STATE OF CALIFORNIA
DEPARTMENT OF PUBLIC WORKS

REPORTS OF THE
DIVISION OF WATER RESOURCES
EDWARD HYATT, STATE ENGINEER

REPORT ON

WATER MASTER SERVICE

ON

NORTH COW CREEK AND ITS TRIBUTARIES

SHASTA COUNTY, CALIFORNIA

DURING THE 1936 SEASON

BY

G. M. Vickroy
Water Master

Sacramento, California
March, 1939

EDWARD HYATT, STATE ENGINEER
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DIVISION OF WATER RESOURCES
401 PUBLIC WORKS BUILDING

February 21, 1940

Mr. Harold Conkling
Deputy State Engineer
Sacramento, California

Attention Mr. Gordon Zander
Supervising Hydraulic Engineer

Dear Sir:

Herewith is submitted a report covering the water master service rendered in the Cow Creek Water Master District, Shasta County, California, during the 1936 season.

This report considers the climatologic and hydrographic features of the 1936 irrigation season together with a description of results of water distribution.

Respectfully submitted,

G. M. Wickroy
Water Master

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INTRODUCTION

The Cow Creek Water Master District was created by order of the State Engineer, executed on October 17, 1932, as provided in Section 37 of the Water Commission Act. Water master service under the Water Master District procedure contained in Sections 37 to 37f of said act was inaugurated during 1933 and continued through 1936 on North Cow Creek and its tributaries and on Oak Run Creek.

Water master service in 1936 was commenced on about June 1st and extended throughout the season to about September 30th.

All diversions were opened and regulated to deliver water to the various water right owners according to the schedule of distribution of water contained in Court Decree in case No. 5804 of Charles L. Lemm, et al., vs. John Rutherford, et al. and case No. 5701 of F. A. Colby, et al., vs. L. O. Strayer, et al.

There was a surplus of water until July 24th at which time distribution was made in accordance with rotation schedules as set forth in the above mentioned decrees.

DISCUSSION OF RESULTS

There was a surplus of water in Oak Run and North Cow Creeks during the month of June, the users of North Cow Creek all used water simultaneously throughout the month. Rotation was commenced on North Cow Creek on July 24th, with 100 per cent allotments for the Class A users, receded to 75 per cent by the end of the month. During the first part of August the available flow receded to 50 per cent allotments and continued at this stage during the remainder of the irrigation season.

There was a surplus of water in Oak Run Creek throughout the entire irrigation season.

PRECIPITATION DURING 1936

The average precipitation at Redding and McCloud for the seasonal year October 1, 1935 to September 30, 1936, has been compared with precipitation during the preceding thirteen seasonal years in Table One of this report. Tables 2 and 3 are tabulations of the daily net available water supplies for North Cow and Oak Run Creeks, respectively, during the 1936 season.

WATER SUPPLY DURING 1936

Plates 1 and 2 of this report graphically show the water supplies of Tables 2 and 3, respectively, and compares them with like supplies for 1937 and 1938.

TABLE I
PRECIPITATION DATA
AVERAGE AT REDDING AND McCLOUD

Season	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Total Seasonal
1922-23	4.50	3.42	9.62	4.54	1.41	0.49	6.45	0.75	2.53	0.00	0.24	2.89	36.84
1923-24	1.89	0.87	2.05	2.01	4.61	1.06	0.13	0.10	0.12	0.00	0.28	0.15	13.27
1924-25	7.06	6.55	6.24	4.53	18.35	4.24	5.58	3.11	0.93	0.00	0.81	3.28	60.68
1925-26	0.55	3.74	2.60	6.25	9.80	0.38	5.34	1.02	0.00	0.00	0.29	0.00	29.97
1926-27	3.34	18.18	4.65	10.23	14.01	5.26	4.16	2.18	1.02	0.16	0.07	0.09	63.35
1927-28	2.01	10.87	5.70	3.70	4.69	9.20	2.93	0.35	0.30	0.00	0.20	0.22	40.17
1928-29	0.64	7.41	5.75	1.59	5.32	2.91	3.54	0.11	2.32	0.00	0.00	0.00	29.59
1929-30	1.26	0.00	11.23	5.55	4.68	4.60	3.12	0.88	0.12	0.04	0.00	2.84	34.32
1930-31	0.58	2.65	1.87	7.79	3.52	2.58	0.75	0.60	3.25	0.00	0.00	0.40	23.99
1931-32	3.16	2.41	12.74	2.65	1.47	2.12	2.75	3.80	0.22	0.17	0.00	0.00	31.49
1932-33	0.13	3.13	3.75	6.38	1.19	8.46	0.41	5.38	0.22	0.01	0.00	0.26	29.32
1933-34	2.50	0.01	9.03	4.96	6.60	2.29	3.92	1.16	0.86	0.08	0.03	0.09	31.53
1934-35	3.50	8.83	3.38	8.14	5.01	2.92	8.13	0.75	0.05	0.28	0.01	0.32	41.32
1935-36	2.33	0.85	6.40	12.21	10.05	1.21	4.23	1.33	3.19	0.48	0.00	0.16	42.44
1936-37	0.13	0.00	4.51	4.64	8.79	9.48	7.32	0.31	4.32	0.04	0.00	0.06	39.60
1937-38	4.37	13.37	8.67	7.68	15.11	12.08	2.95	0.58	T	0.00	0.00	1.23	66.04
26 Year Monthly Mean	2.20	4.57	6.31	8.36	6.61	5.44	3.39	2.10	1.10	0.21	0.13	0.94	41.36

TABLE 2

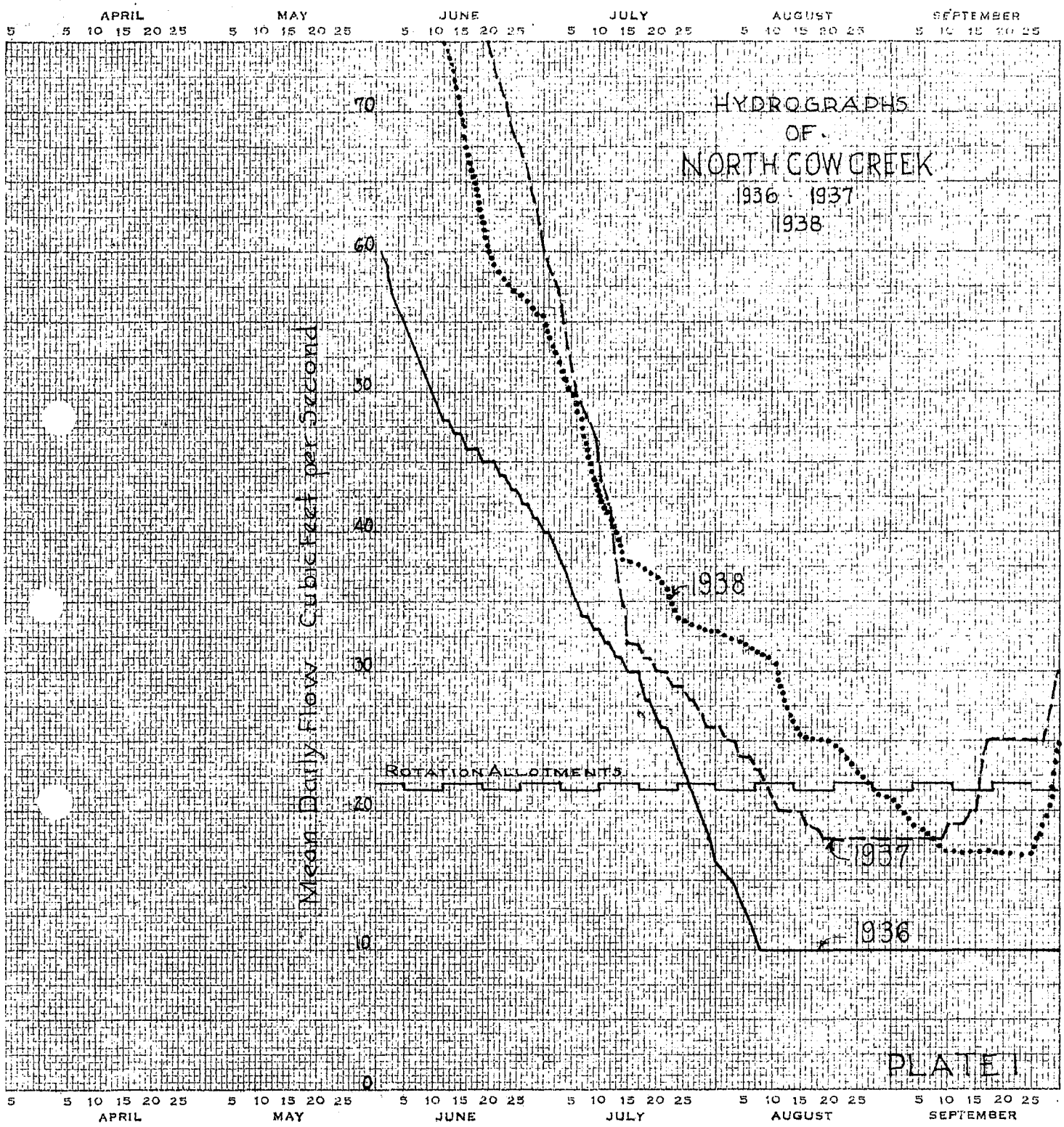
ESTIMATED DAILY NET AVAILABLE FLOW IN CUBIC FEET PER SECOND OF NORTH COW CREEK FOR THE PERIOD JUNE 1 to SEPTEMBER 30, 1936

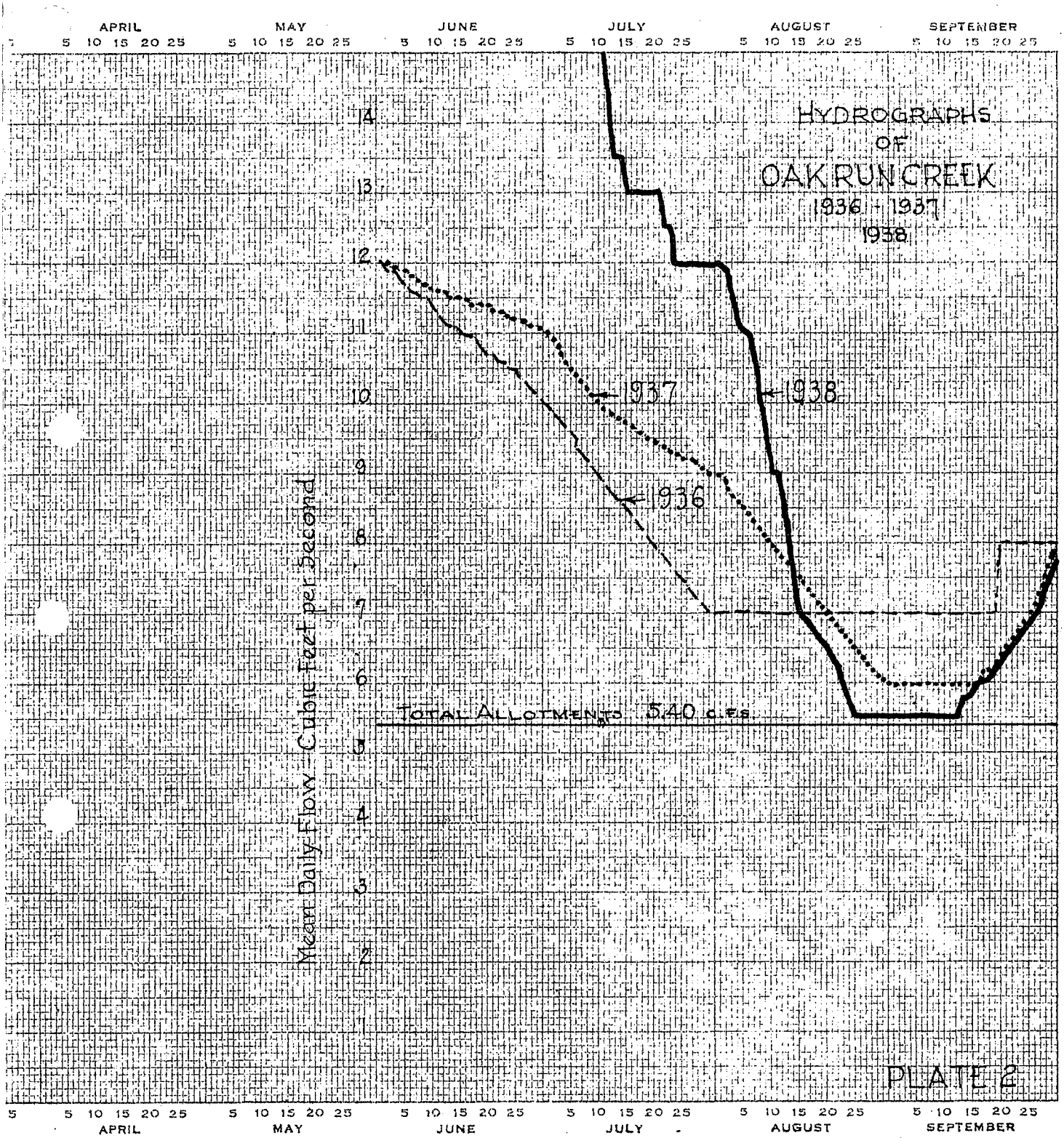
Day	June	July	August	September	
1	60.0	40.0	16.0	10.0	
2	59.0	39.0	15.5	10.0	
3	57.0	38.0	15.0	10.0	
4	56.0	37.0	14.0	10.0	
5	55.0	36.0	13.0	10.0	
6	54.0	35.0	12.0	10.0	
7	53.0	34.0	11.0	10.0	
8	52.0	34.0	10.0	10.0	
9	51.0	33.0	10.0	10.0	
10	50.0	33.0	10.0	10.0	
11	49.0	32.0	10.0	10.0	
12	48.0	32.0	10.0	10.0	
13	48.0	31.0	10.0	10.0	
14	47.0	31.0	10.0	10.0	
15	47.0	30.0	10.0	10.0	
16	46.0	30.0	10.0	10.0	
17	46.0	30.0	10.0	10.0	
18	46.0	28.0	10.0	10.0	
19	45.0	28.0	10.0	10.0	
20	45.0	27.0	10.0	10.0	
21	45.0	26.0	10.0	10.0	
22	44.0	26.0	10.0	10.0	
23	44.0	25.0	10.0	10.0	
24	43.0	24.0	10.0	10.0	
25	43.0	23.0	10.0	10.0	
26	42.0	22.0	10.0	10.0	
27	42.0	21.0	10.0	10.0	
28	41.0	20.0	10.0	10.0	
29	41.0	19.0	10.0	10.0	
30	40.0	18.0	10.0	10.0	
31		16.5	10.0		
Total Sec. Feet Days	1439.0	898.5	336.5	300.0	122 Day Period
Mean Sec. Feet	47.9	29.0	10.9	10.0	24.3
Maximum Sec. Feet	60.0	40.0	16.0	10.0	60.0
Minimum Sec. Feet	40.0	16.5	10.0	10.0	10.0
Total Acre Feet	2850.	1780.	668.	594.	5890.

TABLE 3

ESTIMATED DAILY NET AVAILABLE FLOW IN CUBIC FEET PER SECOND OF OAK RUN CREEK FOR THE PERIOD JUNE 1 to SEPTEMBER 30, 1936

Day	June	July	August	September	
1	12.0	10.0	7.00	7.00	
2	11.9	9.80	7.00	7.00	
3	11.9	9.70	7.00	7.00	
4	11.8	9.60	7.00	7.00	
5	11.7	9.50	7.00	7.00	
6	11.6	9.40	7.00	7.00	
7	11.6	9.30	7.00	7.00	
8	11.5	9.20	7.00	7.00	
9	11.5	9.10	7.00	7.00	
10	11.4	9.00	7.00	7.00	
11	11.3	8.90	7.00	7.00	
12	11.2	8.80	7.00	7.00	
13	11.1	8.70	7.00	7.00	
14	11.1	8.60	7.00	7.00	
15	11.0	8.50	7.00	7.00	
16	11.0	8.40	7.00	7.00	
17	11.0	8.30	7.00	7.00	
18	10.9	8.20	7.00	7.00	
19	10.8	8.10	7.00	7.00	
20	10.7	8.00	7.00	7.00	
21	10.7	7.90	7.00	7.00	
22	10.6	7.80	7.00	7.00	
23	10.6	7.70	7.00	7.00	
24	10.5	7.60	7.00	8.00	
25	10.5	7.50	7.00	8.00	
26	10.4	7.40	7.00	8.00	
27	10.3	7.30	7.00	8.00	
28	10.2	7.20	7.00	8.00	
29	10.1	7.10	7.00	8.00	
30	10.0	7.10	7.00	8.00	
31		7.00	7.00		
Total Sec. Feet Days	330.9	260.70	217.00	217.00	122 Day Period
Mean Sec. Feet	11.0	8.41	7.00	7.24	8.42
Maximum Sec. Feet	12.0	10.0	7.00	8.00	12.0
Minimum Sec. Feet	10.0	7.00	7.00	7.00	7.00
Total Acre Feet	657.	518.	431.	431.	2040.


HYDROGRAPHS
OF
NORTH COW CREEK
1936 1937
1938
APRIL
MAY
JUNE
JULY
AUGUST
SEPTEMBER
5 10 15 20 25
70
60
50
40
30
20
10
0
Mean Daily Flow - Cubic Feet per Second
ROTATION ALLOTMENTS
1938
1937
1936
PLATE I


HYDROGRAPHS
OF
OAK RUN CREEK
1936 - 1937
1938
APRIL
MAY
JUNE
JULY
AUGUST
SEPTEMBER
5 10 15 20 25
14
13
12
11
10
9
8
7
6
5
4
3
2
1
1937
1938
1936
TOTAL ALLOTMENTS 540 c.f.s.
Mean Daily Flow - Cubic Feet per Second
PLATE 2