

Estimated Water Availability

July 2017

Units in acre-feet per year (afy)

1. Maximum Demand	679
2. Demand Management ¹ [Line 1 x 10%]	68
3. Adjusted Maximum Demand [Line 1 - Line 2]	611
4. Range of Firm Yield Supply [Kimball Reservoir + NBA]	1057 - 1288
5. Range of Unused Supply [Line 4 – Line 3]	446 - 677
6. Growth Management, Standby and Other Allocations	231
Range of Available Supply [Line 5 – Line 6]	215 - 446 afy

Notes:

1. Calistoga's average annual water demand over the last five years (2012–2016) as measured by the Napa and Kimball meters.
2. Assumes 10% reduction through voluntary conservation during a below normal year².
3. Maximum demand minus demand management.
4. Firm yield for a below normal year based upon 90% reliability which is an accepted methodology by the State Department of Water Resources.
 - a. Kimball Reservoir supply is 328 afy³. With adoption of the Kimball Interim Bypass Plan (2011), Kimball Reservoir's supply yield is reduced by 41 afy⁴ to 287 afy.
 - b. The North Bay Aqueduct (NBA) sources include 500 afy of original NBA, 925 afy of Kern County water, and 500 afy of American Canyon-purchased water for a total of 1,925 afy. A firm yield of 52% delivery can be expected⁵ which equals a firm yield of 1,001 afy.
 - c. Alternately, the average NBA water allocation from the State Water Project for the past 10 years has been 47% (905 afy). The average NBA water allocation from the State Water Project for the past five years has been 40% (770 afy)
5. Estimated current supply available before standby and other obligations are subtracted.

6. Growth Management, Standby and Other Allocations (rounded) ⁶	
Standby (customers with meter but no use)	30.28
Paid Allocations and Development Agreements	112.38
Bottling Works Unused Obligation	86.28
Growth Management Allocations	<u>2.14</u>
Total	231.08

¹ Below normal year yields assumed

² Water Facilities Plan, Section 3.7.1, Summit Engineering, May 2000

³ Per Dec 2013 reservoir survey

⁴ Kimball Interim Bypass Plan, Appendix 34

⁵ Water Facilities Plan, Section 2.2.4, Summit Engineering, May 2000

⁶ From Attachment 3

Estimated Wastewater Treatment Capacity

July 2017

Units in millions of gallons per day (mgd) and acre-feet per year (afy)

1.	Permitted Treatment Plant Capacity	0.84 mgd
2.	Average Dry Weather Flow	0.45 mgd
3.	Excess Capacity [Line 1 – Line 2]	0.39 mgd
4.	Excess Capacity in acre feet [Line 3 x 1,120]	436.8 afy
5.	Growth Management, Standby and Other Allocations	228.1 afy
6.	Capacity Buffer [Line 4 x 10%]	43.7 afy
7.	Total Reserved [Line 5 + Line 6]	271.8 afy
	Available Treatment Capacity [Line 4 – Line 7]	165.1 afy

Notes:

1. Treatment plant permit rated capacity (average dry weather flow).
2. Average Dry Weather Flow over the last five years (2012-2016), based on metered influent flows to the WWTP between July through September.
3. Excess capacity available
4. Excess capacity converted to acre-feet per year.
5. Growth Management, Standby and Other Allocations (rounded)¹:

Standby	18.0 afy
Paid Allocations and Development Agreements	118.1 afy
Bottling Works Unused Obligation	90.9 afy
Growth Management Allocations	<u>1.1 afy</u>
Total	228.1 afy
6. Capacity Buffer is 10% of the excess available capacity before standby and other obligations are deducted.
7. Estimated total reserved is the combined total of the standby and other obligations plus a 10% capacity buffer.

¹ From Attachment 3

Potential Water Usage and Wastewater Generation

July 2017

Potential Water Usage

Standby (customers with meter but no use)		30.280
Paid Allocations and Development Agreements		112.382
Calistoga Hills Development Agreement	50.000	
Silver Rose Development Agreement	42.040	
Calistoga Senior Apartments	11.460	
Boys & Girls Club	3.210	
Lawer Event Center	2.520	
Francis House B&B	.938	
Wappo Guest Accommodations	.930	
1706 Foothill SFD	.428	
3000 W. Money SFD	.428	
3005 W. Money SFD	.428	
Bottling Works Unused Obligation		86.280
Calistoga Mineral 70.0 baseline – 2.50 (5-yr. average)		
Crystal Geysers 23.3 baseline – 4.52 (5-yr. average)		
Growth Management Allocations (approved projects)		2.140
1801 Michael Way SFD	.428	
1805 Michael Way SFD	.428	
3001 W. Money SFD	.428	
3004 W. Money SFD	.428	
2016 Grant Street (vacant parcel)	.428	
	Total	231.082 acre-feet/year

Potential Wastewater Generation

Standby		18.000
Paid Allocations and Development Agreements		118.086
Calistoga Hills Development Agreement	60.000	
Silver Rose Development Agreement	45.650	
Calistoga Senior Apartments	6.390	
Boys & Girls Club	2.790	
Lawer Event Center	1.470	
Francis House B&B	.674	
Wappo Guest Accommodations	.440	
1706 Foothill SFD	.224	
3000 W. Money SFD	.224	
3005 W. Money SFD	.224	
Bottling Works Unused Obligation		90.910
Calistoga Mineral 95.0 (baseline) – 4.09 (5-yr. average)		
Growth Management Allocations (approved projects)		1.120
1801 Michael Way SFD	.224	
1805 Michael Way SFD	.224	
3001 W. Money SFD	.224	
3004 W. Money SFD	.224	
2016 Grant Street (vacant parcel)	.224	
	Total	228.100 acre-feet/year