



CASITAS MUNICIPAL WATER DISTRICT

HYDROLOGY REPORT

WATER YEAR 2021

June 2022

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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 2020–2021 Water Year (WY 2021). Data is also presented for Calendar Year 2021 for comparison to historical data.

Casitas acquired the Ojai Water System in June 2017 which serves a population of 6,801 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 2021 than previous affected years.

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 June 10, 2021 when the flow reading reached 0 cfs through the facility. Minimal storm runoff occurred in 2020 and early 2021 which contributed to the end of flow through the facility, but it also indicates runoff conditions from the watershed are returning to pre-Thomas Fire conditions.

Streamflow monitoring was also impacted by the Thomas Fire as minimal scouring occurred in WY 2021 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.

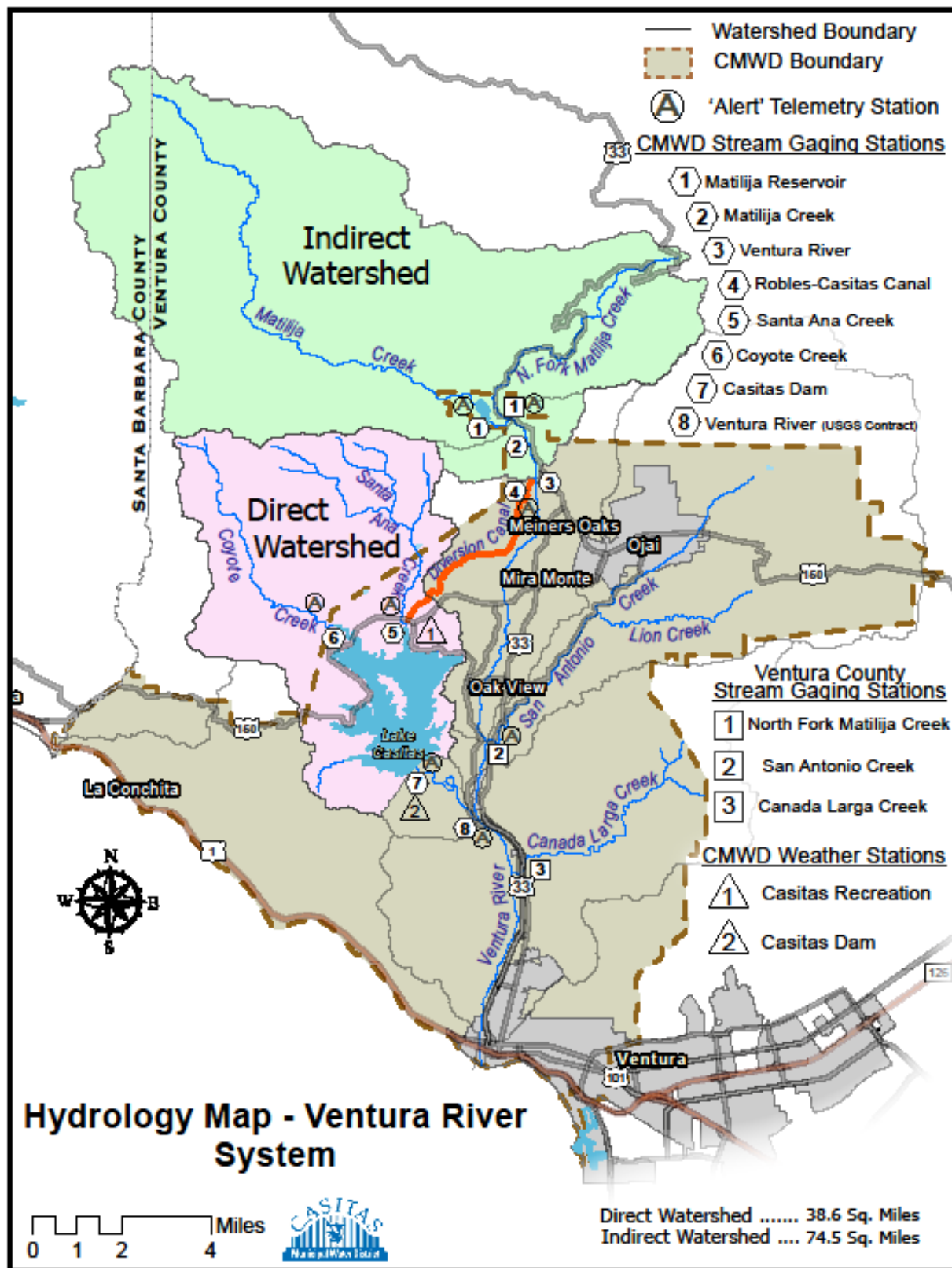


FIGURE 1-1 – Watershed of Lake Casitas

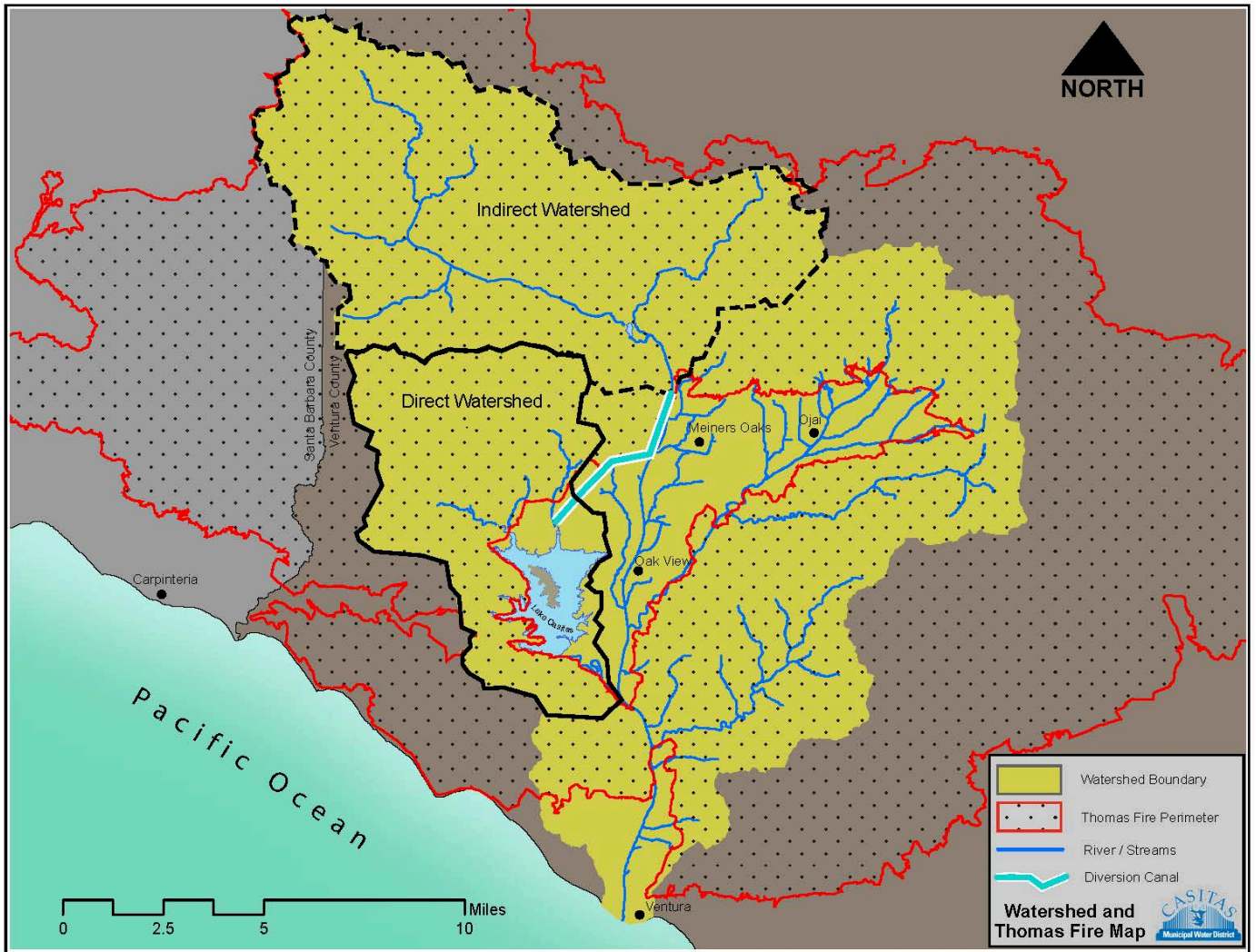


FIGURE 1-2 – Thomas Fire Boundary

2. WATER YEAR 2021 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 2021 began on October 1, 2020 and ended September 30, 2021

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 2021.

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 2021

The average of the four rainfall stations was 6.65 inches for WY 2021. This is below the long-term average of 23.83 inches. Casitas Dam received 7.07 inches while Matilija Dam received 6.48 inches.

The bulk of precipitation at Casitas Dam fell in the months of December, January, and March when cumulative monthly rainfall was 1.69, 3.99, and 1.29 inches, respectively. The highest daily rainfall was recorded on January 29, 2021 with 2.84 inches of rainfall measured at Casitas 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 2021

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 875 acre-feet (AF) between October 1, 2020 and September 30, 2021. Discharge from Matilija Dam measured at the Matilija Hot Springs gage totaled 2,418 AF with a peak mean daily flow of approximately 29 cubic feet per second (cfs) on January 29, 2021¹.

Surface flow at the measurement weir at Robles was present October 1, 2020 and continued through June 10, 2021 and then again from August 7 through August 11, 2021 due to a download from the Matilija Dam. During that period, 2,234 AF was released downstream².

Diversions to the Casitas Reservoir began on January 28, 2020. Prior to January 28, all inflow was released downstream to allow for aquifer levels to rise to the extent that would be expected under natural conditions for the

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.

time of year and type of year (*Trial Operating Criteria for Robles Casitas Diversion Facilities, 1959*). The diversion canal was operated for 4 days and 33 AF was diverted during WY 2021 as shown in Table 2-1³.

Table 2-1
WY 2021 Diversions

Month	Days	Volume Diverted (AF)
October 2020	0	0
November 2020	0	0
December 2020	0	0
January 2021	3	31
February 2021	1	2
March 2021	0	0
April 2021	0	0
May 2021	0	0
June 2021	0	0
July 2021	0	0
August 2021	0	0
September 2021	0	0
TOTAL	4	33

There were no storm peaks that met the Biological Opinion parameters to initiate supplemental downstream releases for fish passage. All flow was released downstream when inflow was less than the required supplemental release.

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 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 757 AF for WY 2021 with February 2021 accounting for 201 AF of total direct inflow as shown in Table 2-2⁴.

³ Robles canal measurement from data compiled by CMWD based on instantaneous readings shown as an average in Appendix B.

⁴ Direct inflow into Lake Casitas is shown in Appendix D.

Table 2-2
WY 2021 Casitas Reservoir Direct Inflow

Month	Direct Flow Volume (AF) ⁵
October 2020	N/A
November 2020	N/A
December 2020	N/A
January 2021	91
February 2021	201
March 2021	83
April 2021	83
May 2021	80
June 2021	118
July 2021	N/A
August 2021	N/A
September 2021	101
TOTAL	757

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 2021

Lake Casitas Reservoir had a net decrease in water storage for WY 2021. Lake elevation was 500.17 feet above mean sea level (MSL) on October 1, 2020 and ended on September 30, 2020 at 487.20 feet above MSL, corresponding to 79,683 AF of storage in Lake Casitas at the end of the WY. The reservoir’s 12.97-foot decrease in elevation resulted in a net loss of 18,094 AF. Storage increased by 501 AF during a five day period of January; 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.

Water deliveries from the reservoir to the main conveyance system totaled 12,468 AF for the Calendar Year. This is up 15 percent from 2020 and down 13 percent from the average deliveries during the previous ten years. Mira Monte well production was 219 AF during WY 2021. Deliveries within the Ojai Water System totaled 1,714 AF during WY 2021; 1,229 AF of which was sourced from the Ojai Water System Wellfield with the additional 484 AF coming from Lake Casitas.

⁵ N/A indicates the month is not applicable because the value was negative.

Casitas did not exercise water rights to divert water released from Matilija Dam. At the request of the State of California Department of Water Resources Division of Safety of Dams (DSOD), the valves were operated in August 2021. Casitas conducted controlled releases from Matilija Dam at the dam on August 2-12 which totaled 0 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 2021

Two temperature records dating back to 1960 was broken during the 2021 calendar year: highest monthly maximums (January for Casitas Dam and Casitas Recreation Area).

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 2021

The historical data was updated for the reporting period and is presented in Figure 3-1 for the period from 1959 through 2021. 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 1959⁶.

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 2021 provided a net decrease in the storage volume as shown in Figure 3-1.

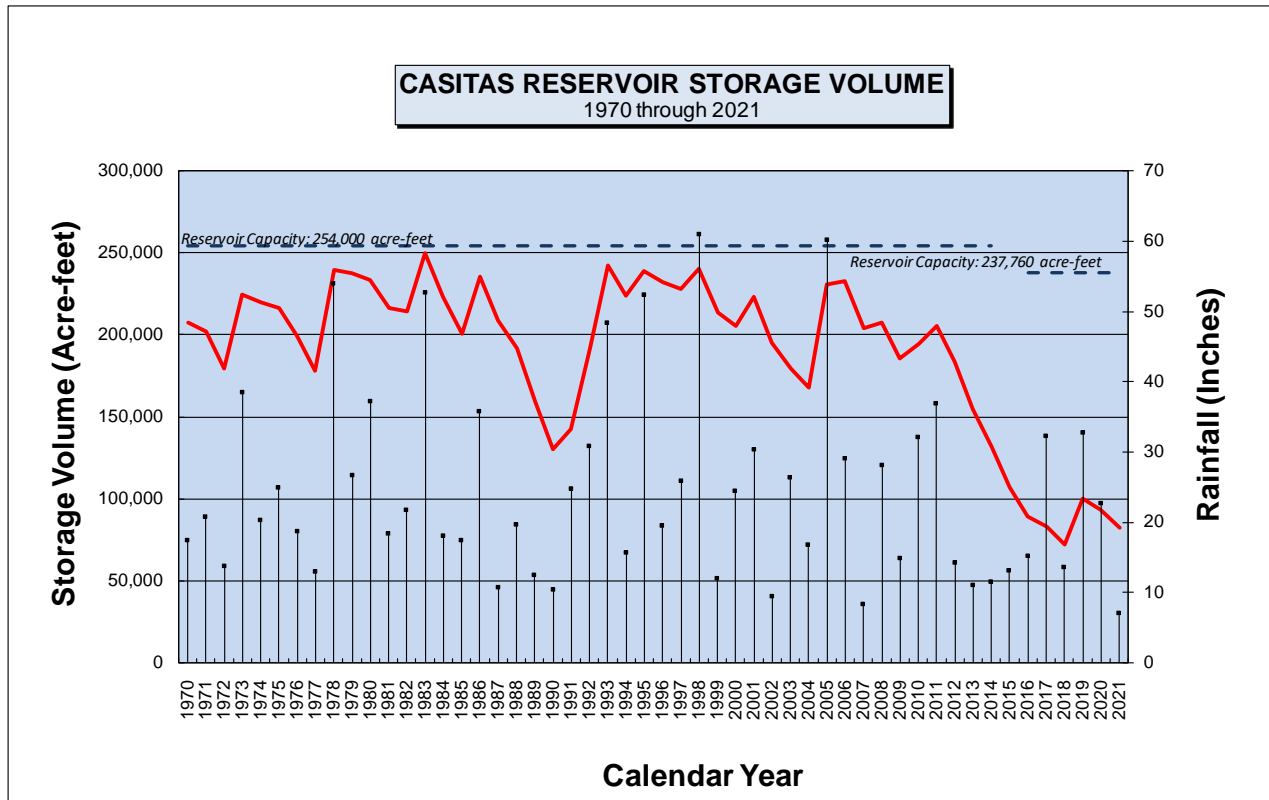


FIGURE 3-1 – Casitas Reservoir Storage Volume 1970-2021

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.

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 (24.3 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

⁶ Historical hydrology data is provided in Appendix H.

trend has resulted in what appears to be a somewhat sinusoidal curve, illustrating reoccurring periods of wet and dry conditions.

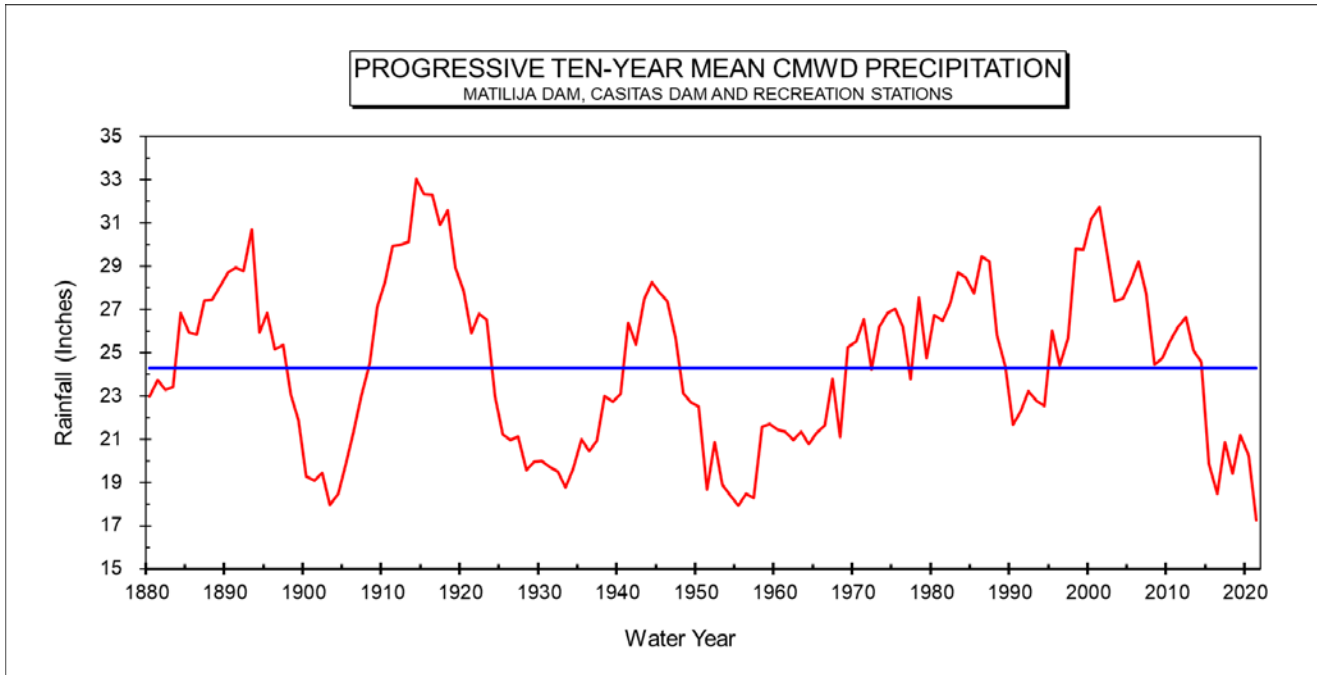


FIGURE 3-2 – Progressive Ten-Year Mean Precipitation

Appendix A

Rainfall Data

VENTURA COUNTY, CALIFORNIA
WATER SURVEY
DAILY RAINFALL RECORD

STATION: **Casitas Dam**
OBSERVER: CMWD Damtender
AUTHORITY: Casitas Municipal Water District
ADDRESS: P.O. Box 37, Oak View, CA 93022
COMPILED: V. Clary

NUMBER: 4
OBSER. TIME: 0800
LATITUDE: 34d22m
LONGITUDE: 119d20m
ELEV:

2020-2021

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1												
2												
3												
4												
5												
6												
7		0.18										
8		0.01										
9												
10						0.51						
11						0.41						
12						0.10						
13						0.07						
14								0.02				
15						0.19						
16						0.01						
17												
18												
19												
20	0.01											
21												
22												
23												
24				0.33								
25				0.06								
26												
27				0.06								
28			0.65	0.62								
29			1.04	2.84								
30				0.08								
31												
Mo Total	0.01	0.19	1.69	3.99	0	1.29	0	0.02	0	0	0	0
Yr Total	0.01	0.20	1.89	5.88	5.88	7.17	7.17	7.19	7.19	7.19	7.19	7.19

Rainfall in inches

VENTURA COUNTY, CALIFORNIA
WATER SURVEY
DAILY RAINFALL RECORD

STATION: **Lake Casitas Recreation Area**
 OBSERVER: CMWD Recreation staff
 AUTHORITY: Casitas Municipal Water District
 ADDRESS: P.O. Box 37, Oak View, CA 93022
 COMPILED: V. Clary

NUMBER: 204
 OBSER. TIME: 0800
 LATITUDE: 34d25m
 LONGITUDE: 119d20m
 ELEV: 592

2020-2021

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1												
2												
3												
4												
5												
6												
7		0.18										
8		0.01				0.01						
9												
10						0.60						
11						0.39						
12					0.03	0.15						
13												
14												
15												
16												
17												
18												
19												
20												
21												
22												
23												
24				0.10								
25				0.05								
26												
27				0.10								
28			0.90	0.76								
29			1.75	2.00								
30				0.19								
31												
Mo Total	0	0.19	2.65	3.20	0.03	1.15	0	0	0	0	0	0
Yr Total	0	0.19	2.84	6.04	6.07	7.22	7.22	7.22	7.22	7.22	7.22	7.22

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

2020-21

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1												
2												
3												
4												
5												
6												
7		0.04										
8												
9		0.01										
10						0.47						
11						0.21						
12						0.43						
13						0.01						
14												
15						0.13						
16								0.01				
17												
18												
19												
20												
21												
22												
23												
24				0.05								
25				0.01								
26							0.01					
27				0.09			0.03					
28			0.99	0.58			0.01					
29			1.01	2.26								
30				0.12								
31				0.01								
Mo Total	0.00	0.05	2.00	3.12	0.00	1.25	0.05	0.01	0.00	0.00	0.00	0.00
Yr Total	0.00	0.05	2.05	5.17	5.17	6.42	6.47	6.48	6.48	6.48	6.48	6.48

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

2020-21

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1												
2												
3												
4												
5												
6												
7		0.07										
8												
9		0.01										
10						0.48						
11						0.25						
12					0.01	0.09						
13												
14						0.01						
15						0.20						
16						0.02		0.02				
17								0.04				
18												
19												
20						0.02						
21						0.01						
22							0.01					
23												
24				0.11								
25				0.04								
26				0.02			0.02					
27				0.04			0.02					
28			0.83	0.16								
29			0.71	2.51								
30				0.12								
31												
Mo Total	0.00	0.08	1.54	3.00	0.01	1.08	0.05	0.06	0.00	0.00	0.00	0.00
Yr Total	0.00	0.08	1.62	4.62	4.63	5.71	5.76	5.82	5.82	5.82	5.82	5.82

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
 VCWPD #: 602
 DATE INSTALLED: 10/1927
 MAINTAINED BY: CMWD/VCWPD

LATITUDE: 34°28'58" N
 LONGITUDE: 119°18'7" W
 ELEVATION: 900 ft
 DRAINAGE AREA: 54 sq mi

WATER YEAR OCTOBER 2020 TO SEPTEMBER 2021

Daily Mean Discharge, cubic feet per second

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3	3	4	5	13	5	3	2	2	1	0.3	1
2	3	3	3	5	11	5	3	2	2	1	3	1
3	3	3	3	5	10	6	3	2	2	0.9	7	1
4	3	3	4	5	10	6	3	2	1	0.8	7	1
5	3	3	4	5	9	5	4	2	1	0.9	7	0.9
6	3	3	3	5	9	5	3	2	2	0.9	7	0.9
7	3	4	3	5	8	5	3	2	2	0.9	7	0.9
8	3	4	3	4	8	5	3	2	2	0.8	7	1
9	3	4	3	4	8	5	3	2	2	0.8	7	2
10	3	4	3	5	7	8	3	2	1	0.8	7	2
11	3	4	3	4	7	8	3	2	1	0.7	6	2
12	3	4	3	4	7	7	3	2	1	0.7	2	2
13	3	4	3	4	7	6	3	2	1	0.8	1	2
14	3	4	3	4	6	6	4	2	1	0.9	0.9	2
15	3	4	3	4	6	7	3	2	1	0.9	0.9	2
16	3	4	3	4	6	6	3	3	1	0.9	0.9	1
17	3	4	3	4	6	6	3	3	1	0.8	0.9	1
18	3	4	3	4	6	5	3	2	1	0.8	0.9	1
19	3	4	3	4	6	5	3	2	1	0.8	1	0.9
20	3	4	3	4	6	5	3	2	1	0.7	1	0.9
21	3	4	3	4	6	5	3	2	1	0.8	1	1
22	3	4	3	4	6	5	3	2	1	0.6	1	1
23	4	4	3	5	6	5	3	2	1	0.6	1	1
24	4	4	3	5	6	5	3	2	1	0.6	1	0.9
25	4	4	3	5	5	5	3	1	1	0.6	1	0.9
26	4	4	3	4	6	5	3	1	1	0.7	1	1
27	4	4	3	7	5	4	3	1	1	0.6	1	1
28	4	4	9	12	5	4	3	2	0.9	0.5	1	1
29	4	4	6	29	----	4	2	2	0.9	0.5	1	1
30	4	4	5	23	----	4	2	2	0.9	0.4	1	1
31	3	----	5	16	----	4	----	2	----	0.4	1	----
TOTAL	99	109	109	202	200	164	94	62	36	23	87	34
MEAN	3	4	4	7	7	5	3	2	1	0.74	3	1
MAX	4	4	9	29	13	8	4	3	2	1	7	2
MIN	3	3	3	4	5	4	2	1	1	0	0	1
ACRE FT	196	216	217	400	397	326	186	123	72	46	172	68

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
 VCWPD #: 604
 DATE INSTALLED: 01/1934
 MAINTAINED BY: VCWPD

LATITUDE: 34°29'34" N
 LONGITUDE: 119°18'23" W
 ELEVATION: 1142 ft
 DRAINAGE AREA: 15.8 sq mi

WATER YEAR OCTOBER 2020 TO SEPTEMBER 2021
 Daily Mean Discharge, cubic feet per second

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1	1	1	1	3	2	2	1	0.8	0.6	0.5	0.6
2	1	1	1	1	3	2	2	1	0.8	0.6	0.5	0.6
3	1	1	1	1	2	2	2	1	0.8	0.6	0.5	0.6
4	1	1	1	1	2	2	2	1	0.8	0.6	0.5	0.6
5	1	1	1	1	2	2	2	1	0.8	0.6	0.5	0.5
6	1	1	1	1	2	2	1	1	0.8	0.6	0.5	0.5
7	1	1	1	1	2	2	1	1	0.8	0.6	0.5	0.5
8	1	1	1	1	2	2	1	1	0.8	0.6	0.5	0.5
9	1	1	1	1	2	2	1	1	0.7	0.6	0.5	0.5
10	1	1	1	2	2	2	1	1	0.7	0.5	0.5	0.5
11	1	1	1	2	2	2	1	1	0.7	0.5	0.5	0.5
12	1	1	1	2	2	2	1	1	0.7	0.5	0.5	0.5
13	1	1	1	2	2	2	1	1	0.7	0.5	0.5	0.5
14	1	1	1	2	2	2	1	1	0.7	0.5	0.6	0.5
15	1	1	1	2	2	2	1	0.9	0.7	0.5	0.6	0.5
16	1	1	1	2	2	2	1	0.9	0.7	0.5	0.6	0.5
17	1	1	1	2	2	2	1	0.9	0.7	0.5	0.6	0.5
18	1	1	1	2	2	2	1	0.9	0.7	0.5	0.6	0.5
19	1	1	1	2	2	2	1	0.9	0.7	0.5	0.6	0.5
20	1	1	1	2	2	2	1	0.9	0.7	0.5	0.6	0.5
21	1	1	1	2	2	2	1	0.9	0.7	0.5	0.6	0.5
22	1	1	1	2	2	2	1	0.9	0.7	0.5	0.6	0.5
23	1	1	1	2	2	2	1	0.9	0.7	0.5	0.6	0.5
24	1	1	1	2	2	2	1	0.9	0.6	0.5	0.6	0.5
25	1	1	1	2	2	2	1	0.8	0.6	0.5	0.6	0.5
26	1	1	1	2	2	2	1	0.8	0.6	0.5	0.6	0.5
27	1	1	1	2	2	2	1	0.8	0.6	0.5	0.6	0.5
28	1	1	1	11	2	2	1	0.8	0.6	0.5	0.6	0.5
29	1	1	1	12	---	2	1	0.8	0.6	0.5	0.6	0.5
30	1	1	1	4	---	2	1	0.8	0.6	0.5	0.6	0.5
31	1	---	1	3	---	2	---	0.8	---	0.5	0.6	---
TOTAL	35	36	40	71	63	58	39	29	21	16	17	16
MEAN	1	1	1	2	2	2	1	1	1	1	1	1
MAX	1	1	1	12	3	2	2	1	1	1	1	1
MIN	1	1	1	1	2	2	1	1	1	0	1	1
ACRE FT	69	71	80	140	124	116	78	58	42	32	34	31

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
 VCWPD #: 607
 DATE INSTALLED: 05/1959
 MAINTAINED BY: CMWD

LATITUDE: 34°27'49" N
 LONGITUDE: 119°17'26" W
 ELEVATION: 740 ft
 DRAINAGE AREA: 74 sq mi

WATER YEAR OCTOBER 2020 TO SEPTEMBER 2021
 Daily Mean Discharge, cubic feet per second

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2	3	4	6	15	7	4	1	1	0	0	0
2	2	3	3	6	13	7	4	2	1	0	0	0
3	2	3	3	5	12	7	4	2	1	0	0	0
4	3	3	3	5	12	7	4	1	1	0	0	0
5	3	2	3	5	11	7	4	1	1	0	0	0
6	2	2	3	5	11	7	4	1	1	0	0	0
7	1	3	3	5	11	7	4	1	1	0	1	0
8	2	3	3	5	10	7	4	2	1	0	1	0
9	2	3	3	5	10	6	4	2	1	0	1	0
10	3	4	3	5	10	10	3	1	1	0	1	0
11	3	4	4	5	9	10	3	2	0	0	1	0
12	3	4	4	5	9	9	3	1	0	0	0	0
13	2	4	4	5	9	8	4	1	0	0	0	0
14	2	3	4	5	9	8	4	1	0	0	0	0
15	2	3	4	4	9	9	3	1	0	0	0	0
16	1	3	4	4	9	8	3	2	0	0	0	0
17	1	3	4	4	8	8	3	2	0	0	0	0
18	2	3	4	4	8	7	3	1	0	0	0	0
19	2	3	4	4	8	7	2	1	0	0	0	0
20	2	3	4	4	8	7	2	1	0	0	0	0
21	2	3	4	4	7	7	2	1	0	0	0	0
22	2	3	4	4	8	6	3	1	0	0	0	0
23	2	3	4	5	8	6	3	1	0	0	0	0
24	3	3	3	5	7	5	3	1	0	0	0	0
25	3	4	4	5	7	6	3	1	0	0	0	0
26	3	4	4	4	7	7	3	1	0	0	0	0
27	3	4	4	7	7	6	3	1	0	0	0	0
28	3	4	12	16	7	6	3	1	0	0	0	0
29	3	4	9	23	---	5	2	1	0	0	0	0
30	3	4	7	20	---	5	2	1	0	0	0	0
31	3	---	6	18	---	4	---	1	---	0	0	---
TOTAL	70	98	131	208	258	214	95	38	9	0	6	0
MEAN	2	3	4	7	9	7	3	1	0	0	0	0
MAX	3	4	12	23	15	10	4	2	1	0	1	0
MIN	1	2	3	4	7	4	2	1	0	0	0	0
ACRE FT	139	194	260	412	513	425	188	75	17	0	11	0

Data is provisional and subject to revision

Robles-Casitas Canal (First Bridge)

USGS #: N/A
 VCWPD #: N/A
 DATE INSTALLED: 1958
 MAINTAINED BY: CMWD

LATITUDE: 34°27'43" N
 LONGITUDE: 119°17'34" W
 ELEVATION: 770 ft
 DRAINAGE AREA: N/A

WATER YEAR OCTOBER 2020 TO SEPTEMBER 2021
 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	0	0	0	0	0	0
2	0	0	0	0	0	0	0	0	0	0	0	0
3	0	0	0	0	0	0	0	0	0	0	0	0
4	0	0	0	0	1	0	0	0	0	0	0	0
5	0	0	0	0	0	0	0	0	0	0	0	0
6	0	0	0	0	0	0	0	0	0	0	0	0
7	0	0	0	0	0	0	0	0	0	0	0	0
8	0	0	0	0	0	0	0	0	0	0	0	0
9	0	0	0	0	0	0	0	0	0	0	0	0
10	0	0	0	0	0	0	0	0	0	0	0	0
11	0	0	0	0	0	0	0	0	0	0	0	0
12	0	0	0	0	0	0	0	0	0	0	0	0
13	0	0	0	0	0	0	0	0	0	0	0	0
14	0	0	0	0	0	0	0	0	0	0	0	0
15	0	0	0	0	0	0	0	0	0	0	0	0
16	0	0	0	0	0	0	0	0	0	0	0	0
17	0	0	0	0	0	0	0	0	0	0	0	0
18	0	0	0	0	0	0	0	0	0	0	0	0
19	0	0	0	0	0	0	0	0	0	0	0	0
20	0	0	0	0	0	0	0	0	0	0	0	0
21	0	0	0	0	0	0	0	0	0	0	0	0
22	0	0	0	0	0	0	0	0	0	0	0	0
23	0	0	0	0	0	0	0	0	0	0	0	0
24	0	0	0	0	0	0	0	0	0	0	0	0
25	0	0	0	0	0	0	0	0	0	0	0	0
26	0	0	0	0	0	0	0	0	0	0	0	0
27	0	0	0	0	0	0	0	0	0	0	0	0
28	0	0	0	0.40	0	0	0	0	0	0	0	0
29	0	0	0	13	---	0	0	0	0	0	0	0
30	0	0	0	3	---	0	0	0	0	0	0	0
31	0	---	0	0	---	0	---	0	---	0	0	---
TOTAL	0	0	0	16	1	0	0	0	0	0	0	0
MEAN	0	0	0	0.51	0.04	0	0	0	0	0	0	0
MAX	0	0	0	13	1	0	0	0	0	0	0	0
MIN	0	0	0	0	0	0	0	0	0	0	0	0
ACRE FT	0	0	0	31	2	0	0	0	0	0	0	0

Data is provisional and subject to revision.

Ventura River near Ventura (Foster Park)

USGS #: 11118500
 VCWPD #: 608
 DATE INSTALLED: 10/1929
 MAINTAINED BY: USGS, Water Resources Division

LATITUDE: 34°21'09" N
 LONGITUDE: 119°18'29" W
 ELEVATION: 205 ft
 DRAINAGE AREA: 187 sq mi

WATER YEAR OCTOBER 2020 TO SEPTEMBER 2021

Daily Mean Discharge, cubic feet per second

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3	2	2	2	3	2	3	3	3	1	0.89	1
2	3	2	2	2	3	2	4	4	3	1	0.90	1
3	4	2	2	2	2	3	4	4	3	1	0.77	1
4	4	2	2	2	2	2	4	4	3	1	0.72	1
5	4	2	2	2	2	2	4	3	3	1	0.93	1
6	4	2	2	2	2	2	4	3	3	0.94	1	1
7	4	2	2	2	2	3	4	3	3	1	2	1
8	4	2	2	2	2	2	4	3	3	1	2	1
9	4	2	2	2	2	3	4	3	3	1	2	1
10	4	2	2	2	2	3	4	3	3	1	2	1
11	4	2	2	2	2	3	4	3	3	1	2	1
12	3	2	2	2	2	3	4	3	3	1	2	1
13	3	2	2	2	2	3	4	3	3	2	2	1
14	4	2	2	2	2	3	4	3	2	2	2	1
15	3	2	2	2	2	3	4	3	2	1	2	1
16	3	1	2	2	2	3	4	3	2	1	2	1
17	3	1	2	2	2	3	4	3	2	1	2	1
18	3	1	2	2	2	3	4	3	2	1	2	1
19	4	1	2	2	2	3	3	3	2	1	2	0.99
20	4	1	2	2	2	3	3	3	2	1	2	0.98
21	4	1	2	2	2	3	3	3	2	1	2	0.95
22	4	2	2	2	2	3	4	3	2	1	2	0.93
23	4	2	2	3	2	3	4	3	2	1	1	0.93
24	4	2	2	2	2	3	4	3	2	1	1	0.96
25	3	2	2	2	2	3	4	3	2	1	1	0.99
26	3	2	2	2	2	3	4	3	2	1	1	0.98
27	3	2	2	3	2	3	4	3	2	1	1	1
28	3	2	3	9	2	3	3	3	1	1	1	1
29	3	2	2	13	---	3	3	3	1	0.98	1	1
30	3	2	2	4	---	3	3	3	1	0.93	1	1
31	3	---	2	3	---	3	---	3	---	0.93	1	---
TOTAL	108	57	58	80	54	90	115	97	70	37	43	31
MEAN	3	2	2	3	2	3	4	3	2	1	1	1
MAX	4	2	3	13	3	3	4	4	3	2	2	1
MIN	3	1	2	2	2	2	3	3	1	0.93	0.72	0.93
ACRE FT	215	113	115	158	107	179	227	193	138	73	85	62

San Antonio Creek at Old Creek Rd

USGS #: 11117500
 VCWPD #: 605A
 DATE INSTALLED: 10/1949
 MAINTAINED BY: VCWPD

LATITUDE: 34°22'57" N
 LONGITUDE: 119°18'10" W
 ELEVATION: 312 ft
 DRAINAGE AREA: 51.2 sq mi

WATER YEAR OCTOBER 2020 THROUGH SEPTEMBER 2021 Daily Mean Discharge, cubic feet per second

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0	0	0	0.26	1	2	2	0.70	0	0	0	0
2	0	0	0	0.10	0.29	2	2	0.83	0	0	0	0
3	0	0	0	0.02	0.15	2	3	0.58	0	0	0	0
4	0	0	0	0.06	0.10	2	3	0.87	0	0	0	0
5	0	0	0	0.05	0.02	2	3	1	0	0	0	0
6	0	0	0	0.03	0.02	3	3	1	0	0	0	0
7	0	0	0	0.01	0.01	3	3	2	0	0	0	0
8	0	0	0	0.01	0.09	2	3	2	0	0	0	0
9	0	0	0	0.02	0.39	2	3	1	0	0	0	0
10	0	0	0	0.01	0.44	3	3	0.63	0	0	0	0
11	0	0	0	0.02	0.65	3	3	0.58	0	0	0	0
12	0	0	0	0.04	0.51	3	3	0.53	0	0	0	0
13	0	0	0	0.14	0.30	3	3	0.47	0	0	0	0
14	0	0	0	0.17	0.16	2	2	0.42	0	0	0	0
15	0	0	0	0.31	0.23	2	1	0.37	0	0	0	0
16	0	0	0	0.42	0.31	1	1	0.32	0	0	0	0
17	0	0	0	0.30	0.27	1	1	0.26	0	0	0	0
18	0	0	0	0.28	0.28	2	1	0.21	0	0	0	0
19	0	0	0	0.15	0.27	2	1	0.16	0	0	0	0
20	0	0	0	0.21	0.61	2	1	0.11	0	0	0	0
21	0	0	0	0.59	1	2	0.97	0.05	0	0	0	0
22	0	0	0	0.81	1	3	1	0	0	0	0	0
23	0	0	0	2	0.87	2	2	0	0	0	0	0
24	0	0	0	1	1	2	0.70	0	0	0	0	0
25	0	0	0	0.92	2	3	1	0	0	0	0	0
26	0	0	0	0.80	2	3	0.80	0	0	0	0	0
27	0	0	0	2	1	2	0.42	0	0	0	0	0
28	0	0	2	14	1	2	0.45	0	0	0	0	0
29	0	0	0.46	10	-----	2	0.43	0	0	0	0	0
30	0	0	0.45	3	-----	3	0.34	0	0	0	0	0
31	0	-----	0.43	2	-----	3	-----	0	-----	0	0	-----
TOTAL	0	0	4	40	16	70	55	14	0	0	0	0
MEAN	0	0	0.12	1	0.59	2	2	0.45	0	0	0	0
MAX	0	0	2	14	2	3	3	2	0	0	0	0
MIN	0	0	0	0.01	0.01	1	0.34	0	0	0	0	0
ACRE FT	0	0	7	79	33	139	109	28	0	0	0	0

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.

Appendix C
Fisheries Storm Peak Logs

(NO FISHERIES STORM PEAK LOGS)

Appendix D
Casitas Reservoir Operational Data

**CASITAS RESERVOIR WATER INVENTORY SUMMARY
2020 - 2021 WATER YEAR**

figures in acre-feet except where otherwise noted

MONTH	RESERVOIR (last of previous month)		RESERVOIR INFLOW				RESERVOIR RELEASES			
	ELEV (ft)	STORAGE	DIRECT	VENTURA RIVER DIVERSIONS	TOTAL	PRECIP	EVAP	TO MAIN SYSTEM	SPILL	CHANGE IN STORAGE
OCT 2020	500.21	97838	-36	0	-36	1	562	1271	0	-1868
NOV 2020	498.98	95970	-94	0	-94	25	376	948	0	-1394
DEC 2020	498.05	94576	-106	0	-106	279	342	958	0	-1127
JAN 2021	497.29	93449	91	31	122	461	206	553	0	-177
FEB 2021	497.17	93272	201	2	203	2	328	477	0	-501
MAR 2021	496.83	92771	83	0	83	156	443	556	0	-761
APR 2021	496.31	92010	83	0	83	0	565	995	0	-1478
MAY 2021	495.29	90532	80	0	80	1	633	1175	0	-1726
JUN 2021	494.08	88806	118	0	118	0	748	1397	0	-2027
JUL 2021	492.63	86779	-68	0	-68	0	844	1577	0	-2488
AUG 2021	490.79	84291	-167	0	-167	0	750	1639	0	-2556
SEP 2021	488.82	81735	101	0	101	0	529	1624	0	-2052
OCT 2021	487.20	79683	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
TOTAL			284	34	317	924	6326	13169	0	-18155

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

CASITAS RESERVOIR OPERATION
OCTOBER 2020

*figures in acre-feet except where otherwise noted

DATE	RESERVOIR (@ 0800 hrs.)			INFLOW			EVAPORATION			PRECIPITATION			RELEASES			STORAGE CHANGE
	Elevation (ft MSL)	Sep 30 th 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	
1	500.17	97777	1590	13	0	13	0.29	0.29	29	0	0	0	45	0	0	-61
2	500.10	97670	1590	10	0	10	0.51	0.51	51	0	0	0	67	0	0	-107
3	500.05	97593	1588	5	0	5	0.16	0.16	16	0	0	0	66	0	0	-77
4	500.01	97532	1588	15	0	15	0.30	0.30	30	0	0	0	46	0	0	-61
5	499.98	97487	1586	4	0	4	0.20	0.20	20	0	0	0	29	0	0	-45
6	499.93	97410	1586	-15	0	-15	0.12	0.21	16	0	0	0	46	0	0	-77
7	499.88	97334	1584	-6	0	-6	0.16	0.18	17	0	0	0	53	0	0	-76
8	499.84	97273	1584	27	0	27	0.15	0.56	35	0	0	0	53	0	0	-61
9	499.80	97212	1584	-6	0	-6	0.14	0.14	14	0	0	0	42	0	0	-61
10	499.77	97167	1583	7	0	7	0.22	0.22	22	0	0	0	30	0	0	-45
11	499.74	97121	1583	-11	0	-11	0.06	0.06	6	0	0	0	29	0	0	-46
12	499.72	97090	1583	8	0	8	0.15	0.15	15	0	0	0	24	0	0	-31
13	499.67	97014	1581	-15	0	-15	0.15	0.29	22	0	0	0	39	0	0	-76
14	499.62	96938	1581	3	0	3	0.17	0.27	22	0	0	0	57	0	0	-76
15	499.57	96863	1579	0.12	0	0.12	0.16	0.19	17	0	0	0	58	0	0	-75
16	499.54	96817	1579	20	0	20	0.32	0.11	21	0	0	0	45	0	0	-46
17	499.48	96726	1577	-22	0	-22	0.30	0.02	16	0	0	0	53	0	0	-91
18	499.45	96680	1577	10	0	10	0.15	0.15	15	0	0	0	42	0	0	-46
19	499.42	96635	1577	7	0	7	0.15	0.47	31	0	0	0	21	0	0	-45
20	499.39	96590	1575	-15	0	-15	0	0.04	2	0.01	0	0.66	29	0	0	-45
21	499.36	96544	1575	10	0	10	0.06	0.24	15	0	0	0	41	0	0	-46
22	499.32	96484	1575	-16	0	-16	0.08	0.07	7	0	0	0	36	0	0	-60
23	499.28	96423	1574	-7	0	-7	0.26	0.07	16	0	0	0	37	0	0	-61
24	499.25	96378	1574	3	0	3	0.15	0.12	13	0	0	0	35	0	0	-45
25	499.23	96347	1574	3	0	3	0.10	0.10	10	0	0	0	25	0	0	-31
26	499.19	96287	1572	-29	0	-29	0.10	0.07	8	0	0	0	23	0	0	-60
27	499.14	96211	1572	-25	0	-25	0.04	0.20	12	0	0	0	39	0	0	-76
28	499.10	96151	1572	-8	0	-8	0.13	0.12	12	0	0	0	40	0	0	-60
29	499.06	96091	1570	-2	0	-2	0.19	0.21	20	0	0	0	38	0	0	-60
30	499.02	96030	1570	-2	0	-2	0.19	0.20	19	0	0	0	40	0	0	-61
31	498.98	95970	1568	-4	0	-4	0.15	0.15	15	0	0	0	41	0	0	-60
TOTAL				-36	0	-36	5	6	562	0.01	0	0.66	1271	0	0	-1868

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

Direct reservoir inflow values may be negative due to inaccuracies 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 2020

*figures in acre-feet except where otherwise noted

DATE	RESERVOIR (@ 0800 hrs.)			INFLOW			EVAPORATION			PRECIPITATION			RELEASES			STORAGE CHANGE
	Elevation	Oct 31 st 95970 Storage	Surface Area	Ventura River			Pan @Dam	Pan @Rec	Lake Total	at Dam	at Rec	Lake Total	To Main System	To River	Spill	
	(ft MSL)		(acres)	Direct	Divers'n	Total	(in)	(in)	(af)	(in)	(in)	(af)				
1	498.95	95925	1568	-1	0	-1	0.15	0.15	16	0	0	0	28	0	0	-45
2	498.93	95895	1568	8	0	8	0.15	0.15	16	0	0	0	22	0	0	-30
3	498.89	95834	1567	-23	0	-23	0.07	0.07	7	0	0	0	30	0	0	-61
4	498.84	95759	1567	-23	0	-23	0.07	0.04	6	0	0	0	46	0	0	-75
5	498.82	95729	1567	31	0	31	0.11	0.11	12	0	0	0	49	0	0	-30
6	498.79	95684	1565	8	0	8	0.08	0.38	25	0	0	0	28	0	0	-45
7	498.75	95624	1565	-58	0	-58	0	0	0	0.18	0.18	23	25	0	0	-60
8	498.74	95609	1565	30	0	30	0.24	0.24	26	0.01	0.01	1	21	0	0	-15
9	498.70	95549	1565	-44	0	-44	0.05	0.05	5	0	0	0	10	0	0	-60
10	498.67	95504	1563	-8	0	-8	0.18	0.18	19	0	0	0	18	0	0	-45
11	498.62	95429	1563	-25	0	-25	0.15	0.04	10	0	0	0	40	0	0	-75
12	498.58	95369	1562	0.71	0	0.71	0.11	0.13	13	0	0	0	48	0	0	-60
13	498.54	95309	1562	-5	0	-5	0.20	0.05	13	0	0	0	42	0	0	-60
14	498.52	95279	1562	15	0	15	0.12	0.12	13	0	0	0	32	0	0	-30
15	498.49	95234	1560	-6	0	-6	0.10	0.10	11	0	0	0	29	0	0	-45
16	498.46	95189	1560	-5	0	-5	0.07	0.18	13	0	0	0	27	0	0	-45
17	498.42	95129	1560	-12	0	-12	0.09	0.17	14	0	0	0	34	0	0	-60
18	498.39	95084	1558	14	0	14	0.10	0.14	13	0	0	0	46	0	0	-45
19	498.36	95039	1558	5	0	5	0.06	0.06	6	0	0	0	44	0	0	-45
20	498.34	95009	1558	22	0	22	0.21	0.20	22	0	0	0	30	0	0	-30
21	498.31	94964	1558	-3	0	-3	0.14	0.08	12	0	0	0	30	0	0	-45
22	498.28	94919	1556	-1	0	-1	0.13	0.13	14	0	0	0	30	0	0	-45
23	498.26	94890	1556	0.95	0	0.95	0.10	0.10	11	0	0	0	19	0	0	-29
24	498.22	94830	1556	-10	0	-10	0.08	0.24	17	0	0	0	33	0	0	-60
25	498.19	94785	1555	-1	0	-1	0.08	0.07	8	0	0	0	36	0	0	-45
26	498.16	94740	1555	0.48	0	0.48	0.08	0.08	8	0	0	0	37	0	0	-45
27	498.11	94666	1555	-22	0	-22	0.12	0.12	13	0	0	0	39	0	0	-74
28	498.09	94636	1553	0.65	0	0.65	0.05	0.05	5	0	0	0	25	0	0	-30
29	498.07	94606	1553	19	0	19	0.20	0.20	21	0	0	0	28	0	0	-30
30	498.05	94576	1553	-2	0	-2	0.07	0.07	7	0	0	0	21	0	0	-30
TOTAL				-94	0	-94	3	4	376	0.19	0.19	25	948	0	0	-1394

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

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

Direct reservoir inflow values may be negative due to inaccuracies 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 2020

*figures in acre-feet except where otherwise noted

DATE	RESERVOIR (@ 0800 hrs.)			INFLOW			EVAPORATION			PRECIPITATION			RELEASES			STORAGE CHANGE
	Elevation (ft MSL)	Nov 30 th 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	To Spill	
1	498.02	94531	1553	5	0	5	0.09	0.21	13	0	0	0	38	0	0	-45
2	497.97	94457	1551	-16	0	-16	0.07	0.16	10	0	0	0	49	0	0	-74
3	497.92	94383	1551	-18	0	-18	0.07	0.09	7	0	0	0	49	0	0	-74
4	497.88	94323	1550	-1	0	-1	0.19	0.03	9	0	0	0	50	0	0	-60
5	497.86	94293	1550	18	0	18	0.16	0.22	16	0	0	0	31	0	0	-30
6	497.83	94249	1550	-1	0	-1	0.10	0.06	7	0	0	0	36	0	0	-44
7	497.81	94219	1550	3	0	3	0.09	0.26	15	0	0	0	18	0	0	-30
8	497.77	94160	1548	8	0	8	0.29	0.29	25	0	0	0	43	0	0	-59
9	497.73	94100	1548	-9	0	-9	0.26	0.15	17	0	0	0	34	0	0	-60
10	497.71	94070	1548	16	0	16	0.20	0.23	18	0	0	0	28	0	0	-30
11	497.69	94041	1547	27	0	27	0.20	0.12	14	0	0	0	42	0	0	-29
12	497.63	93952	1547	-56	0	-56	0.10	0.05	6	0	0	0	27	0	0	-89
13	497.60	93907	1547	-11	0	-11	0.10	0.13	10	0	0	0	24	0	0	-45
14	497.57	93863	1545	-5	0	-5	0.12	0.21	14	0	0	0	25	0	0	-44
15	497.55	93833	1545	5	0	5	0.10	0.06	7	0	0	0	28	0	0	-30
16	497.52	93789	1545	-3	0	-3	0.11	0.18	12	0	0	0	28	0	0	-44
17	497.51	93774	1545	41	0	41	0.16	0.24	17	0	0	0	39	0	0	-15
18	497.46	93700	1543	-20	0	-20	0.07	0.19	11	0	0	0	43	0	0	-74
19	497.44	93670	1543	24	0	24	0.24	0.14	16	0	0	0	38	0	0	-30
20	497.40	93611	1543	-11	0	-11	0.20	0.20	17	0	0	0	31	0	0	-59
21	497.39	93596	1542	13	0	13	0.06	0.04	4	0	0	0	24	0	0	-15
22	497.37	93567	1542	16	0	16	0.01	0.05	3	0	0	0	43	0	0	-29
23	497.32	93493	1542	-21	0	-21	0.09	0.20	12	0	0	0	40	0	0	-74
24	497.29	93449	1540	9	0	9	0.20	0.21	17	0	0	0	35	0	0	-44
25	497.25	93390	1540	-24	0	-24	0.14	0.11	11	0	0	0	25	0	0	-59
26	497.23	93360	1540	8	0	8	0.29	0.19	20	0	0	0	18	0	0	-30
27	497.20	93316	1540	-19	0	-19	0.09	0.10	8	0	0	0	17	0	0	-44
28	497.26	93404	1540	5	0	5	0	0	0	0.65	0.90	99	17	0	0	88
29	497.33	93508	1542	-65	0	-65	0	0	0	1	2	179	10	0	0	104
30	497.31	93478	1542	-17	0	-17	0.02	0.01	1	0	0	0	11	0	0	-30
31	497.29	93449	1540	-8	0	-8	0.05	0.04	4	0	0	0	17	0	0	-29
TOTAL				-106	0	-106	4	4	342	2	3	279	958	0	0	-1127

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

Direct reservoir inflow values may be negative due to inaccuracies 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 2021

*figures in acre-feet except where otherwise noted

DATE	RESERVOIR (@ 0800 hrs.)			INFLOW			EVAPORATION			PRECIPITATION			RELEASES			STORAGE CHANGE
	Elevation	93449 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	To Spill	
1	497.28	93434	1540	10	0	10	0.16	0.18	14	0.00	0	0	11	0	0	-15
2	497.26	93404	1540	-10	0	-10	0.18	0.06	10	0.00	0	0	10	0	0	-30
3	497.26	93404	1540	14	0	14	0.08	0.03	5	0.00	0	0	9	0	0	0
4	497.25	93390	1540	8	0	8	0.14	0.03	7	0.00	0	0	15	0	0	-14
5	497.24	93375	1540	-1	0	-1	0.03	0.04	3	0.00	0	0	11	0	0	-15
6	497.23	93360	1540	7	0	7	0.07	0.14	9	0.00	0	0	14	0	0	-15
7	497.22	93345	1540	3	0	3	0.02	0.12	6	0.00	0	0	12	0	0	-15
8	497.21	93331	1540	7	0	7	0.24	0.02	11	0.00	0	0	10	0	0	-14
9	497.20	93316	1540	15	0	15	0.17	0.14	13	0.00	0	0	17	0	0	-15
10	497.18	93286	1539	-7	0	-7	0.10	0.06	7	0.00	0	0	17	0	0	-30
11	497.17	93272	1539	9	0	9	0.06	0.03	4	0.00	0	0	19	0	0	-14
12	497.15	93242	1539	-1	0	-1	0.06	0.20	11	0.00	0	0	18	0	0	-30
13	497.14	93227	1539	13	0	13	0.08	0.10	8	0.00	0	0	21	0	0	-15
14	497.12	93198	1539	0	0	0	0.04	0.05	4	0.00	0	0	25	0	0	-29
15	497.06	93110	1537	-53	0	-53	0.14	0.16	12	0.00	0	0	23	0	0	-88
16	497.06	93110	1537	40	0	40	0.10	0.06	7	0.00	0	0	34	0	0	0
17	497.02	93051	1537	-24	0	-24	0.09	0.00	4	0.00	0	0	31	0	0	-59
18	497.00	93021	1537	-6	0	-6	0.01	0.07	3	0	0	0	21	0	0	-30
19	496.95	92948	1535	-32	0	-32	0.07	0.07	6	0.00	0	0	35	0	0	-73
20	496.93	92918	1535	33	0	33	0.17	0.24	17	0.00	0	0	46	0	0	-30
21	496.90	92874	1535	-12	0	-12	0.19	0.00	8	0.00	0	0	24	0	0	-44
22	496.86	92815	1534	-17	0	-17	0.22	0.14	15	0.00	0	0	27	0	0	-59
23	496.85	92801	1534	20	0	20	0.08	0.10	7	0.00	0	0	26	0	0	-14
24	496.86	92815	1534	-1	0	-1	0.00	0.00	0	0.33	0.10	27	12	0	0	14
25	496.85	92801	1534	-9	0	-9	0.00	0.00	0	0.06	0.05	7	12	0	0	-14
26	496.84	92786	1534	9	0	9	0.16	0.15	13	0.00	0	0	11	0	0	-15
27	496.83	92771	1534	-15	0	-15	0.00	0.00	0	0.06	0.10	10	11	0	0	-15
28	496.88	92845	1534	-7	1	-6	0.00	0.00	0	0.62	1	88	8	0	0	74
29	497.12	93198	1539	27	24	51	0.00	0.00	0	2.84	2	310	9	0	0	353
30	497.16	93257	1539	43	6	48	0.00	0.00	0	0.08	0	17	7	0	0	59
31	497.17	93272	1539	26	0	26	0.09	0.00	4	0.00	0	0	7	0	0	15
TOTAL				91	31	122	2.75	2.19	206	3.99	3.20	461	553	0	0	-177

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

Direct reservoir inflow values may be negative due to inaccuracies 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 2021

*figures in acre-feet except where otherwise noted

DATE	RESERVOIR (@ 0800 hrs.)			INFLOW			EVAPORATION			PRECIPITATION			RELEASES			STORAGE CHANGE
	Elevation (ft MSL)	Jan 31 st 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	To Spill	
1	497.17	93272	1539	-77	0	-77	0.16	0.16	16	0.00	0.00	0	7	0	0	0
2	497.16	93257	1539	12	0	12	0.18	0.18	18	0.00	0.00	0	9	0	0	-15
3	497.15	93242	1539	-1	0	-1	0.08	0.08	8	0.00	0.00	0	6	0	0	-15
4	497.16	93257	1539	38	2	41	0.14	0.14	14	0.00	0.00	0	10	0	0	15
5	497.16	93257	1539	6	0	6	0.03	0.03	3	0.00	0.00	0	6	0	0	0
6	497.16	93257	1539	13	0	13	0.07	0.07	7	0	0	0	6	0	0	0
7	497.15	93242	1539	-5	0	-5	0.02	0.02	2	0	0	0	8	0	0	-15
8	497.14	93227	1539	14	0	14	0.24	0.24	24	0	0	0	6	0	0	-15
9	497.14	93227	1539	18	0	18	0.17	0.02	9	0.00	0.00	0	8	0	0	0
10	497.13	93213	1539	3	0	3	0.10	0.05	7	0.00	0.00	0	9	0	0	-14
11	497.13	93213	1539	15	0	15	0.06	0.12	9	0.00	0.00	0	6	0	0	0
12	497.14	93227	1539	30	0	30	0.08	0.00	4	0	0	2	14	0	0	14
13	497.11	93183	1539	-21	0	-21	0.08	0.20	14	0.00	0.00	0	10	0	0	-44
14	497.11	93183	1539	19	0	19	0.04	0.09	6	0.00	0.00	0	12	0	0	0
15	497.05	93095	1537	-55	0	-55	0.14	0.33	23	0.00	0.00	0	10	0	0	-88
16	497.05	93095	1537	34	0	34	0.10	0.26	18	0.00	0.00	0	16	0	0	0
17	497.03	93065	1537	5	0	5	0.09	0.10	9	0	0	0	26	0	0	-30
18	497.01	93036	1537	0	0	0	0.01	0.10	5	0	0	0	23	0	0	-29
19	496.99	93006	1535	-3	0	-3	0.07	0.10	8	0	0	0	19	0	0	-30
20	496.98	92992	1535	39	0	39	0.17	0.38	27	0	0	0	26	0	0	-14
21	496.97	92977	1535	21	0	21	0.19	0.11	15	0	0	0	21	0	0	-15
22	496.95	92948	1535	11	0	11	0.22	0.18	20	0	0	0	21	0	0	-29
23	496.94	92933	1535	21	0	21	0.08	0.04	6	0	0	0	30	0	0	-15
24	496.91	92889	1535	6	0	6	0.00	0.24	12	0	0	0	38	0	0	-44
25	496.90	92874	1535	29	0	29	0.00	0.18	9	0	0	0	36	0	0	-15
26	496.87	92830	1534	5	0	5	0.16	0.13	14	0	0	0	35	0	0	-44
27	496.85	92801	1534	11	0	11	0.00	0.22	11	0	0	0	29	0	0	-29
28	496.83	92771	1534	12	0	12	0.00	0.21	10	0.00	0.00	0	31	0	0	-30
TOTAL				201	2	203	2.68	3.98	328	0.00	0.03	2	477	0	0	-501

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

Direct reservoir inflow values may be negative due to inaccuracies 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 2021

*figures in acre-feet except where otherwise noted

DATE	RESERVOIR (@ 0800 hrs.)			INFLOW			EVAPORATION			PRECIPITATION			RELEASES			STORAGE CHANGE
	Elevation	Feb 28 th 92771	Surface Area	Ventura River			Pan @Dam	Pan @Rec	Lake Total	at Dam	at Rec	Lake Total	To			
	(ft MSL)	Storage	(acres)	Direct	Divers'n	Total	(in)	(in)	(af)	(in)	(in)	(af)	Main System	To River	Spill	
1	496.81	92742	1534	18	0	18	0.12	0.25	18	0	0	0	29	0	0	-29
2	496.79	92713	1532	8	0	8	0.07	0.18	12	0	0	0	25	0	0	-29
3	496.76	92669	1532	5	0	5	0.16	0.20	17	0	0	0	32	0	0	-44
4	496.75	92654	1532	27	0	27	0.10	0.00	5	0	0	0	37	0	0	-15
5	496.72	92610	1532	2	0	2	0.19	0.23	20	0	0	0	25	0	0	-44
6	496.71	92595	1532	25	0	25	0.20	0.06	13	0	0	0	28	0	0	-15
7	496.70	92581	1532	12	0	12	0.10	0.09	9	0	0	0	17	0	0	-14
8	496.69	92566	1530	-2	0	-2	0	0	1	0.00	0	1	13	0	0	-15
9	496.67	92537	1530	5	0	5	0.05	0.26	15	0	0	0	19	0	0	-29
10	496.72	92610	1532	15	0	15	0	0	0	0.51	0.60	71	13	0	0	73
11	496.73	92625	1532	-28	0.0	-28	0	0	0	0.41	0.39	51	8	0	0	15
12	496.74	92639	1532	4	0.0	4	0	0	0	0	0.15	16	6	0	0	14
13	496.73	92625	1532	-3	0.0	-3	0	0	10	0.07	0.00	4	6	0	0	-14
14	496.70	92581	1532	-22	0	-22	0	0	14	0.00	0.00	0	9	0	0	-44
15	496.66	92522	1530	-61	0	-61	0	0	3	0.19	0.00	12	7	0	0	-59
16	496.63	92478	1530	-36	0.0	-36	0	0	0	0.01	0.00	1	8	0	0	-44
17	496.62	92463	1530	7	0.0	7	0	0	14	0.00	0.00	0	8	0	0	-15
18	496.61	92449	1530	3	0.0	3	0	0	7	0.00	0.00	0	10	0	0	-14
19	496.59	92420	1529	-2	0.0	-2	0	0	21	0.00	0	0	6	0	0	-29
20	496.58	92405	1529	11	0.0	11	0.20	0.20	19	0	0	0	7	0	0	-15
21	496.56	92376	1529	-7	0.0	-7	0.20	0.06	13	0	0	0	10	0	0	-29
22	496.54	92346	1529	-5	0.0	-5	0.11	0.11	11	0	0	0	14	0	0	-30
23	496.52	92317	1529	38	0.0	38	0	1	44	0.00	0.00	0	23	0	0	-29
24	496.50	92288	1529	18	0.0	18	0.32	0.23	27	0	0	0	21	0	0	-29
25	496.47	92244	1527	-15	0.0	-15	0	0	9	0.00	0	0	20	0	0	-44
26	496.42	92171	1527	-22	0.0	-22	0.20	0.33	26	0.00	0	0	26	0	0	-73
27	496.41	92156	1527	33	0.0	33	0	0	20	0.00	0.00	0	28	0	0	-15
28	496.38	92113	1525	4	0.0	4	0.20	0.32	25	0	0	0	22	0	0	-43
29	496.36	92083	1525	3	0.0	3	0.15	0.20	17	0	0	0	16	0	0	-30
30	496.33	92040	1525	10	0.0	10	0	0	19	0.00	0.00	0	35	0	0	-43
31	496.31	92010	1525	36	0.0	36	0.37	0.37	36	0	0	0	30	0	0	-30
TOTAL				83	0	83	4.20	4.96	443	1.29	1.15	156	556	0	0	-761

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

Direct reservoir inflow values may be negative due to inaccuracies 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 2021

*figures in acre-feet except where otherwise noted

DATE	RESERVOIR (@ 0800 hrs.)			INFLOW			EVAPORATION			PRECIPITATION			RELEASES			STORAGE CHANGE
	Elevation	Mar 31 st 92010	Surface Area	Ventura River			Pan @Dam	Pan @Rec	Lake Total	at Dam	at Rec	Lake Total	To Main System	To River	To Spill	
	(ft MSL)	Storage	(acres)	Direct	Divers'n	Total	(in)	(in)	(af)	(in)	(in)	(af)				
1	496.26	91937	1523	6	0	6	0.48	0.29	39	0	0	0	40	0	0	-73
2	496.23	91894	1523	15	0	15	0.17	0.33	25	0	0	0	33	0	0	-43
3	496.21	91865	1523	17	0	17	0.13	0.15	14	0	0	0	32	0	0	-29
4	496.19	91835	1522	12	0	12	0.20	0.15	18	0	0	0	25	0	0	-30
5	496.17	91806	1522	3	0	3	0.14	0.16	15	0	0	0	17	0	0	-29
6	496.15	91777	1522	20	0	20	0.17	0.21	19	0	0	0	30	0	0	-29
7	496.11	91719	1522	-4	0	-4	0.22	0.17	20	0	0	0	35	0	0	-58
8	496.05	91632	1520	-31	0	-31	0.17	0.20	19	0	0	0	37	0	0	-87
9	495.99	91545	1518	-37	0	-37	0.10	0.21	16	0	0	0	34	0	0	-87
10	495.96	91501	1518	19	0	19	0.20	0.21	21	0	0	0	42	0	0	-44
11	495.93	91457	1518	14	0	14	0.30	0.20	25	0	0	0	33	0	0	-44
12	495.92	91443	1518	19	0	19	0.15	0.14	15	0	0	0	18	0	0	-14
13	495.87	91370	1517	-41	0	-41	0.04	0.01	3	0	0	0	29	0	0	-73
14	495.83	91312	1517	-15	0	-15	0.04	0.11	8	0	0	0	36	0	0	-58
15	495.79	91254	1515	-7	0	-7	0.11	0.20	16	0	0	0	35	0	0	-58
16	495.75	91196	1515	5	0	5	0.36	0.11	24	0	0	0	39	0	0	-58
17	495.72	91153	1515	18	0	18	0.20	0.30	25	0	0	0	36	0	0	-43
18	495.69	91110	1513	9	0	9	0.20	0.20	20	0	0	0	32	0	0	-43
19	495.66	91066	1513	8	0	8	0.26	0.31	29	0	0	0	23	0	0	-44
20	495.62	91008	1513	-4	0	-4	0.10	0.26	18	0	0	0	36	0	0	-58
21	495.58	90951	1512	9	0	9	0.18	0.23	21	0	0	0	46	0	0	-57
22	495.55	90907	1512	7	0	7	0.16	0.14	15	0	0	0	36	0	0	-44
23	495.51	90849	1512	-5	0	-5	0.19	0.12	16	0	0	0	38	0	0	-58
24	495.49	90821	1510	19	0	19	0.14	0.11	13	0	0	0	35	0	0	-28
25	495.48	90806	1510	25	0	25	0.19	0.10	15	0	0	0	25	0	0	-15
26	495.44	90749	1510	-29	0	-29	0.10	0.09	10	0	0	0	18	0	0	-57
27	495.41	90705	1510	-2	0	-2	0.13	0.11	12	0	0	0	30	0	0	-44
28	495.37	90648	1508	2	0	2	0.15	0.20	18	0	0	0	41	0	0	-57
29	495.33	90590	1508	20	0	20	0.37	0.30	34	0	0	0	45	0	0	-58
30	495.29	90532	1506	9	0	9	0.24	0.28	26	0	0	0	41	0	0	-58
TOTAL				83	0	83	5.59	5.60	565	0.00	0.00	0	995	0	0	-1478

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

Direct reservoir inflow values may be negative due to inaccuracies 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 2021

*figures in acre-feet except where otherwise noted

DATE	RESERVOIR (@ 0800 hrs.)			INFLOW			EVAPORATION			PRECIPITATION			RELEASES			STORAGE CHANGE
	Elevation (ft MSL)	Apr 30 th 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	
1	495.24	90461	1506	9	0	9	0.30	0.30	31	0	0	0	49	0	0	-71
2	495.21	90417	1506	13	0	13	0.20	0.04	12	0	0	0	45	0	0	-44
3	495.15	90331	1505	-23	0	-23	0.25	0.44	35	0	0	0	28	0	0	-86
4	495.10	90260	1505	-6	0	-6	0.19	0.24	22	0	0	0	43	0	0	-71
5	495.04	90174	1503	-20	0	-20	0.19	0.21	20	0	0	0	46	0	0	-86
6	495.00	90116	1503	25	0	25	0.30	0.32	31	0	0	0	52	0	0	-58
7	494.96	90059	1501	13	0	13	0.17	0.31	24	0	0	0	45	0	0	-57
8	494.92	90002	1501	-8	0	-8	0.12	0.03	8	0	0	0	41	0	0	-57
9	494.88	89944	1500	-4	0	-4	0.28	0.19	24	0	0	0	31	0	0	-58
10	494.86	89916	1500	14	0	14	0.10	0.22	16	0	0	0	25	0	0	-28
11	494.82	89859	1500	-12	0	-12	0.10	0.08	9	0	0	0	36	0	0	-57
12	494.79	89816	1498	-1	0	-1	0.06	0.12	9	0	0	0	33	0	0	-43
13	494.75	89759	1498	12	0	12	0.33	0.22	28	0	0	0	42	0	0	-57
14	494.72	89716	1498	11	0	11	0.21	0.15	18	0	0	1	37	0	0	-43
15	494.69	89673	1497	11	0	11	0.20	0.15	18	0	0	0	36	0	0	-43
16	494.66	89630	1497	-5	0	-5	0.10	0.11	11	0	0	0	28	0	0	-43
17	494.64	89602	1497	1	0	1	0.10	0.10	10	0	0	0	19	0	0	-28
18	494.60	89545	1497	-8	0	-8	0.20	0.14	17	0.00	0.00	0	32	0	0	-57
19	494.55	89473	1495	-12	0	-12	0.27	0.23	25	0	0	0	35	0	0	-72
20	494.52	89431	1495	19	0	19	0.21	0.12	17	0	0	0	44	0	0	-42
21	494.46	89345	1493	-13	0	-13	0.18	0.34	26	0	0	0	47	0	0	-86
22	494.42	89288	1493	4	0	4	0.30	0.14	22	0	0	0	39	0	0	-57
23	494.38	89232	1492	6	0	6	0.23	0.25	24	0	0	0	38	0	0	-56
24	494.36	89203	1492	11	0	11	0.20	0.18	19	0	0	0	21	0	0	-29
25	494.31	89132	1492	-9	0	-9	0.08	0.47	28	0	0	0	35	0	0	-71
26	494.27	89075	1490	21	0	21	0.30	0.24	27	0	0	0	51	0	0	-57
27	494.22	89005	1490	-3	0	-3	0.14	0.18	16	0	0	0	51	0	0	-70
28	494.18	88948	1489	1	0	1	0.14	0.19	17	0	0	0	42	0	0	-57
29	494.14	88891	1489	17	0	17	0.36	0.18	27	0	0	0	47	0	0	-57
30	494.11	88849	1489	9	0	9	0.20	0.16	18	0	0	0	33	0	0	-42
31	494.08	88806	1487	5	0	5	0.27	0.20	24	0	0	0	24	0	0	-43
TOTAL				80	0	80	6.28	6.25	633	0.02	0.00	1	1175	0	0	-1726

*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 inaccuracies 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 2021

*figures in acre-feet except where otherwise noted

DATE	RESERVOIR (@ 0800 hrs.)			INFLOW			EVAPORATION			PRECIPITATION			RELEASES			STORAGE CHANGE
	Elevation	Surface	Area	Ventura		Total	Pan	Pan	Lake	at	at	Lake	To		Spill	
	(ft MSL)	88806		Direct	Divers'n		@Dam	@Rec	Total	Dam	Rec	Total	Main	River		
1	494.05	88764	1487	17	0	17	0.22	0.22	22	0	0	0	37	0	0	-42
2	494.00	88693	1487	-7	0	-7	0.15	0.28	22	0	0	0	42	0	0	-71
3	493.94	88608	1485	-9	0	-9	0.27	0.20	24	0	0	0	52	0	0	-85
4	493.91	88566	1485	42	0	42	0.38	0.26	32	0	0	0	51	0	0	-42
5	493.85	88481	1484	-5	0	-5	0.33	0.22	28	0	0	0	52	0	0	-85
6	493.80	88411	1484	-13	0	-13	0.10	0.20	15	0	0	0	41	0	0	-70
7	493.75	88340	1482	-21	0	-21	0.19	0.19	19	0	0	0	31	0	0	-71
8	493.73	88312	1482	41	0	41	0.43	0.13	28	0	0	0	41	0	0	-28
9	493.69	88256	1481	3	0	3	0.08	0.25	17	0	0	0	42	0	0	-56
10	493.64	88186	1481	0	0	0	0.38	0.24	31	0	0	0	39	0	0	-70
11	493.64	88186	1481	72	0	72	0.32	0.24	28	0	0	0	44	0	0	0
12	493.60	88130	1481	31	0	31	0.51	0.29	40	0	0	0	46	0	0	-56
13	493.55	88059	1479	7	0	7	0.22	0.36	29	0	0	0	48	0	0	-71
14	493.53	88031	1479	35	0	35	0.21	0.28	25	0	0	0	39	0	0	-28
15	493.47	87947	1477	-8	0	-8	0.20	0.28	24	0	0	0	52	0	0	-84
16	493.41	87863	1477	16	0	16	0.29	0.35	32	0	0	0	68	0	0	-84
17	493.38	87821	1476	48	0	48	0.15	0.29	22	0	0	0	68	0	0	-42
18	493.33	87751	1476	17	0	17	0.34	0.28	31	0	0	0	56	0	0	-70
19	493.27	87668	1474	-16	0	-16	0.07	0.19	13	0	0	0	54	0	0	-83
20	493.23	87612	1474	11	0	11	0.19	0.28	24	0	0	0	43	0	0	-56
21	493.17	87528	1473	-32	0	-32	0.15	0.25	20	0	0	0	32	0	0	-84
22	493.11	87445	1473	-15	0	-15	0.20	0.31	26	0	0	0	42	0	0	-83
23	493.05	87361	1471	-12	0	-12	0.17	0.28	23	0	0	0	49	0	0	-84
24	492.98	87264	1469	-25	0	-25	0.17	0.25	21	0	0	0	51	0	0	-97
25	492.92	87181	1469	-18	0	-18	0.15	0.24	20	0	0	0	46	0	0	-83
26	492.87	87111	1468	4	0	4	0.32	0.22	27	0	0	0	47	0	0	-70
27	492.82	87042	1468	7	0	7	0.29	0.29	29	0	0	0	46	0	0	-69
28	492.76	86959	1466	-23	0	-23	0.20	0.34	27	0	0	0	33	0	0	-83
29	492.70	86876	1466	-14	0	-14	0.16	0.22	19	0	0	0	50	0	0	-83
30	492.63	86779	1464	-15	0	-15	0.28	0.27	28	0	0	0	54	0	0	-97
TOTAL				118	0	118	7.12	7.70	748	0.00	0.00	0	1397	0	0	-2027

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

Direct reservoir inflow values may be negative due to inaccuracies 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 2021

*figures in acre-feet except where otherwise noted

DATE	RESERVOIR (@ 0800 hrs.)			INFLOW			EVAPORATION			PRECIPITATION			RELEASES			STORAGE CHANGE
	Elevation (ft MSL)	Jun 30 th 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	
1	492.58	86711	1463	8	0	8	0.16	0.28	22	0	0	0	54	0	0	-68
2	492.52	86628	1463	6	0	6	0.43	0.25	34	0	0	0	55	0	0	-83
3	492.47	86559	1461	16	0	16	0.36	0.31	33	0	0	0	52	0	0	-69
4	492.42	86490	1461	12	0	12	0.36	0.28	32	0	0	0	50	0	0	-69
5	492.38	86435	1459	0	0	0	0.24	0.25	24	0	0	0	31	0	0	-55
6	492.32	86353	1459	-20	0	-20	0.20	0.32	26	0	0	0	36	0	0	-82
7	492.26	86271	1457	-12	0	-12	0.26	0.26	26	0	0	0	45	0	0	-82
8	492.20	86189	1457	1	0	1	0.27	0.34	30	0	0	0	53	0	0	-82
9	492.16	86134	1456	24	0	24	0.33	0.22	27	0	0	0	52	0	0	-55
10	492.09	86039	1454	-9	0	-9	0.20	0.32	26	0	0	0	60	0	0	-95
11	492.04	85970	1454	17	0	17	0.40	0.36	37	0	0	0	49	0	0	-69
12	491.98	85889	1452	-31	0	-31	0.18	0.18	18	0	0	0	32	0	0	-81
13	491.92	85807	1452	-2	0	-2	0.25	0.37	30	0	0	0	50	0	0	-82
14	491.85	85712	1451	-18	0	-18	0.21	0.20	20	0	0	0	57	0	0	-95
15	491.79	85630	1449	13	0	13	0.36	0.26	30	0	0	0	65	0	0	-82
16	491.73	85549	1449	7	0	7	0.29	0.28	28	0	0	0	60	0	0	-81
17	491.68	85481	1448	23	0	23	0.43	0.31	36	0	0	0	55	0	0	-68
18	491.61	85387	1448	-22	0	-22	0.20	0.27	23	0	0	0	49	0	0	-94
19	491.54	85292	1446	-46	0	-46	0.22	0.12	17	0	0	0	32	0	0	-95
20	491.49	85225	1444	17	0	17	0.32	0.40	35	0	0	0	49	0	0	-67
21	491.41	85117	1444	-11	0	-11	0.30	0.38	33	0	0	0	64	0	0	-108
22	491.34	85023	1443	-9	0	-9	0.20	0.35	27	0	0	0	58	0	0	-94
23	491.28	84943	1441	2	0	2	0.40	0.16	27	0	0	0	55	0	0	-80
24	491.21	84849	1441	-4	0	-4	0.24	0.37	30	0	0	0	60	0	0	-94
25	491.16	84782	1440	-3	0	-3	0.22	0.22	21	0	0	0	43	0	0	-67
26	491.10	84702	1440	-19	0	-19	0.28	0.32	29	0	0	0	32	0	0	-80
27	491.04	84622	1438	-9	0	-9	0.37	0.07	21	0	0	0	49	0	0	-80
28	490.97	84529	1436	-4	0	-4	0.34	0.21	27	0	0	0	62	0	0	-93
29	490.90	84437	1436	-3	0	-3	0.31	0.28	29	0	0	0	60	0	0	-92
30	490.84	84357	1435	-1	0	-1	0.18	0.26	21	0	0	0	58	0	0	-80
31	490.79	84291	1433	11	0	11	0.29	0.25	26	0	0	0	51	0	0	-66
TOTAL				-68	0	-68	8.80	8.45	844	0.00	0.00	0	1577	0	0	-2488

*Evaporation and/or 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 inaccuracies 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 2021

*figures in acre-feet except where otherwise noted

DATE	RESERVOIR (@ 0800 hrs.)			INFLOW			EVAPORATION			PRECIPITATION			RELEASES			STORAGE CHANGE
	Elevation (ft MSL)	Jul 31 st 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	To Spill	
1	490.74	84225	1433	15	0	15	0.29	0.29	28	0	0	0	53	0	0	-66
2	490.69	84159	1432	-7	0	-7	0.30	0.31	29	0	0	0	29	0	0	-66
3	490.63	84081	1432	-2	0	-2	0.23	0.30	26	0	0	0	50	0	0	-78
4	490.57	84002	1430	12	0	12	0.31	0.24	27	0	0	0	64	0	0	-79
5	490.51	83923	1430	3	0	3	0.23	0.28	25	0	0	0	57	0	0	-79
6	490.45	83844	1428	6	0	6	0.33	0.29	30	0	0	0	55	0	0	-79
7	490.39	83766	1427	5	0	5	0.24	0.25	24	0	0	0	60	0	0	-78
8	490.35	83713	1427	14	0	14	0.15	0.32	23	0	0	0	45	0	0	-53
9	490.30	83648	1427	6	0	6	0.43	0.25	33	0	0	0	39	0	0	-65
10	490.24	83570	1425	4	0	4	0.38	0.22	29	0	0	0	53	0	0	-78
11	490.18	83491	1424	4	0	4	0.16	0.28	21	0	0	0	62	0	0	-79
12	490.10	83387	1424	-12	0	-12	0.29	0.28	27	0	0	0	64	0	0	-104
13	490.04	83309	1422	15	0	15	0.23	0.27	24	0	0	0	69	0	0	-78
14	489.96	83205	1420	-11	0	-11	0.31	0.34	31	0	0	0	61	0	0	-104
15	489.90	83127	1420	-14	0	-14	0.24	0.16	19	0	0	0	44	0	0	-78
16	489.83	83036	1419	-23	0	-23	0.21	0.36	27	0	0	0	41	0	0	-91
17	489.76	82945	1417	-12	0	-12	0.15	0.23	18	0	0	0	61	0	0	-91
18	489.70	82868	1417	15	0	15	0.40	0.22	30	0	0	0	62	0	0	-77
19	489.63	82777	1416	-12	0	-12	0.15	0.17	15	0	0	0	63	0	0	-91
20	489.57	82699	1414	-10	0	-10	0.20	0.12	15	0	0	0	53	0	0	-78
21	489.50	82609	1414	-20	0	-20	0.19	0.28	22	0	0	0	47	0	0	-90
22	489.43	82519	1412	-31	0	-31	0.17	0.14	15	0	0	0	44	0	0	-90
23	489.40	82480	1412	8	0	8	0.17	0.20	18	0	0	0	29	0	0	-39
24	489.33	82390	1411	-14	0	-14	0.52	0.17	33	0	0	0	44	0	0	-90
25	489.28	82325	1409	13	0	13	0.24	0.21	21	0	0	0	56	0	0	-65
26	489.20	82222	1409	-19	0	-19	0.23	0.26	23	0	0	0	61	0	0	-103
27	489.11	82107	1408	-27	0	-27	0.26	0.19	21	0	0	0	66	0	0	-115
28	489.04	82017	1406	1	0	1	0.19	0.39	28	0	0	0	64	0	0	-90
29	488.97	81927	1404	-25	0	-25	0.19	0.15	16	0	0	0	49	0	0	-90
30	488.94	81889	1404	31	0	31	0.39	0.28	32	0	0	0	37	0	0	-38
31	488.82	81735	1403	-79	0	-79	0.16	0.27	20	0	0	0	55	0	0	-154
TOTAL				-167	0	-167	7.94	7.72	750	0	0	0	1639	0	0	-2556

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

Direct reservoir inflow values may be negative due to inaccuracies 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 2021

*figures in acre-feet except where otherwise noted

DATE	RESERVOIR (@ 0800 hrs.)			INFLOW			EVAPORATION			PRECIPITATION			RELEASES			STORAGE CHANGE
	Elevation	Aug 30 th Surface	Surface	Ventura			Pan	Pan	Lake	at	at	Lake	To			
	(ft MSL)	81735 Storage	Area (acres)	Direct	Divers'n	Total	@Dam (in)	@Rec (in)	Total (af)	Dam (in)	Rec (in)	Total (af)	Main System	To River	Spill	
1	488.76	81658	1401	3	0	3	0.08	0.15	10	0	0	0	70	0	0	-77
2	488.74	81633	1401	51	0	51	0.10	0.09	8	0	0	0	68	0	0	-25
3	488.66	81531	1400	-13	0	-13	0.41	0.27	30	0	0	0	59	0	0	-102
4	488.62	81479	1400	19	0	19	0.15	0.13	12	0	0	0	58	0	0	-52
5	488.57	81416	1398	6	0	6	0.24	0.31	24	0	0	0	45	0	0	-63
6	488.53	81365	1398	26	0	26	0.25	0.38	28	0	0	0	49	0	0	-51
7	488.47	81288	1396	2	0	2	0.36	0.22	26	0	0	0	53	0	0	-77
8	488.40	81199	1396	-4	0	-4	0.25	0.25	22	0	0	0	63	0	0	-89
9	488.34	81123	1395	13	0	13	0.25	0.20	20	0	0	0	70	0	0	-76
10	488.27	81034	1393	-2	0	-2	0.29	0.30	26	0	0	0	61	0	0	-89
11	488.22	80970	1393	12	0	12	0.12	0.20	14	0	0	0	62	0	0	-64
12	488.17	80907	1392	7	0	7	0.25	0.25	22	0	0	0	48	0	0	-63
13	488.13	80856	1392	10	0	10	0.22	0.23	20	0	0	0	41	0	0	-51
14	488.07	80780	1390	-11	0	-11	0.18	0.13	14	0	0	0	51	0	0	-76
15	488.05	80755	1390	57	0	57	0.17	0.17	15	0	0	0	67	0	0	-25
16	487.93	80603	1388	-73	0	-73	0.23	0.10	15	0	0	0	64	0	0	-152
17	487.88	80540	1387	6	0	6	0.08	0.30	17	0	0	0	52	0	0	-63
18	487.82	80464	1387	-12	0	-12	0.21	0.10	14	0	0	0	50	0	0	-76
19	487.75	80375	1385	-30	0	-30	0.24	0.18	18	0	0	0	40	0	0	-89
20	487.70	80312	1385	-12	0	-12	0.30	0.12	18	0	0	0	33	0	0	-63
21	487.67	80274	1384	26	0	26	0.16	0.19	15	0	0	0	48	0	0	-38
22	487.63	80224	1384	28	0	28	0.24	0.15	17	0	0	0	61	0	0	-50
23	487.53	80098	1382	-46	0	-46	0.18	0.25	19	0	0	0	61	0	0	-126
24	487.47	80023	1380	6	0	6	0.15	0.30	20	0	0	0	62	0	0	-75
25	487.43	79972	1380	16	0	16	0.15	0.10	11	0	0	0	56	0	0	-51
26	487.36	79884	1379	-22	0	-22	0.45	0.12	25	0	0	0	42	0	0	-88
27	487.31	79821	1379	-10	0	-10	0.15	0.21	16	0	0	0	38	0	0	-63
28	487.26	79759	1377	-8	0	-8	0.07	0.11	8	0	0	0	46	0	0	-62
29	487.27	79771	1377	80	0	80	0.15	0.06	9	0	0	0	58	0	0	12
30	487.20	79683	1377	-23	0	-23	0.17	0.20	16	0	0	0	49	0	0	-88
TOTAL				101	0	101	6.25	5.77	529	0.00	0.00	0	1624	0	0	-2052

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

e = estimate

Direct reservoir inflow values may be negative due to inaccuracies 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 2020 THROUGH SEPTEMBER 2021

Daily mean elevation, feet above mean sea level

SPILL OVER DAM @ 1095.35 ELEVATION

Day	2020			2021								
	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	1085.89	1085.92	1085.94	1085.94	1097.44	1095.79	1096.14	1096.99	1096.90	1097.43	1097.68	1082.55
2	1085.89	1085.92	1085.94	1085.94	1097.56	1095.79	1096.18	1096.88	1096.95	1097.45	1097.57	1084.51
3	1085.89	1085.92	1085.94	1085.93	1096.66	1095.77	1096.14	1096.81	1096.96	1097.46	1096.99	1085.82
4	1085.90	1085.92	1085.95	1085.93	1095.74	1095.73	1096.12	1096.89	1096.97	1097.45	1096.25	1085.81
5	1085.90	1085.92	1085.95	1085.93	1095.77	1095.74	1096.11	1096.96	1096.96	1097.42	1095.43	1085.80
6	1085.91	1085.92	1085.95	1085.93	1095.83	1095.77	1096.08	1096.94	1096.94	1097.42	1094.55	1085.79
7	1085.91	1085.94	1085.94	1085.93	1095.89	1095.76	1096.08	1096.87	1096.90	1097.46	1093.49	1085.78
8	1085.91	1085.95	1085.94	1085.94	1095.89	1095.74	1096.10	1096.80	1096.85	1097.50	1092.18	1085.77
9	1085.91	1085.94	1085.94	1085.94	1091.91	1095.74	1096.16	1096.79	1096.88	1097.56	1091.03	1085.76
10	1085.91	1085.95	1085.95	1085.94	1095.56	1095.76	1096.21	1096.78	1096.92	1097.60	1089.81	1085.85
11	1085.90	1085.94	1085.95	1085.94	1095.58	1095.71	1096.21	1096.77	1096.97	1097.60	1088.07	1085.91
12	1085.90	1085.94	1085.94	1085.94	1095.60	1095.66	1096.15	1096.78	1097.02	1097.59	1083.14	1085.92
13	1085.90	1085.94	1085.93	1085.94	1095.61	1095.64	1096.09	1096.80	1097.06	1097.57	1082.91	1085.92
14	1085.90	1085.94	1085.94	1085.93	1095.62	1095.66	1096.03	1096.78	1097.13	1097.56	1082.85	1085.92
15	1085.90	1085.93	1085.94	1085.92	1095.63	1095.66	1096.01	1096.73	1097.31	1097.56	1082.80	1085.93
16	1085.90	1085.93	1085.94	1085.92	1095.63	1095.66	1096.03	1096.61	1097.45	1097.56	1082.75	1085.93
17	1085.90	1085.93	1085.94	1085.92	1095.64	1095.66	1096.06	1096.49	1097.43	1097.57	1082.72	1085.92
18	1085.91	1085.94	1085.94	1085.93	1095.65	1095.68	1096.15	1096.56	1097.42	1097.60	1082.70	1085.92
19	1085.91	1085.93	1085.94	1085.93	1095.65	1095.73	1096.26	1096.68	1097.38	1097.62	1082.67	1085.92
20	1085.91	1085.93	1085.94	1085.94	1095.66	1095.78	1096.30	1096.70	1097.37	1097.66	1082.65	1085.92
21	1085.91	1085.93	1085.94	1085.93	1095.66	1095.78	1096.22	1096.67	1097.34	1097.67	1082.64	1085.91
22	1085.89	1085.93	1085.94	1085.94	1095.70	1095.79	1096.12	1096.60	1097.33	1097.68	1082.63	1085.90
23	1085.89	1085.94	1085.95	1085.94	1095.76	1095.79	1096.09	1096.60	1097.35	1097.66	1082.61	1085.91
24	1085.89	1085.94	1085.95	1085.94	1095.80	1095.79	1096.10	1096.75	1097.34	1097.62	1082.60	1085.92
25	1085.89	1085.94	1085.95	1085.94	1095.80	1095.79	1096.09	1096.98	1097.34	1097.59	1082.59	1085.92
26	1085.90	1085.94	1085.94	1085.94	1095.78	1095.76	1096.04	1096.99	1097.38	1097.56	1082.58	1085.91
27	1085.91	1085.95	1085.94	1085.94	1095.79	1095.79	1096.04	1096.94	1097.43	1097.54	1082.58	1085.92
28	1085.92	1085.95	1085.96	1087.89	1095.79	1095.87	1096.13	1096.90	1097.46	1097.62	1082.57	1085.91
29	1085.93	1085.95	1085.94	1096.90	---	1095.99	1096.37	1096.87	1097.45	1097.68	1082.56	1085.91
30	1085.93	1085.94	1085.94	1097.26	---	1096.05	1096.76	1096.84	1097.42	1097.68	1082.56	1085.92
31	1085.93	---	1085.94	1097.35	---	1096.07	---	1096.84	---	1097.68	1082.56	---

Data logger malfunctioning. Data estimated using downstream gage and observational measurements.

Appendix F

System Delivery Data for Mire Monte Well and Ojai Water System

Mira Monte Well

Calendar Year 2021

Month	Acre Feet
Jan – 21	7.61
Feb – 21	8.15
Mar – 21	9.29
Apr – 21	5.97
May – 21	19.73
Jun – 21	23.86
Jul – 21	27.22
Aug – 21	26.99
Sep – 21	24.76
Oct – 21	15.90
Nov – 21	14.90
Dec – 21	6.02
Total:	190.40 AF

Mira Monte Well

Water Year 2020 – 2021

Month	Acre Feet
Oct – 20	24.10
Nov – 20	17.96
Dec – 20	13.18
Jan – 21	7.61
Feb – 21	8.15
Mar – 21	9.29
Apr – 21	16.32
May – 21	19.73
Jun – 21	23.86
Jul – 21	27.22
Aug – 21	26.99
Sep – 21	24.76
Total:	219.17 AF

OJAI WATER SYSTEM SOURCES AND DELIVERIES 2020 - 2021 WATER YEAR

figures in acre-feet except where otherwise noted

MONTH	YEAR	SYSTEM DELIVERIES	SOURCE	
			WELL - FIELD PRODUCTION	SURFACE WATER
OCT	2020	178	125	53
NOV	2020	142	93	49
DEC	2020	131	119	12
JAN	2021	94	94	0
FEB	2021	47	46	1
MAR	2021	100	99	1
APR	2021	135	124	11
MAY	2021	154	103	51
JUN	2021	170	94	76
JUL	2021	189	118	71
AUG	2021	196	117	80
SEP	2021	176	98	78
TOTAL		1714	1229	484

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	96	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	48	69	93	49	69	109	46	70	99	41	61	91	35	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																									

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	89	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	92	49	67	92	50	69	94	36	63	95	28	59	82	27	52
1977	82	23	51	86	32	54	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	96	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</																				

Appendix H

Historical Hydrology Data

CASITAS RESERVOIR INVENTORY ANNUAL SUMMARY

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

YEAR	RESERVOIR DATA (START OF YEAR- Last Day of Previous Month)		INFLOW FOR YEAR			RELEASES FOR YEAR			SPILL FOR YEAR	EVAP FOR YEAR	RAINFALL ON LAKE SURFACE	STORAGE VOLUME	
	ELEVATION (FT ABOVE MSL)	STORAGE	DIRECT	VENTURA RIVER DIVERSION	TOTAL	TO CONV. SYSTEM	DOWN RIVER	TOTAL				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	2,766	2,034	4,800	12,468	-	12,468	-	5,704	2,407	93,434	76,737
2022	489.48	82,583											
AVG:	522.27	167,277	11,559	10,464	22,024	15,001	81	15,082	1,810	7,682	4,096	185,667	157,849
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
20-21	7.07	7.22	6.48	6.92	5.82
AVERAGE	23.24	22.44	27.92	24.82	21.70
MAXIMUM	59.54	58.78	74.44	60.86	52.90
MINIMUM	7.07	7.15	6.48	6.92	5.82

*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	0.70	0.01	0.09	1.09	7.78	4.08	2.75	0.15	0.63	0	0	1.42	18.70
1964	0.73	4.83	0	3.11	0	2.50	2.10	0.07	0.18	0	0.10	0	13.62
1965	0.82	2.46	8.65	0.60	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	1.40	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	3.50	3.45	5.83	0	0	0	0	0	0	16.70
1971	0.03	7.74	6.18	1.56	1.31	0.99	0.83	1.08	0	0	0	0	19.72
1972	0.10	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	0.20	0	0	0	0	0	19.89
1975	0.74	0.15	10.00	0	4.95	6.50	1.48	0	0	0	0	0.01	23.83
1976	0.19	0	0.08	0	6.99	2.05	0.70	0	0.15	0.15	0	7.59	17.90
1977	0	0.53	0.95	6.11	0.25	1.93	0	2.70	0	0	0.43	0	12.90
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	1.10	2.02	8.89	15.92	4.62	0.62	0.22	0	0	0	0.06	34.06
1981	0.02	0	2.10	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	5.40	0.21	0	0	1.08	0.60	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	17.30
1986	0.64	7.00	0.99	3.51	10.71	6.96	1.96	0	0	0	0	1.33	33.10
1987	0	1.92	0.50	2.58	2.23	3.50	0.11	0	0.02	0.02	0	0	10.88
1988	1.50	1.48	4.05	3.60	2.57	1.45	3.82	0	0.15	0	0	0	18.62
1989	0	1.24	4.40	0.74	3.92	0.90	0.25	0.18	0	0	0	0.10	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	2.10	3.50	18.30	0	0	0.18	0.01	0.01	0	24.43
1992	0.58	0.23	4.89	3.33	11.54	5.90	0.07	0.49	0	0.37	0	0	27.40
1993	1.43	0	6.91	14.02	11.59	6.44	0	0.17	0.64	0	0	0	41.20
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	0.90	1.81	1.22	29.05	2.17	12.30	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	18.80
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	3.40	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	4.70	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	8.60
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	6.00	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	5.40	8.39	0.04	1.21	0.21	0	0	0	35.99
2012	1.90	3.10	0.30	1.88	0.07	4.60	3.21	0	0	0.02	0.01	0.02	15.11
2013	0.06	3.50	3.86	2.07	0.28	1.22	0	0	0	0	0	0	10.99
2014	0.09	0.90	0.63	0	4.56	3.17	0.48	0.01	0	0	0.06	0	9.90
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	0.40	7.20	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	19.30
2021	0.01	0.19	1.69	3.99	0	1.29	0	0.02	0	0	0	0	7.19
AVG	0.75	2.40	3.53	5.24	5.42	3.91	1.41	0.34	0.05	0.02	0.03	0.29	23.40
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	0	0	0	0	0	0	0	0	0	0	0	7.19

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
2021	0	0.19	2.65	3.20	0.03	1.15	0	0	0	0	0	0	7.22
AVG	0.75	2.30	3.34	5.22	5.19	3.76	1.27	0.31	0.05	0.01	0.03	0.30	22.53
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

YEAR	JAN		FEB		MAR		APR		MAY		JUN		JUL		AUG		SEP		OCT		NOV		DEC		TOTAL		Avg. Rain	
	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.		
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	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	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	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	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	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	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	2	583	0	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	4	1044	5	1094	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	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	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	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	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	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	3	1323	52.35		
1996	0	0	0	0	6	1291	0	0	4	371	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	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	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	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	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	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	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	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	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	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	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	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																			