal personnel and family relief centers will not be opening until Tuesday, the Colorado Headquarters for Disasters reported.

The death toll is constantly rising as bodies are found. The actual body count from Kibbey Funeral Home as of 11:15 a.m. was 47. Official counts at the command center was 64 at 8 a.m. The actual count may not be known for weeks.

In terms of property damage, there is no good estimate other than millions of dollars in loss. Dwight Bower, district engineer for the state highway department, said the Big Thompson highway damage was at least \$5 million. The damage to homes, mobile homes, cabins, motels, businesses and other structures will be millions more.

Human Life

But the main concern now is for human life and the injured and stranded.

However, a seemingly endless rain, which began again during the early morning hours, is creating new problems today, grounding all rescue attempts and causing the Big Thompson River to slowly rise again.

However, John Englebert of the sheriff's office said this morning that approximately 175 persons on foot are combing the canyon from the mouth down the east entrance. He said organized search operations are being handled through the sheriff's mounted posse, the Loveland Fire Department and other motorized units from the Sheriff's Office.

No Immediate Threat

Englebert said the drizzling rain is causing the river to rise slowly, but is

Poudre Evacuated

Reports from the command center in Loveland indicate that there is a threat of two area reservoirs in Poudre Canyon breaking through and the entire canyon is being evacuated.

Seaman Reservoir, located about six miles northwest of Colo. 14 and U.S. 287 up the canyon and Halligan Reservoir, about 30 miles northwest of the intersection are both in danger of breaking.

Colorado Highway 14, running the length of the Canyon, is closed to all traffic except for emergency vehicles. Evacuation is presently underway.

creating no immediate threats at this point of another flash flood. He said that any problems would probably be of a more gradual nature.

Meanwhile, the helicopters are grounded until the rain lets up, according to Englebert.

When asked how funding for the entire massive operation was coming along, Englebert said that all emergency disaster fund applications have been submitted at both the state and federal level. He said that as of now, Larimer County is "doing everything that can be done."

First Warning

Sheriff Robert Watson said the first warning that a flash flood was possible came about three hours ahead of the flood but "some people just didn't believe it." Sheriff's Department officers and other emergency personnel warned residents and visitors by announcing the situation by loudspeakers from emergency vehicles.

The devastation in the canyon is beyond belief, according to just about everyone who has seen it.

Watson said, "All the people for the most part gone between the Dam Store and Estes Park."

Washed Down River

"The river's not a blade of grass left at Grandpa's Retreat on any given summer evening," the sheriff said, "there are usually between 30 and 40 trailers and camper units in the area. From all appearances, everything washed down river."

He also reported there was nothing left at the Loveland Hydro plant. Drains in

(Continued on Page 16)

Inside

- Page 2 - A map showing the entire area affected by the flood.
- Page 6 - Two Loveland Ambulance EMT's came face to face with near-certain death, but they survived.
- Page 8 - Several agencies are helping out during the crisis.
- Pages 10-11 - Estes Park itself was not damaged, but not far away the tragic toll begins.
- Pages 12-13 - The police monitors were busy all weekend, and a chronology was kept of their messages.
- Page 14 - The real story may be in the faces of the survivors.
- Page 15 - There is no damage estimate yet, but it will be in the millions.

Loveland Water Supply Cut in Half

By CONNIE PFEIFENBERGER
The water supply to the city of Loveland was cut in half Saturday night as a flash flood moved through the Big Thompson River system.

Don Hatway, Loveland City Manager, said there can be absolutely no watering of lawns or excess use of water now or in the foreseeable future.

Almost all the major industries are closed today and may remain closed due to the inadequate water supply.

According to Hatway there are three transportation lines from the Loveland Filtration plant, a 12 inch wood, a 20 inch cast iron, and a 36 inch steel line and the flood waters took out the 36 inch tube.

He said this means a maximum of 10 million gallons per day is the limit that can now be supplied to Loveland when 18 million gallons is the normal daily usage.

He said he has no prediction how soon the service can be restored.

According to Sheriff Robert Watson, although communication with the filtration plant were cut off, they were able to determine the plant is still completely operational with the intake valves still intact.

"We have all the fresh, clean water we ever did available at the filtration plant, we just can't get to it," he said.

Another problem with the water flowing through the canyon involves Estes Park sewage, which is pouring directly into the river.

One of the pipes to the sewage plant, broken with the force of the water and as of Sunday evening, operators at the plant had been unable to stop the flow.

"This does not in any way mean the water flow into Loveland because it continues because the filter plant is still doing a thorough job," Watson said. It does mean stranded people up in the canyon are faced with an additional danger if they do not boil their water before they drink it.

Here's What You Can Do To Help

By KEP PETITT
Disaster-rescue agencies have responded to Saturday's flood aftermath with instructions for victims, friends and relatives of victims, as well as volunteer workers.

As the confusion is eliminated by organization of rescue and clean-up work, it has become apparent that all those affected can help themselves and others by heeding the instructions that have been formulated.

Persons rescued from the flooded Big Thompson Canyon have been evacuated to Loveland High School. There they can get food, clothing, and transportation. They are asked to sign in at the school, and sign out if they leave.

Persons who have friends and relatives who were in the flooded area can check at the high school. Lists of names are posted.

Persons trying to locate victims by phone may call the school 867-5374. A WATS line had been expected to be installed. The line may be used by persons from outside Colorado, who are trying to locate victims. The number will be announced when available.

Flood victims who were injured were taken to McKee Medical Center in Loveland. Those who were killed were taken to Kibbey Funeral Home, 1112 Lincoln Ave.

Mountain Bell Telephone spokesmen advised that persons trying to call the Loveland area for disaster information, should do so on an emergency basis only. In other words, those who are tempted to call out of curiosity are requested not to call into the disaster area.

Don't try to call the Estes Park or Alampara areas. Those areas have been

isolated, and so calls have been getting through.

An outpouring of concern for flood victims has prompted a wave of volunteer support. Hundreds have volunteered to aid in rescue, traffic control, clean up, housing and more.

As of Sunday at 4 p.m., disaster-rescue officials had all the help they could use at the time. Loveland police department was taking names and telephone numbers of potential volunteers. If needed, those who have left their names will be contacted for assistance.

There is another kind of help local persons might offer, if they can.

Alfred Holman, president of the Apartment Owners and Managers Association here is requesting information on any apartments or homes that may be rented in this area.

Loveland was in severe shortage of

rental units before the flood. The need for rentals will now be of crisis proportions.

Anyone who has a home for sale, which is vacant, is not far away the same rent it until it is sold.

Call Holman at 869-6592, or come to the Alfred E. Holman Real Estate and Investment office with the information. The office is at 238 E. Third, Suite 2A.

Or, persons may contact Jim Gilbert at the Loveland Rental Center at Ploosey Realty, 225 E. Seventh, Suite G, 805-5000.

Flood victims in need of housing may call Ron Jones, 2100 Maple Drive, 867-2221, for information on available housing, and possible disaster subsidy.

A word of advice also has been directed at those not directly affected by the flood, but who want to get in on the action.

Speakers are advised to keep away from the scene. Sheriff's officers planned to remove all but essential personnel

from the immediate flood area. Also, groups of bystanders hamper traffic flow near flooded areas around Loveland. They are requested to stay out of the way of emergency personnel and vehicles.

Red Cross personnel are working to put through long distance calls from Loveland High School. Persons outside Colorado, if they haven't been able themselves to call into Loveland, may be contacted by victims themselves.

Animals have suffered from the flood, as well as people, and Larimer and Boulder County Humane Societies have organized in board pets of flood victims.

Animals will be fed and housed, and there is room for some large animals, such as horses, as well as smaller pets.

The American Humane Society in Denver has volunteered assistance for pets.

The Larimer County Humane Society number is 867-7287.

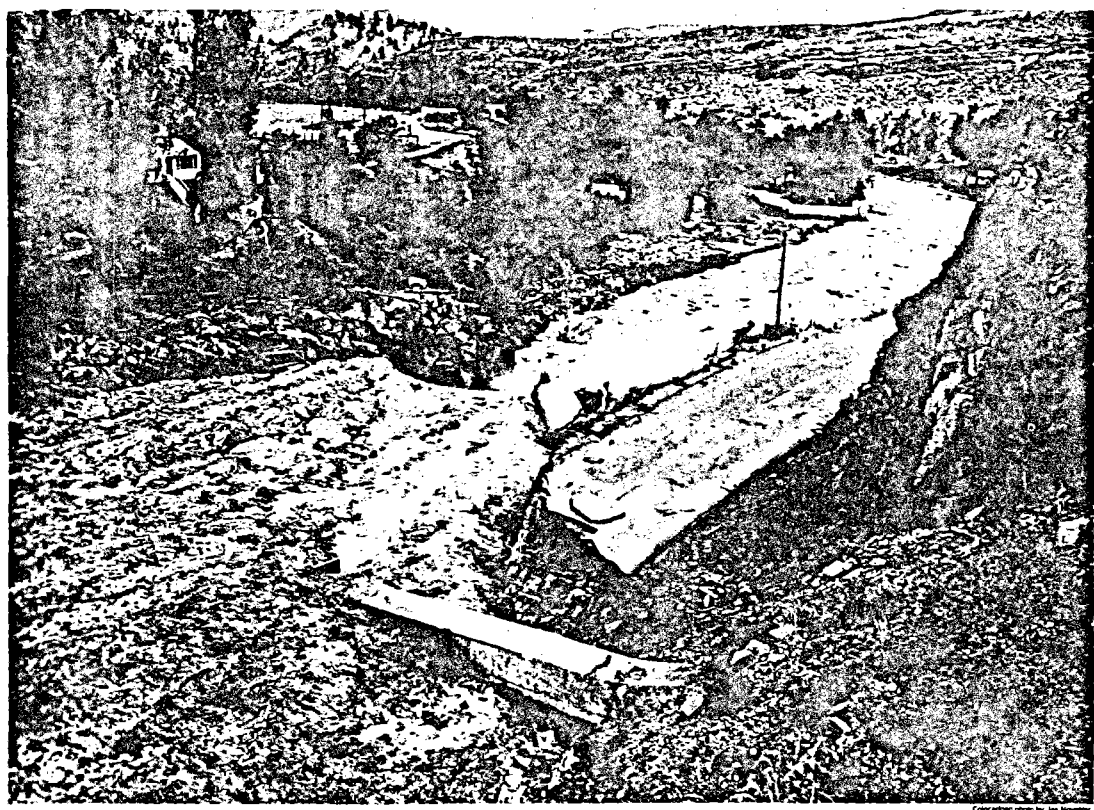
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Rescue stories, additional photos begin on Page 6

Rescue hampered; 57-plus dead in flood



This is the scene looking east from the mouth of the Narrows at the Big Thompson Canyon. The road has been washed out and the siphon is resting downstream

By JAKE HENSHAW
 Of the Coloradoan

Rescue efforts for people trapped in Big Thompson Canyon because of the weekend flood was stymied this morning because of rain and poor visibility.

The operation, involving an estimated 500 officials and volunteers, was organized early Sunday in the wake of what Larimer County Sheriff Robert Watson called "the worst disaster every to hit Larimer County."

The sheriff was trying to organize a four-wheel drive rescue effort into Drake, a town about 15 miles up the canyon, by way of Pole Mountain Road, and a pack horse team down the main canyon.

But the main workhorse of the rescue operation, the helicopters, were grounded until the weather clears.

Even though the rescue effort was slowed, government officials were busy today arranging aid for victims of the flood and repair of the many damaged public and private facilities.

President Gerald Ford signed a declaration designating Larimer County as a disaster area, which makes the area eligible for federal assistance.

While the nation's attention centers on the Big Thompson, local officials also are keeping an eye on the other canyons and creeks in the county.

The Boxelder Creek was up somewhat this morning, but had receded by late morning. The Poudre River also was reported to be slowly rising, but Jack Neutze, the area water commissioner, said there was adequate storage capacity to contain any significant runoff.

The weather report called for continued rain this afternoon with possibly accumulation of another two to four inches in some areas, according to Vincent Scheets of Geophysical R & D.

AS OF LATE MORNING the death toll from the flood was 57, according to officials at the Northern Colorado Water Conservancy District Office in Loveland where rescue operations are centered.

These bodies have been taken either to the Kibbey-Flashburn or Hunter Funeral homes, officials said.

From there they are taken to the old Loveland Memorial Hospital, which has been reopened to serve as a temporary morgue.

A Larimer County sheriff's mobile laboratory is busy fingerprinting the victims and collecting their few to help in identification.

But a spokesman for the Kibbey-Flashburn Funeral Home said this is going to be a difficult process because "they had no wallets and practically no clothing."

Only one victim, W. Hugh Purdy, a 51-year-old veteran of the state patrol has been identified. He died while trying to warn people late Saturday of the impending disaster. From all indications, the death toll will continue to rise over the next few days as the search continues. One official predicted "dozens" more would be found.

"We have not really touched the canyon area at all," said Watson, who is directing the rescue effort.

He explained that nearly all the bodies recovered so far were found along the Big Thompson River between the Narrows and the City of Loveland city limits.

The number of injured also is difficult to pin down.

Paul Linneman, administrator of the McKee Medical Center in Loveland, said about 80 people were treated for injuries received as a result of the flood on Sunday. All but five of these, he said, had minor problems, such as bruises and showed the effect of exposure. The five were held and the others were released.

One person did receive a broken arm. He was John McMaster, owner of the Loveland Ambulance Service, whose vehicle was "reduced to pulp," Linneman said. He also was treated and released.

Because of the slow rescue operation this morning, only one more person had shown up for treatment today. His condition was unknown.

At the Poudre Valley Memorial Hospital, a spokesman said three persons injured in the flood have been admitted and they are all in satisfactory condition.



A sobbing flood survivor comforted

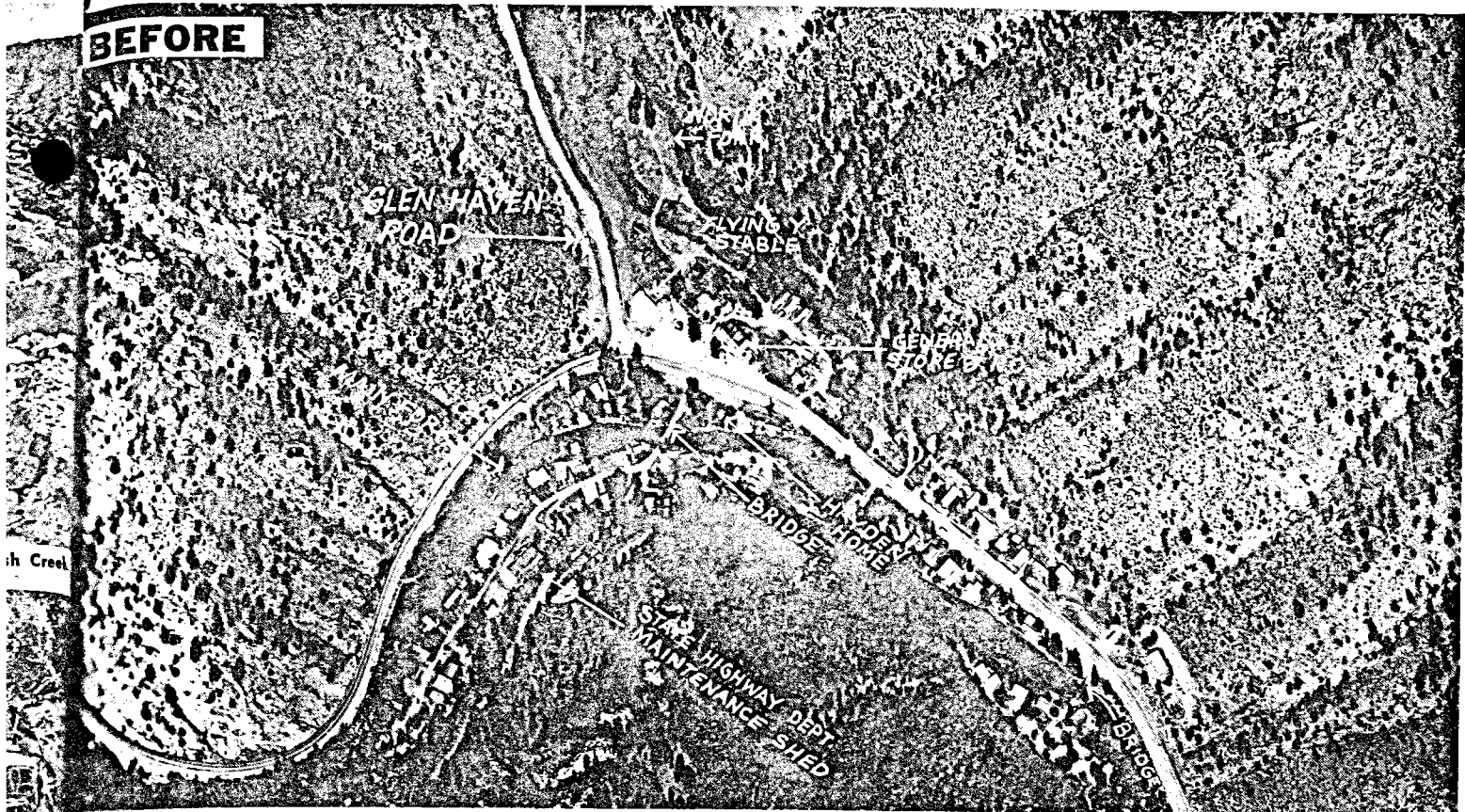
of special interest

- Ralph Nader the campaigner Page 2.
- "Larimer Legacies" has been canceled. Page 5.
- Cadets think Junior ROTC "is out." Page 12.
- Olympics are over... maybe for good Page 18.

On inside pages

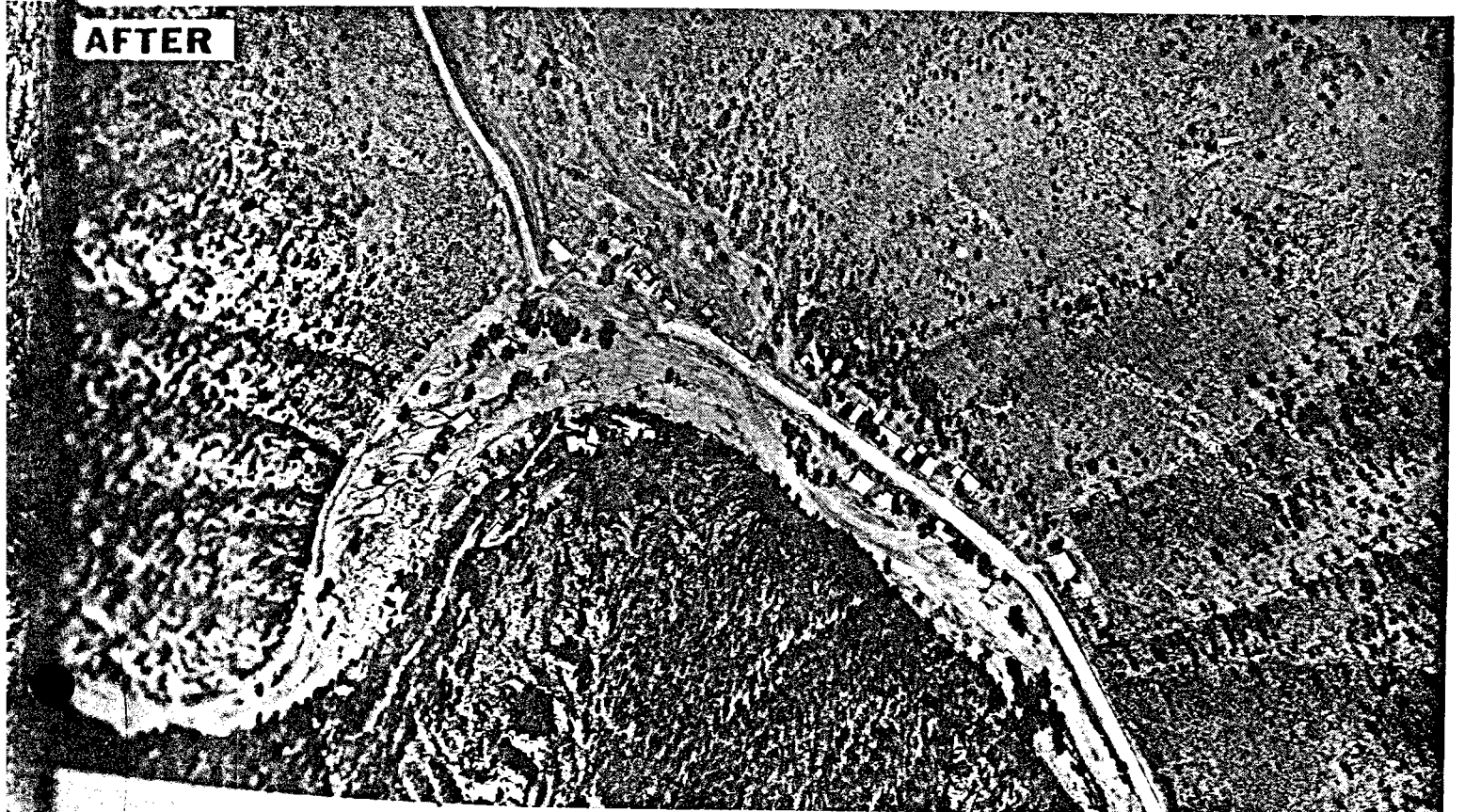
- 1 - News
- 2 - Sports
- 3 - Business
- 4 - Education
- 5 - Community
- 6 - Entertainment
- 7 - Classifieds
- 8 - Real Estate
- 9 - Automobiles
- 10 - Health
- 11 - Travel
- 12 - Local News
- 13 - National News
- 14 - International News
- 15 - World News
- 16 - Sports
- 17 - Business
- 18 - Education
- 19 - Community
- 20 - Entertainment
- 21 - Classifieds
- 22 - Real Estate
- 23 - Automobiles
- 24 - Health
- 25 - Travel

BEFORE



Favorite spot for year 'round homes of retired couples, as well as summer-long retreats for valley community residents, the Drake sector suffered heavily in loss of life and sweeping, capricious destruction.

AFTER



Northglenn-Farmers water pact 'go'

By LYNN HEINZE
Tribune Staff Writer
9-3-76

The agreement between the city of Northglenn and the Farmers Reservoir and Irrigation Company is "go."

By a resolution of the company's board of directors Wednesday afternoon and the unanimous passage of a similar resolution Thursday night by the city council of Northglenn, an agreement calling for the domestic use of agricultural water found new life this week.

The original agreement, signed by mayor Al Thomas and Farmers Company president Adolph Bohlender July 22, called for the delivery of water to the city for domestic use and then a return to the company's irrigation system for irrigation use.

Under the plan, the city would pay for the construction of the treatment and collection facilities through the issuance of nearly \$20 million in bonds. The city's proposed system would carry the water from the company's Standley Reservoir, process it for use by the city's residents, collect the unused water, hold and recycle for return to the company's irrigation canal.

The plan called for the return of all the water taken from the company system, plus an additional 10 per cent, termed "interest on the company's loan of the water to the city."

But that plan was set back during a special stockholders meeting Aug. 24 when the cities of Thornton and Westminster combined with some shareholders to defeat the issue. Under the plan drafted by the company's board of directors and city staff members, the agreement had to get the majority approval of the general shareholders and a majority of the shareholders in the company's Standley division.

Although a majority of the

shareholders attending the special session approved the proposal, as a group and in the Standley system separately, the plan failed to carry the required majority of shareholder ownership in the Standley as required in the agreement.

So, at the time of the meeting, it looked as though the plan would have to wait for the next regular meeting of the company slated in November for reconsideration.

"But the majority of the shareholders indicated to us during the meeting that they wanted the plan," Bohlender told the Tribune. "There has been a great deal of pressure put on us as a board to take some kind of action that would get this plan back into the works."

"They (the shareholders) have told us that we shouldn't let the city (Thornton) run the show. That the farmers wanted the plan and that we should go ahead with it somehow and not let it just go down the tubes," Bohlender said.

Under the plan approved by the company's board and the city council, city representatives will be contacting the individual owners under the Standley system to sign up their shares for the plan. The city's goal would be to get enough shares signed up under the

Standley to assure the delivery of the maximum expected needs in the future—7,785 acre feet, about 30 per cent of the lake's capacity.

"Under the plan as approved, when the city gets enough shares signed up, it goes," Bohlender explained.

The new agreement is essentially the same as that proposed to shareholders last month—except the provision calling for the majority approval of shareholders. The sign-up provision will replace that paragraph, Bohlender explained.

The new agreement will call for the city to pay all costs of the proposed system, including legal defense on the challenge of the plan, should that occur.

When the plan was first made public during the signing ceremonies last month, Bohlender said,

"cooperation—not condemnation—is the answer to the problem" of scarce water management.

The Standley has been the

subject of condemnation actions by the city of Thornton nearly three years. That action is being heard today in Jefferson County District Court Golden.

The company has spent more than \$100,000 in defense of the action. Reports indicate that Thornton and Westminster may have spent from \$.5 to \$1 million to press the action. The condemnation was the first to be filed by a city against an agricultural water user in 100-year history of the state.

But company officials believe the agreement with Northglenn will ease the condemnation pressure in court. Northglenn is one of the main purchasers of water from Thornton, so a separate system would essentially put back water in the Thornton system, thus reducing the need to acquire additional supplies, company officials argue.

The language of the agreement specifically notes that the individual contract "shall in no way operate or be construed as a conveyance or assignment of any water right to Northglenn." Instead, the agreement says, the city will seek "the right to divert and use the water which is contemplated to be exchanged under the plan."



SIPHON NEARS COMPLETION—The 220-foot siphon across the Big Thompson River west of Loveland neared completion Monday as workmen installed one of the three sections of the nine-foot-diameter pipe. The siphon, a supply

link in the Charles Hansen Feeder Canal, was destroyed by a flash flood which roared through the Thompson canyon July 31. (Tribune photo by John Seelmeyer)

Big T siphon near completion

By LYNN HEINZE
Tribune Staff Writer / D-12-16

LOVELAND—The use of an important West Slope water diversion link came closer Monday as workmen erected the first of three sections of a siphon tube across the Big Thompson Canyon west of here.

The siphon, part of the Charles Hansen Feeder Canal used to deliver nearly 120,000 acre feet of water to the Horsetooth Reservoir west of Fort Collins, was totally destroyed by flash flooding in the canyon July 31 which took the lives of 139 people.

The erection of the first section of the 220-foot long, nine-foot diameter pipe Monday put the project within about one week of completion, according to the Bureau of Reclamation's Colorado-Big Thompson project manager Bob Berling.

Berling said that the second section of the pipe would be installed Tuesday and

the center section would move into place on Wednesday. "We're shooting for a completion on Oct. 20. If everything goes according to schedule, we hope to move some water through the tube next week," he said. Some "finishing touches" will continue through the end of the month, Berling predicted, but indicated the work wouldn't interfere with the operation of the feeder canal.

Berling said the loss of the tube cut the deliveries of water to Horsetooth by an estimated 40,000-50,000 acre feet, but said the destruction of the siphon came during a period when deliveries are usually the lowest of the year.

A temporary pumping system was installed soon after the flood to supply some domestic water users and irrigators along the feeder canal, but Berling said the total water pumped amounted to less than 2,000 acre feet. "It was apparently sufficient to meet the needs of the domestic users and, by putting irrigators on a rotation basis, provided some water for their needs as well," he said.

The siphon will be replaced at a cost of about \$300,000, according to Berling. He said the contracts let by the Bureau included about \$105,000 to the Eaton Metal Products Company of Denver, which supplied the materials for the tube, and approximately \$185,000 to the Eagle Construction Company of Loveland for the erection of the siphon.

But Berling noted that the final cost figures for the tube may vary slightly from those figures since the contracts

The completion of work on the siphon structure will bring nearly all of the Bureau's structures in the canyon back into structures service. One structure will still need major construction work this winter, although presently in operation, Berling said.

The Bureau's on-channel Big Thompson diversion dam was damaged heavily in the flooding, but went into operation in early August under manual conditions. Berling said that motors, electrical work and other repairs remain to be done at the structure.

He also said most of the ditch company-owned diversions on the Thompson were repaired and in operation, although some will require extensive work this winter. One ditch, the Handy, lost most of its diversion works as a result of the flood, installed temporary structures to complete the irrigation season and plans to install a permanent flume this winter, Berling said.

Jury finds man guilty of perjury, tampering

Nov 1976
Robert Stroman was found guilty of second degree perjury and three counts of tampering with physical evidence by a jury in District Court Friday.

The jury of six men and six women reached its verdicts about 11:30 a. m. It had started deliberating around 9 a. m. After receiving the verdicts, Judge Hugh H. Arnold, who presided at the three-day trial, continued the case to Dec. 6.

First degree perjury is a Class 4 felony, punishable by an indeterminate to 10-year prison sentence. Tampering with physical evidence is a Class 5 felony, punishable by an indeterminate to five-year sentence in the penitentiary.

Stroman, a Rt. 1, Greeley, farmer, was accused of making a materially false statement while testifying as a witness April 12 at a jury trial in District Court of a suit he had brought for damages to his farm resulting from flooding that occurred after the Latham

Dam three miles east of La Salle broke April 12, 1973.

The tampering charges accused him of knowingly offering false and altered physical evidence at the damage trial with the intent it be introduced as exhibits. The charges related to three checks which Stroman claimed he had written to pay for repairs of items damaged by the flood.

During the criminal trial which began Wednesday, Judge Donald A. Carpenter, who presided at the damage trial, said that Stroman had testified at that trial that the three checks, which totaled \$300.74, were "proper" and had not retracted that assertion even though the check alterations became evident in that trial.

The damage trial was terminated abruptly when Stroman's attorneys asked for dismissal of the case.

During the trial that ended Friday, Michael Varallo, deputy district attorney,

presented testimony and evidence that the three checks at issue originally were dated April 2 and April 9, 1973, which was prior to the Latham Dam break.

This evidence included copies of microfilms made by the United Bank of La Salle at the time the checks were processed by it and sales slips and other records of the three equipment firms to whom the checks were written.

The three checks as offered in the civil damage trial showed dates on their faces of April 22, April 19 and April 19, 1973, all after the dam break. However, bank dates on the reverse side of the checks were prior to the flood.

An Arapahoe County Sheriff's Office document examiner also testified at the trial that dates on the three checks appeared to have been altered.

Stroman's attorney, C. J. Berardini of Denver, did not call any witnesses to testify at the trial.

Scientists disappointed in hail research

TRIBUNE 7-7-76
BOULDER, Colo. (UPI) — American scientists have spent four years, and \$15 million trying to reduce the amount of hail that falls in a section of Colorado, Nebraska and Wyoming, but still don't have enough answers to their questions.

"After fighting this for several years, frankly we're a bit discouraged," admitted John Firor, director of the National Center for Atmospheric Research. "We don't know if we made more hail, and we don't know if we made less." Scientists, using a method

which Soviet officials claimed reduced hail fall 80 to 90 per cent for them, had surprising results in 1972 and 1974. In the first year, four times as much hail fell from seeded clouds as unseeded ones. In 1974, it was three times as much.

The only success came in 1973 when hail was reduced by 50 per cent. But scientists aren't sure they can take credit for either the greater amounts of hail or the smaller amounts.

Hail causes an estimated \$700 million damage each year in the United States.

Firor said the problem is that

one hail storm may naturally produce 10 times more hail than another, but scientists are unable to predict which will do the most damage.

"Let's say that we don't seed one storm, and it turns out to be a small storm without much hail," he said. "Then maybe we'll seed the next one. Perhaps it started out to be four times bigger than the first one. And we seeded it, and it laid down only three times as much hail.

"We would have done a good job, but we have no way of knowing that," Firor said.

NCAR's computer studies show there is a 95 per cent probability the scientists did not reduce hail by more than 60 per cent or increase the amount by more than 500 per cent.

"If we could seed 100 storms, or better yet, 1,000, we could be confident of our results," Firor said.

Even in Hail Alley — an oval-shaped area of Colorado, Wyoming and Nebraska which has the heaviest hail in the nation — there are only 20 hailstorms a year, Firor said. Only half of those were seeded.

"It's back to the drawing boards for us," Firor said.

'Used water' ruled proper replacement

DENVER (UPI) — The Colorado Supreme Court today approved two complicated water use plans which make additional demands on both the Cache La Poudre and the Arkansas Rivers.

Chief Justice Edward Pringle said the rulings would result in a "brand new philosophy of law (dealing with water cases) in this state." He said the decisions would result in a more economical use of water in Colorado.

Essentially, the court ruled plans of augmentation for water do not require addition of new water into a water system. A plan based upon replacement of consumptively used well water is sufficient, the court said.

In one of the companion cases, the court accepted a water augmentation plan submitted by Glacier View Meadows, which hopes to develop 3,236 residential lots in the mountains northwest of Fort Collins.

That plan had been opposed by North Poudre Irrigation Company and the Cache LaPoudre Water Users Association. District Judge Donald Carpenter of Greeley originally approved the plan, and the Supreme Court supported his action with a few modifications.

The other case involved the Kelly Ranch and its plans to provide a water supply through wells for three proposed subdivisions in the Buena Vista area — the Freegold Hill Estates, the River Rim Estates and the Quail Ridge subdivision.

The plan was opposed by the Southeastern Colorado Water Conservancy District, which said other water right holders would be injured.

In that case, the court reversed a ruling by District Judge William L. Gobin of La Junta.

Pringle said the dispute centered around whether plans of augmentation should require a user to provide new water into a system or whether used water was sufficient. The court ruled that new water was not needed.

The Supreme Court noted in the Fort Collins case, the only thing that could upset the plan would be an extended period of drought.

"If such a drought causes insufficient water to be available for replacement, the well water users will be obliged to acquire additional water by lease or otherwise, or else to reduce their consumptive use, to the end that water consumptively used under the plan will not exceed that available for replacement," the court said.

The court pointed to the possibility of pollution of the well water by the subdivisions near Fort Collins because of the many sewer systems which will be developed.

"No one is here — nor can be here — representing the unknown, future purchasers of residential lots whose rights would be affected if our speculative assumption should become an actuality," the court said.

"We visualize that all we can do is to hold — and we do so rule — that possible adverse effects on the quality of well water as a result of the operation of the proposed residential development is not properly an issue here...."

NCWCD orders boundary change study

By RONTOLLEFSON

Tribune Staff Writer 11-8-75

LOVELAND — Board of the Northern Colorado Water Conservancy District (NCWCD) Friday directed its staff to study a proposal by the Weld County Commissioners for expanding district boundaries in southern Weld to include Erie, Fort Lupton and Wattenburg.

Presenting their resolution to the NCWCD board were Commissioners Glenn Billings, Roy Moser and Victor Jacobucci.

Making the boundary-change proposal Wednesday during a commissioners' meeting, Billings said:

"Metro Denver continually is trying to usurp the powers of Weld County — and even Boulder County, though they're in that area. We want to stop that, whether it's over water, sewage, sludge plants or anything else."

Also present at the NCWCD board meeting Friday, a spokesman said, was

State Sen. Robert Johnson, R-Golden. Johnson met two weeks ago with the Weld County Planning Commission and other Weld officials, outlining a bill to create a Metro Denver water-supply district. Johnson is chairman of a legislative interim committee which has been studying the idea for two years.

Under this bill, and if approved by affected voters in November 1976, such a Metro water district would include

Denver and urban parts of Adams, Arapahoe, Boulder, Douglas, Jefferson and extreme southern Weld counties.

The district would be formed in 1977, in approved by voters in that area. It would begin financing itself with several fees on water use, and would begin supplying necessary water district-wide by 1990.

However spokesmen have pointed out the proposed metro district boundary would not mesh with the southern line of NCWCD in southern Weld. Specifically, the Erie and Fort Lupton areas would fall between the two sets of boundaries.

Under the Weld Commissioners' idea, the NCWCD line would be extended south along the Weld-Boulder counties' line to include Erie. It then would be extended east along the Weld-Adams counties' line

to include Fort Lupton in the district. Line a miles east of Fort Lupton then would be routed back north to current boundary.

A spokesman for the NCWCD board said that body was not prepared to act on the idea, referring it for study. Next NCWCD board meeting is Dec. 12, he said.

The spokesman said while the NCWCD board basically does not wish to extend district boundaries, it ordered the study because it does not wish to be inflexible in such a case.

Current NCWCD boundary in that part of Weld takes in the Firestone-Frederick-Dacoro area. It also includes that part of Erie in Boulder County; the town straddles the Weld-Boulder line.

New assessment plan to be outlined during groundwater subdistrict meets

Members of the ground water subdistrict of the Central Colorado Water Conservancy District will be introduced to a new surface-water credit plan developed by the CCWCD board of directors during a series of meetings slated later this month.

According to Jim Erger, president of the district, the plan will offer a completely new method of assessing members of the ground water subdistrict. "It allows a member to get credit for surface water...

to irrigate his crops," Erger said.

Erger, a Henderson farmer, sees the plan as being "so flexible that it should have broad acceptance. We've worked hard to make it fair for everyone." Under the plan, the surface irrigation credit is figured into the ground water subdistrict's plan of augmentation under the Water Rights Determination and Administration Act, according

to Erger. Erger proposed plan of augmentation with the Division I Water Court in Greeley Feb. 28, but the details of the plan have not been decreed by that court.

The plan gives the irrigators credit for ditch water and allows them to sign water allotment contracts on a volunteer basis, Erger said. To explain the plan, the district will hold several meetings throughout the month. Meetings include: Nov. 11, Wiggins, elementary school; Nov. 12, Hudson, fire hall; Nov. 13, La Salle Lions Club; Nov. 18, Kersey, high school, and Nov. 19 Fort Lupton, town hall. All meetings are slated to begin around 7 p.m. and should end about 9 p.m., according to Erger.

Judge Signs Two Water Decrees

Two important, favorable water decrees have been signed by Judge Donald A. Carpenter, water judge, Division I located in Greeley, which affect water rights in Morgan Heights, a subdivision located northwest of Fort Morgan adjoining the city golf course, according to Rainsford J. Winslow, who with his wife, owns the property.

Winslow said the first decree, which was signed by Carpenter Sept. 29, concerns the adjudication of five existing Morgan Heights water wells and the capacity each can produce. The first well was drilled in 1950 by the late L. J. Reid, who owned the property before the Winslows, and this well is being replaced by another well which was drilled in February, 1975. The replacement well can produce 40 gallons of water per minute, the other three each can produce 25 gallons of water per minute, 75 gallons total. These wells were tested by the Canfield Drilling Company of Fort Morgan and the Canfield report was part of the application for this water decree.

This means that the four existing wells can produce 115 gallons of water per minute, 6,900 gallons per hour, 165,600 gallons per 24 hour day, and more than 60 million gallons per year. A Morgan Heights water report shows that people living in the subdivision use approximately 96,000 gallons of water per person per year.

Thus, using 96,000 gallons of water per person per year, the more than 60 million gallons possible from the four wells could support 625 persons in the Morgan Heights area. Winslow pointed out there would have to be additional wells installed for peak water use periods, and possibly it might be necessary to have an alternate day watering plan in the summer. Up to this point, Winslow indicated, residents can water whenever they want.

The second water decree was signed into law by Carpenter Wednesday. This is a plan of augmentation and establishes the right of the owners of Morgan Heights to have as many as 14 water wells

total — 10 more than are in existence now.

Wednesday's water decree covers area numbers one, two, three and four, comprising approximately 280 acres, as shown on the accompanying map. This means that water wells can be drilled in any of these areas or used in any of these areas.

Area number four is a 50-foot-square piece of ground owned by the Winslows and located just north of the South Platte River and just west of the Rainbow Bridge on Highway 52. This location was purchased by the Winslows from Builders Aggregate Co., Inc. to provide emergency water. A test hole was drilled on this ground, and a well could be installed which could produce 1,000 gallons of water per minute, according to Canfield Drilling Co.

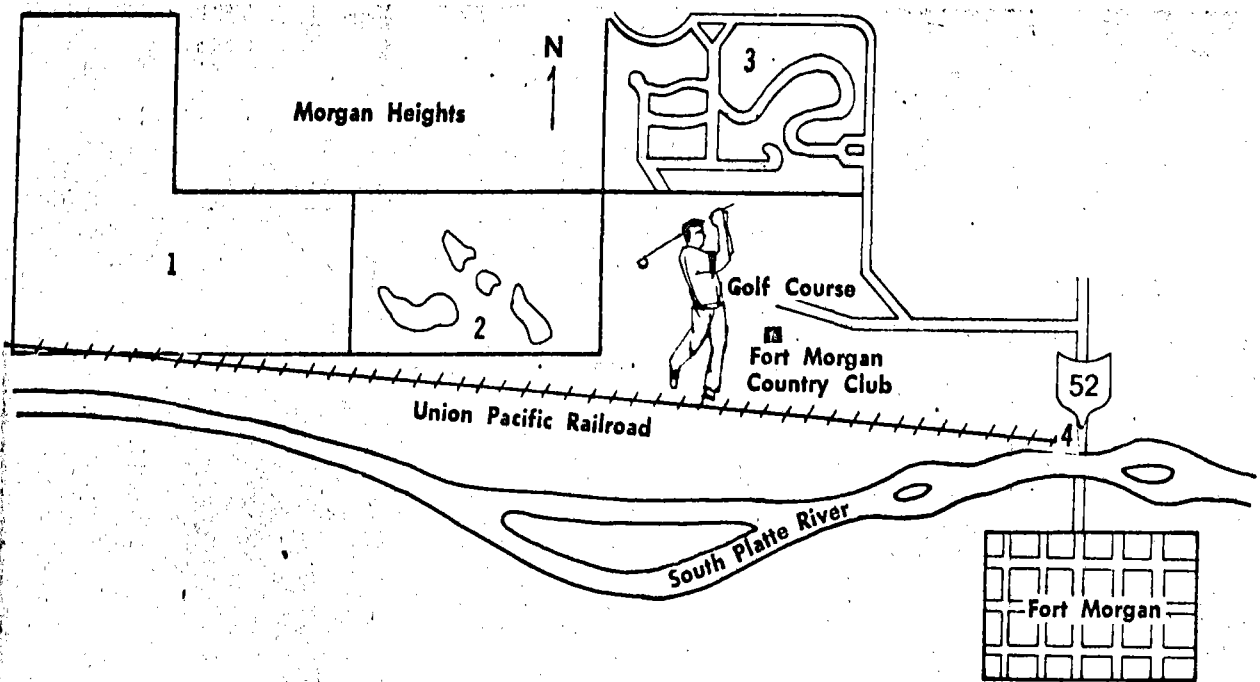
The Winslows own water rights in the Riverside irrigation district, and this water can be used to exchange water necessary to replace water used for domestic purposes.

The first four water wells now in existence come under the Groundwater Appropriators of the South Platte River Basin (GASP), and no replacement water is necessary for these wells, because they were drilled before 1969 when water laws changed.

So, as Morgan Heights grows, these two water decrees make it possible for ample water for the entire area as it develops over the years.

The Morgan Heights water is approximately 28 grains hardness as compared to 70 grains hardness in the City of Fort Morgan, according to tests made by Colorado State University in Fort Collins. The water in Morgan Heights is tested monthly by the Northeast Colorado Health Department and has always been found to be safe for drinking with zero impurities per million parts tested.

(Continued on Page 8)



THIS MAP shows the location of four areas in which water wells can be drilled, according to a water decree signed Wednesday by Water District Court Judge Donald Carpenter.

Three of the areas are in the Morgan Heights area, and the fourth is just west of Highway 52 and just north of the South Platte River.

Aurora, Huron Co. Reach Accord on Water Dispute

By BOB EWEGEN
Denver Post Staff Writer

12-1-76
AURORA — The city council gave unanimous approval Tuesday to a negotiated settlement of its long-running water wrangle with the beleaguered Huron Investment Co.

City Attorney Leland Coulter said the settlement should insure that the city will get all the water it initially dickered for from the financially-beset firm — with the possibility of a windfall of extra water.

In return, Huron is relieved of any further engineering or legal obligations, Coulter said, and the city will release its legal holds on Huron properties.

COULTER SAID the city will benefit from about \$250,000 that Huron has spent on engineering and legal work, and receive a \$100,000 payment to liquidate other outstanding claims.

The Huron case began July 13, 1973, when Aurora agreed to pay the company \$6,175,000 for 7,500 acre-feet of water rights on the High Chaparral Ranch in

Park County, Colo. The city purchase included about 5,000 acres of land for a reservoir site.

The company ran into money problems and on June 17, 1976, filed a petition for bankruptcy under so-called "Chapter XI" proceedings. Negotiations with the city preceded that filing, and continued.

The exact amount of water the city will receive under the new agreement is still uncertain, depending on the results of a water formula calculated over a ten year period.

If the city ends up with less than the 7,500 acre-feet, however, Huron will reimburse it at the rate of \$800 per acre foot.

That is the same rate the city originally paid for the water rights.

IF THE FINAL decree exceeds 7,500 acre-feet, Huron is entitled to the next 200 acre-feet for use on its ranch. After that, however, additional water that may come with the rights will be Aurora's—free of any additional charge, Coulter said.

"It (total water rights) could go to 10,000 acre feet," Coulter said.

The council met with Coulter in a private session for about 10 minutes to discuss some of the legal aspects of the settlement, then returned and unanimously approved the agreement.

The council also approved paying an additional \$50,000 legal fees to the firm of Vranish and Musick in relation to another set of water cases in South Park, where Aurora is dueling with Denver for water rights that eventually could amount to 7,500 to 10,000 acre feet.

6—Rocky Mountain News

Fri., Dec. 5, 1975, Denver

Coors ordered to stop dumping waste in gulch

The state Health Department has ordered the Adolph Coors Co. to stop dumping brewery waste into a gulch north of Golden that feeds into several livestock watering ponds.

The order, which stems from a July 29 incident, was designed to lay the legal foundation for enforcement action in case a similar discharge occurs again.

Howard V. Lewis, Coors director of environmental control and vice chairman of the state Water Quality Control Commission, said the company isn't dumping in the gulch anymore.

He said the July 29 incident shouldn't have happened and that the brewery has spent \$89,000 to clean up the area and improve the watering ponds.

Fred Matter, an official with the Water Quality Control Division of the Health Department, said the wastes were supposed to be distributed on agricultural lands in the area.

Instead, the truck drivers just "backed up to the gulch and pulled the plug," according to Matter.

The official said Lewis, who handles all waste control for Coors, immediately informed the state of the incident.

Matter said the waste dumping under state law required a permit. Coors had no such permit, he said.

While no punitive action has been taken against Coors because of the incident, the issuance of the order would make such an action likely in case of a recurrence.

VIII.

A. ORGANIZATIONS

CONSERVANCY DISTRICTS

Upper South Platte Water Conservancy District	James Settele	President	Fairplay
Central Colorado Water Conservancy District	John W. Rayburn	Manager	315 Denver Ave. Ft. Lupton
Northern Colorado Water Conservancy District	Earl F. Phipps	Manager	P.O. Box 679 Loveland
Lower South Platte Water Conservancy District	Gary R. Friehauf	Secretary- Treasurer	P.O. Box 1725 Sterling
St. Vrain & Left Hand Water Conservancy District	Verna Sigg	Secretary	1755 N. Main Longmont

VIII.

B. ORGANIZATIONS

WATER DISTRICT NO. 1

DITCH AND RESERVOIR COMPANIES

A.A. Smith Irrigating Canal Reservoir, Milling and Pipeline Company	Gene Peterson	Pres.	Snyder
Associated Ditches	Jake Kausman	Chairman	Ft. Morgan
Beaver Creek Ditch Company	John Higgins	Secy.	Brush
Beaver Ditch Company	Charles Henry	Pres.	Brush
Bijou Irrigation Company	John Samples	Secy.	104 West Beaver Ft. Morgan
Bijou Irrigation District	John Samples	Secy.	104 West Beaver Ft. Morgan
Corona Ditch Company	Jack Orr	Owner	Masters
Duel and Snyder	E.L. Caneva	Pres.	Rt. 1 Ft. Morgan
Fort Morgan Canal Company	Lindy Crumley	Supt.	111 East Railroad Ave. Ft. Morgan
Gill and Stevens Ditch Company	Harold Hansen	Pres.	Rt. 1 Brush
Hillrose Irrigation District	Roy Boyles	Secy.	Hillrose
Hoover Ditch Company	Mrs. Pat Peterson	Secy.	Kersey
Iliff Irrigation District	Adam Koehler	Secy.	Sterling
Illinois Ditch Company	George Allard	Pres.	Kersey
Jackson Lake Reservoir Company	Lindy Crumley	Supt.	111 East Railroad Ave. Ft. Morgan
Johnson & Edwards Ditch Company	William Tramp	Pres.	Hillrose
Lower Platte & Beaver Irrigation Company	Roy Boyles	Secy.	Hillrose
Logan Irrigation District	John Eisenach	Pres.	Sterling
Morgan, Prewitt Reservoir Co.	John Samples	Secy.	104 West Beaver Ft. Morgan
North Sterling Irrigation	Alex Michel	Supt.	Foote Building Sterling
Putnam Ditch Company	Harlan Snider	Pres.	Masters
Riverside Irrigation Company	Cecil Osborne	Supt. }	Box 455
Riverside Irrigation District	Cecil Osborne	Supt. }	Ft. Morgan
Snyder Ditch & Reservoir Co.	Gene Peterson	Pres.	Snyder
Tetsel Ditch Company	John Anderson	Pres.	Merino
Tremont Ditch Company	Leon Lake	Secy.	Snyder
Trowell Ditch Company	Willis Elson	Pres.	Hillrose
Upper Platte & Beaver Canal Co.	John Higgins	Secy.	Farmers State Bank Brush
Union Ditch Company	B.B. Peterson	Pres.	Snyder
Weldon Valley Ditch Company	Maurice Jones	Pres.	Weldona
Kiowa-Bijou Groundwater Basin	Donald F. McClary	Att.	231 Main Street Ft. Morgan