CLIMATE CHANGE 101
Local Action

Across the United States, cities and counties are enacting policies and programs to reduce greenhouse gas emissions. Many local governments are motivated by concerns about the impacts of climate change in their communities, as well as an understanding that climate solutions can benefit local economies and local residents. These actions reflect a strong history of local leadership in climate protection in the United States. While local governments face a number of limitations in addressing climate change, they can be a key part of the solution. Their most important role may be to provide useful models and calls to action to higher levels of government.

WHY FOCUS ON LOCAL ACTION?

With rates of urbanization increasing around the globe, and per capita energy consumption on the rise, cities and towns around the world are an important part of the climate change problem—and they can be an important part of the solution as well. They recognize that they have real influence—and a crucial role to play—in reducing emissions.

Local officials are already taking action. Local governments nationwide have adopted formal climate protection plans and are achieving cuts in their greenhouse gas emissions. To date, climate protection initiatives reported by cities and counties have reduced greenhouse gas emissions by more than 23 million tons annually (equivalent to the emissions produced by 1.8 million households or 2.1 billion gallons of gasoline).[1] These initiatives also have substantial co-benefits such as reducing local air pollution and saving more than $535 million in energy and fuel costs every year.

Opportunities and Influence. Compared to sprawling suburban areas and rural communities, cities and towns have many more opportunities to influence local energy use—for example, by improving public transit and encouraging bicycle and foot traffic. Many cities are adopting zoning rules that promote higher-density, mixed-use forms of development, often near public transit locations. Such development reduces vehicle emissions and preserves green space, which has its own climate benefits. Under Oregon law, every city or metropolitan area has an urban growth boundary aimed at controlling urban expansion onto farm and forest lands.

Urban Facts and Figures

- As of 2005, the majority of the world's population lived in cities.
- Seventy-five percent of the world's energy is consumed in urban areas.
- Together, greenhouse gas emissions from the 10 largest U.S. cities account for 10 percent of total U.S. emissions.
- Around the world, 2 billion more people are expected to live in cities by 2030.[2]

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PEW CENTER ON Global CLIMATE CHANGE

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This brief is part of a series called *Climate Change 101: Understanding and Responding to Global Climate Change*, published by the Pew Center on Global Climate Change and the Pew Center on the States.

It's not just about reducing energy demand, however. Cities and towns have some opportunities not available to their suburban and rural counterparts in achieving emissions reductions from the supply side of the energy sector. In a world that is moving to combined heat-and-power supplies and high-efficiency, distributed energy sources, the higher density and the relative compactness of cities and towns enhance their appeal as efficient proving grounds for new and emerging energy technologies. It is the same principle that ensured that high-speed internet and wireless services appeared in cities first—the more potential customers there are in a given area, the greater the efficiency as new technologies are brought to scale.

Relevant Authorities. Beyond having an array of opportunities to reduce emissions, cities also have the authority to make reductions happen. In the United States, local governments are responsible for issuing building and development permits and for making land-use decisions about residential and commercial neighborhoods—decisions that profoundly influence local energy use, especially in the transportation sector. Local governments also have the authority to determine the availability of public transit, and to set building codes that influence the energy efficiency of houses and commercial buildings in their communities.

Many local governments also control the local electricity supply through municipal utilities; others wield substantial influence through franchise agreements with utilities. As a result, governments can take steps to reduce the carbon intensity[3] of the electricity consumed in their communities—for example, by requiring higher percentages of clean, renewable energy in the electricity fuel mix. In the City of Austin, Texas, lawmakers established a requirement that 5 percent of local electricity demand come from renewable energy sources. The city's municipal electric utility is meeting the requirement by stepping up purchases of solar and wind power.

Many cities see opportunities in protecting the climate. Often, policies that reduce greenhouse gas emissions also provide other benefits for communities.

WHAT IS DRIVING LOCAL ACTION?

There is Much to Lose . . . One of the major factors motivating local governments to act on climate change is the recognition that it poses a direct threat to cities and towns. Among the likely consequences of climate change, scientists say, is an increase in extreme weather. Stronger hurricanes and storms, temperature spikes, droughts and flooding all will have serious effects in cities. Hurricane Katrina, which ravaged New Orleans as well as other Gulf Coast cities in 2005, offered a preview of the kinds of storms that could be more likely in the future. The storm and the ensuing damage forced local governments throughout the nation to pay fresh attention to the potential hazards of climate change.

Local officials also are concerned about the higher temperatures projected by scientists. In addition to fears of future heat waves like the one that killed 141 people in California in the summer of 2006,[4] mayors have voiced concern about the effect of higher temperatures on local air pollution. As summer temperatures rise, ground-level ozone or smog increases and can exacerbate respiratory illnesses such as asthma and bronchitis. The health-related impacts of air pollution in California's San Joaquin Valley alone drain the region's economy of $3 billion every year—and communities across the nation face similar costs.[5] These costs result from additional hospital admissions, missed work and school days, and a higher incidence of respiratory and heat-related illnesses, as well as premature deaths.

Climate change will have other effects on cities as well. Decreased snow pack, earlier runoff, and melting glaciers, for example, will affect city water supplies, especially in the West. Sea level rise will pose new and serious challenges for coastal cities. Midwestern cities are concerned about the possibility of more floods, while cities in the Southwest fear a higher incidence of drought. All regions of the country—and all communities in those regions—increasingly will feel the effects of climate change, prompting more and more local officials to act.

… And Much to Gain. But it is not only the potential problems related to climate change that are spurring local action; many cities see opportunities in protecting the climate. Often, policies that reduce greenhouse gas emissions also achieve other benefits for communities. For example:

- Energy efficiency and fuel-saving efforts create financial savings for local government, as well as local businesses and residents—savings that can accrue to the local economy.
- Measures that reduce vehicle travel also contribute to improving local air quality—a strong motivating factor for metropolitan areas that are out of compliance with federal clean air requirements.
- Programs and policies that encourage walking and biking contribute to healthier residents and a stronger sense of community.

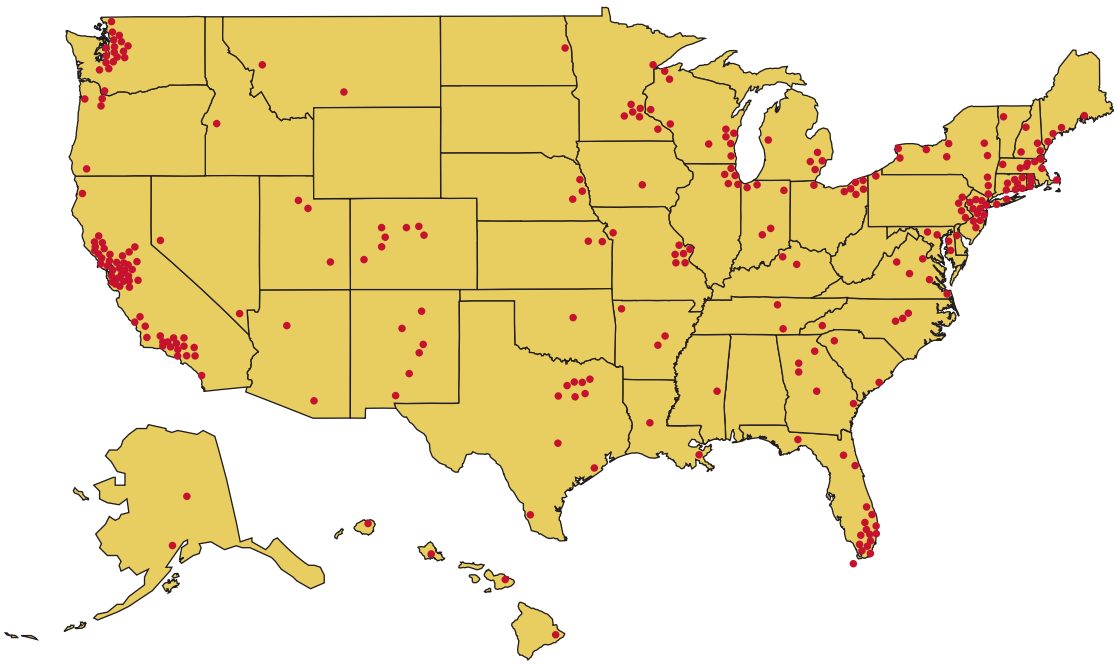
In addition, cities can reap significant rewards as the world embraces GHG allowance trading and other market-based mechanisms for reducing emissions. Cities and towns can achieve reductions more efficiently than lower-density suburbs and rural communities, and sell these credits in carbon markets.

A HISTORY OF LOCAL LEADERSHIP

Local commitment to climate solutions is not new; in fact, cities were leaders in worldwide efforts to reduce emissions from the start. The first greenhouse gas reduction target adopted by any level of government was put forward by Toronto, Canada in 1989. That city's actions helped inspire the first formal municipal program for climate protection, the Urban CO_2 Reduction Project, which was launched in 1991 by the International Council for Local Environmental Initiatives (ICLEI).[6] With only 14 local governments from North America and Europe signed on at the start, this program ultimately developed into the international Cities for Climate Protection (CCP) Campaign, which enlists local governments in developing targets, timelines and implementation strategies for reducing their emissions. The CCP Campaign now represents more than 770 local governments on six continents. In the

Figure 1

Cities Committed to the U.S. Mayors Climate Protection Agreement



Mayors of 320 cities have signed the U.S. Mayors Climate Protection Agreement as of October 2006.
Source: http://www.seattle.gov/mayor/climate/

Local Action on Climate Change

Local governments have a wide range of options for reducing their communities' contributions to climate change. The following examples show some of the steps that localities with climate protection programs are taking.

Energy Supply

Green Power Purchase—Montgomery County, MD

In 2004, Montgomery County led a group of local governments and agencies in a wind energy purchase representing 5 percent of the buying group's total electricity needs. The buying group will collectively purchase 38 million kWh of wind energy each year, for an annual reduction of 21,000 tons of carbon dioxide emissions.

Landfill Methane—San Diego, CA

More than 700,000 tons of carbon dioxide equivalent[7] emissions are being kept out of the atmosphere each year as a result of San Diego's capture of landfill methane gas. In addition to producing electricity for other municipal uses, the gas is converted to liquefied natural gas (LNG) to fuel more than 100 refuse collection trucks.

Combined Heat and Power—St. Paul, MN

District Energy St. Paul burns wood waste to produce steam, which powers turbines that produce electricity. Waste energy from this process provides heat to downtown businesses and homes. This process uses wood waste to displace an estimated 110,000 tons of coal per year, reducing carbon dioxide emissions by an estimated 280,000 tons annually.

Energy Efficiency

ENERGY STAR®—Atlanta, GA

As part of Atlanta's Energy Conservation Program, the city's Department of Procurement has instituted an ENERGY STAR energy-efficient purchasing policy. By purchasing office equipment and other products that have the federal ENERGY STAR label, the city will save energy, which translates into financial savings and reductions in greenhouse gas emissions. The city estimates that it could save nearly $400,000 over ten years if it replaced 1,000 exit signs with ENERGY STAR-qualified models alone.

Low-Income Weatherization—Portland, OR

Designed as a means to increase the disposable income of Portland's low-income families, the city's Block-By-Block Weatherization Program weatherized 261 homes from 2001 to 2003. Low-income families pay a disproportionate amount of their disposable income on utility bills. By reducing the heating and cooling requirements of homes, the city increases the purchasing power of its low-income community.

Municipal Utility Programs/Incentives—Fort Collins, CO

The City of Fort Collins' municipal utility department has instituted the ZILCH program (Zero Interest Loans for Conservation Help) to provide interest-free financing for home energy improvements and upgrades. Loans of up to $2,300 must be repaid within five years or less. Financed projects must have payback periods of 10 years or less in order to ensure that homeowners are getting the most out of their improvements.

Transportation

Transportation Choices—Honolulu, HI

The expansion of Honolulu's Bus Rapid Transit (BRT) program has led to steady growth in passengers choosing the bus for their commute. Monthly ridership has increased from about 100,000 riders in 1999 to more than 630,000 in 2005. Assuming that half of BRT ridership represents a shift from trips made in passenger vehicles to trips taken on BRT, this equals an annual carbon dioxide reduction of approximately 7,000 tons.

Smart Growth/Land Use—Miami-Dade County, FL

Miami-Dade County's Comprehensive Development Master Plan (CDMP) promotes three scales of "Urban Centers" (regional, metropolitan and community) linked by effectively and rationally planned roadway and transit systems. The county is working with municipalities to promote sound transit-oriented design principles, such as mixed residential and commercial developments and commercial revitalization near transit stops, to promote transit use in the urban centers.

Local Action on Climate Change *(continued)*

Clean Diesel and Green Fleet Campaigns—Keene, NH

From fire engines to snowplows, all of the vehicles in the City of Keene, New Hampshire's Public Works Department are running on B20 biodiesel fuel. The fleet is fueled onsite at the department's pump. The biodiesel performs well in cold temperatures and has improved the air quality inside the fleet maintenance facility. The city has burned more than 4,400 gallons of biodiesel since 2002.

Trees and Vegetation

Cool Roofs—Chicago, IL

Chicago is the leading city in the nation, perhaps the world, in implementing green roof technologies. Green roofs add insulation and keep buildings cooler during warm summer months. In addition to the world-renowned rooftop garden on City Hall, the city offers a grant program for homeowners and small businesses to implement green roofs on their buildings. Today, there are more than 80 municipal and private green roofs totaling more than 1 million square feet in Chicago.

Cool Technologies—Houston, TX

Cool Houston! is a program designed to reduce urban temperatures through the use of technologies such as reflective and green roofing, paving with light-colored or porous materials, and a greatly expanded forest canopy. The Cool Houston! plan, published in 2004, includes a goal to plant 10 million new trees in 10 years, along with other strategies for reducing the urban heat island effect.

Cross-Cutting

Lead By Example—Seattle, WA

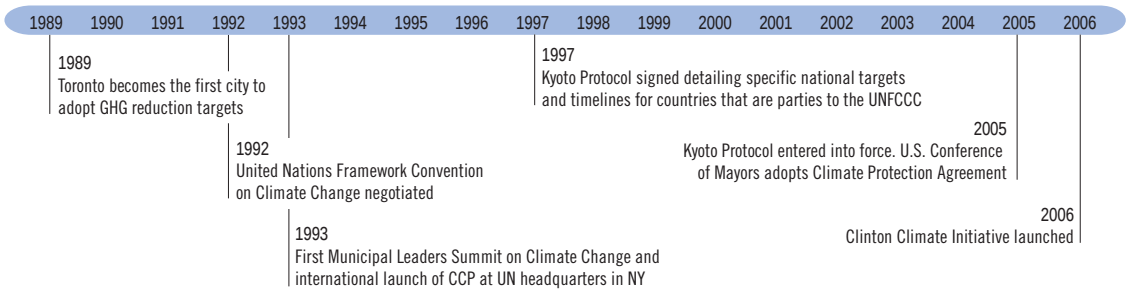
Seattle's city government has reduced its greenhouse gas emissions by more than 60 percent since 1990 by constructing green buildings and operating alternative fuel vehicles. In addition, the city's municipal utility, Seattle City Light, is the only utility in the nation to become "carbon neutral." The utility achieved this goal by offsetting (through funding greenhouse gas-reducing projects) any carbon emissions that it is producing.

Community Outreach—Burlington, VT

The 10-Percent Challenge in Burlington is a voluntary program to raise public awareness about global climate change and to encourage households and businesses to reduce their greenhouse gas emissions by at least 10 percent. Enlisting innovative outreach methods, the program is achieving an estimated annual reduction of 1,500 tons of carbon dioxide in the residential sector alone.

Figure 2

Timeline of Local Government Action Around the World



United States, 200 cities, towns and counties participate in the CCP Campaign, representing 66 million people, or 22 percent of the American population.

Local action on climate change took a major step forward in early 2005, when Seattle Mayor Greg Nickels drafted the U.S. Mayors Climate Protection Agreement. Under this agreement, mayors pledge that their communities will achieve the 7 percent reduction in emissions suggested for the United States in the Kyoto Protocol, the international accord that commits participating developed countries to specific reduction targets relative to 1990 levels. Although the United States has not agreed to ratify Kyoto, more than 320 local elected leaders around the country have signed the mayors' agreement in communities across 46 states plus the District of Columbia, representing over 51 million Americans (see Figure 1). In June 2005, the U.S. Conference of Mayors passed a resolution endorsing the agreement and calling on mayors to begin implementing their climate protection commitments and urging state and federal governments to take comparable action.

Another watershed event in 2005 was The Sundance Summit: A Mayors' Gathering on Climate Protection. Held in July, the summit marked the first-ever national convening of mayors on the sole topic of global warming. The summit created an umbrella effort called Mayors for Climate Protection, which represents more than 300 mayors. Its aim is to help mayors who have committed their cities to reducing greenhouse gases to move from commitments to implementation, share best practices, and harness their collective power to advocate for climate action at the state and federal levels.

Most recently, former President Bill Clinton launched the Clinton Climate Initiative in August 2006. Its aim is to mobilize climate action in leading cities. The initiative will begin with the creation of a consortium of large cities to pool their purchasing power in an effort to reduce the costs of energy-saving technologies and products. This effort also will include technical assistance for cities to measure and track their emissions and emission reductions. The Clinton Climate Initiative builds on other efforts, including CO_2: The World Cities Leadership Summit, a 2005 gathering organized by the mayor of London with the assistance of The Climate Group.

Cities and States Are Working Together

Effective coordination between state and local governments can remove state-level barriers to local climate action and support the implementation of local initiatives to meet state goals. In California, ICLEI recently launched a special task force to forge stronger links between local and state actions there. As states develop their own climate protection targets and plans, more and more states are formalizing roles for local governments within those plans.

In 1995, only 15 local governments in the United States were engaged in climate protection activities. Eleven years later, that number has grown to 200 cities, representing 66 million people.

LIMITATIONS AND CHALLENGES

Despite successes at the local level, many limitations exist on both the scope and effectiveness of local climate initiatives that make them poor substitutes for federal policy. Many of the limitations of local climate action parallel those that constrain state efforts (see *Climate Change 101: State Action*).

Perhaps the biggest weakness of local action is that it simply cannot achieve the economies of scale necessary for widespread and aggressive emissions cuts. Even the best efforts of cities and counties will ultimately be limited in scope.

A related limitation on local climate action is that much regulatory and legislative authority rests in the hands of state and federal governments. For example, urban areas can achieve a lot by promoting smart growth practices and transit, but vehicle and fuel regulation is typically beyond their control. Likewise, municipal utilities have an important role to play, but the power to regulate many larger utilities—with the potential for more significant emissions reductions—lies at the state and federal level.

Local governments also are at a disadvantage because of other pressing needs and tight budgets. For many cities and counties, there are few if any resources available to devote to effective climate action. In addition, different climate policies enacted by various communities across a given area can lead to an inefficient patchwork of regulation, posing challenges to businesses operating in different localities.

LESSONS LEARNED

Local leaders can provide models for climate action for other communities and levels of government to emulate. The experience of local governments suggests that certain elements contribute to the success of local, state or regional climate protection strategies. For example:

Resources for coordination and tracking. Salt Lake City began participating in the Cities for Climate Protection Campaign in 1996. Initially the city's climate efforts were limited because they received only lower-level staff support. This situation changed in 2000 when newly-elected Mayor Rocky Anderson made climate protection a policy priority and designated a staff point person with formal duties and empowerment to work on the city's climate protection plan. Salt Lake City now has one of the premier local climate action plans in the country.

Integration of climate protection into long-term planning. Marin County, California has incorporated climate change impacts and climate protection into its comprehensive general development plan, ensuring that actions to reduce greenhouse gas emissions will be implemented over the long term.

Leadership. Miami-Dade County, Florida has been a leader in climate protection in the United States since 1991. Among the main reasons for the county's success in keeping this issue on the agenda is the advocacy of a strong local elected champion, Clerk of Courts Harvey Ruvin. Ruvin keeps climate protection front and center on the county's priority list and ensures that the necessary resources are allocated to implementing the county's climate action plan.

A network of people and governments who share a commitment to action. In 2002, a cluster of local governments in the metropolitan Boston area began meeting monthly to discuss their climate protection programs and possible areas of collaboration. This network has grown to include more than 20 cities and towns in Massachusetts, which now have a close working relationship with state agencies to advance their local climate work. The same principle applies to climate work at the state, regional, national and international levels: climate action is more effective when government entities collaborate on cross-border actions.

LOOKING AHEAD

In 1995, only 15 local governments in the United States were engaged in climate protection activities. Eleven years later, that number has grown to 200 cities, representing 66 million people. Almost in tandem, state governments increasingly are taking action to adopt greenhouse gas reduction targets, develop climate protection plans, and adopt other policies aimed at protecting the climate. These local and state leaders recognize the importance of action and collaboration at all levels of government to address this global challenge. They can also serve as strong voices in favor of national action. Local and state action needs to be supported by a comprehensive national and international commitment to climate protection.

Pew Center on Global Climate Change

More information on climate change solutions is available at www.pewclimate.org.

ENDNOTES

1. ICLEI U.S. Cities for Climate Protection Progress Report, 2005.
2. United Nations Department of Economic and Social Affairs *World Population Prospects: The 2004 Revision.* 2004
3. Carbon intensity of electricity is the ratio of carbon emissions to the amount of electricity produced, i.e. the amount of carbon emissions produced per kilowatt hour of electricity.
4. "Death Toll Mounts As California's Record-Breaking Heat Wave Ends," *San Jose Mercury News*, July 28, 2006. http://www.mercurynews.com/mld/mercurynews/news/breaking_news/15148596.htm
5. Hall, Jane; Lurmann, Frederick. "The Health and Related Economic Benefits of Attaining Healthful Air in the San Joaquin Valley" *California State University Fullerton: Institute for Economic and Environmental Studies*. March, 2006.
6. In 2003, ICLEI's membership voted to change the name of the organization to ICLEI—Local Governments for Sustainability.
7. Carbon dioxide equivalent is a measure used to compare emissions of various greenhouse gases based on their global warming potential.

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The Pew Center on Global Climate Change is a non-profit, non-partisan, independent organization dedicated to providing credible information, straight answers, and innovative solutions in the effort to address global climate change.

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