

## Water, Water Everywhere, but Still Not One Extra Drop to Spare

With recent media attention focused on the water shortages in California and other parts of the country such as Las Vegas and even in Sao Paulo, Brazil, Asset Preservation Advisors (APA) examined key factors that lead to the shortages. We concluded that the underlying causes of today's water shortages are similar to what caused the drought in Georgia in 2007 and other parts of the country:

- Population increased in the state by 18% from 2000 to 2009 at a much faster rate than the water supply could handle.
- Rainfall amounts in the spring of 2006 were well below normal.
- A mild hurricane season in 2006 and 2007 brought below average amounts of rainfall.

A similar situation is occurring in California, currently in the middle of the third-driest year on record. Residents have been forced to reduce water usage and the drought has prompted the Governor and State Legislature to approve a \$7.5 billion bond measure for water storage and delivery to drought-stricken cities and farms that voters will decide on in November.

Water shortages have been a concern in California since the 1970's when the State investigated building ocean desalination plants in an effort to reduce dependency on reservoirs. However, due to higher costs and environmental concerns the plants were never constructed. That has changed given current conditions, as a seawater desalination plant is now being constructed in San Diego County. The plant will convert 50 million gallons of seawater into drinkable water serving 300,000 San Diegans every day. However, the cost for desalination is twice the cost of water from a traditional reservoir and the plant will not open until 2016.

Las Vegas and the majority of Nevada are also having water shortages. Lake Mead, the main source of fresh water for Las Vegas, is at record lows at 1080 feet due to population increases, limited rain fall amounts and overdraft (see chart). Sao Paulo, Brazil's largest city, is also running out of water. The crisis has become worldwide.



Source: <http://www.arachnoid.com/NaturalResources/>

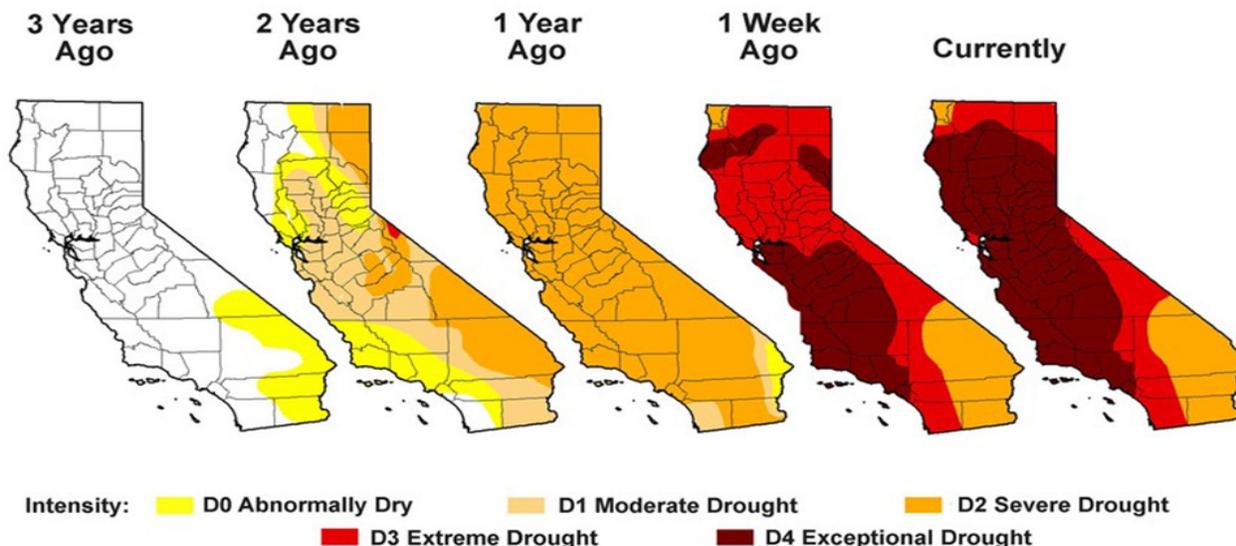
APA believes these are some of the key reasons for the California water shortage:

1. **Increased national population stresses the water supply utilized for agricultural production.** The United States population increased 12 percent from 2000 to 2013, 13 percent in 1990 from 2000 and 13 percent from 1980 to 1990. Increased population requires additional agricultural products (such as almonds and tomatoes) and livestock, requiring additional water. This has a major impact on California water usage. According to the California Department of Food and Agriculture, in 2012 California’s 80,500 farms and ranches received \$42.6 billion for their output. This placed California number one in cash farm receipts with 11.3 percent of the US total. In 2012, California accounted for 15 percent of national receipts for crops and 7.1 percent of the US revenue for livestock and livestock products. Everything from grapes to almonds to tomatoes and cattle come from the California.
2. **California’s population increased.** California (and Texas, which is also having water issues) has had dramatic population increases in the last thirty-four years. As we see in table 1, the State’s population increased 13 percent from 2000 to 2013, 14 percent from 1990 to 2000, and 26 percent from 1980 to 1990.

Table 1: Population Increases from 1990 to 2013			
	2000 to 2013	1990 to 2000	1980 to 1990
United States	12%	13%	13%
California	13%	14%	26%
Texas	27%	23%	40%
New York	4%	11%	2%

Source: Census Data

3. **Increased environmental requirements have caused competition for available water.** For example, court decisions such as The Endangered Species Act have required the California Department of Water Revenue to alter operations at a State Water Project by 23%. Wells Fargo reports that the State Water Project deliveries were reduced by a total of 2.3 million acre feet from 2008-2012 due to these pumping restrictions.
4. **Overall water supply has decreased.** Many of the California reservoirs are near record lows as the three year run of below average rainfall has reduced the water supply. In addition, snowfall in the Sierra Nevada Mountains (which accounts for roughly two-thirds of California’s water) has been well below average. Forecasts show little to no improvement in conditions any time in 2015 or the near future, as droughts typically last two to four years.



Source: Brad Rippey/U.S. Drought Monitor (as of July 31, 2014)

## California Water Utilities Withstanding Water Shortage

Despite the water shortages, APA believes that from a financial standpoint, the majority of water utilities in California can currently withstand the current drought-like conditions. Ironically, at the onset of a drought, *Wells Fargo* reports that revenues for water systems actually increased as a result of lower operating expenses with the use of stored water which reduces overall costs. They report that of the 170 subject water utility credits they examined, the average debt service coverage was 3.24x in 2012 and 3.04x in 2013, well above the Merritt Research median for water utilities of 1.67x. Revenues also increased on average by 8.7 percent in 2012, the year the drought started.

APA examined our California water utility holdings and found similar positive financial factors:

1. The average debt service was 1.96x in 2013 compared to 1.67x 2013 water sector median.
2. Liquidity as measured in days cash on hand (DCOH) was well above the Merritt Research median at 556 DCOH compared to the median of 389.5 DCOH for all water systems in the US
3. Debt levels were above average at 51.9 percent long-term debt to capitalization compared to the median of 44.5 percent for U.S. water utilities.

Table 2: Average California Water Utility Holdings Metrics				
Fiscal Year	2011	2012	2013	2013 Water Sector Medians
Average DSC	1.52	1.56	1.96	1.67
Average Days Cash on Hand	455.68	460.61	556.11	389.5
Debt levels (LTD to CAP)	54.19	52.72	51.93	44.5

Source: Merritt Research Data

## APA Has Been and Remains Highly Selective

APA has been highly selective in purchasing water utilities in California, even before the recent water shortages hit California. In addition to examining the aforementioned key financial metrics such as debt service coverage and liquidity, we take into account the population increases or decreases in the area serviced by the system, the sources of the supply of water, treatment capacity and water drawing rights. These factors play a role in security selection in order to avoid a challenged water utility.

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