Environment

Section Highlights

Days of "Moderate" Air Quality in 2014	221
Tons of Solid Waste Disposed	1.5 million
Reports of Pollutants Discharged into Stormdrains	306
Change in Water Use since 2013	Down 26%

A Success Story

Substantial gains have been made to divert stormwater and urban runoff in the Santa Ana River Watershed into recharge basins where it can be used to replenish the groundwater. This runoff, which used to flow to the ocean, is being captured and treated by a consortium of public entities including the County of San Bernardino, the San Bernardino County Flood Control District and 16 cities within the county. For example, in 2014, the Inland Empire Utilities Agency documented the capture of 8,166 acre-feet of stormwater and dry weather urban runoff flows and 10,977 acre-feet of recycled water. This represents an increase of 11% since 2012, evidence of the collaborative efforts to capture this precious resource even in drought years.

"Moderate" Air Quality the Norm for Past 10 Years

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?

Over the past 10 years, the median air quality index value has not changed substantially:

- Since 2005, a decline in "very unhealthy" 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 value since 2005.
- However, air quality has improved substantially from 30 years ago when the median AQI value in 1985 was 108 compared to 75 in 2014.[1]
- Most days in 2014 were in the "moderate" range (221 or 61% of days).
- Compared to air quality in neighboring and peer regions, San Bernardino County falls in the middle, with Riverside County having the fewest days of air in the "good" range and Miami Metro having the most.

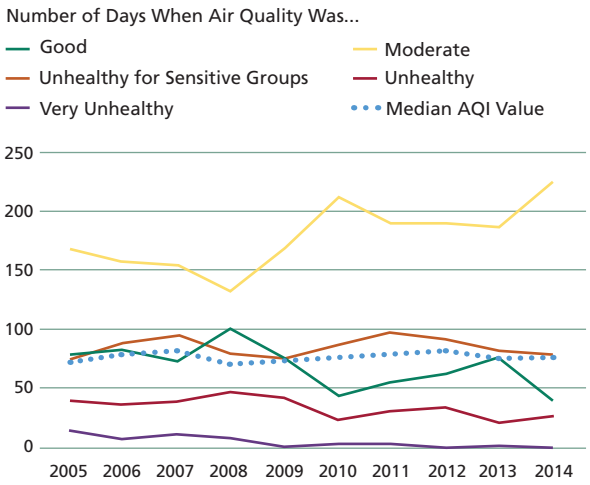
Air Quality Index

The Air Quality Index is calculated for ground-level ozone, particulate matter, carbon monoxide, sulfur dioxide, and nitrogen dioxide. The number 100 corresponds to the national air quality standard for the pollutant.

AQI Values	Health Categories
0 - 50	Good
51 - 100	Moderate
101 - 150	Unhealthy for Sensitive Groups
151 - 200	Unhealthy
201 - 300	Very Unhealthy
301 - 500	Hazardous

Source: U.S. Environmental Protection Agency (http://airnow.gov/)

Air Quality Index
San Bernardino County, 2005-2014

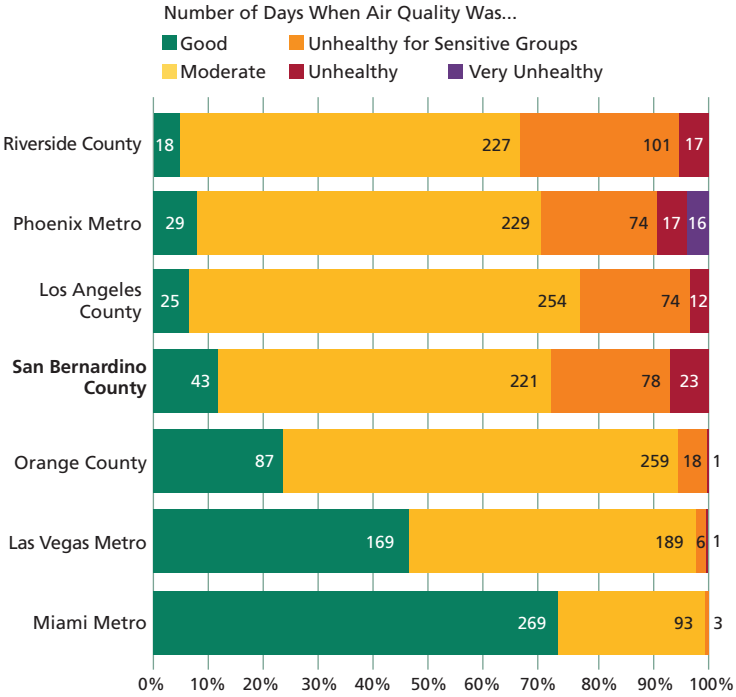


Note: These data, accessed July 22, 2015, have been updated from data presented previously.

Source: U.S. Environmental Protection Agency, Air Data (www.epa.gov/airdata/ad_rep_aqi.html)

[1] U.S. Environmental Protection Agency, Air Data (www.epa.gov/airdata)

Air Quality Index
Regional Comparison, 2014



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 2014 data were accessed July 22, 2015 and are considered preliminary.

Source: U.S. Environmental Protection Agency, Air Data (www.epa.gov/airdata/ad_rep_aqi.html)

Asthma in San Bernardino County

The percentage of San Bernardino County children with an asthma diagnosis has fluctuated since 2001 but has not realized any lasting improvement, currently estimated at 14% in 2013-14. The rate for adults has also not changed dramatically since 2001, estimated at 13% in 2013-14. Poor air quality can contribute to asthma. For example, fine particle pollution can penetrate deep into the lungs and has been linked to a wide range of serious health effects, including premature death, heart attacks, and strokes, as well as acute bronchitis and aggravated asthma among children. 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. The remaining counties can rely on air quality improvements from federal rules already on the books to meet this new standard.

Sources: California Health Interview Survey (http://ask.chis.ucla.edu); U.S. Environmental Protection Agency (http://www.epa.gov/pm/actions.html)

Solid Waste Disposal Declines Despite Population Growth

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. Since 2000, all jurisdictions in California are required by law to divert 50% of waste away from landfills through source reduction, recycling, and green waste composting. 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?

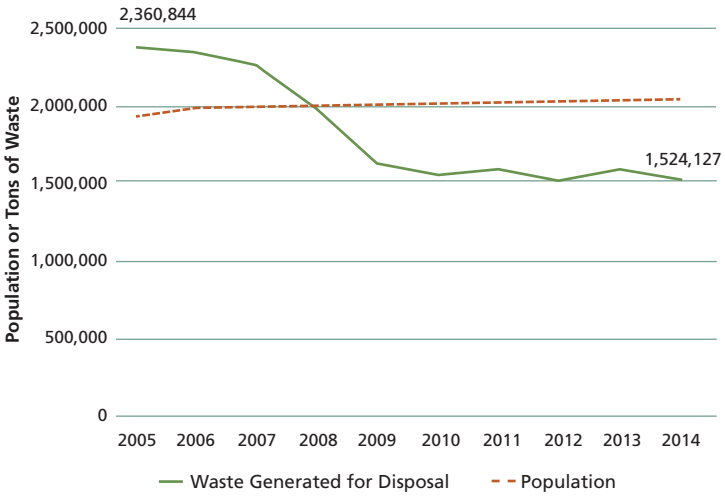
Solid waste disposal remains well below the 10-year high:

- In 2014, a total of 1.5 million tons of waste were generated and disposed of by San Bernardino County residents.
- Waste disposal decreased 35% since the peak in 2005, and has remained relatively steady over the past six years, hovering between 1.6 and 1.5 million tons of waste between 2009 and 2014.
- 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.
- Preliminary 2013 waste diversion data indicate that all 25 jurisdictions (24 cities and the County of San Bernardino) met both their population-based and employment-based disposal rate targets.[1]
- Both the number of households bringing HHW to regional collection centers and the number of pounds collected grew in 2014/15. Each participating household contributed an average of 61 pounds of HHW.

Construction Waste is Diverted from Landfills

One measure that points to the improving business climate in San Bernardino County is the growing number of Construction and Demolition Waste Management Plans (CDWMP) being processed by the Public Works Department/Solid Waste Management Division. A CDWMP is required by the State for significant construction and/or demolition projects, such as residential, multi-family, commercial, industrial, non-residential solar, and demolitions. The CDWMP provides project applicants with a roadmap to aid their efforts to meet the State requirement to divert a minimum of 50% of onsite construction and demolition (C&D) waste from landfills. The County continues to exceed the overall jurisdiction diversion requirement of 50% set by the State, achieving a 64% rate in 2014.

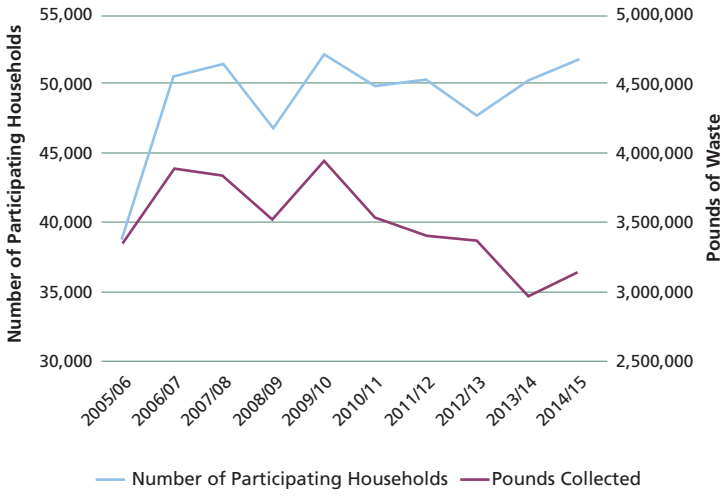
Solid Waste Generated for Disposal Compared to Population Growth
San Bernardino County, 2005-2014



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)

Household Hazardous Waste Program Participation and Pounds of Waste Collected
San Bernardino County, 2006-2015



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

Source: San Bernardino County Fire Department

[1] CalRecycle, *Countywide, Regionwide, and Statewide Jurisdiction Diversion/Disposal Progress Report* (www.calrecycle.ca.gov/LGCentral/Reports/jurisdiction/diversiondisposal.aspx)

57% Decline in Pollutant Discharge into Storm Drains

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 indictor shows the number of 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?

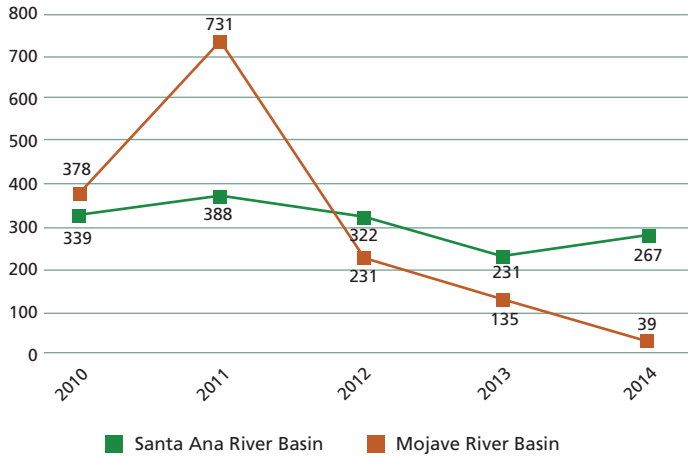
There were a total of 306 illegal discharge, dumping and spill event reports in San Bernardino County in 2014:

- In the Santa Ana River watershed, there were 267 illegal discharge reports in 2014.
- While the number of reports varies from year to year, this year marks a 21% decline in reports over the past five years in the Santa Ana River watershed.
- In the Mojave River watershed, there were 39 illegal discharge reports in 2014 – the lowest number of reports since tracking began in 2008.
- In both watersheds, overall reports of illegal discharges declined 57% in five years.
- Of the illicit discharges in the two watersheds, a combined total of 121 illegal discharges required enforcement action, such as a notice of violation or fines. This equates to 40% of all illegal discharges reported.
- In the Santa Ana River basin, San Bernardino Areawide Stormwater Program members conducted 5,236 inspections of industrial and commercial facilities and construction sites. Of this total, 1,513 inspections (or 29%) resulted in deficiencies requiring corrective action.
- In the Mojave River basin, Mojave River Watershed Group members conducted 419 inspections of active construction sites. Of this total, 13 inspections (or 3%) resulted in the site having to take corrective action.

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.

Stormwater Quality: Illegal Discharge, Dumping and Spill Events in the Santa Ana and Mojave River Basins (San Bernardino County portions), 2010-2014



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.

26% Reduction in Water Use Since 2013

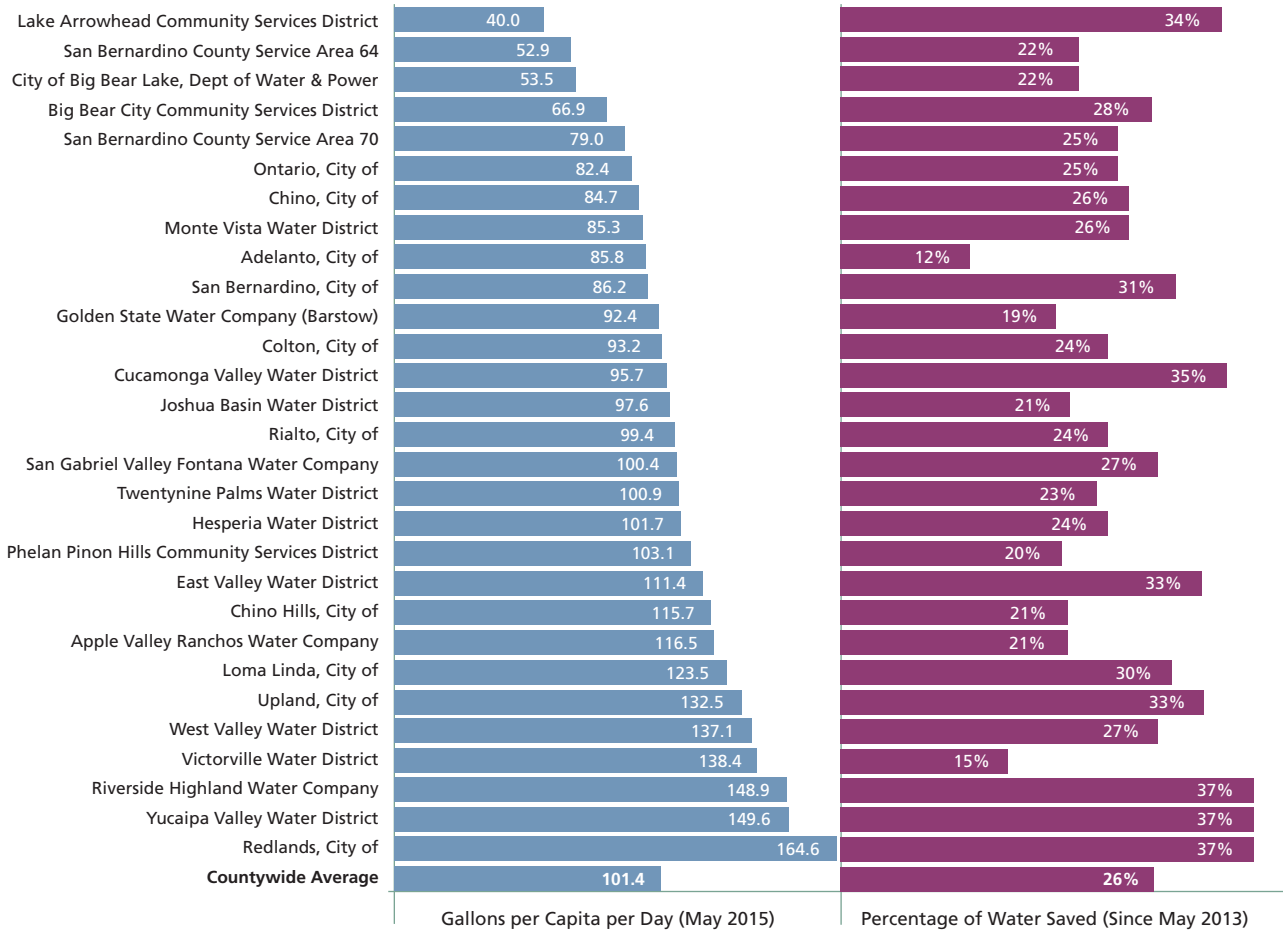
Given San Bernardino County's arid climate, effective water management is essential to ensure that the county has an ample water supply now and in the future. It is also law. Emergency conservation regulations were adopted on May 5, 2015, which require a 25% statewide reduction in potable urban water use between June 2015 and February 2016. To achieve this goal, each urban water supplier serving more than 3,000 connections is given a customized conservation target between 4% and 36% depending on their baseline water usage, with the expectation that, collectively, water suppliers should achieve a 25% reduction statewide. This indicator measures estimated residential water consumption in gallons per capita per day from a majority of the water suppliers serving San Bernardino County. It also shows the percentage of water saved over a two-year period. The water suppliers presented serve an estimated population of approximately 1,980,000 (or roughly 94% of the San Bernardino County population).[1]

How is San Bernardino County Doing?

While impact of the new emergency regulations will not be reflected in the data until June 2015, May 2015 data show San Bernardino County suppliers are on track to meet the statewide reduction target:

- On average, San Bernardino County residential consumers used 101 gallons per capita per day (GPCD) in May of 2015.[2]
- This rate ranges from a low of 40 GPCD in Lake Arrowhead to a high of 165 GPCD in Redlands.
- The countywide average reduction in water usage between May 2013 and May 2015 was 26%.
- This percentage ranges from a low of 12% saved in Adelanto to the high of 37% saved in several districts.
- Residential water usage can differ due to regional variations in climate, precipitation, land use, tourism, and local supplier water usage regulations and conservation programs.

Estimated Residential Gallons per Capita per Day (May 2015) and Percentage of Water Saved (Since May 2013)
San Bernardino County Water Suppliers, 2013 and 2015



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 2015 Water Conservation Report by Supplier

[1] California Department of Finance, Table E-1, January 2015
[2] The countywide GPCD average and the countywide average percentage saved were calculated by averaging the calculated GPCD rate or percent saved for each supplier.