

# environment

All local jurisdictions have met their targets for reducing solid waste and the number of residents bringing hazardous waste to collection centers is increasing. Per capita water consumption decreased in the past year, with a 17% decline since 2009. Long-term trends in electricity, natural gas, and vehicle fuel consumption are also downward. The Santa Ana River and Mojave River watersheds reported fewer illegal dumping or spills in the past year. Air quality was good or moderate on most days, but nearly one-third of the year had air that was unhealthy or unhealthy for sensitive groups.

## *Clean Trucks Fuel Hope for Cleaner Air*

*Can shifting a fleet of diesel-powered trucks to natural gas really make for cleaner air? The San Bernardino Associated Governments (SANBAG), which serves as the county's council of governments and transportation planning agency, wanted to find out. In 2010, SANBAG teamed up with the California Energy Commission, the U.S. Department of Energy's Clean Cities program, and Ryder System, Inc. to deploy 202 state-of-the-art compressed natural gas (CNG) and liquefied natural gas (LNG) heavy-duty tractor-trailer trucks in leased service in the South Coast air basin. The project also funded CNG and LNG fueling and maintenance facilities in the cities of Fontana and Orange. During the 20-month demonstration period, the natural gas trucks logged almost nine million miles and displaced more than 1.35 million gallons of diesel fuel, exceeding project goals.*

# Milestone: No Days of Very Unhealthy Air

## Description of Indicator

This indicator uses the Air Quality Index (AQI) to measure air quality in San Bernardino County (including South Coast and Mojave Desert monitors in San Bernardino County), and compares this data to other counties in the South Coast Air Quality Management District (SCAQMD).

## Why is it Important?

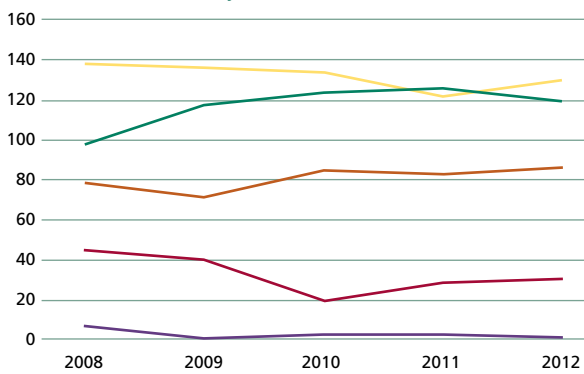
Poor air quality can aggravate the symptoms of heart and lung ailments, including asthma. It can also cause irritation and illness among the healthy population. Long-term exposure increases the risks of lung cancer, cardiovascular disease, and many other health conditions. Poor air quality can also put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

## How is San Bernardino County Doing?

Overall air quality was somewhat poorer in 2012:

- About a third of the year (120 days) had air quality in the “good” range, which is less than in 2011, and another third of the year (129 days) had “moderate” air quality, which is more than the previous year.
- There were also more days that were considered “unhealthy” (30 days or 8% of the year) and “unhealthy for sensitive groups” (87 days or 24% of the year) such as asthmatics (see Chronic Disease).
- However, for the first time in 30 years, there were no days with air quality in the “very unhealthy” range.<sup>1</sup>
- Among the four counties within the SCAQMD air basin, San Bernardino County had more days of good air than Los Angeles and Riverside counties, but fewer days of good air than Orange County.

**Air Quality Index**  
San Bernardino County, 2008-2012



Number of Days When Air Quality Was...

- Good
- Moderate
- Unhealthy for Sensitive Groups
- Unhealthy
- Very Unhealthy

Note: These data, which omit FEM PM 2.5 values, are not directly comparable to data presented in previous Community Indicators Reports.

Source: South Coast Air Quality Management District

<sup>1</sup>Thirty-year trend is obtained from the U.S. Environmental Protection Agency, Air Data ([www.epa.gov/airdata](http://www.epa.gov/airdata)). Since Air Data output from 2009 to present in San Bernardino County (and from 2008 to present in the other SCAQMD counties) is not comparable to prior years, the data shown for San Bernardino County after 2008 (and after 2007 for the other counties) was calculated by SCAQMD to correspond with Air Data.

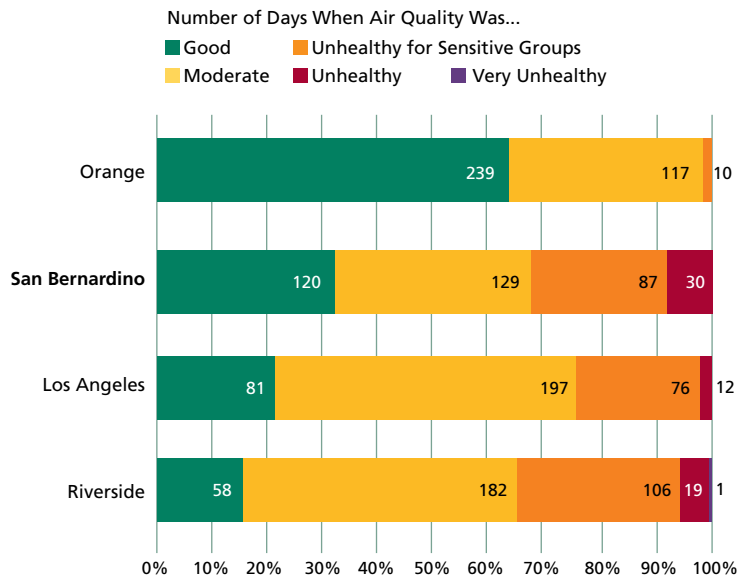
## Air Quality Index

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 County Comparison, 2012



Note: These data, which omit FEM PM 2.5 values, are not directly comparable to data presented in previous Community Indicators Reports.

Source: South Coast Air Quality Management District

## Connecting the Dots

Air Quality in San Bernardino County is directly affected by Transit initiatives.

# After Five Years of Declines, Solid Waste Disposal Rises

## Description of Indicator

This indicator measures the tons of commercial and residential solid waste generated in San Bernardino County destined for disposal in County landfills, as well as waste destined for 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?

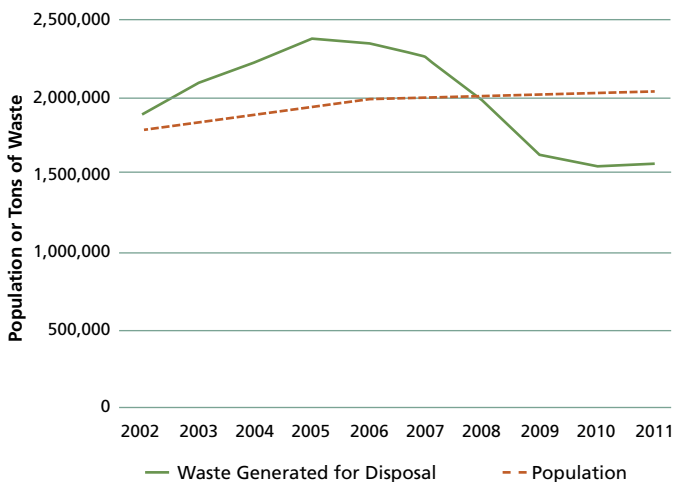
Reducing solid waste production and diverting recyclables and green waste extends the life of landfills, decreases the need for costly alternatives, and reduces environmental impact. As of 2000, all jurisdictions in California are required by law to divert 50% of waste away from landfills through source 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 is up slightly:

- After five years of declines, waste generated and disposed by San Bernardino County residents rose 1% in 2011.
- Waste disposal remains down 33% since the peak in 2005, and down 19% since 2002.
- Meanwhile, San Bernardino County’s population grew an estimated 14% since 2002, suggesting that economic factors and diversion programs, not population, are primarily responsible for the decline in disposal.
- Preliminary 2011 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.<sup>1</sup>
- The number of households bringing HHW to regional collection centers rose slightly in 2011/12 while the number of pounds collected declined. Each participating household contributed an average of 71 pounds of HHW.
- San Bernardino County has a higher HHW program participation rate (9% of households) than the statewide average (7%).<sup>2</sup>

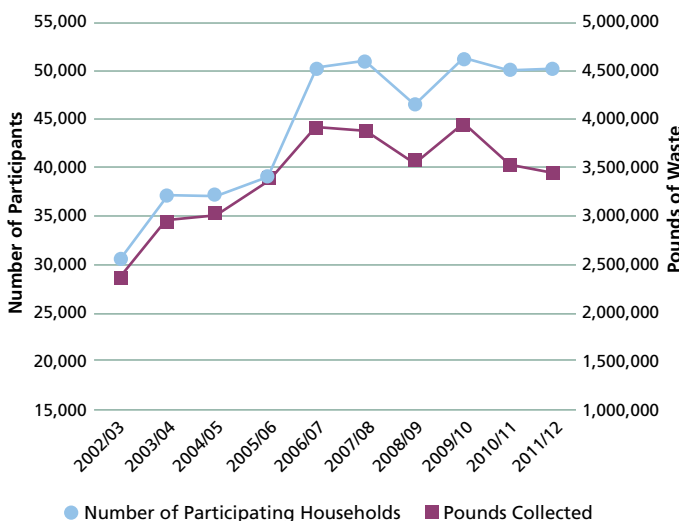
Solid Waste Generated for Disposal Compared to Population Growth San Bernardino County, 2002-2011



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 San Bernardino County, 2003-2012



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

Source: San Bernardino County Department of Public Works

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

<sup>2</sup> CalRecycle ([www.calrecycle.ca.gov/HomeHazWaste/reporting/Form303/default.htm](http://www.calrecycle.ca.gov/HomeHazWaste/reporting/Form303/default.htm)), 2010/11; U.S. Census Bureau, American Community Survey, 2009-2011, 3-Year Estimates ([www.census.gov](http://www.census.gov))

### Connecting the Dots

The proper disposal of Solid Waste and Household Hazardous Waste improves Stormwater Quality.

# Decrease in Illegal Dumping Reports

## 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?

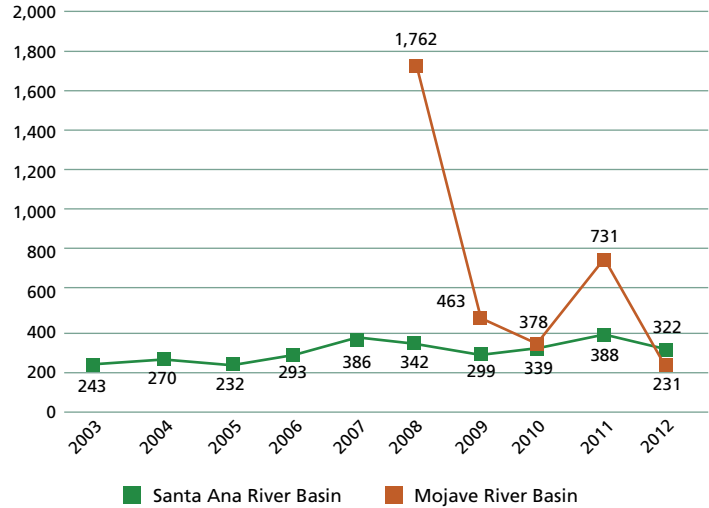
Stormwater pollution refers to urban water runoff that picks up pollutants as it flows through the storm drain system – a network of channels, gutters and pipes that collects rain and snowmelt. Eventually, the water empties – untreated – directly into local rivers and lakes. Pollutants in stormwater 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, clog the storm drain system, and attract rats and cockroaches. Flooding may also occur due to blocked storm drains during heavy rain events. Effective stormwater management is critical for reducing or eliminating pollution, blocked drains and flooding.

## How is San Bernardino County Doing?

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

- There were 322 illegal discharge reports in 2012 in the Santa Ana River watershed.
- While the number of reports varies from year to year, there has been an average increase of about nine reports a year since 2003.
- In the Mojave River watershed, there were 231 illegal discharge reports in 2012. This marks the fewest number of reports since tracking began in 2008.
- Of the illicit discharges in the two watersheds, a combined total of 260 illegal discharges required enforcement action, such as a notice of violation or fines. This equates to 47% of all illegal discharges reported.
- In the Santa Ana River basin, San Bernardino Areawide Stormwater Program members conducted 4,905 inspections of industrial and commercial facilities. Of this total, 1,744 inspections (or 36%) resulted in facilities having to take corrective actions to comply with stormwater regulations.
- In the Mojave River basin, Mojave River Watershed Group members conducted 195 inspections of active construction sites. Of this total, 39 inspections (or 20%) resulted in the facility having to take corrective action.

**Stormwater Quality: Illegal Discharge, Dumping and Spill Events in the Santa Ana and Mojave River Basins (San Bernardino County portions), 2003-2012**



Note: Data have been revised since previously reported. 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.

## 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.

## Connecting the Dots

Stormwater Quality and the potential use of storm water (purple pipes) relates directly to Water Consumption.

# Water Consumption Drops for Third Consecutive Year

## 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.<sup>1</sup>

## 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 2012, average water consumption continued to decline:

- The average water consumption per person was 179 gallons a day for the six agencies sampled.
- Per capita water consumption varied from a high of 246 gallons per capita per day (GPCPD) to 92 GPCPD, depending on the agency.
- Since 2009, when SB X7-7 was enacted, per capita water usage among the sampled San Bernardino County water agencies has decreased 17%.
- Compared to neighboring counties, San Bernardino County's average of 179 gallons per capita per day is higher than Orange County at 165 GPCPD, and lower than Riverside County at 241 GPCPD.<sup>2</sup>

Average Urban Water Consumption in Gallons per Capita per Day for Selected Water Agencies Serving San Bernardino County, 2008-2012



Note: Data for 2011 have been updated since publication in the 2012 Community Indicators Report.

Sources: Analysis of data provided by Fontana Water Company; Santa Ana Watershed Project Authority; Cucamonga Valley Water District; Mojave Water Agency; City of Ontario Municipal Water Agency; City of San Bernardino Municipal Water Department; Victorville Water District; California Department of Finance, Table E-4

<sup>1</sup>Due to the many independent water agencies serving San Bernardino County, a countywide water consumption figure is not available. Data were sought from a sampling of agencies serving the larger geographic or population centers in the county. Together, the six water agencies sampled in San Bernardino County serve approximately 1,300,700 residents, or 63% of the total county population.  
<sup>2</sup>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.

**Connecting the Dots** .....  
 Water Consumption and conservation is a topic of interest to legislators and the community, and may lead to increased Voter Participation rates.

# Electricity and Natural Gas Use Up; Vehicle Fuel Use Down

## Description of Indicator

This indicator measures total and per capita electricity, natural gas, and vehicle fuel use in San Bernardino County.

## Why is it Important?

Energy prices and supplies impact the cost of doing business as well as business stability. Additionally, the three main contributors to greenhouse gas (GHG) emissions – electricity, natural gas, and vehicle fuels – are together responsible for over 80% of GHG emissions. Improved energy efficiency saves residents and businesses money, reduces dependency on fossil fuels, and lessens the environmental impact of carbon emissions.

## How is San Bernardino County Doing?

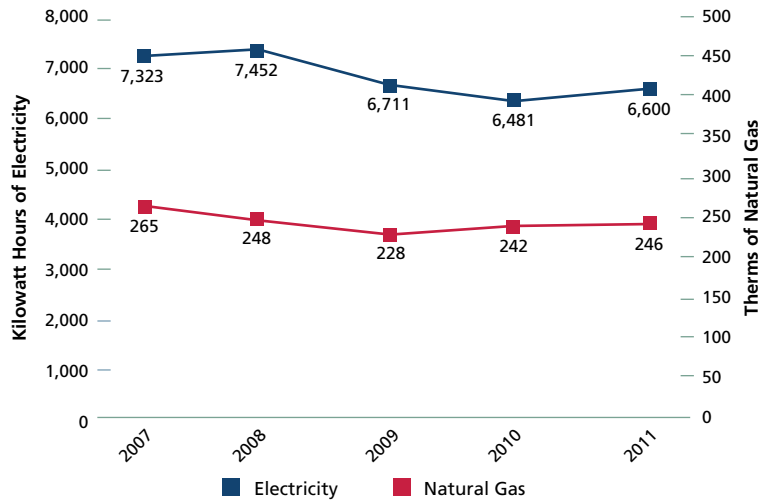
Between 2010 and 2011, per capita electricity and natural gas consumption increased:

- Per capita electricity consumption and natural gas consumption both increased 2% from 2010 to 2011.
- However, the five-year trend remains downward with a 10% decline in per capita electricity use and 7% decline in natural gas use during the period from 2007 to 2011.

Vehicle fuel consumption is trending downward:

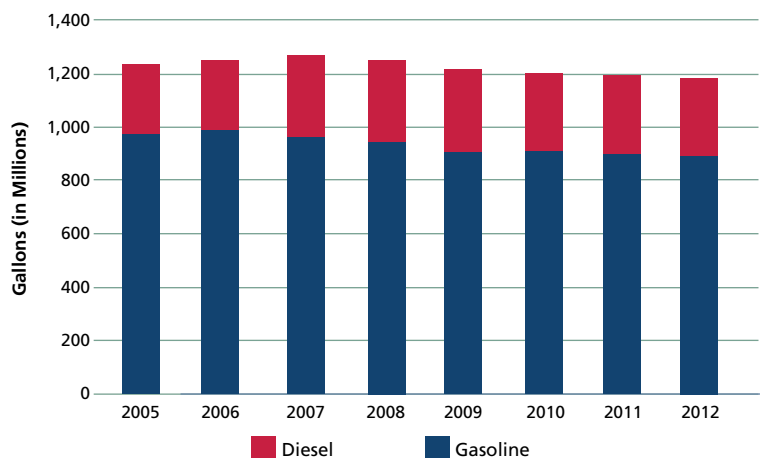
- Between 2005 and 2012, total vehicle fuel consumption (gasoline and diesel) decreased 5%, from a total of 1.26 billion gallons in 2005 to 1.19 billion gallons in 2012.
- At the same time, the amount of travel (in daily vehicle miles of travel) increased by about 2%, suggesting an improvement in average vehicle fuel economy.
- On a per capita basis, vehicle fuel consumption declined 10.7% from 646 gallons per person in 2005 to 577 gallons per person in 2012.
- The trend in higher fuel efficiency is borne out by the steadily increasing fuel economy of new vehicles purchased, averaging 21.7 miles per gallon nationally in 2010 and 23.2 miles per gallon in 2012. Average fuel economy is expected to continue to improve as these new vehicles replace older ones.
- In the single year between 2011 and 2012, vehicle fuel consumption decreased less than 1%.

**Per Capita Electricity and Natural Gas Consumption**  
San Bernardino County, 2007-2011



Sources: California Energy Commission Energy Consumption Data Management System (<http://ecdms.energy.ca.gov/elecbycounty.aspx>); California Department of Finance Population Estimates

**Vehicle Fuel Consumption**  
San Bernardino County, 2005-2012



Note: Consumption figures for years 2005-2007 are actual consumption reported by Caltrans; figures for years 2008-2012 were estimated for San Bernardino County based on statewide gasoline consumption data from the California State Board of Equalization.

Sources: Caltrans California Motor Vehicle Stock Travel, and Fuel Forecast ([www.dot.ca.gov/bq/tsip/smb/documents/mvstaff/mvstaff08.pdf](http://www.dot.ca.gov/bq/tsip/smb/documents/mvstaff/mvstaff08.pdf)); California State Board of Equalization ([www.boe.ca.gov/sptaxprog/reports/MVF\\_10\\_Year\\_Report.pdf](http://www.boe.ca.gov/sptaxprog/reports/MVF_10_Year_Report.pdf))

### Tackling GHG Emissions

In 2006, AB 32 and SB 375 set greenhouse gas (GHG) reduction targets. In San Bernardino County, the members of the San Bernardino Associated Governments (SANBAG) developed a plan to reduce GHG emissions. The effort will develop the following:

- A baseline year (2008) GHG emissions inventory for each of the participating cities;
- A future year (2020) GHG emissions forecast for each of the cities;
- A tool for each city to develop a municipal inventory (i.e., emissions due only to the city's municipal operations) and municipal reduction plan;
- Regional and local GHG reduction measures for building energy, water, transportation, off-road equipment, waste, and stationary fuel combustion; and
- Greenhouse gas reduction plans for each jurisdiction.

The County of San Bernardino has completed a similar plan, and 21 cities are jointly participating in the SANBAG effort. The GHG Plan and associated Environmental Impact Report will be completed in 2013.

### Many Factors Influence Energy Consumption

Energy consumption in any given year is influenced by a range of factors including the economy, fuel prices, discretionary income, and weather conditions. Conservation and technological advances in efficiency also contribute to reductions in energy consumption.

### Connecting the Dots

Energy Consumption is driven by the economy as a whole and the various Employment sectors.