

Green, Greener, Greenest



A summary of the City of Santa Clara's efforts to protect the environment

What you can do to help

City has history of environmental sensitivity

For more than 40 years, the City of Santa Clara has demonstrated a serious concern and commitment to protecting and preserving the environment. Through its policies, actions, and innovative leadership, the City of Santa Clara – and its residents and businesses – have stepped up to safeguard natural resources and the future of the planet for coming generations.

One of the City Council's adopted 2007-09 Principles and Priorities is to "affirm commitment to reduction of greenhouse gases and development of sustainable renewable energy and green power resources." Climate protection and sustainability are key initiatives in the update of the City's General Plan for 2010-2025.

This special publication summarizes this community's many environment-friendly practices, programs and projects. It also includes ideas of how residents and businesses can act to save more energy and reduce impact on the land, air, and water of Earth.



Global warming – what's it all about?

You are not the only person who sometimes wonders how recycling a soft drink can is helping to prevent global warming ... and why you should care if it does. Unless you've spent some time studying and thinking about the environment, the inter-connections between what we do in everyday life and the future of the Earth may not be obvious.

Global warming is another term for "climate change," which refers to the average temperature of the Earth over decades and centuries. Scientists have calculated the Earth's climate going back more than 100,000 years. There have been temperature swings throughout history, but most climate scientists believe that humans are to blame for much of the warming that has occurred since the early 1900s.

The Intergovernmental Panel on Climate Change, created by the United Nations and comprised of scientists from 113 countries, issued a warning report about climate change in the 21st century with these startling statistics:

- The Earth's temperature is predicted to rise 2-11.5 degrees Fahrenheit by the year 2100.
- Sea levels are projected to rise 7-23 inches by the end of the century – more if polar ice sheets continue to melt.

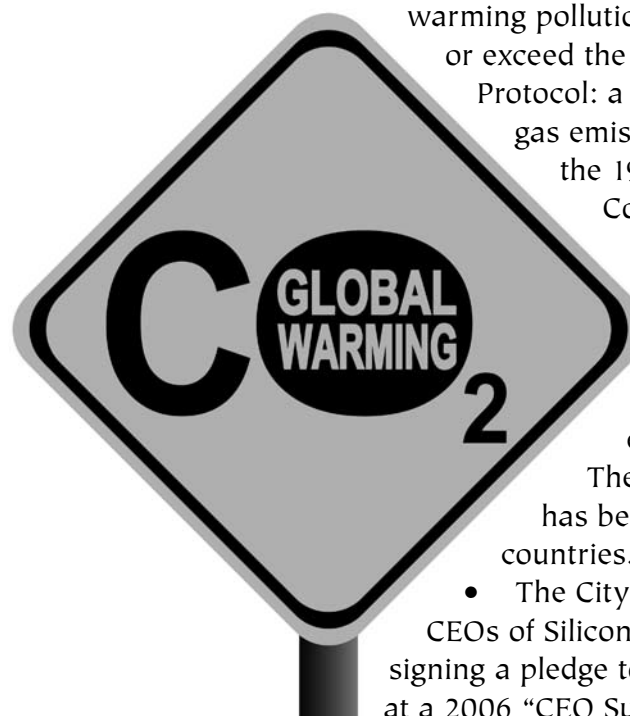
The dangers of climate change are many. Weather patterns may change, bringing hurricanes, blizzards, heavier rains and droughts – leading to more natural disasters such as flooding and wildfires. Ocean temperatures may rise, affecting marine life, and the mammals that are dependent on them as a food source. Heat stored in oceans may also be released into the atmosphere, accelerating more global warming.

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City actions show concern about global warming

Over the past few years, the City of Santa Clara has publicly pledged its support of regional, national and international initiatives focused on reducing greenhouse gases in order to slow climate change. These include:

- Santa Clara is one of 780 cities in America [as of Jan. 28, 2008] that have signed the U.S. Mayors Climate Protection Agreement calling on communities throughout the nation and the federal government to take actions to reduce global warming pollution. The goal is to meet or exceed the target of the Kyoto Protocol: a reduction of greenhouse gas emissions to 5.2% below the 1990 levels by 2012. Compared to the emission levels that would occur without the Kyoto Protocol, this target actually represents a 29% cut, according to environmental experts. The international agreement has been ratified by 141 countries.
 - The City joined more than 850 CEOs of Silicon Valley companies in signing a pledge to promote clean energy at a 2006 "CEO Summit on Alternative Energy."
- Santa Clara is a key member of Sustainable Silicon Valley, a coalition of businesses, governments and non-government organizations working to reduce regional carbon dioxide emissions 20% below 1990 levels by 2010.
- Representatives of the City participated in the United Nations Climate Change Conference in early 2008 and shared success stories from the municipal Electric Utility, Silicon Valley Power, and other members of the Northern California Power Agency on providing energy from renewable sources.



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Preserving open space is important

At the start of 2008, the City of Santa Clara has approximately 464.5 acres of open space within City limits. This translates into 4.07 acres of open space per 1,000 residents.

The open space includes 32 municipal parks (covering 242 acres), 10 special park facilities, the Santa Clara Golf & Tennis Club, and City cemeteries. A Greenprint Map, which can be viewed on the City’s website, shows all of the City-owned open space as well as schools, creeks, landscaped medians, and other “green” sites.

In 2001, a two-year metamorphosis of 40 acres of blighted land in Santa Clara was completed – turning an abandoned golf course littered with debris and weeds into a beautiful open space that showcases seven natural habitats of the region.

Ulistac Natural Area includes grassland, coast scrub, oak savannah, riparian woodland, sycamore woodland, oak woodland and wetlands. Irrigation in the park uses recycled water piped in from the San Jose/Santa Clara Water Pollution Control Plant.

The development and maintenance of this open space is a cooperative effort between the City and volunteers who help plant and care for the habitats.

The City invested in another 40 acres of open space with the purchase of a wildlife habitat in Coyote Valley, purchased with funds from the municipal Electric Utility, Silicon Valley Power, and donated to The Land Trust of Santa Clara County to ensure permanent protection of the land and its resources. This land is home to the Bay Checkerspot Butterfly, an endangered species, as well as other wildlife.

A third example of the City’s commitment to preserving open space is the donation of a parcel of property to the Don Edwards San Francisco Bay National Wildlife Refuge, which is owned and administered by the U.S. Department of the Interior, U.S. Fish and Wildlife Service. The property was gifted to the City by Evalyne Y. Bentzien, a long-time resident.

The small parcel is in the center of the South Bay Salt Pond Restoration Project in the Refuge, the largest tidal wetland restoration project on the West Coast of the U.S. The Wildlife Refuge is used by waterfowl, shorebirds, rails, egrets and herons, and its vegetation is important for filtering pollutants and maintaining water quality in the Bay.

The City’s concern for sensitive environmental areas led to the City Council’s decision in 2003 to select a route for a four-mile electrical transmission line that would keep it away from wetlands. The



“We do not inherit the earth from our ancestors, we borrow it from our children.”

Native American proverb



line runs between the Silicon Valley Power Northern Receiving Station and PG&E’s Los Esteros Substation in North San Jose and provides significant power capacity for North Santa Clara.

Facts about Recycling

- Every second in America, 1,500 aluminum cans are recycled
- Recycling one glass bottle saves enough energy to light a 100-watt bulb for four hours
- Every ton of recycled paper saves 17 trees and 380 gallons of oil
- Tennis balls get their “fuzz” from recycled plastic
- The amount of motor oil Americans could recycle each year would fill 120 supertankers

Recycling brings results

Earth Day in April, 1970 is often credited as the start of the environmental movement – a point in time when Americans began to realize that they needed to take action to conserve resources and protect the future of the planet. That same year, Congress passed the Resource Recovery Act to focus attention on the need for recycling, resource recovery, and the conversion of waste into energy.

Through the years, recycling has expanded from newspapers and aluminum cans to a wide variety of materials used



every day at home, at work, and at school. Curbside collection programs make it easy for residents to collect and set out for pick-up recyclable items. About 7,000 tons of recyclable materials and 11,000 tons of yard clippings are collected annually from residents using the City’s curbside collection programs. This means that over 50% of the waste stream generated in Santa Clara is diverted from the landfill, saving landfill space, natural resources, and energy.

Like most businesses and nonprofit organizations in Santa Clara, the City has an active recycling program for its own staff. Mixed paper and other recyclable items are collected at workstations and central collection points in departments. In addition to mixed paper, glass and plastics, City departments also recycle tires, scrap metal, waste oil, antifreeze, dry cell and automotive batteries, and e-waste.

Recycle batteries

Americans use about eight batteries a year per person, and too many of them end up in landfills. Batteries contain toxic heavy metals such as lead, arsenic, zinc, copper and mercury. If they are buried in a landfill, the dangerous metals can seep into the groundwater.



The City of Santa Clara has a two-pronged program for collecting and recycling batteries. Residents can recycle batteries by putting them in a sealed plastic bag and placing them on top of their garbage cart for curbside collection. Batteries can also be brought to the Street Department at City Hall or any of the City’s 10 fire stations. Call 615-4900 for information or the nearest location.

Santa Clara walks the e-waste talk of “reduce, recycle, reuse”

“E-waste” refers to electronic products such as computers, copiers, fax machines, and televisions that are outdated, broken, or in some other way at the end of their useful life. Although many of these products can be reused, refurbished, or recycled, e-waste is one of the fastest growing segments of the U.S. waste stream.

The City of Santa Clara’s Information Technology (IT) Department takes the lead in looking for ways to safely dispose of old City equipment, purchase items with reduced energy consumption, and reuse technology whenever possible.

Of prime importance is reducing the generation of e-waste through savvy procurement and regular maintenance. The IT Department ensures that all new desktop computers are equipped with



Compost at home

Home composting is a great way to reduce organic household waste and improve your garden at the same time by enriching the soil. Your compost pile can be built with fruit and vegetable trimmings, coffee grounds, tea bags, eggshells, used paper towels, leaves, lawn clippings, sawdust, pine needles and common household items.

Low-cost compost bins and free classes on how to make compost at home are offered throughout Santa Clara County during the year. For more information, call the Santa Clara County “Rotline” at 918-4640 or visit the website www.reducewaste.org.



LCD monitors rather than CRT monitors because they require less electricity and contain fewer harmful compounds. When purchasing new IT equipment such as desktop computers, printers and other peripherals, care is taken to select those that consume less energy and have options such as automatic “power off.”

Innovation also comes into play in thinking about new ways to set up IT systems. For example, Santa Clara’s IT Department is using “server virtualization” which allows one server to act as several servers. Fewer servers means saving energy, generating less heat (so more electricity is saved on air conditioning systems), and fewer pieces of equipment to be disposed of when retired from service. It is estimated that for every dollar spent on hardware, another 50-60% is spent on electricity and cooling costs for the life of the equipment. Reducing the need for hardware saves a significant amount of money as well as being environmentally friendly.

Obsolete City-owned electronic equipment is sent to a licensed hazardous materials vendor for proper disposal.

Residents and businesses can recycle e-wastes at no charge at locally publicized public and private drop-off events. For information, contact the Center for Development of Recycling at 924-5453 or 800-533-8414, or call the City at 615-3080 or 615-2063.



Recycling Dictionary

Household Hazardous Waste: Leftover household products that contain toxic, corrosive, ignitable or reactive ingredients such as paints, cleaners, pesticides, oils, etc.

Landfills: Engineered areas where waste is buried into the land. There are more than 1,700 active landfills in the U.S., according to the Environmental Protection Agency, and about 10,000 closed landfills, including one that is now the site of the Santa Clara Golf & Tennis Club. When researchers from the University of Arizona went on an archeological “dig” at a landfill they found newspapers and other biodegradable items buried decades earlier still intact. Garbage does not break down easily. In fact, it takes 100 year for a tin can to decompose, over 200 years for an aluminum can, and 450 years for plastic – all items that could be recycled.

Municipal Solid Waste: More commonly known as trash or garbage. Americans produce more than 251 million tons of MSW per year.

Waste Stream: The total flow of materials sent to disposal by all components of a community—residents, businesses, government, schools, nonprofits, etc.



The world is in your hands.

What you can do to protect Earth’s land

- Recycle all that you can and keep it out of the landfill! The curbside collection recycling program includes glass containers, aluminum and metal cans, scrap metal, polystyrene (Styrofoam), plastic containers, plastic bags, newspapers, mixed paper, used motor oil, used oil filters, and heavy packing cardboard.
- Forget about bottled water and enjoy fresh water from the faucet. The City of Santa Clara provides a safe and reliable supply of high quality drinking water. The Earth Policy Institute reports that 1.5 million barrels of oil is used annually to produce plastic water bottles for U.S. consumers, enough to fuel 100,000 cars for a year.
- Take your own bags when shopping for groceries, clothes, and household items. Either reuse paper or plastic bags you have, or get cloth bags that can be used for years.
- Keep household hazardous waste out of landfills. Drop-off events are scheduled throughout the year to safely dispose of household cleaners, pesticides, herbicides, pharmaceuticals, paint products, car and household batteries, solvents, waste oil, automotive products, and Sharps containers. Call 299-7300 for schedule information and drop-off appointments.
- Eliminate as many disposable products as possible from home and work. Use washable cups and glasses, cloth napkins instead of paper, sponges rather than paper towels for clean-up, etc. It can also save you money! Using one roll of paper towels a week can add up to \$87 a year.
- Recycle your old cell phone by donating to the Santa Clara Senior Center for emergency use by senior citizens and disabled persons.

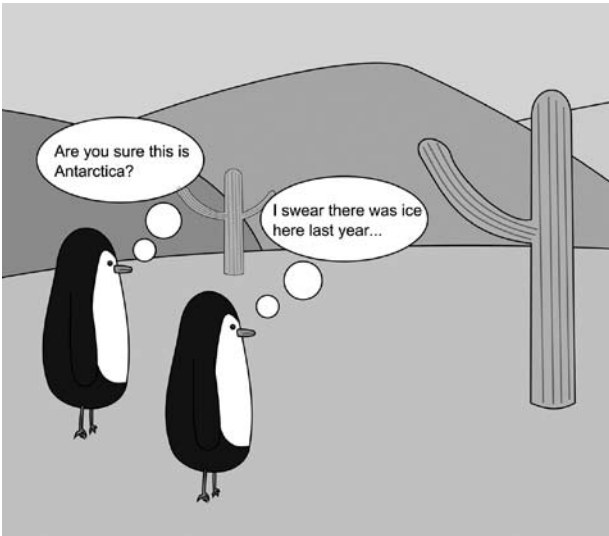
“When we see land as a community to which we belong, we may begin to use it with love and respect.”

*Aldo Leopold
A Sand County Almanac*



**Concerned about
global warming**
from page 1

All of the measures to reduce greenhouse gases are based on obtaining an inventory of current emissions to use as a benchmark in order to assess improvement. The City of Santa Clara is working with a consortium of agencies on a regional inventory, estimated to be complete in mid 2008. These agencies include Joint Venture: Silicon Valley Network, Sustainable Silicon Valley, the International Council on Local Environmental Initiatives, and the Bay Area Air Quality Management District.



Santa Clara is ahead of most communities in tracking greenhouse gas emissions since the municipal Electric Utility, Silicon Valley Power, began a formal inventory in 2005 with third party certification from the California Climate Action Registry. In 2006, the City Council endorsed the Greenhouse Gas Reduction Principles developed by the California Municipal Utilities Association. The Principles include a commitment to:

- Aggressively pursue renewable energy supplies
- Measure and verify programs that reduce greenhouse gas emissions
- Educate customers on ways to reduce greenhouse gas emissions

Also in 2006, the City and its Electric Utility are on record supporting the National Action Plan for Energy Efficiency, a commitment by a collaboration of electric utilities, utility regulators and partner organizations to aggressively create a sustainable approach to energy efficiency.

If the tenets of this plan are fully implemented, it could help defer the need for 40 new 500-megawatt power plants in the U.S. – avoiding greenhouse gas emissions equivalent to those given off by 35 million vehicles. It would also result in lowering the cost of air pollution controls and reducing the price of natural gas.

*“We never know the
worth of water till the
well is dry.”*

*Thomas Fuller
Gnomologia, 1732*

Santa Clara a leader in recycled water use

All water is recycled. Mother Nature continuously renews water through a cycle — from ocean to sky to earth. So, although the concept of recycling water is not new, it has only been in the last three decades that communities have experimented with recycling waste water for reuse. The City of Santa Clara was the first Bay Area city to launch an extensive recycled water program.

Drought years in the mid 1980s sparked the City’s interest in using recycled water, primarily for landscape irrigation. The initial recycled water transmission and delivery system was completed in 1989, and the water was used for irrigation at the Santa Clara Golf & Tennis Club, at a nearby City park, for street median landscaping, dust control for construction projects, sewer cleaning and street cleaning. These early efforts, which saved enough potable water to serve the equivalent of 1,400 homes for a year, won the City an American City & County Award of Merit.

Since then, the recycled water program has grown regionally and the South Bay Water Recycling Program was started to reduce the discharge of treated water flowing from the San Jose/Santa Clara Water Pollution Control Plant into San Francisco Bay. Too much discharge of highly treated water into the Bay converts the saltwater marsh to fresh water and brackish water marsh, negatively impacting the salt marsh habitat of two endangered species. Recycling some of the water from the plant reduces the discharge of treated water into the Bay, as well as reserving potable water for drinking, food preparation and hygiene.

By 2006, one hundred miles of recycled water pipeline was operational in the South Bay Recycling distribution system, delivering recycled water for landscaping, playing fields, golf courses, cemeteries, industrial processing, dual plumbing, agriculture and other non-drinking water purposes. In Santa Clara, businesses using recycled water include Intel, Sun Microsystems, California Paperboard, Great America Theme Park, and the San Francisco 49ers training facility. Parks served with recycled water include Lick Mill Park, Thamien Park and Live Oak Park. In 2007, the City of Santa Clara delivered more than 1 billion gallons of recycled water for non potable uses.



Don’t try to recycle water at home

Reusing dish, shower, sink and laundry water to irrigate the yard might seem like a good way to conserve water, but in most cases it is not. There are strict health regulations on the use of “gray” water, and it requires a change in household plumbing that needs a building permit.

A better way to protect water resources is by reducing household water use and supporting the City’s extensive water recycling efforts.

What you can do to protect Earth’s water

- Make sure your home does not have a hidden water leak. Read your water meter before and after a two-hour period when no water is being used. If the meter reading is not exactly the same, there is a leak.
- Take shorter showers, 3-5 minutes is long enough to get clean.
- Aerate your faucets to reduce flow by 50%.
- Turn off the faucet while brushing your teeth, shaving or washing your face.
- Only run full loads of the dishwasher and clothes washer.
- Fish don’t need aspirin or any drug. Never flush medicines down the toilet or any drain because ingredients can make their way into the Bay. Properly dispose by taking these to household hazardous waste disposal days.
- Pick up free water conservation devices from the Water & Sewer Utilities Office at City Hall including low flow showerheads, faucet aerators and automatic shut off hose nozzles.
- Be careful about what ends up in the gutter in front of your house. Storm drains flow directly into creeks and San Francisco Bay without any screening or treatment. Grass clippings, pet waste,



- fertilizer and detergents can be toxic to fish and other wildlife.
- Avoid washing your car in the street or driveway where soapy water will flow into the storm drain.
 - Get irrigation tips and information on how to landscape with plants that don’t require much water from the Water & Sewer Utilities Office.
 - Add a layer of mulch around plants. It will help maintain moisture, and discourage weeds.
 - Don’t over-water your yard. Adjust your watering schedule to what your plants need during each season and check your irrigation system for broken sprinklers.
 - Use a broom rather than a hose to clean off the driveway, patio or deck.

Water Dictionary

Gray Water: Wastewater from bathtubs, showers, bathroom sinks, dishwashers and clothes washers.

Wastewater: Water that has been used for washing, flushing, or in manufacturing processes. Wastewater goes down a drain and into a sanitary sewer system that flows it to the San Jose/Santa Clara Water Pollution Control Plant.

Recycled Water: Water that has been treated at the San Jose/Santa Clara Water Pollution Control Plant and is safe and usable for purposes other than drinking or food preparation.

Storm Drain: The storm drain system is designed to collect and dispose of rainwater. Water from streets, sidewalks and other hard surface areas is directed into gutters and catch basins. Underground pipes carry the water into creeks, rivers and eventually San Francisco Bay.

Urban Runoff: Rainwater that does not naturally percolate into the ground or evaporate, but runs off of hard surfaces such as streets, sidewalks, driveways, parking lots, etc. into the storm drain system.

Nonpoint Source Pollution: Materials that mix with urban runoff and pollute water in the storm drain. The pollution can come from many different sources including fertilizers, herbicides and insecticides from yards, oil or grease from vehicles, soapy water from washing the car, pet wastes, and more. Contents of the storm drain system are not screened or treated, so pollutants are not removed and can cause water quality problems. The City of Santa Clara has participated in the Santa Clara Valley Urban Runoff Pollution Prevention Program since 1990 with such activities as regular street sweeping, storm drain cleaning, industrial/commercial discharge control and other policies and practices to reduce pollution in urban runoff.

Planning for next 50 years of Wastewater Treatment Plant

The San Jose/Santa Clara Water Pollution Control Plant is jointly owned by the two cities and is one of the largest advanced wastewater treatment facilities in the U.S. About 115 million gallons of wastewater (influent) arrives at the plant daily. The treated wastewater (effluent) is released to the San Francisco Bay, with about 10% reused in the recycled water program.

The Plant was built in 1956 and needs to be modernized. A Master Plan effort is underway to anticipate future Plant needs for capacity, treatment, and reliability improvements. The Master Plan will also address regulatory compliance, worker and



community safety, habitat protection and restoration, land management, and other aspects of its operation and integration into the community.

The target date for completion of the Master Plan is 2009. The public is invited to learn more about the Plant and the process on the website www.sanjoseca.gov/esd.

Global warming from page 1

Without greenhouse gases, life as we know it would not exist on Earth. But too many greenhouse gases in the atmosphere trap heat and increase the temperature of the Earth’s surface. Some greenhouse gases occur in nature, and some are exclusively human-made, such as gases used for aerosol. In the U.S., greenhouse gas emissions come mostly from burning fossil fuel for energy for manufacturing, transportation, heating and cooling.

So, the connection between that soft drink can in your garbage and the future of the Earth as a planet that can sustain human life is this:

- Making a new soft drink can requires energy.
- Most energy now in use comes from burning fossil fuel.
- Burning fossil fuel generates carbon dioxide.
- Carbon dioxide is one of the greenhouse gases that contributes to global warming.
- Global warming is changing weather patterns.
- Changing weather patterns are depleting natural resources and endangering the sustainability of human life.

Numbers tell the environmental story

- **5,909,000,000** tons of carbon dioxide generated in the U.S. by factories and automobiles every year
- **5,800,000** tons of catalogs and other direct mailings ended up in the U.S. municipal solid waste stream, enough to fill more than 450,000 garbage trucks
- **10,000** steps a day recommended by the U.S. Surgeon General for each person to stay healthy and fit, and keep vehicles off the road
- **200** parking spaces at the Great America Train Station, a joint project of the City of Santa Clara and VTA, that encourages commuters and weekend travelers to use public transit including VTA light rail and buses, ACE and Capitol Corridor services
- **100** miles of purple pipe in place in Santa Clara to carry recycled water to industry, parks, and landscaping
- **90** tons of waste kept out of the landfill because of comprehensive recycling program by the Santa Clara Convention Center, which has been honored for four years by the California Integrated Waste Management Board’s Waste Reduction Awards Program
- **75** electric and hybrid vehicles in the City’s sustainable green fleet
- **50-70** gallons of water used by the average person each day
- **4.3** pounds of trash tossed out each day by the average American (compared to 2.7 pounds in 1960)
- **0** what it costs to prevent waste and conserve the Earth’s natural resources by reducing and reusing these resources



Renewable energy in Santa Clara's power mix

Renewable energy comes from resources such as sun, wind, and rain that are replenished naturally. It is the opposite of non-renewable energy that comes from resources taking millions of years to form and which, once used, cannot be easily replaced. Non-renewable resources include natural gas, coal, and oil.

A high priority for Silicon Valley Power, Santa Clara's municipal Electric Utility, is to keep increasing the percentage of its power from renewable resources. In 2006, 22% of its power mix was from renewable geothermal, small hydroelectric, solar, and wind sources. The 2007 total surpassed 30%. If large hydroelectric resources are included, then 57% of Santa Clara's power mix is renewable.



More than 4,200 households and 194 Santa Clara businesses are participating in the Green Power program in which they pay slightly higher electric rates in order to buy power from renewable energy sources such as wind and solar.

Residents help to "Spare the Air"

Many Santa Clara residents pay close attention to announcements of "Spare the Air" days when the Bay Area Air Quality Management District asks the public to voluntarily cooperate during high-risk air pollution conditions.

The District monitors pollutants and the level of particulate matter in the air. When the level becomes unhealthy, a "Spare the Air" Day is declared. During winter months (mid-November to mid-February), this means urging residents not to burn wood in their fireplaces and woodstoves. During summer months, the Spare the Air program notifies the public when air quality is forecast to be unhealthy and urges them to drive less and reduce their emissions of pollutants from activities such as using gas-powered lawn mowers and blowers.

Today's conditions and a five-day air quality forecast for Santa Clara can be viewed on the website www.sparetheair.org.

On the road to cleaner air

Ten years ago, the City first replaced some of its gasoline-powered fleet vehicles with electric vehicles. Ever since, the City has diligently worked to replace more of the fleet with low/zero emission vehicles. Currently, the City's total fleet of 180 includes five electric vehicles and 70 hybrids. If only non-public safety vehicles are counted, 88% of that portion of the fleet is alternate fuel/hybrid vehicles – surpassing the City Council's goal of 75% by June, 2008.

Alternatives to gasoline-powered vehicles for public safety uses are just starting to be manufactured, and the City will begin replacement of those vehicles as they become available. Santa Clara is already on the year-long waiting list for an aerial bucket vehicle for utility uses.

City vehicles that are diesel-powered are also being replaced or retrofitted with diesel emission filters over the next five years in order to meet requirements of the California Air Resources Board.



"Let the clean air blow the cobwebs from your body. Air is medicine."

Lillian Russell
Reader's Digest, 1922



How many light bulbs does it take ...

Since 1998, Silicon Valley Power has distributed more than 42,000 free compact fluorescent light bulbs to residents. If every American replaced just one old-fashioned incandescent bulb with a compact fluorescent light bulb, it would be the environmental equivalent of removing two million cars from the road.

Tips to save energy

- Turn off lights when you leave the room.
- Turn off radios, TVs, computers, and other appliances when not in use.
- Set the thermostat for 68 degrees or lower during cold weather, and 78 degrees or higher in warm weather.
- Only turn on the air conditioner if it is too hot for fans to do the cooling job.
- Close the fireplace damper when it's not in use so that heat from the furnace doesn't escape.
- Caulk or weather strip all doors and windows.
- Keep curtains closed if it is very hot or very cold outdoors.



OFF

- Replace appliances with energy-efficient models. Check on rebate offers from the municipal Electric Utility, Silicon Valley Power, on a variety of appliances, insulation, lighting and cooling products. Visit the website www.siliconvalleypower.com for current rebate programs.
- Get rid of the extra refrigerator or freezer in the garage. It may be costing you \$120 a year to operate, and you may qualify for a refrigerator recycling rebate of \$35.
- Insulate the attic and put an insulation blanket around the water heater.

What you can do to protect Earth's air

- Reduce your energy use.
- Keep your vehicle(s) in good working order. Regular maintenance and tune-ups could reduce your car's emissions by more than half.
- Combine trips and errands. Starting a car after it has been sitting for more than an hour pollutes up to five times more than when the engine is warm.
- Use public transit whenever you can.
- Walk or ride a bike instead of driving. Not only will it help to prevent air pollution, it will improve your health and fitness. Santa Clara has an active and involved Bicycle Advisory Committee that makes recommendations to the City Council on bicycle and pedestrian related projects and promotes recreational and commuter bicycling. The City has published a bicycle map showing bike routes and trails, and it is updated regularly.



- Tighten down your gas cap – as much as 30 gallons of gas evaporate every year from gas caps that aren't closed properly.
- Replace gas-powered yard equipment such as mowers and leaf blowers with electric, rechargeable, or manual models.
- Properly seal household cleaners, pool and spa chemicals, solvents, paints, etc. in airtight containers.
- Buy low VOC or no VOC household cleaners and paints. VOC is short for Volatile Organic Compound, organic compounds that evaporate into the air.
- Replace a wood-burning fireplace with an EPA-certified wood heater, fireplace insert or gas-only fireplace.
- Maintain your chimney to remove the build-up of pollutants.
- Avoid the use of aerosols. Opt for spray pump products instead.

Trees can help offset global warming



Trees benefit the environment in two ways: 1) they directly absorb carbon dioxide, the primary greenhouse gas; and 2) they provide natural air conditioning, reducing energy use. It takes a lot of trees, though, to compensate for the number of vehicles on the road – 500 full-size trees to absorb the carbon dioxide produced by a typical car driven 12,000 miles.

For almost 50 years, the City of Santa Clara has invested in a Municipal Tree Program to increase its urban forest and to maintain a healthy tree canopy in both residential and commercial areas. City trees are planted and maintained by the City.

Because of its commitment to place and maintain thousands of trees throughout the community, Santa Clara has been a “Tree City U.S.A.” every year since 1986 and received a “Tree City U.S.A. Growth Award” since 2003 for its higher level of tree care.

Trees are celebrated every year in Santa Clara at an Arbor Day/Earth Day event each spring that brings more than 1,000 students from nine local elementary schools to the grounds of the Triton Museum of Art to learn more about the environmental benefit of trees.

Green Building policies are growing

Although vehicles get the most blame for harmful emissions, the biggest emitters of carbon dioxide in the U.S., according to the U.S. Department of Energy, are buildings. According to the U.S. Green Building Council, buildings account for 65% of electricity consumption, 36% of energy use, and 30% of raw materials use.

In December of 2007, the City Council adopted three Green Building Policy Recommendations. Santa Clara and other jurisdictions in the county-wide Cities Association will be working together to achieve these goals:

- To recognize and adopt the LEED (Leadership in Energy and Environmental Design) rating system of the U.S. Green Buildings Council, and the GreenPoint residential rating system of Build It Green.
- To require the submittal of a completed LEED or GreenPoint checklist as part of a planning application. Applicants would not be required to adopt green building practices, but would be required to complete the checklist thereby increasing their awareness of green building methodologies.
- To achieve LEED Silver Certification or better for new City construction and renovation projects over 5,000 square feet.

Another aspect of protecting the environment during construction was tackled by the City Council in 2003 when it was decided that all new building and/or demolition projects over 5,000 square feet must recycle at least 50% of the materials generated for discards. So far, every project that size since then has met this requirement.

Many City buildings have been retrofit with energy efficient lighting. Buildings constructed or remodeled in recent years, such as the Senior Center, Community Recreation Center, Teen Center and Youth Soccer Park have energy efficient lighting and equipment.

Solar brings a bright future to Santa Clara

Everything under the sun – that has been the policy of the City of Santa Clara in looking at all of the ways that solar power can be used as a renewable energy source throughout the community.

Solar water heating systems for residents and businesses, including both solar pool heating and domestic hot water heating, are installed and maintained by the City's Water & Sewer Utilities. Solar electric systems for homes are encouraged by the City in a number of ways such as reduced permit fees. The City calculates the fees on installation labor costs only, excluding equipment and reducing the permits to about 40% of what it would be if the total project cost was used for the valuation. The municipal Electric Utility, Silicon Valley Power, offers \$10,000 annually in rebates for permit fees for residential solar electric systems.

To raise awareness of solar power and provide funds for installing solar in nonprofit facilities in Santa Clara, in 2003 Silicon Valley Power introduced the Neighborhood Solar Program. Residential and business customers make contributions to the fund, matched dollar-for-dollar by Silicon Valley Power. As a result, photovoltaic systems are now in place at Haman Elementary School and Valley Village Retirement Center. In 2009, the Neighborhood Solar Program will install

solar at the Bill Wilson Center, a nonprofit organization that serves youth and families. Other solar projects in Santa Clara include:

- Silicon Valley Power provided solar electric systems for three Habitat for Humanity homes built in Santa Clara. Six more Habitat home are under construction in 2008 and another project is in the planning stages. All will be provided with solar systems so that these low income families can enjoy extremely inexpensive electric bills.
- Solar systems were built into the reconstruction of Fire Station 3 and the replacement Fire Station 4 opening in 2008.
- Residents learn more about the environmental and cost benefits of solar power with a visit to the Solar Explorer, a miniature “house on wheels” equipped with solar panels and energy efficient devices and displays. Silicon Valley Power takes the Solar Explorer to schools and community events.



Energy Dictionary

Megawatt: A unit for measuring power. One megawatt – one million watts of electricity—is equivalent to the energy produced by about 10 automobile engines.

Kilowatt Hour: A unit used to measure the amount of energy used by a home or business. The average household in the U.S. uses about 8,900 kilowatt hours of electricity each year.

Renewable energy: Energy that uses natural resources such as sunlight and wind that are naturally replenished.

Non-renewable energy: Energy sources that take millions of years to form like coal, oil.

Photovoltaic: A technology that uses solar panels to produce an electric current.

Santa Clara has a long history of being sensitive to the environment

1907

The Santa Clara Woman’s Club asks residents to put rubbish in front of their homes to make them more “hygienic.” The Chamber of Commerce continues the tradition in the 1940s, and the City formally starts the Annual Clean-Up Campaign in 1960. The award-winning program allows residents of single family homes and most multi-family complexes to easily clean up their homes and yards. Many materials collected are recycled, including wood waste, metal appliances and refrigerants (Freon) from certain appliances. Salvage companies, neighbors and individuals take usable materials for sale or reuse.

1960

A Municipal Tree Program is launched by the City of Santa Clara to enhance the beauty of the community and to purify the air, absorb sound, deflect wind, provide shade protection, control erosion, and help with energy conservation.

1975

The City of Santa Clara establishes one of the nation’s first municipal solar utilities.

1986

Gas generated at the closed City landfill is recovered and converted into electric energy. By 2006, the process has generated more than 174 million kilowatt hours of electricity.

1989

The City of Santa Clara completes the first significant recycled water transmission and delivery system in the Bay Area.

1990

Curbside recycling of multiple materials begins for single family residents.

2001

The City completes an extensive retrofitting of traffic signals at 130 intersections that replaces incandescent bulbs with LED lenses, reducing the overall electricity consumption of the signals by more than 90%. LED lenses also have a lifespan 10 times longer than incandescent.



2001-2006

One of the first fleets of electric-hybrid transit buses is demonstrated in the City of Santa Clara with the Breathe Easy Express (BEE) buses that provides free, cleaner-air commuter transportation to major employment centers in Santa Clara. The demonstration project is sponsored by the municipal Electric Utility, Silicon Valley Power, and the Santa Clara Chamber of Commerce.

2002

Santa Clara is named one of the best workplaces for commuters in the Bay Area because of its commitment to bicycle lanes and facilities, trails, transit hubs, and support of employee-sponsored alternative transportation programs for workers such as carpooling and transit subsidies.

2003

City of Santa Clara requires that all building and/or demolition projects over 5,000 square feet in size must recycle at least 50% of the materials discarded.

2004

The first section of the San Tomas Aquino/ Saratoga Creek Trail is open between the Bay Trail (near Highway 237) and Agnew Road, providing a convenient alternative route for bicyclists and pedestrians.

2005

The 147-megawatt gas fired Donald Von Raesfeld Power Plant opens to provide approximately one third of the requirements needed to serve residential and business customers of Silicon Valley Power. The plant uses two high efficiency combustion turbines with added recovery steam generators, and uses recycled water in the processes. It is one of the cleanest power plants on record.



2006

Silicon Valley Power’s Green Power Program is nationally recognized with a Green Power Leadership Award by the U.S. Department of Energy, the U.S. Environmental Protection Agency and the Center for Resource Solutions. It was again honored the following year in this prestigious competition.

2007

Santa Clara University’s energy-efficient solar-power home entry wins third place in the Washington D.C. Solar Sustainability Decathlon, competing against 160 colleges from throughout the U.S. and Europe. Partial funding of the project came from Silicon Valley Power, the City’s Electric Utility.



And on the horizon...

2009

This is the tentative timeframe for completion of an innovative large-scale photovoltaic system installation over an existing City-owned public parking area at the Great America Train Station. The \$1.5 million project will shade cars while

generating renewable energy for the City’s municipal electric utility.

2010

Goal: Reduce CO2 emissions from City Hall buildings by 10%.

2011

Goal: Completion of the full 12-mile San Tomas Aquino/Saratoga Creek Trail that will extend from the San Francisco Bay Trail in Santa Clara to Prospect Road in San Jose. The trail will connect with parks, employment centers, transit systems and residential areas.

2017

Goal: 30 megawatts of solar power installed in Santa Clara by this date.

Environment Quiz

How much do you know?

- Which of the following is a renewable resource?
a) oil
b) iron ore
c) trees
d) coal
- The most common major cause of pollution of streams, rivers and oceans is what?
- Most electricity in the U.S. is generated from what source of power?
- Having ozone in the earth’s upper atmosphere protects us from what?
- What is the largest source of carbon monoxide in the U.S.?
- Which country currently emits the most greenhouse gases?
a) India
b) China
c) The United Kingdom
d) The U.S.
- Which type of light bulb uses the least energy?
a) incandescent
b) compact fluorescent
c) halogen
- How many human deaths does the World Health Organization attribute to the effects of global warming?
a) 150
b) 1,500
c) 150,000
d) 1,500,00
- How long does it take for carbon dioxide in the atmosphere to disperse?
a) 1 year
b) 10 years
c) 50 years
d) 100 years
- Recycling a stack of newspapers three feet high can save one tree.
a) True
b) False

- Answers:
- c. trees
 - Surface water running off of yards, streets, paved lots and farm fields
 - By burning coal, oil and wood
 - Harmful, cancer-causing portions of sunlight
 - Motor vehicles
 - The U.S. generates the highest amount of annual greenhouse gas emissions (about 20%), but China is expected to overtake the U.S. in annual emissions by the end of this decade.
 - b. A compact fluorescent light bulb uses 60-80% less energy than a standard incandescent bulb or halogen bulb
 - c. The effects of global warming are blamed for 150,000 global deaths per year. Causes include extreme weather, drought, heat waves, decreased food production, and the increased spread of vector-borne diseases like malaria.
 - d. 100 years!
 - True

Sources: U.S. Environmental Protection Agency, National Geographic