

# Environment

## Section Highlights

Ranking in Residential Solar Power

1st

Days of "Moderate" Air Quality in 2015

51%

Pounds of Household Hazardous Waste Diverted

3.3 million

Average Daily per Capita Water Consumption

102 gallons

## A Success Story

*San Bernardino Associated Governments (SANBAG) offers Property Assessed Clean Energy (PACE) financing to all residents and businesses in San Bernardino County. Operated by SANBAG as the HERO Program, PACE allows property owners to finance energy efficiency, clean energy, or water efficiency improvements and pay back the costs over time on their property tax bill with no up-front cost. To date, 12,976 homes have been improved through the program, with projects such as more efficient air conditioning and heating systems, improved insulation, turf replacement, solar panels, and improved windows and doors. Based on the projects already completed, property owners annually save 106.4 million kWh of electricity, 48.8 million gallons of water, and reduce their greenhouse gas emissions by 29,064 tons. In addition, the work performed by contractors to complete these projects – valued at \$277.2 million since the program began in October 2013 – has led to significant economic activity. PACE projects have over \$480 million in economic impact and helped create approximately 2,350 jobs.*

## Riverside-San Bernardino Top Region for Solar Power

New policies and innovations are driving a shift from the use of carbon-based energy sources to alternative sources, clean technology, and increased energy efficiency. This indicator uses the Green Innovation Index to measure San Bernardino County's progress in achieving sustainable economic growth. The Green Innovation Index provides statewide rankings of 26 metro areas on several measures of green innovation, including: installed solar capacity, clean vehicle rebates, and electricity consumption per capita.

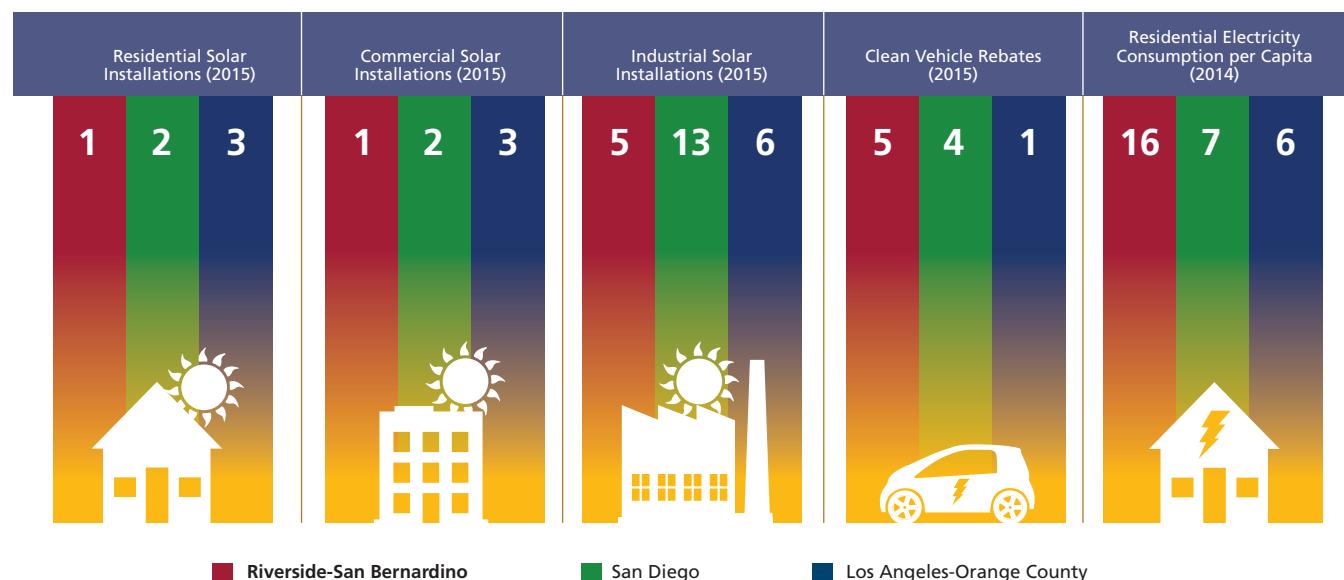
### How is San Bernardino County Doing?

Compared to 26 metro areas in California, the Riverside-San Bernardino metro area is the epicenter for solar power:

- In 2015, residents and commercial businesses in the Riverside-San Bernardino metro added more kilowatts of solar power than any other metro area in California.
- Riverside-San Bernardino was also the southern California leader in industrial solar power additions, ranking 5th in the state.
- Riverside-San Bernardino ranked high (5th out of 26) in the number of clean vehicle rebates issued in 2015. However, the number of rebate applications in Riverside-San Bernardino declined 2.5% between 2014 and 2015.
- In terms of electricity consumption per capita, Riverside-San Bernardino ranked 16 out of 26 metros in 2014, coming in at 2.64 kilowatt hours per 1,000 residents. This marks an increase of 4.2% since 2001.

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**Ranking Among 26 California Metro Areas for Selected Green Innovation Metrics**  
Selected Metro Areas, 2014 or 2015



Source: Next10, California Green Innovation Index, June 2016 ([www.next10.org](http://www.next10.org))

## 10-Year Trend: Fewer Unhealthy Days, but Also Fewer Good Days

Poor air quality can aggravate the symptoms of heart and lung ailments, including asthma. It can also cause irritation and illness among the healthy population. Long-term exposure increases the risks of lung cancer, cardiovascular disease, and many other health conditions. Poor air quality can also put children's lung development at risk. This indicator uses the Air Quality Index (AQI) to measure air quality in San Bernardino County, neighboring California counties and peer regions outside of California.

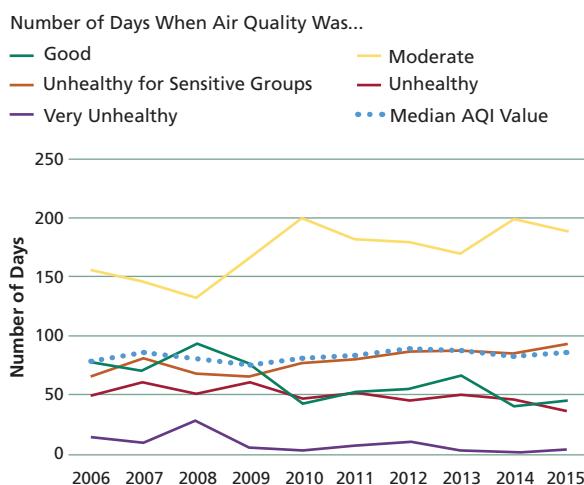
### How is San Bernardino County Doing?

Air quality was in the "moderate" range for half of the days in 2015:

- There were 187 days in the "moderate" range (or 51% of days) in 2015.
- Since 2006, a decline in "very healthy" and "unhealthy" days of air quality was counteracted by a rise in "moderate" days and a decline in "good" days, resulting in little change to the median air quality index.
- However, air quality has improved substantially from 30 years ago when the median AQI value in 1985 was 122 (in the "unhealthy for sensitive groups" range) compared to 84 in 2015 (in the "moderate" range).
- Compared to air quality in neighboring and peer regions, San Bernardino County has poorer air quality than all regions compared except Riverside County.

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**Air Quality Index**  
San Bernardino County, 2006-2015



Note: The AQI breakpoints for ozone were updated on June 21, 2016 by the data source to be consistent with the 2015 ozone standards. This update applies to all historical data as well.

Source: U.S. Environmental Protection Agency, Air Data ([www.epa.gov/airdata/ad\\_rep\\_aqi.html](http://www.epa.gov/airdata/ad_rep_aqi.html))

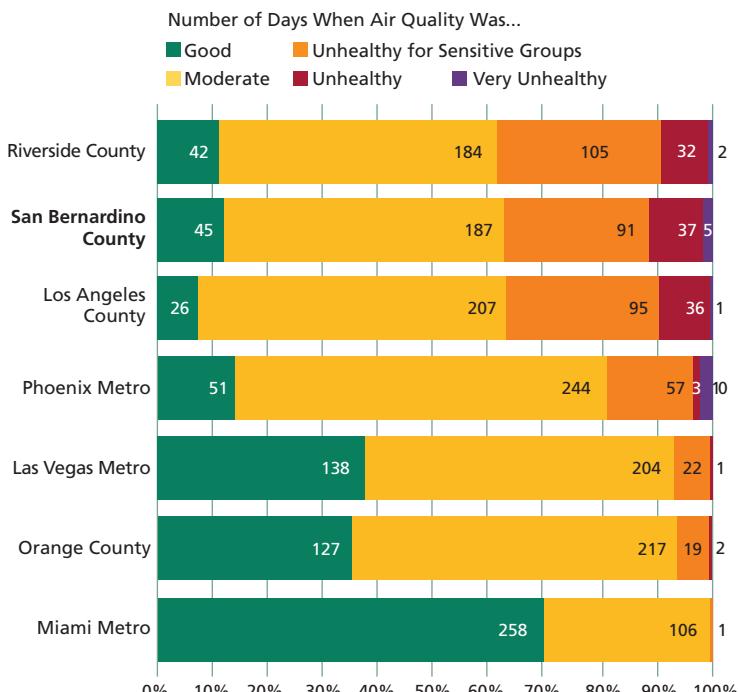
### Asthma in San Bernardino County

The percentage of San Bernardino County children who have been diagnosed with asthma in their lifetimes was 15.5% in 2014, a rate that is slightly below the previous 10-year average. The proportion of adults with an asthma diagnosis was 14.2% in 2014, which is on par with the previous 10-year average. Poor air quality, especially particulate matter, can contribute to asthma. In response to the latest research, a 2012 federal court ruling required the EPA to update the fine particle pollution standards (PM 2.5). San Bernardino County is one of seven out of over 3,000 counties nationwide that is anticipated to need to take additional steps to meet the new standard by 2020. Over the past five years, PM2.5 AQI values have improved somewhat, from 18% of days in the "good" range in 2001 to 24% of days in 2015.

Sources: California Health Interview Survey (<http://ask.chis.ucla.edu>); U.S. Environmental Protection Agency ([www.epa.gov/pm/actions.html](http://www.epa.gov/pm/actions.html) and [www.epa.gov/airdata/ad\\_rep\\_aqi.html](http://www.epa.gov/airdata/ad_rep_aqi.html))

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**Air Quality Index**  
Regional Comparison, 2015



Note: The regions are sorted from top to bottom according the median air quality index value in each region, from highest to lowest. These data are based on hourly monitor data to assess air quality, resulting in more days of unhealthy air than data that is used by air quality management districts for regulatory compliance, which uses 24-hour monitor values. The AQI breakpoints for ozone were updated on June 21, 2016 by the data source to be consistent with the 2015 ozone standards. This update applies to all historical data as well.

Source: U.S. Environmental Protection Agency, Air Data ([www.epa.gov/airdata/ad\\_rep\\_aqi.html](http://www.epa.gov/airdata/ad_rep_aqi.html))

### 2016 Air Quality Management Plan

The 2016 Air Quality Management Plan is a regional blueprint for achieving air quality standards and healthful air in the areas under the jurisdiction of the South Coast Air Quality Management District (SCAQMD), which in San Bernardino County primarily serves the non-desert portion. The 2016 AQMP focuses on available, proven, and cost effective strategies to promote reductions in greenhouse gases and toxic risk, as well as gain efficiencies in energy use, transportation, and goods movement. The Plan recognizes the critical importance of working with other agencies to develop funding and other incentives that encourage the accelerated transition of vehicles, buildings, and industrial facilities to cleaner technologies in a manner that benefits not only air quality, but also local businesses and the regional economy. For more information, visit [www.aqmd.gov/home/library/clean-air-plans/air-quality-mgt-plan](http://www.aqmd.gov/home/library/clean-air-plans/air-quality-mgt-plan)

Source: South Coast Air Quality Management District

## 3.3 Million Pounds of HHW Diverted from Landfills

Reducing solid waste production and diverting recyclables and green waste extends the life of landfills, decreases the need for costly alternatives, and reduces environmental impact. California has set a goal of diverting 75% of waste away from landfills through source reduction, recycling, and green waste composting by 2020. Collection of household hazardous waste (HHW), such as oil, paint, electronics, thermostats, batteries, and fluorescent tubes, helps protect the environment and public health by reducing illegal and improper HHW disposal. This indicator measures the tons of commercial and residential solid waste generated in San Bernardino County destined for disposal in County and out-of-County landfills. It also measures the pounds of HHW collected and the number of annual participants in the HHW program.

### How is San Bernardino County Doing?

Solid waste disposal remains well below the 10-year historical average of 3.6 million tons.

- In 2015, a total of 1.6 million tons of waste were generated and disposed by San Bernardino County residents.
- Waste disposal decreased 30% since 2006, and remained relatively steady over the past six years, hovering between 1.6 and 1.5 million tons of waste between 2009 and 2015.
- Meanwhile, San Bernardino County's population grew an estimated 8% over the same period, suggesting that in the face of population growth, economic factors and diversion programs are driving the decline.
- Both the number of households bringing HHW to regional collection centers and the number of pounds collected grew in 2015/16. Each participating household contributed an average of 62 pounds of HHW.

### Ambitious Recycling Program Helps Reach Goals

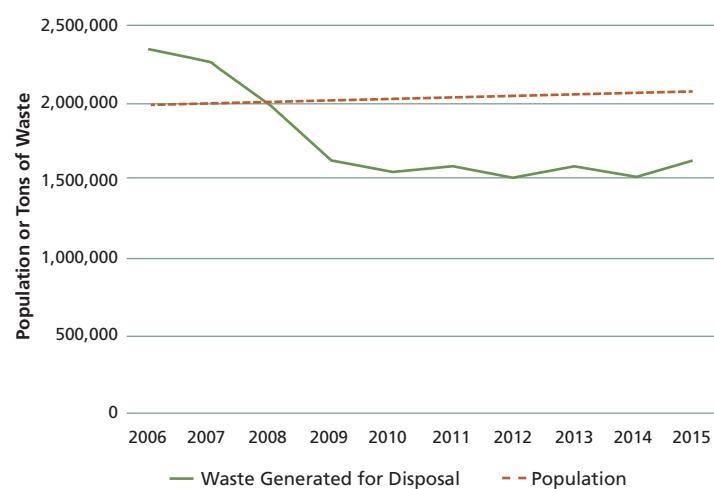
In an effort to increase recycling to meet the state mandated waste reduction goals, the County Public Works Department/Solid Waste Management Division began the Comprehensive Disposal Site Diversion Program (CDSDP) in 2008. This program, implemented at all County disposal facilities, sorts materials such as concrete, drywall, metal, wood/green waste, pallets, tires, mattresses, and mixed recyclables (cardboard, plastic, glass) to be pulled out for further processing or reused or recycled. During 2015, the CDSDP prevented 9,875 tons of waste from being disposed at San Bernardino County disposal facilities. This program has significantly helped the County reach its diversion goals, with a 63% diversion rate attained for 2015. Since its inception in 2008, the CDSDP has diverted over 730,000 tons of materials.

### "Reduce, Reuse, Recycle" Applies to HHW, Too

In partnership with PaintCare, the San Bernardino County Fire Household Hazardous Waste (HHW) Division administers the highly successful Materials Exchange/Reuse program which recycles paint and offers it back to the residents of San Bernardino County. HHW staff bulks paint to produce quart, one gallon, and five gallon buckets of paint in a few different colors. The paint is then offered to residents for free. The Material Exchange/Reuse program also offers residents other useable products for free in addition to paint. To find out more, residents can call (909) 382-5401 or visit [www.sbcfire.org](http://www.sbcfire.org).

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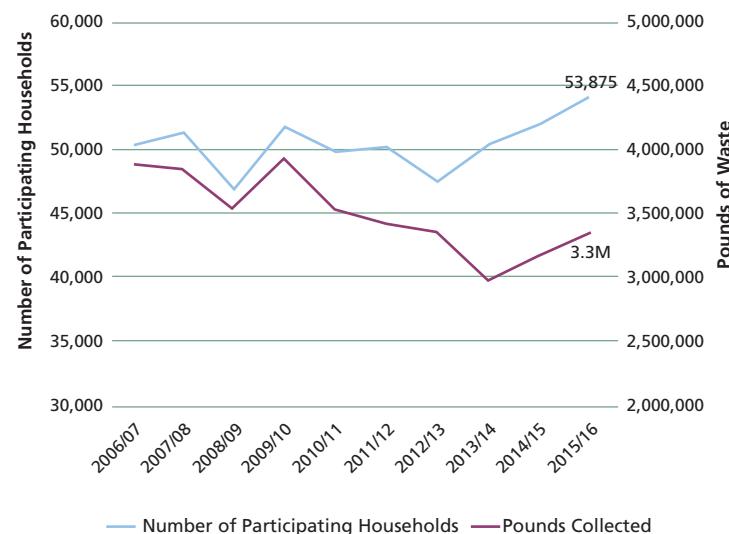
### Solid Waste Generated for Disposal Compared to Population Growth San Bernardino County, 2006-2015



Note: Solid waste generated for disposal includes cities and unincorporated areas.

Sources: San Bernardino County Department of Public Works; California Department of Finance, Table E-2 ([www.dof.ca.gov](http://www.dof.ca.gov))

### Household Hazardous Waste Program Participation and Pounds of Waste Collected San Bernardino County, 2007-2016



Note: Chart includes San Bernardino County unincorporated areas and all cities except Fontana.

Source: San Bernardino County Fire Department

## Illegal Pollutant Discharges into Storm Drains Continue to Fall

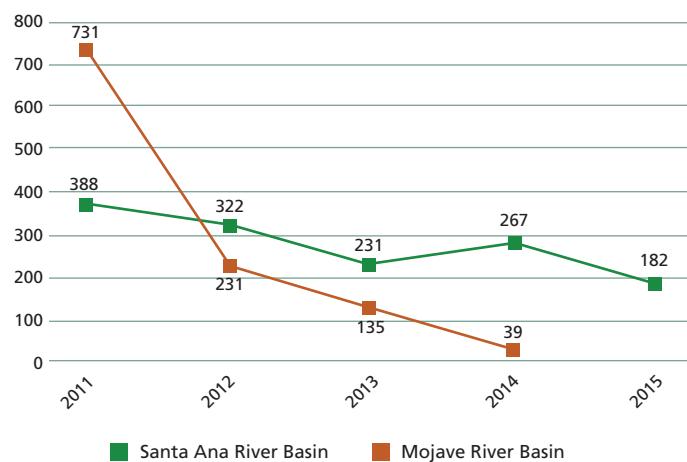
Stormwater pollution refers to urban water runoff that picks up pollutants as it flows through the storm drain system – a network of channels, gutters and pipes that collects rain and snowmelt. Eventually, the water empties – untreated – directly into local rivers and lakes. Pollutants in stormwater runoff, such as litter, pet waste, motor oil, anti-freeze, pesticides, fertilizers, and toxic household chemicals, can have serious implications. They can contaminate local drinking water supplies and have detrimental impacts on the local environment and wildlife. Trash and debris accumulated in catch basins may create foul odors and attract pests. Flooding may also occur due to blocked storm drains during heavy rain events. Effective stormwater management reduces pollution, blocked drains and flooding. To track stormwater quality management in the Santa Ana River and Mojave River watersheds this indicator shows reports of illegal discharges of pollutants (such as paint or motor oil) into surface waterways and storm drains. Also measured are enforcement actions and facility inspections.

### How is San Bernardino County Doing?

There was a decline in the number of illegal disc  
dumping and spill event reports in San Bernardino C  
in 2015:

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**Stormwater Quality: Illegal Discharge, Dumping and Spill Events in the Santa Ana and Mojave River Basins (San Bernardino County portions), 2011-2015**



Note: Mojave River watershed data is not available for 2015.

Source: San Bernardino County Flood Control District Stormwater Program, Annual Report; Mojave River Watershed Group Small MS4 General Permit Annual Report

### The ABCs of NPDES MS4

Polluted stormwater runoff can be washed into Municipal Separate Storm Sewer Systems (MS4s, or commonly known as storm drains). Owners of storm drains – such as a state, county, city, or other public entity – must obtain a National Pollutant Discharge Elimination System (NPDES) permit to develop and implement programs to help prevent harmful pollutants from being washed into local bodies of water. In San Bernardino County, public entities work together under two separate MS4 permits. The San Bernardino Areawide Stormwater Program – consisting of the County, Flood Control District, and all 16 cities in the area (Big Bear Lake, Chino, Chino Hills, Colton, Fontana, Grand Terrace, Highland, Loma Linda, Montclair, Ontario, Rancho Cucamonga, Redlands, Rialto, San Bernardino, Upland, and Yucaipa) – works to protect the Santa Ana River watershed. The Mojave River Watershed Group – consisting of the County and the three cities in this basin (Apple Valley, Hesperia, and Victorville) – works to protect the Mojave River watershed. The public entities within each group work cooperatively to comply with complex regulations that require extensive multi-agency collaboration and numerous initiatives to effectively reduce pollutants from urban runoff.

### What Factors Contribute to Illegal Discharge Reporting?

Increases in reports of illegal discharges can be attributed to population growth and greater public awareness, which leads to more incident reporting. Decreases can be attributed to fewer severe weather events leading to debris blockage and improved public compliance with posted signs and laws related to dumping.

## WATER CONSUMPTION

# Water Use Ranges from 49 to 164 Gallons per Person per Day

Given San Bernardino County's arid climate, effective water management is essential to ensure that the county has an ample water supply now and in the future. Statewide mandatory urban water restrictions, which went into effect in June 2015 and were lifted in May 2016, imposed water usage limits and prompted increased conservation and recycling. This indicator measures estimated residential water consumption in gallons per capita per day from large water suppliers serving San Bernardino County. It also shows the percentage of water saved over a three-year period. The water suppliers presented serve an estimated population of just over 2,000,000 (or roughly 94% of the San Bernardino County population).<sup>1</sup>

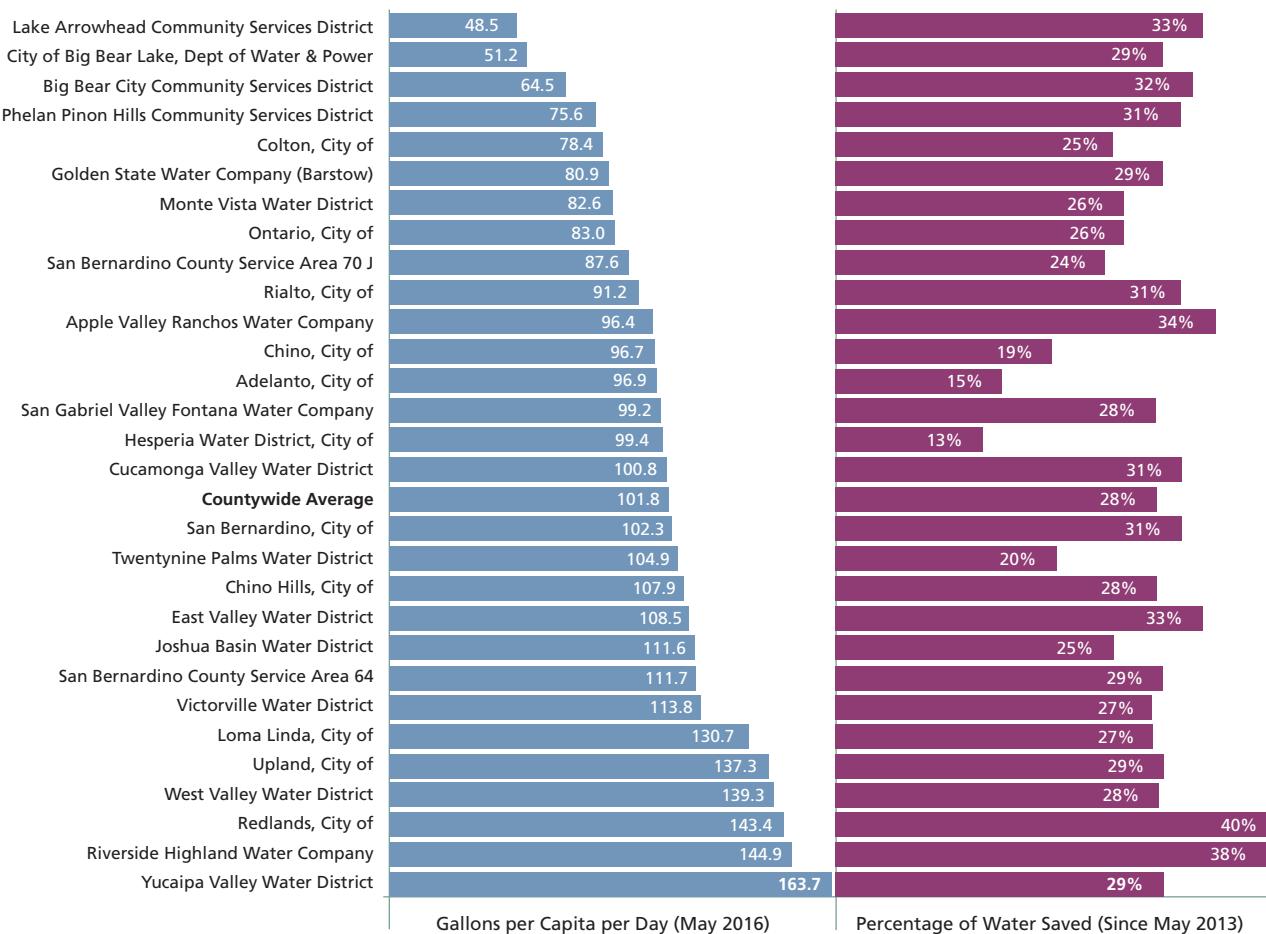
### How is San Bernardino County Doing?

San Bernardino County residents' daily per capita water consumption did not change substantially between May 2015 and May 2016:

- On average, San Bernardino County residential consumers used 102 gallons per capita per day (GPCD) in May 2016, compared to 101 GPCD in May 2015.<sup>2</sup>
- This rate ranges from a low of 49 GPCD in Lake Arrowhead to a high of 164 GPCD in Yucaipa Valley.
- The countywide average reduction in water usage between May 2013 and May 2016 was 28%.
- This percentage ranges from a low of 13% saved in Hesperia to a high of 40% saved in Redlands.
- Residential water usage can differ due to regional variations in climate, precipitation, land use, tourism, and local supplier water usage regulations and conservation programs.

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**Estimated Residential Gallons per Capita per Day (May 2016) and Percentage of Water Saved (Since May 2013)**  
San Bernardino County Water Suppliers, 2013 and 2016



Note: This chart includes urban water suppliers serving San Bernardino County that have more than 3,000 connections.

Source: State Water Resources Control Board, May 2016 Water Conservation Report by Supplier

<sup>1</sup> California Department of Finance, Table E-1, January 2016

<sup>2</sup> The countywide GPCD average and the countywide average percentage saved were calculated by averaging the calculated GPCD rate or percent saved for each supplier.