

ANNUAL REPORT -- WATER YEAR 1965
LOVELAND OFFICE
IRRIGATION DIVISION NO.1

Water District 2,3,4,5 and 6 of Division 1 has, undoubtedly, experienced the most unusual weather and moisture conditions on record. A tornado, hurricane velocity winds, struck an area west of Loveland on June 14th, causing over a million dollars worth of property damage. Numerous ditches in the area were washed out or "over topped" causing damage to the dykes and farm lands below. Considerable damage by the June 16th flood was sustained by many ditches in the Northern Colorado Water Conservancy District area. Cost estimate figures for repairs furnished by the Bureau of Reclamation amount to \$245,000. Undoubtedly, many areas and ditches had flood damage which was not reported. The cherry crop received hail and wind damage. The sugar beet harvest yielded less sugar content and tonnage in certain areas, yet increased in other areas.

Vital reservoir dams were inspected following the storm and found to be in good condition.

A comparison of the stream flows of the three major streams indicate the extent of deviation from normal or average during the past season.

<u>Gaging Sta. & Location</u>	<u>Year</u>	<u>Runoff in 1000 A.F</u>	<u>Approx. Long Time Average in 1000 A.F.</u>	<u>Percent of Average</u>	<u>Snow Forecast 6-1-65</u>
St. Vrain @ Lyons	1964	49.5	94	53	
	1965	113.	94	120	135
Big Thompson @ Mouth of Canyon	1964	83.6	118	71	
	1965	159.8	118	135	105
Cache La Poudre @ Canyon Mouth	1964	194.6	300	65	
	1965	314.9	300	127	117.

The water users of the six districts ordered a total of 135,662.4 acre feet out of a possible 186,000 acre feet allotted. Distribution of Project water into the various districts was as follows:

<u>Water Dist.</u>	<u>Supplied From</u>		<u>Total Acre Feet</u>
1	Hansen Feeder Canal via Big Thompson River	800	800
2	Hansen Feeder Canal via Big Thompson River Boulder Supply Canal via Boulder Creek	0	0
3	Hansen Supply Canal via Cache La Poudre R. Direct to water users from Project canal	72,097.4 7,343.7	79,441.1
4.	Hansen Feeder Canal via Big Thompson River St. Vrain Supply Canal via Little Thompson Direct to water users from Project canal	24,876.8 7,509.0 2,694.8	35,080.6
5	St. Vrain Supply Canal via St. Vrain River Direct to water users from Project canal	12,321.4 4,092.0	16,413.4
6	Boulder Supply Canal via Boulder Creek Direct to water users from Project canal	1,950.8 1,976.5	3,927.3
TOTAL TO ALL DISTRICTS (Including Replacement)			<u>135,662.4</u>

Comparative figures on amounts of Project water ordered and delivered, except direct delivery from canals, are as follows:

<u>Stream</u>	<u>Ordered Am't In Acre Feet</u>	<u>Delivered Am't In Acre Feet</u>	<u>Over or Under Delivery</u>
Boulder	1,950.8	2,035.	+ 84.2
St. Vrain	12,321.4	12,370.	+ 51.6
Big Thompson *	107,815.	94,946.	-12,869.
Little Thompson	7,509.	7,646.	+137.
Cache La Poudre	<u>72,097.4</u>	<u>74,780.</u>	<u>+2,682.6</u>
Totals	201,693.6	191,777.0	-9,913.6

* Includes "Skim" and Dille Tunnel diversions.

The Northern Colorado Water Conservancy District declared an initial quota of sixty percent of Project water available for delivery in the 1965 season. This amounted to 185,854.4 acre feet, including 2,519 acre feet replacement water. Less than one percent was called for and delivered during the month of April. Approximately 22,250 acre feet was delivered in May. During June and July, it was evident that an increase of quota would not be needed.

The amount of water available on the western slope in Granby and Willow Creek Reservoir, as of Nov. 1, 1965 was approximately 311,000 acre feet. This represents an increase of 140,000 acre feet over last year.

Available Project water in storage on the eastern slope, not counting Boulder Reservoir, on Nov. 1, 1965 was 131,200 acre feet. This is 160,000 acre feet more in storage than at the same time last year.

Boulder Reservoir storage gained from 4825 acre feet to 6853 acre feet during the period Nov. 1, 1964 to Nov. 1, 1965. This amount includes 3148 acre feet diverted from Lefthand Creek drainage via Boulder Feeder Canal during free water period of June 11-21, 1965.

Processing and delivery of Project water orders has remained essentially the same since 1957. Minor changes initiated in District 3 this past year have been beneficial, however, more changes are desirable.

East slope storage of free water in the Project system totaled 14,200 acre feet during June, which accounts for the minus figure on the Big Thompson River. A total of 2343 acre feet above water orders was used in the Hansen Supply Canal to the Cache La Poudre River during September for rating purposes at the 20' Parshall Flume delivery point. This work was accomplished through the cooperation of the Northern Colorado Water Conservancy District, Geological Survey, Colorado State University and State of Colorado personnel. This accounts for the plus figure on the Cache La Poudre River deliveries. The policy of the Bureau of Reclamation and Northern Colorado Water Conservancy District to deliver approximately one percent over the order was in effect during the past irrigation season.

The actual amount of water delivered to each of the streams is administered by the Water Commissioner in the area, less the carrying charge which varies as to conditions.

Western slope diversions for the Project during the period Nov.1, 1964 to Nov.1, 1965 was 101,607.3 day second feet or 201,530 acre feet. The amount diverted during the water year was 106,392.3 day second feet or 211,020 acre feet. This water joins east slope water at Lake Estes near Estes Park. A total of 138,459 day second feet or 274,160 acre feet was diverted from Lake Estes during the period Nov.1, 1964 to Nov.1, 1965. During the water year 142,571.5 day second feet or 282,180 acre feet was diverted. This includes 69,180 acre feet of Big Thompson "Skim" water and represents 150 percent of the eleven year average.

The Big Thompson River was also diverted through Tunnel No.1 or "Dille" Tunnel. Diversions of 11,900 acre feet, plus Project water orders, was used to operate the Big Thompson Power Plant. This year 86,420 acre feet went through this plant compared to 97,602 acre feet last year, based on Nov.1, 1964 to Nov.1, 1965.

During the same period, 118,020 acre feet was measured in the Hansen Feeder Canal north of the Big Thompson Siphon. Of this amount, 1,700 acre feet was delivered directly to the Buckhorn Water User's Association. The balance of 116,320 acre feet went to Horsetooth Reservoir.

This year, 800 acre feet of Project water was ordered for water users in District 1. Moisture conditions were favorable the latter part of April to make a 100 percent delivery to the So. Platte River.

Reservoir storage as of Nov.1, 1965 is above normal and approaching a maximum safety margin established by the State authorities.

A total of 200 stream and 56 canal current meter measurements were made out of the Loveland office. Numerous other measurements in this area were made by Denver office personnel.

I wish to thank the personnel of the Bureau of Reclamation, Flatiron and Estes Park Dispatchers and Northern Colorado Water Conservancy District for their cooperation and assistance during the past year.

Respectfully submitted,

Dean E. Thompson

/s/ Dean E. Thompson
Ass't Water Resources Engineer