environment

The historic drought in California brought water conservation to the forefront again in San Bernardino County. The upside is water conservation efforts appear to be working with a 13% drop in water consumption throughout our communities. Additionally, our air quality has improved substantially in the past 30 years, but the county faces new challenges with the influx of industry and trucking and its impact on air quality. Programs to increase natural gas and electric trucks within fleets in the region are making a difference.

Incentives Help to Curb Water Use

The Mojave Water Agency in San Bernardino County's arid High Desert has achieved a 30% drop in per capita water consumption since 2000 with innovative programs such as "Cash for Grass," which has resulted in the elimination of more than 6.1 million square feet of turf. The agency plans a follow-up program targeting larger areas of turf at commercial, industrial, and institutional facilities.

Residential Installations Add Significant Solar Capacity

Description of Indicator

This indicator assesses the percentage of electricity generated from renewable sources by San Bernardino County's electricity retailers.[1] It also measures grid-connected residential solar installations completed through the California Solar Initiative (CSI).

Why is it Important?

Generating energy from domestic, renewable sources reduces a community's impact on the environment. It also addresses resource supply challenges from nonrenewable sources and contributes to national security. Increasing the proportion of electricity from carbon-neutral sources in San Bernardino County's energy portfolio may help the county meet statewide greenhouse gas reduction goals and improve air quality.

How is San Bernardino County Doing?

In 2012, the percentage of electricity generated from renewable sources declined slightly for two out of the three utilities serving San Bernardino County that purchase or produce renewables:[2]

- Southern California Edison, which provides most of San Bernardino County's electricity, supplied 20% from renewable energy sources, down slightly from 21% in 2011.
- Colton Public Utility provided 5% renewable energy in 2012, down from 7% in 2011, but the utility has agreements in place or forthcoming to ensure compliance with renewable energy standards by 2017.
- For the past three years, 20% of Bear Valley Electric Service's portfolio was sourced to renewables.
- The 2012 California average was 20% renewable energy sources, while the U.S. average lagged behind at 11%.

San Bernardino County is among the top producers in the state of solar energy from residential installations:

- Solar installations by San Bernardino County residents added nearly 17,000 kilowatts to the electricity grid in 2013.
- At 805 kilowatts per 100,000 residents, San Bernardino County added more kilowatts of electricity from residential solar installations in 2013 than all California counties except Riverside County.

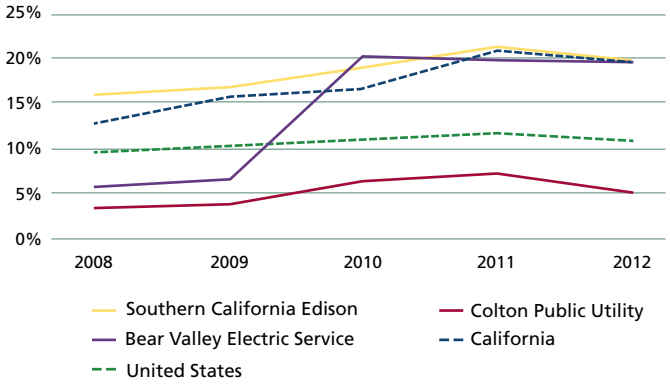
Completed Grid-Connected Residential Solar Installations
County Comparison, 2013

Region	Kilowatts per 100,000 Residents
Riverside	1,384
San Bernardino	**805**
San Diego	497
California	*477*
Orange	451
Los Angeles	289

Note: Figures represent kilowatts completed in 2013, not cumulative solar capacity.

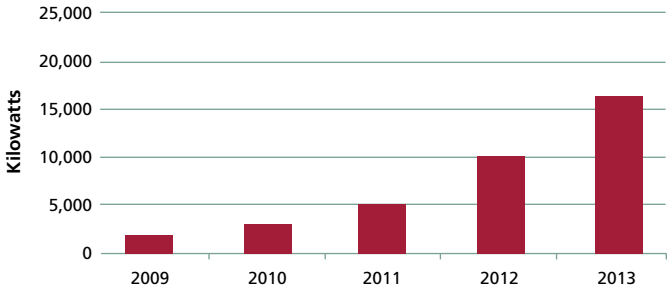
Sources: California Solar Statistics (www.californiasolarstatistics.ca.gov); California Department of Finance, Table E-2, July 2013 (www.dof.ca.gov/research/demographic/reports/view.php)

Electricity Generated from Renewable Sources
San Bernardino County Utilities, California, and United States, 2008-2012



Sources: Bear Valley Electric Service; Colton Public Utility; Needles Public Utility Authority; Rancho Cucamonga Municipal Utility; Southern California Edison; Victorville Municipal Utilities; California Public Utilities Commission (www.cpuc.ca.gov); U.S. Energy Information Administration (www.eia.gov/renewable/data.cfm#summary)

Grid-Connected Residential Solar Installations Completed Annually
San Bernardino County, 2009-2013



Source: California Solar Statistics (www.californiasolarstatistics.ca.gov)

Renewables Portfolio Standard
California's Renewables Portfolio Standard (RPS) program requires investor-owned utilities, electric service providers, and community choice aggregators to increase procurement from eligible renewable energy resources to 33% of total procurement by 2020. Intermediate targets are 20% between 2011-2013 and 25% from 2014-2016. Eligible renewable sources include geothermal, biomass and waste, wind, small hydroelectric, and solar. Non-eligible sources, such as large hydroelectric projects and customer-owned generation (e.g., rooftop solar panels), do not count toward the 33%.

Source: California Public Utilities Commission (www.cpuc.ca.gov/PUC/energy/Renewables/overview.htm)

Residents Look to HERO to Help Fund Solar Power
In October 2013, the Home Energy Renovation Opportunity (HERO) Program began in San Bernardino County. HERO is a financing program that allows homeowners to make solar power, energy efficiency and water conservation improvements to their home with no upfront costs. The amount of the loan is paid back over time through an assessment on the homeowner's property tax bill. As of April 2, 2014, 273 residential solar projects have been installed over the life of the program, representing 1.7 megawatts of capacity.

Source: San Bernardino Associated Governments (SANBAG)

[1] Percentages provided include physical energy and Renewable Energy Certificates (www.epa.gov/greenpower/gpmarket/rec.htm).
[2] Victorville Municipal Utilities Service (industrial and commercial customers only), Rancho Cucamonga Municipal Utility, and Needles Public Utility Authority currently do not have renewable energy specified in their portfolios.

Air Quality Improves

Description of Indicator

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.

Why is it Important?

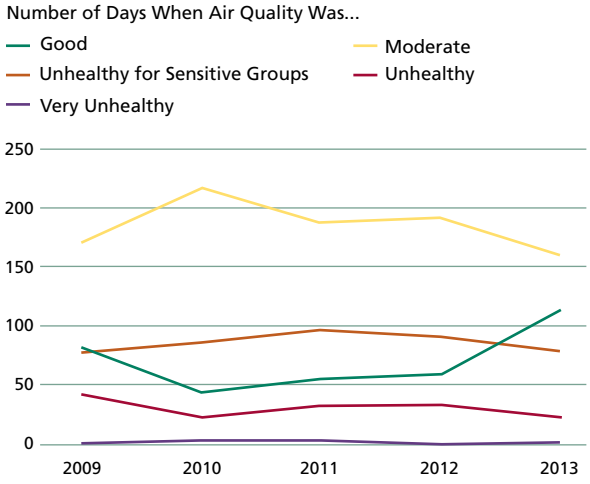
Poor air quality can aggravate the symptoms of heart and lung ailments, including asthma. It can also cause irritation and illness among the healthy population. Long-term exposure increases the risks of lung cancer, cardiovascular disease, and many other health conditions. Poor air quality can also put children's lung development at risk.

How is San Bernardino County Doing?

According to preliminary 2013 air quality data, San Bernardino County had more days of good air than the previous year:

- In 2013, 108 days had "good" air quality, compared to 57 "good" days in 2012.
- Most days (158) had "moderate" air quality.
- 79 days were considered "unhealthy for sensitive groups," such as asthmatics (see Chronic Disease).
- 19 days were "unhealthy" and one day was "very unhealthy."
- Air quality has improved substantially in the past 30 years, from a median AQI value of 119 in 1984 compared to the 2013 median of 69.[1]
- Compared to air quality in neighboring and peer regions, San Bernardino County falls in the middle, with Los Angeles County having the fewest days of good air and Miami having the most.

Air Quality Index
San Bernardino County, 2009-2013



Note: These data, accessed April 17, 2014, are not comparable to data presented in the 2013 Community Indicators Report. The 2014 report uses a different data source which includes the two air basins in San Bernardino County.

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)

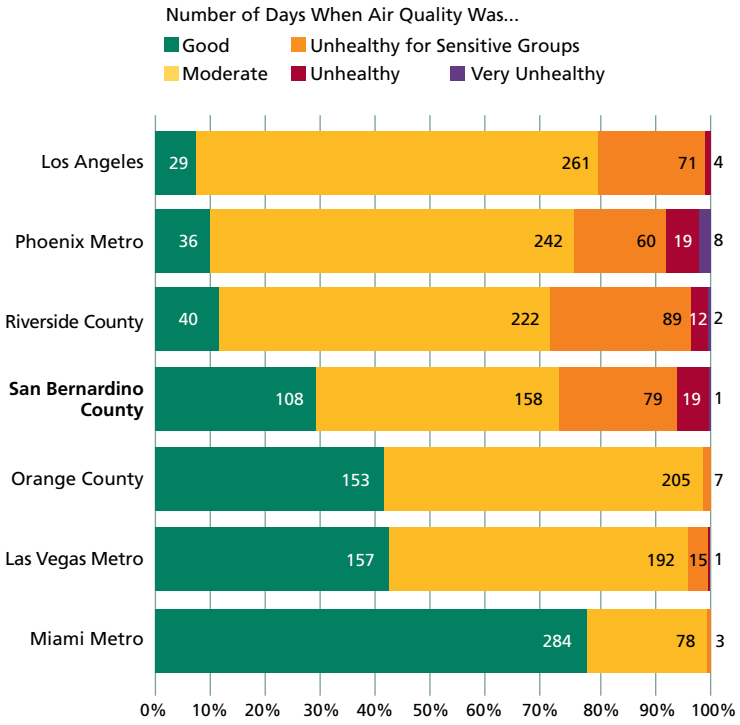
Air Quality Index

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
Regional Comparison, 2013



Note: 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 2013 data were accessed April 17, 2014 and are considered preliminary.

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

Clean Air Transportation on the Rise

Natural gas and electric vehicles – ranging from passenger vehicles to transit and school buses, and even heavy-duty trucks – are now traveling the roads and highways of the Inland Empire on a daily basis. Companies like A-Z Bus in Colton and Agility Fuel Systems in Fontana are part of a growing "clean air" transportation industry, improving air quality while saving money on fuel and maintenance costs. Alternative fuel infrastructure is growing quickly in the region to meet the demands of this expanding fuel-diverse industry, with natural gas stations at venues such as Ontario Airport and the San Bernardino County fleet yard. Electric infrastructure is soon to appear at local malls and is already in use at UPS's San Bernardino facility which operates 40 zero-emission electric trucks.

Solid Waste Disposal Declines

Description of Indicator

This indicator measures the tons of commercial and residential solid waste generated in San Bernardino County and destined for disposal in County and out-of-County landfills. It also measures the pounds of household hazardous waste (such as oil, paint, and batteries) collected and the number of annual participants in the Household Hazardous Waste (HHW) program.

Why is it Important?

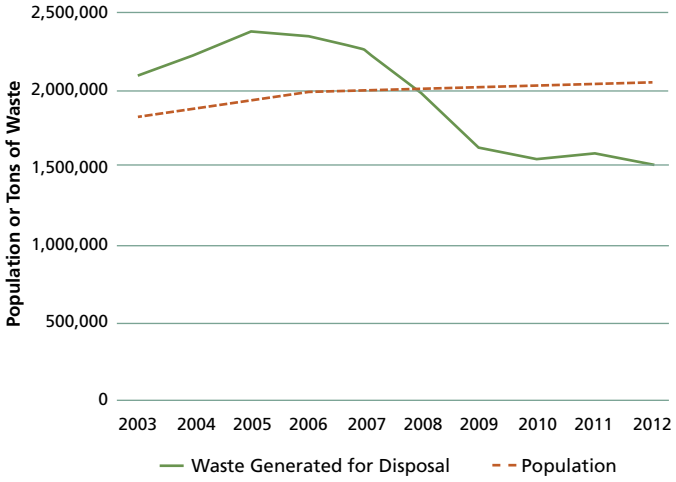
Reducing solid waste production and diverting recyclables and green waste extends the life of landfills, decreases the need for costly alternatives, and reduces environmental impact. Since 2000, all jurisdictions in California are required by law to divert 50% of waste away from landfills through source reduction, recycling, and green waste composting. Collection of household hazardous waste helps protect the environment and public health by reducing illegal and improper HHW disposal. "Universal waste" – such as electronics, thermostats, batteries, and fluorescent tubes – is produced by nearly all households and businesses, and contains hazardous chemicals or metals that can harm the environment. This type of waste accounts for an increasing proportion of HHW collected and raises the cost of collection.

How is San Bernardino County Doing?

Solid waste disposal remains below the 10-year average:

- In 2012, waste generated and disposed by San Bernardino County residents fell slightly, from 1.6 million tons of waste in 2011 to 1.5 million tons in 2012.
- Waste disposal remains down 36% since the peak in 2005, and down 29% over the past 10 years.
- Meanwhile, San Bernardino County's population grew an estimated 12% since 2003, suggesting that in the face of population growth, economic factors and diversion programs are driving the decline.
- Preliminary 2012 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]
- The number of households bringing HHW to regional collection centers fell slightly in 2012/13 as did the number of pounds collected. Each participating household contributed an average of 69 pounds of HHW.

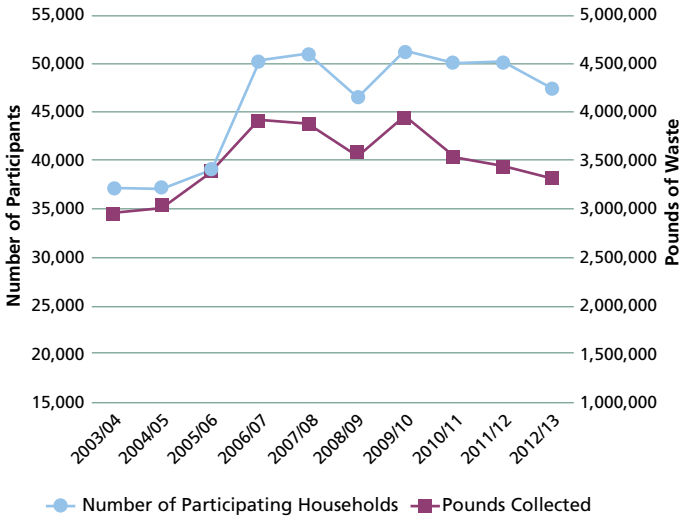
Solid Waste Generated for Disposal Compared to Population Growth
San Bernardino County, 2003-2012



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
San Bernardino County, 2004-2013



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)

Illegal Dumping Reports Decrease Again

Description of Indicator

This indicator measures stormwater quality management in the Santa Ana River and Mojave River watersheds by tracking 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.

Why is it Important?

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 untreated water empties 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.

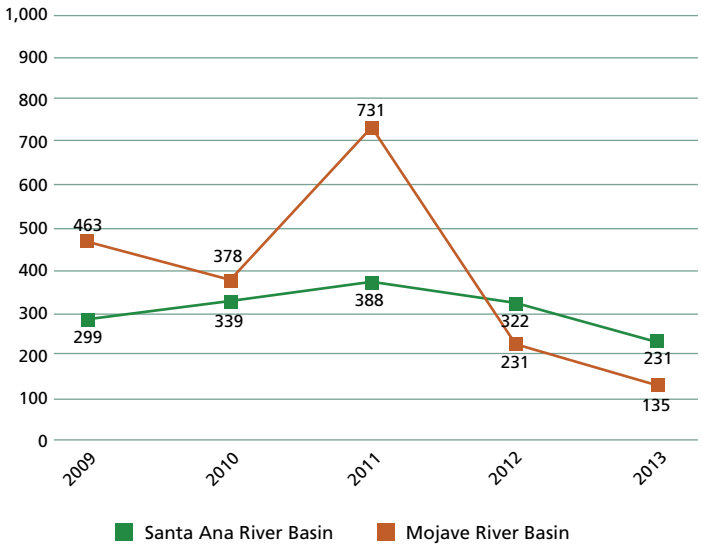
How is San Bernardino County Doing?

Both watersheds reported fewer illegal discharge, dumping and spill events:

- There were 231 illegal discharge reports in 2013 in the Santa Ana River watershed.
- While the number of reports varies from year-to-year, this year marks a 14% decline in reports since 2004.
- In the Mojave River watershed, there were 135 illegal discharge reports in 2012 – the lowest number of reports since tracking began in 2008.
- Of the illicit discharges in the two watersheds, a combined total of 201 illegal discharges required enforcement action, such as a notice of violation or fines. This equates to 55% of all illegal discharges reported.
- In the Santa Ana River basin, San Bernardino Areawide Stormwater Program members conducted 4,780 inspections of industrial and commercial facilities and construction sites. Of this total, 1,790 inspections (37%) resulted in deficiencies.
- In the Mojave River basin, Mojave River Watershed Group members conducted 132 inspections of active construction sites. Of this total, four inspections (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 that leads to more incident reporting, while 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), 2009-2013



Note: Data for Mojave River Basin are not available prior to 2008. The high number of reports in the Mojave River Basin in 2008 is due in part to an unusually large number of debris reports.

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.

13% Decline in Water Consumption Over the Past Five Years

Description of Indicator

This indicator measures average urban (residential and commercial) water consumption in gallons per capita per day from a selection of water agencies serving San Bernardino County.[1]

Why is it Important?

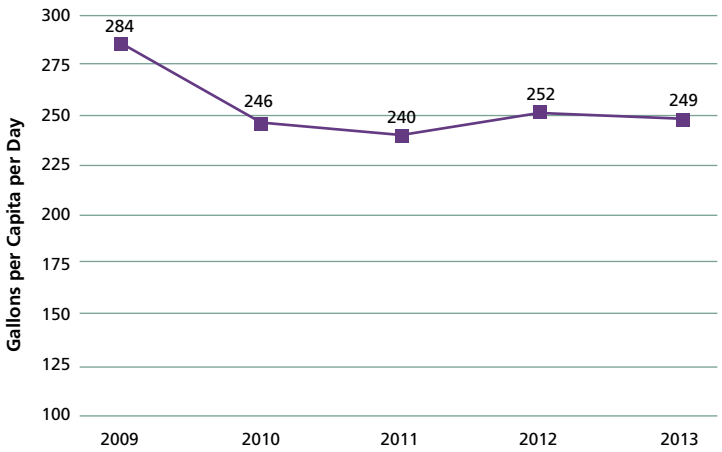
Given San Bernardino County's arid climate, effective water management is essential to ensure that the county has an ample water supply now and in the future. Conservation is also now law. In November 2009, the state legislature passed SB X7-7 requiring an approximate 20% reduction in per capita usage by 2020.

How is San Bernardino County Doing?

In 2013, average water consumption fell slightly:

- The average water consumption per person was 249 gallons a day for the agencies sampled.[2]
- Per capita water consumption varied from a high of 433 gallons per capita per day (GPCPD) to 136 GPCPD, depending on the agency.
- Part of the large variation can be explained by higher GPCPD figures in areas with high levels of tourism, since visitor population estimates are not included in the daily per capita water consumption calculation.
- Since 2009, when SB X7-7 was enacted, per capita water usage among the sampled San Bernardino County water agencies has decreased 13%.
- Compared to neighboring counties, San Bernardino County's average of 249 gallons per capita per day in 2013 is higher than Orange County at 172 GPCPD in 2012 and Riverside County at 241 GPCPD in 2012.[3]

Average Urban Water Consumption in Gallons per Capita per Day for Selected Water Agencies Serving San Bernardino County, 2009-2013



Note: Due to variation in the water agencies providing data, these summary water demand statistics are not comparable to data presented in previous Community Indicators reports.

Sources: Water demand and service population data is provided by Mojave Water Agency (which includes Mojave Basin Area, State Water Project Deliveries, and Morongo Basin Area), Twentynine Palms Water District, Inland Empire Utilities Agency (which includes the Cucamonga Valley Water District, Fontana Water Company, and the City of Ontario), City of Big Bear Lake Department of Water and Power, City of San Bernardino Valley Municipal Water Department. Acre-foot to gallons conversion data is from Minco (www.minco.com/tools/unit-calculator.aspx)

[1] Due to the many independent water agencies serving San Bernardino County, a countywide water consumption figure is not available. Data were provided by a sampling of agencies serving the larger geographic or population centers in the county.
[2] Together, the water agencies sampled in San Bernardino County serve approximately 1,252,000 residents, or 60% of the total county population.
[3] The figure for Orange County encompasses the entire county; the figure for Riverside County reflects a sample of five agencies serving approximately 45% of the total population.