

Planned & Actual Water Production By Source (Acre-Feet)

Report Month:

December

Water Year: 2019

	Cachuma Project			Gibraltar Reservoir		Devil's Canyon	Mission Tunnel		Groundwater Production				Desalination		State Water		Net Overlap Water	Groundwater Recharge		Blend Water		Potable System Total		Recycled System		El Estero Process Usage		Water System Total		
	Plan	Act.	Balance	Plan	Act.	Actual	Plan	Act.	Plan	SU #1	Foot-hill Basin	Total Actual	SU#3 Actual	Plan	Act.	Plan	Act.	Act.	Injec.	Total Actual	Plan	Act.	Plan	Act.	Plan	Act.	Plan	Act.	Plan	Act.
2018 Oct	179	124	8,737	135	135	0	44	56	0	0	0	0	0	240	266	281	280	-13	0	0	17	0	862	848	84	65	15	22	961	936
Nov	384	230	8,436	0	125	0	44	58	0	0	0	0	0	240	276	68	126	-12	0	0	17	0	720	804	54	53	15	21	789	878
Dec	127	12	8,424	0	135	0	44	65	0	0	0	0	0	240	282	281	192	-11	0	0	17	0	675	675	37	25	15	27	728	727
2019 Jan	32			0			44		0					240		281				0	17		581		19		15		615	
Feb	79			0			44		0					240		254				0	17		600		20		15		635	
Mar	175			0			44		133					240		162				0	17		737		19		15		771	
Apr	259			0			44		133					240		143				0	17		802		48		15		864	
May	332			0			44		133					240		172				0	17		904		76		15		995	
Jun	319			0			44		133					240		174				0	17		893		98		15		1,006	
Jul	362			0			44		133					240		182				0	17		944		119		15		1,077	
Aug	411			0			44		133					240		182				0	17		993		113		15		1,120	
Sep	355			0			44		133					240		170				0	17		925		114		15		1,054	
Year to Date	690	366	8,424	135	396	0	133	178	0	0	0	0	0	720	824	630	598	-35	0	0	50	0	2,257	2,328	176	143	45	70	2,478	2,541
Annual Total	3,014			135			533		931					2,880		2,347					201		9,636		800		180		10,616	
Notes			*3										*6							*1	*5	*1	*2			*4				

A B C D E F G H I J K L M N O P Q R S T -U V -W X Y Z AA AB AC AD AE

- *1 Groundwater recharge & Blend Water not part of potable system use.
- *2 Based on 2013 potable system production of 13,765 AF with 30% conservation.
- *3 Cachuma Balance: Net of entitlement, carryover, spills, & transfers, per COMB
- *4 Effective 2011 WY, Net Production to Distribution System (Meter Distr. Flow - EEWTP process water).
- *5 Planned blend water assumes additional downtime for recycled system repairs.
- *6 Groundwater from Storage Unit #3 is non-potable water serving recycled water demands.

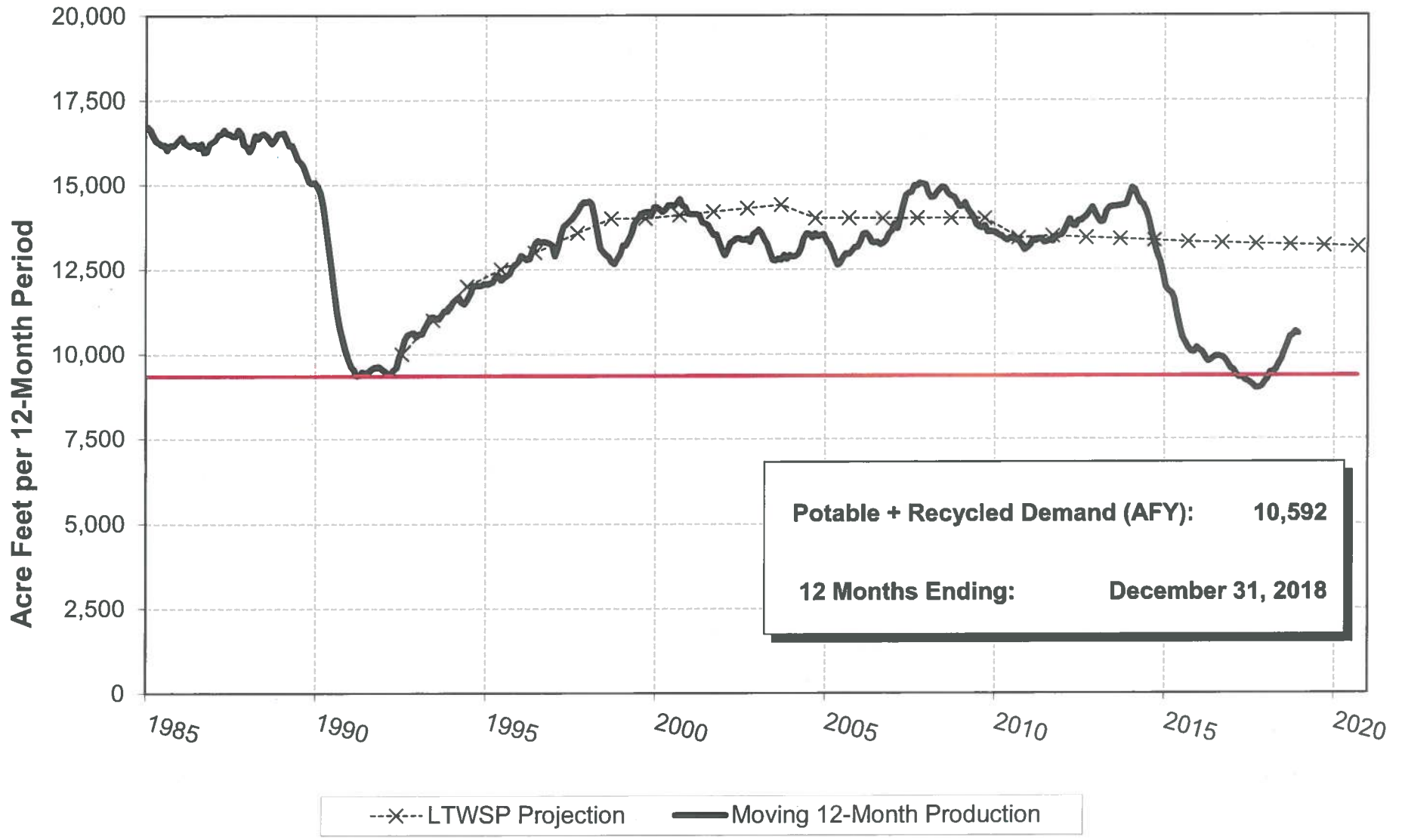
YTD Percent of Target:	103.1%	81.6%		102.5%
	Potable	Recycled		System

Potable System V = C+F+G+I+M+P+R+S-U-W

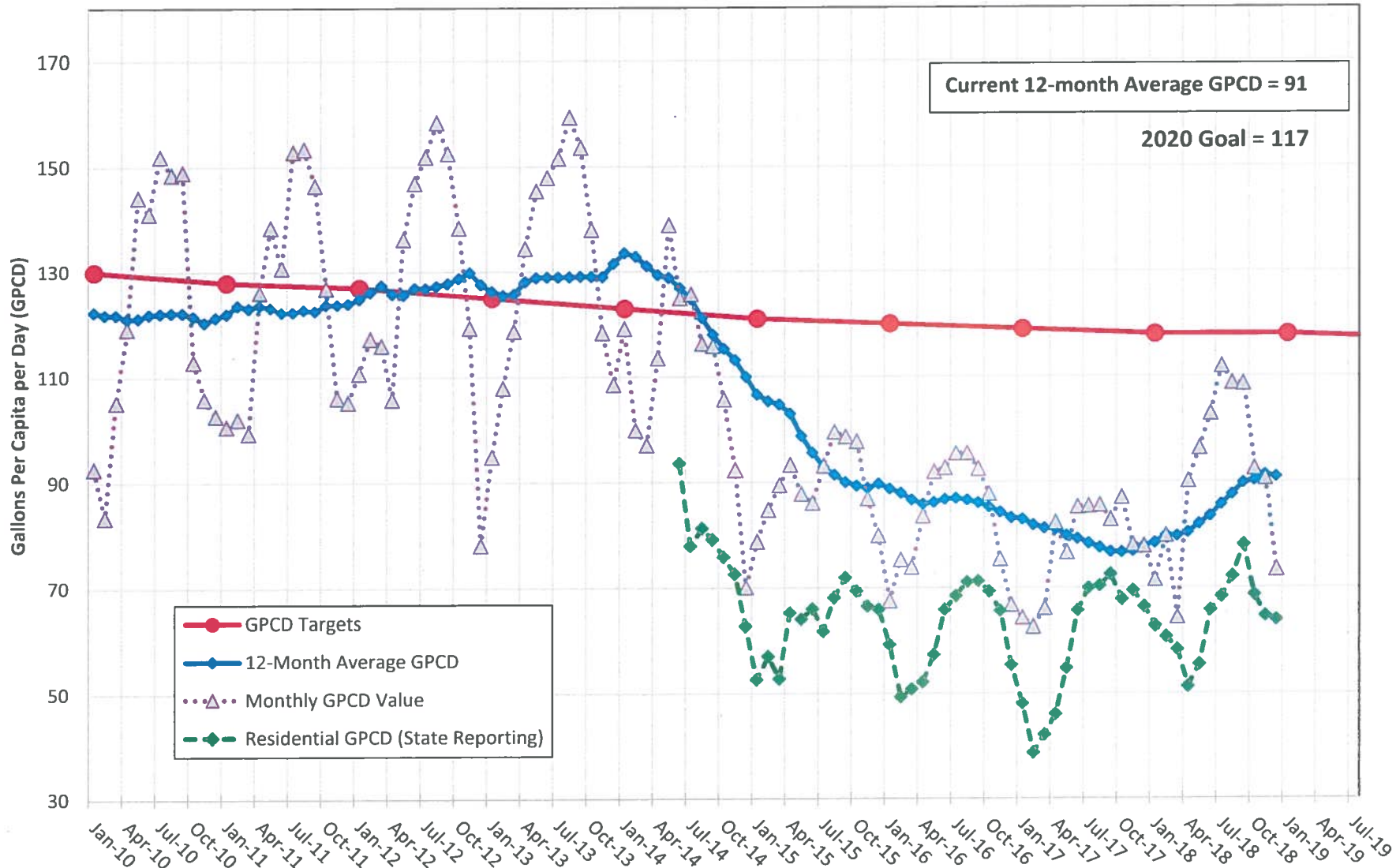
= Preliminary Data or Not Yet Available

City of Santa Barbara Water Demand

Moving 12-Month Production to Serve Potable + Recycled Systems



City of Santa Barbara Water Use in Gallons Per Capita per Day (GPCD) December 31, 2018

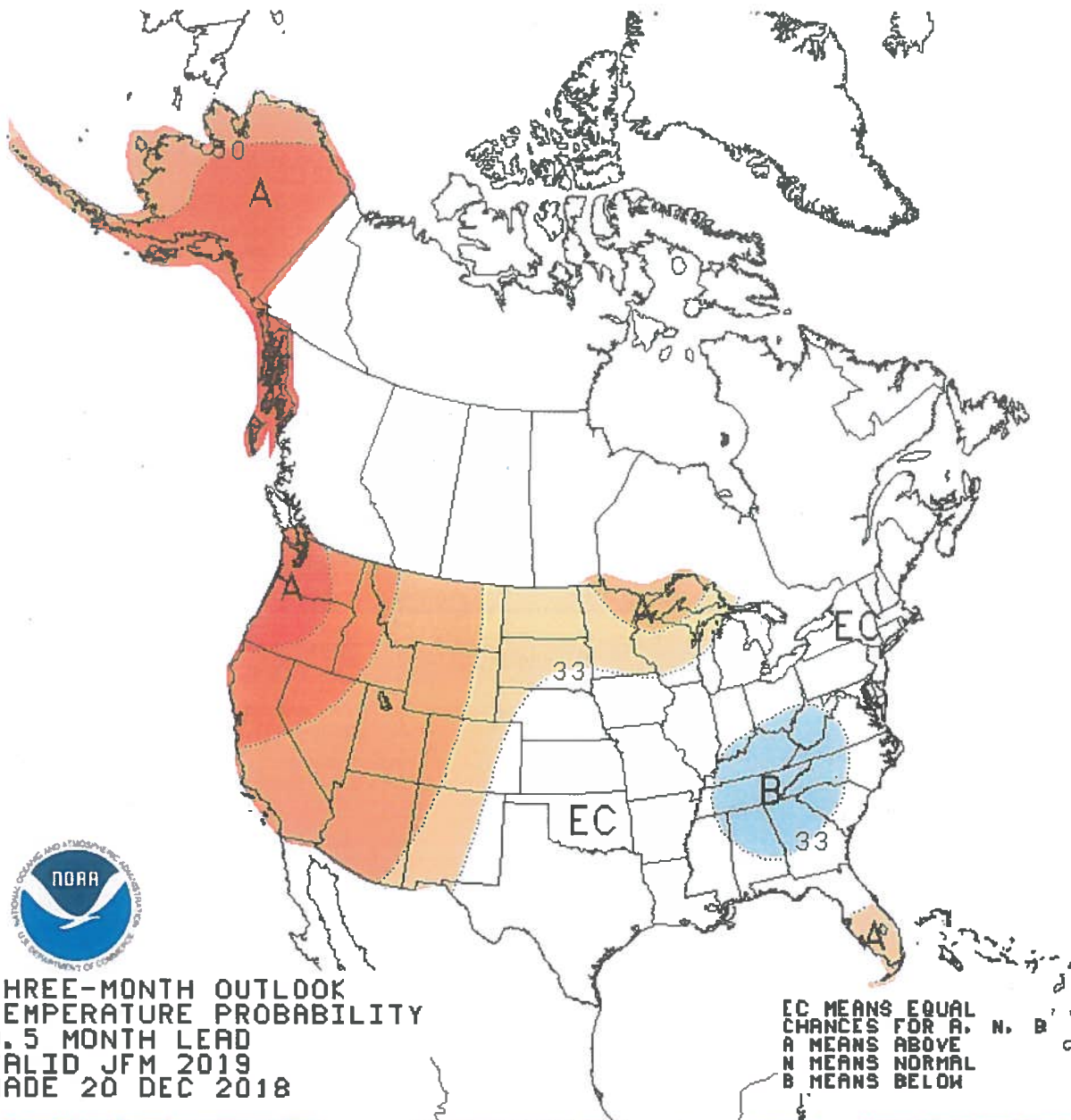


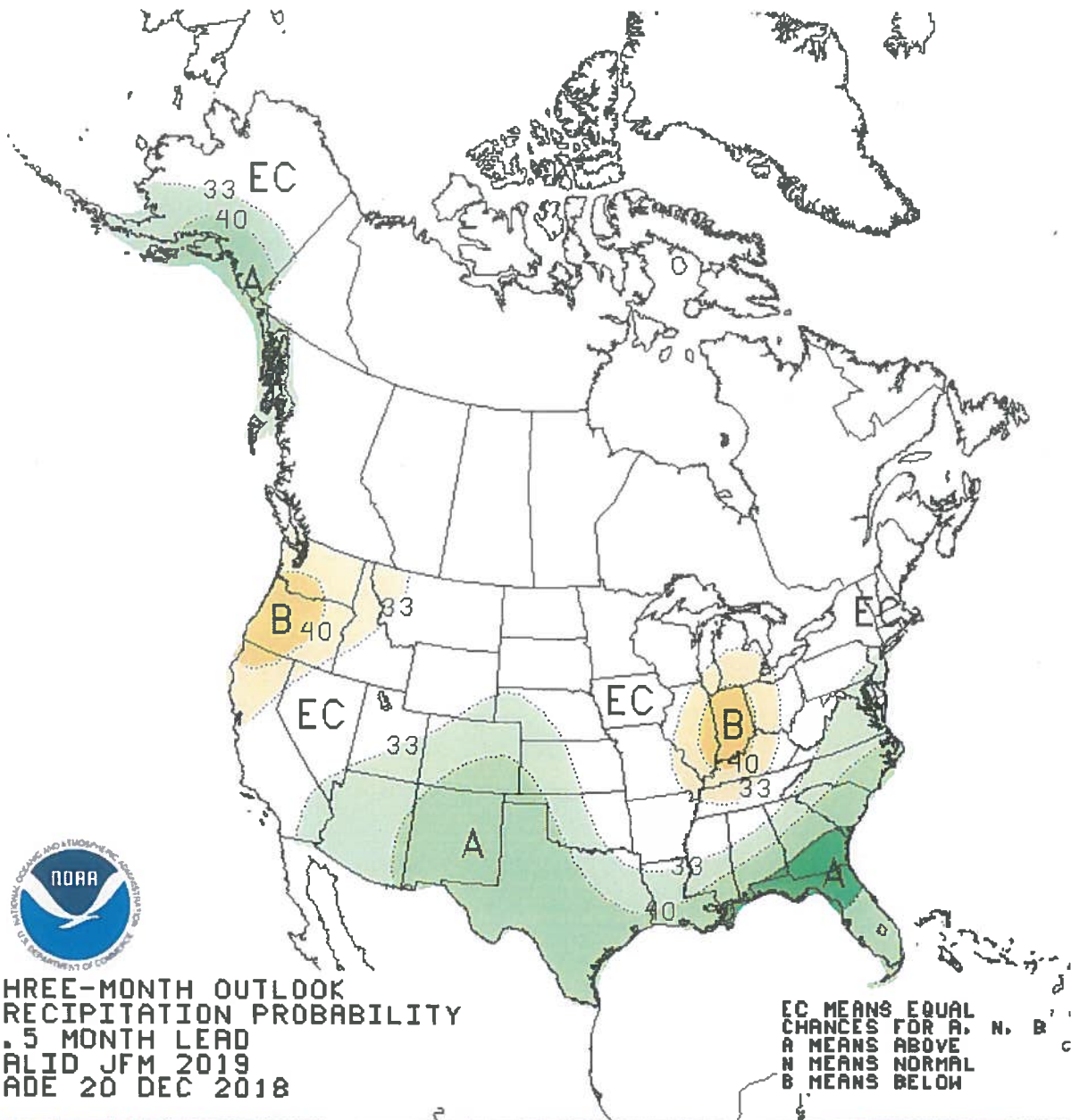
NOTE: The GPCD values above exclude blend water for recycled water production.

GIBRALTAR RAINFALL DATA

Gauge Location: Gibraltar Dam

Year	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Total
1968-69	1.19	1.07	2.22	31.18	18.23	1.67	2.81	0.00	0.00	0.00	0.00	0.00	58.37
1969-70	0.00	2.59	0.31	4.34	3.57	6.58	0.00	0.00	0.00	0.00	0.00	0.00	17.39
1970-71	0.08	9.38	8.87	1.10	1.64	0.00	0.94	0.47	0.00	0.00	0.00	0.00	22.48
1971-72	0.47	1.09	13.20	0.19	0.32	0.00	0.24	0.11	0.00	0.00	0.00	0.00	15.62
1972-73	0.55	9.10	1.06	8.38	14.89	4.27	0.00	0.00	0.00	0.00	0.00	0.00	38.25
1973-74	0.70	3.19	2.83	12.26	0.05	5.35	0.85	0.02	0.00	0.00	0.00	0.00	25.25
1974-75	0.89	0.06	9.53	0.35	5.62	8.96	2.13	0.08	0.00	0.00	0.01	0.00	27.63
1975-76	0.40	0.44	0.22	0.00	10.93	2.02	1.08	0.00	0.00	0.00	0.05	4.28	19.42
1976-77	0.25	0.44	0.83	5.42	0.26	2.89	0.00	5.19	0.00	0.00	0.38	0.00	15.66
1977-78	0.00	0.14	9.23	1.91	14.42	18.28	4.27	0.00	0.00	0.00	0.00	1.63	49.88
1978-79	0.00	2.76	2.51	8.49	6.08	7.26	0.00	0.00	0.00	0.00	0.00	1.01	28.11
1979-80	0.58	0.96	2.02	8.13	17.69	4.39	1.10	0.24	0.00	0.00	0.00	0.00	35.11
1980-81	0.00	0.00	1.74	6.17	2.99	9.98	1.05	0.00	0.00	0.00	0.00	0.00	21.93
1981-82	0.38	2.57	0.47	6.14	0.65	7.55	5.30	0.05	0.00	0.00	0.00	1.70	24.81
1982-83	1.30	7.87	5.61	15.07	8.47	15.11	8.86	0.00	0.00	0.00	0.79	0.59	63.67
1983-84	5.57	4.18	6.75	0.25	0.08	0.95	0.24	0.00	0.00	0.00	0.07	0.28	18.37
1984-85	0.49	3.52	7.94	0.96	1.24	1.92	0.13	0.00	0.00	0.00	0.00	0.05	16.25
1985-86	0.42	7.14	1.11	3.24	10.61	6.77	1.51	0.00	0.00	0.00	0.00	0.84	31.64
1986-87	0.00	0.96	0.42	2.71	2.04	4.58	0.00	0.00	0.00	0.00	0.00	0.00	10.71
1987-88	1.60	1.52	4.67	5.19	4.12	2.60	5.14	0.06	0.05	0.00	0.00	0.00	24.95
1988-89	0.00	1.04	5.73	0.29	5.38	1.43	0.13	0.46	0.00	0.00	0.00	0.25	14.71
1989-90	0.79	0.58	0.00	5.61	3.33	0.27	0.24	0.78	0.00	0.00	0.00	0.20	11.80
1990-91	0.00	0.26	0.18	1.71	4.88	23.12	0.03	0.00	0.06	0.38	0.00	0.00	30.62
1991-92	0.33	0.13	7.54	4.72	18.82	7.28	0.04	0.16	0.00	0.07	0.00	0.00	39.09
1992-93	1.78	0.00	8.17	14.30	16.43	8.12	0.00	0.34	0.47	0.00	0.00	0.00	49.61
1993-94	0.19	1.51	2.42	1.74	9.76	2.72	0.65	0.51	0.00	0.00	0.00	0.09	19.59
1994-95	2.19	1.29	1.54	33.26	3.39	15.30	0.33	1.64	0.02	0.00	0.00	0.00	58.96
1995-96	0.00	0.18	2.85	2.93	10.30	2.21	1.00	0.39	0.00	0.00	0.00	0.00	19.86
1996-97	7.05	1.89	7.81	7.45	0.13	0.00	0.00	0.00	0.00	0.04	0.00	0.09	24.46
1997-98	0.00	5.48	10.17	6.64	34.63	4.47	4.43	6.62	0.03	0.00	0.00	0.55	73.02
1998-99	0.13	1.30	0.79	4.25	2.24	4.55	2.97	0.00	0.13	0.24	0.00	0.03	16.63
1999-00	0.00	1.65	0.00	2.25	16.70	3.73	5.36	0.03	0.19	0.00	0.00	0.00	29.91
2000-01	4.04	0.00	0.15	11.24	8.85	13.59	2.96	0.01	0.00	0.01	0.00	0.00	40.85
2001-02	0.65	4.48	2.89	1.03	0.33	0.84	0.08	0.09	0.00	0.00	0.00	0.06	10.45
2002-03	0.00	4.61	6.45	0.12	5.26	4.43	4.97	2.82	0.00	0.06	0.00	0.00	28.72
2003-04	0.00	2.29	3.10	0.42	8.50	0.43	0.00	0.00	0.00	0.00	0.00	0.00	14.74
2004-05	8.39	0.46	17.37	21.54	15.65	3.58	1.14	1.46	0.00	0.00	0.00	0.14	69.73
2005-06	0.60	1.43	0.68	9.67	5.41	5.22	8.15	1.29	0.00	0.00	0.10	0.00	32.55
2006-07	0.37	0.23	1.63	2.62	3.40	0.16	0.81	0.00	0.00	0.00	0.02	0.85	10.09
2007-08	0.38	0.10	4.09	23.84	3.11	0.00	0.15	0.27	0.00	0.00	0.10	0.00	32.04
2008-09	0.06	2.22	4.07	1.00	7.95	0.90	0.35	0.01	0.09	0.00	0.00	0.00	16.65
2009-10	5.81	0.00	5.19	11.89	6.90	0.69	4.44	0.08	0.00	0.00	0.00	0.00	35.00
2010-11	2.03	2.04	14.04	2.06	5.12	14.95	0.00	1.18	0.51	0.00	0.00	0.00	41.93
2011-12	0.74	3.00	0.36	1.22	0.47	5.89	3.08	0.00	0.00	0.00	0.00	0.04	14.80
2012-13	0.34	2.60	2.68	1.39	0.24	1.02	0.00	0.61	0.00	0.00	0.00	0.00	8.88
2013-14	0.08	1.21	0.29	0.00	5.07	5.16	0.66	0.57	0.00	0.00	0.00	0.00	13.04
2014-15	0.00	1.21	7.88	0.87	0.73	0.60	0.36	0.62	0.98	0.00	0.00	0.16	13.41
2015-16	0.23	0.36	0.71	4.66	2.66	4.22	0.27	0.13	0.00	0.00	0.00	0.00	13.24
2016-17	1.20	1.26	3.10	11.51	14.23	1.24	0.21	0.45	0.00	0.00	0.02	0.23	33.45
2017-18	0.00	0.07	0.00	3.92	0.28	7.13	0.13	0.30	0.00	0.00	0.00	0.00	11.83
2018-19	0.18	4.82	0.94										5.94
	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Total
50 yr avg	1.02	2.11	4.04	6.31	6.88	5.09	1.57	0.54	0.05	0.02	0.03	0.26	27.90
50 yr median	0.38	1.30	2.76	4.09	5.10	4.25	0.51	0.08	0.00	0.00	0.00	0.00	24.64
Average YTD:	1.02	3.14	7.18										
Actual YTD:	0.18	5.00	5.94										

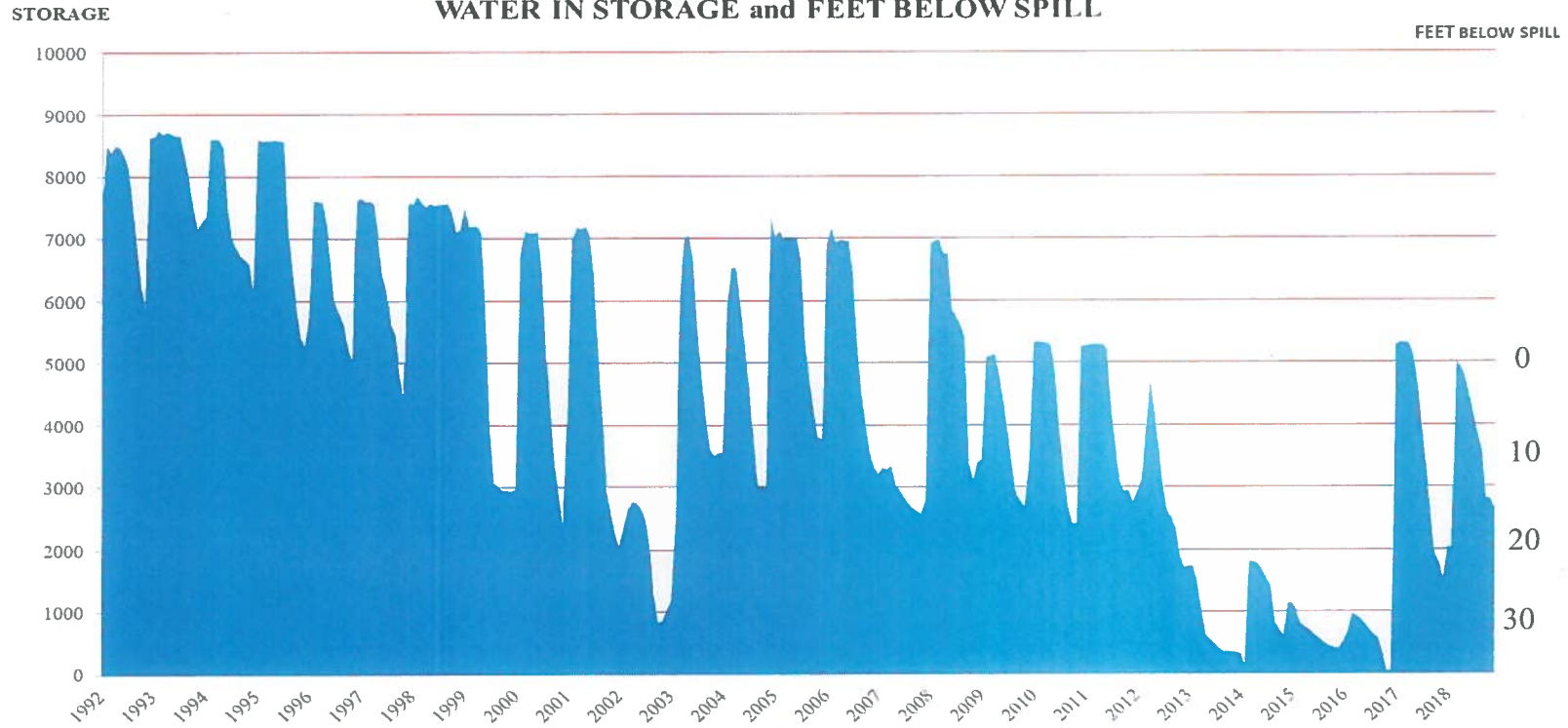




THREE-MONTH OUTLOOK
PRECIPITATION PROBABILITY
0.5 MONTH LEAD
VALID JFM 2019
MADE 20 DEC 2018



GIBRALTAR RESERVOIR HYDROGRAPH WATER IN STORAGE and FEET BELOW SPILL



<u>ELEV.</u>	<u>STATUS</u>	<u>CAPACITY (AF)</u>
1,400.00	Reservoir is Full	5,246
1,376.48	First 16" Intake Valve	1,156
1,361.82	Second 16" Intake Valve	0
1,300.00	Reservoir is Empty	0

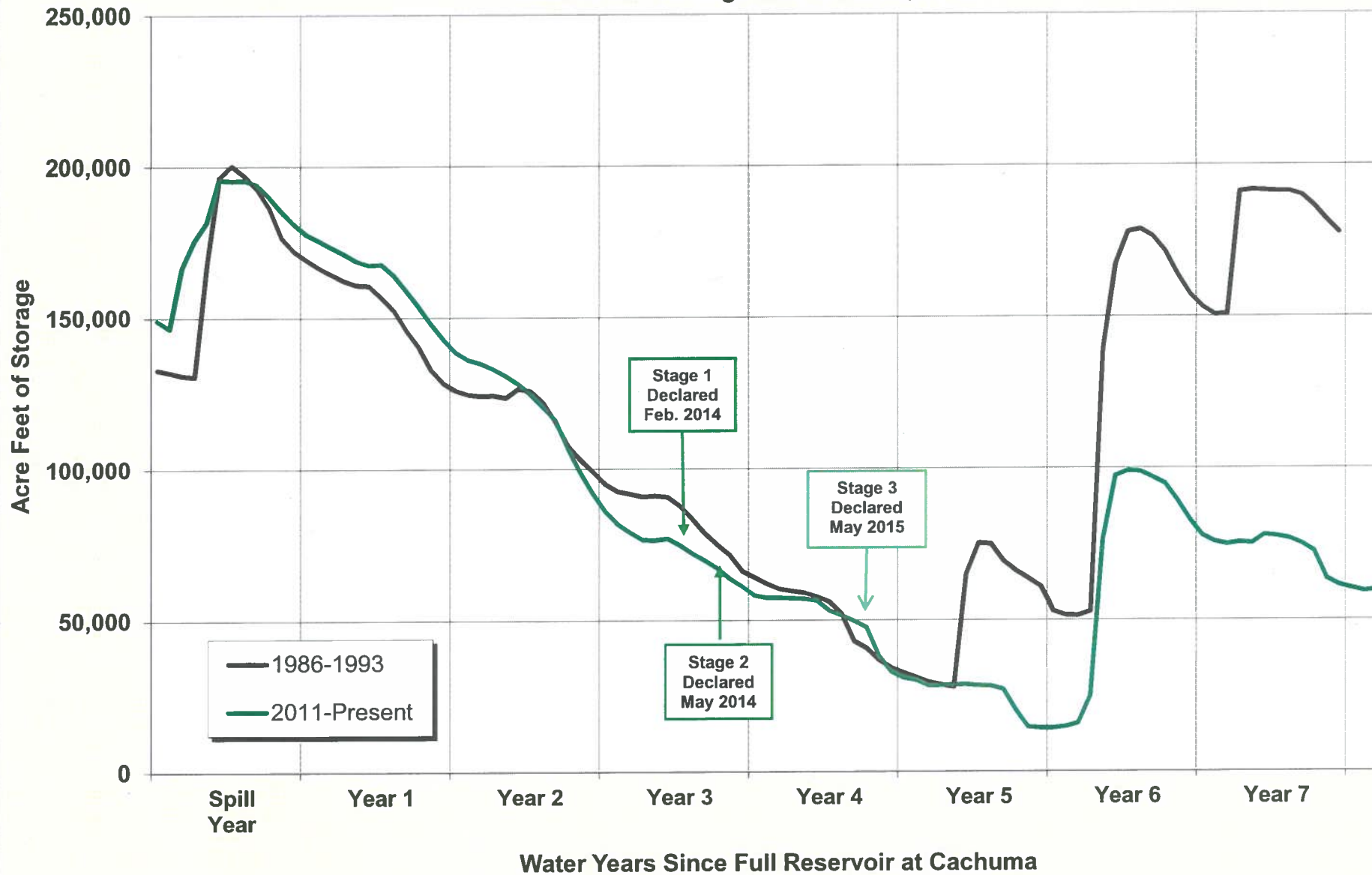
January 1993 - February 1996... Reflects use of M,N&S 1992 Gib. Area/Capacity Survey @ 8,618 AF
 February 1996 - October 1998... Reflects use of M,N&S 1996 Gib. Area/Capacity Survey @ 7,631 AF
 October 1998 - December 2001... Reflects use of M,N&S 1998 Gib. Area/Capacity Survey @ 7,261 AF
 January 2002 - December 2004... Reflects use of M,N&S 2001 Gib. Area/Capacity Survey @ 7,096 AF
 January 2005 - November 2007... Reflects use of M,N&S 2004 Gib. Area/Capacity Survey @ 7,085 AF
 December 2007 - July 2008... Reflects use of M,N&S 2007 Gib. Area/Capacity Survey @ 6,784 AF
 August 2008 - May 2010... Reflects use of MN&S 2008 Gib. Area/Capacity Survey @ 5,303 AF
 June 2010 - September 2013... Reflects use of MN&S 2010 Gib. Area/Capacity Survey @ 5,251 AF
 October 2013 - September 2016... Reflects use of MN&S 2013 Gib. Area/Capacity Survey @ 5,246 AF
 October 2016 to September 2017... Reflects use of MNS 2016 Gib. Area/Capacity Survey @ 5,272 AF
 October 2017 to September 2018... Reflects use of MNS 2017 Gib. Area/Capacity Survey @ 4,968 AF
 October 2018 to present... Reflects use of MNS 2018 Gib. Area/Capacity Survey @ 4,314 AF

TIME & DATE OF SPILL SINCE 1989

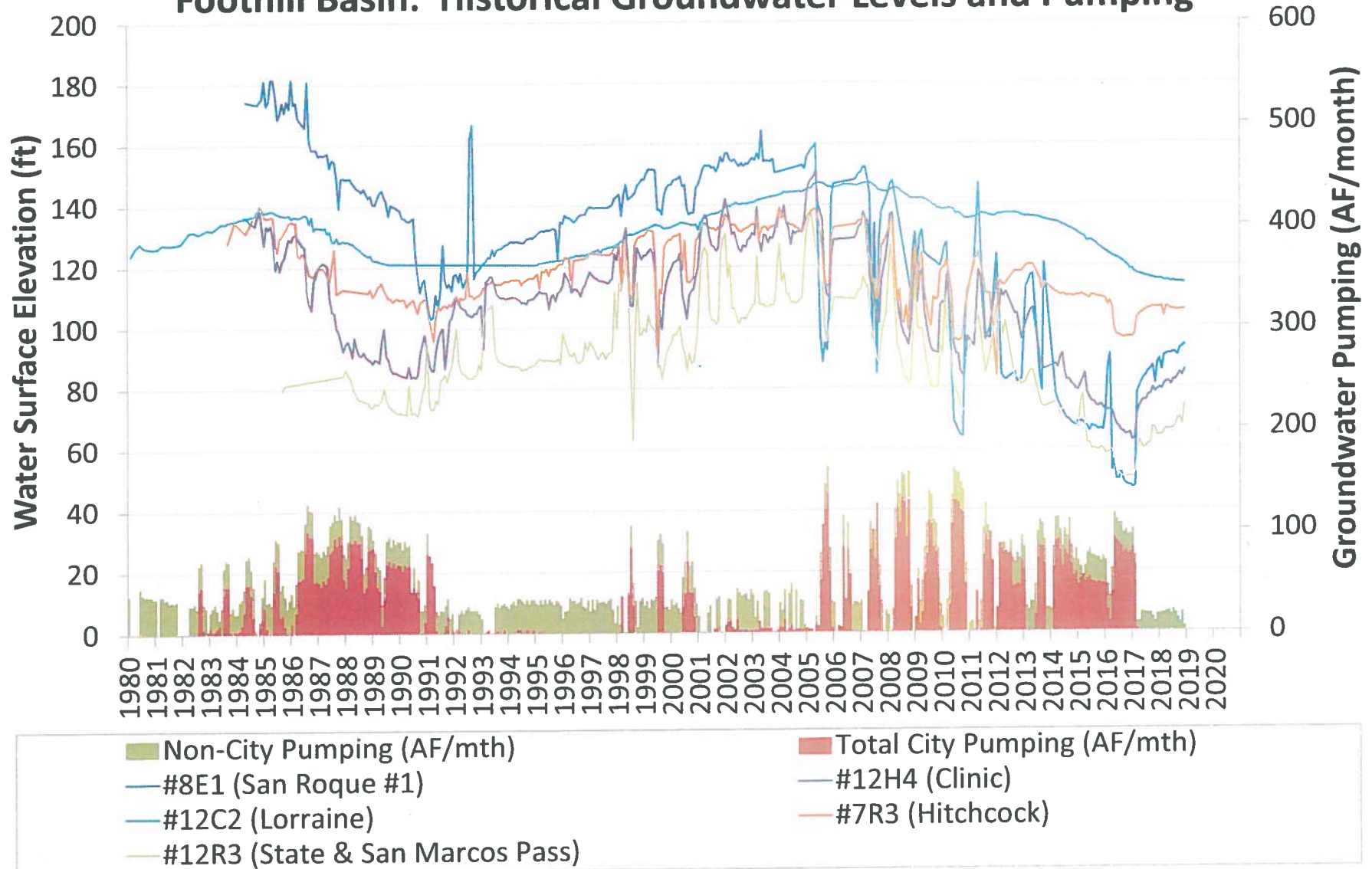
4:30 Am	March 19, 1991
9:09 Am	February 7, 1992
10:30 Am	January 7, 1993
6:45 Am	February 18, 1994
1:37 Pm	January 9, 1995
2:10 Pm	February 20, 1996
6:00 Am	December 22, 1996
3:00 Am	January 2, 1997
1:30 Pm	January 15, 1997
9:40 Am	December 6, 1997
4:30 Pm	February 6, 1999
8:00 Am	February 24, 2000
1:00 Am	February 15, 2001
1:30 Pm	April 14, 2003
5:00 Pm	December 29, 2004
8:30 Pm	January 2, 2006
1:00 Am	January 5, 2008
7:00 Pm	February 16, 2009
12:00 Noon	January 20, 2010
07:00 Am	December 20, 2010
01:00 Am	January 24, 2017
07:30 Am	March 29, 2018

Cachuma Storage: Current Drought & 1986-93 Period

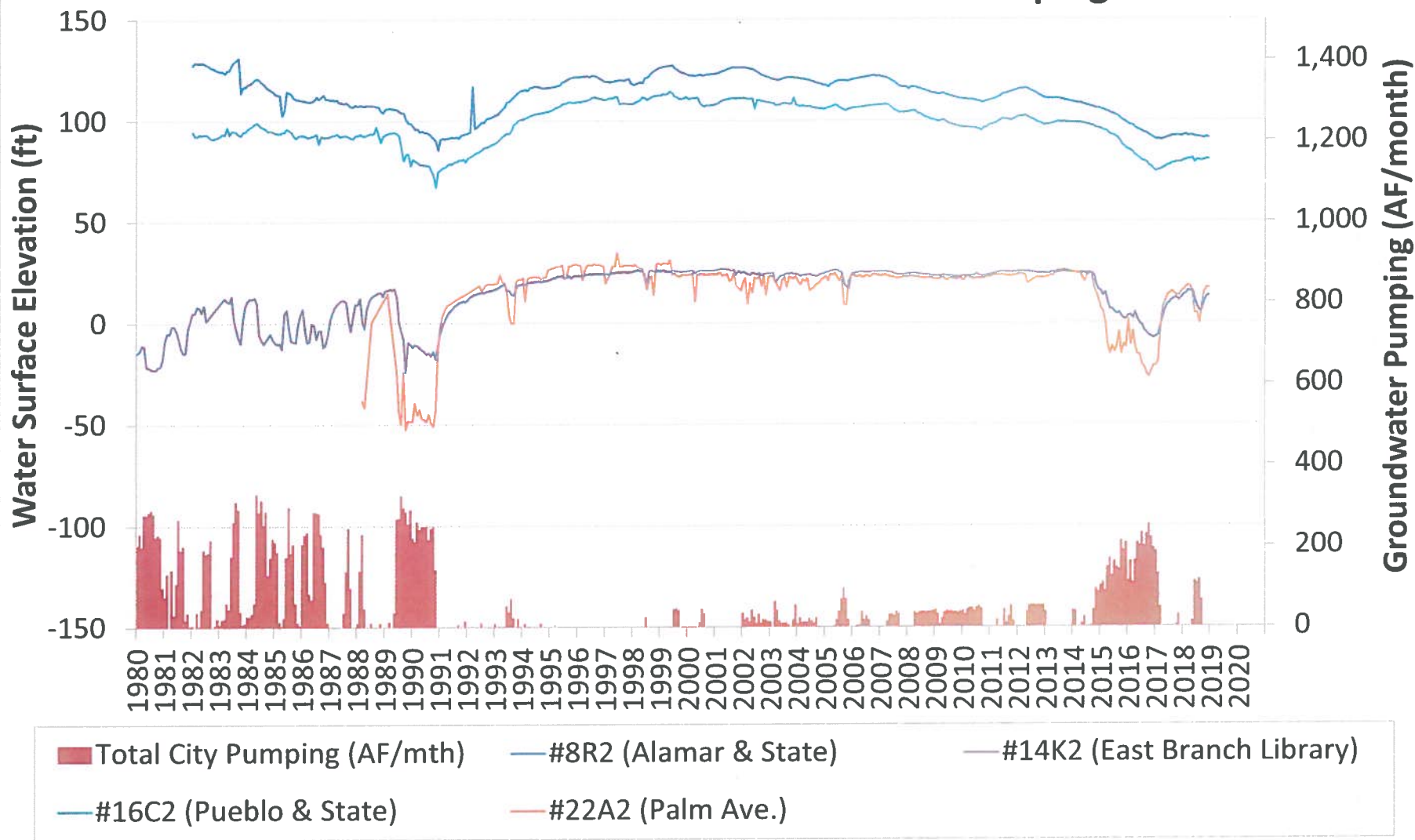
Data Shown Through December 31, 2018



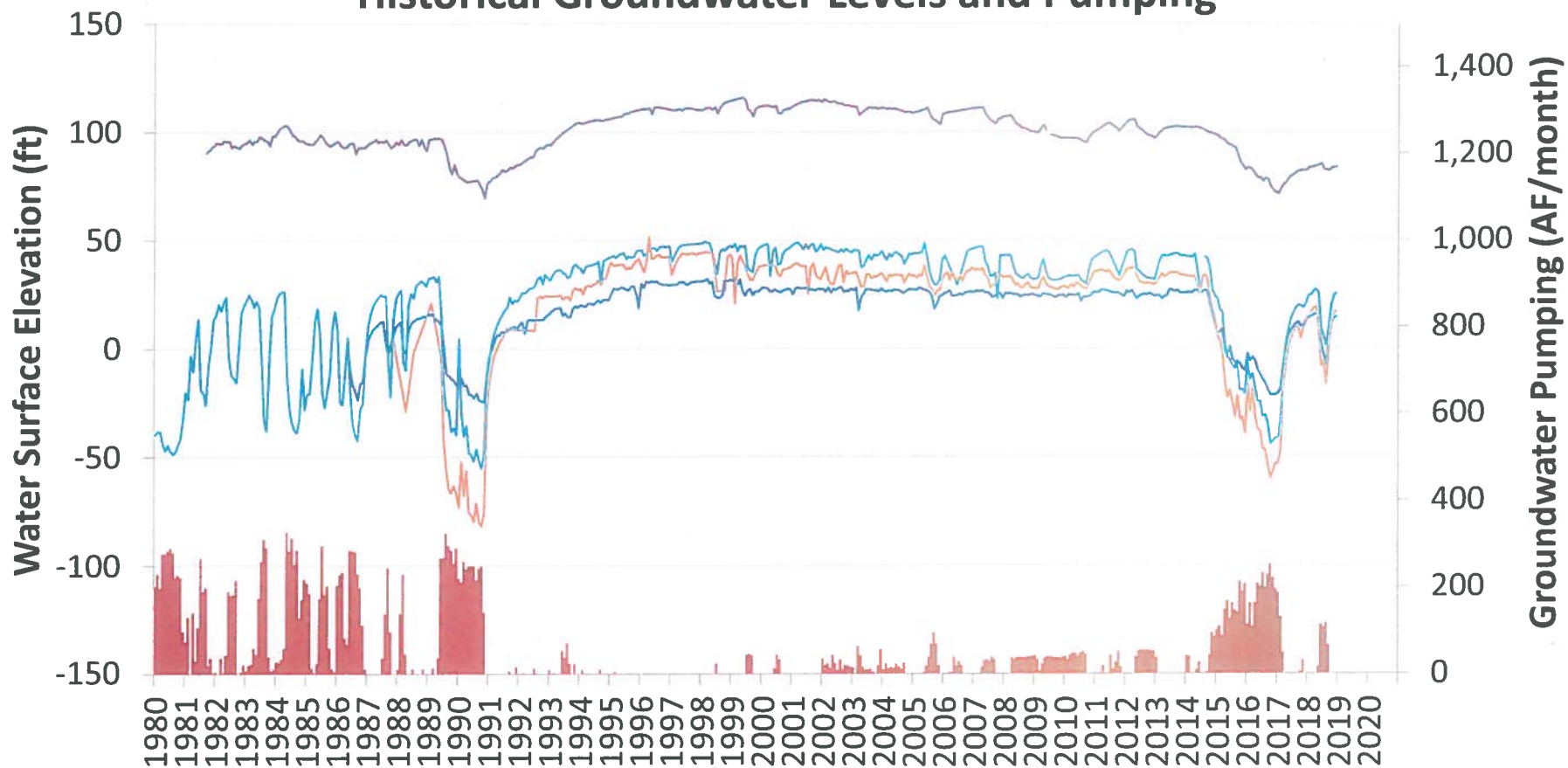
Foothill Basin: Historical Groundwater Levels and Pumping



Storage Unit #1, Upper Producing Zone: Historical Groundwater Levels and Pumping



Storage Unit #1, Lower Producing Zone: Historical Groundwater Levels and Pumping



■ Total City Pumping (AF/mth)

— #16C1 (Pueblo & State)

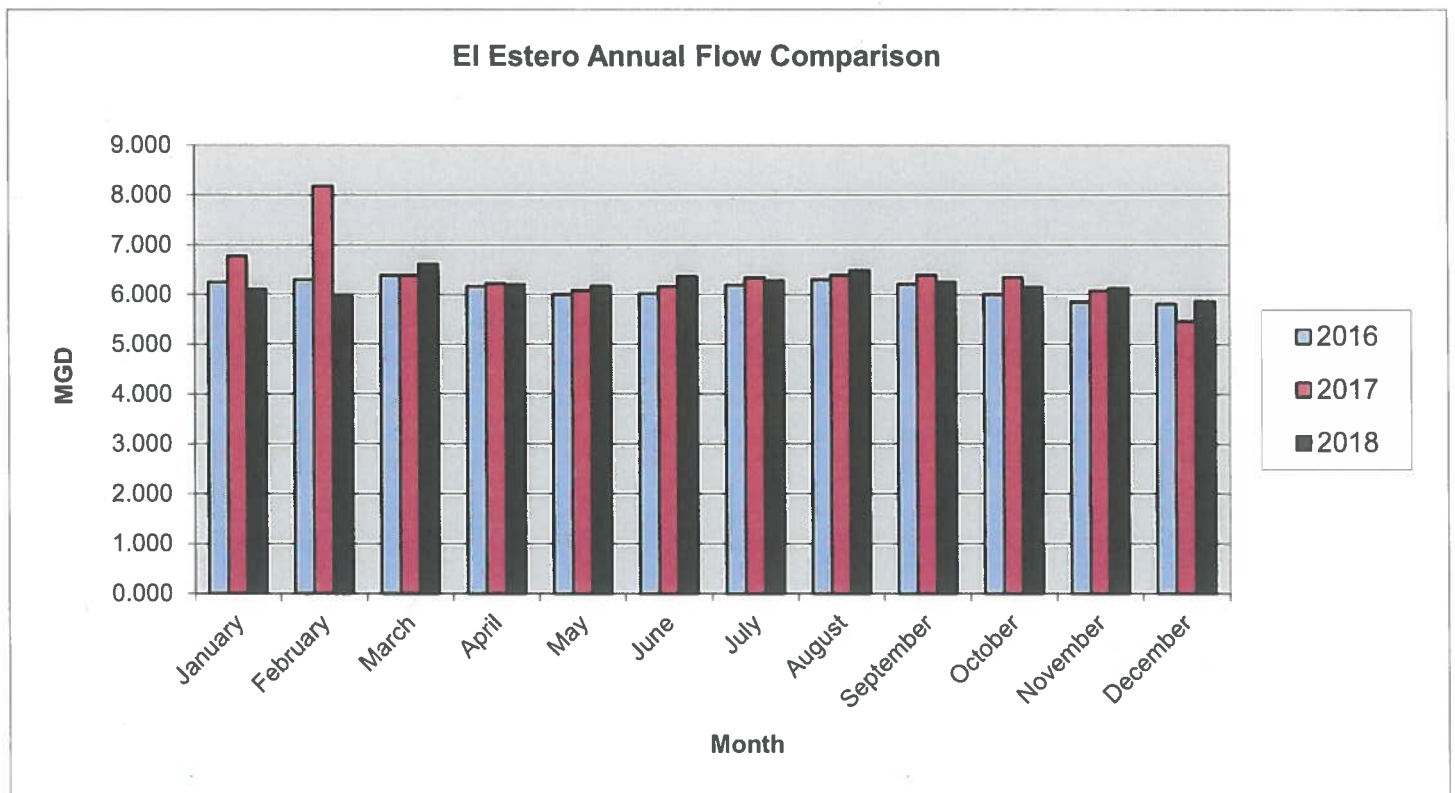
— #22A4 (Palm Avenue)

— #23E5 (El Estero WWTP)

— #16R1 (Spencer Adams Parking Lot)

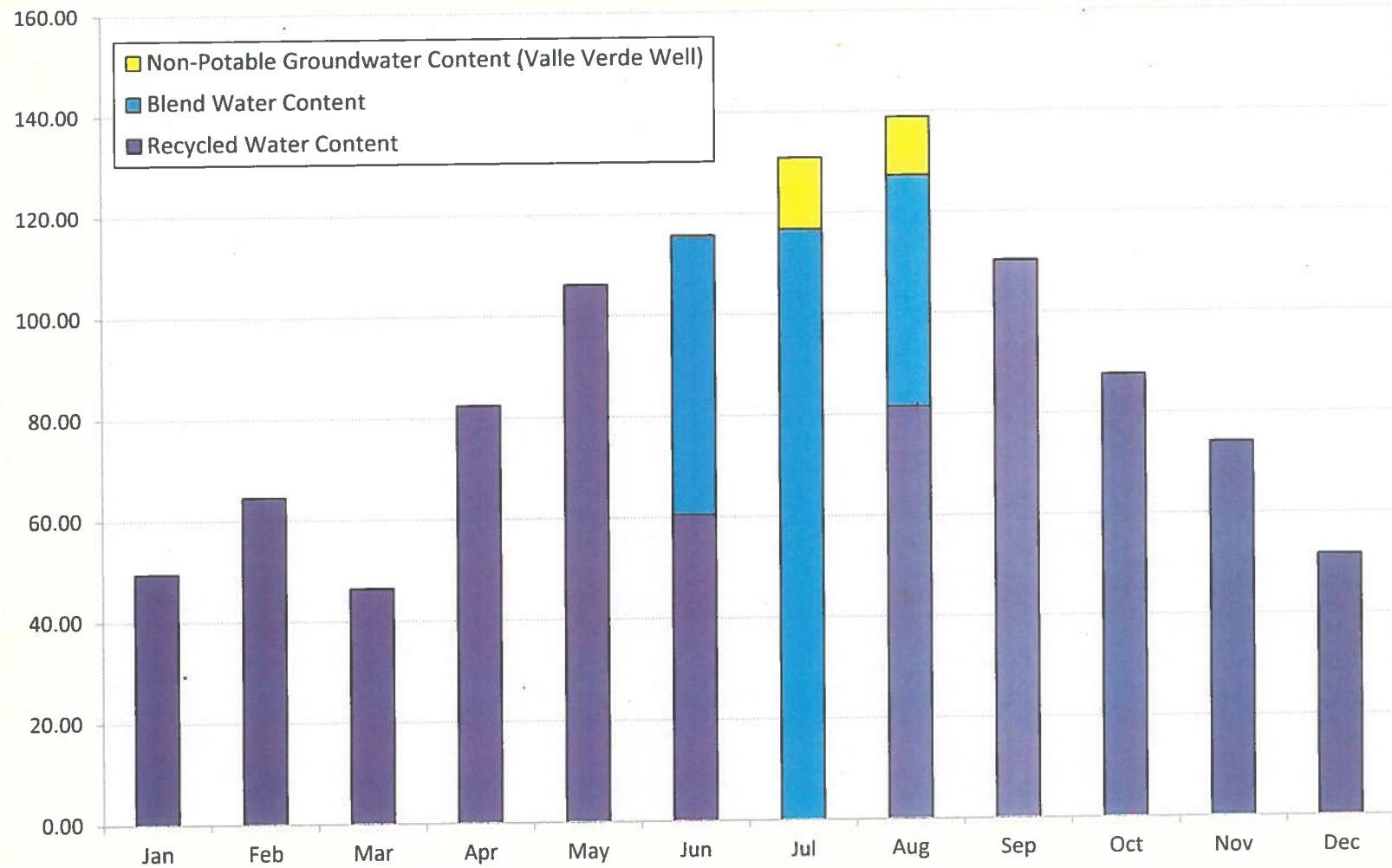
EL ESTERO INFLUENT FLOW COMPARISON

	2016	2017	2018
January	6.245	6.777	6.106
February	6.298	8.177	5.987
March	6.380	6.382	6.605
April	6.164	6.224	6.203
May	5.999	6.080	6.168
June	6.020	6.162	6.365
July	6.189	6.338	6.277
August	6.301	6.389	6.482
September	6.205	6.390	6.247
October	6.005	6.341	6.153
November	5.843	6.071	6.123
December	5.806	5.464	5.863



Annual Flow is Calculated Adjusted Influent Flow

Recycled Production by Source of Supply for 2018 (Acre-Feet)





City of Santa Barbara
Public Works Department

Interoffice Memorandum

DATE: January 14, 2019
TO: Water Commission
FROM: Joshua Haggmark, Water Resources Manager
SUBJECT: Water Supply Update

Following is the status of implementation of Pass Through Operations under the 1989 Upper Santa Ynez River Operations Agreement ("Pass Through Agreement"). There have been no significant changes since the last update, which is provided below.

Reclamation's Environmental Assessment and Finding of No Significant Impact

City staff presented Reclamation with responses to their remaining technical questions. City staff continues to wait for a response from the Area Manager regarding remaining issues on Reclamation's EA.

Warren Act Contract

In parallel with the above, negotiations continue on suitable language for the Warren Act contract. Staff is working to ensure that Reclamation's standard template is modified as necessary to reflect the unique provisions of the Pass Through Agreement. The effort also includes consideration of Warren Act requirements associated with the conveyance of Gibraltar water through Cachuma Project facilities, specifically Lauro Reservoir. Staff met with Reclamation on June 6, 2018 to clarify the City's water rights as they relate to the draft contract. Staff met with Reclamation again on September 6, 2018 to further develop suitable Warren Act contract language and to further clarify the City's water rights.

cc: Kelley Dyer, Water Supply Manager

DC/