

## Estimated Water Availability

December 2014

Units in acre-feet per year (afy)

1.	Maximum Demand	716.0
2.	Demand Management <sup>1</sup> [ Line 1 x 10% ]	71.6
3.	Adjusted Maximum Demand [ Line 1 - Line 2 ]	644.4
4.	Range of Firm Yield Supply [ Kimball Reservoir + NBA ]	1128.5 to 1319.1
5.	Range of Unused Supply [ Line 4 – Line 3 ]	484.1 to 674.7
6.	Growth Management, Standby and Other Allocations	233.94
7.	<b>Range of Available Supply [ Line 5 – Line 6 ]</b>	<b>250.16 to 440.76 afy</b>

### Notes:

1. Calistoga's existing water demand over the last five years (2010–2014) as measured by the Napa and Kimball meters.
2. Assumes 10% reduction through voluntary conservation during a below normal year<sup>2</sup>.
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..
  - Kimball Reservoir supply is 336 afy<sup>3</sup>. With adoption of the Kimball Interim Bypass Plan (2011), Kimball Reservoir's supply yield is reduced by 41 afy<sup>4</sup>, to 295 afy.
  - 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 expected<sup>5</sup> which equals a firm yield of 1,001 afy.
  - Alternately, the average NBA water allocation from the State Water Project for the past ten years has been 53.2% (almost identical to the 52% contained in the May 2000 Summit engineering Report) and equates to 1024.1 afy. Using the average NBA water allocation from the State Water Project for the past five years has been 43.3% and equates to 833.5 afy.
5. Estimated current supply available before standby and other obligations are subtracted.
6. Growth Management, Standby and Other Allocations (rounded)<sup>6</sup>

Standby (customers with meter but no use)	30.3
Paid Allocations and Development Agreements	117.4
Bottling Works Unused Obligation	83.8
Growth Management Allocations	<u>2.5</u>
Total	233.9
7. Estimated remaining water supply available for use in 2015.

<sup>1</sup> Below normal year yields assumed

<sup>2</sup> Water Facilities Plan, Section 3.7.1, Summit Engineering, May 2000

<sup>3</sup> Water Facilities Plan, Section 2.2.3, Summit Engineering, May 2000

<sup>4</sup> Kimball Interim Bypass Plan, Appendix 34

<sup>5</sup> Water Facilities Plan, Section 2.2.4, Summit Engineering, May 2000

<sup>6</sup> From Attachment 3

## Estimated Wastewater Treatment Capacity

December 2014

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	0.47 mgd
3.	Excess Capacity [ Line 1 – Line 2 ]	0.37 mgd
4.	Excess Capacity in acre feet [ Line 3 x 1,120 ]	414.4 afy
5.	Growth Management, Standby and Other Allocations	232.5 afy
6.	Capacity Buffer [ Line 4 x 10% ]	41.4 afy
7.	Total Reserved [ Line 5 + Line 6 ]	273.9 afy
8.	<b>Available Treatment Capacity [ Line 4 – Line 7 ]</b>	<b>140.5 afy</b>

### Notes:

1. Treatment plant permit rated capacity (average dry weather flow).
2. Average Dry Weather Flow over the last five years (2010-2014), 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)<sup>1</sup>:
 

Standby	18.0 afy
Paid Allocations and Development Agreements	123.8 afy
Bottling Works Unused Obligation	89.5 afy
Growth Management Allocations	<u>1.2 afy</u>
Total	232.5 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.
8. Estimated remaining wastewater treatment capacity available for use.

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<sup>1</sup> From Attachment 3

**Potential Water Usage and Wastewater Generation**

December 2014

**Potential Water Usage**

Standby (customers with meter but no use)		30.280
Paid Allocations and Development Agreements		117.356
Calistoga Hills Development Agreement	50.000	
Silver Rose Development Agreement	42.040	
Indian Springs Expansion Development Agreement	10.29	
Calistoga Family Apartments	7.668	
Oak Villa	2.520	
Brian Arden Winery	1.130	
Solage Spa Expansion	.243	
Puerto Vallarta Market	.783	
Lava Vine Winery	.160	
509-A Washington Street SFD	.382	
1711 Emerald SFD	.428	
1739 Emerald SFD	.428	
1809 Michael Way SFD	.428	
1813 Michael Way SFD	.428	
1706 Myrtle SFD	.428	
Bottling Works Unused Obligation		83.760
Calistoga Mineral 70.0 baseline – 4.28 (5-yr. average)		
Crystal Geyser 23.3 baseline – 5.26 (5-yr. average)		
Growth Management Allocations		2.544
1801 Michael Way SFD	.593	
1805 Michael Way SFD	.593	
Wappo Guest Accommodations	.930	
957 Petrified Forest Road SFD	.428	
	<b>Total</b>	<b>233.94 acre-feet/year</b>

**Potential Wastewater Generation**

Standby		18.000
Paid Allocations and Development Agreements		123.846
Calistoga Hills Development Agreement	60.000	
Indian Springs Expansion Development Agreement	2.25	
Silver Rose Development Agreement	45.650	
Calistoga Family Apartments	11.220	
Oak Villa	1.470	
Brian Arden Winery	1.130	
Puerto Vallarta Market	.574	
Solage Spa expansion	.219	
509-A Washington Street SFD	.213	
1809 Michael Way SFD	.224	
1813 Michael Way SFD	.224	
1706 Myrtle SFD	.224	
1739 Emerald SFD	.224	
1711 Emerald SFD	.224	
Bottling Works Unused Obligation		89.500
Calistoga Mineral 95.0 (baseline) – 5.5 (5-yr. average)		
Growth Management Allocations		1.180
Wappo Guest Accommodations	.440	
1801 Michael Way SFD	.370	
1805 Michael Way SFD	.370	
	<b>Total</b>	<b>232.526 acre-feet/year</b>