Climate Protection Strategies and Best Practices Guide

2007 Mayors Climate Protection Summit Edition

THE UNITED STATES CONFERENCE OF MAYORS

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Foreword

This report on U.S. cities’ efforts to conserve energy and reduce the greenhouse gas emissions that threaten our planet has been prepared for the Mayors Climate Protection Summit in Seattle. It is based on information submitted to The U.S. Conference of Mayors by mayors who applied for the First Annual Mayors’ Climate Protection Awards, announced in June during our 2007 Annual Conference of Mayors in Los Angeles, and by mayors planning to participate in the Seattle Summit.

Two years ago the Conference of Mayors unanimously endorsed the U.S. Mayors Climate Protection Agreement, an initiative launched by Seattle Mayor Greg Nickels in which participating cities are committed to 1) striving to meet or beat the Kyoto Protocol targets in their own communities, through actions ranging from anti-sprawl land-use policies to urban forest restoration projects to public information campaigns; 2) urging their state governments, and the federal government, to enact policies and programs to meet or beat the greenhouse gas emission reduction target suggested for the United States in the Kyoto Protocol – a seven percent reduction from 1990 levels by 2012; and 3) urging the U.S. Congress to pass greenhouse gas reduction legislation which would establish a national emission trading system.

Conference President and Trenton Mayor Douglas H. Palmer has encouraged and continues to urge mayors to sign on to the Agreement; nearly 700 have done so to date – including the mayors of cities whose initiatives are described in this report – and the number continues to rise.

For decades our Conference has adopted and promoted policy positions on a range of issues affecting energy production and use and its impact on the environment. In recent years we have increasingly called attention to the need for global climate protection, focusing on renewable energy sources, national standards for climate change, building standards and practices, and transportation options.

Conference President Palmer unveiled a 10-Point Plan in January during our Winter Meeting in Washington which makes enactment of a new Energy and Environmental Block Grant our top legislative initiative for the 110th Congress, and we are making great progress toward this goal. Following this, in February, President Palmer and I officially launched The U.S. Conference of Mayors Climate Protection Center. This action took our organization beyond advocacy; it responded to an urgent need to provide mayors with the guidance and assistance they need to lead their cities’ efforts to reduce the greenhouse gas emissions linked to climate change.

One of the first activities undertaken by the Climate Protection Center was a survey of cities designed to build a baseline of information on their efforts to reduce greenhouse gas emissions. Released during our Los Angeles meeting, it showed that, in cities throughout this nation, fleets include vehicles that use alternative fuels or hybrid-electric
technology; power plants employ cleaner energy sources; lighting is provided by energy-efficient technologies; buildings are more environmentally sustainable; and individual city climate protection efforts are being viewed as part of broader regional environmental and public health strategies.

This report builds on that survey, providing a wide range of illustrations of how cities are tackling the need to conserve energy and other resources and to reduce greenhouse gas emissions, and what they are accomplishing as a result of their efforts. These best practices vary greatly in size, scope, cost, and focus. Some are well established and some are just getting underway, but all have ideas to offer on how to protect our cities today and our planet in the years ahead. We are grateful to the mayors who have shared them with us.

Tom Cochran
Executive Director
The U.S. Conference of Mayors
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Introduction

This report describes successful approaches that 52 mayors and their cities have taken to conserve energy and other natural resources, acquire clean energy, and adopt products and practices that reduce the greenhouse gas emissions known to contribute to climate change. Many describe initiatives that reduce emissions generated by city government operations; others describe initiatives that encourage city residents and local businesses to conserve. Because the approaches described range so widely, they are presented in this report under three headings:

- **Cross-Cutting Initiatives** generally describe comprehensive, multi-faceted approaches taken by cities to reduce greenhouse gas emissions.
- **Regional Initiatives** describe efforts made by cities to work with other local and state governments and businesses to achieve conservation and greenhouse gas reduction goals.
- **Focused Initiatives** generally provide specific examples of energy or resource conservation programs or projects undertaken by cities, usually as part of broader-based conservation efforts.

Throughout the report are references to technologies, energy measures, and pollutants that frequently appear as symbols or abbreviations. Those appearing most often include:

- **BTU** – British Thermal Unit
- **CFL** – Compact Florescent Light
- **CO₂** – Carbon Dioxide
- **GHG** – Greenhouse Gas
- **NOₓ** – Nitrogen Oxide
- **kWh** – Kilowatt Hour (1,000 watt-hours)
- **LED** – Light Emitting Diode
- **mWh** – Megawatt Hour (1,000,000 watt-hours)
- **PV** – Photovoltaic
- **SO₂** – Sulphur Dioxide
- **VOC** – Volatile Organic Compound

Also frequently referenced in the report is LEED, Leadership in Energy and Environmental Design, the green building rating system of the U.S. Green Building Council. Buildings may receive Certified, Silver, Gold, or Platinum ratings based on their achievement of green building standards.

Each description in the report includes the name and contact information for an individual in the city who can provide additional information on the city’s initiatives.
Cross-Cutting Initiatives

Albuquerque, NM: Mayor Martin J. Chávez

ALBUQUERQUEGREEN

Recognizing that there can be no easy solutions to the problem of climate change and its effects on the environment, Mayor Martin Chávez’s approach to reducing greenhouse gas emissions in his City – an initiative titled ALBUQUERQUEGREEN – is, by design, comprehensive, multi-faceted, and performance-oriented.

In developing the initiative, the Mayor recognized that one of the most significant challenges to be faced was the lack of awareness of the problem and the possible solutions to it among many of Albuquerque’s residents. His response was to assemble a team of technical and marketing experts to assist him in developing a comprehensive sustainable development action plan with strategies that would be integrated into public education and outreach campaigns. The plan that was developed targets eight core areas: 1) integrating the City’s growth into a network of mixed use, compact, and transit oriented urban villages; 2) increasing transit use, walking, and cycling; 3) increasing energy efficiency of buildings and supplying them with renewable clean energy; 4) creating a network of connected green ways, parks, natural areas, and community gardens; 5) integrating decentralized, small scale, renewable resource-oriented infrastructure systems within existing large-scale systems; 6) integrating sustainability priorities into the City’s culture; 7) ensuring that economic development includes a clear commitment to increased performance on sustainability objectives; and 8) ensuring that City management provides sustainability leadership by engaging City staff, key stakeholders, and the citizenry on sustainability initiatives and strategies.

The initiative’s public education and outreach messages are conveyed through a Web site – www.albuquerquegreen.com; summits focusing on sustainable energy, economic development, and best practices; billboards, brochures, pamphlets, flyers, and a Green Guide; and stakeholder-driven task forces.

The ALBUQUERQUEGREEN plan includes a road map for meeting The U.S. Conference of Mayors 2030 Challenge, which requires all new buildings to be carbon neutral and powered using 100 percent renewable energy by 2030. Available general fund operating dollars and renewable energy and conservation bonds are providing the needed funding.

The initiative has already had a significant impact in the City:

- In its own operations, the City has cut greenhouse gas emissions by 67 percent, natural gas use by 42 percent, and use of refrigerants by 95 percent.
- Residents have reduced water use by 42 percent and funded the sustainable San Juan-Chama water project.
- Fifteen percent of the City government’s electricity is now wind-powered, and an increase to 20 percent is planned.
All vehicles purchased by the City are alternatively fueled.
There are pedestrian-friendly, mixed-use urban village initiatives, and a commitment to becoming the most bicycle-friendly Southwestern city.
There are venues to grow and celebrate healthy food, and the City is building safe social networks.
The City is encouraging the growth of green-tech companies, employment, and investment.

A description of the ALBUQUERQUEGREEN plan is in final draft form and will be made available to other municipalities, states, and organizations wanting to take Albuquerque’s approach to cutting greenhouse gas emissions.

Additional information is available from Richard Kennedy, Deputy Director, Environmental Health Department at (505) 768-2625 or rkenndy@cabq.gov.

**Alexandria, VA: Mayor William D. Euille**

**ENERGY CONSERVATION PROGRAM**

Alexandria’s Energy Conservation Program integrates and emphasizes involvement, action, education, and communication. Examples of activities undertaken by the City include the following:

- **Involvement** – Green concepts are part of a Resident and Business Community Strategic Plan. Interagency teams work with contractors to integrate green products in renovation, maintenance, and services.

- **Action** – The City has targeted new construction for LEED certification, emphasized hybrid vehicle use, initiated a fuel conservation campaign, installed vegetated roofs on two facilities, and recruited an Energy Manager.

- **Education** – The City has an in-house employee education and LEED accreditation program for new construction, existing buildings, and interiors. Four agencies currently participate in this. Two employees are now LEED-certified; four more should be before the end of the year.

- **Communication** – The City communicates green actions and initiatives through its Web site, the Council Strategic Plan, departmental newsletters, and public meetings and special events. City officials report that the community has embraced green concepts.

Proximity to Washington, D.C., rising energy costs, and the need for environmental sensitivity and sustainability were primary motivating factors behind Alexandria’s development of the program. With a population density of more than 8,700 per square mile, preserving open space and efficient planning of developed space has a significant impact on quality of life. Challenges faced in developing the program included educating employees and the community on the definition of “green,” determining costs, providing staff to administer programs, identifying and embracing green concepts, and incorporating the Program into everyday practices.
City officials have targeted energy and refrigerants – two primary sources of greenhouse gas emissions.

- **For energy:** The City established a multi-jurisdictional contract for green energy; the school system purchases five percent of its electricity from renewable sources; and the City has committed to energy-efficient building design to increase energy conservation.

- **For refrigerants:** The City has eliminated chlorofluorocarbon (CFC) use; used environmentally-friendly alternatives for new construction, renovation, and HVAC equipment replacement; and trained maintenance staff on refrigerant management.

Alexandria earmarks $200,000 annually for energy conservation in its Capital Improvement Program. Green technology is incorporated into new construction costs. In 2005 the City replaced 15 pool cars with gasoline-electric hybrids. The City used $100,000 (including a $40,000 grant from the State) to install vegetated roofs at two existing facilities. Sustainable, environmentally-friendly practices have been incorporated into baseline program budgets; City officials have found this to be an efficient re-allocation of existing funds.

Additional information is available from Ed Handley, Director of General Services, at (703) 838-4770 or edward.mandley@alexandriava.gov.

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**Annapolis, MD: Mayor Ellen Moyer**

**“TAKE A DEEP BREATH/GIVE THE POWER PLANT A REST”**

Annapolis Mayor Ellen Moyer believes that changes in the hearts and minds of citizens on major issues often start with school children. The Mayor and other City officials developed a clean air educational program called “Take a Deep Breath” which has been taught to every fourth grade student in Anne Arundel County. The course was designed to educate the students about clean air and encourage them to plant a tree. It also asked the students to convince their parents to commit to driving 10 fewer miles each week. Beyond the obvious environmental lessons built into the course, the children developed their math skills by computing the amount of pollution that planting a tree and driving less would remove from the atmosphere.

Recently, the program was expanded to become “Take a Deep Breath/Give the Power Plant a Rest.” In addition to the children’s educational component, residents are now being encouraged to switch to compact fluorescent light bulbs and to learn about other steps they can take to reduce their carbon footprint. The new program is supported by public service announcements on local radio and television which encourage listeners to “take the pledge” to reduce their carbon footprint. Brochures with tips on cutting carbon emissions are available throughout the City. Those who “take the pledge” get a small “Cloud Nine” sticker to place in their vehicle window, letting other people know that they are sharing in the responsibility for global climate protection.
The Mayor’s Special Projects Fund provides the funding for the program. Mayor Moyer believes this grassroots, one-citizen-at-a-time approach fits in with Annapolis’s history as an activist City where the individual citizen feels empowered and invested in the idea of making a difference. One of the major challenges faced in implementing the program, however, was apathy, even negativity, on the part of the local news media, with the local paper editorializing on what it felt was the program’s waste of time and money.

“Take a Deep Breath/Give the Power Plant a Rest” is one of several energy conservation initiatives taken in Annapolis. Among examples:

- The City Council recently passed a resolution accepting the recommendations of an Energy Efficiency Task Force.
- The City is committed to replacing both City and transit vehicles with alternative fuel vehicles.
- The City has made a commitment to the World Wildlife Fund’s Power Switch Program to find alternative sources for the purchase of energy.
- There are now four green roofs within the City limits, and green roofs are encouraged when development permits are sought.
- The City currently has a 42 percent tree canopy and has committed to increasing it to 50 percent in the coming years. In each of the past three years, the City has given 500 trees to residents.
- The Annapolis Conservancy, unique in the nation, has saved and created open space on some 200 acres of property inside the seven square miles of the City.
- Over the past four years the City has developed more than 70 bio-retention areas to capture and filter rain water and storm runoff before it reaches the Chesapeake Bay.
- The Back Creek Nature Park is being developed almost entirely by volunteers and is considered a model of how to preserve open space in an urban environment. In addition to the waterfront, forest, steep bank, marsh, and prairie restoration work underway, significant grant funds are being invested in a storm water educational center which will serve both children and adults.

Additional information is available from Ray Weaver, Public Information Officer, at (410) 263-1183 or RWeaver@annapolis.gov.

Austin, TX: Mayor Will Wynn

AUSTIN CLIMATE PROTECTION PLAN

The Austin Climate Protection Plan was announced by Mayor Will Wynn and adopted by the City Council in February 2007. To implement it the City has hired a program manager and five full-time employees. Additionally, each City department will have staff assigned to climate protection efforts.

The ACPP includes new programs, most of which are well into development, and previously existing ones which have been assigned more ambitious targets. Targets for energy and renewables programs, for example, have been increased by approximately 50 percent.
Funding sources are varied, with budgets now being developed for the next fiscal year. Some efforts are self-funded or paid for through avoided costs. It is expected that, overall, the range of programs will dramatically reduce costs for consumers, ratepayers and taxpayers, and provide the collateral benefit of a cleaner, healthier and more livable environment.

Austin’s plan, which can be viewed on the City’s Web site at http://www.ci.austin.tx.us/council/downloads/mw_acpp_points.pdf, is organized around separate municipal, utility, homes and buildings, and community plans, and the “Go Neutral” plan, which will help individuals and organizations work toward carbon neutrality. Highlights of each of these include the following:

**Municipal Plan**
All City facilities, fleets, and operations totally carbon-neutral by 2020:
- 100 percent of City facilities powered with renewable energy by 2012 – perhaps two to three years earlier;
- City fleet carbon-neutral by 2020 through use of electric power, non-petroleum fuels and offsets;
- Departmental climate protection plans which include policies, targets, and reporting for maximum cost-effective reduction of energy use.

**Utility Plan**
Immediate greenhouse gas cap and reduction plan at municipally-owned utility:
- 700 MW in new savings through energy efficiency programs by 2020;
- 30 percent of energy needs met by renewable energy sources by 2020;
- Carbon neutrality on new generation units through lowest-emission technologies, carbon sequestration, offsets, and early retirement of existing GHG-emitting generation.

**Homes and Buildings Plan**
Most energy-efficient building codes in the nation:
- All new single-family homes zero energy capable by 2015;
- Energy efficiency in all other new construction increased by 75 percent by 2015;
- Energy efficiency requirements for existing homes/buildings at point of sale.

**Community Plan**
Development of targets/strategies and implementation of plans for GHG reductions community-wide:
- Work with stakeholders, technical advisors on plans for transportation, land use, waste management, water conservation, natural areas, etc.

**“Go Neutral” Plan**
Reduction of carbon footprint to zero by all businesses and individuals:
- Develop online carbon footprint calculator and provide menu of local GHG reduction strategies that citizens, businesses, organizations, and visitors can fund through offset credits.
Baltimore, MD: Mayor Sheila Dixon

ENERGY CONSERVATION PROGRAM

The City of Baltimore is working to reduce the consumption and cost of its energy by 1) examining utility billing and promoting efficiency; 2) aggregating the purchase of electricity with surrounding counties; and 3) implementing energy reduction projects.

The City has established an extensive database of utility billing – covering electricity, gas, steam, and water – for every City agency. Using utility billing software, the City has established a baseline and is able to compare consumption and use patterns. To date, Baltimore has saved $700,000 as a result of scrutinizing billing. An employee awareness program is also being used to encourage employees to turn off energy consuming devices when not in use.

In addition to aggregating the purchase of electricity with surrounding county systems, the City is studying the use of residential aggregation.

A number of City facilities have introduced new technologies that result in efficiencies and savings – savings which can be used for future improvements and expansions. These projects include:

- Energy reduction projects, including installation of energy efficient lighting, bathroom fixtures, temperature control systems, boilers, windows, chillers, building envelopes, and other HVAC upgrades in 180 public school buildings, is expected to save $50 million; installation in 33 City buildings is expected to save $30.8 million.
- Replacement of all City traffic signals with LEDs is expected to save $6.5 million.
- A three-megawatt cogeneration facility that converts excess methane gas produced by the City’s wastewater treatment plant into electricity is expected to save $14 million.
- The retrofitting of 200 large vehicles is expected to reduce emissions by 36 percent.

Because the City lacked the capital funds to undertake many of these projects, it developed an innovative self-funding mechanism for energy reduction projects. It instituted energy performance contracting – a design-build process in which energy efficient improvements, equipment, and services are paid for through energy savings generated over the term of the project, and in which the contractor is obligated to guarantee the savings.

The process begins with an energy audit and a commitment by the contractor that energy use will be reduced by about one-fourth, allowing the City to pay for the project through the reduction in the amount it will pay for energy. This process was used in most energy reduction projects, and in some cases it was used in conjunction with already-funded HVAC projects. For example, the public school projects totaled $120 million; $50 million of this was paid through energy savings, $70 million through capital funding.
City officials report that, by controlling the City’s $80 million expenditure for energy and water and implementing conservation upgrades, it is able to improve the quality of classrooms and offices and to undertake other needed improvements. Energy use has been reduced by nearly 75 million kWh annually, which saved an estimated $8.36 million in FY 2006 and the equivalent of 255,876 million BTUs. It represents an annual removal of 61,476 tons of CO$_2$, 4,861 tons of SO$_2$, and 81,189 tons of NO$_x$, and the planting of 30,707 acres of trees.

Additional information is available from Ferdinand De Lara at (410) 545-6071 or ferdinand.delara@baltimorecity.gov.

Dublin, CA: Mayor Janet Lockhart

RECYCLING INITIATIVE

The City of Dublin has aggressively promoted recycling, understanding that recycling offers an excellent opportunity to save energy, conserve resources, reduce carbon emissions, and realize other benefits. The City’s recycling efforts in 2006 yielded a 70.8 percent increase over 2004 in materials collected, an absolute increase of 7,838 tons – from 11,075 tons in 2004 to 18,913 tons in 2006. The City’s specific initiatives to promote recycling include the following:

- The City adopted a non-exclusive Construction & Demolition (C&D) Ordinance which requires developers to divert at least 50 percent of the materials collected from a development site from landfills. Since the creation of the ordinance, the City’s haulers have diverted nearly 87 percent of the material collected – 23,010 tons of recycled C&D material.
- The commercial and residential collector has been required to convert all of its vehicles to natural gas, thereby significantly reducing the environmental impact of collection. The Bay Area Air Quality Management District provided a grant to subsidize the cost of converting the vehicles.
- Incorporating recycling efforts into Citywide beautification, the City has purchased 2,000 pounds of landscaping “bark” chips made from recycled rubber for use on City-maintained land.
- Park benches and picnic tables have been replaced with new park furniture made from 90 percent recycled materials.
- A free annual household hazardous waste drop-off event helps to ensure hazardous items are disposed of or recycled properly.
- The City offers free curbside pick-up. In addition to paper, plastic, glass, and metal, Dublin provides free recycling pick-up services for e-waste, food scraps, used oil, large items, and batteries.

Beyond recycling, Dublin has sought to conserve resources and eliminate pollutants through numerous policies and practices, including:
- Adoption of a Civic Green Building Ordinance under which new construction projects valued at $3,000,000 or more are required to obtain a LEED Silver certification;
- Participation in San Francisco Community Power’s energy efficiency program, through which, on warm days when energy use is predicted to be high, Dublin reduces its use of electricity by turning off lights, computers, and other devices wherever possible;
- Participation in a water conservation program, allowing treated, recycled water to be used to irrigate the City’s parks and landscapes;
- Development of a clean water program to prevent pollutants from entering the storm drain system, ensuring only clean water enters local waterways and the San Francisco Bay; and
- Participation in the regional “Spare the Air” program, which is coordinated by the Bay Area Air Quality Management District. On days when air pollution is predicted to be high, the City posts a Spare the Air announcement on its Web site, urging the reduction of carbon emissions through the use of public transit, car pooling, or other transportation alternatives.

Additional information is available from Roger Bradley, Administrative Analyst, at (925) 833-6605 or Roger.Bradley@ci.dublin.ca.us.

Fayetteville, AR: Mayor Dan Coody

CITY PLAN 2025

Fayetteville’s population has grown 16 percent since 2000. As the largest city in the sixth-fastest-growing Metropolitan Statistical Area in the nation, such rapid growth has produced suburban sprawl in the planning area, increased traffic congestion, and raised many other environmental and global warming concerns. City Plan 2025, Fayetteville’s comprehensive land use strategy, responds to these concerns. Adopted in July 2006, its targets are 1) making appropriate infill and revitalization the City’s highest priorities; 2) discouraging suburban sprawl; 3) making traditional town form the standard; 4) growing a livable transportation network; 5) assembling an enduring green network; and 6) creating attainable housing.

City Plan 2025, which is fully funded by the City, is the first plan in Arkansas and one of the first in the U.S. to incorporate a Sector Map and Future Land Use Map (FLUM), both of which use the SmartCode to depict desired development patterns. The Sector Map combines public input with topographic and land use data to identify Controlled Growth Areas, Intended Growth Areas, Restricted Growth Areas, and Infill Areas. The FLUM analyzes current and envisioned development patterns and identifies Natural Areas, Rural Areas, Residential Neighborhood Areas, City Neighborhood Areas, and Urban Center Areas.
The Plan designates approximately 11,000 acres, or 20 percent of the planning area, as Natural Areas. This designation protects riparian corridors and target areas having significant biodiversity, large numbers of native plant species, connections to large habitat areas, and potential for walking trails. Planned developments will provide housing for a mixed-income community with amenities such as trails, sidewalks, and tree-lined streets that encourage residents to walk or bike to popular destinations. Two initial developments are participating in the LEED-ND Pilot Program to explore ways of crafting “green” neighborhoods.

In implementing City Plan 2025, the greatest challenge involved educating citizens on the value of increased density and traditional neighborhood form. Five months of public outreach and education culminated in a 10-day charrette in which more than 700 citizens participated.

Fayetteville’s City Plan 2025 goals, particularly those aimed at reducing vehicle miles traveled, are strongly supported by the Fayetteville Alternative Transportation and Trail (FATT) Master Plan, which was adopted in 2001. The FATT plan uses a five-mile north-south trail through central Fayetteville to connect neighborhoods, businesses, parks, an entertainment district, and the University of Arkansas; numerous trails will extend east and west from this backbone. An eight-member trails construction crew and a Trails Coordinator responsible for trail design, right-of-way acquisition, and construction oversight provide for rapid trail construction. A combination of City capital improvement funds, a $2.1 million bond issue, and T-21 grants and Recreational Trails Program grants from the U.S. Department of Transportation provide funding.

Additional information is available from John Coleman, Sustainability Coordinator, at (479) 575-3272 or jcoleman@ci.fayetteville.ar.us.

**Lexington, KY: Mayor Jim Newberry**

**ENERGY MANAGEMENT**

The Lexington-Fayette Urban County Government (LFUCG) has launched a wide range of initiatives in an effort to become more energy efficient and to “green” facilities and the transportation fleet. Examples include:

- Creation of an internal Energy Management Team and development of an energy management policy;
- Purchase of 41 gasoline-electric hybrid vehicles – currently the largest public or private fleet in the State;
- Installation of a second used oil heater at Fleet Services;
- Purchase of a solar powered aerator for a pond at the Adult Community Corrections facility, along with motion-controlled lighting for select office space;
- Purchase of 20 vending misers to reduce energy used by Parks and Recreation soda machines;
- Installation of a geothermal system at the Day Treatment Center;
Each year, use of 37 million cubic feet of biogas (methane) from a sewage treatment plant to power boilers;
Purchase of Energy Star-rated office equipment, LED exit signs, LED scoreboards, LED traffic signal modules, electronic fluorescent light ballasts, and programmable thermostats;
Participation in and sponsorship of the Bluegrass Green Living and Energy EXPO;
Creation of the LFUCG Energy Efficiency Annual Awards to recognize divisions which take steps to save energy;
Distribution of wallet cards promoting energy efficiency to more than 3,300 employees each year.

The Division of Traffic Engineering has replaced more than 10,000 incandescent traffic and pedestrian modules with LEDs. Because LEDs use significantly less energy, this upgrade has lowered LFUCG energy costs for these signals by approximately $120,000 per year. It has also reduced maintenance costs significantly: In calendar year 2004, prior to the upgrade, Traffic Engineering replaced 1,560 traffic and pedestrian modules; in 2006, after the upgrade was completed, Traffic Engineering replaced only 59 modules. The greenhouse gas reduction achieved is equivalent to planting over 4,000 trees or taking 400 cars off Lexington roadways each year.

In 2006 the LFUCG joined with the University of Kentucky, Fayette County Public Schools, and LexTran, the local bus service provider, in an initiative to promote the use of biodiesel in Fayette County. Under this initiative, which was coordinated by the Lexington Municipal Planning Organization under the umbrella of the Bluegrass Partnership for a Green Community, the LFUCG committed to dispensing diesel fuel containing 10 percent biodiesel (B10) from an underground storage tank located at the Town Branch Treatment Plant to fuel sanitary sewer diesel-powered vehicles, and agreed to purchase biodiesel commercially for use in additional LFUCG vehicles. More than 18,000 gallons of biodiesel have been used by the LFUGC since this initiative was undertaken. The LFUGC also committed to switching to “on-road” diesel fuel, which contains significantly less sulfur, for its off-road diesel equipment. And it eliminated a central refueling point in favor of purchasing fuel at commercial stations; this reduced miles driven by employees by more than 800,000 in the first year.

Additional information is available from Tom Webb, Chair, LFUCG Energy Management Team, at (859) 425-2808 or tomw@lfucg.com.
Menlo Park, CA: Mayor Kelly Fergusson

MENLO PARK GOES GREEN

Menlo Park has a suite of goals, policies, and practices intended to reduce Menlo Park's greenhouse gas emissions and help find additional solutions to control the earth's climate.

Green Ribbon Citizens’ Committee: In March 2007, the Mayor and a City Council member convened the Green Ribbon Citizens' Committee, an ad-hoc group of residents and businesses, to research and report back to the Mayor and Council how both the government and community could reduce greenhouse gas emissions. A baseline GHG study authorized by the Council will be presented on November 20, as will the Citizens’ Committee report and recommendations. Committee recommendations submitted in June and incorporated into the 2007-08 budget include energy audits of City facilities, municipal solar installations, green building training for staff, numerous improvements to bicycle and pedestrian routes, and the planting of hundreds of trees.

The GRCC’s work is organized into subcommittees covering 1) land use and green building approaches; 2) energy efficiency, waste, and procurement policy; 3) clean transportation alternatives; 4) green business; and 5) communications and community outreach. The GRCC sponsored a summer speaker series featuring world-renowned climate change experts including recent Nobel Prize winner Professor Stephen Schneider of Stanford University and the U.N. Intergovernmental Panel on Climate Change, Professor Jim Sweeney of Stanford’s Woods Institute, Stanford economics Professor Larry Goulder, and former California Environmental Protection Agency chief Winston Hickox.

Green Alley: Green Alley is a business development initiative which is creating a green-tech/clean-tech regional retail shopping destination near the downtown area. The City worked closely with the landowner to bring the Northern California showroom for Tesla Motors, the electric sports car company, to Menlo Park's El Camino Real. Tesla will form the anchor for additional, similar retail businesses, including dealers for other electric cars and scooters, and other alternative vehicles.

In August, Menlo Park held two "Downtown Menlo Park Goes Green Block Parties." The City’s main street was closed to vehicle traffic and alternative vehicles (including electric cars, scooters, and bio-diesel fueled vehicles) were showcased along with local nonprofit and other organizations dedicated to global cooling. Downtown restaurants, businesses, and the "shop local" ethic were promoted. The world-renowned Kepler’s Books hosted a summer-long speaker series on the "Go Green" theme and synchronized its efforts in August with the Downtown Goes Green events.

Green Energy and Fostering Innovation: As the "Venture Capital Capital of the World," and located near some of the world's great universities, Menlo Park is uniquely positioned to attract cutting-edge companies that are developing energy generation methods that reduce the use of fossil fuels and their harmful by-products. Examples
include energy start-up companies with processes to create cellulosic ethynol (ZeaChem),
carbon nanotube thin-film development (Unidyme), and "direct" carbon technologies
(DCT).

**Solar City:** The start-up company Solar City offered the Menlo Park community a "bulk
buy" program for installation of solar panels for residents and businesses. Solar City’s
initial goal was sales of 175kW in panels; it ultimately sold 212 kW in panels, which will
result in more than four million tons in CO₂ emission reductions over the next 30 years.

**Green Collar Jobs:** The Mayor recommended that the CEO of Solar City contact Menlo
Park’s vocational job training center, JobTrain, to discuss training the City’s workforce
for jobs in the emerging green-tech sector. JobTrain has now established a solar panel
system installation training program which will enable the local labor force to share in the
prosperity of Silicon Valley's "next wave."

**Community Goals:** A number of the City Council's goals for the community relate
directly to the ability of the City to reduce its GHG emissions. These include
environmental stewardship; transportation and traffic improvements, such as those that
make the City more bicycle- and pedestrian-friendly and that improve regional transit;
and downtown land use visioning, which would lead to increased density near transit
corridors.

Menlo Park has a long history of environmental leadership. In past years the City has
undertaken a number of projects that have reduced municipal energy consumption; these
include retrofitting heating and air conditioning systems, installing a solar hot water
system in a new community pool, adding insulation to buildings, installing energy-
efficient lighting, installing “cool” roofing materials, and replacing windows. In
addition, the City employs a full time Environmental Coordinator.

**Preparing for Effects of Climate Change:** Environmental impact reports now include
the potential effects of sea level rise for development projects being considered in the
bayside industrial and residential districts. The Council soon will be examining the
impact of climate warming on the City water supply. Most of Menlo Park’s water is
supplied by the Hetch Hetchy reservoir and its associated annual snow pack in the Sierra
Nevada Mountains. As the climate warms, this snowpack will shrink, and the Bay Area's
water supply will become increasingly uncertain.

A GHG emissions baseline footprint study by ICLEI and the forthcoming Citizens’
Committee recommendations – an action-based prioritization by citizens (using
electronic voting) of more than 150 possible actions the City could take to reduce GHG
emissions – are the foundation from which Menlo Park will move toward its vision of a
carbon-neutral City.

Additional information is available from Mayor Kelly Fergusson, Ph.D., P.E., at (650)
207-9334 or kfergusson@menlopark.org.
Minneapolis, MN: Mayor R.T. Rybak

SUSTAINABILITY INITIATIVE

With the launch of its Sustainability Initiative in 2003, the City of Minneapolis renewed its commitment to a sustainable future with an emphasis on climate protection. The Mayor and City Council established numerical targets for 24 Sustainability Indicators, required that the Initiative be integrated into the operations of all City departments, produces an Annual Report on progress, and is holding departments accountable for the Initiative through annual reporting. The City’s sustainability Web site is at www.ci.minneapolis.mn.us/sustainability/index.asp.

The Sustainability Initiative has strengthened City ordinances, transformed internal practices and purchasing, increased project funding, and strengthened partnerships with other organizations pursuing carbon reduction goals.

Actions in the City’s internal operations include:
- development of a CO2 reduction plan;
- adoption of the LEED Silver standard for new or significantly-renovated City-owned facilities, with the next facility to be certified LEED Gold;
- building of all new or completely remodeled City facilities to at least 30 percent above the State energy code, and use of Energy Star appliances exclusively;
- installation of solar photovoltaic arrays on three City facilities;
- installation of passive solar, greenroofs, rain gardens, pervious pavers, and strong daylighting on City-owned buildings;
- reduction of the City fleet by 10 percent and replacement of another seven percent of the fleet with 28 hybrid vehicles and more than 135 flex fuel vehicles that run on E-85 or unleaded gasoline (and Mayor Rybak drives a Prius plug-in hybrid);
- creation of an idle-reduction policy for Public Works and Fire Department vehicles;
- use of biodiesel in all diesel vehicles, including fire trucks – 10 percent in winter, 20 percent in summer;
- installation of a joint City-County E-85 fleet fueling station; and
- City funding to lower cost of transit cards for City employees in order to encourage them to take the bus or light rail to work.

Actions in the community cover a wide range of goals and include:
- since 2003, in partnership with the Minneapolis Park and Recreation Board, planting 15,000 trees;
- providing $200,000 to the nonprofit Tree Trust to distribute another 2,500 trees;
- hosting an international greenroofs conference;
- engaging in a pilot project with HourCar, a nonprofit car-share program using hybrid vehicles, and initiating discounts for HourCar and car-pooling vehicles at Municipal Parking Garages;
- partnering with the nonprofit Minnesota Center for Energy and Environment and others to launch and promote the “Minnesota Energy Challenge,” through which
about 2,000 City residents and businesses have committed to reducing more than 16.65 million pounds of CO2 annually;

- requiring that all City-licensed taxis be more fuel efficient within 10 years;
- implementing an enthusiastically-received community micro-grant program to reduce residents’, businesses’ and non-profits’ carbon footprints;
- designating a City staff member to give global warming presentations in the community as part of the Al Gore Climate Project;
- launching a Green Manufacturing Initiative with the City of St. Paul, the Sierra Club, and the United Steelworkers of America, focusing on the creation of green jobs; and
- developing and maintaining a 99-mile bikeway system, making the City second in the nation for commuter biking.

Minneapolis has lobbied and influenced others to make changes and investments in order to reduce global warming. Minnesota now requires that 25 percent of its electricity must be produced by renewable energy by 2025. The City also lobbied successfully for conversion of three area coal-fired power plants to natural gas, with the result that these plants will release 21 percent less CO2 while boosting power to provide an additional 300,000 homes with electricity. Minneapolis prevented expansion of Interstate 35 until it included bus rapid transit, and strongly supported inaugural light rail transit construction through the heart of the City. (Of note is that light rail ridership has consistently exceeded projections and grew by 19 percent last year.) In addition, the City ensured that the design for the replacement for the recently collapsed Interstate 35 highway bridge would include readiness for light rail.

Additional information is available from Gayle Prest, Manager of Sustainability, at (612) 673-2931 or gayle.prest@ci.minneapolis.mn.us

New York, NY: Mayor Michael R. Bloomberg

PlaNYC

On Earth Day 2007, New York City Mayor Michael R. Bloomberg outlined PlaNYC, a series of 127 proposals aimed at helping New York meet the challenges of a growing population while at the same time reducing the City’s greenhouse gas emissions. Examples of these initiatives include planting one million more trees, increasing park space, piloting congestion pricing, establishing a New York City Energy Planning Board, and improving the fuel efficiency of the City’s taxi fleet.

PlaNYC began as a land use management strategy but it soon became clear that what was needed was a holistic approach to address all of the issues growth involves. As a result, PlaNYC addresses the increasing need for affordable housing, the expansion of parkland, and increasing transit opportunities in neighborhoods that are currently underserved in an effort to further encourage the use of mass transit.
Incorporating the interests of the City’s many advocates and business leaders into the plan was the principal challenge faced by PlaNYC. Mayor Bloomberg’s response was to create a Sustainability Advisory Board composed of the City’s top environmental, business, environmental justice, and real estate experts. An unprecedented outreach campaign consisting of 11 public meetings covering every borough, 150 advocacy group meetings, and the establishment of a Web site to solicit feedback on PlaNYC’s goals resulted in thousands of ideas on how to make New York a more sustainable city. The Mayor’s Office spent three months developing a plan that incorporated the views provided in response to the outreach effort.

PlaNYC is expected to reduce greenhouse gas emissions through more efficient buildings, a cleaner power supply, and more sustainable transportation. Examples include expanding the City’s hybrid-electric taxi fleet, improving energy efficiency of existing buildings and requiring new construction to be more energy efficient, “greening” the City’s energy and building codes, replacing inefficient power plants with state-of-the-art technology, and reducing vehicle use by improving mass transit.

The vast majority of initiatives in PlaNYC is currently budgeted for in the City’s capital and expense budgets. Funding for a few of the initiatives is expected to come from State or federal funds, such as the Urban Partnership Agreement grant for federal funding to mitigate congestion, and State funding to match the City’s contribution to the Sustainable Mobility and Regional Transportation (SMART) fund for transit projects.

PlaNYC is expected to enable the City to absorb growth while creating affordable, sustainable housing and open spaces in every neighborhood. It is also expected to improve air quality, protect the City’s water, and meet the City’s energy reliability needs. PlaNYC is further expected to transform the City’s transportation network – and to fund this transformation. Collectively, the initiatives in the plan are expected to reduce greenhouse gas emissions by 30 percent by 2030.

Additional information is available at www.nyc.gov/planyc or from Jonathan Dickinson, Senior Policy Advisor, Office of the Mayor, at (212) 708-3126 or JDickinson@cityhall.nyc.gov.

Olympia, WA: Mayor Mark Foutch

SUSTAINABLE ACTION MAP

In 2005 the Olympia City Council observed that, while the City has had a strong sustainability philosophy for two decades and has talked a lot about being sustainable, it had not actually translated sustainability into daily operations. The Council then set a goal of putting sustainability into action. Evaluating why this had not occurred before, department directors identified three unanswered questions which constituted barriers to putting sustainability into action:

- What do we mean when we say sustainability?
How do we deliver on sustainability at every level of the organization – how can sustainability be part of the job and make the job easier at the same time?

How can policy makers and staff reconcile seemingly competing interests among social, economic, and environment needs?

City staff concluded that to overcome these barriers, every employee needed a simple, easy to use, engaging tool to help guide their work toward greater sustainability. The City invited a team of undergraduate students from Evergreen State College to design the tool. (The Team called itself STARS: Students Toward Achieving Realistic Sustainability.) The Director of Public Works mentored the team for 10 weeks. Their product, enthusiastically endorsed by the City Council as a Citywide model, was a powerful three-dimensional tool called the Sustainable Action Map (SAM) which optimizes an action instead of compromising it, frames discussion for policy makers, allows tough issues to emerge in a safe way, forces staff to pause and push for innovation before moving forward with the easy, most predictable solution, and identifies key stakeholders early in the process.

The most noteworthy aspect of SAM, according to City officials, is that it is simple and easy to use – so intuitive that an employee can work through it without any training or instruction. The one-page decision map is now used in all City departments, applied to situations large and small. It has been used to engage community groups during Town Hall meetings, to challenge staff to find creative solutions, and to help the Council see the tradeoffs and opportunities attached to policy options being considered. SAM poses four key sustainability questions concerning the impact of any decision:

- **Natural**: How does it impact environmental health?
- **Individual**: How does it impact the well-being of citizens and employees?
- **Community**: How does it impact relationships, effective government, social justice, and overall livability?
- **Economy**: How does it impact the local economy and costs, now and over the long term?

Olympia reports a wide variety of accomplishments using SAM. Among them:

- The City achieved 1990 emission levels in compliance with the Kyoto Protocol in 2007 due to policy decisions to move utilities to 100 percent green power in 2006, and the City adopted a Green Fleet Policy in 2007.
- A Public Works Program Assistant voluntarily purchased a new sustainable white board.
- The Council adopted a resolution to move the community to a vision of zero waste. That vision was translated in 2007 into a Beyond Waste Master Plan and will result in a savings of 33,000 tons of CO₂.
- During AFSCME contract negotiations, a union mechanic framed the discussion of a sustainable safety boot purchasing policy.
- Support for a Citywide wellness program called PRISM was obtained from the City Manager.
Discussion with the community of the impacts of sea level rise and climate change is being framed. Over 1,200 people attended a “Climate Change, Olympia’s Call to Action” event on October 2, 2007.

The Department of Public Works business plan is organized around the four elements of sustainability.

A household sustainability plan to reduce negative environmental impact was developed by a family in Olympia.

Officials report that the City continues to be invited to present SAM at national and state conferences on innovation, sustainability, and city operations, and that other City organizations and nonprofit sustainability groups have adopted SAM as a decision tool.

Additional information is available from Michael Mucha, Director of Public Works, at (360) 753- 8426 or mmucha@ci.olympia.wa.us.

Sacramento, CA: Mayor Heather Fargo

SUSTAINABILITY MASTER PLAN

Mayor Heather Fargo believes that the City of Sacramento, as a major landowner, employer, building manager, fleet operator, utility owner and operator, consumer of goods and services, and service provider has both the opportunity and responsibility to bring about significant improvements in environmental quality by reducing greenhouse gas emissions. The goal of the Mayor’s Sustainability Master Plan is to provide responsible management and effective stewardship of the City’s built and natural environments, focusing on nine areas:

- Energy Independence;
- Climate Protection;
- Air Quality Improvement;
- Reduced Material Resource Use;
- Public Health and Nutrition;
- Green Urban Design, Land Use, Building, and Transportation;
- Parks, Open Space, and Habitat Conservation;
- Water Resources Conservation and Protection;
- Promotion of Public Involvement and Personal Responsibility.

The City’s efforts have already had an impact and the Master Plan will continue to build on this.

- Soon to be implemented is a comprehensive green building program that will establish specific guidelines and point-based checklists for private green development and offer incentives to those that build green.
- The City has organized the Build It Green Public Agency Council, a confederation of local building officials from a six-county region that meets quarterly to develop consistent green building programs.
- Three percent of the City’s electricity is purchased from renewable resources.
City Hall is among the top five percent of energy performers for large office buildings in the nation.

The City’s energy consumption has been reduced by nine percent since 1992.

The City owns and operates one LEED Platinum high rise building, and six buildings are moving toward LEED Silver certification.

Over the past several years the City has done extensive outreach and public education on water conservation.

The Clean Tech Zone program will attract green technology companies that provide green jobs to residents. The program offers tax incentives, expedited permitting, job training, loans, and other incentives.

The Fleet Sustainability Policy will set specific citywide measurable goals to reduce fuel consumption and improve air quality.

Additional information is available from Reina J. Schwartz, Director, Department of General Services, at (916) 808-7195 or rschwartz@cityofsacramento.org.

Santa Ana, CA: Mayor Miguel Pulido

SANTA ANA GREEN

In the City of Santa Ana, Mayor Miguel Pulido has advocated for green initiatives since he entered office and has introduced comprehensive programs to meet or beat the requirements of the Kyoto Protocol. The Mayor’s long-term efforts to promote and upgrade existing programs and introduce new programs has led to “Santa Ana Green,” a diverse, multifaceted approach to environmental issues and public awareness that is sensitive to the City’s ethnically and economically diverse population. The program focuses on five sectors:

- Climate protection education provides residents with local action information. Offered in multiple languages, 14 steps outline easy contributions residents can make daily to help achieve climate control goals.
- Santa Ana’s Tree Program is part of Tree City USA, which requires establishment of a Tree Board, a Tree Care Ordinance, and a Community Forestry Program. It also requires that a city establish and maintain Arbor Day annually. Santa Ana boasts an urban forest of 60,000 trees in a highly urbanized area and invests $2.6 million annually in its tree programs.
- The Hybrid and Alternative Vehicle Program includes seven departments and a City-use fleet of 27, with eight more replacement hybrid vehicles on the way. The fleet maintenance policy is to replace vehicles with the cleanest and most fuel-efficient vehicles that meet the needs of various City departments. Replacement vehicles are chosen through the EPA Green Vehicle Guide in accordance with local, State, and federal mandates covering replacement vehicles.
- Santa Ana is a long-time signatory of the California Urban Water Conservation Council. Beyond meeting the standards of the Council, the City educates residents on water conservation programs and opportunities. It also offers programs that incentivize water conservation practices through rebates. Waterless urinals alone are
saving 40,000 gallons of water each year. Synthetic athletic turf installed at three sports facilities has resulted in the conservation of over 4 million gallons of water per year.

- Santa Ana maintains certified recycling centers and composting centers and has implemented construction and demolition recycling throughout the City. Other programs recycle motor oil and filters, batteries, household hazardous waste, and sharps. The City primarily purchases recycled products. At a 59 percent diversion rate, Santa Ana exceeds California’s recycling goals.

Mayor Pulido’s service since January 2005 on the South Coast Air Quality Monitoring District’s Governing Board has enabled him to champion clean air initiatives benefiting all City residents; his contributions this year led to a historic shared commitment in California's 2007 State Implementation Plan for federal ozone and particulate clean air standards. A member of the AQMD’s Technology Committee, the Mayor has worked to accelerate market penetration of a wide range of clean technologies and to expand development of plug-in hybrid electric vehicles. Modernization of the region's school bus fleets, for example, is being achieved through grant funding for add-on filters, new natural gas and diesel engines, and related infrastructure.

Additional information is available from Alma Flores, City Manager’s Office, at (714) 647-6900 or aflores@santa-ana.org.

Santa Barbara, CA: Mayor Marty Blum

SUSTAINABLE SANTA BARBARA PROGRAM

The Sustainable Santa Barbara Program was developed to protect and enhance the environment in all City services and operations, and to promote the culture and values of sustainability in the community. As the issue of global warming has become more urgent, the City has made a commitment to take on the challenge and lead by example in conserving energy and reducing greenhouse gas emissions.

The City’s first challenge was putting its own house in order. With leadership from a Sustainable Council Committee and an interdepartmental Green Team, the City developed strategies and programs for conserving energy, using renewable energy, and reducing greenhouse gas emissions.

The City also integrated environmental sustainability in annual performance plans. Supervisors and managers in 140 program areas developed green objectives as part of their annual plans. All departments analyzed their work operations to identify ways to reduce emissions.

Various communication tools are used to encourage the community to adopt a sustainable lifestyle; these include a monthly television news magazine show, an interactive Web site
Among the program’s recent accomplishments included in its 2007 annual report:

- The City Council adopted the Pesticide Hazard and Exposure Reduction (PHAER) Zone model that designates entire sites or portions of park sites as “Green” or “Yellow,” based on the potential for exposure by humans and sensitive habitat to hazardous pesticides. The City has converted 98 percent of City parkland to “Green” status.
- The City uses B20 ultra-low-sulfur biodiesel in all diesel vehicles, including fire engines and construction equipment. Thirteen emergency generators are also powered by biodiesel.
- The City has transitioned to Green Seal certified cleaning supplies in most facilities. These products have been effective in cleaning work areas with no significant problems for custodial staff.
- The City’s marina is one of the first public marinas in the State to receive a California Clean Marina certification for activities to improve water quality, enforce no-discharge rules, and reduce toxic materials from boating equipment and supplies.
- The City continues to add new development to the recycled water distribution system and encourage additional legal uses in addition to irrigation.
- The City recently implemented an Energy Use and Reduction Policy to help employees and facility maintenance staff conserve energy. The Policy provides guidelines and tips to employees for the use of lighting, computers, electrical devices, and heating and air conditioning.
- Staff members are working with the Planning Commission to appropriately condition development to include “green” elements such as bioswales, permeable surfaces, tree preservation, limited grading, and construction/demolition waste reuse and recycling for many projects.
- The City completed its first greenhouse gas emissions study that calculated the emissions related to the use of vehicle fuel, electricity, and natural gas.

Santa Barbara’s program is funded by solid waste franchise fees, fees for wastewater and water services, and an internal services fund for building facility and motor pool maintenance.

Additional information is available at http://www.santabarbaraca.gov/Government/SustainableSB/ and from Nina Johnson, Assistant to the City Administrator, at (805) 564-5305 or NJohnson@SantaBarbaraCA.gov.
Seattle, WA: Mayor Greg Nickels

THE SEATTLE CLIMATE ACTION PLAN

The Seattle Climate Action Plan is the City’s response to the U.S. Mayors Climate Protection Agreement, which sets a goal of reducing greenhouse gas emissions by 2012 to seven percent below 1990 levels.

Reduced snow pack during the winter of 2004-2005 posed a serious threat to Seattle’s supply of drinking water and hydroelectric power. Seattle is vulnerable to summer drought, winter flooding, rising sea levels, and other consequences of climate change. In the absence of federal leadership, Mayor Greg Nickels decided to develop a local plan to address climate change and challenged other mayors to do the same.

The Seattle Climate Action Plan, financed through the City’s operational budget, recognizes that success depends on individual businesses, community organizations, and governments working together to reduce GHG emissions. Inspiring action and building partnerships are key elements of the Plan. A progress report on actions contained in the plan was released late October 2007 and is available at www.seattle.gov/climate.

An innovative element of the Plan is its ability to inspire action in the City and region.

In September 2007, the City launched Seattle Climate Action Now, an outreach campaign to inspire residents to take actions that reduce climate pollution, and to counter the perception that since the scale of climate change is global, local actions don’t matter. The effort focuses on the local impacts of global warming, local opportunities to reduce climate pollution, and the importance of sharing information with other cities. The effort includes a comprehensive Web site – www.SeattleCAN.org – that provides tools and resources, community events where residents can come together to take action, and a broad-based network of partner organizations – businesses and community groups – to spread the word about opportunities to reduce emissions. During its first year, the campaign is focused on transportation and home energy actions, Seattle’s two largest sources of climate pollution. During the first week of the campaign, more than 2,000 residents visited the Web site.

The Department of Neighborhoods’ Climate Protection Fund provides up to $15,000 for a wide variety of projects aimed at helping residents develop community-driven approaches to addressing global warming. To date, four projects have been funded for a total of $60,000 and three additional projects are currently under review. One funded project is the Greater Seattle Climate Dialogues, a network of study groups throughout the City where people learn about and discuss the greenhouse effect and its solutions. Descriptions of this and other projects are available at www.seattle.gov/neighborhoods/nmf/projectawards.
Led by 12 founding partners, including the City of Seattle, the Seattle Climate Partnership provides assistance to Seattle-area employers who want to reduce their carbon footprint. As of September 2007, 51 Seattle-area businesses have signed on as partners representing sectors including health care, finance, engineering, industry, development, biotechnology, education, and government. The Partnership focuses on providing technical assistance and networking opportunities to member organizations. So far, the Partnership has developed a resource guide, a carbon footprinting tool, and intensive technical assistance, both in the form of quarterly workshops and one-on-one assistance for some partners. In 2008, the Partnership will launch a recruitment effort aimed at the largest employers and fleet owners, expand its technical assistance program, and develop a strategy to assist partners in reducing emissions related to fleets and fuels. More information on the Partnership is available at www.seattle.gov/climate/partnership.htm.

The City also recognizes the importance of developing networks among cities through The U.S. Conference of Mayors, to share successful strategies and leverage political influence in support of climate protection at the national level.

Seattle residents realize that climate change poses an undeniable threat to the City’s most valuable assets: its natural beauty and recreational opportunities, the availability of drinking water, and access to renewable energy. Residents also understand that the solutions require life-style changes for the long term in order to preserve the quality of life they now enjoy.

Additional information is available at www.SeattleCAN.org/index.htm and from Kristine Kertson, Public Information Officer, at (206) 233-0073 or Kristine.Kertson@Seattle.gov.

**Stamford, CT: Mayor Dannel P. Malloy**

**STAMFORD COOL & GREEN 2020**

On October 17, 2007, Mayor Dannel Malloy issued an environmental proclamation, “Stamford Cool & Green 2020,” featuring a multi-faceted approach to the climate protection challenge. In addition to ongoing energy efficiency programs, the City will substantially expand its climate protection efforts, with the ultimate goal of making Stamford the leading environmental steward in Connecticut. Among the initiatives listed in the proclamation are the following:

- Creation of an Energy Improvement District to promote the development of combined heat and power generation and renewable power.
- Construction of two large-scale solar systems on the roof of the Rippowam Middle School and Highway Department facilities – funded by $2 million in Clean Renewable Energy Bonds.
- Requiring LEED standards for private buildings – site plans to be LEED-certifiable by 2011 – and reducing building fees by 10 percent for LEED Silver, 20 percent for LEED Gold, and 25 percent for LEED Platinum.
Through the Green Lights Program, encouraging residents to replace traditional light bulbs with compact fluorescent bulbs. The City plans to supply 5,000 free bulbs to residents.

Providing tax relief for citizens who purchase hybrid cars. Reducing the assessed value of a hybrid vehicle by $2,000 will result in a $68 reduction in car tax.

Encouraging residents to sign up for clean energy through their electric bill to support electricity generated by alternative energy sources. The goal is for Stamford to be number one in the State for enrollment – the “Cleanest & Greenest” energy city in the State.

Conversion of 20 percent of the City’s car fleet to hybrids, alternative fuels, or high fuel efficiency vehicles within five years.

Increasing solid waste recycling to 40 percent by 2010 by recycling of plastics numbered 3-7, recycling electronics more frequently, and broadening the composting system.

Developing a list of the “top 10” green items or services that are routinely purchased by the City and implementing a policy to ensure that the green items (cleaners, computers, vehicle fleets, office electronics and paint, among them) are purchased.

The Stamford Cool & Green 2020 proclamation builds upon the success of City efforts dating to 1998. Stamford has implemented over 50 energy efficiency projects within municipal facilities, saving over $2.4 million in cumulative energy costs and receiving over $2 million in utility rebates. The City shed 1.5 megawatts of power over eight facilities when called upon to do so by the electric grid operator – another resource that helps to defer or eliminate the need for power plant construction – and in 2004 installed the first municipal solar system in Connecticut to sell kilowatt hours back to the grid. Stamford also purchased its own street lights from the local utility company and is actively implementing reduced wattages and newer lighting technologies.

Additional information is available from Nancy Domiziano at (203) 977-4203 or ndomiziano@ci.stamford.ct.us.

Syracuse, NY: Mayor Matthew J. Driscoll

ACTION PLAN FOR SUSTAINABILITY

The City of Syracuse has developed an action plan for building a sustainable way of life in which three key strategies are integrated into the City’s municipal policies: economic growth and development, environmental conservation and use of natural resources, and social equity.

In leading the development of the plan, Mayor Matthew Driscoll has partnered with Syracuse University, the State University of New York (SUNY) College of Environmental Science and Forestry (ESF), and the U.S. Green Building Council, all on the cutting-edge of renewable energy, indoor environmental quality systems, and green building practices. With their assistance, numerous initiatives have been spearheaded.
Turning the City Green includes:
- Powering Syracuse City Hall with a mix of renewable energy;
- Replacing inefficient street lighting and traffic signals;
- Retrofitting municipal buildings with energy-efficient equipment;
- Performing comprehensive energy audits on major City facilities;
- Reducing the City’s total annual greenhouse gas emissions by 11,000 tons; and
- Adapting the City’s compressed natural gas refueling station for hydrogen refueling capabilities, including the use of hydrogen buses.

Comprehensive City-wide Energy Management System includes:
- Monitoring and controlling energy use resulting in energy cost savings and reductions;
- Providing for Emergency Curtailment Programs when necessary;
- The City serving as the coordinator for the New York State Energy Research Development Authority for the six surrounding counties;
- Achieving the City’s goal of reducing its energy usage 20 percent by 2006;
- Exceeding the goal of reducing greenhouse gas emissions 20 percent by 2010; and

Legislative Accomplishments include:
- A City ordinance adopted in 2007 that requires all municipal building projects in the City to meet LEED green-building standards;
- State legislation adopted in 2006 that provides funding for all 35 school-owned buildings to be renovated using LEED green-building standards; and
- Adoption in 2005 of Syracuse’s Comprehensive Plan 2025, the first Citywide planning document produced since 1919.

Leadership Activities include:
- Organization of the first Statewide Sustainability Summit for Mayors and Municipal Leaders in 2006;
- Signing of the Urban Environmental Accords in 2005, making Syracuse one of 84 cities worldwide to complete 21 initiatives to improve the environment – and the City has already completed 14 of these;
- The Syracuse City School District being the first school district in New York State to have 100 percent participation in the Go Green Initiative in 2007.

Economic Development Impacts include
- The Syracuse area attracting so many companies that jobs in firms doing business in the environmental sector are outpacing federal and State job growth;
- Central New York being branded as home to an environmental cluster of firms and research institutions known worldwide for supplying products and services for analyzing, engineering, monitoring, controlling, or modifying indoor and outdoor environments; and
- Employees in environmental related industries now being over four times more concentrated in the Syracuse region than they are nationally.
Additional information is available from Colleen Deacon, Press Secretary, at (315) 448-8005 or CDeacon@ci.syracuse.ny.us.
Regional Initiatives

Arlington, TX: Mayor Robert N. Cluck, MD

TEXAS CITIES FOR CLEAN AIR COALITION

The Texas Cities for Clean Air Coalition (TCCAC) was a statewide effort initiated by Mayor Robert Cluck to oppose the permitting and construction of 17 coal-fired electricity plants in the central/eastern region of the State. The proposed plants would have used old-technology scrubbers and filters to reduce the CO₂ emitted as a byproduct of the electricity generation process. Analysis by environmental experts suggests that these plants would have released 30,000 tons of nitrogen oxides, 115 million tons of CO₂, and almost 4,000 tons of toxic mercury into the atmosphere each year.

The TCCAC was created in a June 30, 2006 meeting of regional officials which Mayor Cluck convened and hosted at the University of Texas at Arlington. The proposed plants were already in the permitting phase at this time and were being fast-tracked by the Texas Commission on Environmental Quality. The TCCAC initiative involved assembly of technical expertise on environmental alternatives such as coal gasification and CO₂ sequestration, and presentation of the alternatives to the State legislature. Legal advisors and consultants had to be retained to craft the TCCAC position. All of this was moving forward in advance of a plan to collect the revenues that would be needed to cover costs, which preliminary estimates had put in the hundreds of thousands of dollars. But when Mayor Cluck and then-Dallas Mayor Laura Miller invited the cities in their region to become part of a network of municipalities, counties, and other entities opposed to the permitting of the proposed plants, and to each contribute $10,000 to the effort, the response exceeded expectations: 35 entities responded and, along with private citizens, contributed more than $600,000 to the effort.

Proponents of the coal-fired plants, including most of the State’s electricity producers and providers, argued forcefully that the TCCAC initiative would result in the reduction of the amount of electricity available to Texas consumers, drive up electricity costs, and lead to “brownouts” and “blackouts” similar to those being experienced at that time in California. But the TCCAC was able to counter their campaign, with the result that the Texas Utilities Commission agreed to shelve eight of the 11 plants slated for construction in the Dallas/Fort Worth region.

For Dallas/Fort Worth, achieving ozone attainment status is a top priority; non-attainment status jeopardizes everything from influx of new businesses to federal highway funding. Members of the TCCAC believe that the area’s air quality poses perhaps the biggest threat to quality of life in the region, and that their effort has prevented an already poor air quality situation from becoming worse.
Charlotte, NC: Mayor Pat McCrory

CLEAN AIR WORKS!

A collaborative proactive program addressing air quality in an eight-county, two-state non-attainment area, Clean Air Works! engages businesses in educating and motivating employees to utilize alternative methods of commuting and helps businesses change operations and practices to improve air quality. This Regional Air Quality Board initiative began with a pilot program in May 2006 that recruited 52 companies in seven counties and produced significant results in terms of both business involvement and air quality impact.

Clean Air Works! represents a public-private initiative that changes private sector practices without regulatory mandates – a goal of both the business leaders and elected officials involved. Because employers are well positioned to educate and empower their employees to make changes in commuting habits, Clean Air Works! provides free, one-on-one staff assistance to design and implement customized air quality improvement programs. Services provided to employer partners, who are of varying sizes and represent a variety of industry sectors, include worksite assessments, on-site events and transportation fairs, and a variety of turnkey tools for successful marketing to employees.

In a short period of time, Clean Air Works! has supported more than 400,000 in reduced and avoided miles traveled by educating people about alternatives such as walking, biking, carpooling, vanpooling, mass transit, and telecommuting, and about alternative schedules such as four-day work weeks. Gas cap checks, anti-idling policies and carpool formation events have helped to engage employees in simple actions they can take to improve air quality. Operational audits have helped to identify policies and procedures businesses can change or adopt to reduce their energy usage.

Because public budgets are extremely tight, acquiring funding to launch and continue the program was and continues to be a significant challenge. Staff and elected officials in Charlotte worked with the Mecklenburg County Commission and the Mecklenburg-Union Metropolitan Planning Organization, each of which has provided $500,000. The funding provided by the Metropolitan Planning Organization involved Congestion Mitigation and Air Quality funds recommended for the program by the City. Additional in-kind and cash contributions have been made by the businesses involved and supporting business organizations.

Additional information is available from Dennis Marstall, Assistant to the Mayor, at (704) 336-3980 or dmarstall@ci.charlotte.nc.us.
Indianapolis, IN: Mayor Bart Peterson

CENTRAL INDIANA CLEAN AIR PARTNERSHIP

Through its Indy GreenPrint environmental initiative, Indianapolis recognizes the importance of clean air to the City’s quality of life, the sustainability of its environment, and the health of its citizens. The City has focused on citizen education and individual measures that citizens can take to reduce air pollution, particularly on poor air quality days, through its well-established and well-recognized Knozone air quality outreach program – http://www.knozone.com/home.htm.

Indianapolis has created a voluntary, simple, flexible partnership opportunity titled the Central Indiana Clean Air Partnership (CICAP) which targets the area’s business community. CICAP is intended to help businesses improve central Indiana air quality and contribute to climate protection, thereby helping the City meet the Mayor’s Climate Change Agreement goals. To become a Central Indiana Clean Air Partner, a business or organization chooses to implement environmentally-friendly measures that will increase employee awareness of air quality, support the Knozone program, and reduce the amount of air pollution generated in day-to-day personal and business activities.

Indianapolis's Office of Environmental Services provides businesses with a list of voluntary clean air measures that includes activities linked to Knozone air quality action days and the Knozone program, and initiatives aimed at business fleets, business employee commuting, and business energy/fuel savings. Each business chooses the initiatives most appropriate for their operations and commits to implement them. The number of measures chosen determines the company's level of partnership: Gold – 10 or more commitments, Silver – six to nine commitments, and Bronze – three to five commitments. Each renewable term of membership is for two years.

The CICAP provides each partner with a “toolkit” CD that contains materials designed to make the program easy to implement. Some of the tools included are: ready-to-run articles for company newsletters, sample vehicle idle reduction and alternative work schedule policies, fact sheets, and e-mail text that can be used to notify employees of impending air quality action days.

Depending on the partnership level, benefits of joining the partnership may include: a welcome letter from Mayor Bart Peterson; a certificate naming the company as a Central Indiana Clean Air Partner; inclusion of the company logo on the CICAP web page (www.indycicap.org), list serve, and literature; a month-long profile of the company on the Knozone web site; provision of logo stickers and other materials that a company can use to publicize its commitment to clean air; and provision of signs to post at its facilities if a company chooses to establish idle free zones for drop-off and delivery areas. As the partnership evolves, the City will inform partners when new opportunities for participation and new information about air quality become available.
Inaugural partners to the CICAP included several prominent local businesses: Eli Lilly and Company, the Rolls-Royce Corporation, R.W. Armstrong and Associates, and University Place Conference Center and Hotel. Since its launch in late August 2007, at least 35 additional businesses have committed to enroll as CICAP partners; these include area law, consulting, and engineering firms and the local gas and electric utilities. The City estimates that, with its current partners, the program delivers its clean air message directly to at least 15,000 additional central Indiana residents, and each week the list of CICAP partners grows.

Additional information is available from Allison Wells Gritton, Director of Environmental Affairs, at (317) 327-4491 or agritton@indygov.org.

Irvine, CA: Mayor Beth Krom

COMMUNITY ENERGY PARTNERSHIP

Irvine is one of the two founding cities of the 10-city Community Energy Partnership program. Begun in 1999, this program delivers energy conservation resources to individuals through existing social structures within the community. It does this by creating hubs of activity to involve people in energy efficiency. This in turn develops an energy efficiency ethic within those communities that persists long after the initial activity is over. Partners with the cities include the electricity and natural gas utilities serving the area, and The Energy Coalition, a nonprofit organization that helps city governments, businesses, students, and residents practice smart energy management.

The Community Energy Partnership relies on two basic strategies. The first is the PEAK program, an educational curriculum for fourth graders. Introducing the curriculum into the schools required finding a champion within the school system. The champion then helped tailor PEAK to meet California State curriculum standards, advocated for the program, and helped to identify pilot schools. Now, each year, approximately 2,000 fourth-grade students in all 22 elementary schools in the Irvine Unified School District are educated about energy efficiency, peak energy demand, and energy management.

The second strategy is to distribute, free to residents, compact fluorescent light bulbs (CFLs). In each past year, approximately 5,000 CFLs have been distributed. In April 2007, the Irvine City Council decided this year’s distribution would be 60,000 CFLs. While passing out the CFLs, Partnership staff members talk to people about the proper use, handling, and disposal of the bulbs and the variety of other energy efficiency programs available to them, and answer any questions they may have. CFLs have been distributed at an electronic waste collection event, Earth Day events, community concerts, and even a Global Village Festival. CFLs are also available to residents anytime through community centers and are being distributed through the Meals on Wheels program to ensure that those who cannot make it to the events are included in the program.
Through 2005, the Community Energy Partnership reached at least 8,500 people in Irvine who would not otherwise have been involved in energy efficiency, and reduced CO₂ emissions by 1,300 tons total. Once all 60,000 CFLs are distributed this year, the CO₂ emissions reductions will jump to 1,200 tons annually. As importantly, this program has produced a better-informed community: residents are asking more questions about energy use and management, and reporting more frequently on the ways they are helping to fight global warming.

The Community Energy Partnership is funded by California utility ratepayers and administered by the utilities under the auspices of the California Public Utilities Commission. The City budgets staff time and other resources to help coordinate and support the effort.

Additional information is available from K. Shawn Thompson, Energy Administrator, at (949) 724-7449 or sthompson@ci.irvine.ca.us.

**Trenton, NJ: Mayor Douglas Palmer**

**TRENTON GREEN INITIATIVE**

In October 2007 Mayor Douglas Palmer announced the establishment of the Trenton Green Initiative, a new public-private partnership to produce both specific short-term action steps and long-term strategic plans to reach climate protection goals. The unique partnership brings together a critical core of stakeholders including the City and County governments; the State of New Jersey’s utility regulatory agency, environmental protection department, labor and work force development department, and largest energy supplier; and community-based community development and environmental organizations.

The work of the Trenton Green Initiative addresses two important challenges: to develop an environmental and public health strategy in support of sustainable development, drawing from the best climate protection practices on the globe and translating them in ways that work in older, urban industrial cities like Trenton; and to demystify the issue of global warming, capture the imagination of residents, and inspire their widespread participation.

Guided by its Steering Committee, the Initiative partners have been working for several months to engage a broad range of stakeholders in a strategic planning process to identify current green policies and practices, identify gaps in these policies and practices, and outline a range of near-term and long-term activities for consideration and implementation, with targets and indicators to track progress. The strategic issues include:

- Environmental Health – Open Space Planning, Urban Forestry, Alternative Transportation, Brownfields;
- Energy Efficiency Investments – Public, Residential, Commercial, Renewables, Energy Independence District;
- Carbon Reductions – Baseline Assessment, Legislation;
- Community Education and Engagement – Youth, Public Employees, Community Based Organizations;

Funding for the Initiative comes from the City, County and State operating budgets and from corporate foundations. Initiative results to date include the following:

- The City has adopted Practical Energy Management Guidelines proposed by the Governor’s Office of Energy Savings.
- The State’s Labor and Workforce Development has convened a “Green Jobs Workforce Advisory Committee” consisting of businesses that expect to hire workers in alternative energy and energy efficiency occupations, as well as government agencies, higher education and other training providers.
- Isles, Inc., an established non-profit community development and environmental organization, and the State’s Board of Public Utilities are developing pilot residential audit and retrofit installation projects utilizing YouthBuild program participants.
- Public Service Electric and Gas has compiled and analyzed electric and gas energy utilization data for the City as part of a baseline assessment.
- PSEG has committed a full-time loaned executive for a period of six months to coordinate Initiative efforts.
- A Steering Committee has been established consisting of representatives from Public Service Enterprise Group; the City; the State’s Board of Public Utilities, Department of Environmental Protection, and Department of Labor and Work Force Development; the Mercer County Executive; the Governor’s Office of Energy Savings; and Isles, Inc.

Additional information is available from Kent Ashworth, Office of Public Information, at (609) 989-3828 or kashworth@trentonnj.org.
Focused Initiatives

Atlanta, GA: Mayor Shirley Franklin

CITY HALL GREENROOF

On December 18, 2003, the City of Atlanta completed construction of the first governmental “greenroof” in the Southeast. Constructed on the roof of City Hall, the greenroof, in addition to its benefits for that building, was intended to serve as a prototype to showcase and drive the development of greenroof technology within urban Atlanta and throughout the Southeast region. When construction was started, there were few examples of greenroofs in the region, and none on public buildings.

The City Hall greenroof covers 3,500 square feet. It replaced a little-used patio with what officials describe as an urban oasis, a place in which visitors can find relaxation and solitude. The greenroof is open to all during normal business hours and is ADA accessible. Since its construction, school groups, garden clubs, engineers, and commercial real estate developers have been drawn to it to learn about its function and benefits. The greenroof has also been featured by major national news organizations, in addition to local news outlets and environmental publications.

The City used its own general funds, a State matching grant, and private donations to fund the project. Donations by local companies included labor and over 227,000 pounds of pavers, engineered soil mix, plants, drainage mats, service conduit, and waterproof materials. Construction challenges, including roof weight restrictions and getting materials to the site, are not unusual for a project of this type and required the use of innovative construction techniques and creative material choices.

The City Hall greenroof is demonstrating its benefits for the building – greatly mitigating stormwater runoff and the urban heat-island effect, extending the life of the traditional roofing materials, and significantly improving the energy efficiency of the building, with a corresponding reduction in greenhouse gas emissions. It is also benefiting Atlanta as a whole as more and more builders use it as a model for greenroofs on their urban projects.

Additional information is available from Susan McCray, Environmental Affairs Manager, at (404) 330-6850 or smccray@atlanta.gov.
Boston’s Green Affordable Housing Program has added renewable energy, energy efficiency, green, and healthy home points to the City’s existing criteria for ranking proposals to build affordable housing. The City is seeking long-term savings from reduced energy and water use as well as improved living conditions for all residents, especially those who live with asthma. The program will produce 130-160 kW of installed PV capacity on approximately 200 housing units. In combination, energy savings and clean energy generation will cut greenhouse gas emissions substantially.

The program operates in conjunction with the existing Request for Proposals system and requires that applicants include the renewable energy, energy efficiency, green, and healthy home features in their affordable housing proposals. Through outreach, training, and project management, the City is helping affordable housing proponents and City agency staff members build their capacity to integrate each of these features early in the development process. City officials believe that the early-stage integration of design, engineering, and construction planning is the only way to ensure that often competing goals of high-quality, durable, attractive, and healthy affordable housing can be met.

Because development teams generally lack experience with and technical capacity for integrated design, green experts hired by the City are revising the RFP process and designing green training sessions for potential applicants. As projects move through the pipeline, these experts maximize the benefits of the existing renewable energy funding by identifying potential funding for energy efficiency, non-renewable green, and healthy homes features. By integrating State funding for renewable energy into the City’s affordable housing loan products, the program makes renewable energy and green building elements standard without adding the project management and bureaucratic expenses of another loan/grant closing to an already complicated process.

Boston’s program builds on the City’s first-in-the-nation zoning requirement that new private building construction follow LEED standards. It is funded with $2 million from the Renewable Energy Trust of the Massachusetts Technology Collaborative, a quasi-State agency, and a $100,000 foundation implementation grant. $500,000 is being used to support the green aspects of the Boston Housing Authority’s redevelopment of a distressed public housing project, Franklin Hill, which is located in a neighborhood which has a higher-than-average prevalence of asthma.

Additional information is available from Sarah Zaphiris, Policy Advisor to the Mayor, at (617) 635-2886 or Sarah.Zaphiris@cityofboston.gov.
Chattanooga, TN: Mayor Ron Littlefield

ELECTRIC BUS SYSTEM

In support of a $150 million revitalization of Chattanooga’s downtown area, the Chattanooga Area Regional Transit Authority (CARTA) designed and implemented a zero-emission, no-fare electric bus system that serves the downtown and newly renovated riverfront areas of the City.

In 1969, the federal government rated industrial Chattanooga’s air quality the worst in the nation. Following years of downtown urban decay, economic stagnation, and traffic congestion, the City’s revitalization plan called for a clean and efficient mode of public transportation. Use of a battery powered electric shuttle was determined to be the best way to meet this need. The challenge was to fund and develop a reasonably priced electric bus that would stand up to the rigors of use in an urban transit system.

A company that would develop and manufacture a prototype electric bus for the City’s shuttle system was formed by a Chattanooga entrepreneur. (This company, Advanced Vehicle Systems, later manufactured buses for many other cities in the U.S. and abroad.) Design modifications to the original prototype vehicles were dictated by local operating conditions. CARTA also had to train drivers and mechanics accustomed to operating and maintaining conventional diesel buses on the features of the new electric vehicles.

Twelve electric buses are carrying between 700,000 and one million passengers annually along a 3.5-mile loop through downtown and the riverfront. This use of clean technology avoids the burning each year of approximately 36,500 gallons of diesel fuel. A second 2.2-mile route was added in August.

Eighty percent of the initial $20 million in funding needed for the shuttle system’s parking infrastructure and operations was provided by the Federal Transit Administration; the Tennessee Department of Transportation and the City each contributed 10 percent.

Additional information is available from Tom Dugan, Executive Director, Chattanooga Area Regional Transportation Authority, at (423) 629-1411 or tomdugan@gocarta.org.

Chicago, Illinois: Mayor Richard M. Daley

SOLAR THERMAL GRANT PROGRAM

Chicago’s Solar Thermal Grant Program, designed in January 2006 by the City’s Department of Environment, grants solar thermal panels to laundromats, community service organizations, affordable housing developments, and other businesses that use a high volume of hot water. The City’s goals for this Program are to help recipients reduce
natural gas consumption and costs and increase funding for programming for especially sensitive populations such as seniors and low income residents.

Solar thermal panels concentrate solar energy as heat which is used to heat water in swimming pools, sinks, and showers, and can be used to heat or cool buildings. This technology, while differing from the better known solar photovoltaic panels which produce electricity from the sun’s energy, also reduces greenhouse gas emissions and the production of SO₂ and mercury.

The Program reduces greenhouse gas emissions by offsetting demand for natural gas used for domestic hot water heating and space heating. In addition to the businesses and community organizations that obtain the panels through the Program, more than 20 City facilities, including fire stations, police stations, senior residences, and the Chicago Cultural Center, are now using them.

To secure its supply of solar panels, the City negotiated an economic development agreement with the vendor. The panels are manufactured locally, in Chicago’s Stockyards Planned Manufacturing District, by Solargenix Energy LLC. Chicago has committed $5 million to solar thermal technology using City funds and grants leveraged from foundations and the State government. Use of the technology has allowed the City to reduce long term energy costs and save on funding that can be applied to other community ventures. The Program’s 2007 guidelines came out in June.

Additional information is available from Brendan Daley, Deputy Commissioner, Chicago Department of Environment, at (312) 744-8901 or bdaley@cityofchicago.org.

Columbus, OH: Mayor Michael B. Coleman

PEDAL INSTEAD

The Get Green Columbus plan launched by Mayor Michael B. Coleman in 2005 set forth a vision for how the City should lead by example to improve air and water quality, help companies create green jobs, spur the construction of green homes and buildings, increase recycling, and expand green space. Columbus has completed a baseline study of the greenhouse gas emissions from City operations and is now developing an action plan. The City is not waiting for completion of the Action Plan, however, to start reducing greenhouse gas emissions.

The action Columbus is taking to encourage biking offers just one example of a successful initiative already underway. In 2007 the Mayor created a Bicentennial Bikeways Master Plan effort to engage residents, commuters, and businesses in the mission of increasing the use and availability of safe paths, trails, lanes, and accommodations for cyclists. As a part of the effort to increase bicycle ridership, the City also launched “Pedal Instead,” which offers a free, monitored, bike valet service at
major festivals. The service proved to be so popular that it has already been expanded to include home football games at The Ohio State University.

Pedal Instead volunteers track how many bikes they park and ask riders how far they biked to the event. So far this year, volunteers have parked 2,193 bikes that had traveled 18,228 miles. If each of those cyclists had driven to the festival, they would have consumed an estimated 899 gallons of gas and created 17,170 pounds of CO2.

The costs of the program have been minimal since the “bike corral” is run by volunteers from a local biking organization. The volunteers accept donations for their biking advocacy organization and continue to be very enthusiastic about the program. The City’s only costs have been in fabricating the corral and paying City employees to set it up and remove it. In 2008 the City will expand Pedal Instead and market it to more major events.

Additional information is available at www.GetGreenColumbu.org or from Susan Ashbrook, Environmental Steward, at (614) 645-0807 or seashbrook@columbus.gov.

**Colorado Springs, CO: Mayor Lionel Rivera**

**ELECTRICITY DEMAND INITIATIVES**

The City of Colorado Springs and Colorado Springs Utilities have launched several initiatives aimed at reducing the consumption of energy and, with it, the generation of greenhouse gases. Three examples of current efforts to reach out to both residential and commercial energy users illustrate how significant savings are being generated.

**Renewable Energy Rebate Program**

This program encourages Colorado Springs Utilities’ commercial and residential customers to install solar electric (PV) panels to offset their retail energy consumption. Customers who install PV generating systems for their homes or businesses are eligible to receive a rebate of $3.75 per AC watt. While PV technology is expensive compared to conventional power generation, the various rebates and tax credits available can add up to 40 to 60 percent of total system cost.

A new program in 2006 which started with 21 participants, the City’s rebate initiative nonetheless has produced .0165 megawatts of demand savings and 72.42 megawatt hours of consumption savings. This represents a 65-ton reduction in greenhouse gas emissions.

**The Peak Demand Rebate Program**

This Colorado Springs Utilities program provides new and existing commercial customers with rebates for verified electric demand savings. Customers must install eligible energy efficiency or load shifting Demand-Side Management measures; the incentive is a return of $400 per kilowatt saved. Customers can employ a wide range of
applications and emerging technologies for retrofits or new construction in order to achieve demand savings.

Eligible projects must include, at a minimum, a 10-kilowatt demand reduction during the summer peak period. In its first year, with just a few participants, the Program produced .141 megawatts of demand savings and 793.62 megawatt hours of consumption savings. This is a 697-ton reduction in greenhouse gas emissions.

**Energy Audits**

Energy audits available to commercial and industrial businesses served by Colorado Springs Utilities aim to raise awareness of utility energy consumption and offer suggestions for reducing use of gas, electricity, and water, all of which are provided by Colorado State University. Engineering reports provided to customers focus on 1) low cost, or achieving savings with existing facility equipment and systems; 2) capital cost, or measures that require investment to achieve savings, such as replacing inefficient lighting and air conditioning systems or installing a new technology; and 3) strategic planning, or identification of concepts that can “build in” energy efficiency for future buildings and ideas for upgrades to existing equipment when replaced.

Utility account managers follow up with customers to encourage them to take action on recommended efficiency measures. About 15 percent of the customers audited have implemented at least one low-cost suggestion; nine percent have implemented at least one capital-cost measure. It is estimated that the audit initiative is producing four percent savings for each customer – a total of 5,300 megawatt hours and 10,820 dekatherms of natural gas. This translates into a reduction of 5,300 tons of greenhouse gas.

The greenhouse gas reductions achieved by the three Colorado Springs programs represent the equivalent of removing 1,058 automobiles from the road.

Additional information is available from Alan Goins, Manager, Facility and Security Operations, Colorado Springs Utilities, at (719) 668-8024 or agoins@csu.org.

**Denton, TX: Mayor Perry McNeill**

**BIO DIESEL FACILITY FOR AIR QUALITY**

The City of Denton established a public/private partnership with Biodiesel Industries Incorporated (BDI) to construct and operate a biodiesel fuel production facility powered by methane gas from the City’s landfill. The plant converts used cooking oils collected from local restaurants to a non-toxic, biodegradable biodiesel fuel. Approximately 500,000 gallons of biodiesel have been produced since the plant opened in March 2005. Much of the biodiesel currently being produced is used as an alternative fuel for the City’s solid waste fleet and other diesel-powered equipment.
Air quality has been a concern for the City for several years. In 2004 and 2005, Environmental Protection Agency air quality testing in Denton County reflected higher than acceptable levels of ozone concentrations. City use of alternative fuels for a portion of fleet vehicles is required to meet federal air quality standards.

The retrofit and replacement costs involved in providing the City’s fleet with cleaner burning engines were projected to be in excess of $2 million. To address air quality issues, Denton was already planning to install a methane gas collection system at its landfill. The combination of the alternative fuel needs and the methane collection plan led to a comprehensive solution: the biodiesel plant.

The biogas (methane) generated by a landfill is a much more potent greenhouse gas than CO₂. Using landfill CO₂ methane as a fuel source for biodiesel production converts the methane to CO₂ instead of releasing the gas directly into the atmosphere. Converting methane to CO₂ helps protect the air and mitigates global warming problems.

Denton’s biodiesel production facility is the first to use landfill biogas to supply all production energy, including all process heat and power.

Clarifying and understanding the biodiesel fuel production process and associated permitted requirements posed challenges for the City but, as these challenges were resolved, the environmental benefits of the biodiesel facility became clear. The City’s fleet-wide use of biodiesel is estimated to reduce vehicle emissions by up to 12 tons per year. In terms of overall impact, officials say, the facility converts waste products into fuel, helps stabilize the nation’s oil demands, creates cleaner air, and provides jobs, which boosts the local economy.

The City provided $650,000 for fuel production equipment and a site for the facility. Capital costs were funded through long-term bond sales. In return, the City received fuel price stability: a guaranteed fuel price for five years. BDI provided the production and operations facility, a methane storage tank, a boiler, and the vehicles and storage tanks necessary to collect used cooking oils. BDI operates the facility and incurs all day-to-day operating and production expenses.

Additional information is available from Katherine Barnett, Special Projects Coordinator, at (940) 349-8202 or Katherine.barnett@cityofdenton.com.
Fort Wayne, IN: Mayor Graham Richard

TREE PLANTING PROGRAMS

Two tree planting initiatives are adding significantly to Fort Wayne’s tree canopy and to the City’s ability to absorb CO2 emissions.

Through a program titled the Great Tree Canopy Comeback, the City is working in partnership with Friends of the Parks to restore and supplement a formerly lush tree canopy. More than 1,000 trees have been planted in City parks in the last five years, and another 210 are slated for planting this year.

Cultural Landscape Reports commissioned in 2002 for three historic City parks revealed the loss of more than 50 percent of the parks’ tree canopy since 1949. With the integrity of these parks at risk, the community rallied in an effort to preserve and restore their landscapes. Over the years that effort spread to additional parks, where similar threats to landscape quality existed.

Friends of the Parks publicized the need to support restoration and continued sensitive maintenance of City parks. The successful publicity campaign led to a successful private fundraising effort, the allocation of City funds to the initiative, and the rallying of volunteers who assist Parks staff and contractors in the actual planting of trees. The City uses its purchasing power to buy trees from private nurseries at bulk rates; this, coupled with the use of volunteers, results in a very low cost-per-tree for landscape-size trees.

Friends of the Parks raised private funds for the Cultural Landscape Reports, which gave credibility to further private fundraising to implement the Great Tree Canopy Comeback. Funding sources include private donations, Community Economic Development Income Tax funds, and the City Parks budget.

A single mature tree absorbs roughly 48 pounds of CO2 per year. Thus, the approximately 1,000 trees planted since the program began absorb roughly 48,000 pounds of CO2 annually. Eventually, the City would like to include park trees in a carbon registry.

Through its well-established Street Tree Program, individual Fort Wayne property owners can request the planting of trees in the public lawns bordering City streets. The City collects a small fee from the property owner for each tree planted; this fee is waived for low-income residents. City officials believe that requiring property owners to request the trees and make a small investment in them increases the trees’ survival rate. More than 8,000 street trees have been planted since the program began more than 17 years ago, and 600 more are expected to be planted in 2007.

The City initiated the program because street tree planting had been reduced to a trickle and there was concern that, with no replanting, the City would have few street trees left in
30 years. The success of the effort depended on the ability of the City to help the community understand that street trees are a vital piece of the urban infrastructure, and to change public perceptions of what constituted good community investment decisions.

After the trees are planted the City provides residents with care information and someone to contact if there are problems. The City has a full-time arborist who has instituted scientific tree management.

The program is funded primarily with discretionary County and economic development income taxes used for capital improvements. This funding is supplemented by fees developers pay to have trees planted along the street front of their projects and occasionally with funds from the Community Development Block Grant, Redevelopment Commission, and specific bond issues.

Additional information on both programs is available from Wendy Barrott, Director, Energy and Environmental Services, (260) 427-2528 or Wendy.Barrott@ci.ft-wayne.in.us.

**Hallandale Beach, FL: Mayor Joy Cooper**

**WATER CONSERVATION ORDINANCE**

Hallandale Beach officials have declared that their mission is to make their City “Clean and Green.” As a small, full-service city with growing needs and limited staff resources, it is addressing climate change by implementing policies and programs that do not require major investment. It has:

- Initiated a hybrid vehicle replacement program to change over the City’s fleet;
- Conducted energy surveys at all municipal buildings with a goal of changing all lighting to CFL’s and converting to solar power where feasible;
- Implemented computer technology to become paperless, and required double-sided copying when copying is necessary;
- Installed water gauges on all sprinkler systems; and
- Implemented an “Adopt a Street” program and created a new “Adopt a Beach” program.

Hallandale Beach is situated in Florida’s Lower East Coast water supply area where coastal cities have been faced with saltwater intrusion that has threatened the entire area’s water supply. Hallandale Beach has been forced to close all but two of its fresh water wells, making it more dependent on the western well fields.

It is estimated that irrigation accounts for over 50 percent of area potable water use. In order to address this unnecessary use, the City has adopted a water conservation ordinance that mirrors the Phase 1 water restrictions implemented by the South Florida Water Management District during drought situations. Under this ordinance, all residential and commercial buildings are permitted to use sprinklers three days a week.
between the hours of 4:00 a.m. and 8:00 a.m., with odd and even numbered houses alternating days. Residents are limited to washing their vehicles on the same schedule and must use hoses with automatic shutoff valves. All restaurants must serve water only when requested by their customers. The City also requires that all new projects involving landscaping incorporate xeriscape principles and encourages residents to plant drought-tolerant species.

The City kicked off the new ordinance on Earth Day by distributing water conservation tools such as shutoff valves, rain gauges, test kits to detect water leaks within homes, and hose repair kits. It also educated residents on proper planting materials and techniques.

City officials believe that, to date, the adoption of the Water Conservation Ordinance represents their most effective action on conservation. Through a partnership with the South Florida Water Management District, Mayor Joy Cooper hopes to encourage the adoption of the ordinance by all area municipalities. As Broward League of Cities President, the Mayor has established a Sustainability Committee that will be focusing on green initiatives, growth management, and transportation and water issues.

Additional information is available from Mayor Cooper at (954) 457-1300 or JoyCooper@aol.com.

**Hollywood, FL: Mayor Mara Giulianti**

**WATER REUSE PROGRAM**

The City of Hollywood’s water reuse facility has the capacity to produce up to eight million gallons per day (mgd) of reclaimed water. Approximately three mgd are used to process plant water and another three to four mgd are distributed to six golf courses, a townhome community, a City park, and the City’s nursery. In addition, the Public Works Department uses a tanker truck to irrigate medians throughout the City with reclaimed water. The City is planning to provide reclaimed water to a second City park in the near future.

Hollywood initiated the water reuse program to assist in meeting its future demand for potable water and to respond to conservation measures implemented by the South Florida Water Management District which restrict use of the Biscayne Aquifer water supply. It cost approximately $7.2 million to build the water reuse facility, which was financed with State revolving fund loans.

Finding customers who will pay for irrigation water that they had been getting for free as ground water, and getting them to accept “processed sewer water” have posed the biggest challenges to the initiative. The City met the challenges by making the cost of the product attractive and educating potential customers about the treatment process and benefits of using reclaimed water, particularly during droughts.
One of the first municipalities in Broward County to develop a water reuse program, Hollywood is now looking into ways of using tanker trucks to provide reclaimed water to nursery businesses affected by water use restrictions during droughts.

City officials cite several benefits of the water reuse program: It is reducing greenhouse gas emissions in the community by using less energy to treat wastewater. It is conserving water in one of the area’s most valuable resources, the Biscayne Aquifer. And the City’s golf courses, parks, and medians are unaffected by droughts and remain attractive for citizens to enjoy.

Additional information is available from Renee Jean, Public Affairs Manager, at (954) 921-3201 or rjean@hollywoodfl.org.

Honolulu, Hawai‘i: Mayor Mufi Hanneman

ENERGY CONSERVATION LOAN PROGRAM

The Honolulu Solar Roofs Initiative Loan Program provides low interest loans (zero percent and two percent) to low and moderate income homeowners in the City and County of Honolulu to enable them to install solar water heating systems, reduce their energy costs, and become part of Honolulu’s energy conservation effort. It also provides these loans to landlords who rent the majority of their rental units to low and moderate income tenants.

Property owners may also apply for a City-sponsored home rehabilitation loan which can cover energy conservation construction improvements including replacing major home appliances with Energy Star-rated appliances.

Community Development Block Grant funds finance the Program. Promotional materials are provided through a public-private partnership with the Hawaiian Electric Company (HECO). A major print and television promotional campaign was funded by HECO and has been complemented by ongoing outreach efforts at community events.

The low interest loan program was created because State renewable energy income tax credits and electric utility rebates appeared to be insufficient incentives to offset the up-front costs that prevented many Honolulu residents from installing solar water heating systems or converting to energy-efficient appliances. The major challenge was educating the public about the program’s low up-front cost and long term cost savings. Many homeowners did not think that switching to solar power or purchasing a new major Energy Star-rated appliance was within their means.

The Program is part of a 10-year energy conservation plan that marries Honolulu’s Polynesian ancestors’ system of resource management with modern technology. With 95 percent of City and County energy needs fed by imported oil, Honolulu is developing specific goals for alternative fuels usage, hybrid vehicles, co-generation of electricity,
conservation, and recycling. Every solar water heater in place, for example, decreases reliance on oil by approximately five barrels per year and contributes to reduced greenhouse gas emissions.

Additional information is available from Dan Tully, Rehabilitation Loan Branch Chief, Department of Community Services, at (808) 527-5907 or dtully@honolulu.gov.

Houston, TX: Mayor Bill White

ENERGY EDUCATION CAMPAIGNS

Houston’s energy consumption grows as its population grows. Approximately one-third of Houston’s energy consumption is driven by residential usage. The City’s Power to People Campaign is designed to educate Houstonians on simple options to reduce energy consumption, save money, and make a difference in reducing greenhouse gas emissions.

The Campaign began on May 19, 2007 with volunteers going door to door in Houston neighborhoods handing out 10,000 compact fluorescent light bulbs. Displays were set up at retail outlets throughout the Houston area to provide information on inexpensive steps that can be taken immediately to minimize energy consumption in the home. Residents are encouraged to log on to the Campaign’s Web site – www.houstonpowertopeople.com – for options to save money. The site urges residents to switch to compact fluorescent light bulbs, program their thermostats, plug air leaks around windows and doors, tune up air conditioning systems every two years and replace air filters monthly, and shop for their retail electric provider and renewable energy options.

Funding for the Campaign is provided through the City’s general fund, which supports a staff position and associated overhead, and corporate sponsorships – Wal-Mart, Sam’s Club, and CenterPoint Energy, the local transmission company – which underwrite major pieces of the initiative.

A second Web site – www.houstonconsumerchoice.com – is dedicated to informing Houstonians about the options they have in purchasing electricity. The site allows consumers to compare traditional energy costs with green energy costs and to choose their providers based on cost or any other criteria they wish to use.

At the end of 2006 there was no longer a regulated electricity price available in the market. Neither the City nor the Texas Public Utility Commission had as much control over electricity rates, and traditional ceilings on rates were done away with. Mayor White wanted residents to have tools they could use to explore traditional and green service options and associated rates. The Consumer Choice Program’s Web site includes a user-friendly calculator that allows them to do this, and help with the calculator is available at all City Public Libraries, Multi-Service Centers, and other community facilities. The Web site was launched with a major media campaign. Currently, more than 3,000 people are viewing the site each day.
The Mayor required all energy providers involved to meet standards of financial strength, to keep their offers open to Houstonians, and to assure consumers that their choice of providers would not affect the reliability of their service. The $760,000 cost of the Program is underwritten by CenterPoint Energy. The Web site is maintained by the City’s Information Technology staff.

Additional information is available from Jedediah Greenfield, Environmental Communications Manager, at (713) 437-6961 or Jedediah.Greenfield@cityofhouston.net.

Miami, FL: Mayor Manuel A. Diaz

TREE CANOPY REMEDIATION AND REPLACEMENT

In 2002 Miami launched a comprehensive and aggressive environmental program to reverse decades of neglect; the aim is to improve climate protection and the City’s livability by implementing sustainable urban design principles. Tree canopy remediation and replenishment are key components of this effort. The City is working to increase its tree canopy to 30 percent from its current seven percent and conducting a comprehensive analysis of the tree canopy in partnership with American Forests. Working with community groups, the private sector, and various government agencies, Miami is well on its way to meeting its goals.

Since 2001, Miami’s population has increased 10 percent – rapid growth compared with the one percent growth of the 1990s and seven percent total growth from 1970 to 2000. Officials believe economic prosperity, strong leadership, and public confidence are combining to produce the greatest renaissance in the City’s history. Miami’s population is projected to grow by 30 percent by the end of the decade, adding additional environmental and climate protection pressures. Facing potentially extreme impacts from future climate change, the City has recognized the need both to reduce its carbon footprint and to create a more livable and walkable community-oriented environment.

During the unusually busy 2005 hurricane season the City lost over 40 percent of its already-depleted tree canopy, exacerbating what had already been considered a serious problem. That loss brought additional media attention to the issue, and the City was able to leverage additional State, federal, and philanthropic support to fund canopy renewal.

During the past year, Miami planted over 3,000 trees. City officials estimate that the entire planting program, when completed, will effect a reduction of 15,272 tons in atmospheric CO₂. To further reduce City-produced emissions, the municipal fleet is converting to more efficient alternative fuel and hybrid vehicles.

New tree-lined streets have improved the livability of City neighborhoods, resulting in more walkable streets and less traffic. Traffic calming measures have led to less congestion. Miami’s first comprehensive, long-term plan for public spaces and urban
forestry is ensuring continual improvements to the tree canopy and existing open spaces, and is creating new open spaces and the use of “green” connections to link parks and neighborhoods and make them more walkable. Air quality has also improved in Miami with simultaneous, significant reductions in greenhouse gas emissions.

Miami’s tree planting program is characterized by a holistic approach which includes comprehensive analysis, education, and implementation elements. It has developed strong partnerships with the County, State and federal governments, and non-profit organizations and, as a result, has garnered and leveraged sufficient resources (grants and donations) to quadruple the existing tree canopy within 10 years. A Tree Trust Fund has been created to fund special greening projects on an on-going basis. Proceeds from fines and tree planting permits are dedicated to greening initiatives. To date, the Tree Trust Fund has generated over $667,000.

Additional information is available from Robert Ruano, Director, Grants and Sustainable Initiatives, at (305) 416-1532 or rruano@miamigov.com.

**Milwaukee, WI: Mayor Tom Barrett**

**REDUCING HEALTH RISKS/DECREASING CARBON EMISSIONS**

The City of Milwaukee is combining lead abatement work with energy conservation, with a goal of improving public health and energy efficiency. The City Health Department’s Childhood Lead Poisoning Prevention Program engaged in a collaborative effort with We Energies, the local electric utility, to replace windows posing lead paint hazards with Energy Star insulated windows.

While this placed the City among the highest achievers nationally in solving the problem, officials recognized that additional lead abatement work remained to be done. At the same time they recognized that the older homes needing lead abatement were also consumers of tremendous amounts of energy. Residents of drafty older homes tend to turn up their thermostats to compensate for heat loss. It is estimated that window replacements increase household energy efficiency by an average of 10 percent, which translates into a reduction in carbon emissions of approximately 566,000 pounds annually. It was clear that replacing the windows in homes targeted for lead abatement with Energy Star units would result in cost effective reductions in energy use.

A We Energies grant of $360,000 allowed the City to leverage lead abatement program funding to serve more households. In 2006, the initial project year, 550 households in areas with known lead paint risks were served at a cost of approximately $650 per household. The project targeted specific neighborhoods and specific housing stock; it identified willing owners of homes built before 1950, providing grant funds to cover the window replacement costs.
Milwaukee’s initiative is a successful public-private partnership benefiting an underserved area. In addition to providing lead abatement services, it educates residents on the economic and environmental benefits of energy conservation. The initial project work was completed in a very short time and is being evaluated to determine whether modifications would increase energy conservation and overall project benefits.

Additional information is available from Ann Beier, Director of the Office of Environmental Sustainability, at (414) 286-3351 or abeier@milwaukee.gov.

Northbrook, IL: Village President Gene Marks

RENEWABLE WIND-GENERATED ENERGY INITIATIVE

To offset the need for fossil fuel-derived energy and reduce greenhouse gas emissions, the Village of Northbrook is purchasing 4,500 megawatt hours of renewable Illinois wind-generated energy to operate its water utility.

Village officials recognize the urgency of the need to invest in cleaner, more efficient technologies and the need to educate the public on the implications of greenhouse gas emissions, global warming, and the nation’s dependence on foreign oil. They also recognize that alternative sources of energy currently cost more, and that old energy-use habits die hard. Officials believe, however, that if enough public agencies embrace modest changes – including using energy-efficient light bulbs, insisting on more fuel-efficient vehicles, reducing idling, taking public transit, adjusting thermostats, and the like – the Village can have an impact on the local, regional, national, and global environment.

In August 2006, Northbrook’s Director of Public Works, strongly supported by the Village President, recommended that the Village lead by example by committing to annual purchases of 4,500 megawatt hours of Illinois wind-generated renewable energy credits (RECs) to “power” Northbrook’s water utility. Despite the premium paid for RECs, the initiative was unanimously approved by the Village Board. Using Environmental Protection Agency statistics on Midwest power plants, the purchase of megawatt hours of wind energy at this level will annually offset the burning of 1,915,000 pounds of coal and the production of 4,992,507 pounds of CO₂, 22,194 pounds of SO₂, and 12,182 pounds of NOx.

Northbrook is the only community in Illinois not situated on the shores of Lake Michigan that has its own intakes, raw water transmission mains, and inland filtration/pumping facilities. The purchase of RECs provides enough renewable energy to run all utility operations required to treat and pump 2.1 billion gallons of water per year. According to the Lieutenant Governor of Illinois, this is more renewable energy than is purchased annually by all State agencies combined.
The Village’s commitment to wind-generated energy for the water utility costs $72,000 annually. This equates to 3.5 cents per 1,000 gallons of potable water, which is equivalent to a user fee of less than $5 per year for the average residential consumer. To date, the water utility rate has not increased.

The community takes great pride in Northbrook’s leadership in pursuing green energy sources, and the Village proudly displays banners in the central business district proclaiming its commitment to wind energy. The initiative has resulted in positive media coverage of the Village and has generated interest in wind energy in other towns, schools, and park districts. The benefits of wind energy are also regular topics during public meetings and in the Village newsletter. In December 2006 the Lieutenant Governor presented the State’s Environment Heroes Award to the Village President in recognition of the wind power initiative.

Additional information is available from James Reynolds, Director of Public Works, at (847) 533-2685 or Reynolds@northbrook.il.us.

**North Little Rock, AR: Mayor Patrick Henry Hays**

**ENERGY CONSERVATION INITIATIVES**

An increase in the purchase price of North Little Rock’s power prompted Mayor Patrick Henry Hays to develop a comprehensive energy conservation and sustainability plan for his City. Mayor Hays has issued several changes in workplace policies and procedures to conserve energy, introduced hybrid vehicles to the City’s fleet, and converted all City traffic signals to LEDs. The City is providing Energy Conservation Information Stations throughout the City, providing resources online, and setting aside money to assist the poor and elderly with energy bills and home weatherization.

The North Little Rock Home Energy Audit Program and Energy Conservation Education Program offer two examples of specific initiatives underway.

**Home Energy Audit Program**

The City’s Home Energy Audit Program is a no-cost, on-site home energy audit service available to all customers of the City-owned Electric Department. A certified energy auditor conducts a one- to two-hour “walk-through” energy audit of the customer’s home, examining heating and air conditioning equipment, looking for and identifying obvious air infiltration points, and inspecting attic and crawl spaces for adequate insulation and duct work. Throughout the audit, the auditor educates the customer on simple, common sense approaches to conserving energy.

At the conclusion of the home audit, the customer is issued a findings report which outlines how to save money by implementing energy conservation practices such as replacing incandescent bulbs with compact fluorescent lighting, purchasing more energy-efficient appliances, or weatherizing their home. The auditor discusses the findings with
the customer, gives advice on sources of information on additional information on energy conservation and home weatherization, and provides an energy conservation “starter kit.”

Customers sign up for the audit by phone or on-line. The cost of the audit program, including salaries, transportation, and materials, is absorbed by the Electric Department’s general fund. A five-month, weekly training program for the auditors which included both classroom and in-field training was provided by the local community college.

**Sixth Grade Energy Conservation Education Program**

Beginning in the 2006-2007 school year, the City and the North Little Rock Electric Department collaborated with local school districts to provide a six-week energy conservation education program for area sixth graders. The program, designed to generate both immediate and long-term energy savings, builds student knowledge of environmental issues, provides high-efficiency devices to families, and serves as an effective community outreach program.

The program, *LiveWise*, involved 436 sixth-grade students and their families from Poplar Street Middle School, Sylvan Hills Middle School and the Montessori School of North Little Rock. The teachers and students received educational materials designed to build knowledge and demonstrate simple ways to save energy by changing both habits and devices. The program combines classroom activities with hands-on home projects to introduce resource-conscious behavior to students and their families. As part of the program, the students take home a Resource Action Kit that contains high-efficiency devices; with the help of their parents, they install the devices in their home and complete home audit reports.

The City provided funding ($38 per student) for the education program. Challenges included school administration buy-in and teacher participation due to the late start of the program in its first year. The *LiveWise* materials meet all State and national educational requirements, which allows the program to fit easily into teachers’ existing lesson plans. Upon completion of the program, all participating teachers indicated they would conduct it again and would recommend it to their colleagues.

North Little Rock officials say the program allows the City to collect data to better understand trends in energy usage and instills better energy conservation practices and attitudes in citizens, which saves them money on their energy bills. A survey showed that 82 percent of the students reported they had changed the way they use energy, 74 percent installed CFLs in their homes, and 56 percent said they installed new high-efficiency showerheads. From measurements returned by the students, the North Little Rock Electric Department projects annual savings of over 4,000,000 gallons of water, 15,000 therms of natural gas, and 240,000 kWh of electricity.

Additional information on the Energy Audit Program is available from Mac Bryson, Assistant System Engineer, at (501) 975-8778 or MBryson@NorthLittleRock.AR.gov. Additional information on the Sixth Grade Energy Conservation Education Program is
North Miami, FL: Mayor Kevin Burns

GREEN HOUSING REHABILITATION GUIDELINES

North Miami is committed to climate protection and, with Mayor Kevin Burns serving as the catalyst, the City Council has taken action on legislation and policy aimed at reducing the City’s greenhouse gas emissions.

The first “green” procurement ordinance in South Florida was created in North Miami. It offers preference points to vendors supplying green products or services and contains an administrative regulation which requires City staff to purchase only green products – cleaning products and recycled paper, for example – and to send correspondence electronically. The City maintains a Green North Miami Web site and publishes a Green North Miami Guide, both of which provide residents and business owners with tips on the steps they can take to reduce greenhouse gas emissions.

Recognizing that federal and State housing programs provide a unique opportunity to promote education and outreach on actions to address the problem of climate change, the Mayor initiated the adoption of the City’s “Housing Rehabilitation Specifications Guidelines” which require that 100 percent of federal Community Development Block Grant and Home Ownership Opportunities Program funds and Florida’s State Housing Initiatives Program funds must be used for rehabilitation, redevelopment and construction projects that contribute to the greening of the City. Specifically, the guidelines require that all funds spent in these programs be used in a sustainable manner to promote energy efficiency. Incandescent bulbs must be replaced with Energy Star fluorescent bulbs, for example, and only green products may be used.

North Miami’s housing initiative is based on the belief that providing an environmentally sound and sustainable dwelling unit and reducing energy consumption translates into financial savings for property owners and improves the quality of life in the City overall. City officials estimate that the initiative has reduced greenhouse gas emissions by approximately 613,500 pounds per year and has saved 423,000 kWh of electricity per year.

Additional information is available from Maxine A. Calloway at (305) 893-6511 or mcalloway@northmiamifl.gov.
Palm Desert, CA: Mayor Richard S. Kelly

PALM DESERT VISITOR CENTER

When Palm Desert needed a larger visitor center, City officials began designing a conventional building. They stopped, however, when inspired by the thought that a new center could be a showcase for environmentally friendly design, and that City government could provide an example of what such an approach to design can accomplish.

Today’s Palm Desert Visitor Center sets a new, environmentally friendly standard for construction in the California desert. The 8,200-square-foot building showcases several elements of sustainable design:

- **Energy and Atmosphere** – The Center uses 40 percent less energy than the amount permitted under stringent City building codes. Sixty photovoltaic roof panels generate solar energy. The building and its equipment use none of the chlorofluorocarbon-based refrigerants that contribute to ozone layer depletion. The use of low VOC-emitting paints, sealants, and adhesives reduced the volatile organic compounds that contribute to air pollution.

- **Water** – Drought-tolerant plants and efficient fixtures such as dual-flush toilets and low-flow showerheads allow the Center to use 50 percent less water than a conventional building.

- **Materials** – Counters, floor tiles, and carpeting are composed of recycled and rapidly renewable materials including newspaper, sorghum stalks, and hemp. Cabinetry is also made from rapidly renewable materials including bamboo, sunflower seed husks, and wheatgrass. More than half of the construction waste was diverted from landfills and recycled.

Taking this approach to the construction of the Center has reduced greenhouse gas emissions both locally and regionally. Partially solar powered, the Center requires less conventional electricity and natural gas than typical buildings. Showers and bike racks encourage employees to bicycle to work. The Center’s location is served by paths for electric golf carts and alternatively fueled public transportation, thus reducing the need for vehicle trips. Finally, the Center occupies a relatively small footprint on its site and is surrounded by trees and other plants.

Having to restart the design of the building from scratch and having no green buildings nearby to emulate posed challenges for the City and necessitated hiring a consultant from Portland, Oregon, to assist with the project. In addition, a scarcity of recycled and renewable materials and specialized construction methods increased costs. The final cost of the Visitor Center, $4.5 million, was financed with Redevelopment Agency bonds.

The Palm Desert Visitor Center recently earned LEED Silver certification, the first building in the Coachella Valley to be awarded LEED certification at any level and one of only two buildings in Riverside County and 22 buildings in California to have
achieved the Silver level. This may have launched a trend: five buildings in the Coachella Valley are now pursuing LEED certification.

The Palm Desert Visitor Center has become an educational beacon for schoolchildren, residents, and visitors who are attracted by its design and want to learn about the materials and ideas that went into it. With its gardens of native desert plants and waterfalls, the Center is a peaceful, scenic oasis situated on land that could easily have attracted a strip mall.

Additional information is available from David Hermann, Management Analyst, at (760) 346-0611, extension 380, or dhermann@ci.palm-desert.ca.us.

Pembroke Pines, FL: Mayor Frank Ortis

ENVIRONMENTAL PROGRAMS AND POLICIES

With the goal of enhancing the quality of life of its citizens, neighbors, and visitors, the City of Pembroke Pines has established policies and practices that improve water quality and increase conservation. The City has an extensive history of developing, codifying, practicing, and enforcing policies critical to this mission.

The City’s Comprehensive Plan and Code of Ordinances formalize policy and enforcement mechanisms which have led to the establishment and maintenance of a healthy ecosystem. For example:

- Pembroke Pines requires 10 acres of parkland for every 1,000 residents; Broward County requires three acres of parkland per 1,000 residents.
- The City complies with the Broward County Department of Planning and Environmental Protection’s Wellfield Protection Program.
- Commercial car wash facilities use recycled water.
- All irrigation water must come from a non-potable source – a requirement unique to Broward County.
- The building code requires the use of low-flow plumbing fixtures.
- Irrigation systems must use rain sensors.
- Fifty percent xeriscaping is required when installing new landscape materials.
- Native and drought-resistant plants must be used in new plantings, in compliance with the South Florida Water Management District’s Plant Manual Guide II.
- The City has in excess of 23,500 acres of open space which includes lakes, waterways, parks and recreation facilities, open space campuses, and wetlands. Its 500-acre wetlands bank centralizes the location of wetlands required by development in the City that would have otherwise been constructed at multiple locations throughout the City. This centralization markedly increases the effectiveness of the wetlands in filtering water prior to its entry into the everglades ecosystem.
- Planned Unit Developments located within the City have had to construct vast on-site wetlands to ensure the quality of run-off from the surrounding areas.
The City’s right-of-way cross section requires the construction of engineered swale systems abutting the pavement. The creation and maintenance of the swale system throughout the City is critical to the proper drainage and percolation of rainwater. The City’s water treatment plant utilizes Ion Exchange water treatment technology. With this advanced technology, the City currently meets Stage II water regulations as promulgated by the U.S. Environmental Protection Agency. The use of Ion Exchange technology saves millions of gallons of water each year, as make-up water required for the system is less than one percent while other advanced water treatment technologies have rates greater than 10 percent. The City uses 100 gallons of water per day per person, well below the South Florida Water Management District’s goal of 140 gallons per day per person.

Pembroke Pines is maintaining compliance with the requirements of the National Pollution Discharge Elimination System permit. At recent meetings of the Broward County Everglades Workgroup, the County presented charts acknowledging the high quality of the waters flowing from the City through the ecosystem. The South Broward Drainage District also indicated at these meetings that it has adjusted its water sampling locations because of the positive results it was obtaining from Pembroke Pines.

The City is also actively engaged in several regional efforts and workgroups, including the South Florida Water Management District/Lower East Coast Water Supply Plan, the Broward County/Water Matters Campaign, the Broward County/Everglades Workgroup, and the Florida League of Cities/Water Workshops. Pembroke Pines has pledged $20,000 to support Broward County’s newly-created Mobile Irrigation Laboratory, and it will be an active participant in the upcoming Broward County Water Matters demonstration project.

Additional information is available from Gordon “Skip” Keibler, Assistant City Manager, at (954) 431-4884 or gkeibler@ppines.com.

Portland, OR: Mayor Tom Potter

MULTIFAMILY ASSISTANCE PROGRAM

For almost three decades, Portland has focused its policies, programs, and practices on reducing energy use while strengthening the local economy. Among the more successful efforts has been the City’s Multifamily Assistance Program (MAP), which improves the energy efficiency of multifamily buildings. Since 1987 this program has facilitated the weatherization of 44,000 apartment units by building owners, lowered utility bills for 100,000 residents, and saved nearly 75,000 mWh of electric power each year.

MAP addresses a classic problem in the building industry: Owners invest in capital improvements, but tenants pay the utility bills. In Portland, the City recognized that all parties, and the community as a whole, could benefit if owners were helped to recognize
the value of energy-efficiency improvements, and if the project-management process were simplified.

City staff members are trained in the technical aspects of energy-saving measures that qualify for utility and government incentives, and in the nuances of the available rebates, tax credits, and low-interest financing. MAP staff simplifies what would otherwise be a complicated and time-consuming process for building owners by preparing paperwork, reviewing contractor bids, and providing guidance and technical advice. And they are persistent. The result is that building owners have invested significant private capital in energy-efficiency improvements.

MAP provides a powerful example of how reducing carbon emissions can improve quality of life, maintain affordable housing, and cultivate business development. It has improved the lives of residents, added jobs and dollars to the local economy, and helped lower energy bills for many middle- and low-income families, resulting in significantly increased discretionary incomes. It has upgraded Portland’s building stock and reduced tenant turnover. It has helped local weatherization firms add jobs and has redirected funds back into the local economy that previously went to purchase fossil fuels. All of this has been accomplished while generating considerable energy savings. Reductions in natural gas and electricity usage from MAP result in savings of more than 3.3 million mWh and 1.5 million metric tons of CO₂ over the lifespan of the buildings. Annual reductions represent over three percent of total local carbon emissions.

MAP pioneered the use of carbon offset funding to accomplish these savings. The program also demonstrates that high-quality customer service and a sound business case can simultaneously achieve tremendous energy savings and community benefits.

Competing demands for investment capital, the cyclical nature of the rental market, and ever-shifting financial incentives for efficiency improvements have provided constant challenges for the program. Over time, MAP staff members have carefully cultivated relationships and credibility among owners, trade associations, and weatherization contractors, and have been able to draw upon this goodwill to overcome obstacles.

MAP receives no City taxpayer dollars. It has been funded entirely by an innovative structure of public, private, and non-profit partners, and the sale of the resulting carbon offsets. Funding for a typical year includes $200,000 from the sale of carbon offsets, $120,000 from ratepayer efficiency funds, and $20,000 from the Oregon Department of Energy.

Additional information is available from Andria Jacob, Office of Sustainable Development, at (503) 823-7616 or ajacob@ci.portland.or.us.
Richardson, TX: Mayor Gary A. Slagel

TRANSPORTATION DEMAND MANAGEMENT PROGRAM

The City of Richardson’s Transportation Demand Management (TDM) program was approved by the City Council in 1995 in response to the growing awareness of the positive impact that car and van pooling can have on traffic congestion and air quality. The program started with a survey of City employees, collecting information on their home addresses and their desire and/or need to car pool and van pool, and using the information to facilitate the pooling process. Twelve years later, several car pools and one van pool continue to operate. The City's TDM database calculates each individual employee's monthly vehicle miles, gallons of fuel, and pounds of pollution saved. Employees average a total of more than 500,000 miles of savings each year, resulting in a concomitant reduction in pollutants – 429,362 pounds of CO₂, 26,000 pounds of CO, and 1,773 pounds of NOₓ – and conservation of 34,886 gallons of fuel.

Greater use of mass transit has been an integral part of the City’s TDM strategy. Working with the Dallas Area Rapid Transit (DART) Authority, Richardson secured three light rail stations that are located next to the Central Expressway, the main highway carrying 500,000 vehicles a day north and south through Richardson. A High Occupancy Vehicle (HOV) lane currently under construction on this expressway will further aid traffic flow. In addition, three major Transportation Oriented Developments (TOD) providing 1,669 housing units and additional commercial and retail space are under construction or have received City Council approval and are in the final planning stages.

Providing City employees with reduced mass transit fares has proved to be popular, with nearly 40 employees participating in the fare program each month. The City subsidizes 50 to 60 percent of the cost of the employee DART passes. In addition, employees with City business in downtown Dallas often take advantage of free DART passes for rides to and from downtown.

Costs of the City's TDM program are low: It requires one-quarter of an employee’s time and $24,000 for promotions and incentives.

Efforts to involve private sector employers in the TDM program were stymied with the events of September 11, 2001, which had a significant impact on local employment. Recently, however, the City has taken over management of a shuttle program serving a loop route of area businesses near a light rail station, and will be meeting soon with employers in the area to encourage their greater involvement in the funding of the system.

Also contributing to TDM goals is the City’s network of 24 miles of hike and bike trails. A like number of miles are in the planning stages and awaiting funding. Major
connectors to neighboring cities' hike and bike trails are part of Richardson’s trails plan.

Richardson’s TDM program is a recognized success, having received the Dallas Area Mobility Coalition's annual TDM award for 13 straight years. The Environmental Protection Agency recently recognized the City as a "Best Workplace for Commuters" award, only the second Texas city to have received this award.

Additional information is available from Tom Hatfield, Director of Health, at (972) 744-4032 or tom.hatfield@cor.gov.

Rochester, NY: Mayor Robert J. Duffy

CITY WATER BUREAU OPERATIONS CENTER

The City of Rochester’s original Water Bureau Operations Center, built in 1913, was outdated, inefficient, in disrepair, a blight on its neighborhood, and a potential health and safety risk to employees. The need for a new Center was clear and, given the severe state of decay of the old facility, City officials determined it was necessary to get the new one up and running as quickly as possible. Further, for the sake of neighborhood stability, and to avoid having to acquire a new site, they determined that the new Center would be built on the original site. The site, however, having also been used for years as the City’s public works facility, had become a Brownfield, with significant soil and groundwater contamination.

While some initial clean-up of the site began in 1999, the decision to reuse it wasn’t final until a few years later. Planning, design, final clean-up, construction, completion, and move-in were accomplished in less than six years, but the pace of the project did not allow the City to seek outside funding. The entire project cost, therefore, was covered through City bonding – $2 million for clean-up and $12 million to have the building ready for use.

The new Water Bureau Operations Center was built to LEED standards and, in August 2007, became the first municipal building in New York State to receive Gold level certification. In addition, over 17,000 tons of construction and demolition material were recycled and reused in the new facility. Energy efficiency is 31 percent above New York State code requirements, and 100 percent of the electricity used is purchased from renewable sources. Among the benefits produced by the project, officials say, are a healthier, safer work environment and neighborhood; a reduction in the use of fossil fuels; and increased value of surrounding properties. More importantly, they say, it stands as a model of public leadership in environmental sustainability and stewardship.

As the “flagship” of the City of Rochester’s commitment to environmental stewardship, the new Center has energized City staff, as well as citizens, to become involved in Rochester’s growing climate protection efforts. The City now has an inter-departmental Green Team which addresses all City planning and purchasing processes to ensure
sustainable practices. In Rochester, all new construction and redevelopment will meet LEED standards, new City fleet vehicles will be hybrid or powered with alternative fuel, and the City will continue to increase its purchase of electricity generated from renewable sources.

Additional information is available from Alinda Drury, Senior Staff Assistant, at (585) 428-6140 or drury@cityofrochester.gov.

Rohnert Park, CA: Mayor Vicki Vidak-Martinez

GREEN BUILDING ORDINANCE

In Rohnert Park, as of July 1, 2007, all new single-family dwellings, multi-family dwellings, commercial development, and City-sponsored construction projects are subject to green building standards. City officials and staff expect that the new ordinance creating these requirements will result in reduced greenhouse gas emissions, more responsible use of building materials, creation of more environmentally-friendly buildings, conservation of water and energy and, ultimately, sustainability.

City officials are aware that many California communities have implemented voluntary green building programs to encourage green building practices. Rohnert Park, however, has taken the next step – an unprecedented integration of environmental stewardship and the regulatory process in the form of a comprehensive ordinance mandating that all new construction meet high green building standards.

Rohnert Park’s Green Building Ordinance establishes three tiers for all construction based upon type of construction and size or relative environmental impact of the construction project. These tiers are used to determine the applicable compliance threshold for a project. The compliance thresholds consist of points or ratings that a project is awarded based upon its use of green building techniques. A critical aspect of the ordinance is its flexibility: Builders can select the green building techniques that best suit a particular job. As green building techniques evolve over time, the tiers and point system will evolve in tandem. The Rohnert Park Green Building Ordinance is available at www.rpcity.org.

The New Home Construction Green Building Guidelines, published by the nonprofit Build It Green, is the City’s referenced standard for residential green building; LEED guidelines apply to commercial construction. Construction guidelines include:

- Minimizing construction waste;
- Keeping pollutants from landscape maintenance out of waterways and reducing landscaping water use;
- Constructing the building for energy and resource efficiency;
- Using insulation products with recycled content and low or no formaldehyde emissions;
Designing the plumbing system to reduce hot-water runs, insulating hot water pipes, and installing water-efficient toilets;

Installing heating and air conditioning for energy efficiency and better indoor environmental quality;

Incorporating solar hot water systems and photovoltaic systems that generate electricity from sunlight; and

Selecting high-efficiency appliances.

Certain types of construction are exempt from the new Green Building section of the municipal code. For example, earthquake retrofits do not have to comply, and residential additions are exempt unless more than 500 square feet of new floor area is being added, in which case the project must earn at least one point, requiring that the homeowner receive some green building education.

For residents concerned about the additional costs of green buildings, City officials note that *The Economist* reports green building adds only one to three percent to the cost of construction.

Additional information is available from Peter Bruck, Building Official, at (707) 588-2257 or pbruck@rpcity.org.

**Salt Lake City, UT: Mayor Rocky Anderson**

**ENVIRONMENTALLY AND ECONOMICALLY SUSTAINABLE BUSINESS PROGRAM**

As the title suggests, in Salt Lake City’s Environmentally and Economically Sustainable (e2) Business Program, Salt Lake City staff members work with local businesses, showing them how they can become both more environmentally and economically sustainable. Program staff provides information and research on energy conservation, recycling, cleaner transportation choices, water use, and waste disposal – all designed to show businesses how they can save money while operating in a sustainable manner. And in periodic e2 business meetings, owners and managers can network, share ideas, and help one another to solve issues that may arise.

The e2 Program was created in 2003 to recognize and support the Salt Lake City business community and, in so doing, help the local economy. City officials noted at the time that, while the Environmental Protection Agency had a Performance Track Program that recognizes environmental efforts of large industries, and the State of Utah had a similar program, there was no mechanism to reach the numerous small and medium-size businesses and employees that would not ordinarily deal with these programs. The e2 Program, believed to be the first of its kind, fills a gap by helping non-industrial businesses understand that they can have an impact on the environment. Businesses in the Program are now being asked to calculate greenhouse gas reductions achieved to document progress.
With no advertising budget to launch the e2 program, start-up efforts were slow, but once a core group of businesses were identified, more began applying, and growth has been steady. Salt Lake City provides staff for the program, and interns help manage it. Other support is donated by local businesses which hold events or assist with advertising costs. The total budget is very small – $5,000 to $10,000 per year.

Among the benefits offered participants in the e2 Program – in addition to the obvious cost savings they realize through reduced resource use – are:

- Ability to attract new customers and increase customer loyalty;
- Free advertising purchased through grants and other funding sources of the Salt Lake City Green Program;
- Reduced advertising costs in the City Weekly, Catalyst Magazine, and the new ReDirect Guide (Green Pages);
- Free consultation with Salt Lake City staff experts;
- Use of the e2 brand; and
- Knowledge that the business is contributing in a positive way to the environment and community.

Another benefit realized is that employees of e2 businesses have become more environmentally aware and are making environmentally positive changes in their personal lives.

Additional information is available from Vicki Bennett, Environmental Programs Manager, Salt Lake City, at (801) 535-6540 or vicki.bennett@slcgov.com.

San Diego, CA: Mayor Jerry Sanders

ALVARADO POWER PURCHASE AGREEMENT FOR CLEAN SOLAR ENERGY

The delivery of safe, clean water and the effective processing of wastewater are only two of the City of San Diego’s basic responsibilities, but they account for 61 percent of the City’s total annual electrical use and 54 percent of its energy costs. Because electrical outages cause interruption of water delivery and wastewater processing, energy costs have nearly tripled in the past six years, and all municipal services are competing for limited funding, securing sufficient energy at a predictable cost is a critically important requirement.

In response, the City has formed a public-private partnership with SunEdison, San Diego, LLC, through which it is leveraging tax credits and self-generation incentives to install a one-megawatt photovoltaic array producing clean, renewable energy at the Alvarado Walter Filtration Plant. Under the agreement, Sun Edison will install, own, operate, and maintain the solar array; the City has agreed to purchase all of the power produced by the solar array for a 20-year period, starting at 12 cents per kilowatt hour in the first year, and
increasing by one percent each year after that. This rate is 4.5 cents lower than the current applicable rate provided by the local utility.

The photovoltaic array at the Alvarado Plant includes more than 6,100 solar panels installed on top of three water storage tanks that cover 4.3 acres. It is anticipated that the system will produce 1,602,572 kilowatt hours in the first year and provide 20 percent of the Plant and laboratory facilities’ total energy requirements. The Alvarado Power Purchase Agreement (PPA) is anticipated to reduce annual energy costs for the Plant by $40,000.

Installation of the arrays posed two challenges for the City. The first was securing the solar panels to the top of potable water tanks without jeopardizing the tanks’ structural integrity; the second was avoiding rain water infiltration resulting from the installation, operation, and maintenance of the solar panels. Both challenges were met.

The Plant’s photovoltaic system produces enough clean, renewable energy to power 1,000 homes, and is equivalent to planting 700 trees. The system saves 460 pounds of CO₂, 3,275 pounds of SO₂, and 3,650 pounds of NOₓ each day.

The agreement with Sun Edison enabled the City to avoid a $6.5 million municipal capital expenditure and is providing locally produced secure energy at predictable costs. City officials see the photovoltaic array as an efficient, conscientious use of taxpayer dollars which has reduced the need for additional power plants in the region and protected the environment by reducing greenhouse gases.

Additional information is available from Tom Blair, Energy Administrator at (858) 492-6005 or TBlair@SanDiego.gov.

**Santa Clarita, CA: Mayor Marsha McLean**

**GREEN TRANSIT MAINTENANCE FACILITY**

In May 2006 Santa Clarita completed construction of one of the world’s only LEED Gold certified buildings using rice straw-bales, solar, and other energy-efficient and innovative technologies. The 12-acre Transit Maintenance Facility (TMF) includes a 22,000 square-foot administration building, 25,000 square-foot maintenance building, bus wash facility, compressed natural gas (CNG) fueling island for buses, and a publicly-accessible CNG fueling station.

The $24 million project was designed to accommodate more than 150 buses and 160 personnel, with room for future expansion. Construction costs for the administrative office building alone were approximately $200 per square foot. Eighty percent of the funding for the TMF was provided by the Federal Transit Administration; most of the balance was provided by the South Coast Air Quality Management District.
In 1999 the Santa Clarita City Council adopted a Sustainability Plan which included the development of a Green Building Program. The decision to build the TMF was in response to a request from members of the building community for the City to demonstrate that green construction is doable and cost effective. Because the City had no previous experience in the construction of LEED certified buildings it was necessary to create an extensive and participatory education and integrated design process and assemble a multi-disciplinary team to design the building. Team members included representatives of all phases of the building’s life, including plan checkers, inspectors, occupants, and maintenance staff. Among the innovative elements incorporated were rice straw-bale walls, water source heat pumps, raised floors, photovoltaic solar panels, a daylighting (clerestory windows) strategy including electric lighting with daylight sensors, material source reduction (no ceiling tiles), low VOC finishes, deep roof overhangs for shade in summer, and water-efficient planting material, irrigation, and plumbing fixtures.

Rice straw is a large generator of green house gases in California; it generates GHG whether it is burned, fuel for a biomass facility, or left to decompose. Rice straw-bale construction has resulted in significant reductions in GHG emissions at the State level. Because of its highly-rated insulation properties, buildings using it consume less energy. The City’s TMF energy and water conservation programs eliminate 240,000 pounds of GHG emissions and its 174,506 kWh solar panels eliminate 140,000 pounds of GHG emissions. Its use of recycled fly ash in concrete also reduced CO2 emissions.

The TMF has improved transit operations in the City and serves as the green building model sought by the local building industry. Tours to promote green building are conducted by staff for residents, builders, and decision makers at local, State, and federal levels.

Additional information is available from Travis Lange, Environmental Services Division Manager, at (661) 286-4098 or tlange@santa-clarita.com.

**Tacoma, WA: Mayor Bill Baarsma**

**GREEN RIBBON TASK FORCE - BIODIESEL INITIATIVE**

Tacoma is taking a community based approach to identifying and implementing measures to reduce emissions that cause global warming. The Mayor’s Green Ribbon Climate Action Task Force is made up of community leaders and stakeholders representing a wide range of interests – business leaders, the development community, labor unions, environmental groups, local universities, architects, trucking and freight transportation, transit, government, and regulatory representatives. The group is working toward a comprehensive plan to reduce carbon emissions in a manner that will also improve the livability of the City and encourage economic development.
The effort has strong support from the Mayor and City Council, and all of the major stakeholders have contributed significant time and energy to the process, indicating that they believe the process and ultimate product are worth the effort. Staff to organize and support the effort have been selected and funded out of current programs, keeping the cost of the effort to a minimum. The Task Force is committed to exceeding Kyoto goals – consistent with a resolution adopted by the City Council early in 2006 to do this – and has a target of reducing emissions that is consistent with the Intergovernmental Panel on Climate Change recommendations for 2050. Their recommendations will address transportation, energy, and all other major sources of the City’s emissions. City officials say the diversity of the stakeholders has yielded very promising ideas and good discussions of potential carbon reduction measures.

One of the specific carbon reduction initiatives already launched in Tacoma is the City’s use of B20 biodiesel in its entire solid waste fleet and a majority of its diesel-fueled Water and Power vehicles – a total of more than 220 vehicles. The City converted to this type of biodiesel in 2001 and currently uses approximately 700,000 gallons per year. (In the area, only King County Metro Transit uses more.) In the coming year, an additional 20 large vehicles in the Wastewater Utility will be added to the program.

Tacoma was one of the first government fleet operators in the nation to use biodiesel for an entire fleet of utility vehicles. American City and Town magazine reported that it was the first city in the Pacific Northwest to fully commit to the fuel.

The ongoing cost of this program is the difference in price between B20 biodiesel and regular diesel fuel, and biodiesel is currently slightly cheaper. Only minor costs were incurred in preparing older trucks to use the fuel. The U.S. Department of Energy estimates that using biodiesel reduces CO2 emissions by 15 percent. With the City using about 700,000 gallons of biodiesel per year for its garbage and utility fleets, annual CO2 reductions are estimated to total approximately 1,500 tons.

Additional information is available from Gary Kato, Assistant Division Manager, at (253) 593-7713 or gkato@cityoftacoma.org.

**Tucson, AZ: Mayor Robert E. Walkup**

**TUCSON SOLAR PROGRAM**

A greenhouse gas inventory completed by the City of Tucson in 1998 prompted the City to develop several new policies and programs to protect air quality. The Mayor and City Council adopted the Sustainable Energy Standard for all new City facilities to increase energy efficiency by 50 percent and require the “beneficial use of solar energy.” Since 1999, Tucson has continuously increased its solar capacity, setting an example for citizens and surrounding communities. The City has installed photovoltaic (PV) systems producing more than 200 kWdc and solar thermal systems producing approximately 3.8 million BTUs per day.
In 2000, six solar water heaters were installed in the Public Safety Training Academy; in 2002, a 43.2 kW PV array was installed in the Hayden-Udall Water Treatment Plant; in 2004, 72 solar pool heaters were installed in the Adaptive Recreation Center; from 2005 to 2007 a 74.4 kW PV array was installed in the Thornydale Reclaimed Water Storage facility; and in 2005 a 60 kW PV array was installed in the Pennington Street Garage. Solar applications unique to Tucson include the elephant solar water heater, PV flood control warning lights, and solar bus shelters.

The success of the Tucson effort required overcoming the “lowest first cost” mentality of administrators by educating them to look at the life-cycle cost implications of solar power for utilities and maintenance; dealing with structural and warranty concerns associated with mounting solar equipment on City rooftops; and adjusting to changing solar technology by building on successful previous projects and learning from failures.

The City has developed innovative ways to finance and maintain its solar projects, including utility partnerships, public grants, and private financing. In 2000 the Mayor and City Council authorized a “1% for Solar Fund” (approximately $160,000 annually) to increase the use of solar power in City projects. Since then the City has invested more than $1.78 million in solar projects – about $1.12 million in City funds; $380,000 in utility rebates, grants, and in-kind support; and $280,000 in private financing. Recently, a $7.7 million Clean Renewable Energy Bonds allocation to install PV systems totaling 1.2 megawatts on seven facilities was received, and a $200,000 Solar American Cities grant to further expand the Tucson solar market has also been received from the U.S. Department of Energy.

Additional information is available from Doug Crockett, Energy Manager, at (520) 791-5111, ext. 320, or doug.crockett@tucsonaz.gov.

**Waukesha, WI: Mayor Larry Nelson**

**PUBLIC-PRIVATE ENVIRONMENTAL PARTNERSHIP**

An effort by the City of Waukesha to find creative solutions to the challenge of shrinking budgets and increasing demand for local services led to a partnership with locally-based Johnson Controls, Inc. The company outlined for the City ways to reduce operating costs and provide more productive and efficient facilities and infrastructure systems for both City staff and residents. In developing the plan, JCI evaluated the City’s existing equipment and areas in City facilities in order to design a complete maintenance strategy. The evaluation covered buildings, traffic signals, and sewage pump stations. The traffic signals qualified for energy efficiency grant dollars from the local energy utility and the Federal Highway Safety Improvement Program.

The JCI project received full support from the City’s Finance Committee. The contract with JCI was innovative in the way it required guaranteed performance. Over a 10-year
period, if cumulative benefits to the City do not equal or exceed the cost of the initial investment, the City will be refunded any payments made to Johnson Controls during that period. The investment before grants was $1,682,000; the total annual projected savings in the first year are $204,095. The City issued General Obligation Bonds to cover the cost of the majority of the project, but a Federal Highway Safety Improvement grant of $400,000 was used to finance 90 percent of an LED signal conversion project.

The JCI project concentrated on building lighting, water conservation, and HVAC equipment, with a total of 38 improvement measures that would maximize energy savings. The City reduced water consumption in the City Hall building alone by 77 percent. By utilizing more efficient equipment and using solar harvesting ballast in some buildings, the City was able to reduce annual greenhouse gas emissions annually by 3,340,522 pounds of CO2, 14,775 pounds of SO2, and 7,991 pounds of NOx. This converts to 602 passenger cars not driven, 16,585 gallons of gasoline not used, or saving the total electricity used in 357 households.

Beyond the JCI contract, under a City sprinkling ban in place from May 1 to October 1, residents are restricted to watering their lawns and gardens in the early morning or late evening, two days per week. This restriction has resulted in an 11 percent reduction in water usage Citywide. This year the City advertised a Conservation Challenge in which residents are asked to reduce their water use during the 2008 calendar year; the winner will receive free water for a year. Already, 100 residents have accepted the Challenge.

Mayor Larry Nelson believes that the significant reductions in water and energy consumption that are being achieved will contribute to the quality of life in his City that has made it *Money Magazine’s* 36th best small city in the U.S.

Additional information is available from Mayor Nelson at (262) 524-3700 or mayor@ci.waukesha.wi.us.