



June 22, 2016, Self-Certification Supporting Analysis and Documentation

The State Water Resources Control Board on May 18, 2016 adopted a statewide water conservation approach that replaces the prior percentage reduction-based water conservation standard with a localized “stress test” approach that mandates urban water suppliers act now to ensure at least a three year supply of water to their customers under drought conditions. These standards require local water agencies to ensure a three-year supply assuming three more dry years like the ones the state experienced from 2012 to 2015. Water agencies that would face shortages under three additional dry years will be required to meet a conservation standard equal to the amount of shortage. For example, if a water agency projects it would have a 10 percent supply shortfall, that agency’s mandatory conservation standard would be 10 percent.

Santa Monica passes this stress test, and determines it has sufficient supplies to meet the City’s needs over the next three years, by virtue of having local supplies available in combination with imported supplies from its water wholesaler, Metropolitan Water District (MWD). MWD has certified it has sufficient supplies for its member agencies to meet the stress test requirement for the next three years. The calculation supporting this Water Supply Assessment is provided in Table 1, followed by supporting documentation.

Table 1 – Water Supply Assessment			
Total Potable Use Demand			
Potable Water Production in 2013	14,078 AF		
Potable Water Production in 2014	13,987 AF		
Total Potable Water Demand, average of two years = (14,078+13,987)/2	14,033 AF		
Total Potable Water Supply			
Potable Water Supply	2017	2018	2019
Local Groundwater	9,000 AF	9,000 AF	9,000 AF
Imported Water	5,033 AF	5,033 AF	5,033 AF
Total Potable Water Supply	14,033 AF	14,033 AF	14,033 AF
Calculate Conservation Standard			
Total Potable Water Demand	14,033 AF		
Total Potable Water Supply	14,033 AF		
Shortfall (Demand –Supply)	0 AF		
Self-Certification Standard (Mandatory Conservation Standard)	0%		
(Supply Shortfall as a percent of total Demand)			

The City of Santa Monica is providing this information pursuant to the emergency regulation set forth in Section 864.5(g) of Title 23 of the California Code of Regulations. In compliance with Section 864.5(g), The City of Santa Monica has calculated, to the best of its ability, the volume of water that it expects it would have available in each of the next three years under the assumptions identified in Section 864.5(b) of Title 23 of the California Code of Regulations. These numbers are not in any way meant to be – nor should they be interpreted as – guaranteed or minimum amounts of water. Instead, these estimated supply numbers are based on the information available at this time to The City of Santa Monica and the assumptions in Section 864.5(b). Furthermore, while the estimated supply and demand balances are fully documented, these analyses do not in any way obligate the actual operation of The City of Santa Monica’s system over the next three years.

Total Potable Use Demand Documentation

Total Potable Water Production		
Year	Quantity	Reference
2013	14,078 AF	https://www.smgov.net/uploadedFiles/Departments/Public_Works/Water/2015_UWMP_Final_June_2016.pdf , Table 4.2
2014	13,987 AF	https://www.smgov.net/uploadedFiles/Departments/Public_Works/Water/2015_UWMP_Final_June_2016.pdf , Table 4.2

Total Potable Water Supply Documentation

Local Groundwater		
Year	Quantity	Reference
2017	9,000 AF	https://www.smgov.net/uploadedFiles/Departments/Public_Works/Water/2015_UWMP_Final_June_2016.pdf , Table 5.5
2018	9,000 AF ¹	https://www.smgov.net/uploadedFiles/Departments/Public_Works/Water/2015_UWMP_Final_June_2016.pdf , Table 5.5
2019	9,000 AF ¹	https://www.smgov.net/uploadedFiles/Departments/Public_Works/Water/2015_UWMP_Final_June_2016.pdf , Table 5.5

1. Table 5.5 in the 2015 Urban Water Management Plan includes 12,500 Acre Feet for groundwater production in years 2018 and 2019. 9,000 AF was used in this analysis as a conservative estimate.

Imported Water		
Year	Quantity	Reference
2017	5,033 AF	http://www.mwdh2o.com/PDF_About_Your_Water/SWRCB_MWD_SuppliesAvailabletoUrbanWaterSuppliers.pdf
2018	5,033 AF	http://www.mwdh2o.com/PDF_About_Your_Water/SWRCB_MWD_SuppliesAvailabletoUrbanWaterSuppliers.pdf
2019	5,033 AF	http://www.mwdh2o.com/PDF_About_Your_Water/SWRCB_MWD_SuppliesAvailabletoUrbanWaterSuppliers.pdf

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Other Questions and Responses

Does your water agency intend to have a conservation standard that is higher than the mandatory conservation standard calculated above?

Yes, the City of Santa Monica intends to remain at Stage 2 of its Water Shortage Response Plan, https://www.smgov.net/uploadedFiles/Departments/Public_Works/Water/Water_Shortage_Response_Planrevised9_8_15.pdf continue a mandatory a 20% reduction and water restrictions until local conditions significantly improve and to meet the City's adopted water self-sufficiency goal thereby eliminating the need to import water.

Do you know the volume of water in the aquifer that is in your source(s) of groundwater? How frequently are groundwater elevations monitored?

A depiction of the Santa Monica Basin (Basin number 4-11.01, South Coast Hydrologic Region, Coastal Plain of Los Angeles, [Groundwater Basin California's Groundwater Bulletin 118](#)) is provided below. Santa Monica pumps groundwater from the Arcadia, Olympic, and the Charnock Sub-basins. The Charnock sub-basin is the City's largest producer of groundwater.



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In a 2013 study entitled Conceptual Groundwater Basin Model and Assessment of Available Groundwater Supplies Santa Monica Groundwater Basin, the following table presents estimates of the groundwater in storage at the then current conditions (late 2011). In total storage at that date the basin was approximately 93% full (317,430 AF / 338,304 AF).

**PRELIMINARY CALCULATION OF AVAILABLE GROUNDWATER IN STORAGE
ARCADIA, CHARNOCK, COASTAL AND OLYMPIC GROUNDWATER STORAGE SUBUNITS**

BASIN CONDITION	"FULL BASIN" (SHALLOWEST WATER LEVELS)	"LOW BASIN" (DEEPEST WATER LEVELS)	CURRENT CONDITIONS (LATE-2011)
ARCADIA GROUNDWATER STORAGE SUBUNIT			
Surface Area of Subbasin (mi ²)	6.1		
Total Average Thickness of Aquifer (ft)	150		
Estimated Specific Yield of Sediments	8%		
Average Saturated Thickness (ft)	150	26	138
Groundwater in Storage in Subunit (AF)	46,848	8,120	43,100
CHARNOCK GROUNDWATER STORAGE SUBUNIT			
Surface Area of Subbasin (mi ²)	2.2		
Total Average Thickness of Aquifer (ft)	400		
Estimated Specific Yield of Sediments	12%		
Average Saturated Thickness (ft)	400	300	360
Groundwater in Storage in Subunit (AF)	67,584	50,688	60,826
COASTAL GROUNDWATER STORAGE SUBUNIT			
Surface Area of Subbasin (mi ²)	4.0		
Total Average Thickness of Aquifer (ft)	460		
Estimated Specific Yield of Sediments	12%		
Average Saturated Thickness (ft)	460	115	445
Groundwater in Storage in Subunit (AF)	141,312	35,328	136,704
OLYMPIC GROUNDWATER STORAGE SUBUNIT			
Surface Area of Subbasin (mi ²)	3.0		
Total Average Thickness of Aquifer (ft)	430		
Estimated Specific Yield of Sediments	10%		
Average Saturated Thickness (ft)	430	246	400
Groundwater in Storage in Subunit (AF)	82,560	47,232	76,800
TOTAL OF ALL SUBUNITS (In AF):	338,304	141,368	317,430

Note: See text for explanation and derivation of parameters and values.

It is impossible to say with any certainty that the volume in groundwater storage is “known”; however, assuming the hydrology for supply estimation purposes mirrors the 2013/2014/2015 years, it is estimated that water in storage is reduced approximately 20% - 50 % from 2011 levels indicated above. This equates to an *estimated* range of 159,000 AF to 254,000 AF in storage. Regarding the second question, groundwater elevations are monitored weekly.

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