Sustainability Guidebook

for

Claremont Residents

The League of Women Voters of the Claremont Area
Claremont, California

Sustainability Committee

of the
League of Women Voters of The Claremont Area

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The League of Women Voters of the Claremont Area is grateful to the authors of the articles in this guidebook for their generosity in sharing their time and their expertise by preparing this material and to Sally Seven for editing this document. One of the traditional LWV missions is community education and it is in that tradition that we offer this compendium.

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As is customary, the views expressed are those of the authors, as is the selection of resources. References are included merely for the convenience of the reader and are neither definitive nor exhaustive. The inclusion of references to other organizations and resources here does not imply their endorsement by the League or by the Millenium Campaign which provided a grant to support publication.

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WHAT YOU CAN DO

A Sustainability Guidebook

for

Claremont Residents

July 2007

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INTRODUCTION

by Katie Gerecke

At the recent Claremont Public Forum on Sustainability several speakers spoke of the relationship of our local efforts to the wider world of global sustainability. Malcolm Lewis of CTG Energetics, Inc. [and a Harvey Mudd graduate] put it all in context when he said that ***sustainability is***

Global

Continental

National

State

Regional

Watershed

City

Community

Neighborhood

Block

Individual

He reminded us that, "We are all a part of the Global Ecosystem. The health of the whole is the sum of the parts. If we are concerned about the health of the whole, we need to deal with the health of each part. We can affect the whole by making wise decisions on the individual components. Different decisions need to be made, and actions taken, at each level of society." He feels that California is leading the way with AB 32 [which sets up a nonprofit California Climate Action Registry to provide procedures and protocols for reducing greenhouse gas emissions from various sources], and the governor's executive order to reduce carbon emissions in California to 1990 levels by 2020 [a 25% reduction] and to 80% below 1990 levels by 2050. Transportation fuels account for more than 40% of greenhouse gas emissions, and part of the governor's plan is to replace 20% of the gasoline used with lower carbon fuels. By establishing a western regional, multi-state [California, Arizona, New Mexico, Oregon, and Washington] registry, the governor hopes to cap greenhouse gas emissions throughout the region.

The built environment is having an enormous and growing impact on the global ecosystem. Bob Tener, Executive Director of the Charles Pankow Foundation, spoke of the economic, human, and community benefits of "going green". He said that everybody in the community, both private and public, will be "realizing benefits locally and enhancing global issues. Residents will be able to take new pride in Claremont..... acting locally for global benefits." Shannon Parry, Sustainable Community Coordinator, City of Santa Monica, stressed the importance of community education and civic participation by community institutions and businesses in their role of educating people and informing their decisions as they foster a dialog around sustainability issues. She talked about the importance of knowing a community's ecological footprint and using it to track progress. She also discussed the use of indicator data for identifying status and needed change.

Chris Veirs, Senior Planner for Redevelopment, Claremont, spoke of the work of the Claremont Mayor's Ad Hoc Sustainable Development Committee and particularly of its role in the development of a Green Paper reviewing the status of the city, mainly based on the new City General Plan. He also spoke of the tasks ahead as the city develops a Task Force on Sustainability to go forward with the vital public education and consideration of such things as incentives and policy/ordinance changes that will make Claremont more sustainable.

The sustainability forum held on April 14, 2007 was jointly sponsored by the Mayor's Ad Hoc Sustainable Development Committee [MAHSDC] of Claremont and the Sustainability Committee of the League of Women Voters of the Claremont Area. It was partially funded by the Millenium Campaign of the New World Foundation (UN) with a grant through the LWVUS Education Fund. The MAHSDC had spent about 12`months working on its "Green Paper" in ten areas under three main headings:

- Built Environment,
- Resource Management
- Natural Environment.

The League of Women Voters has positions on Sustainability at the National, State, County and Local levels. These positions include statements on Air Quality, Energy, Water, Resource and Waste Management, and Transportation among others. These positions are available for review in the local LWV office. Two LWV members served on the MAHSDC and a member of this committee served on the LWV Sustainability Committee. The LWV Committee began to develop this Resident's Guidebook at the same time.

The League firmly believes that the understanding of sustainability needs to be broad enough to include Social and Economic as well as Environmental Sustainability. The achievement of any one goal, or any one facet of the broader goal, is not enough to ensure that future generations will have at least the same opportunities to live and prosper that this generation enjoys. All aspects of sustainability must be incorporated into that vision if true sustainability is to be a reality.

To some people the concept of sustainability of our community as related to global sustainability may be relatively new; to others it may be familiar. We hope that this guidebook will encourage residents of Claremont to "***Act locally and think globally***" as they consider the suggestions herein. The purpose of the suggestions in the guidebook is to provide ideas about various ways that residents of Claremont can help our community to be more sustainable, as well as to benefit individuals and families in the community. We hope that it will provide specific, concrete suggestions that can be implemented locally and will begin to have a global impact.

It is our intent that this process will be ongoing and the benefits measurable. As new technologies, new ideas, and changes occur in the field of sustainability, we hope to revise and update the material and update the document. We invite the users of this guidebook to comment to us on the usefulness and any suggestions that they might have as we go along. This can be done by leaving a telephone or e-mail message at our local League office, listed on the front of this document.

We especially appreciate the persons who have contributed their expertise and understanding to this publication. Some are LWV members; some are not. They are all local community people who have the interests of Claremont at heart and are concerned about sustainability in all its aspects. Their time and efforts have made this guidebook possible. Your time and efforts can make it effective. Thank you for being involved and concerned.

ACHIEVING A SUSTAINABLE COMMUNITY

by Karen Vance

As The [U. S.] President's Council on Sustainable Development made clear in its March 1996 report, the umbrella of sustainability covers a wide range of issues, much broader than ecological sustainability. The Council listed eight categories or topics and specifically noted that they are "truly interdependent and flow from the Council's understanding that it is essential to seek economic prosperity, environmental protection, and social equity together. The achievement of any one goal is not enough to ensure that future generations will have at least the same opportunities to live and prosper that this generation enjoys: all are needed."

In the Preface to the Council's report, the co-chairs [Jonathan Lash, President, World Resources Instiute, and David T. Buzzelli, Vice-President, Dow Chemical Company] provide a perspective that could be helpful as Claremont seeks to become more sustainable:

"We recognized that both communities and nations exist to secure for their individual citizens the benefits of collective action in response to common problems. This collective action must, at least in a democracy, be based upon agreements of common purpose. It has been our personal experience that American society has been having increasing difficulty reaching agreement about societal goals. This has been expecially true for those issues that lie within the overlapping shadows of American's hopes for economic progress, environmental protection, and social equity. Policy debates in these areas have been characterized by confrontation and mistrust.

…

"The policies of mistrust are the greatest obstacle to the process of innovation and and change that we all believe is necessary to achieve the goals we share. We believe that consensus will move America forward both faster and farther than confrontation. Moreover, we believe that consensus is the public's job, not the government's. Government is important in implementing what the people agree on, but we all need to do the hard work of listening, learning, and finding common ground."

While the case for environmental sustainability has become an increasingly familiar concept for most of us, its interwoven history with political and social sustainability may be less familiar. A genesis of the movement for environmental sustainability, worldwide, can be found initially in political and social concerns for those living in poverty. These concerns, expressed at the United Nations Conference on the Human Environment in Stockholm in 1972, were taken up by the World Council of Churches in a conference on Science and technology for Human Development in 1974. Prominent Claremont theologian, John Cobb, was present at this 1974 conference where the phrase "sustainable society" was coined.

The World Council of Churches, in addressing the concerns of sustainability and poverty, noted in 1974 that, "First, social stability cannot be obtained without an equitable distribution of what is in scarce supply or without common opportunity to participate in social discussions." This expression of concern for equity between the developed and the less developed nations of the world became a cornerstone for the United Nations' Brundtland Report, begun in 1983 and published in 1987 as "Our Common Future," a foundational piece for most current discussions of sustainability.

ELEMENTS OF SUSTAINABILITY

[(U.S.) President's Council, ***Sustainable America***, March 1996]

Sustainable Communities

- Natural resources preserved
- Historic resources preserved
- Jobs available
- Sprawl contained
- Neighborhoods safe and secure
- Lifelong education facilitated
- Transportation accessible
- Health care accessible
- Quality of life improvement possible for all

Health and the Environment

- Benefits of clean air, clean water, & healthy environment available to all
- Benefits available at home, at work, and at play

Economic Prosperity

- Meaningful jobs available for all
- Poverty being reduced
- Opportunity for high quality of life available to all

Equity

- Justice afforded to all
- Economic well being equitably available
- Environmental well being equitably available
- Social well being equitably available

Conservation of Nature

- Natural resources [land, air, water, & biodiversity] used, conserved, protected, and restored
- Long-term social, economic, and environmental benefits ensured for current and future generations

Stewardship

- Ethic created to encourage individuals, institutions, and corporations to take full responsibility for economic, environmental, and social consequences of their actions

Civic Engagement

- Citizens, businesses, and communities have full opportunity to participate in and influence decisions that affect them
- Decisions involving natural resources, the environment, and economy are all included

Population

- Stabilization of the population encouraged consistent with the capacity of the local community, the state, the nation, and the earth to support its inhabitants.

It is important for us in Claremont to remember, in discussions of environmental sustainability, the contexts clearly outlined in the founding studies: first world concerns about the environment, consumption, emissions, and pollution can seem like profound self-absorption and indifference to those in developing third-world nations who live every day with realities such as starvation, lack of shelter, and lack of medical care.

The importance of balancing the rampant development and use of resources per capita in developed nations -- with their concomitant emissions, pollution and damage done to the environment -- against the life-threatening deprivations of those in underdeveloped nations whose only hope seems to lie in developing and exploiting resources, is a delicate but imperative task.

The Bruntland report has helped to point the way: Sustainable development is a matter of equity both between and within generations. Even the narrow notion of physical sustainability implies a concern for social equity between generations, a concern that must logically extend to equity within generations."

How does this brief glimpse of historical context provide background knowledge for defining the issue of sustainability in Claremont? The Claremont General Plan speaks clearly to issues of political and social equity at the local level. Within Claremont there are clear issues of political and social equity to be addressed: affordable housing; equality of access to participation in a transparent government process; discrepancies in services provided to the northern versus southern sections of the city; disputes about police treatment of various racial and ethnic groups; alleged inequality of educational opportunities at northern versus southern elementary schools; a homeless population whose needs may not be served; women and children living in poverty whose basic needs for shelter, food or medical care are not being met; gang activity; the presence of drug dealers and the exploitation of women as prostitutes are all issues present in our small community.

Claremont, as a responsible member of the global community, can apply sustainable principles and practices as they are understood throughout the world in their political and social ramifications-- as well as environmental-- to address these problems effectively. Clusters of implementation measures, included in the Claremont General Plan, may be grouped under the headings of "Political Sustainability" or "Social Sustainability" for illustrative purposes.. Creative use of these measures by our city can foster a truly sustainable community.

Converting sustainability from an abstract concept to a measureable entity makes it easier to plan for change and recognize progress. Using the concept of a community footprint, as Santa Monica does, is one useful way to communicate complex relationships in an understandable way. In addition, many cities [e.g., Santa Monica, CA; Jacksonville, FL; Seattle, WA] have developed sustainability indicators, or data points that reflect the status of a larger system, to measure community environmental, social, and economic vital signs.

The Izaak Walton League has suggested some characteristics that make good indicators:

- measuring results rather than effort [i.e., the number of literate adults, rather than the amount of money spent on literacy education]
- easy to gather and analyze at regular intervals
- taken from reliable sources
- reliable for up to two decades
- allowing communities to compare themselves with one another

Claremont has used indicators in formulating its Youth Master Plan Scorecard with which it reports progress to the community. In its effort to become a sustainable city, Santa Monica started with 16 indicators in 1994 and now has eight goals areas and lists more than 60 indicators in a matrix interrelating the goal areas. Seattle selected 40 from a proposed list of 99 indicators and grouped them into ten topic areas and issued its first report [on 20 of the 40] in 1993.

It's time for sustainability to become a measurable reality in Claremont. It's time to select relevant, meaningful indicators and to get them measured. It's also time for us to know how big our collective footprint is and to begin reducing it.

Resources

Community Sustainability, A mini-curriculum for grades 9-12, B. J. Hren & D. M. Hren, for the Izaak Walton League of America, 1996

Monitoring Community Sustainability, Izaak Walton League of America, Sustainability Education Project, September 1998

Our Common Future, World Commission on Environment and Development, 1987

Sustainable America, *A New Consensus for Prosperity, Opportunity, and a Healthy Environment for the Future*, The President's Council on Sustainable Development, *Executive Summary*, March 1996

Sustainable Santa Monica, City of Santa Monica**;** Reports, Goals & Indicators, etc. available on the website: www.smgov.net/epd/scp or call the Environmental Programs Division, (310) 458-2227

ECOLOGICAL FOOTPRINTS

by John Sullivan

The Ecological Footprint (EF) is a way of thinking about our resource consumption and it can help us identify ways to reduce our footprint. The following description is from the Global Footprint Network overview of an EF:

Ecological Footprint : Overview

The Ecological Footprint is a resource management tool that measures how much land and water area a human population requires to produce the resources it consumes and to absorb its wastes under prevailing technology.

In order to live, we consume what nature offers. Every action impacts the planet's ecosystems. This is of little concern as long as human use of resources does not exceed what the Earth can renew. But are we taking more?

Today, humanity's Ecological Footprint is over 23% larger than what the planet can regenerate. In other words, it now takes more than one year and two months for the Earth to regenerate what we use in a single year. We maintain this overuse or overshoot by liquidating the planet's ecological resources. This is a vastly underestimated threat and one that is not adequately addressed.

By measuring the Ecological Footprint of a population (an individual, a city, a nation, or all of humanity) we can assess our overshoot, which helps us manage our ecological assets more carefully. Ecological Footprints enable people to take personal and collective actions in support of a world where humanity lives within the means of one planet.

Another term, the Carbon Footprint, is also becoming an increasingly popular referent. The Carbon Footprint [according to the Global Footprint Network] is 50% of humanity's overall Ecological Footprint, and global warming is one of the most visible symptoms we've seen to date of the larger problem humanity is facing: ever-increasing global ecological overshoot.

Ecological overshoot means that humanity is living beyond the planet's ability to sustain us. Today the focus is on carbon, but climate change is happening as we approach other critical limits as well, in fisheries, forests, cropland, and water. Unless we focus on ending overshoot as a whole-systems problem, some of our solutions to climate change could cause large, unintended consequences.

For example, in Brazil, sugarcane plantations used for ethanol production are being linked to air pollution, water pollution, and deforestation….

The Ecological Footprint was created to ensure that addressing a singular issue, like global warming, doesn't negatively impact entire ecosystems or shift pressures from one land type onto another.

(Source: http://www.footprintnetwork.org/gfn_sub.php?content=footprint_overview)

Resources

- You can learn more about Ecological Footprints by exploring the information at the URL above.

- World Wildlife Fund has partnered with the Global Footprint Network to produce the ***Living Planet Report 2006*** and you can explore this report at

  http://worldwildlife.org/news/livingplanet/pdfs/ living_planet_report.pdf

- The average footprint worldwide is 4.5 acres per person. For the United States, the average footprint per person is 23.7 acres. Perhaps the best way to learn about the EF is to calculate your own footprint. Go to

  http://ecofoot.org/ to calculate your own EF.

AIR QUALITY

by C. Freeman Allen

Smog

Our air basin has the worst air quality problem in the nation!

Smog was terrible in Claremont after WW II. On some days the eye-watering haze was so thick it clouded the air looking along a single block. The cause was found to be primarily products from combustion: burning gasoline and diesel fuel in automobiles and other mobile sources, coal and oil burned in power plants, refineries, and other industrial sources. Backyard trash burning was banned early on. Later emission controls were required on automobiles, and on pumps at gas stations. Numerous regulations were instituted to control industrial and other emissions, and these are being updated and new ones implemented continually. These measures have immensely improved our air quality, but progress is slowing because the most effective measures have been implemented. And as population grows in the Southland, ever more stringent controls will be needed if air quality is not to worsen again.

Smog is formed from a mixture of unburned volatile carbon-based (organic) compounds sometimes referred to as VOCs (e.g., gasoline, paint thinner, dry cleaning solvents), nitrogen oxides (NOX, a brownish gaseous byproduct of high temperature combustion), and oxygen. Sunlight, over time, causes this mix to form ozone in the air. Ozone is a powerful oxidant, which causes the formation of a soup of acrid substances and haze called "photochemical smog". Ozone concentration in the air is used as a measure of how serious the smog is at a given time, and newspapers (such as the Los Angeles Times) publish local air quality forecasts ranging from *GOOD*, *MODERATE, UNHEALTHFUL FOR SENSITIVE PEOPLE,* to *UNHEALTHFUL FOR EVERYONE*.

In our South Coast Air Basin the ring of mountains and an "inversion layer" of warm air over denser cold air at ground level to an altitude of a thousand feet or so confine these pollutants. The result is a relatively stagnant pool of air, and the longer it is subject to sunlight, the higher the smog levels rise. Consequently, smog is usually worst during summer daylight hours and inland from the coast where prevailing winds from the west move the air mass eastward. Claremont, being so far inland, is a high-smog area.

Of the chemical precursors to smog, gasoline is the major source of volatile organic compounds (hydrocarbon in this case). Because gasoline evaporates readily, much will escape into the air during refueling at gas stations unless these vapors are recaptured. Vapor recovery hoses were installed on gasoline pumps shortly after WW II when smog became such a serious problem.

Nitrogen oxides (NOX) are formed when fuels such as gasoline, diesel fuel, fuel oil, or methane are burned (as in the engine of a car or a ship, or in industrial plants such as oil refineries and power plants). The high temperatures cause nitrogen and oxygen in the combustion air to combine and form NOX, which makes up part of the exhaust gases. Industrial plants are now required to install technology to remove NOX before the exhaust gases leave the smokestack.

In automobiles, the catalytic converter removes VOC (unburned gasoline), nitrogen oxides, and carbon monoxide. Electronic controls, relying on an oxygen sensor in the tailpipe, ensure that the right amount of oxygen is present for the catalyst to be effective. Thus, proper automotive tune-ups and emission control checks are vital smog control measures. California's Smog-Check program was established to ensure that this happens, and to get highly polluting vehicles off the road.

Fine particulates, such as in smoke and diesel exhaust, also contribute to reduced visibility and respiratory health problems. Sulfur in fuels leads to formation of haze-producing sulfuric acid and sulfates in the air. Emission control technology, such as catalytic converters, is more difficult to

devise for diesel engines. Diesel-powered vehicles have thus not been required to have effective emission controls and it is common to see clouds of exhaust, sometimes sooty, coming from the tailpipes of diesel trucks. But the required technology is now reasonably available, and the California Air Resources Board has adopted a Diesel Risk Reduction Plan, which established goals of reducing emissions in virtually all in-use diesel engines in California by 2010.

Both photochemical smog and fine particulate matter reduce visibility, but more important they cause troubling health problems:

- Air pollution is a contributing factor in a number of chronic conditions including asthma, emphysema, heart and pulmonary diseases, and others.
- The California Air Resources Board (CARB) recently estimated that approximately 6,500 Californians die prematurely each year as a result of air pollution.

Sulfur, Visibility, and Acid Deposition

Fuels used in California are required to have a low sulfur content to minimize problems from fine particles, sulfur dioxide, and sulfuric acid emissions. California power plants burn methane, an exceptionally clean fuel, or low sulfur oil. But in some states coal, which has an appreciable sulfur content, is used. Power plants using such fuels can cause regional haze, which degrades visibility even many miles from the source and can make visits to areas such as the Grand Canyon less enjoyable. For example, the huge Four Corners Power Plant, located on the Navajo Indian Reservation near Farmington, New Mexico is coal-fired. In 2006 the United States Environmental Protection Agency proposed a facility-specific regulation to control emissions from this plant.

Deposition of the sulfuric acid, largely from power plant emissions, has increased the acidity of sensitive mountain lakes.

Indoor Air Pollution.

At times air pollution indoors can be worse than outdoors. Nitrogen oxides build up from use of stoves and furnaces. Second hand smoke from cigarettes accumulates. Substances released by construction materials, plastics, and furniture can be a problem. Unfortunately, such pollution problems can become more acute as measures are taken to seal a house from air leaks to conserve energy. But both goals can be attained if heat exchangers are used to transfer heat energy between the outgoing and incoming air. Construction materials less prone to releasing air contaminants are also becoming more available as part of the 'green building' concept.

Freon © and the Ozone Layer

Odd as it may seem, the harmful effects of smog are measured by ozone concentrations in the air we breathe, but ozone in the stratosphere is beneficial, even essential, to life on earth.

In the lower stratosphere (at altitudes of roughly 10-20 miles) the earth is surrounded by a layer of ozone formed from oxygen under the action of high energy (ultraviolet) radiation from the sun. Although the stratospheric ozone concentration is only a few parts per million at most, its presence is essential to life on earth as we know it, for this ozone absorbs ultraviolet radiation which can destroy molecules essential to life. Alteration of DNA by ultraviolet light results in genetic mutations and can result in skin cancers.

In 1985 it was found that a hole was developing in the ozone layer over the Antarctic. Freons© containing chlorine atoms are known to be a major cause of this ozone depletion. These Freons© were widely used for propellants in spray cans as well as refrigerants in home air conditioners,

automobile cooling systems, and refrigerators: primarily R22 in home air conditioners and R12 in autos before 1993. Both these refrigerants are very stable and have a very long lifetime once released into the atmosphere. Moreover, a single molecule can result in the destruction of thousands of ozone molecules in the protective layer.

The manufacture of R12 was discontinued in 1995, and the refrigerant in automotive systems was changed to R134a. The manufacture of R22 will cease in 2010, and R410a is gradually replacing it. The new refrigerants do not contain chlorine atoms, so they do not endanger the ozone layer. Cooling systems using R410a also use 5% less energy and are quieter. Thus, they have advantages beyond reducing pollution.

Many tons of the harmful R12 and R22 refrigerants are still in use, but the refrigerant can be recovered and not escape into the atmosphere if cooling systems containing them are properly junked or repaired. Fortunately, as a result of these measures the rate of growth of the hole in the Antarctic ozone layer was shown to be decreasing in 2003 and the ozone layer is now recovering.

Carbon Dioxide and Global Warming

Burning carbon-based fuels releases carbon dioxide into the atmosphere, and green plants remove it from the atmosphere. As industrial activity, personal consumption, and population increase worldwide, so does the amount of carbon dioxide in the atmosphere. Although not toxic, atmospheric carbon dioxide does absorb heat (infrared) radiation that would otherwise escape into space. The result is gradual overall warming of the earth's atmosphere. Global warming is already causing notable climate changes and has the potential to cause great disruption over coming decades if the present trends continue unabated.

Energy conservation has a triple benefit: it helps control air pollution and global warming – and reduces costs to the consumer. Who could ask for more! (See the article on Energy for more on Global Warming and the reduction of carbon dioxide emissions.)

What Claremont Residents Can Do Locally

- **Reduce transportation-related emissions**.

Much can be done in this regard, and every bit helps. Keep down miles driven. Use high-efficiency vehicles. Use low-emission vehicles. Keep vehicle emission controls well maintained. Use public transportation. Carpool. Particularly efficient low-emission high-mileage-per-gallon hybrid vehicles are now available. The Toyota Prius and Honda Civic Hybrid are examples. These vehicles are fueled by gasoline but convert much otherwise wasted energy (such as for braking) to useful electrical energy to power the vehicle. Methane-powered vehicles are also less polluting but presently are most commonly used as fleet vehicles and buses.

Hydrogen-powered and electric vehicles are even less polluting, but are not likely to become widely available in the near future. Electric vehicles now in use suffer from limited range and the need for readily available recharging facilities. Hydrogen-powered vehicles are not readily available, nor are the necessary fueling stations. However, hydrogen and electricity are simply means of providing energy where needed. Both must be produced from other energy sources such as power plants, so their use is not a panacea as is sometimes implied.

♦ **Keep your vehicles well tuned and maintained.**

Because automobile emissions are such a huge air pollution problem, keeping motor vehicles well tuned, as well as emission controls working properly, is especially important.

♦ **Minimize releases of refrigerants containing chlorine.**

When buying an air conditioner, choose one with R410a, a chlorine-free refrigerant, mandated to replace R22 by the 1990 Clean Air Act. Units charged with R22 are still being sold, but this chlorine-containing refrigerant degrades the protective ozone layer.

When disposing of or repairing an old refrigerator, air conditioner, or automobile, be sure that the refrigerant in the cooling system will be recovered and not just vented to the atmosphere.

♦ **Be an advocate for clean air.**

Air pollution control is a highly political issue. Those responsible for significant emission sources often lobby vigorously for reduced or delayed emission controls. The air-breathing public is less organized but every individual can be heard. Make your wishes known to our elected representatives.

♦ **Minimize carbon dioxide emissions.**

See Energy and Trees sections.

Resources

Regional

South Coast Air Quality Management District (SCAQMD or AQMD) was formed in 1976 and is the air pollution agency responsible mainly for regulating stationary sources of air pollution for most of Los Angeles, San Bernardino, and Riverside Counties and for all of Orange County. Their website is a good source of information on local air quality trends and controls: **AQMD Headquarters** is at 21865 Copley Drive - Diamond Bar, CA 91765. Phone: (909) 396-2000. Web site: www.aqmd.gov.

State

California Air Resources Board (CARB or ARB) is the "clean air agency" of the state of California. Established originally as the Air Resources Board in 1967, it is known for setting stringent standards for air quality.

CARB's goals are to

- Attain and maintain healthy air quality.
- Conduct research into the causes of and solutions to air pollution.
- Systematically attack the serious problem caused by motor vehicles, still collectively the major source of air pollution in California..

Phone: (800) 242-4450 Web site: www.arb.ca.gov

National

United States Environmental Protection Agency (USEPA or EPA) promulgates national air quality standards and regulates emissions of interstate vehicles such as trucks, trains, ships, and aircraft.
USEPA Regional Office, San Francisco: Phone (415) 947-8000. Web site: www.epa.gov

ENERGY

by Ray Fowler

Three things have mushroomed simultaneously — human population density, global energy use based on carbon-based fossil fuels (coal, oil, gas), and scientific invention permitting humans to make massive changes in earth's natural processes. This intersection of forces is creating an imbalance in Earth's carbon cycle with results which are making the planet less habitable for current life forms, including humans.

A cycling of carbon atoms determines the planet's surface temperature. Humans and most other current plants and animals on Earth depend on an average surface temperature of about 14 degrees centigrade. Increased carbon dioxide in the air heats the air, and starts processes which can end life as we've known it. To keep the temperature stable for humans and other living things, most of the carbon atoms on Earth must be kept locked in rocks, soils, water, and plant and animal life. Otherwise, carbon atoms can join oxygen atoms in the air and form enough carbon dioxide gas ($C0_2$) to make Earth a dead planet like Venus or Mars.

As we burn carbon-based fossil fuels (coal, oil, gas) to produce light, heat, cooling, shelter, and transportation for humans, we are releasing these trapped carbon atoms to join the air's oxygen and create $C0_2$ at a higher, faster rate and percentage than nature's carbon-cycling system ever has before.

At the same time, Earth's population has reached unprecedented levels and that growth has coupled with scientific invention so that we are upsetting Earth's balance at the same fast, massive rate. We are overgrazing, overlogging, burning forests, overcementing land, draining waterways, and overkilling top predatory animals in ways which shrink both the size of our ecosystems and the variety of plant and animal life in each ecosystem.

We have become major weather-makers and land-changers, altering climate, weather, ecosystems, and life forms globally faster than ever before in two major ways:

- Producing pollutants which change the carbon dioxide levels in the atmosphere.
- Vastly changing the balance among land and life forms on earth.

We hear the bad results daily: Glaciers and polar ices are melting with warmer seas rising, weather is more unpredictable with more extreme droughts and rain, species are vanishing along with their habitat, barrier reefs protecting land shores are disappearing, and rainfall changes are producing salinity in farmlands. In our Southwest, air warms when oceans warm. Snow packs which store our summer water melt earlier; so there are more spring floods; then in the summer farmers' water supplies, hydropower, and fish habitats dry up, similar to the slightly warmer, drier Southwest climate 5000 years ago which ended a flourishing widespread Amerindian culture until cooler conditions returned.

Scientists are concerned with three main "tipping point" potentials in this century:

- The collapse of the Gulf Stream, a conveyor belt of cold and warm waters rotating through the Atlantic, which would lead to ice age trends.
- The death of the Amazon rain forests, which produce less moisture when carbon dioxide increases in the air, leading to increased atmospheric $C0_2$ effects and water shortages.

- The explosive release from the sea floor of methane gas [now trapped in “ice crystals”] if ocean temperatures rise, thereby compounding $C0_2$ problems.

The good news is that many people also believe that individual action now to reduce carbon emissions in their own lives by 70% (by conservation, alternative energy source use, careful purchasing, and recycling) can make a crucial difference without major reductions in lifestyle. Paleontologist Tim Flannery of Australia believes the Arctic and Antarctic can be stabilized, we can "save four out of every five species currently under threat, limit the extent of extreme weather events and reduce, almost to zero, the possibility of any of the three great disasters occurring this century, especially the collapse of the Gulf Stream and the destruction of the Amazon" (*We Are the Weather Makers* by Tim Flannery).

Wiser Energy Use at Home

Energy use in a typical U.S. home breaks down this way: 44 cents of every dollar is for air temperature (heaters and air conditioners), 14 cents for water heating, 9 cents for refrigeration, and 33 cents for appliances, electronics, and lighting combined.

Most energy available to Claremont homes comes from centralized distributors using commercially generated energy: The Gas Company primarily uses gas. Southern California Edison Company generates electricity mostly from coal but also uses some gas, water, nuclear, solar, and wind resources. [For a few years beginning in 1891, part of Claremont's electricity was generated by San Antonio Canyon water directed through the turbines of a small hydroelectric plant situated near what is now Mt. Baldy Village (*Claremont* by Judy Wright, p.32).]

Individuals can reduce carbon release in several ways while using energy:

- Conserve (e.g., turn out lights).
- Use alternatives to carbon-releasing sources (i.e., solar, wind, and water).
- Buy thoughtfully (e.g., less packaging).
- Recycle (i.e., donate and buy at thrift shops and recycle paper, glass, plastic, and permitted metals in City recycling bins. (Note that toxic materials, including unwanted prescription medicines, should be turned in to special City/County-sponsored Roundups for toxic waste.)

What Claremont Residents Can Do

- **Gas**

Conserve: use gas appliances more efficiently each day; set the thermostat to minimize gas use; take shorter showers (which saves water also); do efficient loads of dishes and clothes fewer times per week.

The Gas Company mails monthly tips for energy savings. Phone: 800-427-2200 Web: www.socalgas.com

- **Edison Electricity**

Conserve: always turn lights off as you leave a room; replace incandescent bulbs with fluorescent bulbs; insulate your home (Insulating the attic is the most effective, least expensive, and usually the easiest.); choose mechanical rather than electrical and electronic appliances when possible. Support or change to Green Power when offered by your electricity supplier (a major achievement).

Southern California Edison mails monthly energy savings tips and gives discounts for installing energy-efficient appliances. You can take SCE's Home Energy Survey on line. Obtain a personalized energy profile for your house and life style. Phone: 800-655-4555 Web: www.sce.com/survey.

♦ **Solar** "The sun will rise tomorrow - you can count on it".

According to the United Kingdom's *The Economist* [3/10/07], in just one hour the earth receives more energy from the sun than human beings consume during an entire year. According to the U.S. Department of Agriculture, solar panels could, if placed on about 0.05% of the country's mainland land mass, provide for all of its current electricity needs. The promise is there. Our choices can help shape the future.
In the meantime, beginning to use solar power can save you $$.

- ***Water*:** Solar energy has for many centuries been used for heating water by putting pipes in the sun, customarily now put on home roofs and requiring a minimum of servicing.
  MohrPower Solar, CA LIC # 661434 Ph: 800-637-6527/ Web: www.MohrPower.com
- *Electricity*: Only now has technology given individual homeowners the opportunity to put solar panels of photovoltaic [PV] cells on their roofs to generate their own electricity needs and perhaps sell some back to centralized suppliers such as Edison.

The current nominal average initial outlay of about $20,000 per solar (photovoltaic) installation is substantially reduced in three ways: by a large California State subsidy of almost half the cost paid back after installation; by an ongoing small tax credit for "going solar"; and by there being no increase in assessed valuation for County property taxes, even though such a change would otherwise be considered a taxable home improvement.

♦ **Energy-Saving Large Trees**

It is important not to sacrifice one vital value in order to obtain another. Maintaining and increasing the number of large trees in Claremont is crucial to our high property values and to the environment at the same time: to oxygen production and toxin absorption for cleaner air, to beauty, to carbon sequestering in order to lessen global warming, to anchoring the soil in place, to maintaining respiration and natural cooling, and much more. Solar installation must be sensitively integrated with large tree planting and maintenance, especially in Claremont, in order not to be counterproductive in the long run.

Statistics collected from the USDA [Dept. of Agriculture], the American Public Power Association, the Center for Urban Forest Research, the Council of Tree and Landscape Appraisers, National Mortgage groups, property management Information Services, Forest Service, National Wildlife and Arbor Day Foundations, and Texas A and M University show that mature street and private property trees provide

- air conditioning and energy cost savings up to 50%
- financial increases in property values of thousands of dollars [higher value locations having more trees]
- improved soil conservation and underground water quality
- faster recovery of human health [reduced stress levels, blood pressure, and muscle tension]
- carbon/toxin sequestering and oxygen/food production, the basic animal/plant life cycle on Earth

♦ **Voluntary "Offsets"**

In addition to direct reduction of greenhouse gases by efficient conservation [especially through efficient transportation, thermostat regulation, and efficient appliances] and personal use of non-fossil renewable energy sources whenever available, people can now also help in a less direct way, by making voluntary donations to "offset" projects offered by various companies. These companies use the donations to start alternative energy projects [solar, wind, water force, tree forest health, livestock manure management, truck stop and port electrification, etc.].

Donors must use reasonable caution to verify that the projects are valid, certified, non-toxic, and cost-effective. See Oregon Climate Trust [www.climatetrust.org] and UK's Climate Care [www.climatecare.org].

Resources

Local

- Mark von Wodtke, Energy Harvester, Ph: 909/560-3526
- Web: www.EnergyHarvester.com

- Bill Yates, CA LIC #10/514259 Ph: 951-317-9258

Regional

- Goods Solar Institute of Hopland, CA, via its commercial operation Real Goods Solar [GAIAM] has solarized over 60,000 homes since 1978. Web: www.realgoods/calsolar.com
- Rocky Mountain Institute [RMI] covers the entire field of energy efficiency, including solar. Web: www.rmi.org

National

- National Arbor Day Foundation, Tree City U.S.A. Program [Claremont is a member.] Phone: 402-474-5655 Web: www.arborday.org/programs/treecityUSA.cfm
- A Green Home is a Healthy Home, Connecticut Department of Environmental Protection Web: www.newdream.org/home

International

- Green Energy News covers global energy news in all fields. Web: www.green-energy-news.com/
- ICLEI, Local Governments for Sustainability, with a global program, Cities for Climate Protection [CCP] Web: www.iclei.org
- Global Footprint Network Web: www.footprintnetwork.org

WATER

by Sally Seven and John Sullivan

Introduction: Water As A Scarce Resource

Water is an essential ingredient for sustaining even a minimal quality of life. It is necessary both for our bodies and for the production of food we eat. Water also is crucial in the manufacture of most of the products we purchase.

In Claremont and Southern California, there is not enough water to meet the needs of the population. As a result, water is imported from great distances. Fifty to sixty percent of the water we consume in Southern California comes to us from the Owens Valley in the eastern Sierras, from the San Francisco Bay Delta, and from the Colorado River. This water is transported at considerable financial and environmental cost.

Human need for water and the cost of bringing it to Southern California suggest strongly that we treat water as a scarce resource in this area. We need to continue our current efforts at conservation and look for additional ways to conserve.

The U. S. Environmental Protection Agency has identified "four pillars" of sustainable water systems: conservation, better management, cooperation among communities in the same watershed, and full-cost pricing. To this, we could add a "fifth pillar": sensitivity within each household to water consumption and a focus on ways to increase conservation of water. Americans currently pay less for drinkable tap water than do residents of other developed countries.

Water treatment, transportation, storage, and distribution are all included in the cost of water. We may not see charges for, say, transportation of water directly in our water bills but we pay for that through taxes imposed by the federal and state governments and by water districts.

It is useful to look at the cost of water from a comparative perspective: the average price of 1000 gallons of water in the U. S. is $2.49. Next most expensive is Canada at $2.99, then Sweden at $3.25. South Africans pay $3.48; Italians, $4.34. In the Netherlands, 1000 gallons cost $5.64; in the U. K, $7.20: and in Denmark, $8.50 (*U.S. News and World Report*, June 4, 2007).

In Southern California, the cost of water will vary from community to community depending on the availability of local supplies in the form of groundwater. The larger a community's groundwater resources, the less imported water is needed and the lower the price of water to the consumer.

It is important to remember that better than 50% (possibly as high as 70% in some communities) of the water that goes to each household is used outside the house to irrigate gardens. This water has been treated for human consumption and yet is applied to lawns and gardens.

What Households Can Do to Conserve Water

- Use tap water instead of bottled water
- Take shorter showers
- Install low-flow shower heads (2 to 2.5 gallons/minute)
- Install low-flush toilets (1.3 gallons/flush or less; U.S. standard is 1.6 gallons)
- Brush teeth without water running
- Check your household water system for leaks regularly
- Fix all leaks promptly
- Install aerators or faucets to limit flow to 1 gallon/minute or less

- Do full loads with your dishwasher (Newer machines use less than 6 gallons/load.)
- Do full loads in your clothes washer
- Replace old clothes washing machines with Energy Star, low-water-usage models
- Consider a front-loading clothes washer which uses less water
- Use a carwash that is efficient and recycles its water
- Landscape with native, drought-tolerant plants
- Sculpt your garden to reduce runoff to sidewalk and street (Concrete does not grow!!)
- Never hose down your driveway to clean it. Use a broom.
- Always be aware of water usage and alert to waste

Resources

- http://www.aswater.com/CSC/Water_Quality/Water_Quality_Report_2006/Claremont_v3.pdf (Golden State Water Company, 2006 Water Quality Report, Claremont)
- www.bewaterwise.com (MWD, source for conservation & native plants)
- www.usnews.com/water (USNWR article on water)
- http://www.mwdh2o.com/ (Metropolitan Water District, general information)
- http://www.epa.gov/ebtpages/water.html (EPA water page)
- http://www.nrcs.usda.gov/feature/backyard/watercon.html (Tips for gardeners)
- David Carle, *Introduction to Water in California* (Berkeley: UC Press, 2004) (Overview of California's water distribution systems)
- Norris Hundley, *The Great Thirst: Californians and Water, a History*, Revised Edition (Berkeley: UC Press, 2001) (Standard reference on history of water in California)

TREES

by ***Susan Schenk***

Introduction

Claremont prides itself on being a "City of Trees". Trees not only add beauty to the landscape, but also provide shade, moderate temperature and water loss, reduce energy costs and air pollution, and contribute to property values and to the character of the city. The City has an extensive set of policies concerning the planting and care of City-owned trees but none yet concerning privately-owned trees, although some should be in the making.

Every year, dozens of the private trees in Claremont suffer from poor pruning. It not only ruins the beauty of the trees and much of their usefulness, it often results in greater costs to the homeowner.

There is a misconception that all trees must be pruned regularly, and that severe pruning one year will reduce costs the next. All species of trees have a characteristic shape and size. Trees grown for fruit or flower production generally require annual pruning, often into an unnatural form. Trees grown for beauty or shade should be chosen with regard to their mature size and shape so that they never are too large for their location.

As a tree grows, the size of the root system keeps pace with the growth of the above-ground portion, ensuring that the water and nutrient supply from the roots and the energy production of the aboveground portion stay in balance. If too much of the tree is pruned, trees such as elms may actually die from the shock. In other species, to replace the lost photosynthetic capacity, the plant is stimulated to grow from dormant buds along the branches, producing what are called "water shoots". These thin new branches obscure the natural shape of the tree. They are often produced in abundance so that more pruning is necessary the following year. In addition, they obscure the natural shape of the tree, and they are more weakly attached to the main branches than the originals were, decreasing safety.

When pruning, dead and diseased branches should be eliminated, and any safety issues should be addressed. Sometimes a few lower branches might be removed to allow more light to plants growing underneath. Sometimes a few branches may be removed or shortened to improve shape. The crown may be thinned a bit to allow more light or wind through. However, when trees are pruned, it should generally be limited to less than 25% of the bulk of the tree. More pruning will stimulate excessive water sprouts.

A well pruned tree will not look pruned, it will just look naturally attractive. Never, ever should a tree be topped. Regrowth will be ugly and even if the tree doesn't die, it will never be really healthy. A good arborist may be able to scale back the size of the crown over a few years without destroying a tree's character. If a tree has really outgrown its spot, consider replacing it with a new tree that will grow to the size you want. The result will look much better and save you money in the long run.

Remember, trees in nature are not pruned and we like the way they look, so go carefully.

What Claremont Residents Can Do

- **Learn about trees and pruning**
  - *The Sunset Western Garden Book*: This is a treasury of information about gardening and includes information about pruning trees as well as providing information that will help in the selection of trees appropriate for a site.
  - Specialized pruning books: These are available at bookstores and home improvement stores.
  - Visit your local nurseries to take a look at the plants and talk to the staff.
  - Visit the Rancho Santa Ana Botanic Garden and the Los Angeles Arboretum to see mature specimens of different trees.
  - Walk or drive around Claremont and look at the mature trees.
  - Look at a copy of the City's Tree Policy to see what procedures they require.

- **Learn about local arborists**
  - Ask your friends who have nicely-pruned trees for recommendations
  - Ask the City to provide a list of certified arborists (they don't have one yet, but it was a recommendation of the Mayor's Ad Hoc Committee).
  - Throw away any cards that list "topping" as a service.
  - Ask tree trimmers for references and go see some of their work.

Resources

Local

- Rancho Santa Ana Botanic Garden
- The City
- Local nurseries sometimes provide workshops

Regional

- The Los Angeles Arboretum
- The faculty at Cal Poly Pomona and Mt SAC

Other Resources

- Your friends and neighbors who are keen gardeners
- Websites:
  - www.treesaregood.org
    The educational website of the International Society of Arboriculture
  - www.na.fs.fed.us/spfo/pubs/howtos/ht_prune/prun001.htm
    Pruning info
  - www.natlarb.com/Public/About_consumers.htm
    National Arborists Association consumer information page
  - http://www.calflora.net/trees/index.html
    Trees of Southern California photos

Choosing trees in brief:

- Before you go to the nursery, know
  - where you want the tree to go.
  - what the purpose of the tree is: to provide shade, fruit, flowers, height in a border, etc
  - whether the tree should be deciduous or evergreen (note: evergreens drop leaves too but do it a few at a time over a longer period of the year).
  - how much maintenance you are willing to do (will the tree drop leaves, catkins, flowers, fruit; how often will it need pruning; etc)
  - how tall and wide you want the tree to be when full grown
  - how large a space you have for the tree
  - how close the planting spot is to roofs, windows, sewer lines, sidewalks, patios, pools, ponds, driveways, fences, etc.

    > *If a tree has a mature spread of 30 feet, then a roof less than 15 feet away may necessitate regular pruning to keep branches off of it. A driveway too close to the trunk may be subject to lifting. This depends of course on the shape and growth characteristics of the tree both above and below ground.*

  - what you want to build or grow under the tree
  - how drought-tolerant you want the tree to be
  - how pest and disease resistant you want the tree to be

- Make a list of trees that fit your requirements. (See above for sources of information.)

- When you get to the nursery
  - Be sure you have a list of your requirements and of trees that fit them
  - Remember that the charming 5-gallon tree you see may grow to be 80 ft tall and 60 feet wide given time, or have a shallow, invasive root system, or drop masses of fruit that have to be picked up, or produce thousands of seedlings, or may not be suited to the conditions in your garden.

- The bottom line:

  Never buy a tree without knowing its eventual size and its growth characteristics and requirements, no matter how pretty it is.

TREE FACTS, OR WHY BEING A TREE CITY MATTERS

[based on facts from Friends of Trees: www.friendsoftrees.org/tree_resources/facts*]*

- A typical tree produces about 260 pounds of oxygen a year. A rough estimate of a person's oxygen use is 400 pounds a year. Thus, two trees will provide for one person.

- A city tree cleans about fifteen times more carbon from the atmosphere than does a rural tree.

- Each urban tree with a 50-year lifespan provides an estimated $273 a year in reduced costs related to air conditioning, erosion control, stormwater control, air pollution control, and wildlife shelter.

- An average tree absorbs ten pounds of pollutants from the air each year. Over an estimated 40-year lifespan, each tree will save about $75 in reduced and removed air pollutants. [Source: Center for Urban Forest Research, Pacific Southwest Research Station, USDA Forest Service, Davis, California.]

- Shade from trees can cool buildings up to 20 degrees in the summer.

- Unlike some other investments that depreciate with age, a tree's value increases. Trees increase home property values 7 to 21 percent, depending on location, number, and size of the trees.

"Urban forests make environmental and economic sense." [ENN, 4/11/02]

LANDSCAPING

by Barbara Eisenstein

Introduction

Gardens should be peaceful, restorative places. However, many traditional Southern California gardens require high expenditures of resources including water, pesticides, fertilizers and fossil fuels. They contribute to noise and air pollution that reduce the quality of life in our communities. Non-sustainable gardening practices may also increase weed problems in neighboring open space and lead to urban runoff that fouls our waterways and beaches.

What Claremont Residents Can Do Locally

- **Landscape** with appropriate native and Mediterranean plants. Welcome birds and butterflies into your yard with these plants and enjoy the sights, sounds and smells of California.
  - Attend classes at Rancho Santa Ana Botanic Garden to learn which plants will do best in your garden and how to care for them.
  - Call or email the RSABG Garden Hotline with your questions on landscaping with native plants (Phone: 909-624-0838, email: rsabg.hortinfo@cgu.edu).

- **Plant trees** to cool your house during the hot summer months. Place trees carefully to provide the most shade during summer afternoons. Keep the mature size of your trees in mind when selecting and placing.
  - Utilize the services of professionally trained individuals such as a Certified Arborist, Certified Tree Worker, or Certified Nurseryperson for important tree-related tasks.
  - Call the Claremont Community Services Department if you see any City tree in need of attention or if you have questions or problems regarding City trees.
  - Check the City's website for more tips on our community forest.

- **Irrigate efficiently**. Check your system often. Although the best time of day to water is early morning, it is crucial that you are able to check your system frequently to ensure that you are not watering streets, buildings or sidewalks. How often do you see a "sprinkler geyser" wasting our precious resources?

- **Group plants** with similar water requirements. Apply water according to their needs. Most California native plants do best with thorough but infrequent watering once they are established. Many natives go dormant during the summer and may only require water once a month or less to look their garden best.

Check the website of Metropolitan Water District of Southern California for irrigation tips: http://www.bewaterwise.com

Resources

Organizations Involved in Landscaping with Water-wise and Native Plants

Local

- **Rancho Santa Ana Botanic Garden**
  Phone: (909) 625-8767, website: http://www.rsabg.org

Regional

- **Metropolitan Water District of Southern California**
  website: http://www.bewaterwise.com

- **California Native Plant Society**
  San Gabriel Mountains Chapter, website: http://www.cnps-sgm.org
  Riverside/San Bernardino Chapter, website: http://www.enceliacnps.org

- **Los Angeles County Cooperative Extension**
  Common Ground Garden Program, Master Gardeners, Garden Helpline
  Phone: (323) 260-3238 website: http://celosangeles.ucdavis.edu

- **Los Angeles County Arboretum & Botanic Garden**
  Phone: (626) 821-3222, website: http://www.arboretum.org

- **Theodore Payne Foundation**
  Phone: (818) 768-1802, website: http://www.theodorepayne.org

Other Resources

Local

- City of Claremont, Community Services Department, for information on city trees and our community forest. Phone: (909) 399-5431, website: http://www.ci.claremont.ca.us/ps.municipalservices.cfm?ID=64
- Native Plant Garden Hotline, RSABG, Phone: (909) 624-0838, email: rsabg.hortinfo@cgu.edu, website: www.http://rsabg.org
- Local nurseries: many will order native plants on request. By asking for native plants you increase the likelihood that retail nurseries will stock them in the future.

Regional native-plant and water-conserving gardens

- **Chino Basin Water Conservation District Demonstration Garden**
  4594 San Bernardino St., Montclair CA.
  Phone: (909) 626-2711, website: http://www.cbwcd.org

- **Fullerton Arboretum**
  California State University, Fullerton, CA 92634
  Phone: (714) 733-3579, website: http://arboretum.fullerton.edu

- **The Huntington Library, Art Collections, and Botanical Gardens**
  1151 Oxford Road, San Marino, CA 91108
  Phone: (626) 405-2100, website: http://www.huntington.org

- **Los Angeles County Arboretum & Botanic Garden**
  301 N. Baldwin Ave. Arcadia, CA 91007, Phone: (626) 821-3222;
  website: http://www.arboretum.org

- **Maloof Garden**
  5131 Carnelian Street, Rancho Cucamonga [Altaloma], CA 91729,
  Phone: (909) 980-0412, website: http://www.malooffoundation.org
- **Puente Hills Landfill Native Habitat Preservation Authority, Arroyo Pescadero**
  Colima Road, Whittier, CA 90602, Phone: (562) 945-9003, website: http://www.habitatauthority.org
- **Rancho Santa Ana Botanic Garden**
  1500 North College Ave., Claremont, CA 91711 Phone: (909) 625-8767,
  website: http://www.rsabg.org
- **Santa Barbara Botanic Garden**
  1212 Mission Canyon Road, Santa Barbara, CA 93105
  Phone: (805) 682-4726, website: http://www.sbbg.org
- **South Coast Botanic Garden**
  26300 Crenshaw Blvd., Palos Verdes Peninsula, CA 90274, Phone. (310) 544-6815
- **University of California Riverside Botanic Gardens**
  University of California Riverside, Riverside, CA 92521
  Phone: (909) 784-6962 or 787-4650, website: http://gardens.ucr.edu
- **The Water Conservation Garden**
  12122 Cuyamaca College Drive West, El Cajon, CA 92019
  Phone: (619) 660-0614, website: http://www.thegarden.org
- **Western Municipal Water District: Landscapes Southern California Style**
  450 Alessandro Blvd., Riverside, CA 92508
  Phone: (909) 780-4170, website: http://www.wmwd.com/landscape.htm

Additional Websites

- California Invasive Plant Council, website: http://www.cal-ipc.org
- California Native Plant Society, website: http://www.cnps.org
- California Oak Foundation, website: http://www.californiaoaks.org
- City of Claremont, Community Forest,
  website: http://www.ci.claremont.ca.us/ps.municipalservices.cfm?ID=64
- International Society of Arboriculture, consumer website: http://www.treesaregood.com
- Metropolitan Water District of Southern California, website: http://www.bewaterwise.com
- Tree Care Industry Association (formerly National Arborists Association),
  website: http://128.241.193.252/index.aspx

ORGANIC GARDENING

by Paul T. Nurre

Introduction

Backyard gardening is a valuable endeavor, both for saving money on food and for better understanding how food comes from the soil to our plates. Our society is currently experiencing a growing awareness of, and interest in, how our food is produced, what inputs are used to accomplish this production, and how these inputs affect our health and our environment. Many consumer fears are unfounded; many of them are not. Many questions concerning food and environmental quality, particularly hot-button issues such as genetic modification, simply have not yet been answered. Advocates on all sides want you to pick a side, despite a glaring lack of long-term scientific credibility to support their claims. One way to remove oneself from these debates, and to personally take control of food safety issues facing you and your family, is to follow the timeless advice of an age-old adage: if you want something done right, you have to do it yourself.

What Claremont Residents Can Do Locally

- ***Know your climate and choose what you like***

The Inland Empire was once a booming agricultural hub for the nation. Expansive acreage of orchards, vineyards, and row crops once dominated our landscape, and thrived due to our mild winters and warm, dry summers. This prime climate still exists in your backyard, and your soil is ready for you to take advantage of it. Staples of this area consisted largely of citrus and avocado, and the backyard grower can also have great results with deciduous trees such as peaches, nectarines, plums, and apricots, as well as more tropical plants such as cherimoya, banana, and guava. Many growers experience problems with cold-climate crops such as pears, apples, and cherries. Unless one is prepared to do some research into these crops and the various varieties which can perform in the Claremont area, (i. e., chill-hour requirements), I would advise against them.

Where annual crops are concerned, good warm season crops (tomatoes, bell peppers, cucumbers, watermelon, cantaloupe) are well adapted for our Mediterranean summer. Cool season crops, such as lettuce, broccoli, cabbage, potatoes, can be successfully raised if properly tended.

Choose your crops based on food you like and what you know can be successful. To ignore either of these factors makes your efforts pointless.

- ***Train yourself to read labels***

The growing trend of organic agriculture is evident in your local Lowe's, Home Depot, or hardware/supply store. Organic fertilizers and pesticides are occupying a growing percentage of shelf space at these places; you just need to keep your eyes peeled for them. Popular nitrogen fertilizers include manure (a classic), fish emulsion, and blood meal, all organic byproducts of the animal agriculture industry. Organic pest control can include botanical pesticides such as d-limonene (a citrus peel extract), vegetable oil extracts (neem oil, canola oil, other seed oils), or pyrethrin (chrysanthemum extract) products. Mineral fungicides, such as sulfur, can be also be purchased in an organic form. Some of these products (i. e., neem oil) can serve as both a fungicide and an insecticide and come in easy to use spray bottles. Being derived from natural botanical oils, they are very safe for humans and pets (though you should still carefully follow the directions included on the label). These products should have an OMRI Seal (Organic Materials Review Institute) or other marker, verifying that the material complies with USDA standards. Experiment with a few of these products if/when you experience pest problems; look for these and other ingredients on product labels; and look for stickers that validate the products as organically certified.

A backyard grower not interested in becoming a certified organic producer doesn't need to go to the added effort of buying organic seed or organic transplants. Locating organic seedlings for transplant can be difficult, and organic seed is available largely through mail order. If you're interested, I recommend www.harrisseeds.com <http://www.harrisseeds.com/> for a full array of organic and untreated seed. (Untreated refers to a clean seed that has not been treated with a protective coating of fungicide or nutrients.)

- ***Add to your soil what you take away.***

Plants are capable of pulling carbon [C] and oxygen [O] out of the air. Aside from these two elements, all the rest are supplied by soil. Water and nutrients are constantly removed by plants, and must therefore be replenished by some type of input. Nitrogen is the primary component of plant health and structure outside of C, H [hydrogen], and O. [Note the earlier brief list of nitrogen sources that can be purchased.] Backyard composting, particularly a fascinating process known as vermiculture (worm-aided composting), can add low levels of nitrogen to the soil in the form of humus (no, not the garbanzo bean spread...that's hummus), as well as improving the soil texture of the largely mineral soils of the Claremont foothills. Organic matter facilitates water infiltration, helps keep soil moist, and provides a good texture for plant root development (picture potting soil versus beach sand). Again, when purchasing soil supplements from the store, **read the label**. These labels **by law** must contain a list of ingredients similar to foods. Look primarily for good sources of nitrogen, phosphorous, and potassium, as well as magnesium, iron, calcium, and sulfur.

- ***Keep doing your homework!***

If you are passionate about food production, continue increasing your knowledge on the subject, go to Farmers' Markets and talk to farmers. They are walking encyclopedias and many are flattered by backyard greenthumbs taking an interest in plants and food. More conveniently, take your questions to the internet, or check out some literature.

Resources

Local

- Farmers' Markets: Claremont, Sunday 8 am – 1 pm, Second St. & Yale Ave., Claremont Village; San Dimas, Wednesdays; Glendora, Thursdays. Watch for others.
- Organic Farm at Pomona College www.organicfarm.pomona.edu <http://www.organicfarm.pomona.edu/>

Regional

- UC Master Gardener Program
  The Master Gardener helpline is available by phone at (323) 260-3238 or
  email at mglosangeleshelpline@ucdavis.edu
  <mailto:mglosangeleshelpline@ucdavis.edu> .
- Pomona Organics (pomona.organics@yahoo.com <mailto:pomona.organics@yahoo.com>)

Websites

- Organic Materials Review Institute (OMRI)
  Information on what organic food growers can use: www.omri.org <http://www.omri.org/>
- USDA Agricultural Marketing Service
  www.ams.usda.gov/nop/NOP/standards/ListReg.html
  <http://www.ams.usda.gov/nop/NOP/standards/ListReg.html>

REDUCE, REUSE, RECYCLE

by Barbara Fowler

Introduction

The economic ethic in wealthy cultures changes from saving to spending, and from reuse of materials to wastefulness. But now U.S. wealth and unprecedented global population growth are overtaxing natural resources. This combination has made a "Reduce and Reuse" ethic cost-effective again for individuals and families, for big businesses, and for environmental sustainability.

The City of Claremont was one of the earliest initiators of the three-bin recycling system: green bins for plant materials which can be mulched and reused, gray bins for recyclable materials which can be reformed into new objects, black bins for trash which goes to the dump.

This program started thanks to citizens who believed in a sustainable environment.

Sustainable practices based on "Respect, Reduce, Repair, Reuse, and Recycle" create a triple bargain immediately:

- Reducing solid waste disposal problems and expense.
- Reducing fossil fuel burning caused by energy production for goods and their transport by ship and plane (which creates carbon dioxide which creates global warming).
- Reducing international trade imbalances.

Small basic changes in our buying and disposal habits today make big crucial differences in the world tomorrow. Our (and the world's) purchases determine what and how materials are produced by big companies. Our choices either encourage or discourage carbon gas increases in the air. Examples: Hewlett-Packard made one simple change to lighter printer packaging and lowered carbon emissions equaling the removal of 3500 cars from the roads. Walmart made a *5%* packaging reduction and reduced carbon by 667,000 tons.

We help the companies make that difference every time we

- Avoid buying unnecessary, over-packaged, discardable, or toxic goods.
- Buy locally produced, previously owned, recycled, reusable, and eco-sensitive products when possible, thereby reducing carbon emission from both production and transportation processes (ships, planes, trucks).
- Reuse all products as long as possible.
- Recycle, via donation to others or to recycle centers, whatever we no longer want.

It is ONLY our purchase choices which keep Reused and Recycled goods commercially viable. We could change these next facts:

- When Americans stopped buying Holiday items between holidays, commercial and charity places couldn't afford to store them so they now discard them at dumps and import new items at the next holiday.
- Former Los Angeles “Reuse” businesses are now just trash collectors because customers won't buy enough pre-used and recycled goods for them to profit from sales of reused items.

What Claremont Residents Can Do Locally

“Consume less; share more” leaves a smaller footprint.

- ***Modify Spending: Reduce***
  - Reduce purchase of excess or unneeded materials, such as larger homes, plastic and wrapping materials, non-reusable (throwaway) items, non-biodegradable and toxic materials.
  - Purchase pre-owned, high-recycled-content, efficient, reusable, energy-saving, smaller, recyclable, biodegradable, bulk items; use natural cleaning items (vinegar, soda); keep and use refillable containers; store off-season goods; pay bills online and use direct deposit checks; use libraries; rent equipment.
- ***Practice Saving: Repair, Reuse***
  - Use things longer and reuse everything possible, including repairing, restoring, and revamping original items.

- People think especially of reusing shopping bags, containers, and decorations, but almost everything can be used and reused by yourself and others: clothing, shoes, papers, books, magazines, jewelry, knick-knacks, eyeglasses, dishes and cookware, linens, furniture, house and yard gadgets and machinery, etc.

♦ ***Increase Sharing: Recycle***

- Donate usable items to Charitable, Thrift, Collectible, Antique, and Used shops. Your patronage of these shops, auctions, and yard sales keeps recycling in business.
- Send recyclable materials, all possible glass, plastic, paper, metal, etc., to recycling centers, city and private.
- Save hazardous items [batteries, petroleum products, pesticides, paints, oil, unwanted medications, cosmetics] to turn in at one of the periodic Los Angeles County sponsored Hazardous Waste Roundups. Info: 909-399-5431.

Resources

Local

Many local organizations have auctions and yard sales to raise money for their causes, excellent opportunities to purchase and donate. Here are a few:

♦ **City of Claremont** Trash Collection/Recycling 909-399-5431

♦ **Economy Shop**, 325 W. First Street, 909-626-7334
Sales: Tu, We, Th ; Hours: 9 am – 4 pm; Donations: Same days - Same hours

♦ **Pilgrim Place** [unique & special items], 670 Mayflower Circle, Claremont, 909-621-9581
Sales: 1st Thursdays monthly; Hours: 8 –10 am.
Fall Festival: 2nd Nov. weekend, 10 am – 4 pm, Fri. & Sat., Donations: Feb – Oct.

♦ **Claremont Annual Yard Sale**, 909-399-5497, Cahuilla Park: Indian Hill and Scripps Dr.
Held every May, residents sell: $15.00/reserved space 9 am-12 noon

♦ **Claremont Library**, 208 Harvard Blvd., 909-621-4902
On-going sales of used books on carts – available during Library hours.
Biennial Book Sales - Watch for announcements or phone the library.
Book donations: Daily - see Library hours

Regional

♦ **Goodwill**, 210 E. Foothill Blvd., Pomona, 909-596-3700 Sales: Monday through Saturday, 9 am-6 pm; Sunday, 10 am-6 pm Donations: Monday through Saturday, 9 am -7 pm; Sunday, 10 am –6 pm

♦ **Pomona Library**, 625 S. Garey, Pomona, 909-620-2043 Sales: Monthly, Daily; Phone Lorraine: 909-455-3520 Donations [books, jewelry, knick-knacks, gift items]: Daily during library hours, access off downstairs parking lot.

Other

♦ A Comprehensive Resource: www.Freecycle.org

♦ World Wildlife Federation has tips for recycling and an on-line store featuring many recycled products. www.worldwildlifefederation.com

♦ For local foods sources listed by zip code: www.localharvest.org

♦ For used sports items: www.PlayltAgainSports.com

♦ For non-toxic, chemical-free cosmetics [useful since federal government does not regulate them]: www.safecosmetics.org

♦ Co-op America: www.coopamerica.org

SOLID WASTE, RECYCLING, AND HOUSEHOLD HAZARDOUS WASTE COLLECTION

by Stacey Niemeyer and Ellen Taylor

The City of Claremont operates its own trash program rather than contracting with a private hauler. The City's program provides many ways for residents to help the environment while disposing of their trash.

Many of the facets of the city-run trash program were developed in response to AB 939, the California Integrated Waste Management Act of 1989 which required each city and county plan to include an implementation schedule which shows diversion of 50 percent of all solid waste by January 1, 2000 through source reduction, recycling, and composting activities. On February 23, 2007, Senator Padilla introduced SB 1020, a bill that, if passed, would require cities and counties to divert no less than 75 percent of their waste stream by January 1, 2012. The City of Claremont's most recent reported diversion rate was 55% for the 2005 calendar year.

Residential Single Family Collection

The City provides separate, automated containers for refuse, recyclables and green waste. The three-can system encourages residents to recycle. There is no charge for the disposal of recyclables and green waste. There is only a charge for disposal of refuse. Fees are based on the size of container requested by the property owner [40-gallon: $19.45/month; 64-gallon: $23.24/month; and 90-gallon: $29.63/month]. The more items disposed of as recyclables, the smaller refuse container a resident needs, thus reducing sanitation fees. Recycling and green waste containers are only offered in the 90-gallon size.

In addition to weekly pickups, each single-family residence is offered three free bulk item loads per calendar year. Bin, roll-off, and lowboy rentals are available for one-week periods for the disposal of debris that cannot fit in the normal automated container. Bins rent for $67.95 and roll-offs and lowboys rent for $345.35 per week.

Where It Goes

Essentially all [99%] of the City's waste is disposed of at one of three locations*: Grand Central Recycling (GCR) in the City of Industry, Burrtec in Fontana, or the Landfill in Puente Hills. Recently, the Sanitation Districts of Los Angeles County notified the Community Services Department that the City has achieved a 99% acceptance rate of green waste disposal at the Puente Hills Landfill. That means 99% of Claremont's green waste was clean enough to be a reusable product such as ground cover for agriculture farmers, alternative daily landfill cover, mulch and/or compost. If green waste is contaminated, it is hauled to the refuse pit and buried with the refuse, defeating the purpose of AB 939 requirements. Claremont's acceptance rate for green waste is the highest among any public or private hauling agencies.

Commercial and Multi-Family Collections

The City plans to expand the commercial and multi-family-unit recycling program. If the number of weekly collections in these areas were increased, the recycling bins would not become so full that people decide to dispose of recyclables in refuse containers. Approximately 20 additional locations in the City have been identified where recycling bins could be placed. Currently, there are no enclosures at these locations. A pilot program at these locations could determine if increased recyclable material can be collected. Bins would be placed adjacent to an existing enclosure or in a parking space nearby. Staff would work closely with property managers to create a program satisfactory to both parties.

Beyond Pickups

Residents can drop off recyclables at the City's Recycling Center, which is available Monday, Wednesday, and Friday between the hours of 2 pm and 5 pm and on Saturdays between 8 am and 12 pm. The Recycling Center accepts all recyclable materials with the exception of hazardous and electronic waste. These items are to be disposed of at a Los Angeles County sponsored roundup. The Recycling Center is located at the corner of Bonita Avenue and Berkeley Avenue adjacent to the Police Station.

The only hazardous substances the City collects are used motor oil and oil filters. The City purchases used oil containers using grant funds from the California Integrated Waste Management Board. The City also supplies local automotive shops that are certified to collect used oil with containers for their use.

All other hazardous and electronic waste must wait for disposal at one of the periodic Los Angeles County sponsored Household Hazardous and E-Waste Roundups. In 2006, the City hosted two roundups and has inquired about hosting two in 2007 as well. Residents can dispose of the following material at these events: automotive fluids and batteries, household cleaners, latex & oil base paint, lawn & garden care products, as well as beauty products and medicines. The Roundups will also collect electronic waste such as computer monitors, TVs, printers, cell phones, radios, and computer peripheral or personal electronics.

- **Tires** In September 2007, the City will participate in the first used tire collection event. The Los Angeles County Department of Public Works will give participants a 15 percent discount coupon for use on their next purchase of Bridgestone or Firestone tires.
- **Mulch** In April 2006, the City began its Free Mulch Pilot Program. The program has been made permanent by City Council due to the success of the pilot project. The mulch is provided by the City's Urban Forest Maintenance Contractor, West Coast Arborists. This program increases the City's diversion rate by keeping tons of material out of the waste stream and helps to promote the reuse of materials.
- **Holiday Trees** During the first two weeks in January of each year, the City offers free pickup service for holiday trees. The 2007 program resulted in the collection of 24.5 tons of trees that were eventually recycled in conjunction with the Los Angeles County Sanitation Districts (LACSD). LACSD accepts, at no charge, loads of holiday trees from cities that have existing residential green waste collection programs. The trees are eventually shredded for use as alternative daily landfill cover material with a portion used as mulch or compost.
- **Education** Two new and innovative programs in the works concern a partnership between the City and the school district. The first is to teach students about the importance and benefits of recycling. In the second, staff will work to help schools develop campus recycling programs.

The City's varied approaches to and programs for trash collection have been beneficial. Future additions to the program will enhance the overall success.

Resources

Local

- City of Claremont: Trash Collection and Recycling (909) 399-5431

Regional

- Board of Supervisors: M. Antonovich District Office, (909) 394-2264, 615 E. Foothill Blvd., San Dimas
- Los Angeles County Sanitation Districts Household Hazardous Waste Recording: (800) 238-0172

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*Residential refuse: All hauled by GCR to their facility;

Residential recycling: All city-hauled to GCR's facility;

Residential green waste: Majority city-hauled to the landfill, some city-hauled to Burrtec and GCR;

Commercial refuse: Hauled by GCR to their facility or to the landfill;.

The rest: City-hauled to the landfill.

Commercial recycling: All city-hauled to GCR

Bins, roll-offs and lowboys: All city-hauled to Burrtec
Street sweeping: All city-hauled to Burrtec

TRANSPORTATION SERVICES

by Ellen Taylor

Claremont has an integrated, balanced multi-modal approach to transportation, incorporating motor vehicles, pedestrians, bicycles, and bus and rail systems. Transit connects neighborhoods, local and regional activity centers, schools, and colleges. The City has a calm traffic environment that encourages and supports both bicycling and walking., and is connected to wilderness areas via bikeways and trails. Regional, national, international land, sea, and air transportation systems are accessible from Claremont.

Streets lend identity to our neighborhoods and form the backbone of Claremont's circulation system. Claremont's street system is differentiated by roadway size, function, and capacity. To meet long-term circulation needs and reflect City policies regarding sustainability, as well as to deal with congestion and to accommodate long-term traffic needs, the City has developed a **Master Plan of Roadways** that differentiates between Freeways, Arterial Streets, Collector Streets & Local Streets**.**

Several Caltrans facilities traverse Claremont. The 10 Freeway, an east-west interstate highway, has an interchange at Indian Hill Boulevard. The 210 Freeway, another east-west highway, has interchanges at Towne Avenue and Base Line Road. Base Line Road (State Route 30) and Foothill Boulevard (State Route 66) are owned and maintained by Caltrans. The City has accepted Caltrans relinquishment of Base Line Road, understanding that the City will face significant maintenance costs.

As traffic in the City and region increases and through traffic seeks alternative routes, such routes may indirectly or directly impact local neighborhoods. The City is committed to preserving its residential neighborhoods and has established policies contributing to preservation efforts, such as traffic-calming policy, which directs traffic to routes that minimize adverse impacts in residential neighborhoods. The policy also calls for a balanced system of circulation, incorporating motor vehicles, pedestrians, bicycles, and other transportation modes. Landscaping, trees, sidewalks, and bike lanes also help to calm traffic.

New development affects circulation within and through our City. Additional traffic generated by new development incrementally impacts our transportation system and affects our quality of life. In 1997, the City set up the transportation impact fee to fund transportation improvements to reduce impacts of new development within the City. Costs of improvements funded by the fee are fairly apportioned to new development based on benefits conferred on new development or the need created by new development.

Pedestrians and cyclists share our roadways with automobiles. They also share our trail system with equestrians. Bicycling and walking play increasingly significant roles as sustainable alternatives to the automobile. The City continues to recognize this fact by providing and maintaining facilities for these other modes of travel. Claremont residents have expressed a strong desire to maintain public space for use by pedestrians, bicyclists, and equestrians. Claremont supports pedestrian-oriented improvements and amenities within our circulation system to improve walkability, including wide sidewalks, safe street crossings, features that encourage cautious driving, and a pleasant and safe walking environment. Handicapped access strategies are also incorporated into all street and pathway plans.

All neighborhood streets should have sidewalks or pathways inviting people to walk. Appropriate and aesthetically pleasing landscaping welcomes walkers and can give the user a sense of cool and calm.

Properly designed, marked, and signed crossings lead to higher levels of motorist courtesy toward pedestrians. Pursuant to the City's adopted crosswalk policy, the City supports having marked crosswalks at protected (signalized or stop-controlled) intersections, if their presence minimizes pedestrian-auto conflicts. The City discourages marked crosswalks at unprotected locations (mid-block or uncontrolled intersections); however, the City has set up criteria for areas near elementary schools to allow residents to petition for installation of a marked crosswalk at an unprotected location, if certain conditions are met.

Bicycling is an increasingly popular form of recreation as well as transportation. Claremont residents should be able to cycle to work or school using convenient routes. Cycling is also a major recreational activity, and mountain bikers can traverse the hills using the Claremont Wilderness Park Trail.

Claremont has designated a Bike Priority Zone within The Village, The Claremont Colleges, and residential neighborhoods south of Foothill Boulevard and north of First Street. The Bike Priority Zone emphasizes safe bicycle routes and parking facilities. Bicycle crossing buttons and bike loop sensors are provided at

intersections. The regional bikeway utilizing Bonita Avenue and First Street will be the City's most important east-west bike route. All schools in Claremont provide bike racks for students and faculty; bicycle lockers are available at the Metrolink parking lot and the Parking Garage on First Street.

The **Citrus Regional Bikeway**, originally planned for construction in the railroad right of way through Claremont, has been moved to surface streets because the proposed trail along the railroad right-of-way conflicts with the future Metro Gold Line. As now planned, the bikeway (from west to east) will utilize Bonita Avenue and First Street for its primary route to Claremont Boulevard. When completed in Claremont, the bikeway will connect to the regional trail in San Bernardino at the Upland/Montclair boundary. Sections of the regional trail are already completed in Upland, Rancho Cucamonga, and Fontana, with the ultimate goal of providing a continuous path to Rialto.

Beginning with the Santa Fe Railroad, the Ontario and San Antonio Heights trolley, and Pacific Electric Red Cars, and continuing today with Metrolink, Amtrak, and the planned extension of the Metro Gold Line, rail transit provides options for Claremonters who wish to travel beyond the City. New options for transit-oriented development projects in areas surrounding rail stations have been created, and rail transit continues to be an agent for change in Claremont.

The **Metro Gold Line** is planned for a 24-mile extension eastward from Pasadena to Montclair, with a station at the Claremont Depot, paralleling the Metrolink track through Claremont. The location of the Gold Line station in The Village will be designed to provide access between the two systems.

Public bus service in Claremont is provided by **Foothill Transit**. A network of Foothill Transit routes provides access to recreational, institutional, residential, and commercial sites in Claremont and elsewhere in the San Gabriel Valley and Inland Empire. All of the routes connect to Metrolink at the Claremont Depot, with many of these buses going directly to Montclair Transit Center. The ability to modify bus routes over time will allow improved access to airports, better integration of transit within new developments, better transit options east into Montclair and San Bernardino County, and potentially the creation of privately owned public transportation options to supplement the excellent services provided by Foothill Transit.

In addition to fixed-route bus transit, **paratransit** services (such as Dial-a-Ride,* Get About,** & Group Van Services***) add flexibly scheduled and routed services that enhance the multi-modal approach of transportation in Claremont. The specialized transportation services of the Pomona Valley Transportation Authority (PVTA), our community transit provider, allows riders to travel throughout the four cities of Claremont, La Verne, Pomona, and San Dimas. PVTA has a voluntary agreement with these four cities, which use their Proposition A local sales tax funds as the primary source of revenue for PVTA. Each city determines the services and the level of service it is provided.

Several needs remain unmet in Claremont: additional day-care access for preschool children, transportation for youth to after-school activities located off school campuses, trips across the county line (particularly for medical purposes), additional peak-hour service, limited expansion of services beyond the edges of Claremont, more north-south off-peak service, and additional demands for service north of Base Line Road. Use of bikes, especially by youth, could ease congestion problems during peak-use hours. The City is considering a trolley system to connect the Village, the high school, the colleges and businesses, and a hotel along Foothill.

Claremont is transit rich, with transportation options covering the gamut of need and use, but we must continue to work to keep transportation services in the city both convenient and accessible.

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* Claremont **Dial-a-Ride** is a curb-to-curb, general public, shared, dial-a-ride service operated by PVTA, providing transportation within the City and to specified destinations outside Claremont.

****Get About** provides transportation services to registered senior residents and disabled persons of any age. Get About operates within the four cities of Claremont, La Verne, Pomona, and San Dimas, and to selected destinations in adjacent areas.

*****Group Van Services** are operated by PVTA on an advance-reservation or subscription basis to groups of six or more individuals traveling to the same destination. Group transportation is available within Claremont and the area covered by the Claremont Unified School District, plus other destinations approved by PVTA.

RENOVATION

by Michael Shea

Introduction

Renovation of existing residential buildings can range from enlarging a bathroom to a complete house remodel, including kitchen remodels. Green building practices can be used for all renovation projects. Please reference the checklist below and determine which aspects are doable and affordable for your project. Even the smallest project such as painting, window coverings and carpeting can be green!

What Claremont Residents Can Do Locally

Building Construction Waste Management

- Re-use (E) materials. Instead of throwing out the existing doors, windows and hardware, use them in the renovation. Also consider reusing light & plumbing fixtures, wood casework and wood trims.
- Divert waste materials to qualified waste recycler. Typical materials that should be recycled include batteries [as hazardous waste], paper & cardboard, and yard trimmings. Composting is the natural way to divert green waste into soil supplement for your yard.

Building Envelope

- Insulate (walls, ceilings, attic and roof). This is one of the most cost-effective ways to increase the efficiency of your home. New products with radiant/ reflective surfaces are now available for roof/attic insulation.
- Reduce air infiltration (caulking & sealing). If your lifestyle requires more heating and air-conditioning, this is important to prevent excessive building 'leakage'. Plugging the air leaks can go a long way towards keeping your home at the temperature you desire. Most leaks occur around windows, doors, and other penetrations which can be easily plugged with weatherstripping and caulking.
- Tune-up heating, ventilating, & air conditioning (HVAC) systems every two years. Clean the filter monthly during peak usage; a dirty filter can significantly reduce the efficiency of your HVAC.
- Improve indoor air quality (low VOC paints, adhesives & sealants, rugs). Homeowners can benefit immensely from using products that don't give off "volatile organic compounds" (VOCs). All of these products are available at local retail outlets. In addition, homeowners can make their own VOC-free cleaning products using simple household materials such as baking soda, vinegar, and borax.
- Use Green Building materials. Selecting green materials involves an assessment of a product's environmental impact over its life cycle. The process tracks the raw materials used to make a product; its energy consumption during the manufacturing process; its transportation; its performance when used; and its disposal, reuse, or recycling options. When choosing materials and products, look for high levels of renewability, reusability and durability and low levels of embodied energy (energy required to extract, process and transport materials) and environmental impact. Consider using flooring made from recycled and renewable resources such as linoleum, bamboo, recycled-content tile or non-VOC carpet. Also look for FSC (Forest Stewardship Council) certified wood, cork, recycled wood and rubber.
- Install a solar-powered attic ventilation fan. In the summertime, most attics become a huge heat load (Temperatures can exceed 130 degrees.) that then radiates down into the home, usually at the hottest times of the day. Insulating above the ceiling and ventilating the attic will significantly reduce or at least neutralize this unwanted heat source. Using a solar-powered fan permits a single installation without having to run an additional power circuit to a typically inaccessible location.
- Install window sun shades/screens. The most effective solar shading devices are installed on the building exterior, such as awnings and trellises. These devices block the solar energy before it hits or enters the building itself. The optimum designs allow natural daylight into the building without the "solar heat gain" that occurs when sunlight streams directly through a window into the building. Interior shades and blinds eliminate the direct sunlight and glare, but do nothing to reduce the 'heat gain'. In fact, the shades and blinds essentially become "radiators" by absorbing the direct sunlight and transforming it into heat that is welcome in the winter time but detrimental in the summer time.

- Install skylights or 'solar tubes' for daylight. Use a high-efficiency skylight that allows the daylight in but prevents the solar heat from entering the home. Daylight into dark corridors and interior spaces not only improves the ambiance but also reduces the use of light fixtures.
- Plant shade trees on the south-facing side of house (to reduce cooling loads). This is the 'natural way' to provide positive solar shading. Selecting the correct trees (deciduous type) will give you light and heat gain during the winter months when the trees are bare and provide full solar shading during the summer months when the tree foliage is full.

Energy Efficiency

- Replace light fixtures using compact fluorescent bulbs; they can be a huge energy saver. Change incandescent bulbs to compact fluorescent type. Reducing light wattage reduces heat generated by lights and will require less cooling, therefore using less energy all around.
- Install insulated glass windows. Using high efficiency, insulated glass in windows is a good but expensive retrofit option for many homes that need the thermal efficiency, keeping heat in during the winter and heat out during the summer. Current glass technology is able to 'tune' the window performance to a myriad of micro-environments, but this requires technical expertise and not just the typical retrofit window contractor.
- Install an 'energy efficient' HVAC system. Have an energy efficient HVAC system designed for your home. Install a unit that is sized to meet your comfort needs. Do not be convinced to oversize your system. Reduce the 'cooling season' by using fans and natural ventilation, especially in Southern California.
- Purchase energy-efficient appliances. Purchase Energy Star qualified products that meet a high level of energy efficiency. Refrigerators, freezers, washers, dryers, and water heaters represent the major energy users in a residence. Energy Star appliances typically save at least 15% over the federal minimum standards.
- Improve efficiency of water heating. Consider replacing your water heater with a tankless unit that can reduce water-heating costs by 50% because it supplies hot water on demand only. Lower the temperature setting to 120 degrees. Insulate water heater tank and piping.
- Install and use ceiling fans for air circulation (reducing dependence on HVAC). Ceiling fans improve occupant comfort by circulating air, reducing the need for high energy dependent HVAC systems. Install fans in areas where occupants spend more time, such as bedrooms and family rooms.
- Install programmable thermostat. This simple yet advanced device allows occupants to program the heating and cooling cycles in the home. Running the HVAC only when needed can save the typical homeowner 10% a year on heating and cooling bills.
- Install whole house fan. This dual-purpose fan system is usually installed in a central location within the house to 'evacuate' the entire air volume of a residence in a very short time. When the HVAC has been off for the duration of a summer day, the whole house can be 'flushed' with ambient temperature air from the building exterior before the occupant activates the HVAC system. The whole house fan will direct the exhaust air into the attic area and also flush the very hot air that has accumulated below the roof and above the ceiling during the day.
- Install PV array to offset energy consumption. This is a very expensive proposition, but merits careful consideration. With the twilight of cheap fossil-fuel-generated energy upon us, it will take a 'grassroots' approach by the general populace to effect change in how we generate/harvest, distribute, and use energy for ourselves and all future generations. Becoming independent of the utility grids is one very sustainable method of promoting responsible energy generation and use. A roof-mounted photovoltaic (PV) array (capturing solar energy and transforming it directly into electricity) can supplement or even replace dependency upon the existing power grid. This requires technical expertise and careful analysis by the homeowner.
- Install solar hot water collection system. Like PV systems, solar collectors are a very sustainable response for generating hot water for domestic use. Properly sized, these arrays will generate more than enough hot water for not only household requirements (dishwashing, clothes washing, showers and tubs) but also pool and spa heating, all of which currently use fossil fuel as the primary energy source.

Water Conservation

- Change all fixtures to low-flow type. Use less water by adding aerators to your sink faucets and changing to low-flow shower heads and toilets. Replace clothes washing & dishwasher machines with low volume water capacity types. Visit www.bewaterwise.com
- Landscape with native, drought-tolerant plants. Native plants have been growing and evolving in our area for thousands of years and have adapted to the local soils and climate. As a result, they are more likely to thrive with minimal care. They need less water and virtually no fertilizer or pesticides.
- Collect rainwater or gray water. Water from sinks, showers, and washers can be used for irrigation if it is not 'polluted' with soaps or chemicals that are not bio-degradable. In addition, state and local code ordinances and enforcement have not yet recognized gray water recycling systems as a viable plumbing system. Changes need review with local building department. See *Path to Freedom* for information on ollas, gray water systems, and rain barrels. Visit www.pathtofreedom.com

Resources

Local and Regional

- City of Pasadena-Think Green Program
  Alice M. Sterling, Senior Project Manager, 175 North Garfield Ave., Pasadena, CA 91109
  (626) 744-3726
- California Green Builder www.cagreenbuilder.org

National

- US Green Building Council and LEED for Homes, 1800 Massachusetts Ave. NW, Suite 300, Washington, DC 20036 www.usgbc.org

Books

- A Primer on Sustainable Building, Dianna Lopez & William D. Browning
  www.mi.org/catalog/dgs/htm *Brief, comprehensive and readable introduction to green building.*
- Your Green Home: A Guide to Planning a Healthy, Environmentally Friendly New Home,
  Alex Wilson; New Society Publishers, 2006
- Safe Shopper's Bible: A Consumer's Guide to Non-Toxic Household Products, Cosmetics and Food,
  David Steinman and Samuel S. Epstein, MD; Macmillan, 1995
- Clean and Green: The Complete Guide to Non-Toxic and Environmentally Safe Housekeeping,
  Annie Berthold-Bond; Ceres Press, 1990
- The Not So Big House, *A Blueprint for the Way We Really Live*; Sarah Susanka, Kira Obolensky;
  The Tauton Press
- Before You Build, *A Pre-construction Guide*; Robert Roskind, Owner Builder Center; Ten Speed Press
  www.tenspeed.com
- The Natural House; Daniel D. Chiras; Chelsea Green Publishing, PO Box 428, White River Junction, Vermont 05001 www.chelseagreen.com
- Buildings of Earth & Straw, Bruce King; Ecological Design Press
- The Natural House Book, *The Natural House Catalog*; David Pearson; Simon & Schuster/Fireside, Rockefeller Center, 1230 Avenue of the Americas, New York, NY 10020
- The Healthy House, *Healthy House Building*; John Bower; The Healthy House Institute,
  7471 N. Shiloh Road, Unionville, IN 47468
- Regional Guidelines for Passive Energy Conserving Homes, *AIA Research Corp for US Dept of Housing & Urban Development*; July 1980, HUD-PDR-355(2)

- The Green House, *New Directions in Sustainable Architecture*; Alana Stang & Christopher Hawthorne; Princeton Architectural Press www.papress.com
- Off the Grid, *Modern Homes + Alternative Energy*; Lori Ryker; Gibbs Smith, Publisher www.gibbs-smith.com
- Cool Homes in Hot Places, Suzanne Trocme; Collins Design, Publisher

OtherPublications

- Eco-structure, *Improving environmental performances of buildings & their surroundings*; Spiderweb Publishing Inc. www.eco-structure.com
- Environmental Design & Construction, Published by BNP Media, 2401 W. Big Beaver, Suite 700 Troy, Michigan 48084 www.EDCmag.com

Additional Websites *- For an understanding of Green Building Basics, see the following sites*:

- Low Impact Living www.lowimpactliving.com
- Build It Green www.builditgreen.com
- City of Seattle, Washington-Green Building Remodeling Guidelines
http://www.seattle.gov/dpd/GreenBuilding/SingleFamilyResidential/Resources/RemodelingGuidelines/default.asp
- City of Scottsdale, Arizona-Green Building: Home Remodeling Guidelines
www.scottsdaleaz.gov/greenbuilding/Manuals/GBRemodelingWorkbook.pdf
- Global Green USA-Green Building Resource Center www.globalgreen.org/gbrc
- US Green Building Council www.usgbc.org
- GreenerBuildings.Com www.greenerbuildings.com
- Environmental Building News www.buildinggreen.com
- Healthy Building Network www.healthybuilding.net
- Green Home Guide www.greenhomeguide.com
- Rocky Mountain Institute www.rmi.org
- Natural Resources Defense Council www.nrdc.org/cities
- Whole Building Design Guide www.wbdg.org
- EarthCraft House www.earthcrafthouse.com

GREEN BUILDINGS

by ***Robert Tener***

"Build green. It's not just the right thing to do, it's the economical thing to do!"

Introduction

As Claremonters gain interest in and seek knowledge about Claremont's future as a "Sustainable City," compelling and vital issues about our ***built environment*** take center stage. Across our nation, we are in the midst of a dynamic, exciting, very real trend popularly called the "green buildings movement." Beginning in the 1990's and continuing today with increasing prevalence, responsible leaders in land, building, and infrastructure development have realized, and have acted on, the benefits of the "*Think Globally, Act Locally*" mantra through the adoption of green buildings principles. Claremont stands at a challenging crossroads in 2007-2008. We must determine whether or not, as a community, we will take advantage of available experience, technology; best practices, and advice from professionals that are now available to our City to develop our built environment in the most sustainable way, pursing and adopting the objectives of green buildings practices.

This brief section of the Guidebook offers ***four perspectives*** related to green buildings that Claremonters can consider:

- The perspective of a Claremont resident as a responsible citizen
- The perspective of Claremonters being impacted by commercial land and building development in Claremont
- The perspective of Claremonters being impacted by land and building development by public agencies
- The perspective of Claremonters whose workplace is in a building in our City

What Claremont Residents Can Do Locally

- **First**, as a responsible resident of Claremont: Think Globally; Act Locally!
  - Become well informed! Study and learn how the design, construction, and operation of buildings affect the natural environment, the human environment, our city, and you personally. Start by reading the brief appendix here, describing how buildings impact our environment and the benefits of green buildings. Then go on to learn what some "best practices" for green buildings are that are available now for building designers, constructors, and the building owners who operate and maintain them. Resources listed here explain how some other communities are capitalizing on these best practices. The U.S. Green Buildings Council is the most complete, comprehensive, widely accepted source of factual information about green buildings [www.usgbc.org].
  - Urge our elected City Council Members, our Planning Commissioners and Architectural Commissioners, and our City Staff people to get familiar with the benefits of green buildings and how the City can take advantage of them. Claremont's prospects for attaining a sustainable built environment rest squarely in the hands of these people, and they will listen to you, as a resident and as a voter.

- Track the work of the new (in 2007) City Task Force on Sustainable Development. Learn what progress and actions the Task Force is (or is not) considering towards green buildings for Claremont, and give your advice to the Task Force based on your own interests.

♦ **Second**, as a Claremonter impacted by *commercial* land and building development in Claremont: If you know of any commercial land or building development being proposed anywhere in the City – especially if you are acquainted with the developer, or live in the vicinity of the development – talk with the developer as well as with the City Staff. Find out whether they are familiar with green building principles and whether the planned development will incorporate them. Be clear about your desire that everything that's built in out City be done with green building principles designed and built in.

♦ **Third**, as a Claremonter impacted by land and building development by *public agencies* -- this means the planning, design, and construction of any buildings and infrastructure by, for example, the City of Claremont (such as the proposed new Public Safety Facility); by CalTrans; by the Gold Line, or by any State or Federal agency. Talk first with our City Staff and/or with City Council members. Find out whether the public agency is familiar with green building principles and whether the planned development will incorporate them. Be clear about your desire that everything that's built in out City be done with green building principles designed and built in.

♦ **Fourth**, if your workplace is in a building in Claremont: You have a personal stake in whether or not your building owner is respecting green building principles and best practices in the operation and maintenance of all the property and building systems!

Resources

♦ "LEED™ for Existing Buildings" is a comprehensive, nationally validated road map for delivering economically profitable, environmentally responsible, healthy, productive places to live and work: www.usgbc.org

♦ BEEP program of the Building Owners and Managers Association: www.boma.org

Local

♦ City Task Force on Sustainable Development *(being formed, July 2007)*

♦ City Planning Commission

♦ City Architectural Commission

♦ City Staff*: (as of July, 2007 primary contact person is Mr. Chris Veirs, Claremont Redevelopment Agency Staff)*

♦ Any person who has attained the "LEED™ Accredited Professional" certification

♦ Certain Registered Architects and Professional Engineers with green building experience

♦ LWV Sustainability Committee

♦ Green Paper published by the Mayor's Ad Hoc Committee on Sustainable Development (42 pages) (May 8, 2007 City Council minutes)

Regional

- US Green Building Council, Los Angeles Chapter: www.usgbc-la.org
- US Green Building Council, Orange County Chapter: www.usgbc-oc.org
- Dr. Malcolm Lewis (Harvey Mudd College alumnus), CTG Energetics, Irvine
- Knowledgeable City Staff persons nearby (Shannon Perry, Santa Monica; Alice Sterling, Pasadena; others)

Other Websites

- www.usgbc.org
- www.greenglobes.com
- www.smartcommunities.ncat.org
- www.bdcnetwork.com
- www.revitalizationonline.com

Appendix

Impacts of Buildings on the Natural Environment

- Buildings profoundly impact our natural environment, economy, health and productivity.

- Buildings in the U.S account for

    - 36% of our total energy use
    - 65% of our electricity consumption
    - 30% of greenhouse gas emissions
    - 30% of our raw materials use
    - 30% of our waste output *(136 million tons annually)*
    - 12% of our potable water consumption

- Atmospheric emissions from the use of energy leads to global climate change, smog, ground-level ozone, and acid rain

- Buildings transform land that otherwise would perform valuable ecological functions

Benefits of Green Buildings

- **Environmental Benefits**
    - Conserve water
    - Reduce electricity & energy consumption
    - Reduce depletion of natural resources
    - Reduce global warming, pollution, smog, acid rain
    - Reduce ozone depletion

- **Economic benefits**
    - Reduce building operating costs
    - Increase building value
    - Optimize property's life-cycle economic performance
    - Decrease building vacancy; improve tenant retention
    - Improve employee productivity

- **Health and Safety Benefits**
    - Reduce indoor air quality problems
    - Reduce exposure to hazardous chemicals
    - Provide healthy workplaces; improve employee satisfaction
    - Reduce negative effects of UV radiation on people

- **Community Benefits**
    - Conserve open space
    - Reduce demand for landfill space
    - Reduce traffic & promote alternative transportation means
    - Lower impacts on water delivery & sewage infrastructure

GLOSSARY

bioregion: an area defined by its unique ecological characteristics

capacity building processes: opportunities to gain information and experiences that improve one's ability to do something

carrying capacity: the limit to the number of humans the earth can support in the long tern without damage to the environment

civic democracy: the practice of democracy at the municipal level where an active and engaged citizenry is the primary source of political power

community: a inclusive term meant to include individuals of all ages, races, abilities, opinions, and economic circumstances; organizations; government agencies; businesses, employees, employers; residents, property owners, renters, visitors; schools, students; public and private service agencies; other groups and entities

community sustainability: the goal of a system of development cultivated in places where people pursue environmental stewardship, economic security, civic democracy, and social justice as complementary goals

conservation: the controlled use and protection of natural resources; the planned management of a natural resource to prevent exploitation, destruction, or neglect

diversion: with respect to solid waste, refers to all waste that is kept out of a landfill through recycling, beneficial reuse, composting, or other means

ecological footprint: a finite area of ecologically productive land and water on earth which must be shared among more than six billion people, as well as plants and other living species, averaging about 5 acres per person on earth. The average American footprint is 25 acres, far exceeding a "fair earthshare." An ecological footprint is an excellent tool for illustrating the magnitude of change necessary for our world to become sustainable. It is also useful for evaluating and comparing the total environmental impact of specific activities and in this way helpful for decision making.

ecological literacy: knowledge about the local and global environmental impacts of economic and social systems and understanding of the methods to address these impacts

ecological renewal rate: the amount of time required to regenerate a renewable natural resource or restore and stabilize biological, chemical, or physical conditions altered by use or pollution

ecology: organisms plus their environment

education about sustainability: the interdisciplinary use of civics, science, political science, geography, and other traditional disciplines to advance environmental protection, economic security, civic democracy, and social justice as complementary goals. Education about sustainability is a lifelong process that emphasizes systems thinking, partnerships, multicultural perspectives, and citizen empowerment.

efficient: productive without waste

energy: capacity for doing work; usable power like heat and electricity; the resources for producing such power

environment: the complex of physical, chemical, and biotic factors [climate, soil, and living things] that act upon an organism or an ecological community and ultimately determines its form and survival

environmental justice: the act of making decisions that have just and equitable environmental consequences

environmentally preferable: a product, service, activity, or process that has a lesser or reduced effect on human health and the environment when compared to other products, services, activities, or processes that serve the same purpose

extended producer responsibility: responsibility across the entire life cycle of a product, particularly to the post-consumer phase [i.e., after the product is discarded and becomes waste]. Typically, once a product is sold, the responsibility for disposing of it belongs to the consumer. Extended producer responsibility requires that the producer maintain responsibility for recycling or proper disposal of a product once it has surpassed its useful life.

human carrying capacity: the maximum number of people, living at a specific level of natural resource consumption, that an area of land can support indefinitely

green: any environmentally preferable product, service, activity, or process

green technology: methods of production and construction that waste no natural resources

indicator: a data point reflecting the status of a larger system

management: conducting, supervising, or judiciously using the means to accomplish an end

responsible: dependable, accountable, reliable, stable

renewable limits: harvesting resources within renewable limits refers to a rate lower than the rate at which the resource can renew itself. Renewable limits and sustainable limits are interchangeable.

social justice: the act of making decisions that have just and equitable social consequences

sustainable: of, relating to, or being a method of harvesting or using a resource so that there is no depletion or permanent damage

sustainable development: development that meets the needs of present generations without compromising the ability of future generations to meet their own needs

sustainability: a state defined by desired social and economic conditions, governed by population size and the limits of ecological systems, achieved by meeting equitably the needs of current and future generations without a net loss in environmental integrity

stewardship: responsibility for the management of environmental, economic, and social factors

systemic: pertaining to the elements that constitute a system, such as the system's underlying mindset, goals, and rules

systems theory: the idea that physical or non-material standing stocks obey scientific laws of conservation and accumulation as they are influenced by inflows and outflows regulated by negative feedback loops

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Resources
Izaak Walton League of America; Sustainable Santa Monica

SUSTAINABILITY ~~~

BASIC TO LIFE AND LEAGUE

The concept of sustainability is inherent in LWV positions, an unspoken presumption underlying many positions. The need to be sustainable is not new, nor is League's recognition of its importance. What is new is using the word "sustainability" as an umbrella term to represent League's ongoing concern for tomorrow as well as today and to reflect the interdependence among League positions.

"Sustainability" refers to the dynamic among ecological, economic, and social systems on a global scale. It asks us to attend to interactions among positions in different program areas. League positions speak of preservation and conservation, of stewardship, of considering long-term benefits and meeting future needs. Referring to "carrying capacity" is another way of talking about interdependencies and sustainability.

Support for sustainability exists in current League positions, although often implicit rather than explicit.

- With respect to government, positions support policies that promote equity, flexibility, and responsibility so that democratic government is encouraged and protected (i.e., ***political sustainability***).

- With respect to natural resources, positions support their protection and wise management "in the public interest" to "promote an environment beneficial to life" (i.e., ***environmental sustainability***).

- With respect to social policy, positions promote the equity, justice, education, and nurturing essential to sustaining society (i.e., ***social sustainability***).

Sustainable communities recognize an interdependence with the global community and seek to meet current economic, environmental, and social demands through equitable and democratic means without compromising the ability of future generations to meet their own needs.

More specifically, **sustainable communities** have levels of pollution, consumption, and population size that are in keeping with regional carrying capacity; their members share an ethic of responsibility to one another and to future generations; the prices of their goods and services reflect the full societal and environmental costs of their provision and disposal; their systems of governance and leadership encourage democratic deliberation; and their design of markets, transport, land use, and architecture enhances neighborhood livability and preserves ecological integrity.

Sustainability is basic to our future and our League.

~~ Sally A. Seven, President, League of Women Voters of Los Angeles County [an ILO], 1998

In 1996, after a two-year study, the thirteen Leagues in the Los Angeles County ILO [LWV/LAC] adopted the following position that includes support for **sustainable communities.**

POPULATION IMPACTS ON A SUSTAINABLE FUTURE

- ✓ Support for education of League members and the public about the rate of population growth and the social, environmental, and governmental impacts associated with a large and rapidly expanding population.

- ✓ **Support for population stabilization or reduction, moving as quickly as possible to a population size sustainable indefinitely without significant damage to quality of life for present or future generations.**

- ✓ **Support for the promotion and achievement of lifestyles and communities that can be sustained over the long term without damage to the environment, including but not limited to conservation and recycling efforts to minimize the costs of rising populations in terms of resource consumption, waste production, air and water quality, open space, wetlands, and other natural resources.**

- ✓ **Support for governmental and individual policy planning and decision making that consider the carrying capacity of our region and our earth.**