

ms. 735

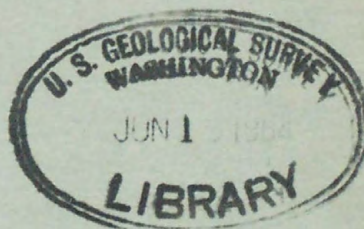
Form 9-014

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

GROSS THEORETICAL WATERPOWER
DEVELOPED AND UNDEVELOPED, STATE OF CALIFORNIA

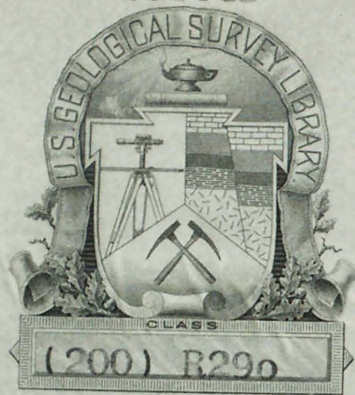
R. N. Doolittle and K. W. Sax
Sacramento, California, May, 1964

5,41
Cm



(200)
R290

196065



no. 735, 1964

C2007
R290
No. 735

USGS LIBRARY - RESTON



3 1818 00082879 6

✓
U. S. Geological Survey
Reports open file series No 735

1964



20 DEC 1965

(200)
P 295
no. 735

✓
(UNITED STATES)
(DEPARTMENT OF THE INTERIOR)
GEOLOGICAL SURVEY
[Reports - Open File series]

GROSS THEORETICAL WATERPOWER, DEVELOPED AND UNDEVELOPED
STATE OF CALIFORNIA

By R. E. Doolittle and K. W. Sax

Open-File Report

Not reviewed for conformance with the editorial
standards of the Geological Survey

Sacramento, California, May 1964

(200)
R296
no. 735

To accompany

Brett - Int. 33787

UNITED STATES
DEPARTMENT OF THE INTERIOR
Geological Survey
Washington, D. C.

U.S. Geological Survey - Reports - open file series

For release June 15, 1964

The Geological Survey is releasing in open files the following reports. Copies are available for consultation in the Geological Survey library, 1033 GS Building, Washington, D. C., and in other offices as listed:

~~1. Subsurface geology of the Upper Cretaceous Kirtland and Fruitland Formations of the San Juan Basin, New Mexico and Colorado, by James E. Fassett. 93 p., 4 figs., 12 plates. 8102 Federal Office Building, Salt Lake City, Utah; 468 New Custom House, Denver, Colorado, and 3535 E. 30th Street, Farmington, New Mexico.~~

2. Gross Theoretical Waterpower, Developed and Undeveloped, State of California, by R. N. Doolittle and K. W. Sax. 28 p. 8030 Federal Building, Sacramento, California; 232 Appraisers Building, San Francisco, California, and 1031 Bartlett Building, Los Angeles, California.

* * * * *

CONTENTS

	<u>Page Number</u>	
Introduction	1-4	
California Summary of Developed and Undeveloped Sites	5	
Colorado River Basin	5	
Great Basin	5	
Pacific Slope Basins	5	
Data On Individual Sites	<u>Developed</u>	<u>Undeveloped</u>
Colorado River Basin		
Lower Colorado River Basin	6	15
Great Basin		
Pyramid Lake Basin	7	16
Carson Sink Basin	-	16
Walker-Mono Lakes Basin	7	16
Owens Lake Basin	7	17
Southeastern California Basins	8	17
Pacific Slope Basins		
Klamath & Smith River Basins	9	18
Upper Sacramento River Basin	9	19
Feather River Basin	10	20
Lower Sacramento River Basin	11	22
North Coast River Basins	11	23
San Joaquin River Basin	12	24
South Coast River Basins	14	27

GROSS THEORETICAL WATERPOWER,
DEVELOPED AND UNDEVELOPED, STATE OF CALIFORNIA

INTRODUCTION

The Geological Survey is preparing an estimate of the gross theoretical waterpower potential of all of the western United States and Alaska in connection with a special study by the U. S. Geological Survey of the Nation's potential energy resources. This report presents in tabular form the waterpower potential of the state of California (including six sites on the Klamath River, in Oregon). The study was made essentially in accordance with standards established by the World Power Conference. Significant criteria from these standards are:

Powersites

Waterpower sites, or "powersites", are definite sections of a stream which are developed or are capable of being developed for the production of waterpower.

Potential Power Resources

The potential power resources of any country, section or river basin shall be the aggregate of the gross theoretical power at all the powersites, developed and undeveloped, in such country, section, or river basin.

Rates of Flow

The gross theoretical power of powersites shall be computed for three different rates of flow, defined as follows: Q95, Q50, and Qa (arithmetical mean flow).

Gross Head

The "gross head" shall be the difference in elevation at the time of such flow between the water surface at the beginning and at the end of the powersite, without reduction for losses.

Gross Theoretical Power

The "gross theoretical power" of a powersite shall be the full potential output at 100 percent efficiency expressed in kilowatts, and shall be determined by taking the product of the flow per second by the gross head.

Gross theoretical power shall be taken as:

$$0.085 Qh$$

when the head "h" is in feet and the flow "Q" is in cubic feet per second. (To avoid the use of large numbers in the tables, gross theoretical power is shown in megawatts (MW), one megawatt equaling 1000 kilowatts.)

The tabulation includes gross theoretical power for all developed sites having powerplants with installed capacity of 100 kilowatts or more and for all undeveloped sites having a minimum potential of 1000 kilowatts based on flow available 50 percent of the time. The least specific of World Power Conference criteria is the definition of "undeveloped sites." For purposes of this report all sites technically feasible of development were included. Development of many of these sites is quite improbable for reasons such as prior water commitments; statutes restricting dam construction; conflict with National Parks, Monuments, or Wilderness Areas; or questionable

economic feasibility. All such sites have been noted with an asterisk (*) in the footnote column indicating that development is improbable.

The potential power based on the Q95 flow represents the power that can be realized 95 percent of the time. It therefore represents the dependable power that can be developed on streams where storage for equalizing irregularities in streamflow is not available. This value does not have the significance, at present, that it had in early days of power development for several reasons. Most present-day developments depend on flow regulated by storage rather than normal streamflow. Early developments were generally single installations whereas, at present, most developments are interconnected into a large system in which the characteristics of streamflow and storage are such that deficiencies in one area can readily be absorbed by other units in the system. The principal value of the Q95 evaluation is for comparative purposes, nationally as well as internationally. Also it indicates the minimum value of the potential power of any stream or area under consideration.

The potential power based on mean flow represent the maximum attainable and will tend to be higher than can generally be realized. To realize this condition sufficient storage must be available to so regulate streamflow that all the water, including flood flows, will be utilized through the turbines. Complete utilization is seldom attained due to the absence of topographically or geologically feasible damsites, inadequate storage capacity, higher use of water for industrial or agricultural purposes, or economic infeasibility.

STATE OF CALIFORNIA SUMMARY OF DEVELOPED AND UNDEVELOPED WATERPOWER SITES

Major Basins	No. of sites	Q 95 MW	Q 50 MW	Mean MW	Installed capacity MW
Colorado River Basin					
Potential at developed sites	6	54.6	123.9	129.8	189.0
Potential at undeveloped sites	2	5.2	9.3	10.3	-
Potential at developed and undeveloped sites	8	59.8	133.2	140.1	189.0
Great Basin					
Potential at developed sites	23	81.7	156.6	197.9	285.1
Potential at undeveloped sites	27	21.9	56.9	135.7	-
Potential at developed and undeveloped sites	50	103.6	213.5	333.6	285.1
Pacific Slope Basins					
Potential at developed sites (Incl. 3 sites in Oregon)	121	974.3	2535.9	4259.8	4353.1
Potential at undeveloped sites (Incl. 3 sites in Oregon)	242	982.5	3681.5	8342.7	-
Potential at developed and undeveloped sites	363	1956.8	6217.4	12602.5	4353.1
TOTALS					
Potential at developed sites	150	1110.6	2816.4	4587.5	4827.2
Potential at undeveloped	271	1009.6	3747.7	8488.7	-
Potential at developed & undeveloped sites	421	2120.2	6564.1	13076.2	4827.2

DEVELOPED WATERPOWER SITES

STATE		Powerhouse location		Gross head	Gross theoretical power, with gross head, 100 per- cent efficiency & flows at			Installed capacity	Foot- notes
Major Basin	Sub-basin	Latitude	Longitude	feet	Q 95	Q 50	Mean		
Stream	Site	° ' "	° ' "		MW	MW	MW	MW	
CALIFORNIA									
Colorado River Basin									
Lower Colorado River Basin									
Colorado River,	Parker	34 18	114 08	78	38.1	90.2	90.9	120.0	k
All-American Canal,	Siphon Drop	32 47	114 38	15	2.0	2.2	2.2	1.6	a
All-American Canal,	Pilot Knob	32 44	114 43	55	0.0	4.7	7.0	33.0	a
All-American Canal,	Drop No. 2	32 42	115 02	25	4.0	7.2	8.0	10.0	a
All-American Canal,	Drop No. 3	32 42	115 08	25	3.6	6.6	7.4	4.8	a
All-American Canal,	Drop No. 4	32 42	115 13	51	6.9	13.0	14.3	19.6	a
Potential at developed sites					(6)	54.6	123.9	129.8	189.0

a. Arbitrary estimates for Q95 and Q50 for complex regulations.

k. Entire installed capacity located in and credited to California.

DEVELOPED WATERPOWER SITES

Major Basin	Sub-Basin	Stream	STATE	Powerhouse location	Latitude	Longitude	Gross head feet	Gross theoretical power, with gross head, 100 per cent efficiency & flows at			Installed capacity	Footnotes
		Site			° 0'	° 0'		Q 95 NW	Q 50 NW	Mean NW	NW	
CALIFORNIA												
Great Basin	Pyramid Lake Basin	Truckee River,	Farad		39 25	120 02	90	0.7	2.0	6.1	2.8	
Potential at developed site				(1)				0.7	2.0	6.1	2.8	
Walker-Nono Lakes Basin												
	Mill Creek,	Mill Creek			38 03	119 50	785	0.2	0.7	1.2	2.4	
	Lee Vining Creek,	Poola			37 57	119 13	1689	1.7	5.0	9.8	10.0	
	Rush Creek,	Rush Creek			37 46	119 08	1807 1249	1.2	3.1	6.1	8.4	
Potential at developed sites				(3)				3.1	8.8	17.1	20.8	
Owens Lake Basin												
	Owens River,	Upper Gorge			37 33	118 35	802	11.2	20.5	22.5	37.5	a
	Owens River,	Middle Gorge			37 30	118 34	795	11.1	20.3	22.3	37.5	a
	Owens River,	Control Groge			37 26	118 34	780	10.9	19.9	21.9	37.5	a
	Owens River,	Pleasant Valley			37 25	118 31	87	1.3	2.3	2.6	3.2	a
	Bishop Creek,	Bishop Creek No. 2			37 16	118 35	953	1.1	2.8	5.7	6.3	
	Bishop Creek,	Bishop Creek No. 3			37 18	118 32	809	1.0	2.4	4.8	6.6	
	Bishop Creek,	Bishop Creek No. 4			37 19	118 30	1112	1.3	3.3	6.6	6.3	
	Bishop Creek,	Bishop Creek No. 5			37 20	118 29	415	0.5	1.2	2.5	3.5	
	Bishop Creek,	Bishop Creek No. 6			37 21	118 28	260	0.3	0.8	1.5	1.8	
	Big Pine Creek,	Big Pine Creek No. 3			37 08	118 19	1245	0.6	1.7	3.4	3.2	
	Division Creek,	Division Creek No. 2			36 56	118 16	1250	0.2	0.3	0.5	0.6	
	Cottonwood Creek,	Cottonwood			36 27	118 02	1377	0.5	2.2	4.4	1.5	

DEVELOPED WATERPOWER SITES

STATE		Powerhouse location		Gross head	Gross theoretical power, with gross head, 100 per- cent efficiency & flows at			Installed capacity	Foot- notes
Major Basin	Sub-Basin	Latitude	Longitude	feet	Q 95	Q 50	Mean		
Stream	Site	° '	° '		MW	MW	MW	MW	
CALIFORNIA									
Great Basin (Contd.)									
Owens Lake Basin (Contd.)									
	Los Angeles Aqueduct, Haiwee	36 06	117 57	193	4.3	7.7	8.5	5.6	a
	L. A. Aqueduct, S. Francisquito 1	34 35	118 27	935	18.3	32.9	36.6	50.4	a
	L. A. Aqueduct, S. Francisquito 2	34 32	118 33	540	10.6	19.0	21.1	42.0	a
	L. A. Aqueduct, San Fernando	34 18	118 29	253	3.5	6.4	7.1	5.7	a
	L. A. Aqueduct, Franklin Canyon	34 06	118 25	285	0.7	1.2	1.3	2.0	a
Potential at developed sites		(17)			77.4	144.9	173.3	239.2	a
Southeastern California Basins									
	San Geronio River, Big Oaks	34 02	116 52	1773	0.3	0.6	0.9	1.5	
	San Geronio River, Pine	34 01	116 54	898	0.2	0.3	0.5	0.8	
Potential at developed sites		(2)			0.5	0.9	1.4	2.3	

a. Arbitrary estimates for Q95 and Q50
for complex regulations.

DEVELOPED WATERPOWER SITES

STATE		Powerhouse location		Gross head	Gross theoretical power, with gross head, 100 per- cent efficiency & flows at			Installed capacity	Foot note
Major Basin	Sub-Basin	Latitude	Longitude	feet	Q 95	Q 50	Mean		
Stream	Site	°	'		MG	MG	MG	MG	
CALIFORNIA									
Pacific Slope Basins									
(Basins include minor areas and 3 de-veloped sites in Oregon)									
Klamath & Smith River Basins									
Link River,	East Side (0)	42	14	121	47	49	1.0	2.4	4.0
Link River,	West Side (0)	42	13	121	47	48	0.2	0.5	0.9
Klamath River,	Big Bend (0)	42	06	122	04	463	13.2	60.0	68.3
Klamath River,	Copco No. 1	41	59	122	20	125	3.7	16.7	18.9
Fall Creek,	Fall Creek	41	59	122	22	730	1.7	2.0	2.2
Klamath River,	Copco No. 2	41	58	122	22	157	4.6	21.0	23.7
Klamath River,	Iron Gate	41	56	122	26	158	5.0	22.8	25.9
Canyon Creek,	Junction City	40	45	123	04	660	9.3	3.9	3.4
Potential at developed sites		(8)					29.8	129.3	149.3
Upper Sacramento River Basin									
Pit River,	Pit No. 1	40	59	121	30	454	43.2	52.1	52.1
Hat Creek,	Hat Creek No. 1	40	56	121	32	217	8.5	8.9	9.8
Hat Creek,	Hat Creek No. 2	40	58	121	32	198	7.7	8.1	8.9
Pit River,	Pit No. 3	41	00	121	45	315	37.5	54.7	64.9
Pit River,	Pit No. 4	40	59	121	51	382	47.4	73.1	88.5
Pit River,	Pit No. 5	40	59	121	59	615	74.2	114.5	142.9
Sacramento River,	Shasta	40	43	122	25	478	118.8	253.5	338.8
Sacramento River,	Keswick	40	37	122	27	101	25.2	53.8	71.8
Old Cow Creek,	Kilarc	40	41	121	52	1219	0.2	1.8	4.7
South Cow Creek,	Cow Creek	40	34	122	01	715	0.2	2.3	6.0
Battle Creek,	Volta	40	28	121	52	1254	4.9	9.5	13.2
Battle Creek,	South	40	24	121	53	516	5.6	10.7	14.9
Battle Creek,	Inskip	40	24	121	58	378	4.4	8.4	11.7

DEVELOPED WATERPOWER SITES

STATE		Powerhouse location		Gross head	Gross theoretical power, with gross head, 100 per- cent efficiency & flows at			Installed capacity	Foot- notes
Major Basin	Sub-Basin	Latitude	Longitude	feet	Q 95	Q 50	Mean		
Stream	Site	°	'		MW	MW	MW	MW	
CALIFORNIA									
Pacific Slope Basins (Contd.)									
Upper Sacramento River Basin (Contd.)									
Butte Creek,	Coleman	40	24	122 07	482	6.3	12.2	17.0	13.8
Butte Creek,	DeHalla	39	52	121 36	1532	7.8	15.6	26.0	24.0
Butte Creek,	Centerville	39	47	121 39	577	3.4	6.9	12.3	6.4
Potential at developed sites					(16)	395.3	636.1	883.5	885.2
Feather River Basin									
So. Fk. Feather R., Woodleaf		39	33	121 12	1494	2.8	15.6	49.5	52.0
So. Fk. Feather R., Forbestown		39	33	121 17	823	1.7	9.4	29.2	28.8
So. Fk. Feather R., Kelley Ridge		39	32	121 29	668	1.7	8.9	27.1	9.0
Hamilton Branch, Hamilton Branch		40	16	121 05	533	1.8	5.1	9.1	5.2
Butt Creek, Butt Valley		40	10	121 11	357	16.7	24.3	27.6	55.0
No. Fk. Feather R., Caribou No. 1		40	05	121 09	1150	18.6	27.4	32.3	90.0
No. Fk. Feather R., Caribou No. 2		40	05	121 09	1150	37.1	55.7	65.1	150.0
No. Fk. Feather R., Selden		40	01	121 15	770	37.8	57.3	68.5	156.0
Rock Creek, Rock Creek		39	54	121 21	535	31.8	66.5	99.7	113.4
No. Fk. Feather R., Bucks Creek		39	55	121 20	2558	1.1	9.8	54.4	66.0
No. Fk. Feather R., Cresta		39	49	121 25	290	18.6	42.3	65.3	67.5
No. Fk. Feather R., Poe		39	43	121 29	477	31.9	74.7	112.6	124.2
No. Fk. Feather R., Big Bend		39	40	121 14	465	31.3	73.9	110.7	52.8
W. Br. Feather R., Lime Saddle		39	42	121 34	478	1.0	1.8	2.0	1.6
W. Br. Feather R., Coal Canyon		39	37	121 36	545	1.2	2.1	2.3	0.8
No. Fork Yuba R., Bullards Bar		39	29	121 08	166	2.3	10.7	21.8	6.5
North Fork Yuba R., Colgate		39	20	121 11	820	11.2	35.5	38.8	24.0
So. Fork Yuba R., Spaulding No. 3		39	20	120 38	318	0.5	3.2	7.3	6.3
So. Fork Yuba R., Spaulding No. 1		38	20	120 38	197	0.7	3.2	9.2	6.4
So. Fork Yuba R., Spaulding No. 2		38	20	120 38	344	0.6	1.8	2.4	3.4

DEVELOPED WATERPOWER SITES

STATE		Powerhouse location		Gross head	Gross theoretical power, with gross head, 100 per- cent efficiency & flows at			Installed capacity	Foot- notes
Major Basin	Sub-Basin	Latitude	Longitude	feet	Q 95	Q 50	Mean		
Stream	Site	°	'		MW	MW	MW	MW	
CALIFORNIA									
Pacific Slope Basins (Contd.)									
Feather River Basin (Contd.)									
Yuba River,	Narrows	39 14	121 16	240	4.7	11.8	11.8	9.4	
South Fork Deer Cr.,	Deer Creek	39 18	120 50	1048	1.8	5.3	7.3	5.5	
Bear River,	Drum	39 15	120 46	1439	5.4	24.0	68.9	48.0	
Little Bear River,	Alta	39 13	120 48	904	0.8	1.4	1.5	2.0	
Bear River,	Dutch Flat	39 13	120 50	643	1.1	5.5	16.4	22.0	
Dry Creek,	Halsey	38 57	121 03	331	1.1	5.1	9.7	12.0	
Auburn Ravine,	Wise	38 53	121 06	519	1.3	7.1	14.1	12.0	
Potential at developed sites		(27)			266.6	589.4	961.0	1129.8	
Lower Sacramento River Basin									
So. Fk. American R.,	El Dorado	38 48	120 37	1910	11.5	33.4	80.2	20.0	
Silver Creek,	Union Valley	38 52	120 26	420	0.4	5.4	17.3	33.0	
Silver Creek,	Jaybird	38 50	120 32	1540	1.4	22.6	71.1	133.0	
Silver Creek,	Castro	38 48	120 37	1050	1.1	16.9	52.7	71.3	
American River,	American River	38 47	120 46	614	4.2	7.3	7.3	5.5	
American River,	Folsom	38 42	121 10	340	4.2	43.4	108.3	162.0	
American River,	Nimbus	38 38	121 13	42	0.5	5.3	13.2	13.5	
Potential at developed sites		(7)			23.3	134.3	390.1	438.3	
North Coast River Basins									
E. Fk. Russian R.,	Fotter Valley	39 22	123 07	477	0.9	4.1	7.7	9.0	
Potential at developed site		(1)			0.9	4.1	7.7	9.0	

DEVELOPED WATERPOWER SITES

STATE		Powerhouse location		Gross head	Gross theoretical power, with gross head, 100 per- cent efficiency & flows at			Installed capacity	Foot- notes
Major Basin	Sub-Basin	Latitude	Longitude	feet	Q 95	Q 50	Mean		
Stream	Site	°	'		MG	MG	MG	MG	
CALIFORNIA									
Pacific Slope Basins (Contd.)									
San Joaquin River Basin									
Kern River,	Kern No. 3	35	46	118 26	821	9.4	22.9	49.4	32.0
Kern River,	Borel	35	35	118 31	270	3.3	10.4	21.2	8.2
Kern River,	Kern No. 1	35	28	118 47	877	11.2	35.0	71.3	25.0
Kern River,	Kern Canyon	35	26	118 47	262	3.3	10.5	21.3	8.4
Middle Fork Tule River,	Tule R.	36	10	118 42	1563	1.7	4.0	7.6	4.8
Tule River,	Lower Tule	36	07	118 47	1151	1.8	3.9	7.6	2.0
Middle Fork Kaweah R.,	Kaweah No. 3	36	29	118 50	804	1.2	9.0	17.4	2.8
Kaweah River,	Kaweah No. 1	36	28	118 51	1482	1.3	9.7	18.1	2.3
Kaweah River,	Kaweah No. 2	36	27	118 52	389	0.6	4.5	8.6	1.8
North Fork Kings River,	Haas	36	55	119 01	2444	1.0	12.5	74.2	135.0
North Fork Kings River,	Balch No. 1	36	55	119 05	2379	0.4	5.3	30.9	31.0
North Fork Kings River,	Balch No. 2	36	55	119 05	2389	1.0	10.6	62.3	97.2
Kings River,	Kings River	36	53	119 10	750	0.8	7.7	40.9	42.0
San Joaquin River,	Mammoth Pool	37	13	119 20	1100	13.4	59.8	124.4	129.4
Big Creek,	Portal	37	15	119 10	230	0.9	4.5	9.0	10.0
Big Creek,	Big Creek No. 1	37	13	119 15	2131	20.8	67.0	90.6	67.0
Big Creek,	Big Creek No. 2	37	12	119 18	1858	18.2	58.4	79.0	57.8
Big Creek,	Big Creek No. 2A	37	12	119 18	2418	11.3	37.0	45.2	80.0
San Joaquin River,	Big Creek No. 8	37	12	119 20	713	10.3	33.3	44.8	58.9
San Joaquin River,	Big Creek No. 3	37	08	119 23	827	22.1	85.1	145.5	107.1
San Joaquin River,	Big Creek No. 4	37	07	119 29	416	11.7	46.0	76.0	84.7
North Fork Willow Creek,	Crane Valley	37	17	119 31	120	0.0	0.3	0.7	0.8
North Fork Willow Creek,	San Joaquin #3	37	15	119 31	438	0.0	0.9	2.5	4.0
Willow Creek,	San Joaquin No. 2	37	12	119 30	345	0.0	0.7	2.0	2.4
Willow Creek,	San Joaquin No. 1A	37	09	119 30	72	0.0	0.2	0.7	0.3

DEVELOPED WATERPOWER SITES

STATE		Powerhouse location		Gross head	Gross theoretical power, with gross head, 100 per- cent efficiency & flows at			Installed capacity	Foot- notes
Major Basin	Sub-Basin	Latitude	Longitude	feet	Q 95	Q 50	Mean		
Stream	Site	° ' "	° ' "		MF	MF	MF	MF	
CALIFORNIA									
Pacific Slope Basins (Contd.)									
San Joaquin River Basin (Contd.)									
Willow Creek,	A. G. Wishon	37 08	119 30	1412	0.4	3.6	13.2	13.0	
San Joaquin River,	Kerckhoff	37 05	119 34	390	10.7	49.1	68.1	34.1	
Merced River,	Yosemite	37 43	119 43	390	0.6	4.5	17.6	2.0	
Merced River,	Hucheguer	37 35	120 16	300	1.0	21.7	34.2	31.3	
Cherry Creek,	Cherry Creek	37 54	119 58	2425	0.4	45.1	123.9	135.8	
Ketch-Ketchy Agued.,	Mokassin	37 49	120 18	1316	33.6	69.4	81.7	73.6	
Tuolumne River,	San Pedro	37 43	120 24	264	5.2	19.1	43.5	27.0	
Tuolumne River,	La Grange	37 40	120 26	120	0.1	1.9	5.6	4.3	
Mid. Fork Stanislaus R.,	Donnell	38 15	120 02	1484	48.6	28.8	48.4	34.0	
Mid. Fork Stanislaus R.,	Heardsley	38 12	120 04	284	1.9	6.2	14.7	10.0	
Mid. Fork Stanislaus R.,	Spring Gap	38 11	120 07	1933	8.8	3.6	7.1	6.8	
Stanislaus River,	Stanislaus	38 08	120 23	1689	12.0	43.0	99.8	82.0	
Utica Ditch,	Marys	38 09	120 26	635	1.7	3.9	4.7	3.6	
Utica Ditch,	Angels	38 05	120 32	448	0.8	1.1	1.9	1.4	
Gulliver Creek,	Phoenix	38 02	120 20	1155	1.2	2.0	2.4	1.6	
Stanislaus River,	Melones	37 57	120 32	230	0.8	8.0	29.5	24.3	
Stanislaus River,	Tulloch	37 52	120 36	157	0.5	9.3	20.1	17.1	
No. Fork Mokelumne R.,	Bear River	38 30	120 13	2109	0.9	8.2	23.3	30.0	
No. Fork Mokelumne R.,	Salt Springs	38 30	120 13	256	1.7	6.6	10.0	9.4	
No. Fork Mokelumne R.,	Tiger Creek	38 27	120 30	1219	8.8	36.3	59.8	51.0	
No. Fork Mokelumne R.,	West Point	38 25	120 33	312	2.4	9.5	16.2	13.6	
Mokelumne River,	Electra	38 20	120 40	1268	9.7	38.8	65.7	89.1	
Mokelumne River,	Pardee	38 15	120 51	327	1.9	14.7	23.3	15.0	
Potential at developed sites		(48)			251.5	976.2	1802.7	1723.4	

DEVELOPED WATERPOWER SITES

a. Arbitrary estimates for Q95 and Q50 for complex regulations.

UNDEVELOPED WATERPOWER SITES

STATE		Powerhouse location		Gross head	Gross theoretical power, with gross head, 100 per-cent efficiency & flows at			Foot-notes	
Major Basin	Sub-Basin	Latitude	Longitude	feet	Q 95	Q 50	Mean		
Stream	Site	°	'		MW	MW	MW		
CALIFORNIA									
Colorado River Basin									
Lower Colorado River Basin									
All-American Canal, Drop No. 1		32	43	114 57	13	2.1	3.8	4.2	a
All-American Canal, Drop No. 5		32	40	115 23	24	3.1	5.5	6.1	a
Potential at undeveloped sites					(2)	5.2	9.3	10.3	

a. Arbitrary estimates for Q95 and Q50 for complex regulations.

UNDEVELOPED WATERPOWER SITES

STATE		Powerhouse location		Gross head	Gross theoretical power, with gross head, 100 per-cent efficiency & flows at			Foot- notes	
Major Basin	Sub-Basin	Latitude	Longitude	feet	Q 95	Q 50	Mean		
Stream	Site	°	°		MW	MW	MW		
CALIFORNIA									
Great Basin									
Pyramid Lake Basin									
	Truckee River,	Union Mills	39 21	120 07	500	1.3	4.3	10.6	*
	L. Truckee River,	Independence	39 28	120 13	950	0.6	1.3	2.7	
	Truckee River,	Floriston	39 23	120 01	335	1.3	4.0	10.0	*
Potential at undeveloped sites			(3)			3.2	9.6	23.3	
Carson Sink Basin									
	East Fk Carson R.,	Wolf Creek A	38 37	119 42	250	0.4	1.2	3.3	*
	East Fk Carson R.,	Wolf Creek B	38 37	119 42	315	0.2	0.6	1.5	*
	East Fk Carson R.,	Monitor Creek	38 40	119 44	385	0.8	2.4	5.9	*
	East Fk Carson R.,	Indian Creek A	38 42	119 46	185	0.5	1.4	3.6	*
	East Fk Carson R.,	Indian Creek B	38 42	119 46	300	0.2	0.5	1.3	*
	East Fk Carson R.,	Watasheam P	38 46	119 43	110	0.5	1.4	3.6	*
	West Fk Carson R.,	Woodfords	38 46	119 51	1100	1.0	2.5	7.1	
	West Fk Carson R.,	Paynesville	38 49	119 38	952	1.4	3.2	9.5	
Potential at undeveloped sites			(8)			5.0	13.2	35.6	
Walker-Mono Lakes Basin									
	Green Creek,	Green Creek No. 1	38 09	119 14	340	0.1	0.4	0.8	*
	Green Creek,	Green Creek No. 2	38 10	119 14	760	0.4	1.0	1.9	*
	Robinson Creek,	Robinson Creek	38 12	119 17	400	0.3	0.9	1.9	*
	East Walker River,	Bridgeport	38 25	119 10	500	1.3	2.6	5.6	*
	West Walker River,	Leavitt	38 20	119 33	400	0.5	1.7	5.2	
	West Walker River,	Antelope Valley	38 31	119 27	1200	2.7	8.7	25.9	
Potential at undeveloped sites			(6)			5.3	15.3	41.3	

UNDEVELOPED WATERPOWER SITES

STATE		Powerhouse location		Gross head	Gross theoretical power, with gross head, 100 per- cent efficiency & flows at			Foot not.
Major Basin	Sub-Basin	Latitude	Longitude	feet	Q 95	Q 50	Mean	
Stream	Site	o	o		MW	MW	MW	
CALIFORNIA								
Great Basin								
Owens Lake Basin								
Rock Creek,	Rock Creek No. 1	37 32	118 42	1550	1.3	2.4	4.0	
Rock Creek,	Rock Creek No. 2	37 36	118 43	1000	0.9	1.6	2.6	
Pine Creek,	Pine Creek	37 22	118 41	2290	1.9	3.1	5.8	
Bishop Creek,	Bishop Creek No. 1	37 15	118 35	900	0.8	2.1	4.2	
Big Pine Creek,	Big Pine No. 1	37 08	118 26	1209	0.6	1.6	3.3	
Big Pine Creek,	Big Pine No. 2	37 07	118 21	1789	0.9	2.4	4.9	
Cottonwood Creek,	Powerhouse No. 1	36 28	118 06	2077	0.7	1.9	3.9	
Cottonwood Creek,	Powerhouse No. 2	36 26	118 05	2166	0.7	2.8	5.5	
Potential at undeveloped sites		(8)			7.8	17.9	34.2	
Southeastern California Basins								
Snow Creek,	Snow Creek No. 1	33 52	116 41	1838	0.3	0.5	0.8	*
Snow Creek,	Snow Creek No. 2	33 53	116 41	808	0.3	0.4	0.5	*
Potential at undeveloped sites		(2)			0.6	0.9	1.3	

UNDEVELOPED WATERPOWER SITES

STATE	Powerhouse location	Gross head	Gross theoretical power, with gross head, 100 per-cent efficiency & flows at			Foot not
Major Basin	Latitude	Longitude	feet	Q 95	Q 50	Mean
Sub-Basin	°	'		MW	MW	MW
Stream	Site					
CALIFORNIA						
Pacific Slope Basins						
(Basins include minor areas and 3 undeveloped sites in Oregon)						
Klamath & Smith River Basins						
No. Fork Smith River, Feridotite	41 54	123 59	635	2.2	17.3	36.7
So. Fork Smith River, Big Flat	41 41	123 53	385	2.3	17.0	36.0
Smith River, Junction	41 47	124 03	435	8.1	63.6	134.5
Smith River, Junction afterbay	41 46	124 04	20	0.4	2.9	6.2
Klamath River, Keno (0)	42 09	122 01	292	8.1	36.8	41.9
Klamath River, Big Bend No. 3 (0)	42 04	122 05	130	3.8	17.0	19.3
Klamath River, Salt Caves (0)	42 01	122 10	420	12.2	55.1	62.7
Klamath River, Warm Springs	41 58	122 15	155	4.5	20.4	23.2
Shasta River, Montague	41 50	122 35	460	0.6	5.7	6.9
Klamath River, Badger Creek	41 50	122 37	200	9.2	41.8	47.6
Scott River, Callahan	41 19	122 48	265	0.6	3.3	6.5
Scott River, Scott Valley	41 42	123 01	755	2.2	16.7	36.6
Klamath River, Hamburg	41 47	123 03	390	41.4	103.8	133.9
Klamath River, Happy Camp	41 44	123 24	570	77.0	192.3	248.5
North Fork Salmon R., Sawyer Bar	41 18	123 09	700	1.8	8.9	17.3
North Fork Salmon R., Heiney Bar	41 17	123 15	500	1.7	6.8	13.2
So. Fork Salmon River, Black Bear	41 11	123 13	800	1.9	14.1	23.0
Salmon River, Morehouse	41 19	123 23	530	4.8	35.9	58.1
Klamath River, Slate Creek	41 15	123 39	740	112.9	325.8	506.2
Stuarts Fork, Stuart Fork No. 1	40 57	122 57	600	0.9	2.7	3.2
Stuarts Fork, Stuart Fork No. 2	40 53	122 56	950	1.5	4.5	5.0
Stuarts Fork, Stuart Fork No. 3	40 51	122 52	513	2.0	5.7	6.2
Trinity River, Trinity	40 47	122 45	485	4.0	29.8	67.1

UNDEVELOPED WATERPOWER SITES

Major Basin Sub-Basin Stream	STATE	Site	Powerhouse location		Gross head feet	Gross theoretical power, with gross head, 100 per- cent efficiency & flows at			Foot- note:	
			Latitude	Longitude		Q 95 MW	Q 50 MW	Mean MW		
										D
CALIFORNIA										
Pacific Slope Basins (Contd.)										
Klamath & Smith River Basins (Contd.)										
Trinity River,	Lewiston	40	44	122	48	50	0.4	3.1	7.0	d
North Fork,	Neenan Gulch	40	51	123	08	1348	1.7	16.0	24.1	
Trinity River,	Helena	40	45	123	10	632	7.4	63.9	138.1	d
Trinity River,	Burnt Ranch	40	48	123	28	270	3.5	30.6	66.0	d
South Fork,	Smoky Creek	40	19	123	15	320	0.4	3.7	8.7	
South Fork,	Forest Glen	40	28	123	25	860	1.7	15.0	35.1	
Hayfork Creek,	Hayfork	40	34	123	14	680	0.8	4.9	18.5	
South Fork,	Eltepon	40	43	123	31	670	2.8	22.1	74.9	
New River,	Denny	40	52	123	27	650	0.9	8.8	19.9	
Trinity River,	Beaver	41	07	123	41	690	18.5	149.0	335.5	d
Klamath River,	Hasboldt	41	27	123	56	220	46.2	194.1	323.3	d
Potential at undeveloped sites		(34)					388.4	1539.1	2590.9	d
Upper Sacramento River Basin										
Sacramento River,	Wagon Creek	41	11	121	16	1060	2.3	7.5	18.5	
Pit River,	Big Valley	41	01	121	16	840	0.0	8.8	37.3	*
Pit River,	Pit No. 2	42	00	121	34	112	11.2	14.4	17.2	
Hat Creek,	Sugar Loaf	40	44	121	26	700	4.6	6.0	7.1	
Pit River,	Pit No. 6	40	55	122	00	155	23.1	35.2	43.0	e
Pit River,	Pit No. 7	40	51	122	00	206	35.4	54.5	65.6	e
McCloud River,	Upper Falls	41	14	122	02	410	4.7	6.4	8.7	*
McCloud River,	Big Springs	41	11	122	04	360	14.3	21.1	22.5	*
McCloud River,	Rinckel	41	08	122	04	530	30.9	46.2	48.7	
McCloud River,	Lady Bug A	41	04	122	10	345	21.1	31.6	33.3	
McCloud River,	Lady Bug B	41	04	122	10	1085	3.7	11.1	13.8	

UNDEVELOPED WATERPOWER SITES

STATE		Powerhouse location		Gross head	Gross theoretical power, with gross head, 100 per-cent efficiency & flows at			Foot- notes
Major Basin	Sub-Basin	Latitude	Longitude	feet	Q 95	Q 50	Mean	
Stream	Site	°	'		MG	MG	MG	
CALIFORNIA								
Pacific Slope Basins (Contd.)								
Upper Sacramento River Basin (Contd.)								
McCloud River,	Chonton Tubas	40	57	122 14	700	52.5	76.5	97.6
Clear Creek,	Whiskeytown	40	36	122 32	278	0.4	3.2	8.5 d
Clear Creek,	Manama	40	31	122 32	292	0.5	3.6	10.5 d
Clear Creek,	Saeltzer	40	30	122 28	150	0.3	1.9	5.5 d
Mid. Fk. Cottonwood Cr.,	Fiddlers	40	20	122 39	300	0.5	2.4	7.9
Sacramento River,	Cottonwood	40	24	122 15	80	17.0	42.0	62.2 d
Sacramento River,	Iron Canyon	40	14	122 10	140	39.2	85.2	136.3 d
Deer Creek,	Deer Creek No. 1	40	09	121 39	2025	10.3	18.2	30.5
Deer Creek,	Deer Creek No. 2	40	04	121 49	920	7.3	15.2	27.6
Deer Creek,	Deer Creek No. 3	40	01	121 54	1050	8.3	17.3	31.5
Deer Creek,	Deer Creek No. 4	39	59	121 57	270	2.6	5.6	10.7
No. Fork Stony Creek,	Newville	39	47	122 31	188	0.0	2.0	5.7 f*
Stony Creek,	Black Butte	39	48	122 20	100	0.1	3.4	8.1 f*
Potential at undeveloped sites		(24)				290.3	519.2	758.5
Feather River Basin								
Middle Fk. Feather R.,	Meadow Valley	39	47	121 09	1519	7.7	31.0	89.1
Middle Fk. Feather R.,	Swayne	39	42	121 25	1430	13.4	54.7	151.9
Middle Fk. Feather R.,	Bald Rock No.5	39	38	121 16	710	1.1	6.6	18.1 *
So. Fork Feather R.,	L. Grass Valley	39	39	121 07	1489	0.3	2.0	12.7 *
So. Fork Feather R.,	Sly Creek	39	35	121 07	248	0.4	2.5	8.1 *
Last Chance A.,	Squaw Queen	40	03	120 40	1680	0.3	4.9	20.3
Indian Creek,	Genesee	40	03	120 48	190	0.1	1.5	6.1 *
Indian Creek,	Indian Falls	40	02	121 01	490	0.2	5.4	22.4
E. Br. No. Fk. Feather R.,	Balden No.2	40	01	121 15	770	1.1	12.1	46.9 *

UNDEVELOPED WATERPOWER SITES

STATE		Powerhouse location		Gross head	Gross theoretical power, with gross head, 100 per- cent efficiency & flows at			Foot- notes
Major Basin	Sub-Basin	Latitude	Longitude	feet	Q 95	Q 50	Mean	
Stream	Site	° ' "	° ' "		15'	15'	15'	
CALIFORNIA								
Pacific Slope Basins (Contd.)								
Feather River Basin (Contd.)								
Yellow Creek,	Yellow Creek	40 01	121 15	2152	2.7	7.5	12.8	
Grizzly Creek,	Grizzly Creek	39 53	121 17	688	0.2	2.3	12.9	
Rock Creek,	North Valley	39 54	121 22	2640	0.4	4.5	13.5	*
Feather River,	Oroville	39 32	121 29	675	33.8	73.2	199.4	2
Feather River,	Thermalito Diversion	39 32	121 33	80	2.7	2.7	2.7	
Feather River,	Thermalito	39 31	121 38	90	5.6	16.6	38.5	
No. Fork Yuba R.,	Sierra City	39 34	120 38	1640	1.7	4.6	11.4	*
No. Fork Yuba R.,	Goodyears Bar	39 33	120 52	1530	4.2	11.7	28.6	
No. Fork Yuba R.,	Indian Valley	39 31	121 01	430	5.0	13.6	33.1	
No. Fork Yuba R.,	Wasco	39 31	121 06	275	2.9	13.7	27.4	
No. Fork Yuba R.,	New Bullards Bar	39 23	121 08	605	7.1	33.8	72.8	6
No. Fork Yuba R.,	New Colgate	39 20	121 11	320	1.6	24.8	92.7	
No. Fork Yuba R.,	Lake Valley	39 19	120 37	838	0.9	3.6	10.8	
No. Fork Yuba R.,	Devils Slide	39 18	121 04	1500	0.8	3.4	18.6	*
No. Fork Yuba R.,	Jones Bar	39 17	121 10	850	0.7	6.3	23.3	*
Yuba River,	New Harrows	39 14	121 16	242	0.0	9.0	36.3	
Yuba River,	Parks Bar	39 13	121 20	85	1.7	7.4	17.0	
Bear River,	Dutch Flat No. 2	39 13	120 50	643	1.3	5.5	15.9	
Bear River,	Chicago Park	39 11	120 53	505	1.9	8.7	25.8	
Bear River,	Rollins	39 08	120 57	240	0.2	1.2	7.9	
Potential at undeveloped sites		(29)			100.0	374.8	1077.0	

UNDEVELOPED WATERPOWER SITES

STATE		Powerhouse location		Gross head	Gross theoretical power, with gross head, 100 per- cent efficiency & flows at			Foot- notes	
Major Basin	Sub-Basin	Latitude	Longitude	feet	Q 95	Q 50	Mean		
Stream	Site	°	'		MS	MS	MS		
CALIFORNIA									
Pacific Slope Basins (Contd.)									
Lower Sacramento River Basin									
No. Fork American R., Wabena		39	13	120 26	2250	0.2	2.3	7.7	*
No. Fork American R., Granite Canyon		39	13	120 33	600	1.0	3.1	13.8	
No. Fork American R., Mumford Bar		39	13	120 36	165	0.3	1.1	4.5	*
No. Fork American R., Sawtooth		39	12	120 08	155	0.3	1.2	4.5	*
No. Fork American River, Elzabug		39	12	120 42	380	0.9	3.3	11.3	*
No. Fork American River, Giant Gap		39	09	120 50	720	2.0	8.0	32.4	*
No. Fork American River, Gold Run		39	08	120 51	110	0.3	1.3	5.2	*
No. Fork American River, Windy Point		39	06	120 55	240	0.7	3.1	11.8	*
No. Fork American River, Kings Mill		39	03	120 54	182	0.5	2.6	9.4	*
No. Fk. Mid. Fk. American R., Mosquito		39	01	120 44	1250	0.7	4.1	7.0	*
So. Fk. Rubicon River, Loon Lake No.1		38	58	120 21	810	0.1	2.2	6.8	
So. Fk. Rubicon River, Loon Lake No.2		38	58	120 23	370	0.1	1.2	3.7	
Rubicon River, French Meadows		39	04	120 25	619	0.1	2.9	10.0	
Mid. Fk. American River, Middle Fork		39	02	120 36	2110	0.5	23.1	80.5	
Rubicon River, Ralston		39	00	120 44	1342	0.5	16.5	57.3	
Mid. Fk. American River, American Bar		38	59	120 50	282	1.0	7.5	24.7	*
No. Fk. American River, Auburn		38	52	121 03	482	3.5	28.1	82.5	
So. Fk. American River, Kyburz		38	46	120 19	2320	3.7	10.5	24.8	*
So. Fk. American River, Van Winkle		38	42	120 12	1600	1.2	4.6	9.5	*
So. Fk. American River, Alder Creek		38	45	120 22	1465	2.5	9.3	21.0	
Silver Creek, Nobbs Peak		38	53	120 23	356	0.2	2.0	6.0	
Silver Creek, Jones Fork		38	51	120 23	580	0.0	1.0	3.6	
So. Fk. American River, White Rock		38	46	120 46	860	2.6	23.0	77.4	*
So. Fk. American River, Chili Bar		38	46	120 49	60	0.5	2.2	6.5	
So. Fk. American River, Salmon Falls		38	46	121 01	474	3.6	17.3	53.6	*
Cache Creek, Wilson Valley		38	57	122 27	370	0.0	1.3	18.2	
Putah Creek, Monticello		38	31	122 06	240	0.2	0.8	9.8	
Potential at undeveloped sites		(27)				27.2	183.6	603.5	

UNDEVELOPED WATERPOWER SITES

STATE		Powerhouse location		Gross head	Gross theoretical power, with gross head, 100 per- cent efficiency & flows at			Foot- notes	
Major Basin	Sub-Basin	Latitude	Longitude	feet	Q 95	Q 50	Mean		
Stream	Site	°	°		MW	MW	MW		
CALIFORNIA									
Pacific Slope Basins (Contd.)									
North Coast River Basins (Contd.)									
Mad River,	Coyote	40 36	123 40	250	0.3	3.5	19.2	h	
Mad River,	Big Bend	40 40	123 50	1193	1.2	17.9	95.9	h	
Mad River,	Gold Rock	40 44	123 52	307	0.3	5.0	26.3	h	
Mad River,	Butler Valley	40 46	123 53	95	0.1	1.7	8.9	h	
Mad River,	Sweeney	40 49	123 58	155	0.2	3.0	15.8	h	
Little River,	Little River	41 02	123 59	450	0.5	5.2	19.2		
Little River,	Crannel	41 01	124 04	250	0.4	3.6	13.8		
Potential at undeveloped sites		(31)				13.5	230.1	933.8	
San Joaquin River Basin									
Kern River,	Kern Lake	36 13	118 21	900	7.3	17.6	37.9	*	
Kern River,	Little Kern	36 08	118 27	955	8.2	20.0	43.1		
Kern River,	Junction	35 59	118 29	1040	10.8	26.1	56.3		
So. Fork Kern R.,	Monache	36 02	118 08	1660	0.4	2.8	7.8	*	
So. Fork Kern R.,	Kern River No. 8	35 55	118 09	460	0.2	1.1	2.9	*	
So. Fork Kern R.,	Rockhouse	35 49	118 12	940	0.4	2.7	7.6		
So. Fork Kern R.,	Onyx	35 45	118 12	1630	0.7	5.3	14.7		
Kern River,	Kern No. 2	35 31	118 40	330	4.1	12.7	25.9		
Kern River,	Ant Hill	35 27	118 53	174	2.2	7.0	14.1		
Tule River,	Camp Wishon	36 12	118 40	1100	0.7	1.8	3.4	*	
Tule River,	Success	36 04	118 55	92	0.1	0.5	1.3	*	
Mid. Fork Kaweah R.,	Sevenmile	36 32	118 43	960	0.8	5.6	10.3	*	
Mid. Fork Kaweah R.,	Upper Marble	36 33	118 47	1600	0.4	4.9	10.5	*	
Mid. Fork Kaweah R.,	Kaweah No. 5	36 31	118 43	1425	1.8	14.3	27.7	*	
East Fork Kaweah R.,	East Fork	36 27	118 47	580	0.5	3.7	6.9	*	
North Fork Kaweah R.,	P. H. No. 1	36 34	118 54	1400	0.2	2.9	8.9	*	

UNDEVELOPED WATERPOWER SITES

STATE		Powerhouse location		Gross head	Gross theoretical power, with gross head, 100 per- cent efficiency & flows at			Notes
Major Basin	Sub-Basin	Latitude	Longitude	feet	Q 95 MW	Q 50 MW	Mean MW	
Stream	Site	°	'					
CALIFORNIA								
Pacific Slope Basins (Contd.)								
San Joaquin River Basin (Contd.)								
North Fork Kaweah R., P. H. No. 2		36	29	118 55	900	0.2	2.1	6.1
Kaweah River, Terminus		36	25	119 00	174	0.5	3.0	8.3
So. Fork Kings R., Woods Creek		36	52	118 31	1600	0.8	3.4	9.4
So. Fork Kings R., Paradise Valley		36	47	118 41	2280	3.7	13.0	35.9
So. Fork Kings R., Bubbs Creek		36	47	118 33	1280	1.0	3.7	10.1
So. Fork Kings R., Roaring River		36	47	118 38	1320	1.8	7.0	19.5
So. Fork Kings River, Cedar Grove		36	50	118 52	2070	9.1	36.9	103.6
Mid. Fork Kings R., Simpson		36	54	118 47	1950	5.0	16.4	44.9
Mid. Fork Kings R., Tehipite		36	51	118 52	1710	7.1	24.1	65.6
Kings River, Hume		36	51	118 55	3180	1.1	3.8	10.5
Kings River, Junction		36	52	119 00	950	11.1	37.1	102.1
Kings River, Sellers Ranch		36	53	119 08	450	5.6	18.8	51.5
North Fork Kings River, Helms		37	03	118 57	1638	0.6	3.3	27.8
Dinkey Creek, Ross		36	59	119 07	1100	0.4	3.4	13.0
Dinkey Creek, Dinkey Creek		36	55	119 05	2530	1.1	8.6	34.4
Kings River, Pine Flat		36	50	119 20	388	5.3	29.7	72.6
Mid. Fork San Joaquin R., Fish Valley		37	33	119 06	640	1.4	3.8	12.0
Mid. Fork San Joaquin R., Pumice Flat		37	33	119 07	1860	1.6	5.5	19.0
Mid. Fork San Joaquin R., Junction		37	32	119 10	1000	3.1	10.5	33.2
San Joaquin River, Miller Bridge		37	28	119 14	840	2.9	12.1	37.1
San Joaquin River, Forks		37	24	119 16	620	2.7	13.0	37.4
Chiquito Creek, Jackass		37	27	119 24	2090	2.1	9.4	32.9
San Joaquin River, Chiquito		37	24	119 16	1650	3.1	14.4	41.4
San Joaquin River, Friant		36	59	119 43	268	1.4	6.8	14.8
Fresno River, Windy Gap		37	19	119 49	1180	0.0	2.1	6.0

UNDEVELOPED WATERPOWER SITES

STATE		Powerhouse location		Gross head	Gross theoretical power, with gross head, 100 per-cent efficiency & flows at			Foot- notes	
Major Basin	Sub-Basin	Latitude	Longitude	feet	Q 95	Q 50	Mean		
Stream	Sites	°	'		MW	MW	MW		
CALIFORNIA									
Pacific Slope Basins (Contd.)									
San Joaquin River Basin (Contd.)									
Chowchilla River,	Buchanan	37	13	119 59	190	0.0	0.5	4.8	
Merced River,	Emmett	37	44	119 29	1200	0.4	4.3	17.1	*
Merced River,	Ellilouette	37	44	119 34	1900	0.3	4.4	17.4	*
Merced River,	Happy Isles	37	44	119 34	2200	0.7	11.8	43.0	*
Tenaya Creek,	Tenaya	37	46	119 31	4000	0.7	4.8	19.7	*
Yosemite Creek,	Yosemite Falls	37	45	119 35	2960	0.3	2.0	23.7	*
Bridalveil Creek,	Bridalveil	37	43	119 37	2900	0.2	2.0	7.9	*
Merced River,	Arch Rock	37	41	119 44	1110	1.2	9.7	38.3	g*
So. Fork Merced R.,	Wawona Dam	37	32	119 37	1900	1.0	5.8	25.8	*
So. Fork Merced R.,	Wawona	37	37	119 45	1500	1.5	9.6	40.8	*
So. Fork Merced R.,	Mite Cove	37	38	119 50	1000	1.2	7.9	31.5	*
So. Fork Merced R.,	Sweetwater	37	39	119 55	300	0.4	2.9	10.5	*
Merced River,	Rugby	37	37	120 09	400	1.3	14.8	40.0	
Merced River,	Exchequer (Eal.)	37	35	120 16	459	0.5	11.5	18.1	g
Merced River,	Snelling	37	31	120 22	100	0.3	7.2	11.6	
Tuolumne River,	Cathedral	37	56	119 30	2240	1.3	12.6	48.6	*
Tuolumne River,	Grand Canyon	37	55	119 38	1600	1.4	14.4	55.1	*
Tuolumne River,	Rancheria	37	55	119 38	3200	0.8	15.0	59.8	*
Tuolumne River,	Falls Creek	37	58	119 46	2700	0.5	8.3	28.5	*
Tuolumne River,	Canyon	37	53	119 57	1452	4.7	86.4	124.2	
So. Fk. Tuolumne R.,	South Fork	37	49	120 00	1300	0.4	2.8	13.5	
Tuolumne River,	Big Bearbug Creek	37	53	120 13	1780	0.8	7.4	25.9	
Clavey River,	Upper Clavey	37	59	120 03	1800	0.5	8.0	21.4	
Clavey River,	Ingalls	37	56	120 13	1700	0.3	9.4	24.6	
So. Fk. Tuolumne R.,	Paper Cabin	37	54	120 24	700	0.2	6.5	13.7	
Tuolumne River,	New Don Pedro	37	43	120 24	530	5.2	19.2	43.8	g

STATE		Powerhouse location		Gross head	Gross theoretical power, with gross head, 100 per cent efficiency & flows at			Foot-note
Major Basin	Sub-Basin	Latitude	Longitude	feet	Q 95	Q 50	Mean	
Stream	Site	° ' "	° ' "		cfs	cfs	cfs	
CALIFORNIA								
Pacific Slope Basins (Contd.)								
San Joaquin River Basin (Contd.)								
Mid. Fork Stanislaus R., Relief		38 17	119 44	700	0.8	4.0	7.9	
Mid. Fork Stanislaus R., Wagner		38 22	119 52	850	0.9	4.9	9.6	*
Mid. Fork Stanislaus R., Dardanelles		38 21	119 56	575	2.5	7.2	18.6	
Mid. Fork Stanislaus R., Sand Bar		38 11	120 08	391	2.8	9.2	21.7	
No. Fork Stanislaus R., Highland		38 24	120 04	745	0.6	2.2	9.2	
No. Fork Stanislaus R., Squaw Hollow		38 16	120 16	2225	3.6	12.7	52.6	
No. Fork Stanislaus R., Collierville		38 08	120 23	2470	1.7	15.5	100.1	
Sullivan Creek, Phoenix (Enl.)		38 02	120 20	1180	0.0	0.0	5.6	B
Stanislaus River, New Melones		37 57	120 32	578	1.2	13.3	44.5	B
Calaveras River, New Hogan		38 09	120 48	175	0.0	0.6	3.1	
No. Fork Mokelumne R., Stevenot		38 34	120 01	1040	0.8	3.5	15.4	
No. Fork Mokelumne R., Summit City		38 30	120 09	1640	1.7	8.1	38.2	
So. Fork Mokelumne R., Railroad Flat		38 22	120 37	1620	0.4	4.5	13.1	
Mokelumne River, Middle Bar		38 17	120 46	115	1.0	4.1	9.4	
Mokelumne River, Camanche		38 13	121 02	125	0.7	5.6	8.9	
No. Fork Cosumnes River, Bucks Bar		38 39	120 43	570	0.1	3.2	15.0	
Cosumnes River, Nashville		38 33	120 52	465	0.3	7.1	18.4	
Potential at undeveloped sites		(84)			156.7	815.8	2329.0	
South Coast River Basins								
Bear Creek, Bear Creek No. 1		34 13	117 00	1220	1.7	2.6	5.2	*
Santa Ana River, Bear Creek No. 2		34 10	116 58	1200	1.6	2.6	5.1	*
Santa Ana River, Bear Creek No. 3		34 10	117 01	620	1.1	2.6	3.7	*
Mill Creek, Forest Home		34 05	116 56	2080	0.9	1.6	2.1	*

UNDEVELOPED WATERPOWER SITES

STATE		Powerhouse location		Gross head	Gross theoretical power, with gross head, 100 per- cent efficiency & flows at			Foot- notes
Major Basin	Sub-Basin	Latitude	Longitude	feet	Q 95	Q 50	Mean	
Stream	Site	°	'		MW	MW	MW	
CALIFORNIA								
Pacific Slope Basins (Contd.)								
South Coast River Basins (Contd.)								
Piru Creek,	Junction Res.	34	42	119 00	425	0.0	0.4	1.3 *
Piru Creek,	Buck Creek Res.	34	41	118 50	1525	0.0	1.6	5.2 *
Piru Creek,	Blue Point Res.	34	35	118 47	1450	0.0	1.5	4.9 *
Piru Creek,	Santa Felicia Res.	34	31	118 46	280	0.0	0.3	1.4 *
Piru Creek,	Santa Felicia	34	28	118 45	175	0.0	0.2	0.9 *
Sespe Creek,	Bear Reservoir	34	33	119 12	300	0.0	0.1	0.3 *
Sespe Creek,	Topatopa	34	34	119 01	650	0.1	0.9	4.4 *
Sespe Creek,	Muzel	34	28	118 56	1340	0.3	2.1	11.2 *
Big Sur River,	Big Sur	36	15	121 45	720	0.7	2.4	4.3 *
Potential at undeveloped sites		(13)			6.4	18.9	50.0	

- d. Assumes Trinity River not diverted to Sacramento Basin.
- e. Assumes McCloud River not diverted to Pit Basin.
- f. Trans-basin diversion not included.
- g. Additional potential when existing plant replaced.
- h. Partial Van Duzen River diversion to Mad River included.

PAMPHLET BINDERS

This is No. 1528

also carried in stock in the following sizes

		HIGH	WIDE	THICKNESS			HIGH	WIDE	THICKNESS
		inches	inches	$\frac{1}{2}$ inch			inches	inches	$\frac{1}{2}$ inch
1523	9	"	7	"	1529	12	"	10	"
1524	10	"	7	"	1530	12	"	9 $\frac{1}{8}$	"
1525	9	"	6	"	1532	13	"	10	"
1526	9 $\frac{3}{4}$	"	7 $\frac{1}{4}$	"	1933	14	"	11	"
1527	10 $\frac{1}{2}$	"	7 $\frac{3}{8}$	"	1934	16	"	12	"
1528	11	"	8	"					

Other sizes made to order.

MANUFACTURED BY

LIBRARY BUREAU

DIVISION OF SPERRY RAND CORPORATION

Library Supplies of all Kinds

USGS LIBRARY - RESTON



3 1818 00082879 6