CASITAS MUNICIPAL WATER DISTRICT

HYDROLOGY REPORT

WATER YEAR 2020

August 2021

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1. INTRODUCTION

Casitas Municipal Water District (CMWD or Casitas), in cooperation with the Ventura County Watershed Protection District (VCWPD) and the U.S. Geological Service (USGS), collects hydrology data on the Ventura River system. Figure 1-1 shows the watershed boundaries including drainage areas, stream gaging stations, and weather stations. The hydrology data is a valuable asset for developing an understanding of the water resources of the Ventura River system. Since 1981, CMWD has summarized the data into a series of annual reports. This report presents information and data for the 2019–2020 Water Year (WY 2020). Data is also presented for Calendar Year 2020 for comparison to historical data.

Casitas acquired the Ojai Water System in June 2017 which serves a population of 6,712 as of December 31, 2020. The main water source for this system is a wellfield which draws from the Ojai Valley Groundwater Basin, located within the San Antonio Creek Watershed, a sub-basin to the Ventura River Watershed. The Ojai Water System is supplemented by surface water deliveries from Casitas Reservoir (also referred to as Lake Casitas herein), particularly in times of drought and/or high demand when aquifers are typically depleted and well production is reduced or limited.

Ventura County experienced a major fire (the Thomas Fire) in WY 2018 which burned nearly the entire watershed, as shown in Figure 1-2. Hydrologic impacts from the Thomas Fire are subsiding with less impacts observed in WY 2020 than WY 2019, however, WY 2020 had less rainfall in both intensity and total than 2019.

Following the Thomas Fire, loss of vegetation and diminished rainfall infiltration resulted in steep, amplified-magnitude hydrographs with heavy debris and sediment loads from slope erosion and streambed mobilization. Heavy debris loads continued to impact diversion capabilities in WY 2020 necessitating turnouts to manually clean the screens and replace brush motor sheave belts. Sediment loads appear to be decreasing as the screenbay and forebay accumulated minimal sediment in WY 2020. The forebay ponding capacity remains similar to conditions following the November 2019 removal of approximately 50,000 cubic yards of sediment. Additionally, the April 6, 2020 storm event produced naturally scouring flows, returning the reach directly downstream of Robles to near pre-fire Conditions.

Post-fire run-off deposited fine sediment in the stream channels which appears to have reduced streambed percolation, resulting in prolonged spring and summer time streamflow, and an increased duration of surface connection between the upper portions of the Ventura River watershed and the Pacific Ocean. Historically, Robles does not experience surface flow during the summer and fall in all but well above-average rainfall years. Surface flow was present at Robles since the first storm event following the Thomas Fire through WY 2020.

Streamflow monitoring was also impacted by the Thomas Fire as minimal scouring occurred in WY 2020 at Santa Ana/Coyote Creeks. Data from gaging stations continue to be impacted by heavy sediment loads deposited during post-fire storm events. Further discussion of the impacts and corrective actions taken is included in Section 2.2 herein.

Data from an additional rainfall station located on Ojai's East End and a San Antonio Creek gaging station are included in this report to reflect hydrologic conditions within the San Antonio Creek Watershed. Ojai Water System Sources and Deliveries are also included in this report. Reporting of the hydrologic aspects of this system may be expanded in the future as more data become available.

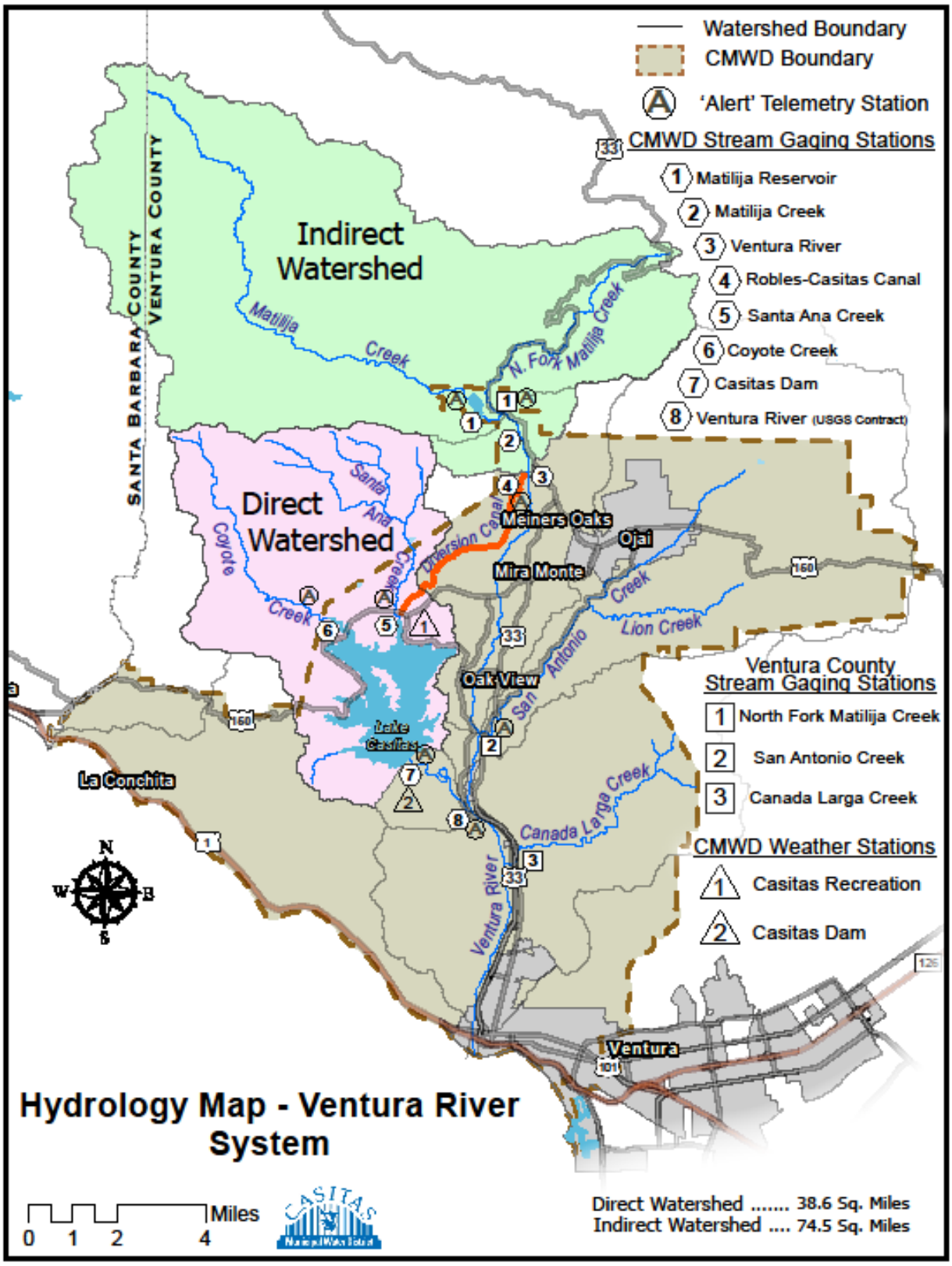

FIGURE 1-1 – Watershed of Lake Casitas

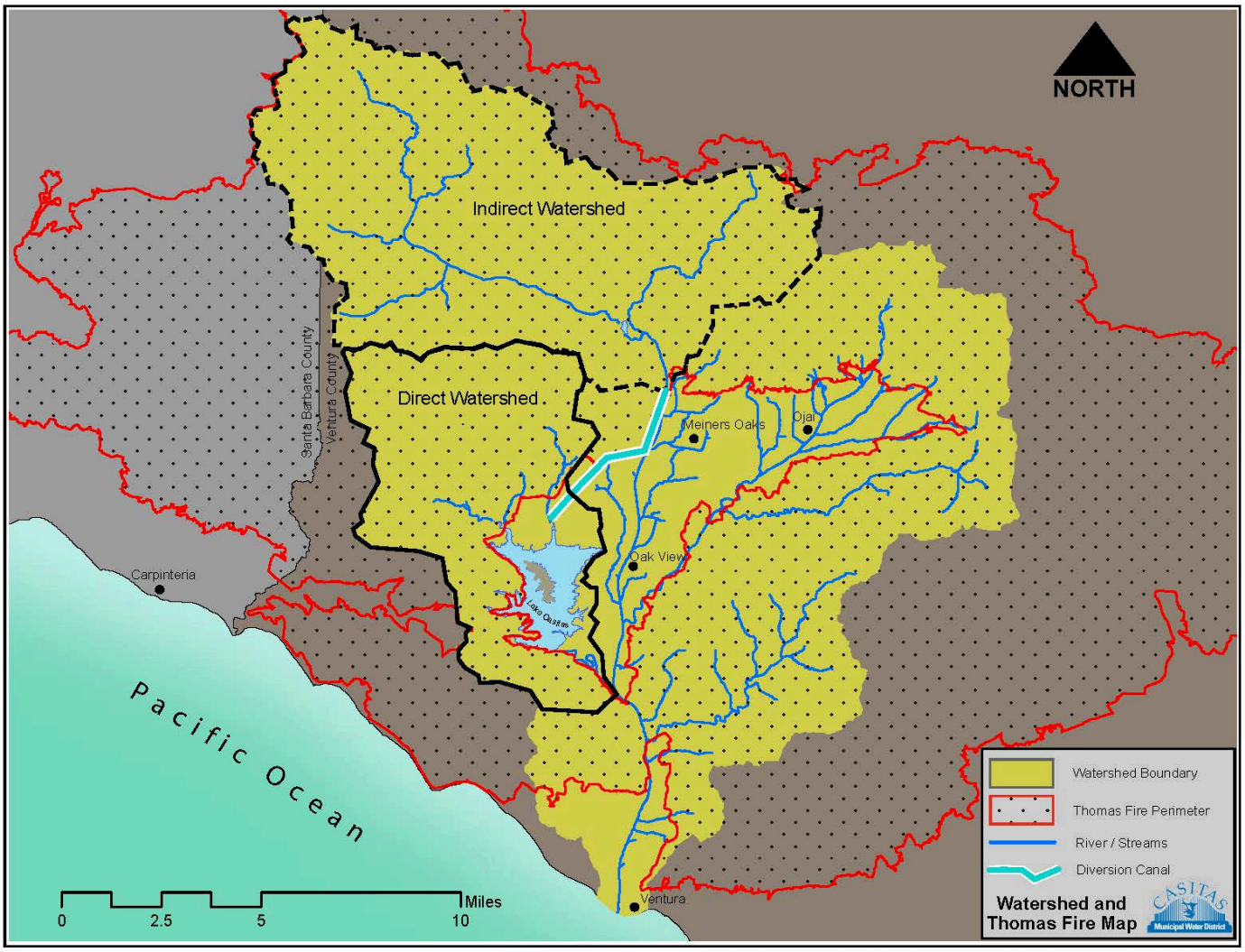

FIGURE 1-2 – Thomas Fire Boundary

2. WATER YEAR 2020 SUMMARY

The Water Year (WY) is a standard used for reporting hydrological cycles. It begins on October 1 of the preceding year and ends September 30 of the named water year. For this report:

- WY 2020 began on October 1, 2019 and ended September 30, 2020

There are four key elements of collected data evaluated this report: 1) rainfall, 2) streamflow conditions, 3) lake storage and system deliveries and 4) ambient air temperatures. Each of these elements are monitored and recorded by CMWD on a daily basis. The following subsections are summaries of the hydrologic characteristics of WY 2020.

2.1.Rainfall

Rainfall and evaporation data are collected on a daily basis by Casitas at two stations, one at the Casitas Dam and one at the Lake Casitas Recreational Area (LCRA). The methods for data collection are standardized for consistency. Rainfall data for Matilija Dam and Thacher School are obtained from VCWPD. Raw data is provided in Appendix A.

2.1.1. WY 2020

The average of the four rainfall stations was 21.83 inches for WY 2020. This is below the long-term average of 24.15 inches. Casitas Dam received 19.30 inches while Matilija Dam received 29.91 inches.

The bulk of precipitation at Casitas Dam fell in the months of December, March, and April when cumulative monthly rainfall was 6.93, 4.97, and 4.46 inches, respectively. The highest daily rainfall was recorded on April 6, 2020 with 5.51 inches of rainfall measured at Matilija Dam.

2.2.Streamflow Conditions

Streamflow conditions are assessed by collecting data at key points in the Ventura River system. Gage station locations are shown in Figure 1-1. Mean daily stream flow data is included in Appendix B.

2.2.1. WY 2020

Due to the ongoing drought, streamflow conditions were below average across the basin. Preliminary data provided by VCWPD indicates discharge from North Fork Matilija Creek totaled 4,398 acre-feet (AF) between October 1, 2019 and September 30, 2020. Discharge from Matilija Dam measured at the Matilija Hot Springs gage totaled 17,280 AF with a peak mean daily flow of approximately 638 cubic feet per second (cfs) on April 6, 2020[1].

Surface flow at the measurement weir at Robles was present October 1, 2019 and lasted the entire WY. During that period, 13,838 AF was released downstream[2]. Sediment transfer following the Thomas Fire has impacted percolation and caused elevated surface flow to occur and continue longer than it would have otherwise for WY 2020.

[1] Matilija Dam measurement from data compiled by CMWD based on instantaneous readings shown as an average daily flow in Appendix B.
[2] Robles weir measurement from data compiled by CMWD based on instantaneous readings shown as an average daily flow in Appendix B.

Diversions to the Casitas Reservoir began on December 4, 2019. Prior to December 4, all inflow was released downstream to allow for aquifer levels to rise to the extent that would be expected under natural conditions for the time of year and type of year (*Trial Operating Criteria for Robles Casitas Diversion Facilities, 1959*). The diversion canal was operated for 78 days and 6,019 AF was diverted during WY 2020 as shown in Table 2-1[3].

Table 2-1
WY 2020 Diversions

Month	Days	Volume Diverted (AF)
October 2019	0	0
November 2019	0	0
December 2019	12	539
January 2020	0	0
February 2020	0	0
March 2020	19	1,175
April 2020	30	4,101
May 2020	16	202
June 2020	0	0
July 2020	1	2
August 2020	0	0
September 2020	0	0
TOTAL	**78**	**6,019**

There were three storm peaks that met the Biological Opinion parameters to initiate supplemental downstream releases for fish passage as shown in Table 2-2. Downstream release requirements were met when Robles inflow was sufficient to do so. All flow was released downstream when inflow was less than the required supplemental release[4].

Table 2-2
WY 2020 Storm Peaks

Date	Peak Storm Flow Rate (cfs)
March 17, 2020	1,640
March 24, 2020	332
April 7, 2020	3,331

Coyote Creek and Santa Ana Creek drainage areas contribute directly to Lake Casitas storage. Coyote Creek and to a lesser extent Santa Ana Creek gaging station continues to be impacted by sediment transport and re-channelization following the Thomas Fire, rendering poor quality flow data. Direct inflow into Lake Casitas, which is reported in the Casitas Reservoir Operation data (Appendix C), was used as a surrogate for Coyote and Santa Ana creeks as the major tributaries, but also accounts for other direct runoff including smaller tributaries such as Ayers, Chismahoo, Willow, and Poplin Creeks. Direct inflow is a zero sum calculation and accounts for change in Lake Casitas storage

[3] Robles canal measurement from data compiled by CMWD based on instantaneous readings shown as an average in Appendix B.
[4] Storm peak flows can be found in Appendix C.

not accounted for by precipitation, Ventura River Diversions, evaporation, precipitation, and releases to the Marion Walker Water Treatment Plant. This value may be negative at times which is attributed to approximation in evaporation coefficients and water loss to infiltration. Only months with a positive direct inflow values are considered as a surrogate for true direct inflow into Lake Casitas and totaled 3,637 AF for WY 2020 with April 2020 accounting for 2,199 AF of total direct inflow as shown in Table 2-3[5].

Table 2-3
WY 2020 Casitas Reservoir Direct Inflow

Month	Direct Flow Volume (AF) [6]
October 2019	N/A
November 2019	N/A
December 2019	304
January 2020	216
February 2020	110
March 2020	831
April 2020	2,199
May 2020	205
June 2020	130
July 2020	92
August 2020	146
September 2020	N/A
TOTAL	**3,637**

2.3.Lake Storage and System Deliveries

Water storage volumes for system reservoirs, Casitas Dam and Matilija Dam, were ascertained by the daily recording of the reservoir elevation and applying the elevation number to a storage table for each reservoir. Casitas Reservoir data is included in Appendix C and Matilija Reservoir Data is provided in Appendix E. System delivery data for Mira Monte Well and the Ojai Water System can be found in Appendix F.

2.3.1. WY 2020

Lake Casitas Reservoir had a net decrease in water storage for WY 2020. Lake elevation was 502.33 feet above mean sea level (MSL) on October 1, 2019 and ended on September 30, 2020 at 500.21 feet above MSL, corresponding to 97,838 AF of storage in Lake Casitas at the end of the WY. The reservoir's 2.12-foot decrease in elevation resulted in a net loss of 3,283 AF. Storage increased by 8,632 AF during the five-month period of December through April; net monthly storage losses occurred outside of that period.

A new Casitas Reservoir storage rating table was adopted after completion of a LIDAR and bathymetric study resulting in a re-calculated reservoir capacity of 237,760 acre-feet (down from 254,000 acre-feet). This table was implemented on October 1, 2017 (start of WY 2018) and Casitas Reservoir storage reported from that date forward will reflect this adjustment.

[5] Direct inflow into Lake Casitas is shown in Appendix D.
[6] N/A indicates the month is not applicable because the value was negative.

Water deliveries from the reservoir to the main conveyance system totaled 10,820 AF for the Calendar Year. This is up 41 percent from 2019 and down 27 percent from the average deliveries during the previous ten years. Mira Monte well production was 154 AF during WY 2020. Deliveries within the Ojai Water System totaled 1,607 AF during WY 2020; 1,339 AF of which was sourced from the Ojai Water System Wellfield with the additional 267 AF coming from Lake Casitas.

Casitas exercised water rights to divert water released from Matilija Dam. Water rights were not exercised for several years due to National Marine Fisheries Services (NMFS) concerns related to downstream biological-impacts. The County of Ventura is the owner of Matilija Dam. As part of the critical drought protection measures (CDPM) Casitas downloaded 102 AF starting on March 17, 2020 and ending on March 18, 2020. Later in the year, at the request of the State of California Department of Water Resources Division of Safety of Dams (DSOD), the valves were operated in July 2020. Casitas conducted controlled releases from Matilija Dam at the dam on March 17-18 and July 2, 2020 which totaled 104 AF of diversion at Robles.

2.4.Ambient Air Temperatures

Data was recorded by CMWD staff at two locations, Casitas Dam and LCRA. These measurements are made on a daily basis and include the maximum and minimum ambient air temperatures and wind speed. This data is included in Appendix G.

2.4.1. WY 2020

A temperature record dating back to 1960 was broken during the 2020 calendar year: highest monthly maximum (September for Casitas Dam). Temperature collected at LCRA during 2020 was limited by camping restrictions and reduced staffing during the COVID-19 Pandemic.

3. HYDROLOGY STATIONS

Table 3-1 shows responsible agencies for various hydrology stations throughout the watershed.

Table 3-1
Hydrology Stations

Type	Location	Agency
Reservoir	Casitas Dam	Casitas
Reservoir	Matilija Dam	VCWPD
Rainfall and Evaporation	LCRA	Casitas
Rainfall and Evaporation	Casitas Dam	Casitas
Rainfall	Matilija Dam	VCWPD
Rainfall	Thacher School	VCWPD
Streamflow	Matilija Creek at Matilija Hot Springs	Casitas/VCWPD
Streamflow	Ventura River Near Meiners Oaks	Casitas
Streamflow	Robles-Casitas Canal	Casitas
Streamflow	Ventura River near Ventura (Foster Park)	USGS
Streamflow	North Fork Matilija at Matilija Hot Springs	VCWPD
Streamflow	San Antonio Creek at Old Creek Road	VCWPD
Streamflow	Santa Ana Creek near Oak View	Casitas/VCWPD
Streamflow	Coyote Creek near Oak View	Casitas/VCWPD

3.1.Historical Hydrology Period 1959 through 2020

The historical data was updated for the reporting period and is presented in Figure 3-1 for the period from 1959 through 2020. The historical data includes summaries for the Casitas Reservoir operation, Robles Diversion, rainfall, and ambient air temperature. Storage volume, represented by a solid line, is reservoir storage at the start of each calendar year (elevation measured on last day of previous calendar year). Rainfall, represented by data points with drop lines, is the three-station water year average for Casitas Dam, LCRA, and Matilija Dam rain gages. Reservoir volume prior to 1970 (not shown) represents initial filling period after Casitas Dam completion in 1959[7].

The change in Casitas Reservoir capacity was made due to performance of a bathymetric survey in 2017 which decreased the previously used 254,000 AF to 237,760 AF. Calendar year 2020 provided a net decrease in the storage volume as shown in Figure 3-1.

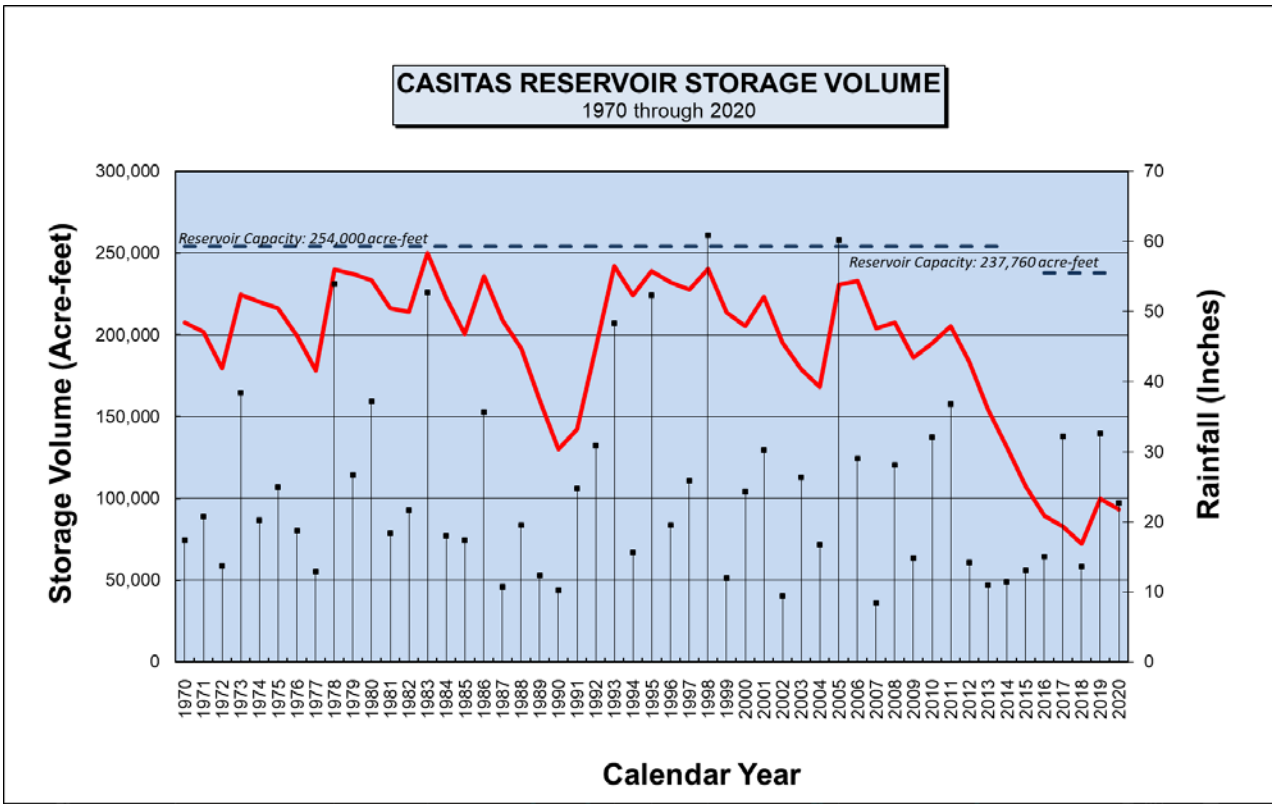

FIGURE 3-1 – Casitas Reservoir Storage Volume 1970-2020

3.2.Trends

The historical section of this summary report contains data tables and figures to illustrate trends experienced by CMWD pertaining to rainfall and water use.

[7] Historical hydrology data is provided in Appendix H.

3.2.1. Ten-Year Moving Average of Mean Precipitation

The trend presented in Figure 3-2 is a ten-year moving average of precipitation from 1880 to present and was created by calculating an average of a water year's three-station average rainfall combined with the previous nine years. The ten-year moving average is represented by the solid line traversing across the overall average for the period (24.4 inches). Rainfall data for all three stations are available since 1959, rainfall prior to 1959 was assembled using comparable nearby stations and/or correlation factors with other available stations within the watershed. The trend has resulted in what appears to be a somewhat sinusoidal curve, illustrating reoccurring periods of wet and dry conditions.

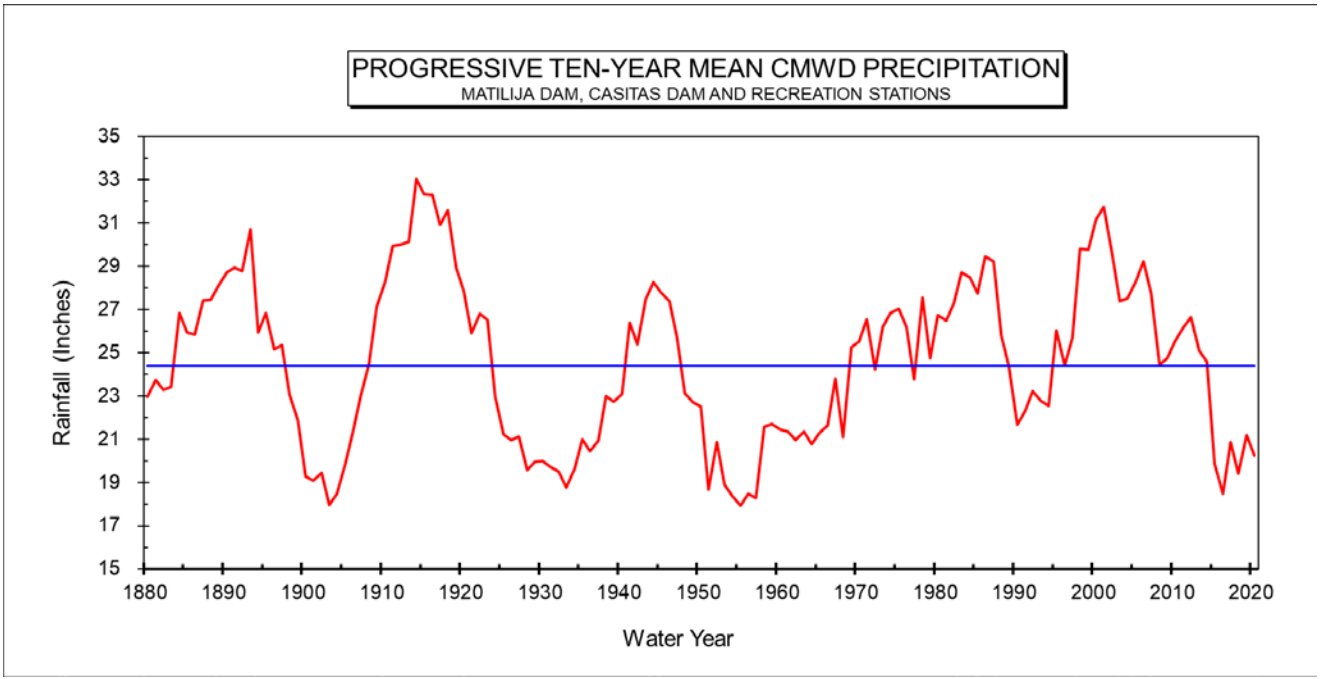

FIGURE 3-2 – Progressive Ten-Year Mean Precipitation

Appendix A

Rainfall Data

VENTURA COUNTY, CALIFORNIA

WATER SURVEY

DAILY RAINFALL RECORD

STATION:	Casitas Dam	NUMBER:	4
OBSERVER:	CMWD Damtender	OBSER. TIME:	0800
AUTHORITY;	Casitas Municipal Water District	LATITUDE:	34d22m
ADDRESS:	P.O. Box 37, Oak View, CA 93022	LONGITUDE:	119d20m
COMPILED:	V. Clary	ELEV:	

2019-2020

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1			0.23									
2												
3												
4			1.14									
5			0.23				0.03		0.01			
6							3.02					
7			0.49				0.06					
8			0.35			0.03	0.26					
9			0.27		0.03		0.52					
10			0.02			0.01	0.57					
11						0.13						
12												
13						0.38						
14			0.03			0.20						
15						0.18						
16						0.29						
17				0.72		2.63						
18						0.12		0.08				
19						0.03						
20												
21		0.04		0.10								
22					0.03							
23			2.3		0.11	0.80						
24			0.17									
25						0.03						
26			1.7									
27		0.83				0.13						
28		0.78										
29		0.20										
30		0.01				0.01						
31												
Mo Total	0.00	1.86	6.93	0.82	0.17	4.97	4.46	0.08	0.01	0.00	0.00	0.00
Yr Total	0.00	1.86	8.79	9.61	9.78	14.75	19.21	19.29	19.30	19.30	19.30	19.30

Rainfall in inches

VENTURA COUNTY, CALIFORNIA

WATER SURVEY

DAILY RAINFALL RECORD

STATION:	Lake Casitas Recreation Area	NUMBER:	204
OBSERVER:	CMWD Recreation staff	OBSER. TIME:	0800
AUTHORITY;	Casitas Municipal Water District	LATITUDE:	34d25m
ADDRESS:	P.O. Box 37, Oak View, CA 93022	LONGITUDE:	119d20m
COMPILED:	V. Clary	ELEV:	592

2019-2020

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1			0.28									
2												
3												
4			1.38									
5			0.12				0.03		0.01			
6							3.02					
7			0.40				0.06					
8			0.48				0.26					
9			0.31		0.14		0.52					
10						0.04	0.57					
11						0.58						
12						0.17						
13						0.41						
14						0.17						
15						0.22						
16						1.05						
17				0.48		1.47						
18						0.13		0.08				
19												
20												
21		0.02		0.09								
22					0.05							
23			2.20		0.48	0.88						
24			0.27									
25			0.02									
26			0.61									
27		0.67				0.12						
28		0.65										
29		0.19										
30		0.06				0.01						
31												
Mo Total	0	1.59	6.07	0.57	0.67	5.25	4.46	0.08	0.01	0	0	0
Yr Total	0	1.59	7.66	8.23	8.9	14.15	18.61	18.69	18.7	18.7	18.7	18.7

Casitas Dam data used as a surrogate due to missing data

Rainfall in inches

VENTURA COUNTY, CALIFORNIA

WATER SURVEY

DAILY RAINFALL RECORD

STATION:	Matilija Dam	NUMBER:	134
OBSERVER:	Automated	OBSER. TIME:	0800
AUTHORITY:	Ventura County Watershed Protection District	LATITUDE:	34°29' N
ADDRESS:	800 S. Victoria Ave, Ventura, CA 93009	LONGITUDE:	119°18' W
COMPILED:	Hydrologist	ELEV:	1060 ft

2019-20

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1			0.40									
2												
3												
4			2.28									
5			0.83				0.06					
6							5.51					
7			0.81				0.05					
8			0.55			0.04	0.31					
9			0.24			0.01	0.62					
10						0.14	0.44					
11						0.86						
12						0.20						
13						0.35	0.04					
14						0.13						
15						0.17						
16						1.62						
17				0.56		3.05						
18						0.01		0.05				
19						0.01						
20						0.01						
21		0.02		0.09								
22					0.24							
23			2.71		0.14	1.81						
24			0.76			0.02						
25												
26			2.25									
27		0.95				0.17						
28		0.93										
29		0.44							0.01			
30		0.01										
31						0.01						
Mo Total	0.00	2.35	10.83	0.65	0.38	8.61	7.03	0.05	0.01	0.00	0.00	0.00
Yr Total	0.00	2.35	13.18	13.83	14.21	22.82	29.85	29.90	29.91	29.91	29.91	29.91

Rainfall in inches

**Data is preliminary and subject to revision - VCWPD*

VENTURA COUNTY, CALIFORNIA

WATER SURVEY

DAILY RAINFALL RECORD

STATION:	Ojai - Thacher School	NUMBER:	059
OBSERVER:	Automated	OBSER. TIME:	0800
AUTHORITY:	Ventura County Watershed Protection District	LATITUDE:	34°28' N
ADDRESS:	800 S. Victoria Ave, Ventura, CA 93009	LONGITUDE:	119°10' W
COMPILED:	Hydrologist	ELEV:	1440 ft

2019-20

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1			0.33									
2												
3												
4			1.02									
5			0.19						0.10			
6			0.01				2.92		0.03			
7			0.57				0.07					
8			0.50				0.57					
9			0.39				0.49					
10						0.06	0.44					
11						0.11	0.01					
12						0.03						
13						0.80	0.30					
14						0.40	0.01					
15						0.08						
16						0.21						
17				0.47		1.60						
18				0.01		0.07		0.26				
19						0.01		0.01				
20						0.01						
21		0.06		0.04								
22				0.01	0.05	0.03						
23		0.01	1.55		0.14	0.93						
24			0.14			0.09						
25			0.01									
26			1.95			0.05						
27		0.70				0.14						
28		1.03				0.01						
29		0.20							0.18			
30		0.01										
31												
Mo Total	0.00	2.01	6.66	0.53	0.19	4.63	4.81	0.27	0.31	0.00	0.00	0.00
Yr Total	0.00	2.01	8.67	9.20	9.39	14.02	18.83	19.10	19.41	19.41	19.41	19.41

Rainfall in inches

**Data is preliminary and subject to revision - VCWPD*

Appendix B

Streamflow Gaging Station Data

Matilija Creek at Matilija Hot Springs

USGS #:	11115500	LATITUDE:	34°28'58" N
VCWPD #:	602	LONGITUDE:	119°18'7" W
DATE INSTALLED:	10/1927	ELEVATION:	900 ft
MAINTAINED BY:	CMWD/VCWPD	DRAINAGE AREA:	54 sq mi

WATER YEAR OCTOBER 2019 TO SEPTEMBER 2020

Daily Mean Discharge, cubic feet per second

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	8	4	11	24	12	11	42	38	22	41	6	4
2	8	4	12	25	11	9	34	38	21	52	6	4
3	8	4	15	23	11	9	25	38	20	14	5	4
4	8	4	42	21	11	9	29	36	19	12	5	3
5	8	5	55	19	11	11	53	33	16	12	5	3
6	8	5	24	16	12	10	638	33	18	12	5	3
7	7	5	23	18	11	8	198	33	17	10	5	3
8	7	6	21	20	11	12	154	33	17	11	5	3
9	7	5	17	20	10	13	190	33	17	10	5	4
10	7	6	18	20	11	15	182	31	18	10	5	4
11	7	6	18	19	13	16	160	32	19	9	4	4
12	7	7	17	19	13	18	147	31	20	10	4	4
13	6	8	13	20	13	17	138	31	18	10	4	4
14	6	8	12	19	12	17	126	31	16	10	4	4
15	6	8	14	18	12	20	117	31	15	9	4	4
16	6	9	15	18	11	295	109	29	15	9	4	4
17	6	10	16	20	11	139	98	28	15	8	4	4
18	5	10	17	18	10	52	88	29	16	8	4	3
19	5	10	19	19	11	31	77	28	15	8	4	3
20	5	9	20	18	12	27	71	27	18	8	3	3
21	5	9	19	16	12	28	69	26	19	7	3	4
22	5	9	29	16	13	26	65	26	15	7	3	4
23	5	9	34	17	14	163	60	24	12	7	4	3
24	5	9	22	17	13	88	57	24	11	7	4	3
25	5	8	25	17	13	77	54	24	13	7	4	3
26	4	7	97	15	11	68	53	24	15	7	3	3
27	4	7	39	14	11	58	50	24	15	7	3	4
28	4	8	34	14	11	48	46	24	16	7	3	3
29	4	10	31	15	11	53	44	23	15	7	3	3
30	4	11	27	14		48	40	21	14	7	4	3
31	4		25	13		44		22		6	4	
TOTAL	183	217	781	562	338	1440	3214	905	497	348	126	103
MEAN	6	7	25	18	12	46	107	29	17	11.21	4	3
MAX	8	11	97	25	14	295	638	38	22	52	6	4
MIN	4	4	11	13	10	8	25	21	11	6	3	3
ACRE FT	363	431	1549	1115	670	2857	6375	1795	986	689	250	205

Estimated daily data

These data are preliminary and subject to change until checked and evaluated by Ventura County. Unverified data may contain errors that have not been checked by Hydrology staff. Ventura County does not guarantee the accuracy of these data; please note that flows may vary considerably during each day and from day to day.

North Fork Matilija Creek at Matilija Hot Springs

USGS #:	11116000	LATITUDE:	34°29'34" N
VCWPD #:	604	LONGITUDE:	119°18'23" W
DATE INSTALLED:	01/1934	ELEVATION:	1142 ft
MAINTAINED BY:	VCWPD	DRAINAGE AREA:	15.8 sq mi

WATER YEAR OCTOBER 2019 TO SEPTEMBER 2020

Daily Mean Discharge, cubic feet per second

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	4	5	7	7	4	3	8	9	3	2	2	2
2	4	5	6	7	4	3	8	9	3	2	2	2
3	4	5	6	7	4	3	8	8	3	2	2	2
4	4	5	14	7	4	3	8	8	3	2	2	2
5	4	5	6	6	4	3	19	8	3	2	2	2
6	4	5	5	6	4	3	191	8	2	2	2	2
7	5	5	8	6	4	3	35	8	2	2	2	2
8	5	5	11	6	4	3	26	8	2	2	2	2
9	5	6	8	7	4	3	29	7	2	2	2	2
10	5	6	7	7	3	3	27	7	2	2	2	2
11	5	6	6	6	3	4	22	7	2	2	2	2
12	5	6	5	7	3	4	20	7	2	2	2	2
13	5	6	5	6	3	4	19	7	2	2	2	2
14	5	7	4	6	3	4	18	7	2	2	2	2
15	5	7	6	6	3	4	17	7	2	2	2	2
16	5	6	7	6	3	60	16	7	2	2	2	2
17	5	6	7	7	3	20	16	7	3	2	2	2
18	5	6	7	6	3	11	15	7	3	2	2	2
19	5	7	7	6	3	9	15	7	3	2	2	2
20	5	7	7	6	3	8	14	7	3	2	2	2
21	5	7	7	5	3	8	13	6	3	2	2	2
22	5	7	9	5	3	11	13	6	3	2	2	2
23	5	6	13	5	3	25	13	6	3	2	2	2
24	5	6	10	5	3	13	12	5	3	2	2	2
25	6	6	12	5	3	11	12	5	2	2	2	2
26	6	6	25	5	3	10	11	5	2	2	2	2
27	7	6	12	5	3	9	11	4	2	2	2	2
28	7	7	10	5	3	9	10	4	2	2	2	2
29	6	7	9	4	3	9	10	4	2	2	2	2
30	6	7	8	4	---	8	9	3	2	2	2	2
31	6	---	8	4	---	8	---	3	---	2	2	---
TOTAL	159	181	259	179	91	275	644	200	72	55	53	51
MEAN	5	6	8	6	3	9	21	6	2	2	2	2
MAX	7	7	25	7	4	60	191	9	3	2	2	2
MIN	4	5	4	4	3	3	8	3	2	2	2	2
ACRE FT	315	359	514	355	180	545	1277	397	143	108	104	101

Estimated daily data

These data are preliminary and subject to change until checked and evaluated by Ventura County. Unverified data may contain errors that have not been checked by Hydrology staff. Ventura County does not guarantee the accuracy of these data; please note that flows may vary considerably during each day and from day to day.

Ventura River near Meiners Oaks (Robles)

USGS #:	11116550	LATITUDE:	34°27'49" N
VCWPD #:	607	LONGITUDE:	119°17'26" W
DATE INSTALLED:	05/1959	ELEVATION:	740 ft
MAINTAINED BY:	CMWD	DRAINAGE AREA:	74 sq mi

WATER YEAR OCTOBER 2019 TO SEPTEMBER 2020

Daily Mean Discharge, cubic feet per second

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	11	8	15	34	14	9	25	29	22	26	8	3
2	9	8	13	30	14	9	27	29	23	51	8	3
3	9	8	12	25	14	8	26	29	15	25	7	3
4	9	8	26	24	14	8	25	28	17	13	7	3
5	9	8	30	23	15	7	27	28	17	19	7	2
6	8	8	23	22	15	7	754	28	18	27	8	2
7	8	8	30	22	13	7	57	29	18	23	8	2
8	8	8	32	21	11	8	69	28	17	10	8	2
9	8	8	30	21	11	7	62	28	16	11	8	3
10	8	8	26	20	11	8	57	27	15	12	6	2
11	7	8	24	20	11	21	53	29	15	11	4	4
12	7	8	22	20	11	31	50	31	14	10	4	4
13	8	8	18	20	11	26	47	30	13	10	4	3
14	8	8	16	19	11	14	45	30	13	10	4	3
15	8	9	15	19	11	14	45	29	13	10	3	3
16	8	9	16	18	11	276	45	28	14	10	3	4
17	8	8	16	21	11	35	40	28	14	10	3	4
18	7	8	15	18	11	40	32	27	16	10	3	3
19	7	6	15	18	11	36	28	28	17	10	3	3
20	7	8	14	18	10	26	28	27	17	10	2	3
21	7	8	14	18	11	23	29	25	17	9	2	4
22	7	8	16	17	12	22	29	24	16	10	3	4
23	6	8	23	17	12	24	29	24	15	10	3	4
24	6	8	22	17	11	32	30	23	14	10	3	4
25	6	8	22	16	11	39	30	24	14	11	3	4
26	6	7	81	16	10	41	30	23	14	10	3	4
27	7	12	27	16	10	41	30	23	14	10	2	4
28	7	17	36	16	9	42	31	22	14	9	2	3
29	7	16	42	24	9	40	30	22	15	9	2	2
30	7	13	39	14	---	35	30	23	14	9	3	2
31	7	---	36	15	---	28	---	23	---	8	3	---
TOTAL	233	264	766	619	337	963	1840	824	473	427	139	92
MEAN	8	9	25	20	12	31	61	27	16	14	4	3
MAX	11	17	81	34	15	276	754	31	23	51	8	4
MIN	6	6	12	14	9	7	25	22	13	8	2	2
ACRE FT	462	523	1518	1228	669	1911	3649	1634	939	847	276	182

Data is provisional and subject to revision

Rating table not validated at high flows.

Robles-Casitas Canal (First Bridge)

USGS #:	N/A	LATITUDE:	34°27'43" N
VCWPD #:	N/A	LONGITUDE:	119°17'34" W
DATE INSTALLED:	1958	ELEVATION:	770 ft
MAINTAINED BY:	CMWD	DRAINAGE AREA:	N/A

WATER YEAR OCTOBER 2019 TO SEPTEMBER 2020

Daily Mean Discharge, cubic feet per second

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0	0	0	0	0	0	7	17	0	0.76	0	0
2	0	0	0	0	0	0	6	15	0	0	0	0
3	0	0	0	0	0	0	4	13	0	0	0	0
4	0	0	49	0	0	0	4	10	0	0	0	0
5	0	0	8	0	0	0	9	9	0	0	0	0
6	0	0	0	0	0	0	338	8	0	0	0	0
7	0	0	2	0	0	0	206	6	0	0	0	0
8	0	0	18	0	0	0	119	5	0	0	0	0
9	0	0	4	0	0	0	156	5	0	0	0	0
10	0	0	0	0	0	0	159	5	0	0	0	0
11	0	0	0	0	0	12	135	5	0	0	0	0
12	0	0	0	0	0	3	112	0.86	0	0	0	0
13	0	0	0	0	0	0.68	93	1	0	0	0	0
14	0	0	0	0	0	0	77	1	0	0	0	0
15	0	0	0	0	0	0	63	0.25	0	0	0	0
16	0	0	0	0	0	104	57	0	0	0	0	0
17	0	0	0	0	0	148	57	0	0	0	0	0
18	0	0	0	0	0	56	59	0.95	0	0	0	0
19	0	0	0	0	0	2	58	0	0	0	0	0
20	0	0	0	0	0	12	53	0	0	0	0	0
21	0	0	0	0	0	10	47	0	0	0	0	0
22	0	0	4	0	0	2	41	0	0	0	0	0
23	0	0	47	0	0	132	37	0	0	0	0	0
24	0	0	13	0	0	47	32	0	0	0	0	0
25	0	0	5	0	0	24	29	0	0	0	0	0
26	0	0	75	0	0	16	26	0	0	0	0	0
27	0	0	36	0	0	9	24	0	0	0	0	0
28	0	0	11	0	0	3	21	0	0	0	0	0
29	0	0	0	0	0	0.69	20	0	0	0	0	0
30	0	0	0	0	---	3	19	0	0	0	0	0
31	0	---	0	0	---	7	---	0	---	0	0	---
TOTAL	0	0	272	0	0	593	2067	102	0	0.76	0	0
MEAN	0	0	9	0	0	19	69	3	0	0.02	0	0
MAX	0	0	75	0	0	148	338	17	0	0.76	0	0
MIN	0	0	0	0	0	0	4	0	0	0	0	0
ACRE FT	0	0	539	0	0	1176	4100	202	0	2	0	0

Data is provisional and subject to revision.

Ventura River near Ventura (Foster Park)

USGS #:	11118500	LATITUDE:	34°21'09" N
VCWPD #:	608	LONGITUDE:	119°18'29" W
DATE INSTALLED:	10/1929	ELEVATION:	205 ft
MAINTAINED BY:	USGS, Water Resources Division	DRAINAGE AREA:	187 sq mi

WATER YEAR OCTOBER 2019 TO SEPTEMBER 2020

Daily Mean Discharge, cubic feet per second

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	8	6	5	24	14	11	23	22	20	11	10	5
2	7	6	5	23	14	11	23	25	19	25	9	5
3	8	6	5	22	15	11	23	26	19	23	8	5
4	8	6	31	21	15	11	23	27	17	14	8	5
5	8	6	3	20	15	10	24	27	18	11	8	4
6	8	6	3	19	14	11	1280	27	19	10	8	4
7	7	5	3	19	14	11	108	28	19	10	7	4
8	7	5	16	19	14	11	100	30	17	9	7	5
9	7	5	10	19	14	11	111	32	17	9	7	5
10	7	5	7	19	14	11	96	33	16	9	7	5
11	7	5	7	19	13	12	67	33	14	9	7	5
12	7	5	7	19	14	14	54	35	15	9	7	5
13	7	5	7	18	13	14	50	35	15	9	8	4
14	7	5	7	18	13	13	42	34	14	9	8	4
15	7	5	7	18	13	13	41	33	13	10	8	3
16	7	5	7	18	13	451	39	31	14	11	7	3
17	7	5	7	23	13	68	36	29	14	11	7	3
18	6	5	7	19	12	43	30	27	14	11	7	3
19	7	5	7	19	12	36	26	27	14	10	7	3
20	7	5	7	18	12	28	25	27	14	10	8	3
21	6	5	8	18	12	23	24	25	14	10	8	3
22	6	5	34	17	12	23	23	24	14	10	8	3
23	6	5	51	16	13	32	22	24	13	11	7	3
24	6	5	26	16	12	28	22	24	12	10	6	3
25	6	5	47	16	12	33	22	23	12	10	6	3
26	6	5	185	15	11	35	22	22	12	10	6	3
27	6	6	33	15	11	35	22	21	11	10	6	4
28	6	7	31	15	11	33	22	20	11	11	6	4
29	6	6	35	14	11	33	22	20	12	11	6	4
30	6	6	30	15	---	30	22	20	12	11	6	4
31	6	---	27	14	---	26	---	21	---	10	6	---
TOTAL	211	159	665	563	373	1131	2443	833	446	345	224	118
MEAN	7	5	21	18	13	36	81	27	15	11	7	4
MAX	8	7	185	24	15	451	1280	35	20	25	10	5
MIN	6	5	3	14	11	10	22	20	11	9	6	3
ACRE FT	418	315	1319	1117	739	2243	4845	1652	884	685	444	234

Estimated daily data. (USGS)

San Antonio Creek at Old Creek Rd

USGS #:	11117500	LATITUDE:	34°22'57" N
VCWPD #:	605A	LONGITUDE:	119°18'10" W
DATE INSTALLED:	10/1949	ELEVATION:	312 ft
MAINTAINED BY:	VCWPD	DRAINAGE AREA:	51.2 sq mi

WATER YEAR OCTOBER 2019 THROUGH SEPTEMBER 2020

Daily Mean Discharge, cubic feet per second

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0.08	0.61	1	0.05	0	2	0.01	0	0	0	0	0
2	0.41	0.56	1	0.15	0.61	1	0.05	0	0	0	0	0
3	0.34	0.64	1	0	2	1	0.15	0	0	0	0	0
4	0.38	0.54	21	0	2	1	0.59	0	0	0	0	0
5	0.45	0.52	0.39	0	0.73	1	2	0	0	0	0	0
6	0.56	0.42	0	0	0.44	2	269	0	0	0	0	0
7	0.44	0.20	0.71	0	0.43	2	27	0	0	0	0	0
8	0.28	0.32	5	0	0.48	2	18	0	0	0	0	0
9	0.37	0.28	1	0	0.62	2	22	0	0	0	0	0
10	0.19	0.27	0.49	0	1	2	21	0	0	0	0	0
11	0.11	0.20	0.64	0	2	2	15	0	0	0	0	0
12	0.09	0.20	0.98	0	2	3	11	0	0	0	0	0
13	0.03	0.25	1	0	1	3	9	0	0	0	0	0
14	0.03	0.31	1	0	0.48	2	6	0	0	0	0	0
15	0.12	0.59	1	0	0.60	1	4	0	0	0	0	0
16	0.18	0.49	2	0.08	0.92	50	4	0	0	0	0	0
17	0.07	0.53	2	0.78	2	9	3	0	0	0	0	0
18	0.11	0.53	2	0	2	2	3	0	0	0	0	0
19	0.15	0.45	0.99	0	2	0.03	3	0	0	0	0	0
20	0.19	0.74	1	0	2	0	3	0	0	0	0	0
21	0.21	0.69	1	0	1	0	2	0	0	0	0	0
22	0.23	0.80	10	0	2	0.80	1	0	0	0	0	0
23	0.34	1	5	0	0.51	4	0.40	0	0	0	0	0
24	0.40	2	0.22	0	1	2	0.09	0	0	0	0	0
25	0.41	2	35	0	1	0.08	0	0	0	0	0	0
26	0.30	1	72	0	2	2	0	0	0	0	0	0
27	0.29	1	3	0	1	1	0	0	0	0	0	0
28	0.51	3	0.87	0	1	0.80	0	0	0	0	0	0
29	0.63	2	0.17	0.05	1	0.34	0	0	0	0	0	0
30	0.69	1	0.44	0.04	------	0.18	0	0	0	0	0	0
31	0.67	------	0	0	------	0.15	------	0	------	0	0	-
TOTAL	9	23	171	1	34	97	424	0	0	0	0	0
MEAN	0.30	0.78	6	0.04	1	3	14	0	0	0	0	0
MAX	0.69	3	72	0.78	2	50	269	0	0	0	0	0
MIN	0.03	0.20	0	0	0	0	0	0	0	0	0	0
ACRE FT	18	46	339	2	67	192	840	0	0	0	0	0

These data are preliminary and subject to change until checked and evaluated by Ventura County. Unverified data may contain errors that have not been checked by Hydrology Staff. Ventura County does not guarantee the accuracy of these data; please note that flows may vary considerably during each day and from day to day.

Appendix C

Fisheries Storm Peak Logs

Flow Assessment at Robles Diversion and Fish Passage Facility
Critical Drought Protection Measures (Stage 3-4, 100k - 65k af)

Date: 3-17-20 Time: 9:00 Prepared by: Scott Lewis

Storm Peak Discharge

	date	time	cfs
North Fork Matilija Cr	3-16	16:29	452
Matlija Cr above dam	↓	12:45	280
Matlija Dam		16:25	1,640
Matilija Cr at Hot Spr.		16:25	1,213
Robles Canal			
Robles Weir	↓	17:54	1,640
Total Robles Inflow		17:54	1,640

BO Defined Storm Event: (Y) / N
BO Defined Overlapping Event: Y / (N)

Santa Ana Br. 2,134 @ 17:15
Foster 2,246 @ 17:45
San Antonio 324 @ 17:00

Current Discharge (Day 1 after peak)

	time	cfs
North Fork Matilija Cr	8:59	54
Matlija Cr above Reservoir	8:30	12
Matlija Dam	8:25	384
Matilija Cr at Hot Springs	8:25	167
Robles Canal	9:06	135
Robles Weir	9:06	27
Total Robles Inflow	9:06	162

Lake Casitas volume 99,485 af @ 7:55

Date Matilija Reservior Filled: 2019
Count of Days: >30

CDPM Method:

- ☐ <30 days - M4 - Modifed Overlapping Release
- ☒ ≥30 days - M9 - Matilija Download with Intial Release
- ☐ Standard Release
- ☐ Back-to-Back Release

			M9 - Matilija Download				
			Robles Inflow		Matilija	Matilija	Matilija
Day	Date	Robles Release	Canal	Weir	Inflow	Outflow	Elevation
1	3-17	50					
2	3-18	50					
3	3-19	50					
4	3-20	50					
5	3-21	50					
6	3-22	50					
7	3-23	50					
8	3-24	50					
9	3-25	50					
10	3-26	50					
11	3-27	40					
12	3-28	30					
13							
14							
15							
16							
17							
18							

Comments:

Flow Assessment at Robles Diversion and Fish Passage Facility
Critical Drought Protection Measures (Stage 3-4, 100k - 65k af)

Date: 3-24-20 Time: 08:00 Prepared by: Scott Lewis

Storm Peak Discharge

	date	time	cfs
North Fork Matilija Cr	3-23-20	01:49	123
Matlija Cr above dam		00:35	119 vc / 288 usgs
Matlija Dam		02:45	503
Matilija Cr at Hot Spr.		03:20	367
Robles Canal		03:40	302
Robles Weir		03:40	30
Total Robles Inflow			332

BO Defined Storm Event: (Y) / N
BO Defined Overlapping Event: (Y) / N

Santa Ana Br. 26 @ 2:45
Foster 32 @ 5:45
San Antonio 20 @ 9:00

Date Matilija Reservior Filled: 3-29-20
Count of Days: 1

Current Discharge (Day 1 after peak)

	time	cfs
North Fork Matilija Cr	7:00	34
Matlija Cr above Reservoir	7:40	9 vc / 80 usgs
Matlija Dam	7:15	249
Matilija Cr at Hot Springs	7:00	142
Robles Canal	8:00	66
Robles Weir	8:00	35
Total Robles Inflow	8:00	101

CDPM Method:
- ☐ <30 days - M4 - Modifed Overlapping Release
- ☐ ≥30 days - M9 - Matilija Download with Intial Release
- ☐ Standard Release
- ☒ Back-to-Back Release

			M9 - Matilija Download				
			Robles Inflow				
Day	Date	Robles Release	Canal	Weir	Matilija Inflow	Matilija Outflow	Matilija Elevation
1	3-24	50					
2	3-25						
3	3-26						
4	3-27						
5	3-28						
6	3-29						
7	3-30	↓					
8	3-31	50					
9	4-1	40					
10	4-2	30					
11							
12							
13							
14							
15							
16							
17							
18							

Comments:

Flow Assessment at Robles Diversion and Fish Passage Facility
Critical Drought Protection Measures (Stage 3-4, 100k - 65k af)

Date: 4-7-20 Time: 9:45 Prepared by: Scott Lewis

Storm Peak Discharge

	date	time	cfs
North Fork Matilija Cr	4-6	2:19	912
Matlija Cr above dam		2:15	390 VC/500 USGS
Matlija Dam		4:10	2051
Matilija Cr at Hot Spr.		4:25	1,731
Robles Canal		3:50	0
Robles Weir		3:50	3331
Total Robles Inflow		3:50	3,331

BO Defined Storm Event: (Y) / N

BO Defined Overlapping Event: Y / (N)

Current Discharge (Day 1 after peak)

	time	cfs
North Fork Matilija Cr	10:04	92
Matlija Cr above Reservoir	9:45	40 VC/* USGS
Matlija Dam	10:05	480
Matilija Cr at Hot Springs	9:35	247
Robles Canal	9:45	227
Robles Weir	9:45	34
Total Robles Inflow	9:45	261

* eq. up. malf. or error

Date Matilija Reservior Filled: 3-23-20

Count of Days: 15

CDPM Method:

- ☐ <30 days - M4 - Modifed Overlapping Release
- ☐ ≥30 days - M9 - Matilija Download with Intial Release
- ☒ Standard Release
- ☐ Back-to-Back Release

M9 - Matilija Download

Day	Date	Robles Release	Robles Inflow: Canal	Robles Inflow: Weir	Matilija Inflow	Matilija Outflow	Matilija Elevation
1	4-7	82					
2	4-8	74					
3	4-9	68					
4	4-10	62					
5	4-11	56					
6	4-12	56					
7	4-13	50					
8	4-14	50					
9	4-15	50					
10	4-16	50					
11	4-17	40					
12	4-18	30					
13							
14							
15							
16							
17							
18							

Comments:

Appendix D

Casitas Reservoir Operational Data

CASITAS RESERVOIR WATER INVENTORY SUMMARY

2019 - 2020 WATER YEAR

figures in acre-feet except where otherwise noted

	RESERVOIR (last of previous month)		RESERVOIR INFLOW				RESERVOIR RELEASES			
MONTH	ELEV (ft)	STORAGE	DIRECT	VENTURA RIVER DIVERSIONS	TOTAL	PRECIP	EVAP	TO MAIN SYSTEM	SPILL	CHANGE IN STORAGE
OCT 2019	502.36	101168	-90	0	-90	0	557	1129	0	-1776
NOV 2019	501.22	99392	-146	0	-146	230	277	748	0	-941
DEC 2019	500.61	98451	304	539	843	868	122	245	0	1344
JAN 2020	501.48	99795	216	0	216	93	189	291	0	-170
FEB 2020	501.37	99625	110	0	110	56	309	575	0	-619
MAR 2020	500.97	99006	831	1175	2006	686	212	366	0	2100
APR 2020	502.35	101152	2199	4101	6300	611	515	303	0	6069
MAY 2020	506.14	107221	205	202	407	11	747	914	0	-1205
JUN 2020	505.40	106016	130	0	130	1	813	1076	0	-1757
JUL 2020	504.31	104259	92	2	94	0	935	1305	0	-2147
AUG 2020	502.96	102112	146	0	146	0	919	1420	0	-2192
SEP 2020	501.56	99920	-360	0	-360	0	328	1394	0	-2082
OCT 2020	500.21	97838	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
TOTAL			3637	6018	9655	2557	5922	9765	0	-3376

reservoir capacity = 237,700 a.f. @ 567 ft.

D:\Shared drives\Hydrology\Casitas Dam\Annual\[CasitasReservoir2021.xlsx]Wtr Yr. 2019-20

CASITAS RESERVOIR OPERATION

OCTOBER 2019

*figures in acre-feet except where otherwise noted

	RESERVOIR (@ 0800 hrs.)			INFLOW			EVAPORATION			PRECIPITATION			RELEASES			
		Sep 30th	Surface		Ventura		Pan	Pan		at	at		To			
	Elevation	*101168*	Area		River		@Dam	@Rec	Lake	Dam	Rec	Lake	Main	To		**STORAGE**
DATE	(ft MSL)	Storage	(acres)	Direct	Divers'n	Total	(in)	(in)	Total	(in)	(in)	Total	System	River	Spill	**CHANGE**
1	502.33	101121	1626	2	0	2	0.19	0.16	18	0	0	0	32	0	0	-47
2	502.29	101058	1624	-11	0	-11	0.19	0.13	16	0	0	0	36	0	0	-63
3	502.25	100996	1624	-12	0	-12	0.10	0.17	14	0	0	0	36	0	0	-62
4	502.21	100933	1624	-15	0	-15	0.26	0.21	24	0	0	0	24	0	0	-63
5	502.18	100886	1623	6	0	6	0.28	0.17	23	0	0	0	31	0	0	-47
6	502.16	100855	1623	7	0	7	0.21	0.17	19	0	0	0	19	0	0	-31
7	502.13	100808	1623	2	0	2	0.10	0.18	14	0	0	0	35	0	0	-47
8	502.09	100745	1621	-13	0	-13	0.12	0.09	11	0	0	0	39	0	0	-63
9	502.05	100683	1621	8	0	8	0.11	0.23	17	0	0	0	53	0	0	-62
10	502.01	100620	1621	5	0	5	0.20	0.10	15	0	0	0	53	0	0	-63
11	501.96	100542	1619	-22	0	-22	0.20	0.17	19	0	0	0	38	0	0	-78
12	501.92	100480	1619	7	0	7	0.42	0.19	31	0	0	0	38	0	0	-62
13	501.88	100418	1618	-17	0	-17	0.14	0.23	19	0	0	0	26	0	0	-62
14	501.85	100371	1618	2	0	2	0.13	0.14	14	0	0	0	35	0	0	-47
15	501.81	100308	1618	-15	0	-15	0.12	0.16	14	0	0	0	34	0	0	-63
16	501.79	100277	1616	20	0	20	0.16	0.19	18	0	0	0	33	0	0	-31
17	501.76	100231	1616	-1	0	-1	0.13	0.16	15	0	0	0	31	0	0	-46
18	501.71	100153	1616	-30	0	-30	0.12	0.18	15	0	0	0	32	0	0	-78
19	501.67	100090	1614	-14	0	-14	0.22	0.22	22	0	0	0	27	0	0	-63
20	501.66	100075	1614	18	0	18	0.13	0.13	13	0	0	0	20	0	0	-15
21	501.63	100028	1614	4	0	4	0.10	0.20	15	0	0	0	36	0	0	-47
22	501.60	99982	1614	33	0	33	0.25	0.39	32	0	0	0	47	0	0	-46
23	501.55	99904	1613	10	0	10	0.13	0.21	17	0	0	0	71	0	0	-78
24	501.51	99842	1613	8	0	8	0.13	0.19	16	0	0	0	54	0	0	-62
25	501.45	99749	1611	-10	0	-10	0.45	0.21	33	0	0	0	50	0	0	-93
26	501.41	99687	1611	-6	0	-6	0.25	0.21	23	0	0	0	32	0	0	-62
27	501.38	99640	1609	-7	0	-7	0.14	0.09	12	0	0	0	28	0	0	-47
28	501.36	99609	1609	16	0	16	0.15	0.10	13	0	0	0	34	0	0	-31
29	501.30	99516	1609	-44	0	-44	0.16	0.18	17	0	0	0	32	0	0	-93
30	501.27	99470	1607	8	0	8	0.19	0.14	17	0	0	0	38	0	0	-46
31	501.22	99392	1607	-30	0	-30	0.08	0.16	12	0	0	0	36	0	0	-78
TOTAL				-90	0	-90	6	5	557	0	0	0	1129	0	0	-1776

Reservoir capacity = 237,761 acre-feet at 567 ft. elevation.

Direct reservoir inflow values may be negative due to innaccuracies of the evaporation coefficients (supplied by the USBR)

Evaporation and precipitation readings taken at approximately 8 a.m.

Monthly Evaporation Coefficients: Jan=0.65, Feb=0.77, Mar=0.76, Apr=0.80, May=0.81, Jun=0.82, Jul= Aug=0.81,Sep=0.76, Oct=0.75, Nov=0.72, Dec=0.66

CASITAS RESERVOIR OPERATION

NOVEMBER 2019

*figures in acre-feet except where otherwise noted

	RESERVOIR (@ 0800 hrs.)			INFLOW			EVAPORATION			PRECIPITATION			RELEASES			
DATE	Elevation (ft MSL)	*Oct 31st 99392* Storage	Surface Area (acres)	Direct	Ventura River Divers'n	Total	Pan @Dam (in)	Pan @Rec (in)	Lake Total	at Dam (in)	at Rec (in)	Lake Total	To Main System	To River	Spill	**STORAGE CHANGE**
1	501.19	99346	1606	-6	0	-6	0.16	0.07	11	0	0	0	29	0	0	-46
2	501.16	99299	1606	10	0	10	0.25	0.25	24	0	0	0	33	0	0	-47
3	501.14	99268	1606	1	0	1	0.09	0.15	12	0	0	0	21	0	0	-31
4	501.10	99207	1606	-7	0	-7	0.13	0.15	13	0	0	0	40	0	0	-61
5	501.07	99160	1604	5	0	5	0.15	0.17	15	0	0	0	37	0	0	-47
6	501.04	99114	1604	-4	0	-4	0.13	0.08	10	0	0	0	32	0	0	-46
7	501.01	99067	1604	-4	0	-4	0.05	0.11	8	0	0	0	35	0	0	-47
8	500.98	99021	1602	-4	0	-4	0.07	0.13	10	0	0	0	33	0	0	-46
9	500.96	98990	1602	10	0	10	0.17	0.15	15	0	0	0	26	0	0	-31
10	500.93	98944	1602	-11	0	-11	0.13	0.20	16	0	0	0	19	0	0	-46
11	500.91	98913	1602	19	0	19	0.09	0.10	9	0	0	0	40	0	0	-31
12	500.88	98867	1601	-2	0	-2	0.02	0.08	5	0	0	0	39	0	0	-46
13	500.85	98821	1601	-2	0	-2	0.14	0.06	10	0	0	0	35	0	0	-46
14	500.82	98774	1601	-19	0	-19	0.05	0.07	6	0	0	0	22	0	0	-47
15	500.80	98744	1601	7	0	7	0.04	0.06	5	0	0	0	32	0	0	-30
16	500.78	98713	1599	-1	0	-1	0.08	0.07	7	0	0	0	23	0	0	-31
17	500.75	98667	1599	-12	0	-12	0.07	0.13	10	0	0	0	24	0	0	-46
18	500.73	98636	1599	18	0	18	0.12	0.15	13	0	0	0	36	0	0	-31
19	500.70	98590	1599	-16	0	-16	0.10	0.13	11	0	0	0	19	0	0	-46
20	500.68	98559	1598	17	0	17	0.24	0.09	16	0	0	0	32	0	0	-31
21	500.65	98513	1598	-16	0	-16	0.02	0.09	5	0.04	0.02	4	29	0	0	-46
22	500.63	98482	1598	-3	0	-3	0.09	0.07	8	0	0	0	20	0	0	-31
23	500.61	98451	1598	-4	0	-4	0.08	0.17	12	0	0	0	15	0	0	-31
24	500.59	98421	1596	-10	0	-10	0.06	0.10	8	0	0	0	13	0	0	-30
25	500.57	98390	1596	-8	0	-8	0.08	0.12	10	0	0	0	14	0	0	-31
26	500.53	98328	1596	-34	0	-34	0	0.20	10	0	0	0	18	0	0	-62
27	500.59	98421	1596	4	0	4	0	0	0	0.83	0.67	100	10	0	0	93
28	500.63	98482	1598	-25	0	-25	0	0	0	0.78	0.65	95	9	0	0	61
29	500.63	98482	1598	-20	0	-20	0	0	0	0.20	0.19	26	6	0	0	0
30	500.61	98451	1598	-30	0	-30	0	0	0	0.01	0.06	5	6	0	0	-31
TOTAL				-146	0	-146	3	3	277	2	2	230	748	0	0	-941

Reservoir capacity = 254,000 acre-feet at 567 ft. elevation.

Direct reservoir inflow values may be negative due to innaccuracies of the evaporation coefficients (supplied by the USBR)

Evaporation and precipitation readings taken at approximately 8 a.m.

Monthly Evaporation Coefficients: Jan=0.65, Feb=0.77, Mar=0.76, Apr=0.80, May=0.81, Jun=0.82, Jul= Aug=0.81,Sep=0.76, Oct=0.75, Nov=0.72, Dec=0.66

CASITAS RESERVOIR OPERATION

DECEMBER 2019

*figures in acre-feet except where otherwise noted

	RESERVOIR (@ 0800 hrs.)			INFLOW			EVAPORATION			PRECIPITATION			RELEASES			
DATE	Elevation (ft MSL)	*Nov 30th* *98451* Storage	Surface Area (acres)	Direct	Ventura River Divers'n	Total	Pan @Dam (in)	Pan @Rec (in)	Lake Total	at Dam (in)	at Rec (in)	Lake Total	To Main System	To River	Spill	**STORAGE CHANGE**
1	500.63	98482	1598	5	0	5	0	0	0	0.23	0.28	34	8	0	0	31
2	500.62	98467	1598	-1	0	-1	0	0.12	5	0	0	0	9	0	0	-15
3	500.60	98436	1598	-18	0	-18	0.05	0.06	5	0	0	0	8	0	0	-31
4	500.71	98605	1599	-88	97	9	0	0	0	1	1	168	8	0	0	169
5	500.76	98682	1599	45	17	62	0	0	0	0.23	0.12	23	8	0	0	77
6	500.76	98682	1599	16	0	16	0.06	0.13	8	0	0	0	8	0	0	0
7	500.80	98744	1601	6	4	11	0	0	0	0.49	0.40	59	8	0	0	62
8	500.83	98790	1601	-38	35	-2	0	0	0	0.35	0.48	55	7	0	0	46
9	500.87	98851	1601	26	8	33	0	0	0	0.27	0.31	39	11	0	0	61
10	500.86	98836	1601	-1	0	-1	0.05	0.10	7	0.02	0	1	9	0	0	-15
11	500.85	98821	1601	-4	0	-4	0.04	0.05	4	0	0	0	7	0	0	-15
12	500.86	98836	1601	25	0	25	0.03	0.02	2	0	0	0	8	0	0	15
13	500.85	98821	1601	-2	0	-2	0.05	0.06	5	0	0	0	8	0	0	-15
14	500.84	98805	1601	1	0	1	0.12	0.08	9	0.03	0	2	10	0	0	-16
15	500.82	98774	1601	-13	0	-13	0.12	0.10	10	0	0	0	8	0	0	-31
16	500.81	98759	1601	-4	0	-4	0.01	0.08	4	0	0	0	7	0	0	-15
17	500.80	98744	1601	6	0	6	0.10	0.10	9	0	0	0	12	0	0	-15
18	500.79	98728	1599	3	0	3	0.18	0.07	11	0	0	0	8	0	0	-16
19	500.78	98713	1599	-2	0	-2	0.08	0.06	6	0	0	0	7	0	0	-15
20	500.77	98697	1599	-2	0	-2	0.06	0.07	6	0	0	0	8	0	0	-16
21	500.75	98667	1599	-16	0	-16	0.08	0.07	7	0	0	0	8	0	0	-30
22	500.76	98682	1599	17	8	25	0	0.06	3	0	0	0	7	0	0	15
23	500.93	98944	1602	-126	94	-32	0	0	0	2	2	300	6	0	0	262
24	501.04	99114	1604	122	26	147	0	0	0	0.17	0.27	29	7	0	0	170
25	501.05	99129	1604	12	10	22	0	0	0	0	0.02	1	8	0	0	15
26	501.35	99594	1609	169	150	318	0	0	0	2	0.61	155	8	0	0	465
27	501.45	99749	1611	95	71	166	0	0.07	3	0	0	0	8	0	0	155
28	501.49	99811	1611	54	21	76	0.08	0.05	6	0	0	0	8	0	0	62
29	501.50	99826	1613	30	0	30	0.14	0.05	8	0	0	0	6	0	0	15
30	501.49	99811	1611	-6	0	-6	0.04	0.03	3	0	0	0	6	0	0	-15
31	501.48	99795	1611	-9	0	-9	0.02	0.04	3	0	0	0	5	0	0	-16
TOTAL				304	539	843	1	1	122	7	6	868	245	0	0	1344

Reservoir capacity = 254,000 acre-feet at 567 ft. elevation.

Direct reservoir inflow values may be negative due to innaccuracies of the evaporation coefficients (supplied by the USBR)

Evaporation and precipitation readings taken at approximately 8 a.m.

Monthly Evaporation Coefficients: Jan=0.65, Feb=0.77, Mar=0.76, Apr=0.80, May=0.81, Jun=0.82, Jul= Aug=0.81,Sep=0.76, Oct=0.75, Nov=0.72, Dec=0.66

CASITAS RESERVOIR OPERATION

JANUARY 2020

*figures in acre-feet except where otherwise noted

	RESERVOIR (@ 0800 hrs.)			INFLOW			EVAPORATION			PRECIPITATION			RELEASES			
DATE	Elevation	99795 Storage	Surface Area (acres)	Direct	Ventura River Divers'n	Total	Pan @Dam (in)	Pan @Rec (in)	Lake Total	at Dam (in)	at Rec (in)	Lake Total	To Main System	To River	Spill	**STORAGE CHANGE**
1	501.48	99795	1611	12	0	12	0.09	0.07	7	0	0	0	5	0	0	0
2	501.51	99842	1613	64	0	64	0.15	0.07	10	0	0	0	8	0	0	47
3	501.49	99811	1611	-23	0	-23	0.02	0.03	2	0	0	0	6	0	0	-31
4	501.47	99780	1611	-12	0	-12	0.18	0.07	11	0	0	0	8	0	0	-31
5	501.47	99780	1611	12	0	12	0.02	0.05	3	0	0	0	9	0	0	0
6	501.47	99780	1611	16	0	16	0.15	0.05	9	0	0	0	8	0	0	0
7	501.47	99780	1611	21	0	21	0.13	0.09	10	0	0	0	11	0	0	0
8	501.47	99780	1611	23	0	23	0.17	0.07	10	0	0	0	12	0	0	0
9	501.46	99764	1611	0.20	0	0.20	0.12	0.06	8	0	0	0	8	0	0	-16
10	501.44	99733	1611	-21	0	-21	0.03	0.06	4	0	0	0	6	0	0	-31
11	501.43	99718	1611	-3	0	-3	0.05	0.06	5	0	0	0	7	0	0	-15
12	501.44	99733	1611	30	0	30	0.15	0.04	8	0	0	0	7	0	0	15
13	501.43	99718	1611	-1	0	-1	0.08	0.03	5	0	0	0	9	0	0	-15
14	501.42	99702	1611	2	0	2	0.08	0.06	6	0	0	0	12	0	0	-16
15	501.41	99687	1611	-3	0	-3	0.03	0.05	3	0	0	0	8	0	0	-15
16	501.41	99687	1611	17	0	17	0.03	0.10	6	0	0	0	12	0	0	0
17	501.45	99749	1611	-7	0	-7	0	0	0	0.72	0.48	81	11	0	0	62
18	501.44	99733	1611	-1	0	-1	0.07	0.09	7	0	0	0	8	0	0	-16
19	501.43	99718	1611	-5	0	-5	0.02	0.06	3	0	0	0	7	0	0	-15
20	501.43	99718	1611	15	0	15	0.09	0.06	7	0	0	0	9	0	0	0
21	501.43	99718	1611	-4	0	-4	0	0	0	0.10	0.09	13	9	0	0	0
22	501.43	99718	1611	11	0	11	0.04	0.04	3	0	0	0	8	0	0	0
23	501.43	99718	1611	12	0	12	0.05	0.06	5	0	0	0	7	0	0	0
24	501.43	99718	1611	12	0	12	0.08	0.06	6	0	0	0	6	0	0	0
25	501.42	99702	1611	-3	0	-3	0.09	0.06	7	0	0	0	6	0	0	-16
26	501.42	99702	1611	12	0	12	0.04	0.06	4	0	0	0	7	0	0	0
27	501.39	99656	1609	-27	0	-27	0.09	0.06	7	0	0	0	13	0	0	-46
28	501.39	99656	1609	20	0	20	0.09	0.04	6	0	0	0	14	0	0	0
29	501.38	99640	1609	10	0	10	0.08	0.14	10	0	0	0	16	0	0	-16
30	501.38	99640	1609	28	0	28	0.14	0.09	10	0	0	0	18	0	0	0
31	501.37	99625	1609	8	0	8	0.11	0.08	8	0	0	0	15	0	0	-15
TOTAL				216	0	216	2	2	189	0.82	0.57	93	291	0	0	-170

Reservoir capacity = 254,000 acre-feet at 567 ft. elevation.

Direct reservoir inflow values may be negative due to innaccuracies of the evaporation coefficients (supplied by the USBR)

Evaporation and precipitation readings taken at approximately 8 a.m.

Monthly Evaporation Coefficients: Jan=0.65, Feb=0.77, Mar=0.76, Apr=0.80, May=0.81, Jun=0.82, Jul= Aug=0.81,Sep=0.76, Oct=0.75, Nov=0.72, Dec=0.66

CASITAS RESERVOIR OPERATION

FEBRUARY 2020

*figures in acre-feet except where otherwise noted

	RESERVOIR (@ 0800 hrs.)			INFLOW			EVAPORATION			PRECIPITATION			RELEASES			
DATE	Elevation (ft MSL)	*Jan 31st* *99625* Storage	Surface Area (acres)	Direct	Ventura River Divers'n	Total	Pan @Dam (in)	Pan @Rec (in)	Lake Total (af)	at Dam (in)	at Rec (in)	Lake Total (af)	To Main System	To River	Spill	**STORAGE CHANGE**
1	501.36	99609	1609	-90	0	-90	0.14	0.07	11	0	0	0	14	0	0	-16
2	501.35	99594	1609	4	0	4	0.03	0.13	8	0	0	0	11	0	0	-15
3	501.35	99594	1609	39	0	39	0.12	0.30	22	0	0	0	17	0	0	0
4	501.34	99578	1609	18	0	18	0.20	0.06	13	0	0	0	21	0	0	-16
5	501.33	99563	1609	13	0	13	0.06	0.10	8	0	0	0	20	0	0	-15
6	501.32	99547	1609	7	0	7	0.01	0.10	6	0	0	0	18	0	0	-16
7	501.30	99516	1609	4	0	4	0.15	0.14	15	0	0	0	20	0	0	-31
8	501.28	99485	1607	-7	0	-7	0.05	0.08	7	0	0	0	17	0	0	-31
9	501.28	99485	1607	0.65	0	0.65	0	0	0	0.03	0.14	11	12	0	0	0
10	501.27	99470	1607	14	0	14	0.16	0.09	13	0	0	0	16	0	0	-15
11	501.25	99439	1607	2	0	2	0.09	0.17	13	0	0	0	19	0	0	-31
12	501.23	99408	1607	-3	0	-3	0.08	0.13	11	0	0	0	17	0	0	-31
13	501.22	99392	1607	15	0	15	0.13	0.09	11	0	0	0	20	0	0	-16
14	501.20	99361	1607	-3	0	-3	0.05	0.09	7	0	0	0	20	0	0	-31
15	501.18	99330	1606	-4	0	-4	0.08	0.11	10	0	0	0	18	0	0	-31
16	501.17	99315	1606	5	0	5	0	0.08	4	0	0	0	16	0	0	-15
17	501.17	99315	1606	30	0	30	0.08	0.10	9	0	0	0	21	0	0	0
18	501.15	99284	1606	4	0	4	0.13	0.11	12	0	0	0	22	0	0	-31
19	501.13	99253	1606	11	0	11	0.10	0.09	10	0	0	0	32	0	0	-31
20	501.11	99222	1606	7	0	7	0.07	0.12	10	0	0	0	29	0	0	-31
21	501.08	99176	1604	-9	0	-9	0.11	0.12	12	0	0	0	25	0	0	-46
22	501.06	99145	1604	-13	0	-13	0	0	0	0.03	0.05	5	23	0	0	-31
23	501.07	99160	1604	-6	0	-6	0	0	0	0.11	0.48	39	18	0	0	15
24	501.05	99129	1604	21	0	21	0.14	0.25	20	0	0	0	32	0	0	-31
25	501.04	99114	1604	0	0	0	0.10	0.13	12	0	0	0	3	0	0	-15
26	501.03	99098	1604	10	0	10	0.13	0.16	15	0	0	0	11	0	0	-16
27	501.01	99067	1604	2	0	2	0.14	0.07	11	0	0	0	23	0	0	-31
28	501.00	99052	1604	36	0	36	0.19	0.20	20	0	0	0	31	0	0	-15
29	500.97	99006	1602	3	0	3	0.20	0.16	19	0	0	0	30	0	0	-46
TOTAL				110	0	110	3	3	309	0.17	0.67	56	575	0	0	-619

Reservoir capacity = 237,761 acre-feet at 567 ft. elevation.

Direct reservoir inflow values may be negative due to innaccuracies of the evaporation coefficients (supplied by the USBR)

Evaporation and precipitation readings taken at approximately 8 a.m.

Monthly Evaporation Coefficients: Jan=0.65, Feb=0.77, Mar=0.76, Apr=0.80, May=0.81, Jun=0.82, Jul= Aug=0.81,Sep=0.76, Oct=0.75, Nov=0.72, Dec=0.66

CASITAS RESERVOIR OPERATION

MARCH 2020

*figures in acre-feet except where otherwise noted

	RESERVOIR (@ 0800 hrs.)			INFLOW			EVAPORATION			PRECIPITATION			RELEASES			
		Feb 29th	Surface		Ventura		Pan	Pan	Lake	at	at	Lake	To			
	Elevation	*99006*	Area		River		@Dam	@Rec	Total	Dam	Rec	Total	Main	To		**STORAGE**
DATE	(ft MSL)	Storage	(acres)	Direct	Divers'n	Total	(in)	(in)	(af)	(in)	(in)	(af)	System	River	Spill	**CHANGE**
1	500.95	98975	1602	-7	0	-7	0.10	0.10	10	0	0	0	14	0	0	-31
2	500.94	98959	1602	15	0	15	0.10	0.10	10	0	0	0	21	0	0	-16
3	500.92	98929	1602	19	0	19	0.15	0.15	15	0	0	0	33	0	0	-30
4	500.89	98882	1601	-11	0	-11	0.08	0.08	8	0	0	0	28	0	0	-47
5	500.87	98851	1601	7	0	7	0.10	0.10	10	0	0	0	28	0	0	-31
6	500.85	98821	1601	6	0	6	0.08	0.08	8	0	0	0	28	0	0	-30
7	500.84	98805	1601	19	0	19	0.19	0.19	19	0	0	0	16	0	0	-16
8	500.82	98774	1601	-25	0	-25	0	0	0	0.03	0	2	8	0	0	-31
9	500.81	98759	1601	-2	0	-2	0.04	0.04	4	0	0	0	9	0	0	-15
10	500.80	98744	1601	-8	0	-8	0	0	0	0.01	0.04	3	10	0	0	-15
11	500.80	98744	1601	-35	0.10	-35	0	0	0	0.13	0.58	47	12	0	0	0
12	500.87	98851	1601	102	3	105	0	0	0	0	0.17	11	7	0	0	107
13	500.90	98898	1602	-1	27	26	0	0	0	0.38	0.41	53	8	0	0	47
14	500.91	98913	1602	-28	0	-28	0	0	0	0.20	0.17	25	8	0	0	15
15	500.92	98929	1602	1	0	1	0	0	0	0.18	0.22	27	12	0	0	16
16	500.94	98959	1602	-53	207	154	0	0	0	0.29	1	89	6	0	0	30
17	501.55	99904	1613	471	292	763	0	0	0	3	1	275	8	0	0	945
18	501.76	100231	1616	24	112	135	0	0	0	0.12	0.13	17	5	0	0	327
19	501.82	100324	1618	-14	4	-10	0	0	0	0.03	0	2	6	0	0	93
20	501.83	100340	1618	51	24	75	0.32	0.32	33	0	0	0	6	0	0	16
21	501.87	100402	1618	58	21	78	0.13	0.13	13	0	0	0	6	0	0	62
22	501.87	100402	1618	-7	3	-4	0.05	0.05	5	0	0	0	8	0	0	0
23	502.03	100652	1621	140	263	403	0	0	0	0.80	0.88	113	7	0	0	250
24	502.21	100933	1624	47	94	141	0.18	0.18	19	0	0	0	11	0	0	281
25	502.27	101027	1624	5	47	52	0	0	0	0.03	0	2	6	0	0	94
26	502.29	101058	1624	9	33	42	0.16	0.16	16	0	0	0	9	0	0	31
27	502.33	101121	1626	21	18	39	0	0	0	0.13	0.12	17	8	0	0	63
28	502.33	101121	1626	7	7	14	0.17	0.17	18	0	0	0	8	0	0	0
29	502.34	101137	1626	34	1	35	0.16	0.16	16	0	0	0	8	0	0	16
30	502.34	101137	1626	4	6	10	0	0	0	0.01	0.01	1	7	0	0	0
31	502.35	101152	1626	28	14	42	0.06	0.06	6	0	0	0	13	0	0	15
TOTAL				877	1175	2052	2	2	212	5	5	686	366	0	0	2146

*Evaporation and Precipitation data from LCRA not logged; Casitas Dam data substituted

Reservoir capacity = 237,761 acre-feet at 567 ft. elevation.

Direct reservoir inflow values may be negative due to innaccuracies of the evaporation coefficients (supplied by the USBR)

Evaporation and precipitation readings taken at approximately 8 a.m.

Monthly Evaporation Coefficients: Jan=0.65, Feb=0.77, Mar=0.76, Apr=0.80, May=0.81, Jun=0.82, Jul= Aug=0.81,Sep=0.76, Oct=0.75, Nov=0.72, Dec=0.66

CASITAS RESERVOIR OPERATION

APRIL 2020

*figures in acre-feet except where otherwise noted

	RESERVOIR (@ 0800 hrs.)			INFLOW			EVAPORATION			PRECIPITATION			RELEASES			
DATE	Elevation (ft MSL)	*Mar 31st* *101152* Storage	Surface Area (acres)	Direct	Ventura River Divers'n	Total	Pan @Dam (in)	Pan @Rec (in)	Lake Total (af)	at Dam (in)	at Rec (in)	Lake Total (af)	To Main System	To River	Spill	**STORAGE CHANGE**
1	502.36	101168	1626	24	14	38	0.08	0.08	9	0	0	0	14	0	0	16
2	502.37	101184	1626	35	12	47	0.22	0.22	24	0	0	0	9	0	0	16
3	502.37	101184	1626	23	8	31	0.25	0.25	27	0	0	0	7	0	0	0
4	502.37	101184	1626	19	8	27	0.20	0.20	22	0	0	0	6	0	0	0
5	502.38	101199	1626	9	18	26	0	0	0	0.03	0.03	4	6	0	0	15
6	503.03	102222	1638	598	671	1269	0	0	0	3	3	412	5	0	0	1023
7	503.76	103380	1651	485	407	892	0	0	0	0.06	0.06	8	6	0	0	1158
8	504.06	103859	1656	41	236	277	0	0	0	0.26	0.26	36	5	0	0	479
9	504.27	104195	1660	33	310	344	0	0	0	0.52	0.52	72	5	0	0	336
10	504.59	104708	1665	128	315	443	0	0	0	0.57	0.57	79	5	0	0	513
11	504.82	105078	1670	83	269	352	0.20	0.20	22	0	0	0	6	0	0	370
12	505.02	105401	1674	84	223	307	0.21	0.21	23	0	0	0	6	0	0	323
13	505.20	105692	1677	76	184	259	0.02	0.02	2	0	0	0	5	0	0	291
14	505.34	105919	1679	63	152	215	0.13	0.13	15	0	0	0	5	0	0	227
15	505.45	106097	1681	55	125	180	0.20	0.20	22	0	0	0	6	0	0	178
16	505.53	106227	1683	45	112	157	0.30	0.30	34	0	0	0	6	0	0	130
17	505.61	106357	1684	39	113	152	0.14	0.14	16	0	0	0	5	0	0	130
18	505.69	106487	1684	50	117	167	0.25	0.25	28	0	0	0	5	0	0	130
19	505.77	106617	1686	29	115	144	0.09	0.09	10	0	0	0	6	0	0	130
20	505.84	106731	1688	21	105	126	0.14	0.14	16	0	0	0	6	0	0	114
21	505.92	106862	1689	52	92	144	0.18	0.18	20	0	0	0	6	0	0	131
22	505.98	106959	1689	39	82	121	0.25	0.25	28	0	0	0	6	0	0	97
23	506.01	107008	1691	-1	73	72	0.18	0.18	20	0	0	0	12	0	0	49
24	506.04	107057	1691	21	64	85	0.27	0.27	30	0	0	0	14	0	0	49
25	506.07	107106	1691	45	58	102	0.32	0.32	36	0	0	0	24	0	0	49
26	506.09	107139	1691	20	52	72	0.21	0.21	24	0	0	0	21	0	0	33
27	506.11	107172	1693	31	47	78	0.29	0.29	33	0	0	0	17	0	0	33
28	506.13	107204	1693	8	42	50	0.05	0.05	6	0	0	0	18	0	0	32
29	506.14	107221	1693	23	40	63	0.24	0.24	27	0	0	0	20	0	0	17
30	506.14	107221	1693	21	38	59	0.19	0.19	21	0	0	0	40	0	0	0
TOTAL				2199	4101	6300	5	5	515	4	4	611	303	0	0	6069

*Evaporation and Precipitation data from LCRA not logged; Casitas Dam data substituted

Reservoir capacity = 237,761 acre-feet at 567 ft. elevation.

Direct reservoir inflow values may be negative due to innaccuracies of the evaporation coefficients (supplied by the USBR)

Evaporation and precipitation readings taken at approximately 8 a.m.

Monthly Evaporation Coefficients: Jan=0.65, Feb=0.77, Mar=0.76, Apr=0.80, May=0.81, Jun=0.82, Jul= Aug=0.81,Sep=0.76, Oct=0.75, Nov=0.72, Dec=0.66

CASITAS RESERVOIR OPERATION

MAY 2020

*figures in acre-feet except where otherwise noted

	RESERVOIR (@ 0800 hrs.)			INFLOW			EVAPORATION			PRECIPITATION			RELEASES			
DATE	Elevation (ft MSL)	*Apr 30th* *107221* Storage	Surface Area (acres)	Direct	Ventura River Divers'n	Total	Pan @Dam (in)	Pan @Rec (in)	Lake Total (af)	at Dam (in)	at Rec (in)	Lake Total (af)	To Main System	To River	Spill	**STORAGE CHANGE**
1	506.15	107237	1693	14	33	47	0	0	0	0	0	0	37	0	0	16
2	506.13	107204	1693	-3	29	26	0.38	0.38	43	0	0	0	20	0	0	-33
3	506.14	107221	1693	32	27	59	0.22	0.22	25	0	0	0	19	0	0	17
4	506.14	107221	1693	12	21	32	0.17	0.17	19	0	0	0	19	0	0	0
5	506.13	107204	1693	-7	17	10	0.07	0.07	8	0	0	0	23	0	0	-17
6	506.11	107172	1693	23	15	38	0.36	0.36	41	0	0	0	30	0	0	-32
7	506.09	107139	1691	0	11	11	0.14	0.14	16	0	0	0	32	0	0	-33
8	506.06	107090	1691	34	10	45	0.47	0.47	54	0	0	0	41	0	0	-49
9	506.03	107041	1691	5	10	15	0.22	0.22	25	0	0	0	39	0	0	-49
10	506.01	107008	1691	4	11	14	0.16	0.16	18	0	0	0	29	0	0	-33
11	506.00	106992	1691	20	10	30	0.22	0.22	25	0	0	0	22	0	0	-16
12	505.97	106943	1689	-18	2	-17	0.11	0.11	13	0	0	0	28	0	0	-49
13	505.94	106894	1689	17	3	20	0.20	0.20	23	0	0	0	45	0	0	-49
14	505.90	106829	1689	-18	2	-16	0.10	0.10	11	0	0	0	38	0	0	-65
15	505.88	106796	1688	33	0.50	33	0.30	0.30	34	0	0	0	34	0	0	-33
16	505.84	106731	1688	-3	0	-3	0.27	0.27	31	0	0	0	32	0	0	-65
17	505.82	106699	1688	30	0	30	0.29	0.29	33	0	0	0	29	0	0	-32
18	505.80	106666	1688	-27	2	-25	0	0	0	0.08	0.08	11	17	0	0	-33
19	505.77	106617	1686	-10	0	-10	0.19	0.19	22	0	0	0	19	0	0	-49
20	505.75	106585	1686	12	0	12	0.23	0.23	26	0	0	0	18	0	0	-32
21	505.72	106536	1686	2	0	2	0.24	0.24	27	0	0	0	24	0	0	-49
22	505.69	106487	1684	15	0	15	0.32	0.32	36	0	0	0	27	0	0	-49
23	505.65	106422	1684	-1	0	-1	0.20	0.20	23	0	0	0	41	0	0	-65
24	505.62	106373	1684	10	0	10	0.29	0.29	33	0	0	0	26	0	0	-49
25	505.60	106341	1684	15	0	15	0.20	0.20	23	0	0	0	24	0	0	-32
26	505.57	106292	1683	-12	0	-12	0.15	0.15	17	0	0	0	20	0	0	-49
27	505.54	106243	1683	7	0	7	0.16	0.16	18	0	0	0	38	0	0	-49
28	505.50	106178	1683	13	0	13	0.33	0.33	37	0	0	0	41	0	0	-65
29	505.47	106130	1681	23	0	23	0.26	0.26	29	0	0	0	41	0	0	-48
30	505.43	106065	1681	-18	0	-18	0.12	0.12	14	0	0	0	33	0	0	-65
31	505.40	106016	1681	0.57	0	0.57	0.19	0.19	22	0	0	0	28	0	0	-49
TOTAL				205	202	407	7	7	747	0.08	0.08	11	914	0	0	-1205

*Evaporation and Precipitation data from LCRA not logged; Casitas Dam data substituted

Reservoir capacity = 237,761 acre-feet at 567 ft. elevation.

Direct reservoir inflow values may be negative due to innaccuracies of the evaporation coefficients (supplied by the USBR)

Evaporation and precipitation readings taken at approximately 8 a.m.

Monthly Evaporation Coefficients: Jan=0.65, Feb=0.77, Mar=0.76, Apr=0.80, May=0.81, Jun=0.82, Jul= Aug=0.81,Sep=0.76, Oct=0.75, Nov=0.72, Dec=0.66

CASITAS RESERVOIR OPERATION

JUNE 2020

*figures in acre-feet except where otherwise noted

	RESERVOIR (@ 0800 hrs.)			INFLOW			EVAPORATION			PRECIPITATION			RELEASES			
	Elevation	*May 31st* *106016* Storage	Surface Area	Direct	Ventura River Divers'n	Total	Pan @Dam (in)	Pan @Rec (in)	Lake Total (af)	at Dam (in)	at Rec (in)	Lake Total (af)	To Main System	To River	Spill	**STORAGE CHANGE**
DATE	(ft MSL)		(acres)													
1	505.37	105967	1679	1	0	1	0.22	0.22	25	0	0	0	24	0	0	-49
2	505.34	105919	1679	-1	0	-1	0.15	0.15	17	0	0	0	30	0	0	-48
3	505.31	105870	1679	16	0	16	0.27	0.27	31	0	0	0	34	0	0	-49
4	505.26	105789	1677	12	0	12	0.38	0.38	44	0	0	0	49	0	0	-81
5	505.23	105741	1677	29	0	29	0.33	0.33	38	0.01	0.01	1	41	0	0	-48
6	505.20	105692	1677	5	0	5	0.10	0.10	11	0	0	0	42	0	0	-49
7	505.17	105643	1676	0	0	0	0.19	0.19	22	0	0	0	28	0	0	-49
8	505.12	105563	1676	-14	0	-14	0.43	0.43	49	0	0	0	17	0	0	-80
9	505.08	105498	1674	-17	0	-17	0.08	0.08	9	0	0	0	38	0	0	-65
10	505.04	105433	1674	23	0	23	0.38	0.38	43	0	0	0	44	0	0	-65
11	505.00	105369	1674	20	0	20	0.32	0.32	37	0	0	0	48	0	0	-64
12	504.94	105272	1672	8	0	8	0.51	0.51	58	0	0	0	47	0	0	-97
13	504.89	105191	1670	-7	0	-7	0.22	0.22	25	0	0	0	49	0	0	-81
14	504.86	105143	1670	20	0	20	0.21	0.21	24	0	0	0	44	0	0	-48
15	504.81	105062	1670	-29	0	-29	0.20	0.20	23	0	0	0	30	0	0	-81
16	504.78	105014	1669	23	0	23	0.29	0.29	33	0	0	0	38	0	0	-48
17	504.74	104950	1669	1	0	1	0.15	0.15	17	0	0	0	48	0	0	-64
18	504.70	104885	1669	15	0	15	0.34	0.34	39	0	0	0	41	0	0	-65
19	504.67	104837	1667	-3	0	-3	0.07	0.07	8	0	0	0	37	0	0	-48
20	504.63	104773	1667	-3	0	-3	0.19	0.19	22	0	0	0	40	0	0	-64
21	504.60	104724	1667	-3	0	-3	0.15	0.15	17	0	0	0	29	0	0	-49
22	504.58	104692	1665	11	0	11	0.20	0.20	23	0	0	0	20	0	0	-32
23	504.54	104628	1665	-16	0	-16	0.17	0.17	19	0	0	0	29	0	0	-64
24	504.51	104580	1665	8	0	8	0.17	0.17	19	0	0	0	37	0	0	-48
25	504.47	104515	1663	-10	0	-10	0.15	0.15	17	0	0	0	38	0	0	-65
26	504.44	104467	1663	25	0	25	0.32	0.32	36	0	0	0	37	0	0	-48
27	504.41	104419	1663	22	0	22	0.29	0.29	33	0	0	0	37	0	0	-48
28	504.38	104371	1661	7	0	7	0.20	0.20	23	0	0	0	32	0	0	-48
29	504.35	104323	1661	-11	0	-11	0.16	0.16	18	0	0	0	19	0	0	-48
30	504.31	104259	1661	-2	0	-2	0.28	0.28	32	0	0	0	31	0	0	-64
TOTAL				130	0	130	7.12	7.12	813	0.01	0.01	1	1076	0	0	-1757

*Evaporation and Precipitation data from LCRA not logged; Casitas Dam data substituted

Reservoir capacity = 237,761 acre-feet at 567 ft. elevation.

Direct reservoir inflow values may be negative due to innaccuracies of the evaporation coefficients (supplied by the USBR)

Evaporation and precipitation readings taken at approximately 8 a.m.

Monthly Evaporation Coefficients: Jan=0.65, Feb=0.77, Mar=0.76, Apr=0.80, May=0.81, Jun=0.82, Jul= Aug=0.81,Sep=0.76, Oct=0.75, Nov=0.72, Dec=0.66

CASITAS RESERVOIR OPERATION

JULY 2020

*figures in acre-feet except where otherwise noted

	RESERVOIR (@ 0800 hrs.)			INFLOW			EVAPORATION			PRECIPITATION			RELEASES			
DATE	Elevation (ft MSL)	*Jun 30th* *104259* Storage	Surface Area (acres)	Direct	Ventura River Divers'n	Total	Pan @Dam (in)	Pan @Rec (in)	Lake Total (af)	at Dam (in)	at Rec (in)	Lake Total (af)	To Main System	To River	Spill	**STORAGE CHANGE**
1	504.27	104195	1660	10	2	12	0.29	0.30	33	0	0	0	43	0	0	-64
2	504.23	104131	1660	-3	0	-3	0.20	0.15	20	0	0	0	42	0	0	-64
3	504.19	104067	1658	0.53	0	0.53	0.22	0.22	25	0	0	0	40	0	0	-64
4	504.14	103987	1658	-2	0	-2	0.31	0.31	35	0	0	0	43	0	0	-80
5	504.12	103955	1658	50	0	50	0.43	0.43	48	0	0	0	34	0	0	-32
6	504.08	103891	1656	-17	0	-17	0.20	0.20	22	0	0	0	25	0	0	-64
7	504.04	103827	1656	-4	0	-4	0.16	0.25	23	0	0	0	37	0	0	-64
8	503.99	103747	1654	-7	0	-7	0.26	0.30	31	0	0	0	42	0	0	-80
9	503.94	103667	1654	5	0	5	0.31	0.31	35	0	0	0	50	0	0	-80
10	503.89	103587	1652	-9	0	-9	0.18	0.18	20	0	0	0	51	0	0	-80
11	503.86	103539	1652	32	0	32	0.39	0.32	40	0	0	0	40	0	0	-48
12	503.82	103476	1652	21	0	21	0.40	0.40	45	0	0	0	40	0	0	-63
13	503.78	103412	1651	-10	0	-10	0.20	0.20	22	0	0	0	32	0	0	-64
14	503.74	103348	1651	14	0	14	0.29	0.37	37	0	0	0	41	0	0	-64
15	503.69	103269	1649	-25	0	-25	0.17	0	9	0	0	0	45	0	0	-79
16	503.64	103189	1649	-11	0	-11	0.19	0.25	24	0	0	0	44	0	0	-80
17	503.60	103126	1649	7	0	7	0.34	0.18	29	0	0	0	41	0	0	-63
18	503.55	103046	1647	-10	0	-10	0.32	0.16	27	0	0	0	43	0	0	-80
19	503.52	102998	1647	14	0	14	0.20	0.20	22	0	0	0	40	0	0	-48
20	503.49	102951	1645	1	0	1	0.22	0.22	24	0	0	0	24	0	0	-47
21	503.44	102871	1645	-2	0	-2	0.31	0.49	44	0	0	0	34	0	0	-80
22	503.40	102808	1645	15	0	15	0.18	0.38	31	0	0	0	46	0	0	-63
23	503.35	102729	1643	-1	0	-1	0.24	0.37	34	0	0	0	44	0	0	-79
24	503.31	102665	1643	4	0	4	0.18	0.39	32	0	0	0	37	0	0	-64
25	503.26	102586	1642	4	0	4	0.37	0.28	36	0	0	0	47	0	0	-79
26	503.22	102523	1642	24	0	24	0.20	0.54	41	0	0	0	46	0	0	-63
27	503.17	102444	1640	-11	0	-11	0.32	0.32	35	0	0	0	32	0	0	-79
28	503.13	102380	1640	14	0	14	0.11	0.39	28	0	0	0	50	0	0	-64
29	503.07	102286	1638	-16	0	-16	0.21	0.21	23	0	0	0	55	0	0	-94
30	503.03	102222	1638	19	0	19	0.26	0.13	22	0	0	0	62	0	0	-64
31	502.96	102112	1636	-17	0	-17	0.23	0.47	39	0	0	0	54	0	0	-110
TOTAL				92	2	94	8	9	935	0	0	0	1305	0	0	-2147

*Evaporation and Precipitation data from LCRA not logged; Casitas Dam data substituted

Reservoir capacity = 237,761 acre-feet at 567 ft. elevation.

Direct reservoir inflow values may be negative due to innaccuracies of the evaporation coefficients (supplied by the USBR)

Evaporation and precipitation readings taken at approximately 8 a.m.

Monthly Evaporation Coefficients: Jan=0.65, Feb=0.77, Mar=0.76, Apr=0.80, May=0.81, Jun=0.82, Jul= Aug=0.81,Sep=0.76, Oct=0.75, Nov=0.72, Dec=0.66

CASITAS RESERVOIR OPERATION

August 2020

*figures in acre-feet except where otherwise noted

	RESERVOIR (@ 0800 hrs.)			INFLOW			EVAPORATION			PRECIPITATION			RELEASES			
DATE	Elevation (ft MSL)	*Jul 31st* *102112* Storage	Surface Area (acres)	Direct	Ventura River Divers'n	Total	Pan @Dam (in)	Pan @Rec (in)	Lake Total (af)	at Dam (in)	at Rec (in)	Lake Total (af)	To Main System	To River	Spill	**STORAGE CHANGE**
1	502.91	102033	1636	16	0	16	0.36	0.22	32	0	0	0	63	0	0	-79
2	502.87	101970	1635	31	0	31	0.40	0.30	39	0	0	0	55	0	0	-63
3	502.82	101891	1635	-9	0	-9	0.30	0.27	31	0	0	0	38	0	0	-79
4	502.77	101812	1633	-19	0	-19	0.03	0.21	13	0	0	0	47	0	0	-79
5	502.73	101749	1633	20	0	20	0.34	0.38	40	0	0	0	44	0	0	-63
6	502.68	101671	1631	-8	0	-8	0.20	0.18	21	0	0	0	49	0	0	-78
7	502.63	101592	1631	-23	0	-23	0.16	0.18	19	0	0	0	37	0	0	-79
8	502.59	101529	1630	22	0	22	0.37	0.22	32	0	0	0	53	0	0	-63
9	502.55	101466	1630	-10	0	-10	0.20	0.22	23	0	0	0	30	0	0	-63
10	502.52	101419	1630	0	0	0	0.20	0.21	23	0	0	0	24	0	0	-47
11	502.47	101341	1628	-15	0	-15	0.13	0.40	29	0	0	0	34	0	0	-78
12	502.42	101262	1628	8	0	8	0.35	0.29	35	0	0	0	51	0	0	-79
13	502.38	101199	1626	13	0	13	0.22	0.27	27	0	0	0	49	0	0	-63
14	502.34	101137	1626	19	0	19	0.24	0.35	32	0	0	0	48	0	0	-62
15	502.29	101058	1624	24	0	24	0.46	0.39	47	0	0	0	56	0	0	-79
16	502.23	100964	1624	-13	0	-13	0.23	0.25	26	0	0	0	55	0	0	-94
17	502.20	100917	1624	26	0	26	0.30	0.30	33	0	0	0	40	0	0	-47
18	502.16	100855	1623	6	0	6	0.21	0.15	20	0	0	0	48	0	0	-62
19	502.11	100777	1623	13	0	13	0.27	0.28	30	0	0	0	61	0	0	-78
20	502.06	100699	1621	5	0	5	0.28	0.29	31	0	0	0	52	0	0	-78
21	502.00	100605	1621	-8	0	-8	0.25	0.29	30	0	0	0	56	0	0	-94
22	501.96	100542	1619	25	0	25	0.29	0.29	32	0	0	0	56	0	0	-63
23	501.92	100480	1619	18	0	18	0.30	0.30	33	0	0	0	47	0	0	-62
24	501.88	100418	1618	-15	0	-15	0.20	0.13	18	0	0	0	29	0	0	-62
25	501.83	100340	1618	-1	0	-1	0.26	0.33	32	0	0	0	45	0	0	-78
26	501.79	100277	1616	32	0	32	0.32	0.56	48	0	0	0	47	0	0	-63
27	501.74	100199	1616	4	0	4	0.29	0.34	34	0	0	0	48	0	0	-78
28	501.69	100122	1614	-10	0	-10	0.17	0.22	21	0	0	0	46	0	0	-77
29	501.63	100028	1614	-7	0	-7	0.32	0.32	35	0	0	0	52	0	0	-94
30	501.60	99982	1614	14	0	14	0.25	0.25	27	0	0	0	33	0	0	-46
31	501.56	99920	1613	-11	0	-11	0.28	0.19	26	0	0	0	25	0	0	-62
TOTAL				146	0	146	8	9	919	0	0	0	1420	0	0	-2192

*Evaporation and Precipitation data from LCRA not logged; Casitas Dam data substituted

Reservoir capacity = 237,761 acre-feet at 567 ft. elevation.

Direct reservoir inflow values may be negative due to innaccuracies of the evaporation coefficients (supplied by the USBR)

Evaporation and precipitation readings taken at approximately 8 a.m.

Monthly Evaporation Coefficients: Jan=0.65, Feb=0.77, Mar=0.76, Apr=0.80, May=0.81, Jun=0.82, Jul= Aug=0.81,Sep=0.76, Oct=0.75, Nov=0.72, Dec=0.66

CASITAS RESERVOIR OPERATION

SEPTEMBER 2020

*figures in acre-feet except where otherwise noted

	RESERVOIR (@ 0800 hrs.)			INFLOW			EVAPORATION			PRECIPITATION			RELEASES			
DATE	Elevation (ft MSL)	*Aug 30th* *99920* Storage	Surface Area (acres)	Direct	Ventura River Divers'n	Total	Pan @Dam (in)	Pan @Rec (in)	Lake Total (af)	at Dam (in)	at Rec (in)	Lake Total (af)	To Main System	To River	Spill	STORAGE CHANGE
1	501.52	99857	1613	-1	0	-1	0.20	0.20	20	0	0	0	42	0	0	-63
2	501.47	99780	1611	-31	0	-31	0.04	0.04	4	0	0	0	42	0	0	-77
3	501.42	99702	1611	0.80	0	0.80	0.31	0.31	32	0	0	0	47	0	0	-78
4	501.37	99625	1609	-19	0	-19	0.11	0.11	11	0	0	0	47	0	0	-77
5	501.32	99547	1609	20	0	20	0.37	0.37	38	0	0	0	60	0	0	-78
6	501.27	99470	1607	19	0	19	0.35	0.35	36	0	0	0	60	0	0	-77
7	501.21	99377	1607	-7	0	-7	0.32	0.32	33	0	0	0	54	0	0	-93
8	501.16	99299	1606	-4	0	-4	0.18	0.18	18	0	0	0	55	0	0	-78
9	501.13	99253	1606	11	0	11	0.14	0.14	14	0	0	0	43	0	0	-46
10	501.07	99160	1604	-27	0	-27	0.20	0.20	20	0	0	0	46	0	0	-93
11	501.03	99098	1604	19	0	19	0.35	0.35	36	0	0	0	46	0	0	-62
12	500.99	99037	1602	-3	0	-3	0.22	0.22	22	0	0	0	36	0	0	-61
13	500.96	98990	1602	-1	0	-1	0.14	0.14	14	0	0	0	32	0	0	-47
14	500.93	98944	1602	-11	0	-11	0.13	0.13	13	0	0	0	22	0	0	-46
15	500.88	98867	1601	-13	0	-13	0.21	0.21	21	0	0	0	42	0	0	-77
16	500.83	98790	1601	-8	0	-8	0.14	0.14	14	0	0	0	54	0	0	-77
17	500.77	98697	1599	-1	0	-1	0.36	0.36	36	0	0	0	56	0	0	-93
18	500.72	98620	1599	25	0	25	0.31	0.31	31	0	0	0	70	0	0	-77
19	500.67	98543	1598	-9	0	-9	0.19	0.19	19	0	0	0	49	0	0	-77
20	500.63	98482	1598	-1	0	-1	0.20	0.20	20	0	0	0	40	0	0	-61
21	500.60	98436	1598	5	0	5	0.15	0.15	15	0	0	0	36	0	0	-46
22	500.54	98344	1596	-18	0	-18	0.24	0.24	24	0	0	0	50	0	0	-92
23	500.49	98267	1594	-1	0	-1	0.16	0.16	16	0	0	0	60	0	0	-77
24	500.44	98190	1594	3	0	3	0.19	0.19	19	0	0	0	61	0	0	-77
25	500.40	98129	1594	13	0	13	0.27	0.27	27	0	0	0	47	0	0	-61
26	500.35	98052	1593	-20	0	-20	0.15	0.15	15	0	0	0	42	0	0	-77
27	500.33	98022	1593	45	0	45	0.40	0.40	40	0	0	0	35	0	0	-30
28	500.30	97976	1593	-5	0	-5	0.15	0.15	15	0	0	0	26	0	0	-46
29	500.25	97899	1591	-23	0	-23	0.12	0.12	12	0	0	0	41	0	0	-77
30	500.21	97838	1591	9	0	9	0.17	0.17	17	0	0	0	53	0	0	-61
TOTAL				-32	0	-32	6	6	656	0	0	0	1394	0	0	-2082

*Evaporation and Precipitation data from LCRA not logged; Casitas Dam data substituted

Reservoir capacity = 237,761 acre-feet at 567 ft. elevation. e = estimate

Direct reservoir inflow values may be negative due to innaccuracies of the evaporation coefficients (supplied by the USBR)

Evaporation and precipitation readings taken at approximately 8 a.m.

Monthly Evaporation Coefficients: Jan=0.65, Feb=0.77, Mar=0.76, Apr=0.80, May=0.81, Jun=0.82, Jul= Aug=0.81,Sep=0.76, Oct=0.75, Nov=0.72, Dec=0.66

Appendix E

Reservoir Elevation Data

Matilija Reservoir Lake Elevation

WATER YEAR OCTOBER 2019 THROUGH SEPTEMBER 2020

Daily mean elevation, feet above mean sea level

SPILL OVER DAM @ 1095.35 ELEVATION

	2019			2020								
Day	**Oct**	**Nov**	**Dec**	**Jan**	**Feb**	**Mar**	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**
1	1095.70	1095.70	1095.74	1095.82	1095.76	1095.74	1095.84	1095.88	1095.86	1095.15		
2	1095.70	1095.70	1095.72	1095.81	1095.76	1095.75	1095.84	1095.88	1095.85			
3	1095.70	1095.69	1095.72	1095.81	1095.76	1095.75	1095.84	1095.88	1095.84			
4	1095.70	1095.69	1095.90	1095.80	1095.77	1095.74	1095.84	1095.88	1095.83			
5	1095.70	1095.69	1095.79	1095.80	1095.78	1095.74	1095.89	1095.88	1095.85			
6	1095.69	1095.69	1095.76	1095.80	1095.77	1095.73	1096.58	1095.87	1095.85			
7	1095.69	1095.69	1095.79	1095.80	1095.76	1095.74	1096.18	1095.87	1095.85			
8	1095.69	1095.68	1095.80	1095.80	1095.75	1095.75	1096.10	1095.87	1095.84			
9	1095.69	1095.68	1095.78	1095.81	1095.75	1095.75	1096.14	1095.87	1095.83			
10	1095.69	1095.69	1095.77	1095.80	1095.76	1095.77	1096.14	1095.88	1095.82			
11	1095.69	1095.69	1095.76	1095.80	1095.76	1095.88	1096.11	1095.88	1095.81			
12	1095.69	1095.69	1095.75	1095.80	1095.76	1095.79	1096.07	1095.89	1095.81			
13	1095.69	1095.69	1095.74	1095.79	1095.75	1095.78	1096.05	1095.89	1095.81			
14	1095.69	1095.69	1095.74	1095.79	1095.75	1095.77	1096.02	1095.88	1095.81			
15	1095.69	1095.69	1095.74	1095.79	1095.75	1095.77	1096.00	1095.88	1095.81			
16	1095.68	1095.69	1095.75	1095.80	1095.75	1096.23	1095.99	1095.87	1095.81			
17	1095.68	1095.68	1095.75	1095.80	1095.74	1095.42	1095.98	1095.87	1095.81			
18	1095.68	1095.69	1095.76	1095.79	1095.74	1094.05	1095.98	1095.88	1095.81			
19	1095.68	1095.69	1095.75	1095.79	1095.75	1094.05	1095.97	1095.89	1095.81			
20	1095.67	1095.70	1095.75	1095.79	1095.75	1094.05	1095.96	1095.89	1095.80			
21	1095.67	1095.70	1095.74	1095.79	1095.75	1094.04	1095.94	1095.88	1095.80			
22	1095.66	1095.70	1095.81	1095.78	1095.76	1094.16	1095.92	1095.88	1095.80			
23	1095.67	1095.70	1095.90	1095.77	1095.75	1096.05	1095.91	1095.88	1095.79			
24	1095.66	1095.70	1095.82	1095.77	1095.74	1095.96	1095.90	1095.88	1095.79			
25	1095.66	1095.70	1095.82	1095.77	1095.74	1095.93	1095.89	1095.87	1095.79			
26	1095.67	1095.70	1096.01	1095.77	1095.74	1095.92	1095.89	1095.86	1095.79			
27	1095.68	1095.75	1095.88	1095.76	1095.75	1095.90	1095.89	1095.85	1095.78			
28	1095.69	1095.78	1095.85	1095.76	1095.74	1095.89	1095.88	1095.86	1095.80			
29	1095.69	1095.76	1095.84	1095.76	1095.74	1095.87	1095.88	1095.86	1095.80			
30	1095.69	1095.74	1095.83	1095.77	---	1095.86	1095.88	1095.86	1095.80			
31	1095.70	---	1095.83	1095.76	---	1095.85	---	1095.87	---			---

Data is provisional and subject to revision.

Water elevation lowered per Calilfornia Division of Safety of Dams. Water elevation at approximate sediment level.

Appendix F

System Delivery Data for Mire Monte Well and Ojai Water System

Mira Monte Well

Water Year 2019 – 2020

Month	Acre Feet
Oct – 19	18.32
Nov – 19	9.85
Dec – 19	1.56
Jan – 20	2.25
Feb – 20	8.21
Mar – 20	1.62
Apr – 20	5.97
May – 20	16.32
Jun – 20	17.39
Jul – 20	24.42
Aug – 20	24.52
Sep – 20	23.38
Total:	**153.81 AF**

OJAI WATER SYSTEM SOURCES AND DELIVERIES

2019 - 2020 WATER YEAR

figures in acre-feet except where otherwise noted

			SOURCE	
MONTH	YEAR	SYSTEM DELIVERIES	WELL - FIELD PRODUCTION	SURFACE WATER
OCT	2019	174	164	11
NOV	2019	142	140	2
DEC	2019	75	75	0
JAN	2020	77	77	0
FEB	2020	103	102	0
MAR	2020	86	85	1
APR	2020	81	81	0
MAY	2020	151	131	19
JUN	2020	161	126	35
JUL	2020	176	103	73
AUG	2020	197	131	66
SEP	2020	184	124	60
TOTAL		**1607**	**1339**	**267**

Appendix G

Ambient Air Temperature Data

HISTORICAL TEMPERATURES
CMWD CASITAS DAM WEATHER STATION
(Degrees F.)

YEAR	JANUARY			FEBRUARY			MARCH			APRIL			MAY			JUNE			JULY			AUGUST			SEPTEMBER			OCTOBER			NOVEMBER			DECEMBER		
	max	min	avg	max	min	avg	max	min	avg	max	min	avg	max	min	avg	max	min	avg	max	min	avg	max	min	avg	max	min	avg	max	min	avg	max	min	avg	max	min	avg
1960	77	24	48	75	29	52	85	35	56	90	37	59	88	35	61	93	45	63	106	46	69	95	44	66	102	44	69	93	37	62	82	31	55	83	25	51
1961	88	26	54	85	30	54	84	31	54	99	33	52	88	35	57	104	40	62	97	47	68	95	39	68	99	37	65	103	37	62	90	31	55	81	30	52
1962	89	25	52	74	31	50	80	29	50	91	37	60	90	38	57	82	42	62	89	47	65	92	47	68	100	45	65	93	41	62	89	32	56	87	22	54
1963	78	16	50	90	39	60	84	30	54	83	33	54	78	39	60	85	42	62	87	45	66	91	44	68	109	48	72	90	43	65	88	33	58	85	30	54
1964	82	28	50	82	29	50	85	32	50	94	34	66	84	35	66	87	42	61	94	45	67	95	48	62	100	44	66	99	44	66	88	28	54	77	28	53
1965	82	29	54	85	29	68	81	35	54	92	31	57	88	37	59	83	40	61	90	47	65	103	49	70	95	45	65	99	40	66	83	34	58	80	28	51
1966	79	28	50	78	30	48	88	29	56	96	38	60	81	43	60	88	42	65	89	46	66	94	49	70	98	44	68	98	39	66	96	34	58	78	27	53
1967	81	29	52	86	30	55	79	31	54	71	33	50	98	37	61	88	39	61	93	52	68	108	54	74	98	51	70	98	40	65	88	33	60	80	26	50
1968	82	27	51	84	36	57	90	35	58	85	34	56	102	37	60	88	42	62	97	48	68	90	46	65	102	40	67	85	32	58	98	42	64	81	20	49
1969	86	28	52	71	30	49	86	31	53	83	36	58	87	42	60	90	42	62	90	49	67	104	47	70	96	48	67	91	37	62	91	33	58	80	24	54
1970	70	24	53	81	34	51	81	33	58	87	32	55	99	37	61	100	45	64	103	48	68	97	48	68	102	43	65	102	35	61	82	35	56	78	30	50
1971	87	23	52	91	30	53	80	24	54	90	35	55	85	38	57	91	39	62	99	48	68	98	50	72	111	41	68	103	25	60	89	31	54	71	24	46
1972	78	23	49	81	25	53	92	30	57	84	31	56	97	37	61	90	45	63	104	47	70	106	48	70	99	43	67	96	30	61	85	32	55	81	22	49
1973	79	24	48	75	33	53	73	31	51	81	36	56	94	39	61	104	42	66	96	44	66	98	46	67	99	45	64	96	39	63	81	31	54	82	30	53
1974	75	24	49	81	30	51	78	32	53	85	35	57	97	34	58	98	46	64	94	46	69	84	45	66	98	46	67	103	39	62	92	31	56	79	23	51
1975	86	31	52	79	27	51	74	31	52	79	32	52	78	35	58	88	42	61	91	45	66	94	45	66	104	46	68	98	35	72	92	25	55	90	23	52
1976	90	23	54	86	31	53	85	29	55	89	33	54	89	42	60	104	43	66	90	48	68	102	47	68	92	50	68	97	37	65	97	26	60	83	29	53
1977	80	29	52	88	30	56	80	29	51	87	34	58	77	37	57	88	43	64	104	64	68	90	49	70	94	43	66	92	38	62	94	32	61	83	32	56
1978	76	29	54	82	31	53	88	35	57	78	34	55	99	39	64	92	46	66	106	45	67	94	46	68	108	43	70	92	43	65	92	30	54	77	20	49
1979	70	24	49	77	28	55	86	32	55	81	34	58	97	38	62	104	44	67	99	46	67	92	44	68	109	47	72	86	38	64	84	27	57	89	26	55
1980	79	30	55	84	32	57	80	29	54	86	36	58	82	36	58	97	42	64	94	47	68	95	48	69	95	44	64	95	36	64	88	29	57	88	31	56
1981	82	32	55	88	29	56	80	35	54	94	36	59	87	41	62	105	50	70	99	47	70	104	47	70	95	45	67	95	32	60	91	33	58	81	32	55
1982	78	26	50	85	33	56	76	31	53	85	32	57	80	41	60	78	40	61	94	47	68	102	47	70	101	41	67	95	41	64	85	32	55	74	27	51
1983	89	28	54	81	32	54	85	35	56	85	34	56	92	39	62	82	47	64	101	48	70	105	49	74	106	51	73	97	45	68	90	29	57	76	29	53
1984	84	31	56	83	31	55	88	35	59	94	34	59	105	41	67	94	46	60	98	52	74	96	53	74	108	51	77	91	39	63	82	32	55	74	29	51
1985	76	28	51	88	26	54	84	31	55	91	40	61	85	38	57	98	44	67	105	52	73	101	49	71	94	40	68	99	34	65	88	30	55	82	25	55
1986	85	35	57	90	31	57	88	38	58	92	38	59	88	41	61	92	47	65	89	49	68	103	50	70	86	41	63	92	40	63	89	36	61	80	32	54
1987	82	24	50	82	29	54	81	30	56	93	38	62	92	42	64	91	47	65	92	46	66	101	47	69	101	49	69	107	49	68	87	31	57	80	24	50
1988	82	29	53	87	30	57	97	33	60	92	38	59	96	39	62	91	40	64	93	51	71	92	48	69	108	46	67	102	42	65	88	31	57	86	26	52
1989	84	26	51	86	28	51	89	32	59	103	38	63	84	40	61	99	46	66	100	50	70	93	48	68	100	46	68	95	35	62	94	29	60	87	28	55
1990	84	27	52	84	23	52	91	30	56	89	42	61	102	39	61	106	45	68	104	50	73	96	49	71	97	50	69	96	42	65	94	30	60	85	15	50
1991	83	28	54	85	35	58	77	31	52	88	37	59	91	40	59	83	44	62	85	50	67	96	48	68	95	48	69	105	36	66	93	33	60	79	28	53
1992	84	31	54	87	35	57	81	39	57	91	44	64	81	49	65	87	45	66	97	49	71	101	50	73	98	50	69	95	46	65	90	34	59	78	27	50
1993	80	28	52	76	36	52	85	36	59	89	41	61	92	40	63	94	43	67	89	52	68	93	52	70	103	45	68	100	44	65	95	32	57	81	29	52
1994	86	30	54	79	29	52	89	36	58	89	40	59	84	43	61	102	48	68	96	52	68	102	51	73	95	46	69	97	39	63	82	28	52	78	26	52
1995	83	32	53	91	41	61	82	36	**58**	89	38	59	78	40	59	90	43	65	106	50	70	103	47	71	101	46	70	97	40	65	88	40	61	81	34	56
1996	86	28	54	87	30	57	84	34	58	94	40	63	89	44	64	102	47	67	103	52	71	101	50	72	93	47	69	84	34	62	93	34	59	75	33	54
1997	80	33	54	87	35	56	95	33	60	94	36	61	98	45	68	84	50	67	99	50	70	110	51	74	104	50	75	102	37	66	100	40	60	81	26	52
1998	76	29	54	75	35	52	85	33	57	86	36	57	80	43	60	82	46	65	96	51	71	108	51	75	106	48	69	93	38	63	82	35	56	84	23	51
1999	81	30	54	83	29	55	82	34	54	93	30	57	89	40	61	84	42	67	95	48	71	98	47	69	103	43	67	100	43	68	88	33	59	85	31	56
2000	79	28	55	81	36	54	84	34	57	89	40	62	90	43	65	91	46	69	104	49	70	97	52	72	103	45	71	89	40	62	81	30	53	81	30	55
2001	67	35	51	64	39	52	71	46	58	71	44	57	77	55	66	82	54	68	82	56	69	85	55	70	85	54	70	79	51	65	69	46	58	65	37	51
2002	80	28	51	90	27	56	84	31	55	87	38	58	94	40	61	90	45	66	98	51	70	93	49	69	109	46	70	99	41	61	91	39	58	72	33	52
2003	91	34	59	76	30	54	90	36	59	87	37	63	95	43	62	87	49	65	97	50	73	101	37	74	101	50	69	100	45	68	83	30	55	76	27	51
2004	79	25	52	75	31	52	94	37	63	102	37	62	102	44	65	84	46	64	94	50	79	97	50	70	103	46	71	94	42	62	80	28	55	78	28	51
2005	84	33	54	77	37	50	83	38	58	87	40	59	95	44	65	92	45	65	97	51	71	100	50	71	101	46	67	99	44	63	89	32	60	79	30	54
2006	79	29	53	90	31	50	82	30	52	85	34	57	90	44	64	101	50	71	107	54	76	98	50	70	101	46	68	92	38	62	96	28	60	80	28	51
2007	85	21	50	89	32	55	94	32	59	84	37	59	98	41	63	89	45	66	97	51	72	102	51	73	110	45	68	100	39	64	92	32	58	82	27	50
2008	77	30	50	87	30	54	90	34	58	100	36	61	99	40	63	108	46	69	96	51	71	95	52	73	102	49	71	103	38	67	94	39	61	78	28	50
2009	84	29	57	84	31	53	85	33	56	101	33	58	98	43	65	88	47	66	96	50	71	106	46	71	103	47	73	99	36	64	87	33	57	72	28	57
2010	79	32	53	85	32	53	87	32	57	85	35	56	89	40	61	81	48	65	98	46	68	97	46	68	113	43	67	99	42	65	97	27	57	80	27	53
2011	85	32	56	84	30	51	97	30	56	93	31	60	93	38	61	89	42	63	96	43	69	99	45	69	103	48	67	102	39	65	83	33	55	74	26	49
2012	83	30	55	86	29	56	87	29	54	86	34	59	92	40	64	91	45	66	98	48	69	99	48	74	105	49	73	106	39	67	97	31	58	73	27	51
2013	83	23	51	84	28	53	88	34	59	89	37	61	99	44	65	96	48	68	93	50	71	105	49	71	104	45	71	96	39	62	93	35	59	83	23	53
2014	93	33	58	88	29	57	92	38	60	97	36	62	104	40	67	86	45	67	101	54	74	98	50	73	109	48	74	106	44	68	94	37	62	87	30	56
2015	87	26	58	90	37	59	96	33	63	96	35	61	90	43	61	93	47	68	95	51	72	103	51	74	109	52	76	107	47	72	92	30	57	89	25	52
2016	85	25	54	94	30	62	90	36	59	93	36	62	82	42	62	112	46	68	98	51	72	91	50	71	106	46	72	99	42	73	97	32	62	82	28	54
2017	84	30	53	82	30	56	88	33	61	95	39	63	96	42	64	101	43	69	98	51	73	108	53	74	104	43	71	106	41	69	100	35	63	88	27	58
2018	90	33	59	70	29	50	86	34	57	94	37	62	92	42	62	88	46	66	115	54	76	101	54	75	94	46	70	94	42	67	94	33	61	79	29	55
2019	81	26	54	70	29	50	86	34	57	89	42	62	80	42	61	92	47	66	101	51	70	94	52	70	104	43	71	101	28	65	95	29	59	77	30	54
2020	84	33	55	88	27	57	84	33	55	98	38	61	97	43	66	100	48	68	98	49	69	105	48	73	119	47	72	104	38	69	96	30	58	89	30	55
Records and Avg of month	94	16	53	94	23	54	97	24	56	103	30	59	105	34	62	112	39	65	115	43	70	110	37	70	119	37	69	107	25	65	100	25	58	90	15	53

NA *Daily values missing, accuracy limited*
Averages are averages of all max and min daily temperatures
NA = not available
g:\engr.wks\hydrology\temperatures\historicaltemps.xls

HISTORICAL TEMPERATURES
CMWD CASITAS RECREATION AREA WEATHER STATION
(Degrees F.)

YEAR	JANUARY			FEBRUARY			MARCH			APRIL			MAY			JUNE			JULY			AUGUST			SEPTEMBER			OCTOBER			NOVEMBER			DECEMBER		
	max	min	avg	max	min	avg	max	min	avg	max	min	avg	max	min	avg	max	min	avg	max	min	avg	max	min	avg	max	min	avg	max	min	avg	max	min	avg	max	min	avg
1960	75	22	48	73	29	51	84	34	56	89	33	59	92	35	62	99	43	66	107	46	72	98	44	69	107	41	71	92	35	62	84	33	56	81	27	52
1961	89	26	54	85	30	54	83	31	54	100	39	59	87	37	58	112	41	62	103	49	72	100	48	72	102	44	66	106	35	64	91	30	55	80	31	51
1962	88	24	50	75	25	50	79	28	50	92	34	60	87	39	58	94	43	63	95	45	67	101	45	72	99	43	68	96	40	61	87	31	57	84	19	53
1963	78	16	48	88	37	58	85	29	52	78	33	53	84	39	58	89	42	62	95	46	69	99	46	70	107	52	74	89	41	64	88	31	56	82	27	53
1964	80	25	49	82	27	50	82	27	49	83	32	54	82	34	57	10	42	62	97	46	70	94	46	69	98	41	66	100	43	62	85	27	54	75	25	52
1965	82	28	52	84	25	51	77	31	52	89	30	54	92	28	58	91	38	58	96	41	66	102	47	71	93	40	62	97	37	61	84	33	56	83	26	50
1966	80	26	49	76	28	48	95	27	55	92	37	59	85	41	60	96	42	65	93	41	68	94	50	72	97	42	62	96	37	64	95	32	56	79	25	52
1967	79	25	50	82	28	53	80	30	52	69	32	54	96	36	60	87	38	60	92	49	70	105	54	75	96	50	70	97	41	65	91	33	60	79	25	49
1968	80	25	50	85	35	56	84	32	56	86	31	57	99	34	60	93	35	62	95	36	72	96	42	62	98	38	62	96	40	62	87	27	56	87	21	48
1969	84	26	50	67	29	49	85	28	52	81	31	56	86	38	60	90	45	61	92	46	68	101	43	71	92	41	62	87	32	59	88	31	58	79	23	52
1970	68	20	52	76	32	50	79	31	56	87	30	47	96	35	60	97	44	67	100	48	71	102	42	69	102	42	66	99	34	62	86	33	55	76	29	49
1971	90	24	51	87	28	52	85	25	52	88	33	54	81	38	56	88	40	62	95	48	68	98	49	72	109	42	68	99	26	60	86	30	44	68	22	46
1972	77	24	43	82	26	54	90	30	58	85	30	58	96	31	62	93	38	65	100	40	71	103	44	71	95	32	67	92	33	60	83	33	55	80	23	51
1973	80	20	47	75	32	53	69	30	50	79	35	56	96	38	61	101	42	68	94	48	67	96	44	69	95	40	64	92	40	63	81	31	53	81	28	53
1974	75	23	49	79	28	51	78	32	54	87	35	56	97	35	58	96	41	65	95	48	70	89	46	68	95	45	68	97	41	60	90	30	56	79	24	49
1975	86	24	52	77	29	51	74	31	53	78	30	52	85	35	58	83	44	62	95	45	68	96	42	68	100	47	70	95	35	61	85	27	54	83	25	53
1976	87	21	53	79	32	51	82	28	54	86	35	54	94	43	61	104	42	67	96	49	67	102	49	67	92	50	69	94	36	63	95	28	59	82	27	52
1977	82	23	51	86	32	NA	78	28	50	84	32	57	81	39	57	85	39	63	100	47	69	94	49	70	96	44	65	90	38	62	92	31	58	78	33	56
1978	74	28	51	88	30	54	88	37	57	75	33	55	99	40	63	90	42	66	109	48	69	96	47	67	109	41	69	96	42	65	86	29	53	76	22	49
1979	69	26	48	76	28	50	84	35	54	79	35	57	95	40	60	102	44	66	98	45	69	89	48	68	105	44	72	90	37	63	82	25	56	87	25	54
1980	76	31	54	82	30	56	76	34	54	91	36	58	89	34	58	95	42	65	110	49	73	96	49	70	104	36	66	104	37	64	90	28	58	89	30	56
1981	82	33	56	88	30	57	79	36	55	94	36	59	88	40	62	102	42	72	93	49	71	102	47	73	95	48	68	93	34	60	89	34	58	84	25	54
1982	80	26	51	83	31	56	76	32	52	85	31	57	83	38	60	87	42	61	95	47	70	104	48	72	106	46	69	94	36	63	84	34	56	75	28	52
1983	90	29	55	79	32	55	82	31	55	79	32	55	89	21	59	86	39	64	96	43	68	99	40	73	103	41	72	93	33	62	86	NA	NA	75	NA	67
1984	80	30	53	80	28	52	81	34	56	86	34	57	100	40	65	94	48	65	96	52	73	94	52	72	101	50	74	90	37	60	78	30	53	71	28	50
1985	72	27	48	85	25	51	80	30	51	87	38	58	85	38	57	98	42	66	105	33	73	100	50	69	91	42	65	96	42	61	84	30	53	84	26	53
1986	84	33	57	85	30	55	82	38	57	87	35	57	88	39	59	88	49	65	89	50	68	94	53	71	87	42	61	88	38	61	86	33	59	76	28	52
1987	75	22	48	80	28	52	78	31	53	88	34	60	91	40	63	89	48	65	91	47	63	94	44	68	101	45	68	102	48	66	83	28	55	74	20	47
1988	80	26	50	80	28	54	93	30	57	89	34	58	94	36	61	87	40	64	91	52	70	92	49	68	104	44	66	96	41	63	86	28	55	82	26	50
1989	80	24	48	80	27	50	82	30	56	96	36	61	86	40	59	94	46	64	102	38	69	90	46	67	102	45	67	95	34	61	91	27	58	90	27	51
1990	84	24	50	81	20	50	86	31	54	86	39	59	98	37	58	110	41	67	98	48	71	96	44	69	99	46	68	92	38	62	89	25	56	82	8	45
1991	78	24	49	82	29	56	80	28	49	84	32	56	90	33	57	90	40	61	95	46	66	96	44	67	90	44	68	101	30	65	90	30	57	78	22	50
1992	80	24	50	82	30	53	76	32	53	90	36	60	NA	NA	NA	NA	NA	NA	NA	NA	NA	98	50	73	NA	NA	NA	97	44	64	87	31	57	74	23	48
1993	79	24	49	78	31	50	**81**	32	56	**84**	38	59	NA	NA	NA	102	40	66	95	50	66	**90**	50	70	**100**	46	70	**97**	42	66	90	34	58	85	30	54
1994	89	32	56	82	30	52	**87**	35	59	**82**	39	59	**86**	43	61	100	48	68	**96**	52	70	100	53	75	**92**	46	70	95	40	64	88	30	55	85	28	54
1995	78	33	53	92	40	61	**78**	**34**	**56**	87	40	60	83	40	61	91	39	65	104	51	71	97	50	75	**100**	48	71	NA	NA	NA	87	42	62	84	36	56
1996	90	29	55	NA	NA	NA	84	33	57	92	41	62	92	46	64	96	48	67	97	54	73	99	52	74	92	49	69	99	38	64	95	38	60	71	43	57
1997	82	32	54	86	34	57	94	34	59	92	36	61	94	46	68	82	52	67	91	42	69	102	55	74	99	52	75	NA	NA	NA	100	41	60	84	29	54
1998	83	31	54	72	37	51	83	35	56	84	36	55	77	38	58	81	40	61	94	43	69	105	44	75	105	45	68	89	40	62	81	35	56	85	22	52
1999	81	30	55	78	27	53	81	33	52	32	88	56	38	86	58	86	42	63	97	50	69	100	49	69	100	44	65	100	43	68	90	34	58	83	31	55
2000	79	30	54	79	35	53	81	35	55	84	39	59	99	40	64	91	48	68	96	48	69	98	51	72	104	47	67	88	41	61	86	30	54	81	31	55
2001	82	28	49	89	30	49	82	35	56	78	36	55	90	42	64	92	48	67	89	50	69	95	51	70	96	46	68	99	43	64	80	32	59	81	31	52
2002	81	24	50	72	35	54	80	30	53	90	38	61	90	43	64	94	49	69	94	49	69	96	48	68	101	44	72	97	40	61	89	38	59	71	29	51
2003	84	32	57	81	28	52	87	31	55	86	31	53	92	39	60	62	38	61	96	43	72	98	50	71	99	38	69	99	43	67	82	28	53	78	24	51
2004	78	28	49	71	29	49	90	35	59	99	31	56	99	41	62	86	39	62	93	48	68	96	40	68	99	43	69	89	39	60	77	26	53	84	23	52
2005	84	30	49	74	33	53	94	33	56	82	35	54	90	42	55	87	43	62	91	42	69	94	41	69	97	43	64	95	38	60	89	30	59	79	30	57
2006	81	25	48	88	27	54	76	28	49	80	38	57	82	43	63	97	50	71	106	55	76	98	51	71	97	51	70	86	48	64	92	30	61	80	26	55
2007	82	20	47	86	30	53	88	36	56	90	38	57	94	40	60	84	46	65	92	38	71	100	50	72	106	46	68	92	40	63	88	34	58	64	35	49
2008	74	30	46	80	30	52	86	34	56	94	36	58	96	40	61	106	48	66	96	48	70	94	52	71	96	48	69	98	40	66	92	40	60	82	20	50
2009	88	28	52	82	30	51	82	34	54	94	34	57	98	40	64	90	42	63	98	42	72	106	46	71	101	42	72	97	32	60	87	28	55	62	31	47
2010	76	26	46	80	28	50	82	30	52	80	30	52	84	38	56	82	42	59	92	42	63	102	42	64	102	38	61	88	36	56	92	27	53	78	26	47
2011	88	26	47	72	20	42	78	22	47	93	31	60	93	38	61	84	42	62	90	52	69	103	52	70	102	50	69	100	38	64	84	34	55	67	34	50
2012	86	28	51	78	32	59	84	28	54	82	38	58	80	44	60	82	40	63	92	40	66	94	50	72	96	48	70	106	42	66	88	34	43	78	29	53
2013	82	25	48	82	29	52	83	38	56	78	40	59	100	44	64	102	52	69	101	54	72	99	55	71	100	49	73	88	40	63	88	38	60	83	25	53
2014	82	36	53	82	34	56	90	39	59	90	38	61	100	45	67	89	46	68	105	50	75	101	50	73	110	48	74	97	42	69	85	38	61	79	26	54
2015	84	32	58	95	30	59	98	30	62	96	35	62	97	47	66	93	52	70	89	51	71	99	56	75	102	52	79	104	48	72	85	34	58	77	26	53
2016	74	30	52	90	31	62	82	35	59	83	43	61	79	43	61	105	45	71	98	48	72	92	51	71	105	45	69	91	44	65	84	34	60	73	30	53
2017	74	30	51	72	31	53	85	32	59	78	44	59	95	38	64	104	42	71	110	55	78	112	56	78	112	44	75	112	42	72	104	34	66	94	27	59
2018	94	32	62	92	26	55	79	32	55	96	34	61	90	42	61	87	44	67	115	56	80	105	56	77	100	50	74	98	40	71	100	36	64	84	26	58
2019	84	26	57	74	30	52	88	35	57	92	38	63	84	42	62	104	52	71	106	52	77	103	52	76	110	50	77	104	32	68	100	32	64	84	32	56
2020	82	30	57	84	26	59	80	38	57	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**
Records and Avg of month	96	16	51	95	20	53	98	22	55	100	30	57	100	21	61	112	35	65	115	33	70	112	40	71	112	32	69	112	26	63	104	25	57	94	8	52

NA *Daily values missing, accuracy limited*
Averages are averages of all max and min daily temperatures
NA = not available
g:\engr.wks\hydrology\temperatures\historicaltemps.xls

Appendix H

Historical Hydrology Data

CASITAS RESERVOIR INVENTORY
ANNUAL SUMMARY

(CALENDAR YEAR - ALL VALUES IN ACRE-FEET UNLESS OTHERWISE NOTED)

	RESERVOIR DATA (START OF YEAR- Last Day of Previous Month)		INFLOW FOR YEAR			RELEASES FOR YEAR						STORAGE VOLUME	
YEAR	ELEVATION (FT ABOVE MSL)	STORAGE	DIRECT	VENTURA RIVER DIVERSION	TOTAL	TO CONV. SYSTEM	DOWN RIVER	TOTAL	SPILL FOR YEAR	EVAP FOR YEAR	RAINFALL ON LAKE SURFACE	MAXIMUM FOR YEAR	MINIMUM FOR YEAR
1959	350.00	-	2,305	5,105	7,410	586	72	658	-	728	59	7,022	574
1960	366.66	5,908	1,322	24	1,346	1,277	80	1,357	-	1,068	372	6,846	5,201
1961	363.28	5,201	967	32	999	1,625	18	1,643	-	819	133	5,201	3,642
1962	355.46	3,870	26,428	21,915	48,343	1,988	55	2,043	-	3,505	1,014	51,977	3,845
1963	477.68	47,679	2,114	2,939	5,053	4,445	72	4,517	-	3,498	1,664	51,524	46,381
1964	446.13	46,381	1,841	354	2,195	6,024	72	6,096	-	3,406	1,293	46,381	38,606
1965	438.57	40,373	15,279	21,439	36,718	7,631	72	7,703	-	2,957	2,421	68,851	39,718
1966	469.42	68,851	11,941	25,323	37,264	7,162	73	7,235	-	5,030	1,915	95,765	70,068
1967	490.62	95,765	12,961	35,172	48,133	8,759	72	8,831	-	6,214	3,840	138,996	108,511
1968	513.22	132,333	1,677	1,070	2,747	13,729	74	13,803	-	6,593	2,133	132,549	116,818
1969	504.25	116,818	55,379	50,349	105,728	14,040	73	14,113	-	8,413	7,625	216,790	116,418
1970	548.94	207,694	7,112	15,859	22,971	16,417	72	16,489	-	9,841	5,395	217,656	207,214
1971	549.78	207,729	3,758	10,957	14,715	16,392	24	16,416	-	9,552	3,433	214,692	193,686
1972	546.52	201,908	813	1,718	2,531	17,878	73	17,951	-	8,758	1,706	202,690	179,435
1973	536.70	179,435	22,262	39,588	61,850	13,963	33	13,996	-	8,937	4,520	239,330	224,519
1974	555.75	224,519	5,240	11,732	16,972	17,400	23	17,423	-	9,394	5,423	238,096	217,063
1975	553.99	220,096	5,352	12,988	18,340	15,937	73	16,010	-	8,870	2,813	235,437	216,370
1976	552.49	216,370	3,031	3,438	6,469	18,371	104	18,475	-	9,142	3,782	219,324	198,885
1977	545.29	199,003	1,590	1,094	2,684	18,035	70	18,105	-	8,821	3,352	200,062	175,359
1978	536.10	178,113	49,376	28,695	78,071	12,390	2,677	15,067	1,572	9,622	9,879	255,307	178,025
1979	561.68	239,802	7,584	8,845	16,429	13,072	32	13,104	1,193	9,963	5,395	255,116	237,183
1980	560.75	237,365	28,923	2,717	31,640	16,283	73	16,356	16,855	9,900	7,393	260,034	233,286
1981	559.18	233,286	3,112	5,772	8,884	20,242	73	20,315	-	9,412	4,002	240,222	216,395
1982	552.52	216,444	5,206	9,933	15,139	14,739	73	14,812	-	8,339	5,645	223,208	206,564
1983	551.56	214,078	44,548	22,131	66,679	15,757	73	15,830	17,877	8,844	11,699	259,264	213,562
1984	565.49	249,931	2,878	2,087	4,965	23,007	73	23,080	-	10,637	2,924	249,958	220,748
1985	555.15	223,006	4,220	3,015	7,235	20,219	73	20,292	-	9,149	2,637	223,208	196,404
1986	545.97	200,605	18,711	39,316	58,027	17,797	73	17,870	742	9,700	5,589	254,926	200,558
1987	560.16	235,828	-988	1,614	626	21,775	73	21,848	-	9,117	3,142	236,063	208,711
1988	549.35	208,687	1,431	9,154	10,585	21,974	73	22,047	-	9,005	3,715	216,543	191,890
1989	542.25	191,936	1,086	524	1,610	26,180	73	26,253	-	9,010	1,399	192,259	159,729
1990	527.43	159,688	-1,115	-	-1,115	21,494	73	21,567	-	8,353	1,447	159,688	130,141
1991	511.99	130,141	12,114	17,620	29,734	15,416	73	15,489	-	7,481	4,496	156,765	127,786
1992	518.58	142,203	20,483	44,202	64,685	12,042	73	12,114	-	8,704	5,620	201,197	142,203
1993	542.12	191,637	43,435	34,685	78,120	11,990	73	12,063	13,395	10,054	7,849	258,362	191,637
1994	562.58	242,177	1,806	3,504	5,310	16,345	73	16,418	-	10,347	3,458	245,810	224,141
1995	555.60	224,141	52,239	1,323	53,562	11,621	72	11,693	27,499	10,287	10,895	262,625	239,122
1996	561.42	239,122	6,883	5,371	12,254	15,902	23	15,925	-	10,489	6,897	244,346	224,898
1997	558.63	231,866	11,745	11,896	23,641	20,482	-	20,482	-	11,062	4,304	248,616	223,132
1998	557.06	227,839	51,727	6,338	58,065	13,411	-	13,411	34,907	9,503	12,632	267,542	227,743
1999	561.85	240,250	1,313	-	1,313	20,121	-	20,121	-	10,224	2,295	240,205	213,513
2000	551.33	213,513	13,541	4,482	18,023	21,506	-	21,506	-	9,801	5,134	227,132	205,434
2001	548.00	205,434	21,919	15,527	37,446	17,809	-	17,809	-	8,379	6,693	242,359	204,837
2002	555.24	223,233	-403	-	-403	22,092	-	22,092	-	8,286	2,718	223,183	194,359
2003	543.65	195,172	3,429	1,571	5,000	16,571	-	16,571	-	7,985	3,583	197,199	178,563
2004	536.62	179,219	9,006	2,853	11,859	20,214	-	20,214	-	7,783	4,897	182,113	157,595
2005	531.47	167,988	53,115	26,906	80,021	17,673	-	17,673	-	7,242	7,798	250,736	169,160
2006	558.25	230,891	9,382	12,091	21,473	17,253	-	17,253	-	7,649	5,534	252,651	231,585
2007	559.06	232,975	-1,450	-	-1,450	21,326	-	21,326	-	8,571	2,253	232,950	203,810
2008	547.35	203,882	15,470	9,927	25,397	18,325	-	18,325	-	8,753	5,538	231,071	203,595
2009	548.89	207,574	-580	506	-74	17,259	-	17,259	-	8,025	3,646	207,719	185,543
2010	539.59	185,881	12,419	10,926	23,345	14,637	-	14,637	-	6,898	7,051	199,945	182,049
2011	543.46	194,731	11,054	17,847	28,901	14,841	-	14,841	-	7,576	4,267	221,751	194,731
2012	548.02	205,482	-837	87	-750	16,244	-	16,244	-	8,263	3,165	205,482	183,746
2013	538.48	183,389	-1,649	-	-1,649	20,402	-	20,402	-	7,858	1,021	183,389	154,501
2014	524.88	154,501	217	1,018	1,235	18,811	-	18,811	-	7,678	2,353	154,501	131,511
2015	512.81	131,600	-1,810	-	-1,810	17,246	-	17,246	-	6,162	736	131,600	107,119
2016	498.22	107,119	-1,707	-	-1,707	14,151	-	14,151	-	4,311	2,394	107,759	89,317
2017**	486.02	89,344	14,074	6,091	20,165	12,214	-	12,214	-	5,435	3,020	111,640	82,919
2018	489.74	82,919	3,547	829	4,376	11,633	-	11,633	-	5,242	1,859	85,050	72,255
2019	481.10	72,278	15,366	21,230	36,596	7,668	-	7,668	-	5,434	4,023	107,663	72,149
2020	501.48	99,795	3,288	5,478	8,766	10,820	-	10,820	-	6,201	1,763	107,237	93,316
2021	497.29	93,449											
AVG:	522.27	167,277	11,701	10,600	22,301	15,042	82	15,124	1,839	7,714	4,123	187,155	159,158
MAX:	525.05	249,931	55,379	50,349	105,728	26,180	2,677	26,253	34,907	11,062	12,632	267,542	239,122
MIN:	350.00	-	-1,810	-	-1,810	586	-	658	-	728	59	5,201	574

*Total water supply delivered to Casitas System during 1991 includes 1240 a.f. state project water into system and 450 a.f. delivered to Santa Barbara out of system.

**Reservoir storage rating table updated and adopted 01 Oct, 2017. Storage volumes after this date reported using 2017 Rating Table.

HISTORICAL RAINFALL
CASITAS MUNICIPAL WATER DISTRICT

WATER YEAR	CASITAS DAM	CASITAS RECREATION	MATILIJA DAM	3 - STATION MEAN	THACHER SCHOOL
1958-59	10.22	11.84	16.62	12.89	11.34
59-60	15.79	14.70	14.45	14.98	13.26
1960-61	8.77	8.42	13.24	10.14	9.48
61-62	37.75	33.96	39.21	36.97	28.74
62-63	18.70	17.54	20.07	18.77	16.87
63-64	13.62	12.04	16.13	13.93	12.79
64-65	23.26	22.77	22.83	22.95	17.42
65-66	25.23	25.23	30.30	26.92	24.59
66-67	34.43	32.30	44.78	37.17	31.14
67-68	16.61	16.44	15.20	16.08	12.62
68-69	46.57	47.55	69.94	54.69	46.93
69-70	16.70	16.52	18.98	17.40	N/A
1970-71	19.72	19.71	22.65	20.69	20.72
71-72	11.94	13.72	15.49	13.72	10.83
72-73	34.79	34.56	45.91	38.42	30.14
73-74	19.95	18.43	22.16	20.18	18.91
74-75	23.83	24.05	26.83	24.90	22.37
75-76	17.90	17.23	20.85	18.66	15.24
76-77	12.90	11.98	13.75	12.88	11.42
77-78	49.05	49.66	63.04	53.92	50.04
78-79	25.80	25.64	28.66	26.70	25.45
79-80	34.06	35.15	42.43	37.21	30.58
1980-81	16.24	16.99	21.88	18.37	15.53
81-82	19.35	20.34	25.35	21.68	21.44
82-83	51.14	48.22	58.65	52.67	52.17
83-84	17.91	16.63	19.34	17.96	14.83
84-85	17.30	15.93	19.00	17.41	12.68
85-86	33.49	32.20	41.32	35.67	27.27
86-87	10.86	9.83	11.44	10.71	9.01
87-88	18.62	18.40	21.58	19.53	20.87
88-89	11.73	11.85	13.65	12.41	12.27
89-90	9.46	8.86	12.48	10.27	8.61
1990-91	24.43	23.59	26.01	24.68	21.78
91-92	29.75	28.53	34.27	30.85	34.25
92-93	41.20	43.31	60.38	48.30	45.71
93-94	16.08	14.69	16.27	15.68	15.60
94-95	49.84	49.04	58.17	52.35	46.89
95-96	18.80	16.91	22.78	19.50	17.71
96-97	24.37	25.27	27.80	25.81	22.12
97-98	**59.54**	**58.78**	64.27	**60.86**	52.29
98-99	12.68	10.67	12.56	11.97	12.92
99-00	24.35	21.94	26.79	24.36	19.73
2000-01	29.36	27.86	33.45	30.22	30.55
01-02	9.28	8.77	10.10	9.38	8.27
02-03	24.83	23.69	30.58	26.37	21.35
03-04	17.03	14.33	18.84	16.73	13.04
04-05	54.66	51.28	**74.44**	60.13	**52.90**
05-06	26.52	25.84	34.58	28.98	26.00
06-07	**8.60**	**7.15**	**9.23**	**8.33**	**7.65**
07-08	26.19	24.58	33.62	28.13	23.89
08-09	14.82	12.91	16.56	14.76	13.62
09-10	31.13	28.48	36.54	32.05	24.35
2010-11	35.99	34.04	40.28	36.77	31.18
11-12	15.11	13.18	14.21	14.17	12.09
12-13	10.99	10.11	11.85	10.98	9.11
13-14	9.90	9.52	14.76	11.39	11.30
14-15	11.65	10.06	17.57	13.09	14.91
15-16	14.64	14.33	16.20	15.06	11.07
16-17	31.53	29.56	35.46	32.18	28.50
17-18	11.49	12.09	17.03	13.54	13.60
18-19	29.49	28.63	39.75	32.62	28.10
19-20	19.30	18.70	29.91	22.64	19.41
AVERAGE	23.50	22.69	28.27	24.82	21.70
MAXIMUM	59.54	58.78	74.44	60.86	52.90
MINIMUM	8.60	7.15	9.23	8.33	0.00

*RAINFALL IN INCHES, WATER YEAR OCTOBER 1 THRU SEPTEMBER 30
BOLD NUMBERS INDICATE RECORD MAX/MIN RAINFALL AMOUNTS FOR THE PERIOD
NOTE: Matilija Dam Rainfall records after 2005-06 season obtained from the Ventura County Watershed Protection District

HISTORICAL MONTHLY RAINFALL
LAKE CASITAS DAM

Note: This data is in combination with VCWPD data and may differ from what is reported for annual averages

W. YEAR	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	TOTAL
1959/1960	0	0	1.18	5.61	4.78	0.65	3.57	0	0	0	0	0	15.79
1961	0.01	5.27	0.45	2.06	0	0.79	0.16	0	0	0	0	0.03	8.77
1962	0	5.62	1.89	3.07	25.49	1.61	0	0.07	0	0	0	0	37.75
1963	0.7	0.01	0.09	1.09	7.78	4.08	2.75	0.15	0.63	0	0	1.42	18.7
1964	0.73	4.83	0	3.11	0	2.5	2.1	0.07	0.18	0	0.1	0	13.62
1965	0.82	2.46	8.65	0.6	0.31	1.45	8.36	0.02	0	0	0	0.59	23.26
1966	0	14.37	7.04	2.43	1.19	0.12	0	0.03	0	0	0	0.05	25.23
1967	0	4.36	10.18	9.29	0.24	3.87	6.35	0	0	0	0	0.14	34.43
1968	0	5.62	1.4	1.75	1.68	5.01	1.13	0	0	0	0.02	0	16.61
1969	1.09	0.91	2.29	26.59	12.12	1.24	2.12	0	0	0.21	0	0	46.57
1969/1970	0	3.77	0.15	3.5	3.45	5.83	0	0	0	0	0	0	16.7
1971	0.03	7.74	6.18	1.56	1.31	0.99	0.83	1.08	0	0	0	0	19.72
1972	0.1	0.43	10.46	0.31	0.38	0	0.19	0.02	0	0	0	0.05	11.94
1973	0.27	6.31	1.23	8.94	14.86	3.17	0.01	0	0	0	0	0	34.79
1974	0.52	2.44	2.04	9.82	0	4.87	0.2	0	0	0	0	0	19.89
1975	0.74	0.15	10	0	4.95	6.5	1.48	0	0	0	0	0.01	23.83
1976	0.19	0	0.08	0	6.99	2.05	0.7	0	0.15	0.15	0	7.59	17.9
1977	0	0.53	0.95	6.11	0.25	1.93	0	2.7	0	0	0.43	0	12.9
1978	0	0.14	6.41	10.35	11.55	16.55	2.86	0	0	0	0.02	1.17	49.05
1979	0.06	2.77	2.28	5.86	5.35	8.39	0	0	0.01	0	0	0.63	25.35
1979/1980	0.61	1.1	2.02	8.89	15.92	4.62	0.62	0.22	0	0	0	0.06	34.06
1981	0.02	0	2.1	3.67	2.06	7.87	0.52	0	0	0	0	0	16.24
1982	0.59	2.99	0.76	3.38	1.03	6.74	2.86	0.02	0	0	0	0.98	19.35
1983	0.76	6.63	5.44	13.62	8.92	8.47	5.4	0.21	0	0	1.08	0.6	51.13
1984	4.94	6.02	4.85	0.12	0.01	0.49	0.08	0	0	0.25	0.13	1.06	17.95
1985	0.49	4.72	7.18	1.13	1.87	1.85	0	0	0	0.02	0	0.04	17.3
1986	0.64	7	0.99	3.51	10.71	6.96	1.96	0	0	0	0	1.33	33.1
1987	0	1.92	0.5	2.58	2.23	3.5	0.11	0	0.02	0.02	0	0	10.88
1988	1.5	1.48	4.05	3.6	2.57	1.45	3.82	0	0.15	0	0	0	18.62
1989	0	1.24	4.4	0.74	3.92	0.9	0.25	0.18	0	0	0	0.1	11.73
1989/1990	0.52	0.31	0	3.85	3.59	0.02	0.13	1.02	0	0	0	0.01	9.45
1991	0	0.33	0	2.1	3.5	18.3	0	0	0.18	0.01	0.01	0	24.43
1992	0.58	0.23	4.89	3.33	11.54	5.9	0.07	0.49	0	0.37	0	0	27.4
1993	1.43	0	6.91	14.02	11.59	6.44	0	0.17	0.64	0	0	0	41.2
1994	0.09	1.32	2.03	0.75	8.58	2.04	0.53	0.24	0	0	0	0.08	15.66
1995	0.9	1.81	1.22	29.05	2.17	12.3	0.44	1.47	0.48	0	0	0	49.84
1996	0	0.19	3.19	1.67	10.34	1.96	1.14	0.31	0	0	0	0	18.8
1997	4.58	3.04	9.13	7.54	0.08	0	0	0	0.12	0	0	0	24.49
1998	0.01	3.42	7.09	4.48	31.14	6.58	2.59	3.83	0.08	0	0	0.33	59.55
1999	0	1.36	0.86	2.77	1.12	3.46	2.49	0	0.15	0	0	0.18	12.39
1999/2000	0	1.17	0	2.77	12.27	3.77	4.22	0	0	0	0	0.09	24.29
2001	2.85	0	0.05	8.59	7.66	8.58	1.61	0	0	0.02	0	0	29.36
2002	0.42	4.18	2.22	1.15	0.44	0.49	0.08	0.19	0	0	0	0.11	9.28
2003	0	6.17	6.12	0	4.31	4.43	1.79	2.49	0.14	0	0	0	25.45
2004	0	3.4	2.96	0.96	9.07	0.64	0	0	0	0	0	0	17.03
2005	6.98	0.06	10.68	20.41	9.84	4.7	0.75	0.91	0	0	0	0.33	54.66
2006	0.95	0.78	1.46	5.46	3.51	4.52	8.51	1.33	0	0	0	0	26.52
2007	0.12	0.27	1.28	3.54	2.07	0.03	0.82	0	0	0	0	0.47	8.6
2008	0.51	0.09	4.46	18.24	2.74	0	0.06	0.03	0	0	0.06	0	26.19
2009	0.15	3.12	3.37	0.64	6.13	1.16	0.21	0	0.04	0	0	0	14.82
2009/2010	6	0	5.33	8.88	6.45	0.49	3.76	0.22	0	0	0	0	31.13
2011	2.25	1.91	15.79	0.79	5.4	8.39	0.04	1.21	0.21	0	0	0	35.99
2012	1.9	3.1	0.3	1.88	0.07	4.6	3.21	0	0	0.02	0.01	0.02	15.11
2013	0.06	3.5	3.86	2.07	0.28	1.22	0	0	0	0	0	0	10.99
2014	0.09	0.9	0.63	0	4.56	3.17	0.48	0.01	0	0	0.06	0	9.9
2015	0	1.28	5.51	2.12	0.77	0.46	0.38	0.25	0.19	0.37	0	0.32	11.65
2016	0.41	0.09	0.4	7.2	2.18	3.77	0.53	0.06	0	0	0	0	14.64
2017	0.71	0.83	4.15	10.88	12.91	1.27	0.53	0.14	0	0	0	0.11	31.53
2018	0	0.03	0	2.83	0.14	8.43	0.02	0.04	0	0	0	0	11.49
2019	0.14	3.11	1.16	9.07	9.56	4.37	0.06	2.02	0	0	0	0	29.49
2019/2020	0	1.86	6.93	0.82	0.17	4.97	4.46	0.08	0.01	0	0	0	19.3
AVG	0.76	2.44	3.56	5.26	5.51	3.95	1.43	0.35	0.06	0.02	0.03	0.29	23.67
MAX	6.98	14.37	15.79	29.05	31.14	18.30	8.51	3.83	0.64	0.37	1.08	7.59	59.55
MIN	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	8.60

Rainfall in inches, water year October 1 through September 30

HISTORICAL MONTHLY RAINFALL
LAKE CASITAS RECREATION AREA (STA #204)

W. YEAR	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	TOTAL
1959/1960	0	0	1.25	5.40	4.29	0.78	2.98	0	0	0	0	0	14.70
1961	0	5.08	0.48	1.90	0	0.63	0.23	0.06	0	0	0	0.04	8.42
1962	0	5.47	1.78	2.56	22.65	1.45	0	0.05	0	0	0	0	33.96
1963	0.49	0.01	0.05	1.35	6.85	3.59	2.61	0.39	0.51	0	0	1.69	17.54
1964	0.48	4.57	0	2.53	0	1.84	2.17	0.11	0.13	0	0.21	0	12.04
1965	0.84	3.39	8.33	0.67	0.38	1.59	7.29	0.01	0.01	0	0	0.26	22.77
1966	0	**14.19**	7.07	2.51	1.11	0.04	0	0.10	0	0	0	0.21	25.23
1967	0.02	4.80	9.71	7.80	0.27	3.53	5.82	0	0	0	0	0.35	32.30
1968	0	5.03	1.15	1.53	1.51	4.76	1.13	0	0	0	0	0	15.11
1969	1.23	0.91	2.62	26.58	12.81	1.26	2.01	0.01	0	0.12	0	0	47.55
1969/1970	0	3.52	0.19	3.68	3.70	5.43	0	0	0	0	0	0	16.52
1971	0	6.36	6.94	1.51	0	0.71	0.55	0.03	0	0	0	0	16.10
1972	0.15	0.62	11.02	0.33	0.58	0	0.16	0	0.02	0	0	0.14	13.02
1973	0.13	6.75	1.20	9.14	14.17	3.16	0	0	0	0	0	0	34.55
1974	0.65	1.94	1.43	9.40	0	4.82	0.09	0	0	0	0	0	18.33
1975	0.67	0.12	10.26	0	4.96	6.50	1.54	0	0	0	0	0	24.05
1976	0.23	0	0.13	0	6.43	2.10	0.71	0	0.25	0	0.06	**7.32**	17.23
1977	0.01	0.63	0.71	4.96	0.25	2.27	0	2.76	0	0	0.39	0	11.98
1978	0.02	0.09	6.57	11.35	13.04	14.71	2.53	0	0	0	0	1.35	49.66
1979	0	2.57	2.48	6.00	5.90	7.83	0	0	0	0	0	0.86	25.64
1979/1980	0.64	0.95	1.96	9.56	16.93	4.04	0.75	0.32	0	0	0	0	35.15
1981	0	0	2.21	4.59	2.15	7.45	0.59	0	0	0	0	0	16.99
1982	0.67	2.64	0.78	4.20	0.90	6.85	2.81	0	0	0	0	1.49	20.34
1983	0.71	5.87	4.60	12.59	8.48	9.13	4.86	0.18	0	0	**1.18**	0.62	48.22
1984	4.88	5.57	5.14	0.09	0	0.55	0.05	0	0	0	0.08	1.06	17.42
1985	0.41	4.21	6.91	1.42	1.71	1.62	0.02	0	0	0	0	0	16.30
1986	0.55	6.28	1.15	3.97	11.09	6.26	1.74	0	0	0	0	1.25	32.29
1987	0	1.66	0.49	2.16	2.06	3.32	0.12	0	0.03	0	0	0	9.84
1988	1.52	1.14	4.10	3.53	2.63	1.75	3.08	0	0	0	0	0.07	17.82
1989	0	1.18	3.91	0.48	4.74	0.87	0.34	0.22	0	0	0	0.11	11.85
1989/1990	0.61	0.47	0	3.67	2.92	0.01	0.18	0.93	0.03	0	0	0.04	8.86
1991	0	0.36	0	2.03	3.85	**17.19**	0	0	0.16	0	0	0	23.59
1992	0.62	0.25	4.52	2.90	13.83	5.79	0.05	0.32	0	0.25	0	0	28.53
1993	1.53	0	7.58	14.97	11.88	6.22	0	0.19	**0.94**	0	0	0	43.31
1994	0.08	1.27	1.69	0.69	8.14	2.02	0.48	0.27	0	0	0	0.05	14.69
1995	0.69	1.48	0.96	**27.61**	2.29	14.03	0.29	1.29	0.40	0	0	0	49.04
1996	0.11	2.49	1.92	9.37	1.54	1.03	0.45	0	0	0	0	0	16.91
1997	4.06	2.92	7.99	10.21	0.09	0	0	0	0	0	0	0	25.27
1998	0	3.59	8.32	4.59	**30.12**	6.54	2.19	**3.21**	0.06	0	0	0.16	**58.78**
1999	0	1.27	0.84	2.74	0.81	2.38	2.19	0	0.17	0	0	0.27	10.67
1999/2000	0	1.00	0	2.34	11.96	3.24	3.28	0	0	0	0	0.12	21.94
2001	2.75	0	0.03	8.48	7.02	8.02	1.56	0	0	0	0	0	27.86
2002	0.41	4.37	1.60	1.10	0.36	0.53	0.08	0.23	0	0	0	0.02	8.70
2003	0	5.63	5.10	0	3.97	4.98	1.27	2.74	0	0	0	0	23.69
2004	0.05	2.68	2.13	0.79	8.08	0.60	0	0	0	0	0	0	14.33
2005	**7.09**	0.02	10.37	17.30	10.22	4.47	0.90	0.60	0	0	0	0.31	51.28
2006	0.97	0.87	0.79	4.93	3.73	4.87	**8.21**	1.47	0	0	0	0	25.84
2007	0.22	0.10	1.03	2.68	1.66	0.10	1.01	0	0	0	0	0.35	**7.15**
2008	0.46	0.04	3.40	17.93	2.49	0	0.09	0.06	0	0	0.11	0	24.58
2009	0.16	3.19	2.64	0.43	5.43	0.84	0.19	0	0	0	0	0	12.88
2009/2010	6.91	0	4.33	8.71	5.47	0.37	2.39	0.30	0	0	0	0	28.48
2011	2.14	1.91	**13.09**	0.90	5.32	9.42	0.11	0.94	0.21	0	0	0	34.04
2012	1.69	2.64	0.30	1.22	0.27	3.89	3.16	0	0	0	0	0.01	13.18
2013	0.15	3.74	3.15	1.91	0.10	0.81	0.25	0	0	0	0	0	10.11
2014	0.03	0.77	0.44	0	4.31	3.49	0.42	0	0	0	0.06	0	9.52
2015	0	0.96	5.41	1.44	0.82	0.25	0.2	0.3	0.14	**0.32**	0	0.22	10.06
2016	0.40	0	0.36	6.72	2.35	4.00	0.50	0	0	0	0	0	14.33
2017	0.71	1	3.79	10.45	11.75	1.30	0.48	0	0	0	0	0	29.56
2018	0	0.05	0	4.14	0.07	7.67	0.02	0.14	0	0	0	0	12.09
2019	0.11	2.47	1.73	8.12	10.64	3.66	0.02	1.88	0	0	0	0	28.63
2019/2020	0	1.59	6.07	0.57	0.67	5.25	4.46	0.08	0.01	0	0	0	18.70
AVG	0.76	2.33	3.35	5.26	5.27	3.80	1.29	0.32	0.05	0.01	0.03	0.30	22.78
MAX	7.09	14.19	13.09	27.61	30.12	17.19	8.21	3.21	0.94	0.32	1.18	7.32	58.78
MIN	0	0	0	0	0	0	0	0	0	0	0	0	7.15

Rainfall in inches, water year October 1 through September 30

Surrogate data used from Casitas Dam due missing data

ROBLES-CASITAS CANAL
MONTHLY DIVERSIONS

	JAN		FEB		MAR		APR		MAY		JUN		JUL		AUG		SEP		OCT		NOV		DEC		TOTAL		
YEAR	days	a.f.	days	a.f.	days	a.f.	days	a.f.	days	a.f.	days	a.f.	days	a.f.	days	a.f.	days	a.f.	days	a.f.	days	a.f.	days	a.f.	**days**	**a.f.**	**Avg. Rain**
1959	26	374	21	3645	23	928	3	158	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	73	5105	12.89
1960	0	0	2	24	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	24	14.98
1961	1	9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	23	2	32	10.14
1962	0	0	20	13564	31	6882	30	1438	5	31	0	0	0	0	0	0	0	0	0	0	0	0	0	0	86	21915	36.97
1963	0	0	23	2043	11	896	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	34	2939	18.77
1964	2	10	0	0	0	0	1	168	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	176	5	354	13.93
1965	0	0	0	0	0	0	29	4955	4	79	0	0	0	0	0	0	0	0	0	0	14	**11676**	28	4729	75	21439	22.95
1966	31	11440	28	3754	12	418	0	0	0	0	0	0	0	0	0	0	0	0	3	**821**	2	108	28	**8782**	104	25323	26.92
1967	20	6284	16	1170	23	5023	30	**10488**	31	**8909**	30	1571	15	478	0	0	0	0	4	454	9	291	18	504	196	35172	37.17
1968	0	0	1	16	24	339	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	715	0	0	29	1070	16.08
1969	7	4924	20	11902	31	**16623**	30	8654	31	2685	30	1507	31	**2710**	5	360	0	0	0	0	5	76	10	908	200	**50349**	54.69
1970	13	312	14	988	31	7347	11	404	0	0	0	0	0	0	0	0	3	365	0	0	1	575	19	5868	92	15859	17.40
1971	31	3460	24	2011	3	24	0	0	0	0	9	861	0	0	0	0	0	0	0	0	4	550	7	4051	78	10957	20.69
1972	20	1093	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	**620**	0	0	1	5	0	0	25	1718	13.72
1973	15	3445	28	**15331**	31	14219	30	4274	23	1435	0	0	0	0	0	0	0	0	0	0	5	884	0	0	132	39588	38.42
1974	23	6431	8	501	19	2437	4	539	0	0	0	0	0	0	0	0	0	0	0	0	3	397	3	1427	60	11732	20.18
1975	0	0	7	1090	21	8876	17	1826	3	686	0	0	0	0	0	0	0	0	0	0	3	510	0	0	51	12988	24.90
1976	0	0	9	2855	0	0	0	0	0	0	0	0	0	0	0	0	2	583	0	0	0	0	0	0	11	3438	18.66
1977	0	0	0	0	0	0	0	0	1	50	0	0	0	0	0	0	0	0	0	0	0	0	4	1044	5	1094	12.88
1978	24	7290	28	13204	17	7034	0	0	0	0	4	1167	0	0	0	0	0	0	0	0	0	0	0	0	73	28695	53.92
1979	0	0	26	4712	16	1796	0	0	3	670	0	0	5	1667	0	0	0	0	0	0	0	0	0	0	50	8845	26.70
1980	20	1456	15	1127	2	134	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	37	2717	37.21
1981	4	203	0	0	31	5018	2	551	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	37	5772	18.37
1982	3	599	0	0	11	1492	25	3582	28	494	15	74	0	0	0	0	0	0	0	0	7	657	14	3035	103	9933	21.68
1983	10	8994	28	8791	0	0	0	0	0	0	17	1138	20	1430	4	218	11	536	0	0	0	0	14	1024	104	22131	52.67
1984	0	0	8	1130	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	9	957	17	2087	17.96
1985	3	528	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	1522	9	964	19	3015	17.41
1986	2	1385	28	14926	31	14415	30	5430	22	1418	27	**1742**	0	0	0	0	0	0	0	0	0	0	0	0	140	39316	35.67
1987	0	0	0	0	10	1034	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	580	12	1614	10.71
1988	10	1368	4	1533	15	4725	11	885	3	643	0	0	0	0	0	0	0	0	0	0	0	0	0	0	43	9154	19.53
1989	0	0	7	524	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7	524	12.41
1990	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	10.27
1991	0	0	1	367	18	11776	30	4186	12	925	0	0	0	0	0	0	0	0	0	0	0	0	2	366	63	17620	24.68
1992	5	1026	23	14826	31	15898	30	7228	31	2460	9	413	0	0	4	**504**	0	0	0	0	0	0	6	1847	139	44202	30.85
1993	27	**21012**	16	10886	0	0	0	0	7	963	5	1039	4	785	0	0	0	0	0	0	0	0	0	0	59	34685	48.30
1994	0	0	13	1645	7	932	0	0	6	927	0	0	0	0	0	0	0	0	0	0	0	0	0	0	26	3504	15.68
1995	3	1323	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	1323	52.35
1996	0	0	0	0	6	1291	0	0	4	371	0	0	0	0	0	0	0	0	0	0	2	354	9	3355	21	5371	19.50
1997	18	7134	6	1843	4	917	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	2002	32	11896	25.81
1998	5	1366	6	4972	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	11	6338	60.86
1999	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	11.97
2000	0	0	4	1459	10	3023	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	14	4482	24.36
2001	2	451	13	2140	28	11786	14	1039	1	111	0	0	0	0	0	0	0	0	0	0	0	0	0	0	58	15527	30.22
2002	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	9.38
2003	0	0	0	0	5	982	5	264	5	325	0	0	0	0	0	0	0	0	0	0	0	0	0	0	15	1571	26.37
2004	0	0	3	1010	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7	1843	10	2853	16.73
2005	31	12925	28	9297	22	4568	0	0	2	116	0	0	0	0	0	0	0	0	0	0	0	0	0	0	83	26906	60.13
2006	7	444	1	246	22	1283	30	8525	31	1593	0	0	0	0	0	0	0	0	0	0	0	0	0	0	91	12091	28.98
2007	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8.33
2008	16	4137	29	4707	31	1083	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	76	9927	28.13
2009	0	0	11	365	3	127	0	0	0	0	0	0	0	0	0	0	0	0	1	7	0	0	1	6	16	506	14.76
2010	13	3461	28	1954	31	685	18	368	0	0	0	0	0	0	0	0	0	0	0	0	0	0	13	4459	103	10926	32.05
2011	31	1739	26	714	31	8151	30	5548	31	1546	13	149	0	0	0	0	0	0	0	0	0	0	0	0	162	17847	36.77
2012	0	0	0	0	1	12	2	75	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	87	14.17
2013	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	10.98
2014	0	0	1	307	3	649	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	62	6	1018	11.39
2015	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	13.09
2016	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	15.06
2017	4	578	21	4482	27	1031	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	52	6091	32.18
2018	0	0	0	0	5	638	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	141	1	50	8	829	13.53
2019	19	1751	26	8506	31	8122	30	1523	30	788	1	1	0	0	0	0	0	0	0	0	0	0	12	539	149	21230	32.62
2020	0	0	0	0	19	1175	30	4101	16	202	0	0	1	2	0	0	0	0	0	0	0	0	0	0	66	5480	22.64
AVG	7	1886	10	2816	12	2803	8	1229	5	442	3	156	1	114	0	17	0	34	0	21	1	298	4	784	51	10600	24.82
MAX	31	21012	29	15331	31	16623	30	10488	31	8909	30	1742	31	2710	5	504	11	620	4	821	14	11676	28	8782	200	50349	60.86
MIN	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8.33

Rain is average water year rainfall for Casitas Dam, Casitas Recreation Area and Matilija Dam rain gages in inches *a.f. : acre-feet*