STATE OF CALIFORNIA
DEPARTMENT OF PUBLIC WORKS
DIVISION OF WATER RESOURCES

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REPORT ON WATERMASTER SERVICE IN COW CREEK WATERMASTER SERVICE AREA SHASTA COUNTY, CALIFORNIA

1955 SEASON

Sacramento, California
February, 1956

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SUBMISSION TO, AND ADOPTION BY
DEPARTMENT OF PUBLIC WORKS

I, J. M. Page, Senior Hydraulic Engineer, Division of Water Resources, Department of Public Works of the State of California, submit the within contained report entitled "Report on Watermaster Service in Cow Creek Watermaster Service Area, Shasta County, California, 1955 Season".

/s/ J. M. Page

Senior Hydraulic Engineer

I, W. R. Gianelli, Supervising Hydraulic Engineer, Division of Water Resources, Department of Public Works of the State of California, approve this "Report on Watermaster Service in Cow Creek Watermaster Service Area, Shasta County, California, 1955 Season".

/s/ W. R. Gianelli

Supervising Hydraulic Engineer

I, L. C. Jopson, Assistant State Engineer, Division of Water Resources, Department of Public Works of the State of California, approve and adopt this "Report on Watermaster Service in Cow Creek Watermaster Service Area, Shasta County, California, 1955 Season", as a report of the Department of Public Works.

WITNESS my hand and the seal of the Department of Public Works of the State of California, this 24th day of February, 1956.

DEPARTMENT OF PUBLIC WORKS
STATE OF CALIFORNIA

/s/ L. C. Jopson
By

L. C. Jopson
Assistant State Engineer

ORGANIZATION

STATE DEPARTMENT OF PUBLIC WORKS
DIVISION OF WATER RESOURCES

Frank B. Durkee . . . . . Director of Public Works

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The activity covered by this report is under the direction of

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INTRODUCTION

This is the twenty-third annual report on watermaster service in the Cow Creek Watermaster Service Area, and covers the period of water distribution in 1955 beginning July 1 and terminating October 15.

The service area was created by order of the Department of Public Works on October 17, 1932, and was supplemented and revised by order of January 21, 1938. The service area includes the water rights determined by decrees of the Superior Court, Shasta County, as follows:

Stream	Case	Number
North Cow Creek and tributaries	Lewn, et al., v. Rutherford, et al.	5804
Oak Run Creek	Colby, et al., v. Strayer, et al.	5701
Clover Creek and tributaries	Millville Ditch Co. v. Hufford, et al.	6904

Watermaster service has been provided during each irrigation season since the service area was created, and annual reports have been prepared to show the work accomplished during each season.

The report is presented herein under four headings as follows: Introduction, Water Supply, Distribution of Water, and Changes in Ownership of Lands and Water Rights. Following the text are tables presenting precipitation data at Shasta Dam and water supply available at two main locations within the area.

WATER SUPPLY

Abnormal precipitation during the month of April increased the water supply considerably over that which was anticipated at the beginning of the season. However, the water supply available throughout the irrigation season was less than at any time during the last five seasons.

Precipitation

Data on precipitation at Shasta Dam, as compiled from records of the relatively new United States Weather Bureau station there, are shown in Table 1. Precipitation during the period October 1, 1954, to September 30, 1955, was 38.82 inches which is equivalent to 70 per cent of the 9-year average for the station. The elevation of this station is 1,078 feet.

Stream Flow

A stream gaging station, with an automatic water stage recorder, was maintained on North Cow Creek near Ingot below the confluence of Cedar Creek and North Cow Creek. Discharge at this station is presented in Table 2. Intermittent measurements were made throughout the season of the flow of Clover Creek at the Millville Ditch. Results of these measurements are presented in Table 3. No continuous records of stream flow are kept on Cedar Creek and Oak Run Creek.

DISTRIBUTION OF WATER

The water rights in the Cow Creek Watermaster Service Area are set forth in the three previously described decrees as follows:

Schedule II of the North Cow Creek decree which defines the rights to the use of water from Cedar Creek;

Schedule III and Schedule IV of the North Cow Creek decree which define the maximum irrigation allotments from North Cow Creek for Class A and Class B users, respectively;

Schedule V of the North Cow Creek decree which defines the irrigation periods of Class A and Class B users from North Cow Creek;

Schedule VI of the North Cow Creek decree which defines the minimum flow allotments from North Cow Creek for Class A and Class B users;

Schedule II of the Oak Run Creek decree which defines the rights to the use of water from Oak Run Creek;

Schedule II of the Clover Creek decree which sets forth the rights to the use of water from Clover Creek and tributaries.

A discussion of the water supply and use of water for the 1955 season on the four streams follows:

North Cow Creek

During the 1955 season distribution was made on a uniform flow basis with 100 per cent of all allotments available until about July 31, at which time the diversion of Ira J. Thorne under Application 11581, Permit 7066, was closed. The available supply was sufficient to provide various percentages of all remaining allotments during the remainder of the season as follows: Seventy per cent between August 1 and August 11, fifty per cent between August 12 and September 15, and one hundred per cent from September 16 to the end of the irrigation season.

A summary of the distribution throughout the season is presented in the following tabulation:

Month	Per cent of allotments available
June	100
July	100
August	64
September	75

Cedar Creek

The available water supply was in excess of decreed allotments up to about July 10 but gradually decreased to about 25 per cent of full allotments on August 10 and remained constant subsequent thereto until the end of the season.

Oak Run Creek

Sufficient flow was available to supply 100 per cent allotments throughout the season. The minimum flow for the season was reached about August 1 at which time 101 per cent of all allotments was available.

Clover Creek

Sufficient flow was available to satisfy 100 per cent of allotments until July 1. Thereafter the flow decreased gradually until August 5 when water supply available was sufficient to satisfy 50 per cent of allotments. The flow remained nearly constant until September 1 when rains caused sufficient increase in the flow of the creek to satisfy all allotments.

A summary of the water supply available throughout the season is presented in Table 3.

A summary of the distribution throughout the season is presented in the following tabulation:

Month	Per cent of allotments available
May	100
June	100
July	75
August	55
September	100

CHANGES IN OWNERSHIP OF LANDS AND WATER RIGHTS

No changes in ownership of lands and water rights occurred during the period covered by this report and subsequent to filing "Statement for Cow Creek Watermaster Service Area, County of Shasta, State of California, for 1955".

TABLE 1

PRECIPITATION AT SHASTA DAM,
SHASTA COUNTY, CALIFORNIA
1954-55

In Inches

Month	Precipitation
October	1.75
November	10.01
December	9.63
January	6.32
February	2.59
March	0.95
April	7.04
May	0.09
June	0.02
July	0.06
August	0.00
September	0.36
TOTAL	38.82

TABLE 2

DAILY MEAN DISCHARGE OF NORTH COW CREEK NEAR INGOT

July 28 to September 19, 1955

In Cubic Feet per Second

Day	June	July	August	September
1			6.8	9.4
2			6.6	9.7
3			6.4	10.0
4	N	N	6.2	10.3
5			6.0	10.5
	O	O		
6			5.8	10.8
7			5.6	11.0
8			5.4	11.3
9			5.2	11.6
10	R	R	5.0	11.9
11	E	E	4.8	12.2
12			4.7	12.5
13	C	C	4.5	12.8
14			4.4	13.1
15	O	O	4.3	13.4
16	R	R	4.6	13.7
17			4.9	13.7
18	D	D	5.2	13.7
19			5.5	13.7
20			5.8	
21			6.1	N
22			6.4	
23			6.7	O
24			7.0	
25			7.3	
				R
26			7.6	E
27			7.9	C
28		9.7	8.2	O
29		8.8	8.5	R
30		7.9	8.8	D
31		7.2	9.1	
Mean		8.4	6.2	11.9
Runoff, in acre-feet		67	379	447

Total for period - 893 acre-feet

TABLE 3

DAILY MEAN DISCHARGE OF CLOVER CREEK AT MILLVILLE DITCH

July 11 to September 14, 1955

In Cubic Feet per Second

Day	June	July	August	September
1		N	2.4	4.4
2			2.4	4.5
3		O	2.3	4.6
4			2.3	4.7
5	N		2.2	4.7
		R		
6		E	2.3	4.8
7	O	C	2.4	4.9
8		O	2.4	5.0
9		R	2.5	5.1
10		D	2.6	5.1
11	R	4.4	2.7	5.2
12		4.3	2.8	5.2
13		4.1	2.9	5.3
14	E	3.9	2.9	5.4
15		3.7	3.0	
				N
16	C	3.6	3.1	
17		3.4	3.2	O
18		3.3	3.3	
19	O	3.2	3.4	
20		3.2	3.4	R
21	R	3.1	3.5	E
22		3.0	3.6	
23		3.0	3.7	C
24	D	2.9	3.8	
25		2.9	3.8	O
26		2.8	3.9	R
27		2.8	4.0	
28		2.7	4.1	D
29		2.6	4.2	
30		2.6	4.3	
31	-	2.5	4.3	-
Mean		3.3	3.2	4.9
Runoff, in acre-feet		135	194	137

Total for period - 466 acre-feet