GREEN LA

An Action Plan to Lead the Nation In Fighting Global Warming

MAY 2007

The City of Los Angeles
Mayor Antonio R. Villaraigosa

Honorable Members of the Los Angeles City Council:

On "Big Sunday '07" in April, we joined thousands of residents to clean up neighborhoods, plant trees, and restore our river. We were not just engaging in service to our communities, but reaffirming the founding principles of environmentalism: that everything is connected to everything else and that each of us must act locally to create global change.

As a city of 4 million people, Los Angeles is no different. That's why we have invested in energy efficient buildings, increased recycling, and purchased a fleet of alternative fuel cars, trucks, and transit vehicles.

We have made great strides in cleaning up our air and water, but today we face an even greater threat to our way of life in Southern California from global climate change. The world's top atmospheric scientists now predict that global temperatures are likely to rise between 3.0 and 5.5 degrees Fahrenheit—and sea levels are likely to rise 6–14 inches—by the end of the century if we continue burning fossil fuels at the current rate.

Here in Los Angeles, climate change will likely mean longer and hotter summers, longer droughts, more devastating wildfires, and shortages of water that threaten public health and our economy.

As city leaders, we have a responsibility to confront the gathering climate crisis. Los Angeles emits one-fifth of 1 percent of the world's carbon dioxide, the heat-trapping gas that is the leading cause of climate change. Although one-fifth of 1 percent may not sound like much, it is roughly equal to the carbon dioxide emissions of the entire country of Sweden. **I believe it's time to take bold action to reduce our contribution to global climate change.**

As the legislative body of this great city, the City Council has championed efforts to minimize our carbon footprint. From recycling, water conservation, and environmental technology to more eco-friendly building and land use practices, the City of Los Angeles continues to enact laws and sponsor programs that go further to protect our environment. The time has come to take even greater steps and set an example for cities around the world.

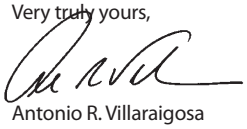
Today I present you with a plan to combat climate change that builds on the legacy of successful environmental initiatives and challenges us to coordinate our efforts to do more. **Our goal is to reduce greenhouse gas emissions 35% below 1990 levels by 2030.**

To achieve this ambitious target, we must improve energy conservation, transition to renewable power sources, and change the ways we commute to work and school. We'll cut smog. We'll save money on energy costs. We'll reduce our dependence on foreign oil and fossil fuels. And we will continue to grow the economy and create new jobs.

In the coming years, we must also redesign our city to increase parks and open space, use water more efficiently, set smart new standards for "green building" and land use planning, and further reduce municipal waste. Los Angeles has the opportunity to become a leader in green technology, generating well-paying jobs while protecting the environment.

The success of our efforts to create a sustainable Los Angeles will be measured by our children. It is with them in mind that we must act today. Together we will transform Los Angeles into the cleanest and greenest big city in America.

Very truly yours,



Antonio R. Villaraigosa
Mayor of Los Angeles

Executive Summary

The Challenge

Los Angeles is home to more than 4 million people in diverse communities that span 469 square miles. As part of the Southern California economy, the 14th largest in the world, Los Angeles is a center of global trade and entertainment.

Yet economic success has not prepared us for the environmental challenges of the 21st century. Indeed, our progress has contributed to one of history's greatest crises—global climate change. The longer we wait to reduce our carbon emissions, the tougher and more expensive it will be.

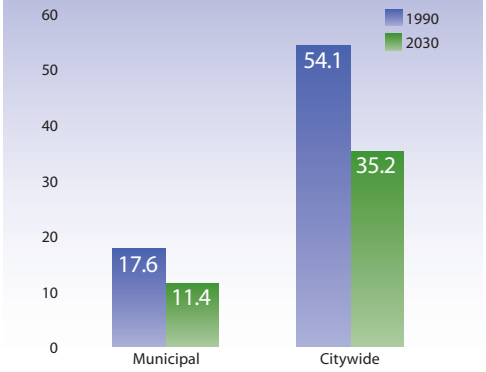
Although climate change is a global problem, mayors and city leaders recognize that it will directly affect their constituents. The City of Los Angeles is working with the Large Cities Climate Leadership Group, which includes 40 of the world's leading cities, and the Clinton Foundation Climate Initiative to share strategies for confronting climate change. Los Angeles is also a signatory to the U.S. Conference of Mayors Climate Protection Agreement.

We must take responsibility for our contribution to global climate change. This plan details innovative steps for city departments and agencies to reduce greenhouse gas (GHG) emissions and create a more sustainable environment. It also outlines a process to facilitate emissions reductions by private businesses and residents throughout Los Angeles. The actions are designed to achieve ambitious reductions by 2030.

FIGURE 1

CO_2: 35% Below 1990 Levels by 2030

in million metric tons



Source: Environmental Affairs Department

The Impact of Climate Change On Angelenos and the Economy

The world's leading atmospheric scientists predict that climate change will have serious environmental, economic, and public health consequences in the coming decades. For Los Angeles, scientists predict that summers will be even hotter, with a doubling or more in the number of heat wave days per year. In addition, Los Angeles will see a 75–85% increase in the number of days with poor air quality and high ground-level ozone concentrations. Hotter, smoggier days mean more stress on electricity and water supplies, more heat-related deaths, and more strain on those with respiratory and cardiovascular diseases.

Changing rainfall patterns will make severe droughts routine. Sea level rises could impact low-lying coastal neighborhoods. And under the most drastic scenario, rising tides could severely impact the Port of Los Angeles, severing the city's connection to international trade and tourism and devastating the port of entry for 43% of U.S. imports.

While the risks associated with climate change are high, the benefits of acting today are largely positive. Reductions in carbon emissions will improve air quality, create a more livable city, and invent cutting-edge green technology that can be marketed to the global community. Viewed properly, the threat of climate change is really an opportunity to transform Los Angeles into the greenest big city in America—a model of urban sustainability for the 21st century.

Los Angeles's Contribution to Climate Change

Los Angeles emits about 0.2% of worldwide carbon dioxide (CO_2) from fossil fuel consumption. Put another way, the city's carbon footprint is roughly equivalent to that of Sweden. Angelenos emitted approximately 51.6 million metric tons of CO_2 in 2004, down from 54.1 million metric tons in 1990. Of that total, municipal government operations accounted for nearly one-third (16.9 million metric tons). Because the city owns and operates its own municipal utility, the vast majority of municipal emissions come from electricity use and generation. However, emissions from cars and trucks are the number one source of CO_2 in Los Angeles, making up nearly 50% of our carbon footprint.

As a share of citywide emissions, municipal facilities and operations have remained stable since 1990. In 1990, approximately 54.1 million metric tons of CO_2 were emitted

from all sources within Los Angeles. Of that figure, municipal operations contributed about 17.6 million metric tons, or 33% of the city's total carbon footprint. In 2004, municipal operations still represented roughly one-third of total citywide CO_2 emissions.

What the City of Los Angeles Is Already Doing

The path to a greener Los Angeles will be challenging, but with strong municipal leadership, Angelenos have always been at the forefront of the conservation movement, rising to meet ambitious environmental goals. These include:

- Recycling 62% of solid waste, a figure that exceeds California's strict recycling goals and represents the highest diversion rate among the nation's top five big cities;
- Investing in renewable energy to generate 20% of total power from clean sources by 2010 and reduce municipal CO_2 output by 17.5% below 1990 levels;
- Holding water use steady through aggressive conservation despite overall population growth of 15% since 1990;
- Reducing the number of smoggy days from more than 200 in 1978 to 30 in 2005;
- Mandating green building standards for all new public buildings and providing incentives for private green development; and
- Investing in a fleet of alternative fuel vehicles that includes nearly half of the city's refuse collection trucks and street sweepers, all 188 DASH buses, and nearly 1,000 hybrid passenger cars, saving more than 10 million gallons of fuel in 2006.

Los Angeles continues to be an environmental leader, but we can and must do more to address global climate change.

Our Goals

This plan presents a framework for confronting global climate change; engaging residents to create a cleaner, greener, sustainable Los Angeles; and growing the green economy.

Transforming the Los Angeles Department of Water and Power: 35% Renewable Energy by 2020

The Los Angeles Department of Water and Power (LADWP) is embarking on the most ambitious transformation of any utility in America. In 2005, Mayor Villaraigosa challenged the department to accelerate plans to generate 20% of its electricity from clean, renewable sources from 2017 to 2010. Since then, LADWP has more than doubled its portfolio of renewable energy by purchasing wind, solar, and geothermal power. Today, through aggressive planning, LADWP is on track to meet the 20% goal with new projects such as the Pine Tree Wind Farm, located in the Mojave Desert.

The department will play a critical role in reducing the city's overall GHG emissions. As part of the climate change action plan, LADWP will transition to 35% of total electricity being from renewable sources by 2020. To accomplish this groundbreaking goal, LADWP will rely on three strategies:

1. **Increase energy conservation:** Conservation is the most cost-effective strategy for meeting energy demand. LADWP will strengthen its programs and incentives to encourage conservation by residential and commercial customers.
2. **Upgrade existing power plants:** Several LADWP power plants are fueled by natural gas. Upgrading these plants with the latest technology will increase efficiency, reducing the amount of fuel necessary to generate an equal amount of power.
3. **Invest in renewable energy:** As long-term contracts with coal-fired power plants expire, LADWP will invest in new sources of clean energy. Los Angeles's proximity to interior deserts and windy mountaintops makes large-scale solar and wind energy economically and practically feasible. Renewable energy sources are described below:
   - **Wind energy**: Wind turbines use strong, steady wind to create electricity. Wind power emits no pollution and has very little impact on the land. Wind energy can be produced anywhere the wind blows with consistent force.
   - **Hydropower**: Dams provide electricity by channeling water down a chute and over a turbine linked to a generator. Hydropower is considered renewable as long as it has no adverse impact on water quality or wildlife habitat.
   - **Geothermal energy**: Energy is generated by converting hot water or steam from deep beneath the Earth's surface into electricity. Geothermal plants emit very little air pollution and have minimal impact on the environment.
   - **Biomass energy**: Organic matter, called biomass, can be used to produce energy. Biomass can also be converted directly into a combustible gas, allowing for greater efficiency and cleaner performance.
   - **Solar Power**: Photovoltaic cells, which are made of silicon, convert the sun's energy into electricity, providing a clean form of energy to power homes and businesses.

Los Angeles will meet the goal of reducing CO_2 emissions 35% below 1990 levels by increasing the generation of renewable energy, improving energy conservation and efficiency, and changing transportation and land use patterns to reduce dependence on automobiles.

How We Are Going to Get There

The unique characteristics of municipal government in Los Angeles offer an unprecedented opportunity to greatly reduce GHG emissions. Ownership of the largest municipal utility in the country allows the city to directly affect a major source of GHGs—electricity production. Emissions from city government buildings and operations also generate substantial CO_2. Including LADWP, municipal operations account for one-third of all CO_2 emissions citywide, five times more than New York City's municipal CO_2 output.

By investing in energy efficiency and renewable power, the City of Los Angeles can significantly reduce its GHG emissions. Improving the efficiency of municipal operations, however, is only part of the solution.

The city must leverage change in the public and private sectors through land use regulation, building guidelines, and investments in transit. It also has the power to provide leadership, stimulate market demand, model innovative and profitable green businesses, promote private investment, create a business-friendly regulatory environment for green companies, and invest in workforce development programs that speed growth of the green economy while improving the income of residents in disadvantaged communities.

Achieving ambitious CO_2 reductions will require sustained advocacy, leadership, and collaboration with other municipal governments and regional regulatory agencies. It will require statewide leadership and international participation to address the challenges of this global issue.

Summary of Actions

Energy

Green the Power From the Largest Municipal Utility in the United States

- Meet the goal to increase renewable energy from solar, wind, biomass, and geothermal sources to 20% by 2010;
- Increase use of renewable energy to 35% by 2020;
- Let contracts for power imports from coal-fired power plants expire;
- Increase the efficiency of natural gas-fired power plants; and
- Increase biogas co-firing of natural gas-fired power plants.

Make Los Angeles a Worldwide Leader In Green Buildings

- By July 2007, present a comprehensive set of green building policies to guide and support private sector development.

Transform Los Angeles Into the Model Of an Energy Efficient City

- Reduce energy use by all city departments to the maximum extent feasible;
- Complete energy efficiency retrofits of all city-owned buildings to meet a 20% or more reduction in energy consumption;
- Install the equivalent of 50 "cool roofs" per year by 2010 on new or remodeled city buildings;
- Install solar heating for all city-owned swimming pools;
- Improve energy efficiency at drinking water treatment and distribution facilities; and
- Maximize energy efficiency of wastewater treatment equipment.

Help Angelenos Be "Energy Misers"

- Distribute two compact fluorescent light (CFL) bulbs to each of the 1.4 million households in the city;
- Increase the level and types of customer rebates for energy efficient appliances, windows, lighting, and heating and cooling systems;
- Increase the distribution of energy efficient refrigerators to qualified customers; and
- Create a fund to "acquire" energy savings as a resource from LADWP customers.

Water

Decrease Per Capita Water Use

- Meet all additional demand for water resulting from growth through water conservation and recycling;
- Reduce per capita water consumption by 20%; and
- Implement the city's innovative water and wastewater integrated resources plan that will increase conservation, and maximize use of recycled water, including capture and reuse of stormwater.

Transportation

Lower the Environmental Impact And Carbon Intensity of Transportation

- Require 85% of city fleet to be powered by alternative fuels;
- Convert 100% of city refuse collection trucks and street sweepers to alternative fuels; and
- Convert 100% of Metropolitan Transportation Authority (MTA) buses to alternative fuels.

Focus on Mobility for People, Not Cars

- Complete the automated traffic signal synchronization and control system (ATSAC);
- Expand flyaway shuttles serving Los Angeles International Airport (LAX) and other regional airports, and convert existing flyaway buses to alternative fuels;
- Make transit information easily available, understandable, and translated into multiple languages;
- Expand the city employee rideshare program;
- Promote walking and biking to work, within neighborhoods, and to large events and venues; and
- Expand the regional rail network.

Create a More Livable City

- Promote high-density housing close to major transportation arteries;
- Promote and implement transit-oriented development (TOD);
- Make available underutilized city land for housing and mixed-use development;
- Make available underutilized city land for parks and open space;
- Clean up brownfields sites for community economic revitalization projects and open space; and
- Make available underutilized city land within 1,500 feet of transit for housing and mixed-use development.

Waste

Shift From Waste Disposal to Resource Recovery

- Recycle 70% of trash by 2015.

Port of Los Angeles

Green the Port

- Fully implement the San Pedro Bay Ports Clean Air Action Plan (CAAP).
- Complete strategic plan for the Port of Los Angeles, including sustainable and green growth options.
- Complete economic development plan for the port, identifying opportunities to link the port's investment in green growth to new economic opportunities in the green sector.

Airport

Green the Airports

- Fully employ the Sustainability Performance Improvement Management System as requested by the City Council and developed by Los Angeles World Airports (LAWA) to track and improve sustainability initiatives;
- Develop and implement comprehensive policies to green Los Angeles airports to meet green building specifications, improve recycling, use alternate fuel sources, use recycled water, employ water conservation methods, reduce energy requirements, and reduce GHG emissions; and
- Evaluate options to reduce aircraft-related GHG emissions.

Open Space and Greening

Unpave Paradise/Create New Paradises

- Create 35 new parks by 2010;
- Revitalize the Los Angeles River to create open space opportunities along the 32-mile corridor within the city of Los Angeles;
- Plant 1 million trees throughout Los Angeles;
- Identify opportunities to "daylight" streams;
- Identify and develop promising locations for stormwater infiltration to recharge groundwater aquifers; and
- Collaborate and partner with schools to create more parks in neighborhoods.

Green Economy

Create Demand and Catalyze Growth Of the Green Economic Sector

- Leverage city policy, purchasing, and regulation, and deepen local university partnerships, to promote local research, development, and production of green technology and products;
- Strengthen global economic relationships to promote investment in Los Angeles's green sector and help local environmentally focused companies penetrate both local and foreign markets;
- Identify and promote locations for green businesses;
- Develop targeted programs to train residents of low and middle income communities for jobs in the green economy;
- Collaborate with the private sector to offer effective incentives for the growth of local green businesses; and
- Collaborate with local educational institutions such as universities, community colleges, and adult education programs to create more curricula that provide city residents with the skills and knowledge to work for competitive green businesses.

Adaptation

Climate Proof Los Angeles

- Improve capacity to respond to an emergency through education and outreach;
- Develop comprehensive plans to prepare for climate change effects on the city, including increased drought, wildfires, sea level rise, and public health impacts;
- Review current zoning and building codes to minimize climate change impact; and
- Reduce the heat island effect by planting 1 million trees throughout the city and increasing open space.

Finally, the plan outlines a public process to conduct community outreach and foster public-private partnerships to reduce CO_2 emissions beyond the city's jurisdiction. Working together, Angelenos can reduce their personal carbon footprints while contributing to the overall reduction of the entire city's CO_2 emissions.

Conclusion

Confronting the threat of global climate change is a challenge that will reorder city priorities for decades to come. It will require a long-term vision and the discipline to make and catalyze critical public and private investments in renewable energy, infrastructure, and environmental technology. It will change the way Los Angeles does business.

Through direct municipal action to mitigate emissions and through partnerships with the public and private sectors, Los Angeles can reduce GHG emissions by 35%. Reducing the city's carbon footprint will bring multiple environmental benefits, with cleaner air, better public health, and more open space. It will stimulate an important new high-tech sector of the economy—the green economy—with opportunities for well-paying jobs for Angelenos.

Together, we will continue our proud history of environmental stewardship by taking bold steps to address global climate change.

I. Introduction

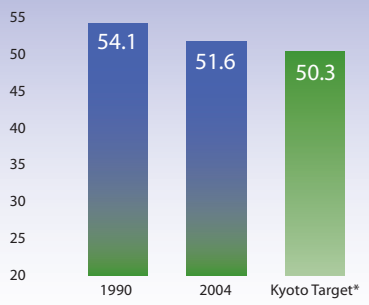
Los Angeles came of age in the 20th century—a city built along streetcar lines and imagined through real estate advertising. In 1900, barely 100,000 people lived in Los Angeles. At the time, compared with sophisticated San Francisco, it was considered a dusty backwater. Its only significant natural resource was oil, and the tar pools scattered around the city and along the shoreline were quickly exploited to fuel the city's early growth and create some of its first fortunes.

Little more than 100 years later, Los Angeles is home to more than 4 million people in diverse communities that span 469 square miles. As part of the Southern California economy, the 14th largest in the world, Los Angeles is a center of global trade and entertainment. Beyond the iconic entertainment industry, the Ports of Los Angeles and Long Beach are a gateway to more than 43% of all goods entering the United States. LADWP is the largest municipal utility in the country. LAX is the busiest airport on the West Coast, and three other city-owned airports serve passengers and cargo worldwide.

Yet economic success has not prepared us for the environmental challenges of the 21st century. Indeed, our progress has contributed to one of history's greatest crises—global climate change. **The longer we wait to reduce our carbon emissions, the tougher and more expensive it will be.**

Although climate change is a global problem, mayors and city leaders recognize that it will directly affect their constituents. The City of Los Angeles is working with the Large Cities Climate Leadership Group, which includes 40 of the world's leading cities, and the Clinton Foundation Climate Initiative to share strategies for confronting climate change.

FIGURE 2
Los Angeles CO_2 Emissions
in million metric tons



*The Kyoto Protocol was signed, but not ratified, by the United States. The agreement would have required the country to reduce GHG emissions to 7% below 1990 levels by 2012.

Source: Environmental Affairs Department

The city is also a signatory to the U.S. Conference of Mayors Climate Protection Agreement.

Confronting the threat of global climate change is a challenge that will reorder city priorities for decades to come. It will require a long-term vision and the discipline to make and catalyze critical public and private investments in renewable energy, infrastructure, and environmental technology. It will change the way Los Angeles does business. It will change the way we pay for our growth, restore our environment, and address existing urban challenges such as poverty.

The path to a greener Los Angeles will be challenging, but with strong municipal leadership, Angelenos have always been at the forefront of the conservation movement, rising to meet ambitious environmental goals. These include:

- Recycling 62% of solid waste, a figure that exceeds California's strict recycling goals and represents the highest diversion rate among the nation's top five big cities;
- Investing in renewable energy to generate 20% of total power from clean sources by 2010 and reduce municipal CO_2 output by 17.5% below 1990 levels;
- Holding water use steady through aggressive conservation despite overall population growth of 15% since 1990;
- Reducing the number of smoggy days from more than 200 in 1978, to 30 in 2005;
- Mandating green building standards for all new public buildings and providing incentives for private green development; and
- Investing in a fleet of alternative fuel vehicles that includes nearly half of the city's refuse collection trucks and street sweepers, all 188 DASH buses, and nearly 1,000

hybrid passenger cars that saved over 10 million gallons of fuel in 2006.

Indeed, energy conservation and investments in renewable power have already reduced total CO_2 output by 4% since 1990, despite population growth of nearly 400,000. **Today, Los Angeles is more than halfway toward meeting the U.S. emissions target outlined by the Kyoto Protocol. By 2010, with actions already underway, the city will meet or beat Kyoto goals.**

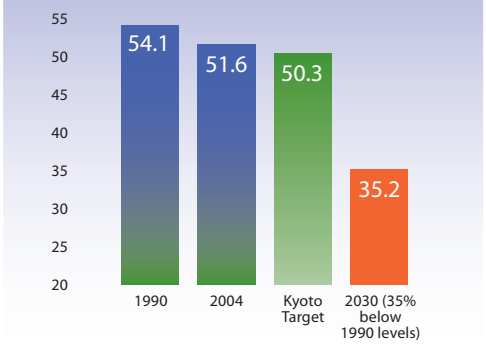
Further reductions in carbon emissions will improve air quality, create a more livable city, and invent cutting edge green technology that can be marketed to the global community. Viewed properly, the threat of climate change is really an opportunity to transform Los Angeles into the greenest big city in America—a model of urban sustainability for the 21st century.

II. Purpose and Scope of the Climate Action Plan

Purpose

The plan details innovative steps for city departments and agencies to reduce GHG emissions and create a more sustainable environment. It also outlines a process to facilitate emission reductions by private businesses and residents throughout Los Angeles. The actions are designed to achieve ambitious reductions by 2030. Progress toward these goals will be measured and monitored annually, and appropriate adjustments will be made along the way.

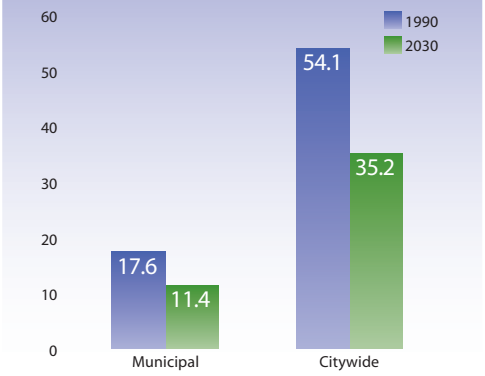
FIGURE 3
Los Angeles Climate Change Goal
in million metric tons



Source: Environmental Affairs Department

The plan proposes an ambitious goal of reducing the city's GHG emissions to 35% below 1990 levels by 2030, making Los Angeles the greenest big city in America.

FIGURE 4
CO_2: 35% Below 1990 Levels by 2030
in million metric tons



Source: Environmental Affairs Department

Scope

This plan covers CO_2 emissions from public and private activities within the City of Los Angeles. It addresses emissions from major sources of CO_2, including the production and consumption of electricity, and transportation fuel and natural gas consumption. The plan presents mitigation and adaptation actions to reduce CO_2 emissions.

Context

A 35% reduction from 1990 levels represents a reduction of 6.2 million metric tons of CO_2 from municipal operations. From a citywide emissions perspective, this goal requires an 18.9 million metric ton reduction from 1990 levels of 54.1 million metric tons of CO_2.

III. Setting the Context
Vision for a Green Los Angeles

This plan represents a key element of the city's agenda for an environmentally sustainable Los Angeles. While not all environmental initiatives reduce GHG emissions, many of the city's broader sustainability goals will help address climate change. For example, increasing access to parks for children, reducing poor air quality that contributes to public health problems, addressing the concentration of pollution sources—including large GHG emitters—in low-income communities of color, and preventing sewage contamination of beaches and waterways all have climate change mitigation benefits. Individual proposals will be prioritized by their ability to catalyze other social and economic goals.

Framework for a Green Los Angeles

Our vision is nothing less than the transformation of Los Angeles into the greenest big city in America. This plan comes at a time of increased civic engagement in the public and private sectors. Never before have so many major environmental organizations, community groups, environmental justice organizations, academics, and private businesses worked together to advance a progressive green agenda for Los Angeles. City departments and proprietary agencies need to ensure their activities work toward improving the environment and making Los Angeles a sustainable city. The objectives are:

1. Improve public health by enhancing the environment

Neighborhoods throughout Los Angeles are exposed to environmental hazards that adversely impact public health. Too many children suffer from asthma, respiratory illnesses, and cancer. Improved air and water quality will reduce exposure to toxic pollution. City actions will reflect the principle of precaution, avoiding creation of new public health threats. The decision-making process must focus on community needs and global interconnectedness while remaining transparent, democratic, and accountable.

2. Unpave paradise by increasing green space

With limited green space—where few children live within walking distance of a park—the city must create a more equitable distribution of open space, greenery, and recreational opportunities. The Million Trees Los Angeles initiative is aimed at increasing the tree canopy for the entire city, which is low compared to other communities nationwide, but emphasizes those neighborhoods where the ratio of trees to pavement is even worse.

3. Promote environmental stewardship for the city and its residents

The city must care for its natural environment and protect our scarce and fragile resources. All neighborhoods and sectors of the community must also be good stewards of the environment. We understand that there are long-term social impacts to the decisions we make.

4. Create a new urban form

Smart growth strategies will play a significant role in mitigating and adapting to climate change. Smart growth is about developing a livable city, and takes a holistic approach to planning, including transportation, water conservation, energy, social justice, economic development, environmental protection, and community development. We strive to promote social, economic, and geographic equality as the basis of environmental sustainability.

5. Build a new green economy in Los Angeles

Focusing on the green sector can result in new jobs, improved human health, and both a more sustainable environment and economy. Catalyzing the growth of green economic activity could serve as a foundation for fundamental change. Los Angeles has significant market influence through its proprietary agencies; its purchasing, procurement, and contracting processes; as well as its regulatory, planning, and land use powers that can be coordinated to "grow green" and promote a robust green economy. The city has the power to provide leadership, stimulate market demand, model innovative and profitable green businesses, promote private investment, create a business-friendly regulatory environment for green companies, and invest

in workforce development programs that facilitate growth of the green economy while improving the income of residents in disadvantaged communities.

The Threat to Los Angeles Of Climate Change

Global climate change refers to the ongoing changes in modern climate patterns, including the rise in average surface temperature, that the United Nations Intergovernmental Panel on Climate Change recently concluded is "very likely" to be caused by humans.

The effects of global climate change are being felt around the world, and they will intensify as CO_2 continues to accumulate in the atmosphere. Scientists predict that global temperatures are likely to rise between 3.0 and 5.5 degrees Fahrenheit—and sea levels are likely to rise 6 to 14 inches—by the end of the century if we continue burning fossil fuels at the current rate. Other effects—such as increased storm intensity, disruption of agriculture and forests, species extinction, and increased wildfires and longer droughts—are also expected.

The economic impact of these changes is predicted to be severe. The Stern Report on Climate Change released earlier this year estimates that the risks of climate change will be equivalent to losing 5% of global gross domestic product (GDP) per year—and could rise to as much as 20% in the worst-case scenario. In contrast, the costs of action—reducing GHG emissions to avoid the worst impacts of climate change—can be limited to around 1% of global GDP each year.

For Los Angeles, scientists predict that summers will be even hotter, with a doubling or more in the number of heat wave days per year. In addition, Los Angeles will see an increase of 75–85% in the number days with poor air quality and high ground-level ozone concentrations. Hotter, smoggier days mean more stress on electricity and water supplies, an increase in heat-related deaths, and greater strain on those with respiratory and cardiovascular diseases. Rainfall patterns may change and the snowpack in the Sierras may diminish by 70–90%, drying up much of our water supply.

Sea level rises could harm low-lying coastal neighborhoods and ground water resources. And under the most drastic scenario, rising tides could severely impact the Port of Los Angeles, severing the city's connection to international trade and tourism and devastating the port of entry for more than 43% of U.S. imports.

Most importantly, the effects of climate change are likely to fall hardest on poor and minority residents of Los Angeles, exacerbating existing economic and social inequalities.

City of Los Angeles: Unique Assets and Opportunities

The unique characteristics of municipal government in Los Angeles offer an unprecedented opportunity to significantly reduce GHG emissions. As the proprietor of the largest municipal utility in the United States, the city has a direct ability to affect generation and consumption of the largest source of GHGs—electricity production. Los Angeles also owns, in conjunction with Long Beach, the largest port complex on the West Coast and gateway to the Pacific Rim, allowing the city to affect emission sources from goods movement nationwide. And as owner of the fifth busiest airport in the world, environmental initiatives by the Los Angeles World Airports (LAWA) at all four of its airports (including LAX) can serve as national models. The demand for green products and services by these departments and the city as a whole can drive the green economy.

- **LADWP:** The department provides electricity to the city's municipal facilities and operations, as well as all residents and businesses within the city's boundaries. LADWP has power generation operations located in the Los Angeles basin and outside the state. It is a major purchaser of environmental products and services.

- **Los Angeles World Airports (LAWA):** LAWA manages four airports throughout Southern California, including one of the world's busiest, LAX.

- **Port of Los Angeles:** As the largest port complex on the West Coast, the Port of Los Angeles, in partnership with the Port of Long Beach, has developed the first-ever joint Clean Air Action Plan. The plan is designed to reduce air emissions from all port sources, including oceangoing vessels, cargo-handling equipment, harbor craft, trucks, and locomotives by at least 45% in five years. This goal is significant. Activities at the Port of Los Angeles

contribute approximately 12% of diesel emissions in the Los Angeles area. One out of every 24 jobs in Southern California is related to port activities, and this number is expected to grow.

Environmental Leadership in the State Of California and City of Los Angeles

The state of California and City of Los Angeles have pioneered many of the most innovative environmental improvements in the country. In the 1950s, California established the nation's first air quality program, which led to the first comprehensive federal Clean Air Act. California acted to require vehicle emission controls, reduce air toxics, and control emissions from stationary sources before federal efforts in these areas. Similarly, water quality programs at the state level served as a framework for the federal Clean Water Act. And Los Angeles created the first combined curbside recycling program.

These decisions were guided by an environmental ethic that remains strong today. Both California and the City of Los Angeles have the most stringent building codes in the country to maximize energy and water conservation. The first Leadership in Energy and Environmental Design (LEED) Platinum-rated public building in Southern California—the Lake View Terrace Public Library—recently opened in Los Angeles. On climate change, California and Los Angeles will act by building on past success and the lessons learned as environmental leaders.

Los Angeles in 2030

More than 225 years ago, 44 Spanish settlers walked nine miles from the Mission San Gabriel to the Los Angeles River—a resting spot they called "Nuestra Señora, La Reina de Los Angeles de Porciuncula—Our Lady, Queen of Angels." Those original pobladores found a flowing river flanked by willow trees and ringed by mountains. They found soil fertile for planting and a climate of near perpetual sunshine with gentle winters and cooling ocean breezes.

Imagine the Los Angeles of 2030—a paradise once lost, now found. Portions of the Los Angeles River are unpaved, returning it to the natural, life-giving stream it once was. Millions more trees shade and green streets, parks, and backyards throughout the city. Renewable sources of energy power homes and businesses. More people use public transportation than they do the automobile, and neighborhoods are known for their walkability. This is the Los Angeles we envision for 2030.

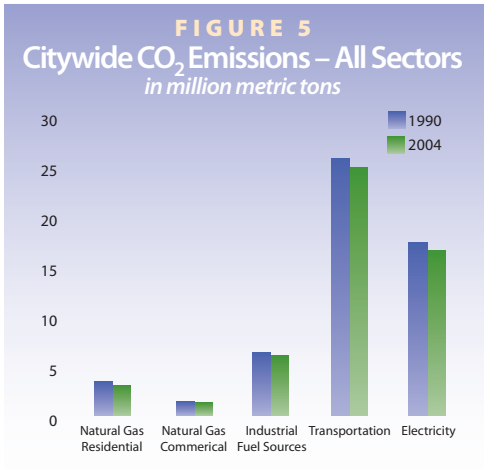
IV. Emissions Profile

Before developing strategies to reduce CO_2 emissions, we must first understand the city's contribution to global warming. GHG emissions are the product of everyday activities, and they are directly related to certain forms of energy use. To analyze these emissions and identify actions to reduce them, we focused on three primary energy sources that move the city: transportation fuels, electricity, and natural gas.

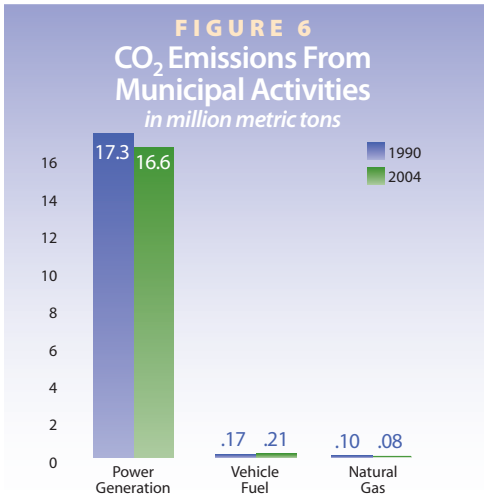
The plan uses a baseline year of 1990—the same baseline in the Kyoto Protocol—to measure progress in reducing emissions. The city's current actual emissions level is represented by data collected for calendar year 2004. The plan concentrates on CO_2 emissions, by far the most prevalent GHG. Emissions information will be collected for 2005 and succeeding years to allow us to chart our progress. The plan will also be expanded to include information and reduction strategies for the other five primary GHGs.

The estimates of CO_2 emissions were generated separately for municipal operations and the city as a whole, using different methods:

- **Municipal facilities and operations:** For all city departments, data were collected on transportation fuel use, electricity generated by LADWP, and natural gas used by city facilities and operations.
- **Citywide emissions:** This estimate is based on data collected from LADWP for electricity generated for use within the city, and information on transportation fuel, natural gas, and other fuels burned directly by all sectors, scaled down from statewide estimates.



Source: Environmental Affairs Department



Source: Environmental Affairs Department

Municipal Facilities and Operations

The municipal, or city government, emissions inventory includes sources of emissions that are directly controlled or operated by the City of Los Angeles. The inventory includes emissions from all city government operations, including those of the Port of Los Angeles, LAWA, and LADWP. It does not, however, include emissions from private activities that occur at the port and airports, such as aircraft emissions and ship emissions. These activities will be addressed in the community emissions profile.

Municipal emissions comprise about one-third of CO_2 output in the City of Los Angeles. Included in the municipal total are emissions from the production of all electricity used in the city. The city government takes responsibility for these emissions since it owns and operates LADWP. Emissions from the use of electricity for city operations, such as operating the lights in City Hall, are not shown separately in the inventory below to avoid counting both the production and use of the same units of electricity.

In 1990, municipal operations accounted for more than 17.5 million metric tons of CO_2. By 2004 their emissions had declined 4 percent, to 16.8 million metric tons. As noted in the chart below, power generation is by far the largest source of municipal CO_2 emissions, accounting for about 98% of the city's municipal carbon footprint. For comparison, emissions from the use of electricity for municipal operations and facilities was ap-

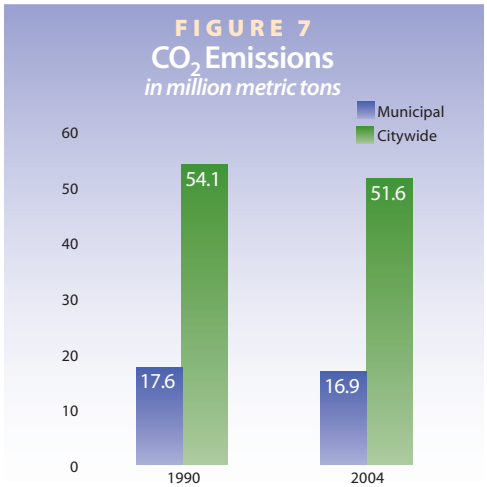
proximately 805,700 metric tons, less than 5% of the total power produced for the entire city.

Citywide Emissions

GHG emissions for all of Los Angeles result from vehicle transportation, residential and commercial electricity and natural gas consumption, and industrial fuel use. The citywide emissions profile also includes emissions from municipal operations.

Based on statewide data and specific information from LADWP, the citywide carbon footprint in 1990 was more than 54 million metric tons. By 2004, citywide emissions had declined to approximately 51.6 million metric tons, a decrease of about 4.6 percent. Nearly half of citywide emissions come from transportation sources, primarily cars and trucks. The chart below illustrates the primary sources and inventories of CO_2 emissions from Los Angeles.

As a share of citywide emissions, municipal facilities and operations have remained stable since 1990. Then, approximately 54.1 million metric tons of CO_2 were emitted from all sources within Los Angeles. Of that figure, municipal operations contributed about 17.6 million metric tons, or 33%, of the city's total carbon footprint. In 2004, municipal operations still represented 33% of the city's CO_2 emissions.



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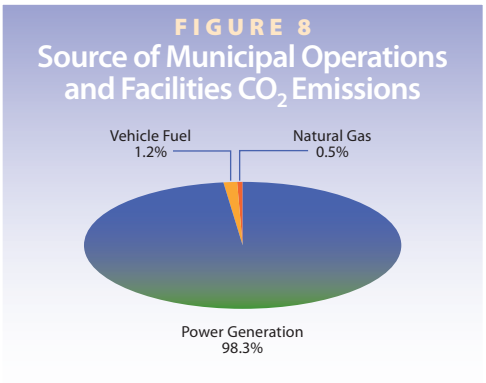

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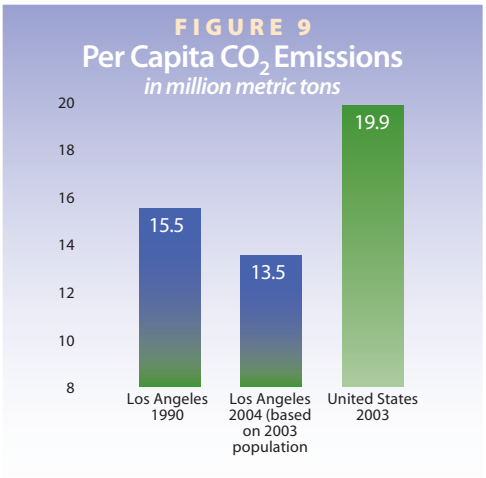

Source: Environmental Affairs Department

Per Capita Emissions

Despite Los Angeles's reputation for sprawling development and freeways, its per capita CO_2 emissions are about two-thirds of the U.S. average. Thanks to our mild climate and stringent building and appliance codes, our residents, on average, have less energy-intensive lifestyles than their suburban and rural counterparts.

In 1990–2004, the population of Los Angeles grew by nearly 400,000. Per capita CO_2 emissions declined during that period from 15.5 metric tons to 13.5 metric tons, a 13% decrease.

LADWP Energy Projects

Project	Date In Service	Percentage of Total Power Generation
Powerex – hydroelectricity	2007	1.8%
PPM Energy – wind	2006	0.9%
Small hydroelectric projects	various	2.8%
Biomass	various	0.4%
Hyperion wastewater plant – digester gas	1998	0.6%
Rooftop solar projects – photovoltaics	various	0.1%

Los Angeles by the Numbers

- 47% of refuse collection vehicles fueled by natural gas
- 3.3 million gallons of diesel fuel displaced through alternative-fuel street sweepers and refuse collection trucks in 2006–2007
- 64% (880 of 1,378) of passenger fleet is hybrid vehicles
- 10.6 million gallons of gasoline saved through alternative-fuel/hybrid vehicles in 2006
- 100% of DASH vehicle fleet (188 buses) alternatively fueled
- Two of the largest alternative-fuel (liquefied natural gas) fueling stations in the country (based on storage capacity) —the East and West Valley Sanitation Yards

Los Angeles as Environmental Leader

Los Angeles pioneered many of the most innovative environmental improvements in the country. Southern California's notoriously poor air quality has forced local governments to invest in clean air technology. As proprietors of the largest port complex and municipal utility in the country, Los Angeles has also been able to institutionalize environmental improvements beyond city boundaries. Finally, there is an "environmental consensus" among civic leaders, community organizations, nonprofits, and the business community. Working as allies, this broad coalition has helped advance sustainability initiatives.

- **Fuel-cell vehicles:** Los Angeles is the first city in the country (second in the world) to incorporate hydrogen fuel-cell vehicles into its municipal fleet.
- **Ultra-low sulfur diesel (ULSD):** Los Angeles was the first large city to demonstrate ULSD (15 parts per million sulfur or less) in heavy-duty applications. The General Services Department (GSD) converted to ULSD for all diesel engines, including those in vehicles and stationary generators, three years before required by regulations.
- **Solid waste diversion/recycling rates:** Los Angeles established the nation's first curbside combined ("blue-bin") recycling program and has surpassed the state-mandated municipal solid waste diversion rate of 50%, currently boasting a 62% rate.
- **Alternative-fuel refuse trucks:** The city owns and operates the largest municipal alternative-fuel refuse truck fleet in the United States, with 262 vehicles operating on natural gas.
- **Green city buildings:** All new city buildings of more than 7,500 square feet must be built to standards under the LEED system. The city has constructed, or is in the process of constructing, 47 LEED-certified buildings. Including completion of the first LEED Platinum public building in the country, the Lakeview Terrace Public Library, Los Angeles has invested more than $890 million in green building construction.
- **Solar roofs:** LADWP has provided more than $50 million in customer incentives to install photovoltaics to generate electricity, representing about 10 megawatts of solar capacity.
- **Traffic signal controls:** Los Angeles boasts an extensive ATSAC system at 3,226 intersections, which provides real-time ability to monitor and modify signal timing according to current traffic conditions. Studies show the system reduces vehicle idling time, and associated pollutants, by 10%.
- **Green power purchases:** LAWA purchases 15% of its electrical power through LADWP's Green Power program, helping to fund the purchase and installation of renewable energy for the city.
- **Biogas to energy:** The Hyperion Treatment Plant, the largest wastewater plant on the West Coast, sends methane gas produced during the digester process to the city's Scattergood Generating Station, producing 80% of its electricity.
- **Building energy retrofits:** Los Angeles has completed energy efficiency retrofits on 63 city-owned buildings, generating savings of nearly 731,000 kilowatt-hours to date, or the equivalent reduction of 502 tons of CO_2.

V. Reducing the City's Carbon Footprint

Although climate change is a global problem, mayors and city leaders recognize that it will directly affect their constituents. Responsible for critical transportation, energy, and water infrastructure, cities are the first responders in the climate crisis and have a unique responsibility to reduce GHG emissions from municipal operations.

The City of Los Angeles is confronted with the reality that climate change can diminish the quality of life for everyone who lives and works here. **That's why Los Angeles is committed to combat global warming.** Each of us, including city government and its operations, has a responsibility to reduce the carbon footprint of the nation's second largest city.

Los Angeles has a special obligation to aggressively confront climate change because, as owner of LADWP, it can directly change the way we purchase and produce power. **Including LADWP, city operations account for one-third of all CO_2 emissions, a percentage five times greater than New York City's municipal CO_2 output.**

While creating great challenges, climate change offers the city and its residents great opportunities for improved quality of life and an increasingly competitive economy. Reducing CO_2 output will produce multiple benefits for Los Angeles, including reducing smog-forming emissions, saving money on fuel, reducing dependence on fossil fuels, and creating a more livable city.

The following section identifies a concrete set of objectives and actions designed to make Los Angeles a leader in confronting global climate change. These measures will reduce emissions directly from municipal facilities and operations and create a framework to address citywide GHG emissions. The actions build on the city's leadership in developing and implementing sustainable environmental policy.

FOCUS AREA: ENERGY

Goal: Green the Power From the Largest Municipal Utility in the United States

Background

LADWP is the largest municipally owned utility in the United States. Since 1916, LADWP has provided electricity to all of Los Angeles and has been the engine for the city's remarkable economic growth during the 20th century. Today, with 7,200 megawatts of electricity generating capacity, LADWP serves 1.4 million households, businesses, and public institutions. In 2005, LADWP sold 22.8 million megawatt-hours of electricity.

Like most U.S. electric utilities, LADWP relies primarily on fossil fuels to generate electricity. About half of the electrical power supply comes from coal-burning power plants in Utah and Arizona that are under long-term contracts. LADWP receives another quarter of its power from natural gas power plants in the Los Angeles basin.

Burning fossil fuels to produce electricity accounts for 32% of the city's total carbon emissions and about 98% of the municipal carbon footprint. While burning natural gas emits only 40% of the CO_2 emitted from burning coal, both are a major source of smog and tiny particles (soot) that can harm the respiratory system. LADWP's resource mix is also vulnerable to supply scarcity. Increasing the use of renewable energy—wind, biomass, solar, and geothermal energy—will stabilize long-run prices and significantly reduce the city's CO_2 emissions.

What we've already done

LADWP is embarking on the most ambitious transformation of any utility in America. In June 2005, the City Council approved LADWP's Renewable Portfolio Standard policy that called for providing 20% of its energy sales to retail customers from renewable energy resources by 2017, with an interim goal of 13% by 2010. Mayor Villaraigosa challenged

LADWP Renewable Energy Projects Under Development

Project	Date Expected in Service	Percentage of Total Power Generation
Pine Tree Wind Farm	July 2009	1.4%
Various wind projects	2008–2010	11.2%
Concentrated solar	December 2010	1.1%
Solar trough	June 2010	1.0%
Renew LA		
Landfill waste-to-energy	July 2010	0.8%
Concentrated solar (3 projects)	October–December 2010	3.0%

LADWP to accelerate its efforts and meet the 20% goal by 2010. In December 2005, the Board of Water and Power Commissioners agreed, and moved the goal to 2010.

Since 2005, LADWP has more than doubled its portfolio of renewable energy by purchasing wind, solar, and geothermal power. Los Angeles's proximity to interior deserts and windy mountaintops makes large-scale solar and wind energy economically and practically feasible. Renewable energy sources are described below:

- **Wind energy:** Wind turbines use strong, steady wind to create electricity. Wind power emits no pollution and has very little impact on the land. Wind energy can be produced anywhere the wind blows with consistent force.
- **Hydropower:** Dams provide electricity by channeling water down a chute and over a turbine linked to a generator. Hydropower is considered renewable as long as it has no adverse impact on water quality and wildlife habitat.
- **Geothermal energy:** Geothermal energy is generated by converting hot water or steam from deep beneath the Earth's surface into electricity. Geothermal plants emit very little air pollution and have minimal impact on the environment.
- **Biomass energy:** Organic matter, called biomass, can be used to produce energy. Biomass can also be converted directly into a combustible gas, allowing for greater efficiency and cleaner performance.
- **Solar Power:** Photovoltaic cells, which are made of silicon, convert the sun's energy into electricity, providing a clean form of energy to power homes and businesses. Large solar collections can feed electricity straight into the grid.

LADWP also produces or buys electricity generated using methane gas—another cause of climate change—recovered from landfills. Under the direction of the City Council's RENEW-LA plan, the city is evaluating proposals to build four state-of-the-art facilities to transform trash into electricity. The city's Hyperion Treatment Plant, the largest wastewater plant on the West Coast, sends methane gas produced during the digester process to the city's Scattergood Generating Station to produce 80% of its electricity needs.

Renewable Energy

Los Angeles generates most of its electricity from coal and natural gas, along with some hydroelectric and nuclear energy. In addition to contributing to GHG emissions, this resource mix is vulnerable to supply scarcity and national security issues, and is unsustainable in the long run. Increasing the use of renewable energy will stabilize long-term prices and significantly reduce the city's CO_2 emissions. Sources of renewable energy include wind, biomass, solar, and geothermal. The city has established an aggressive goal of generating 20% of its electricity from renewable sources by 2010 and 35% by 2030. Since July 2005, LADWP has already increased its renewable share from less than 3% to more than 8%. LADWP will meet the renewable energy targets by constructing its own projects, purchasing existing or newly built renewable facilities, entering joint ventures with neighboring municipal utilities, and, in limited circumstances, by using long-term power purchase agreements.

The city is constructing innovative renewable energy projects, including a ground-breaking pilot project called Terminal Island Renewable Energy (TIRE). The TIRE Project will inject biosolids, the soil-like byproduct of wastewater treatment, into depleted oil and gas reservoirs 5,000 feet below Terminal Island. The biosolids will be converted to clean energy through the natural conditions of high temperature and pressure existing below the earth's surface. The resulting biogas energy will be converted to electricity through a 1 megawatt fuel cell. The TIRE Project will also reduce air emissions and trucking costs currently associated with transporting biosolids to various land application sites, reduce GHGs by sequestering biosolids underground (up to 400 tons/day), and produce renewable electricity from biogas. The TIRE Project will also save millions of dollars in capital, operating, and maintenance costs that otherwise would have been spent on dewatering facilities.

LADWP recently restarted its rooftop solar incentive program that has invested millions of dollars to help homeowners and businesses lower the cost of installing photovotaics to meet their energy needs. LADWP also buys back excess energy available from such systems.

In the last decade, LADWP has modernized two natural gas-fired power plants, increasing their efficiency and lowering smog-forming pollutants and CO_2 emissions. LADWP plans to complete the overhaul of the two remaining natural gas-fired power plants. To maintain reliable electricity service, LADWP must continue to use these natural gas power plants, but they need to be as efficient and low polluting as possible.

What more do we need to do?

- Meet the goal to increase renewable energy from solar, wind, biomass, and geothermal sources to 20% by 2010;
- Increase use of renewable energy to 35% by 2020;
- Let contracts for power imports from coal-fired plants expire;
- Increase the efficiency of Los Angeles basin natural gas-fired power plants; and
- Increase use of biogas for natural gas-fired power plants.

Goal: Make Los Angeles a Worldwide Leader In Green Buildings

Background

A strong economy and growing population have created a building boom in Los Angeles. To accommodate an estimated 300,000 additional residents by 2030, thousands of buildings will be renovated and replaced. Buildings in the United States use one-third of total energy consumed in the country, two-thirds of the electricity consumed, and produce 30% of GHG emissions. Since the expected lifetime of a new building is about 100 years, actions taken today during this period of rapid expansion will have lasting repercussions on the ability to achieve long-term sustainability. Regulating land use, establishing and enforcing minimum building codes, and approving building construction are important city government functions that directly affect climate change. Other building-related activities—such as water use, solid waste management, and type of construction—can also produce CO_2 emissions. Improving energy and water efficiency in buildings and developing sustainable construction guidelines can significantly reduce the city's carbon footprint.

What we've already done

California is an energy efficient state, ranking near the bottom in electricity use per capita, thanks to a mild, Mediterranean climate and stringent statewide and local building codes that have been in place for nearly a generation. Recent advances in green building standards, materials, equipment, and processes continue to increase efficiency.

Los Angeles has also become a hotbed for innovative designers and architects. In 2006, the City Council established an incentive for green building designs meeting LEED Silver standards. LADWP also offers priority service planning for electrical and water service for these buildings.

Launched in December 2006, LADWP's Green Building Incentive Program provides financial incentives for new construction and major rehabilitation projects that are LEED-certified. Payments are calculated using a simple cents/square foot basis, on the number of points earned in the LEED energy category. The incentive rate increases for each additional point earned (e.g., $0.30/square foot for 1 point, $0.40/square foot for 2 points, etc.) as projects save more energy. There is no cap per project, so, for example, a 1 million square foot development that earned four points in the energy category could receive $600,000 from LADWP once certified. More than 20 public and private developments are already part of this program and are now under construction in Los Angeles.

What more do we need to do?

- By July 2007, present a comprehensive set of green building policies to guide and support private sector development.

Goal: Transform Los Angeles Into The Model of an Energy Efficient City

Background

The city is a significant LADWP customer, with millions of square feet of office space owned or leased throughout Los Angeles. In total, the city owns a diverse array of 850 buildings, including libraries, police stations, fire stations, a zoo, and recreation and park facilities; a port and airports; as well as water distribution and treatment systems, and wastewater collection and treatment systems. The electricity used by these buildings and facilities accounts for 72% of the total GHG emissions associated with municipal operations.

What we've already done

In the public sector, the City of Los Angeles has been a green building leader. In 2004, the City Council required all new municipal facilities to meet green building standards. The city has constructed, or is in the process of constructing, 47 LEED-certified buildings. Including the first LEED Platinum-rated public building in the country—the Lake View Terrace Public Library—Los Angeles has invested a total of more than $890 million in green building construction.

At the City Council's direction, the city prepared a resource guide to establishing "green roofs" on buildings. A green roof is a permanent planting system with live plants covering a significant portion of a building's roof. Green roofs can provide a range of environmental, economic, and social benefits.

The City of Los Angeles has completed energy efficiency retrofits on 63 buildings that it owns, generating savings of nearly 731,000-kilowatt hours to date, equivalent to a 502 ton reduction in CO_2.

What more do we need to do?

- Reduce energy use by all city departments to the maximum extent feasible;
- Complete energy efficiency retrofits in all city-owned buildings to meet a 20% or more reduction in energy consumption;
- Install the equivalent of 50 green roofs per year by 2010 on new or remodeled city buildings;
- Install solar heating for all city-owned swimming pools;
- Improve energy efficiency at drinking water treatment and distribution facilities; and
- Maximize energy efficiency of wastewater treatment equipment.

Goal: Help Angelenos Be "Energy Misers"

Background

As the city grows, additional residents and expanding businesses place a larger demand on LADWP power resources. New technologies are also increasing the demand for electricity. Many homes in Los Angeles are full of devices that did not exist a generation ago—such as computers and DVD players—as well as additional television sets, stereos, and air conditioners. As a result, energy consumption has outpaced forecasts. During a heat wave in 2006, Angelenos generated a peak-load record that was not expected to occur until 2017.

That's why conservation remains critically important even as LADWP invests in cleaner sources of power. The cleanest and least expensive kilowatt-hour of electricity is the one LADWP does not have to produce. Conservation also saves residents and businesses' money and reduces the need for new power plants and transmission lines.

Residential customers account for 35% of electricity consumption, commercial customers 53%, and industrial customers 10%.

What we've already done

LADWP offers a variety of financial incentives and rebates to residential, commercial, and industrial customers who purchase energy efficient appliances or install other energy saving devices. Starting in 2007, LADWP will triple its investment in energy conservation from previous years. LADWP has also provided more than $50 million in customer incentives for installation of solar photovoltaics to generate electricity, representing about 10 megawatts of solar capacity. Trees for a Green LA, a popular program, provides free shade trees to LADWP customers to save energy and improve local climates. Trees for a Green LA has now joined in partnership with the Million Trees LA initiative to plant 1 million trees around Los Angeles.

What more do we need to do?

- Distribute two CFLs to each of the 1.4 million households in the city;
- Increase the level and types of customer rebates for energy efficient appliances, windows, lighting, and heating and cooling systems;
- Increase the distribution of energy efficient refrigerators to qualified customers; and
- Create a fund to "acquire" energy savings as a resource from LADWP customers who generate excess electricity.

Installing 2.8 million CFLs will reduce CO_2 by more than 91,000 tons per year. Replacing a single incandescent bulb with a CFL reduces CO_2 emissions from electricity consumption by 65.2 pounds/year.

FOCUS AREA: WATER

Goal: Decrease Per Capita Water Use

Background

Angelenos live in a semi-arid climate. Southern California receives an average of 15 inches of rain per year. Relying solely on that small amount of rainfall is clearly not enough to sustain a city the size of present day Los Angeles. Since the turn of the 20th century, Los Angeles and the rest of Southern California have looked elsewhere for water, building dams and aqueducts and harnessing the flow of rivers hundreds of miles away—first in the Owens Valley, then the Colorado River, and finally the Sacramento and San Joaquin Rivers. Together, these imports provide Los Angeles with 85% of its water.

The conquest of these rivers is the stuff of legend. But the future of these rivers is fragile. Rerouting rivers has caused significant damage to natural ecosystems. Just as important, climate change threatens to dry up rivers by changing precipitation patterns and decreasing the Sierra Nevada snowpack that feeds them. Climate change could also cause more precipitation to fall as rain, overwhelming our waterways and reservoirs.

Over the next 24 years, LADWP estimates it will need an additional 125,000 acre-feet of water to serve 300,000 residents. One of the most cost-effective ways to meet the future demands for water is to conserve. Water supply diversity is also important and alternative supplies, including recycled water and storm water capture, should be pursued.

In addition, conserving water reduces statewide energy consumption. An estimated 19% of California's total electricity demand is associated with water pumping and treatment. Water conservation efforts, therefore, can reduce the city's wastewater treatment costs, improve air quality, and reduce GHG emissions.

What we've already done

The City of Los Angeles and its Southern California neighbors have a remarkable history of water conservation. Water usage in the region is the same today as it was 25 years ago, despite an increase in population of nearly 1 million people. Through LADWP programs, 1.3 million ultra-low flush toilets and showerheads and 39,000 high efficiency clothes washers were installed in city homes and buildings. Water conservation efforts save the city $70 million per year, or around $1 billion over the past 15 years. Los Angeles has reduced wastewater by 56 million gallons per day, equivalent to all the wastewater treated daily in Las Vegas.

What more do we need to do?

- Meet all additional water demand resulting from population growth through water conservation and recycling;
- Reduce per capita water consumption by 20%; and
- Implement the city's innovative water and wastewater integrated resources plan that will promote increased water conservation and maximize the use of recycled water, including capture and reuse of stormwater.

FOCUS AREA: TRANSPORTATION

Goal: Lower the Environmental Impact And Carbon Intensity of Transportation

Background

Los Angeles has been defined by automobile dependence. While we treasure the mobility our cars provide, our love affair with the car has serious consequences for our environment and quality of life. Southern California has long held the dubious distinction of having the worst air quality in the United States. Pollution from cars, trucks, buses, and other mobile sources is the major contributor to the formation of smog, a health concern for all residents. Communities close to freeways, the port, and other transportation infrastructure are disproportionately exposed to toxic air pollutants. While emissions from a single newer car are generally very low, emissions from millions of vehicles on the road add up. Driving a car is probably a typical Angeleno's most-polluting daily activity.

Federal fuel economy standards have remained unchanged for many years, and average fuel efficiency is declining because of the popularity of large vehicles that get poor gas mileage. And we are driving more every year. Transportation-related emissions accounted for about 50% of total CO_2 emissions in Los Angeles in 2004, the single largest source of GHG emissions in our community.

What we've already done

Los Angeles and all Southern California cities have been leaders in transitioning to alternatives to gasoline and diesel. The city's 188 DASH buses run on clean, alternative fuels. The regional transit authority, the Metropolitan Transportation Agency, has replaced most of its diesel buses with clean fuel buses. The City of Los Angeles has 1,000 passenger cars that run on alternative fuels or are gasoline-electric hybrids. Los Angeles is the first city in the country (second in the world) to incorporate hydrogen fuel-cell vehicles into its municipal fleet and now has seven fuel-cell vehicles operating. Los Angeles was the first large city to demonstrate the use of ULSD in heavy-duty applications. GSD converted to ULSD for all diesel engines, including those in vehicles and stationary generators, three years before regulations required. The City of Los Angeles owns and operates the largest municipal alternative-fuel refuse truck fleet in the United States, with 262 vehicles operating on natural gas.

What more do we need to do?

- Require 85% of the city fleet to be powered by alternative fuels;
- Convert 100% of city refuse collection trucks and street sweepers to alternative fuels; and
- Convert 100% of MTA buses to alternative fuels.

Goal: Focus on Mobility for People, Not Cars

Angelenos spend too much time—more than 90 hours per year—stuck in traffic. Traffic congestion diminishes our quality of life and saps productivity. Traffic affects everyone—from truckers carrying goods to and from the port, to students riding buses to school, to adults on their way to work, to tourists trying to see the sights.

Traffic congestion also contributes to climate change. Idling vehicles burn more gasoline or diesel, releasing CO_2 and other pollutants into the atmosphere. Relieving congestion and reducing vehicle miles traveled are sound strategies for reducing GHG emissions.

What we've already done

In the last 20 years, Southern California has spent billions of dollars to improve transit. Los Angeles now has an extensive and heavily used bus, light rail, and heavy rail network that moves passengers throughout the region. MTA has increased the number of buses on the street by one-third and added 25% more bus service hours. Los Angeles County went from zero miles of rail in 1989 to 73 miles in 2003. To relieve congestion, the City of Los Angeles has installed an extensive ATSAC system at most signalized intersections, which provides real-time ability to monitor and modify signal timing according to current traffic conditions. Studies show the system reduces vehicle idling time and associated pollutants by 10% at ATSAC intersections.

What more do we need to do?

- Complete the ATSAC system;
- Expand flyaway shuttles serving LAX and other regional airports and convert existing flyaway buses to alternative fuels;
- Make transit information easily available, understandable, and translated into multiple languages;
- Expand the city employee rideshare program;
- Promote walking and biking to work, within neighborhoods, and to large events and venues; and
- Expand the regional rail network.

FOCUS AREA: LAND USE

Goal: Create a More Livable City

Background

Land use regulations that proscribe the type, size, and density of buildings influence the environment and livability of a community. The pattern of development that is created by zoning can also contribute to GHG emissions by encouraging automobile use.

With 469 square miles, Los Angeles is a vast and sprawling city. Yet many neighborhoods are walkable, with stores and services clustered near dense residential housing. As the city continues to redevelop and grow, there is an unprecedented opportunity to rethink the urban environment. Accommodating continued growth will require taking advantage of infill opportunities and increasing density along transit corridors.

By aligning planning regulations to encourage walkable, mixed-use neighborhoods, the city can create vibrant communities that reduce CO_2 emissions by decreasing automobile use.

What we've already done

A livable community is the foundation of the sustainable city. Through existing planning, zoning, and redevelopment processes, Los Angeles can encourage green practices to reduce the city's carbon footprint. Transit-oriented developments (TOD) are well-designed, higher density, mixed-use residential and business communities created near transit stations. The city is planning TODs near transit stations to create urban villages that discourage using personal vehicles.

What more do we need to do?

- Promote high-density housing close to major transportation arteries;
- Promote and implement TOD;
- Make available underutilized city land for housing and mixed-use development;
- Make available underutilized city land for parks and open space;
- Clean up brownfields sites for community economic revitalization projects and open space; and
- Make available underutilized city land within 1,500 feet of transit for housing and mixed-use development.

FOCUS AREA: WASTE

Goal: Shift From Waste Disposal To Resource Recovery

Background

Los Angeles collects refuse, recyclables, and yard waste from 750,000 households, averaging 6,600 tons per day. Household refuse is trucked to transfer stations and then to landfills to be buried on top of tons of trash that have been buried over years. In the 1980s, California realized it was running out of landfill space and passed the nation's most aggressive recycling requirements for municipalities. Landfills are major sources of methane, a GHG produced by decomposing trash.

What we've already done

Los Angeles established the nation's first curbside co-mingled ("blue-bin") recycling program. The city has surpassed the California-mandated municipal solid waste diversion rate of 50% and currently recycles 62% of all garbage, more than any large American city. The City Council's RENEW LA plan is a blueprint to lead the city to a "zero waste" goal. To meet that goal, Los Angeles is expanding recycling to multifamily dwellings, commercial establishments, and restaurants. Under the RENEW LA Plan, the city is also developing facilities that will convert refuse to energy without incineration.

What more do we need to do?

- Recycle 70% of trash by 2015.

Transit-Oriented Development

TODs are well-designed, higher density, mixed-use residential and business communities created near transit stations. Properly designed TODs attract riders to public transit, stimulate economic development, and reduce the need to use personal vehicles. Los Angeles is planning TODs near 60 rail and bus stations to create urban villages that encourage walking, cycling, and transit use instead of driving. Generally, each TOD consists of the area within a quarter mile of these transit stations. Since each Los Angeles neighborhood is unique, different types of TODs will be developed across the city. Station Area Plans will be developed for each transit station in the city, either as a stand-alone plan or as part of the city's Community Plan Update Process. Walkability guidelines and an Urban Design Studio have been created as part of the city's TOD planning efforts.

FOCUS AREA: PORT

Goal: Green the Port

Background

The Port of Los Angeles is a critical component of the global, national, and regional goods movement system encompassing highways, distribution centers, ports and rail yards. Together with the adjacent Port of Long Beach, the combined facilities—known as the San Pedro Bay Ports—are the busiest container port in the United States and the fifth busiest in the world. The Port of Los Angeles has 30 major cargo terminals, covers 43 miles of waterfront, and includes 7,500 acres of land and water. More than 43% of all imports into the United States enter through the Ports of Los Angeles and Long Beach; more than 60% of this cargo is destined for locations outside of Southern California. In 2005, the ports were responsible for more than 3.3 million jobs nationally and 886,000 jobs in California. As a regional, statewide, and national economic engine and job creator, the role of the Port of Los Angeles continues to grow.

However, communities near and around the port have suffered serious environmental and public health impacts from port-related air pollution. Port operations are responsible for approximately 12% of the city's diesel emissions, including those from ocean-going vessels and the 16,000 trucks traveling to and from the ports. The railroads contribute to localized and regional pollution. The burning of diesel fuel, heavy fuel used in ships, and gasoline all contribute to GHG emissions.

What we've already done

The new San Pedro Bay Ports Clean Air Action Plan (CAAP) is the first of its kind in the country to link the emissions reduction efforts of the two largest ports in the United States with the efforts of the regulatory agencies responsible for ensuring compliance with air quality standards. The plan calls for the following air pollution reduction goals from oceangoing vessels, cargo-handling vehicles, and heavy-duty vehicles: 47% reduction in diesel particulate matter; 45% reduction in nitrogen oxides (NO_X), and 52% reduction in sulfur oxides (SO_X). A series of initiatives over the next five years will address the sources of port-related air pollution, including installing alternative marine power, also known as cold-ironing, at more than 10 berths at the Port of Los Angeles. This will allow ships to use electricity to power their engines while at berth.

What more do we need to do?

- **Fully implement the CAAP:**

  Heavy-duty vehicles: By the end of 2011, all trucks calling at the ports will meet or exceed the U.S. Environmental Protection Agency's (EPA) 2007 emissions standards for on-road particulate matter.

  Oceangoing vessels: 100% compliance with the Vessel Speed Reduction Program, use of low-sulfur fuel, increase use of alternative marine power (cold-ironing).

  Cargo-handling equipment: All yard tractors will meet at a minimum the EPA 2007 on-road or Tier IV engine standards.

  Harbor craft: All craft will meet EPA Tier II standards or equivalent reductions (Tier III when available).

  Railroad locomotives: For Pacific Harbor Line switch engines, use of Tier II engines and emulsified or other equivalently clean alternative diesel fuels available. Diesel-powered Class 1 locomotives entering port facilities will be 90% controlled for particulate matter and NO_X.

  Complete the strategic plan for the Port of Los Angeles, including sustainable and green growth options.

  Complete the economic development plan for the port, identifying opportunities to link the port's investment in green growth to new economic opportunities in the green sector.

FOCUS AREA: AIRPORT

Goal: Green the Airports

Background

LAWA operates four airports in Southern California, including LAX and Ontario Airport, which are major commercial airports. A large airport is like a small city, with buildings, streets, and vehicles of all sizes. Most airport activities generate GHGs. Airports consume electricity for their buildings and equipment. Fossil fuels are used in shuttle buses and maintenance vehicles. Traffic coming to and from the airport produces pollution. And, of course, planes taking off and landing at airports emit pollutants.

What we've already done

The Los Angeles Board of Airport Commissioners adopted a sustainable green building policy that commits LAWA to incorporate LEED standards in all future construction projects. The Tom Bradley International Terminal renovation project is the first at LAX that will meet green building standards. LAWA purchases 15% of its electricity through the LADWP Green Power Program, helping to fund the purchase and installation of renewable energy.

The Green Airport

The Tom Bradley International Terminal renovation project is the first at LAX to incorporate LEED standards developed by the U.S. Green Building Council. The standards promote a whole-building approach to sustainability by recognizing performance in human and environmental health, including sustainable site development, water savings, energy efficiency, materials selection, and indoor environmental quality. The terminal's new heating/ventilation/air conditioning system and more efficient electrical and lighting systems will reduce energy consumption, while a new plumbing system will increase water conservation. More than 75% of the construction and demolition waste will be recycled or salvaged, and the design features various local and sustainable building materials and finishes.

What more do we need to do?

- Fully employ the Sustainability Performance Improvement Management System as requested by the City Council and developed by LAWA to track and improve sustainability initiatives;
- Develop and implement comprehensive policies to green Los Angeles airports to meet green building (LEED) specifications, improve recycling, use alternate fuel sources, use recycled water, practice water conservation, reduce energy requirements, and reduce GHG emissions; and
- Evaluate options to reduce aircraft-related GHG emissions.

FOCUS AREA: OPEN SPACE AND GREENING

Goal: Unpave Paradise/Create New Paradises

Background

Generations have come to Los Angeles because of its natural environment. The mild climate, coast, beaches, and mountains have been an irresistible lure to people looking for a better life. Yet, in our rush to grow our economy and provide places for everyone to live, we paved over this paradise. We lost many of the green places that provide an oasis from our hectic lives. Green spaces allow the city and its people to breathe, relax, play, and to find a connection to nature. Our rivers—even the Los Angeles River where the city was founded—creeks, and streams, have become concrete flood control channels. Green spaces are important as respite but they also have tangible environmental benefits. An urban ecosystem approach recognizes and accounts for the intrinsic ability of ecosystems—through biological processes—to improve environmental quality and livability. These processes can mitigate climate change impacts and reduce GHG emissions. For example, soil and vegetation filters air pollution and absorbs CO_2, prevents flooding and replenishes groundwater, and provides public health benefits and opportunities for recreation. Neighborhoods and streets should include vegetated buffers (bioswales) for stormwater purification and shade trees to promote cooling.

What we've already done

In 2007 alone, the city will open 14 new parks for Angelenos to enjoy. In partnership with the state, we have converted more than 40 acres in downtown to park space. Under the leadership of the Ad Hoc Committee on the Revitalization of the Los Angeles River, the City Council adopted a comprehensive and ambitious plan to restore the river by making it a river again and connecting it to the community.

What more do we need to do?

- Create 35 new city parks by 2010;
- Revitalize the Los Angeles River to create open space along the 32-mile corridor within the city;
- Plant 1 million trees throughout Los Angeles;
- Identify opportunities to "daylight" streams;
- Identify and develop opportune locations for stormwater infiltration to recharge groundwater aquifers; and
- Collaborate and partner with schools to create more parks in neighborhoods.

FOCUS AREA: GREEN ECONOMY

Goal: Create the Demand and Catalyze The growth of the Green Economic Sector

Background

Los Angeles has an opportunity to become a national and global green leader, while generating new jobs, improving public health, and creating both a more sustainable environment and competitive economy. The forward-looking policies and actions outlined in this document are catalytic, creating demand for less-polluting technologies, goods, and services. By its sheer size, Los Angeles will stimulate market demand for locally made, environmentally friendly products and services. City resources can also be leveraged to promote private investment and clusters of green businesses. And by investing in workforce development programs, the city can help prepare Angelenos to take advantage of the job opportunities that the green sector offers, especially to residents of the most disadvantaged communities.

What we've already done:

- Convened experts from private, public and academic sectors to develop an innovative Green Sector Economic Strategy for the city;

Sun Valley Watershed Management And Replenishment Project

The Sun Valley watershed is located in the northeastern San Fernando Valley. It is a 2,700 acre, nine-mile-long community with a substantial flooding problem caused by a lack of storm drains and too much soil sealed by urban development (buildings, roads, parking lots, etc.). Every time it rains in Los Angeles, flooding in Sun Valley endangers human safety, damages the local economy, and threatens human health. Rain water flushes toxins off of industrial sites into neighborhood streets, schools, and parks, as it makes its way to the Los Angeles River and the ocean. The city has designated Sun Valley as an Environmental Justice Improvement Zone because of the high incidence of cancer, respiratory illnesses and asthma, and exposure to toxics-emitting facilities. To address the chronic flooding, Los Angeles County and City of Los Angeles flood control officials planned to install a nine-mile-long storm drain to transport stormwater. However, through collaboration with the public and other stakeholders, management of the area as an urban forest watershed became the preferred solution. The concept has resulted in a project that is currently under construction at a cost of nearly $200 million.

- Prioritized the green sector in the city's overall economic development and workforce strategies; and
- Collaborated with community-based organizations to develop workforce training programs to ensure that residents of low-income communities develop the skills to obtain living-wage jobs in the greening economy.

What more do we need to do?

- Leverage city policy, purchasing practices, and regulation, and deepen local university partnerships, to promote local research, development, and production of green technology and products;
- Strengthen global economic relationships to promote investment in Los Angeles's green sector and help local, environmentally focused companies penetrate both local and foreign markets;
- Identify and promote locations for green businesses;
- Develop targeted programs to train residents of low and middle income communities for jobs in the greening economy;
- Collaborate with the private sector to offer effective incentives for the growth of local green businesses; and
- Collaborate with local educational institutions such as universities, community colleges, and adult education programs to create more curricula that provide city residents with the skills and knowledge to create and work for competitive green businesses.

FOCUS AREA: ADAPTATION

Goal: Climate Proof Los Angeles

Background:

Adaptation is increasingly recognized as a critical component of a comprehensive climate change policy. Although the city will strive to reduce emissions as a means of preventing future climate change, climate impacts expected in the next 25 years will be substantially influenced by past emissions of GHGs. Indeed, the effects of past emissions are already being felt.

Recognizing the importance of adaptation, the city is committed to ensuring that changes to our local climate are incorporated into planning and building decisions.

What we've already done

While the city's Million Trees LA initiative increases the tree canopy, it also provides an important adaptive benefit to climate change by providing shade and cooling temperatures, thus reducing the urban heat island effect. The City Planning Commission has adopted a 14-point plan for sustainable planning with significant adaptation elements.

What more do we need to do?

- Improve capacity to respond to climate-related emergencies through education and outreach;
- Develop comprehensive plans to prepare for climate change impacts affecting Los Angeles, including increased drought, wildfires, sea level rise, and public health impacts;
- Review current zoning and building codes to minimize climate change impact; and
- Reduce the heat island effect by planting 1 million trees throughout the city and increasing open space.

VI. Implementation and Monitoring

We all share the responsibility to reduce GHG emissions because no community is too isolated to avoid the impact of climate change. Shrinking our carbon footprint will cut smog, save money on energy, and reduce dependence on fossil fuel. Ultimately, confronting climate change will help transform Los Angeles into a more livable city.

Yet city government can't do it alone. Regional government partnerships and local community involvement will be critical to the success of this plan. Above all, the city must engage with residents, businesses, environmental and environmental justice leadership, labor, and academic institutions.

Los Angeles can provide strong and decisive leadership through regional planning authorities, such as MTA, the Metropolitan Water District, Southern California Association of Governments, and conservancies. Also, joint use and joint power authorities, partnerships, integrated planning and joint planning, and policy initiatives can be leveraged to further reduce GHG emissions. The city has the responsibility to exert leadership and work collaboratively with other agencies, such as the Los Angeles Unified School District, County of Los Angeles, South Coast Air Quality Management District (SCAQMD) and Regional Water Quality Control Board to explore cooperative programs to reduce overall GHG emissions.

This plan outlines a set of goals to achieve a 35% reduction in GHGs by 2030. Reaching that goal will require the following:

1. City departmental action plans

The City of Los Angeles has a wide array of tools available to implement actions outlined in this framework. The city, through the Mayor and City Council, city departments, and proprietary agencies, can act by virtue of executive directives, ordinances, and policies with both incentives and requirements to implement the actions laid out in this framework. Opportunities where the city can use its direct authority to reduce its GHG emissions will be fully explored and prioritized.

Next Steps:

- By July 2007, the Environmental Affairs Department (EAD) will convene an interagency working group to develop an action plan for non-proprietary municipal departments that identifies and implements immediate opportunities for the city actions outlined in this framework.
- By September 2007, the working group will have developed a prioritized set of city actions.
- By December 2007, LADWP, the largest municipal source of CO2, will develop specific actions related to its contribution to GHG reduction goals, including renewable energy production, energy efficiency, and water conservation.
- By December 2007, LAWA and the Port of Los Angeles will develop individual climate action plans consistent with goals outlined in this plan to examine opportunities to reduce GHG emissions from their operations.

2. Citywide climate change education program

In 1990–2004, the city achieved a remarkable 4.6% reduction in CO_2 emissions—more than 2.5 million metric tons of CO_2, which is equivalent to removing more than 470,000 cars from the road. Meeting the goal of reducing emissions by 35%, however, will require a shift in behavior. To effectively combat global warming, the city must lead by example and signal a call for action. Through a robust public participation process that solicits input from all stakeholders, including residents, businesses and industries, academic institutions, environmental organizations, and environmental justice groups, the city can develop a strategic and bold plan to sustain long-term GHG reductions. The City of Los Angeles will partner with community organizations, environmental justice groups, and environmental groups to develop educational materials and reach out to Angelenos with steps they can take to reduce their own emissions. This effort will be led by EAD and the Environmental Affairs Commission.

Next Steps:

- Beginning in September 2007, EAD, in coordination with the Environmental Affairs Commission, will conduct multi-lingual, community-based outreach to all neighborhoods, specifically communities with environmental justice challenges, to inform them of the development of the actions.
- Convene a series of at least 20 community workshops to engage public input into the climate plan.
- By December 2007, the city will have developed a program to challenge all Angelenos to reduce their individual/household carbon footprint.

3. Continued research and data collection on GHG emissions

Innovations in how we deal with the threat of global warming and emerging methods to collect emissions data are continuing to evolve and improve. While we find ways to mitigate our GHG emissions, economic opportunities in new technologies and jobs will emerge. Los Angeles, with its hub of world-class research institutions, is positioned to take full advantage of this opportunity.

Next Steps:

- By spring 2008, the city, in partnership with research institutions, will work to refine our knowledge of community-wide GHG emissions and carbon footprint.
- Collaborate with the California Climate Action Registry to develop a local government protocol for GHG emissions inventory.
- Publish results from this inventory annually to foster accountability and further action.

4. Advocating stronger regional, state, and federal policies and legislation

Partnerships at all levels of government are necessary to reduce carbon emissions. While California has begun to address climate change, local governments must also develop aggressive strategies to protect residents and business from its impacts.

Next Steps:

- The city will collaborate with the Large Cities Climate Leadership Group (C40) and the Clinton Foundation Climate Initiative (CCI) to share emergent best practices and develop a common municipal agenda to address global warming.
- The city will collaborate with local government associations, including the U.S. Conference of Mayors, to develop and share climate change strategies.
- The city will partner with the SCAQMD to develop meaningful strategies to reduce GHG emissions.
- The city will provide leadership for implementation of AB 32, the Global Warming Solutions Act, and advocate at the federal level for stronger GHG reduction standards.
- The city will leverage partnerships with Los Angeles's international sister cities to combat global climate change.

" The blunt truth about the politics of climate change is that no country will want to sacrifice its economy in order to meet this challenge, but all economies know that the only sensible, long-term way of developing is to do it on a sustainable basis."

– British Prime Minister Tony Blair

Appendix A

Background Information On Climate Change

Cities around the world are responding to climate change by participating in international discussions.

Kyoto Protocol

- The well-known Kyoto Protocol, which was adopted in 1997 and entered into force in February 2005, is an agreement made under the United Nations Framework Convention on Climate Change. The protocol is composed of a range of GHG reductions, with 8 percent reductions for the European Union and some others, 7 percent for the United States, 6 percent for Japan, and zero for Russia. Nearly 170 countries have signed the protocol. Although the United States has signed the protocol, the Senate has not ratified it.

U.S. Conference of Mayors

- The U.S. Conference of Mayors passed the Mayors Climate Protection Act unanimously in June 2005. As of August 2006, 279 mayors (representing more than 48.5 million constituents), including Los Angeles Mayor Villaraigosa, have signed the agreement, which pledges to meet or exceed the Kyoto Protocol standards identified for the United States.

Large Cities Climate Leadership Group

- The C40 (the 40 largest cities in the world, coordinated by the City of London) is a group of the world's largest cities committed to tackling climate change.

Clinton Foundation Climate Initiative

- CCI is a Clinton Foundation project dedicated to making a difference in the fight against climate change in practical and measurable ways, initiating programs that directly result in substantial reductions in heat-trapping GHG emissions.

AB 32 – Global Warming Solutions Act

- AB 32 codified a statewide target of reducing emissions to 1990 levels by 2010 and to 2000 levels by 2020. The city is seeking to go beyond AB 32 and reduce emissions to 35% below 1990 levels by 2030.

Sister City Program

- The City of Los Angeles has more than 20 sister cities across the world. As part of our coordination with these cities, we will promote the understanding and awareness of climate change issues and seek to provide technical assistance to those cities seeking to reduce their GHG emissions.