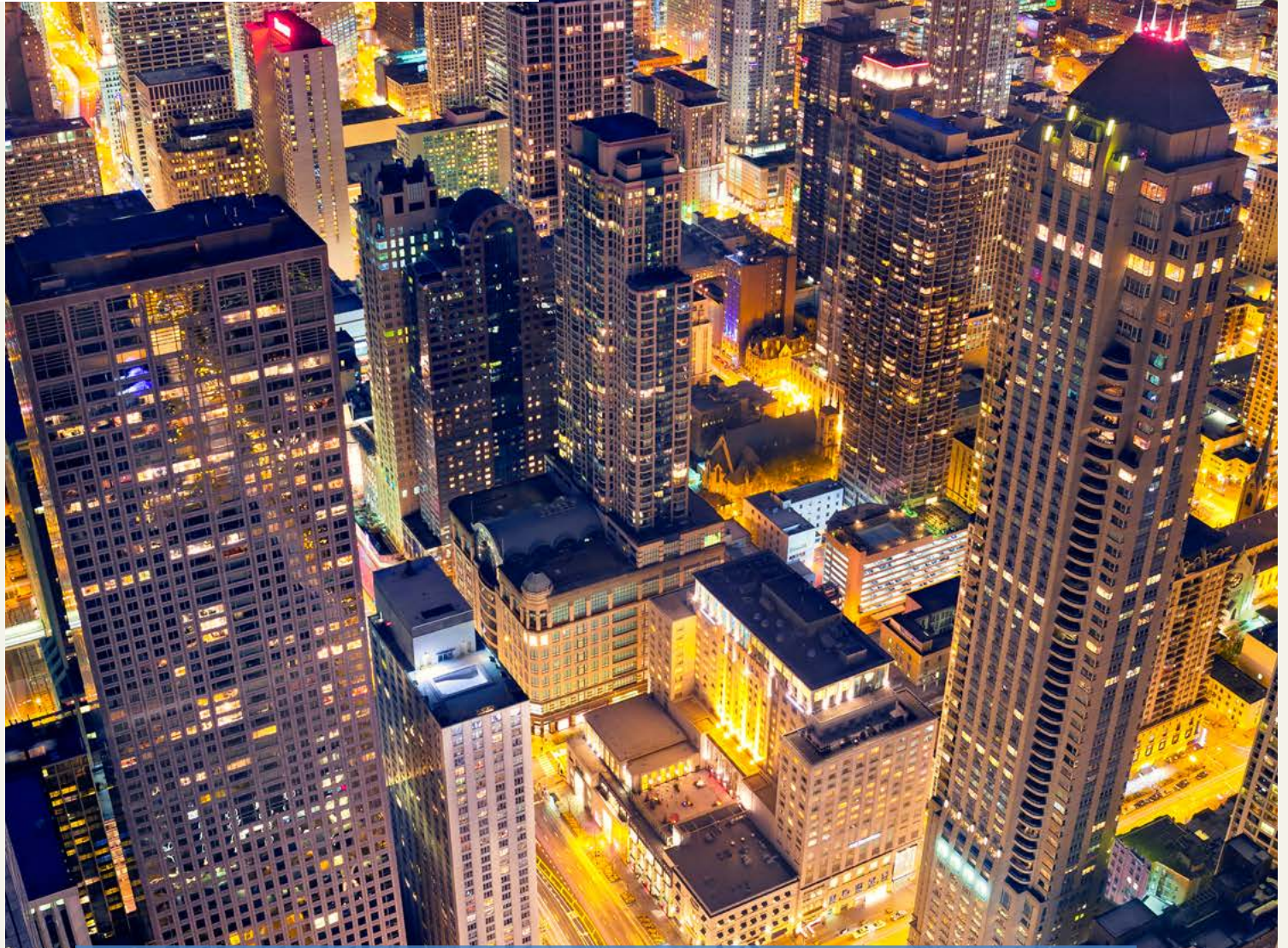




WORKING  
TOGETHER WITH  
CITIES TO REDUCE  
THE IMPACT OF  
CLIMATE CHANGE



**I.C.L.E.I.**  
Local  
Governments  
for Sustainability **USA**



# Measuring Up 2015

How US Cities Are Accelerating Progress  
Toward National Climate Goals

# Partners and Acknowledgements

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## **ICLEI – Local Governments for Sustainability USA**

Michael Schmitz, Executive Director

ICLEI – Local Governments for Sustainability is the leading organization of local governments dedicated to sustainability, resilience, and climate action, with more than 1,000 member cities, towns, and counties around the globe. ICLEI provides cutting-edge resources and technical guidance to help local governments reach their goals, and connects leaders to share solutions and accelerate progress. Learn more at [www.icleiusa.org](http://www.icleiusa.org).

## **World Wildlife Fund**

Lou Leonard, Vice President, Climate Change

World Wildlife Fund (WWF), one of the world's foremost conservation organizations, works in 100 countries and is supported by 1.2 million members in the United States and close to 5 million globally. To inspire and showcase local climate action around the world, WWF launched the Earth Hour City Challenge. The challenge is a friendly competition in which cities share what they are doing to prepare for climate extremes and transition toward a 100% renewable energy future. Learn more at [www.worldwildlife.org/citychallenge](http://www.worldwildlife.org/citychallenge).

**We graciously acknowledge the following individuals and organizations for their assistance in developing the *Measuring Up 2015* report:**

Mike Steinhoff and Juan Wei, primary authors  
Melissa Higbee and Brian Holland, contributing authors  
ICLEI USA

Kevin Taylor, contributing author  
WWF-US

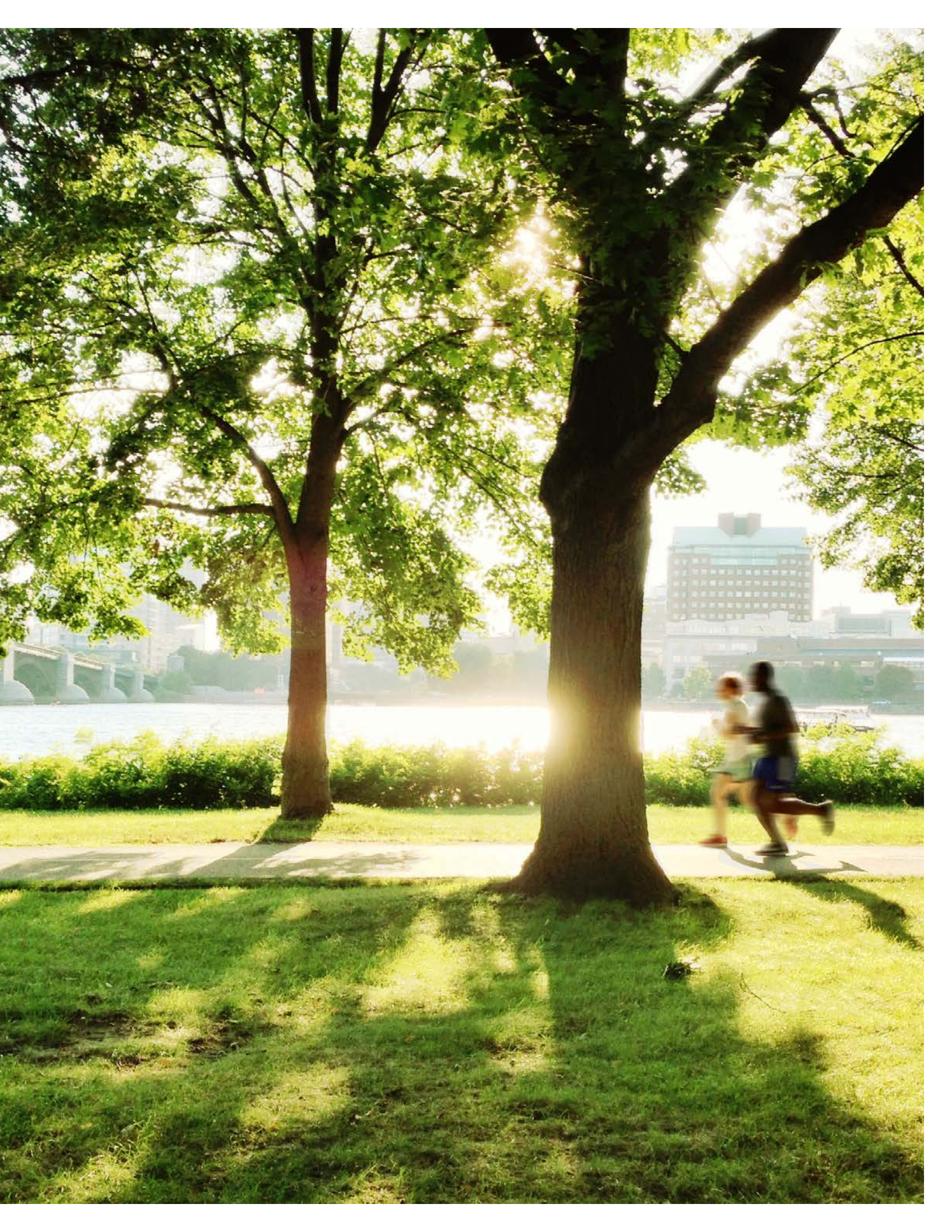
Lucas de Moncuit and Joseph Wladkowski  
ICLEI World Secretariat /carbonn Climate Registry

Katie Walsh and Kyra Appleby  
CDP

Cooper Martin  
Sustainable Cities Institute, National League of Cities

Johanna Partin  
Urban Sustainability Directors Network









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August 6, 2015

Across America, local governments are taking action to address climate change while making communities healthier and more resilient. As this report shows, our communities have set bold goals for greenhouse gas emissions reductions and are taking concrete steps to move toward those goals. The success of these efforts proves that even more can be done nationally while ensuring a vibrant 21st-century economy.

For local governments to realize our vision of low-carbon communities, we need collaboration with our residents and businesses. We also need leadership from state and federal governments that hold jurisdiction over emissions sources that are out of our reach.

We commend the Obama administration's call to aggressively deal with climate change. Over the past several years, federal agencies have taken powerful steps to put the nation on the path to a low-carbon future through higher automobile fuel-efficiency standards and other measures laid out in the President's Climate Action Plan. These efforts culminated with an ambitious national emissions target that was included in last year's US-China climate agreement.

While this progress is encouraging, more must be done. In addition to congressional action that is long overdue, new rules for cutting carbon pollution from power plants should be implemented proactively through flexible, state-level action in the energy sector. We know that it's possible to slow growth in energy sector emissions through energy efficiency and renewable energy initiatives because we're doing it.

As a whole, local governments can play a central role in helping states achieve the targets of the Environmental Protection Agency's Clean Power Plan, which aims to reduce power plant emissions. Furthermore, US leadership toward a global climate accord in Paris in December 2015 is critical to building an effective international response in which all do their fair share.

Local governments stand ready to help the nation deliver on our responsibility to achieve the carbon pollution reductions that science shows us are necessary. As this report demonstrates, the collective impact of local leadership can make a real difference at a national level, and innovative cities will remain key partners in the climate change solution. Together we can ensure our communities, our country, and our planet are safe and prosperous for generations to come.

Sincerely,



**Mayor Kasim Reed**  
Atlanta, Georgia



**Mayor Betsy Hodges**  
Minneapolis, Minnesota



**Mayor Charlie Hales**  
Portland, Oregon











## Introduction

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Climate change is one of the most pressing challenges the world faces today. Its impacts are already being felt in the form of more extreme weather events and shifting climate patterns. If the world continues on the same course, all regions will suffer intensifying consequences—extreme heat, massive flooding, food and water shortages, the spread of diseases, and resource conflicts. The risk is not only to our environment, but also to our health, economic growth, and political stability. Many nations around the world are working together to combat climate change.

The United Nations Framework Convention on Climate Change is seeking to reach a comprehensive international agreement by December 2015. At the national level, many countries have adopted nationwide climate action plans, and cities and counties are consistently leading the way in terms of greenhouse gas emissions (GHG) reduction commitments and actions. *Measuring Up 2015* is the most extensive analysis of US local climate actions performed to date.

The United States has been expediting its national climate agenda through the President's Climate Action Plan. In the US-China Joint Announcement on Climate Change and Clean Energy Cooperation reached in November 2014, President Barack Obama announced that the US would emit 26% to 28% less GHG emissions in 2025 than it did in 2005. This is double the pace of reduction previously set for the period of 2005 to 2020. The US has adopted a number of specific policies and measures to reduce its emissions in a wide variety of sectors, including transportation, energy supply, land use, and waste disposal.

These programs are making a difference. The nation has doubled its wind and solar electricity generation, adopted the toughest fuel economy standards for passenger vehicles in US history, and increased the energy efficiency of homes, industries, and businesses. To keep the nation on track for its short- and long-term emissions reduction goals, the president initiated a national climate action plan in 2013. The plan outlines tools and steps to cut emissions, including the Environmental Protection Agency's clean Power Plan. The main goal of the Clean Power Plan is to reduce carbon dioxide pollution by 32% from existing power plants by 2030—the most ambitious national climate policy ever adopted.

US communities are playing an increasingly important role in moving toward national emissions reduction targets. Local governments have a great deal of authority and influence over sources of emissions such as buildings, transportation, and solid waste. In the past several years, many local governments have started studying their greenhouse gas (GHG) emissions, setting ambitious emissions reduction goals, and implementing various measures to meet them, including promoting public transit, increasing renewable energy generation, and encouraging efficient energy and water use.



Many local governments, including those profiled in this report, are implementing innovative and cost-effective local solutions. For example, Cincinnati is offering 100% renewable energy to its citizens through the city's community choice aggregation program. The Minneapolis Clean Energy Partnership is a first-in-the-nation, public-private initiative that engages local utility companies to advance renewable energy and energy efficiency programs.

Portland, through its strong focus on green buildings and safe biking infrastructure, now has more buildings meeting the highest certification level in the Leadership in Energy and Environmental Design (LEED) standard than any other city in the US and was ranked the number one bike-friendly city in the nation. Atlanta, once known for its urban sprawl and traffic congestion, is transforming its urban areas into walkable urban communities and is leading in the nation's Better Buildings Challenge effort to become a top-tiered sustainable city.

Hundreds of other US communities have taken similar steps to reduce their emissions and are reporting measurable declines.<sup>1</sup> These efforts have the potential to make an enormous difference in tackling climate change and influencing the federal government to set more aggressive emissions reduction targets.

World Wildlife Fund (WWF) and ICLEI – Local Governments for Sustainability have long been assisting communities in reducing their greenhouse gas emissions and achieving long-term sustainability. WWF, through its Earth Hour City Challenge, is mobilizing action and support from cities in the transition toward a climate-friendly future.

The challenge is a global platform celebrating community solutions to climate change, recognizing leadership, sharing inspiring examples, and creating opportunities for dialogue between cities and their residents on collaborative action. ICLEI USA has been providing cutting-edge tools, resources, and technical assistance in emissions management since 1992. It is helping cities to undertake comprehensive management programs while tackling tough implementation challenges in resource efficiency and renewable energy.

## Measuring Up 2015 Findings

The *Measuring Up 2015* report is a joint effort of WWF-US and ICLEI USA. The report represents the most complete and recent analysis of local emissions inventories and targets in the US. It demonstrates that communities across the country are tackling climate change while improving their economies and quality of life. The report analyzes data from 116 local governments in the US and uses in-depth profiles to highlight four cities in very different regions of the country that have set particularly ambitious targets.

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<sup>1</sup> Cities reporting measured, community-wide greenhouse gas (GHG) emissions reductions below base year levels ranging from 1990 to 2006 include Alameda, CA; Atlanta, GA; Austin, TX; Berkeley, CA; Cincinnati, OH; Columbus, OH; Des Moines, IA; Gainesville, FL; Lawrence, KS; Minneapolis, MN; Monterey, CA; New York, NY; Oberlin, OH; Philadelphia, PA; Riverside, CA; San Francisco, CA; and Washington, DC. See Stacey Meinzen and Ann Hancock, *Proven and Promising Climate Measures From U.S. Communities for Possible Application in Sonoma County*, August 2014, <http://climateprotection.org/proven-promising-climate-measures-u-s-communities-possible-application-sonoma-county/>.



AT MID-CENTURY, CURRENT EMISSIONS REDUCTION TARGETS IN 116 US COMMUNITIES WOULD HAVE THE SAME EFFECT AS CLOSING 86 COAL-FIRED POWER PLANTS EACH YEAR. THIS WOULD BE ONLY A SMALL ACHIEVEMENT COMPARED WITH THE ENORMOUS POTENTIAL IMPACT OF CUTTING GHG POLLUTION IN THOUSANDS MORE CITIES ACROSS THE COUNTRY.



### Finding Finance

Lack of financing is one barrier to purchasing low-carbon infrastructure and realizing cities' climate goals. The demand for investment in climate-friendly and resilient urban infrastructure is enormous and unmet. According to the World Economic Forum and the World Bank, more than \$1 trillion per year is necessary to finance this gap in low- and middle-income countries.

WWF and ICLEI are part of the newly formed Cities Climate Finance Leadership Alliance, composed of a diverse membership representing NGOs, international financial institutions, and commercial banks committed to identifying barriers cities face in accessing investment capital and finding new mechanisms to unlock financial flows.

The data show that hundreds of communities representing at least 14% of the US population are already taking responsibility for their GHG pollution by performing emissions inventories and establishing reduction goals. Achieving these local goals by 2050 would result in emissions reductions equivalent to shutting down 86 coal-fired power plants or collectively driving 780 billion fewer miles. These cities stand to benefit from Clean Power Plan regulations in the electricity sector. When implemented, the plan could save these leading climate communities \$7 billion in energy costs from energy efficiency improvements.

The data and city profiles have clearly demonstrated that local governments can cut local GHG emissions, reduce climate threats, and achieve multiple community goals, such as lower energy costs, better air quality, improved health, and enhanced economic development. Success depends on strong leadership, the close involvement of a wide variety of stakeholders, funding and technical support from the federal level, as well as well-rounded planning and execution processes. This report highlights cities that are widely recognized as drivers of progress and innovation beyond their climate action achievements.

A number of pioneering federal programs have provided technical and financial support to help create successful city climate projects. For example, the Partnership for Sustainable Communities program has realized multiple local benefits by coordinating infrastructure development in housing, land use, and transport. The Department of Energy SunShot Initiative not only helps make solar energy more competitive with other sources of electricity, but also reduces GHG emissions and creates jobs.

The President's State, Local, and Tribal Leaders Task Force on Climate Preparedness and Resilience lays out concrete recommendations to assist in preparing local communities to be more resilient in the face of climate change while curbing GHG pollution. Each of these initiatives, along with other similarly aligned programs, have been well received at the local level and have greatly boosted the scale and effects of local climate activities.

## A New Era of Climate Collaboration

Although local governments have demonstrated the capacity and willingness to address climate change, they are also facing some common challenges. Effective local actions can take place only in an enabling state and national policy framework. We call for the following supportive state and national policies and incentives to ensure that city-level initiatives have sufficient resources to achieve their goals and tap their enormous potential:

1. **Implement strong federal power plant regulations.** The Clean Power Plan under Section 111(d) of the Clean Air Act helps reduce GHG emissions from the nation's largest pollution sources. It encourages states and communities to take the lead in creating new markets and jobs in the renewable energy and energy efficiency sectors.



2. **Increase funding for low-carbon,<sup>2</sup> varied transportation options.** The transportation sector is the second-largest contributor to greenhouse gas pollution after electricity usage in buildings, but is often the most difficult to tackle. Land-use planning, legacy infrastructure designed for automobiles, and the prevalence of private vehicles make it challenging to transition to modes of transport that produce less GHG emissions. The high price tag for infrastructure improvements requires support from both state and federal governments.
3. **Put in place national policies to encourage private sector investment in green urban infrastructure.** There is an increasing number of examples from cities around the world of private investment in environmentally sustainable projects that lead to favorable financial returns. Green bonds and other such mechanisms backed by national policies can position green urban infrastructure to attract private investment.
4. **Remove federal barriers to Property Assessed Clean Energy (PACE) financing.** New PACE programs are leading to more energy efficiency and renewable energy upgrades in residential and commercial buildings around the country. Under PACE, financing for equipment like solar photovoltaic panels is provided and repaid as an assessment on property tax bills.
5. **Establish pricing mechanisms for greenhouse gas emissions.** A price on carbon dioxide pollution will enable the market to decide where to most efficiently cut back on the use of fuels and practices that contribute to climate change.

Each of these policies and incentives have successful examples of implementation. Separately or collectively, they have enormous potential to change the way cities plan, finance, and implement climate-friendly solutions.

Because they are home to over half of the world's population and are responsible for 70% of global GHG emissions, cities are at center stage of any effective climate solution. Public and private investment will follow this growth of urban areas. Analysis by WWF-Sweden and Strategy& (formerly Booz & Company) in *Reinventing the City* finds that \$350 trillion—seven times the global gross domestic product—will be invested in cities over the next 30 years. These investments can either lock cities into infrastructure that is vulnerable to the effects of climate change and responsible for more GHG pollution, or be part of a global transition toward sustainable economies and development patterns.

The action local governments take—or don't take—may determine the ultimate outcome of climate change. WWF and ICLEI will continue their efforts to mobilize local actions toward both sustainability and GHG emissions reduction. The year 2015 will be pivotal for addressing climate change. A new global climate treaty is due to be completed, and the US will finalize its power plant regulations. Our cities and counties are prepared and eager to take an even greater lead in combating climate change.

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<sup>2</sup> Low carbon describes an approach to planning, designing, and constructing infrastructure in ways that dramatically reduce the amount of carbon dioxide pollution associated with conventional techniques in these areas.





# The Scale of Local Climate Action

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## A Framework for Measuring Local Climate Action

Widespread local government action on climate change began in the early 1990s and was largely organized under ICLEI's Cities for Climate Protection Campaign, launched in 1993. Through this campaign, a framework for action was developed that provides a process for local governments to act on climate change and measure their progress.

Local communities follow this Five Milestone framework by taking the following actions:

1. conducting an inventory and forecast of local greenhouse gas emissions
2. establishing quantitative greenhouse gas emissions reduction targets
3. developing a climate action plan for achieving the emissions reduction targets
4. implementing the climate action plan
5. monitoring and reporting on progress

Local emissions measurement has been further developed and standardized through the creation of accounting standards, most recently with the Global Protocol for Community-Scale Greenhouse Gas Emission Inventories in 2014. Over the years, various software tools have assisted local governments in moving through the milestones. In 2014, ICLEI's ClearPath online emissions management platform was launched nationally. It is used by more than 350 local governments, producing over 900 emissions inventories, 240 emissions forecasts, and 200 climate action plan scenarios.

In addition to these emissions calculation tools, public reporting platforms allow local governments to transparently disclose their emissions, reduction commitments, and sustainability projects. Managed by ICLEI, carbonn Climate Registry (cCR) is the largest database of worldwide local government climate action and is the official reporting platform for WWF's Earth Hour City Challenge, the Resilient Communities for America campaign, and the Global Compact of Mayors.

Many US communities have also reported their emissions through CDP, an organization that helps businesses and local and state governments measure their environmental impact. Measuring Up 2015 pulls together data from ClearPath, cCR, CDP, and local governments.<sup>3</sup>

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<sup>3</sup> City profiles were partially based on interviews with staff in each city. Footnotes do not list specific staff names because multiple people were interviewed.



The quantitative Five Milestone framework allows us to estimate the collective impact of local government commitments by applying adopted emissions reduction goals to baseline emissions for each local government. Through the data sources described above, ICLEI gathered detailed information about greenhouse gas emissions inventories for 116 local governments in the US. These include seven of the 10 largest US cities and collectively represent around 14% of the US population.<sup>4</sup>

*Measuring Up 2015* represents the first time data from all of these sources has been collected to quantify real emissions figures from this many US cities. NGOs and the federal government are starting to expand and streamline the aggregation of emissions inventories across US cities. Many institutions are also collaborating at the global level to collect cities' emissions data for presentation in Paris at the Conference of the Parties in December 2015. As more cities share climate actions and data, common themes and effective reduction strategies will come to light. The more data available for analysis and exploration, the more effective the conclusions we can draw on how to implement successful climate responses.

## Setting More Ambitious Targets

Emissions target setting and other types of climate action have been a significant component of local sustainability efforts for a number of years. In 2005, as part of the US Conference of Mayors Climate Protection Agreement, more than 1,000 mayors pledged to support GHG emissions reduction targets for 2012 in terms set by the Kyoto Protocol.

Instead of waiting for the next global accord, an increasing number of communities are setting aggressive, long-term reduction targets ahead of the international negotiation process. Recently pledged targets are commonly looking to the year 2050 to meet the scientific imperative of reducing global emissions by at least 80%, as established by the Intergovernmental Panel on Climate Change.

Figure 1 (opposite) illustrates the total reductions that would be achieved annually if each city met its reduction targets. Once the most far-reaching target is met for each city, the analysis assumes that emissions will remain at that level through 2050. Cities will often set new goals to reduce emissions even more once an existing target is met. Though there are fewer later targets, their impact vastly outweighs those with a near-term focus.

As a group, communities with 2020 targets will annually reduce a total of 38 million tons of carbon dioxide by that year, which will translate into about half a million tons per city. Though fewer in number, those cities with targets between 2020 and 2035 will be reducing at twice that rate per city, accounting for another 12 million tons of carbon dioxide reduced per year by 2035.

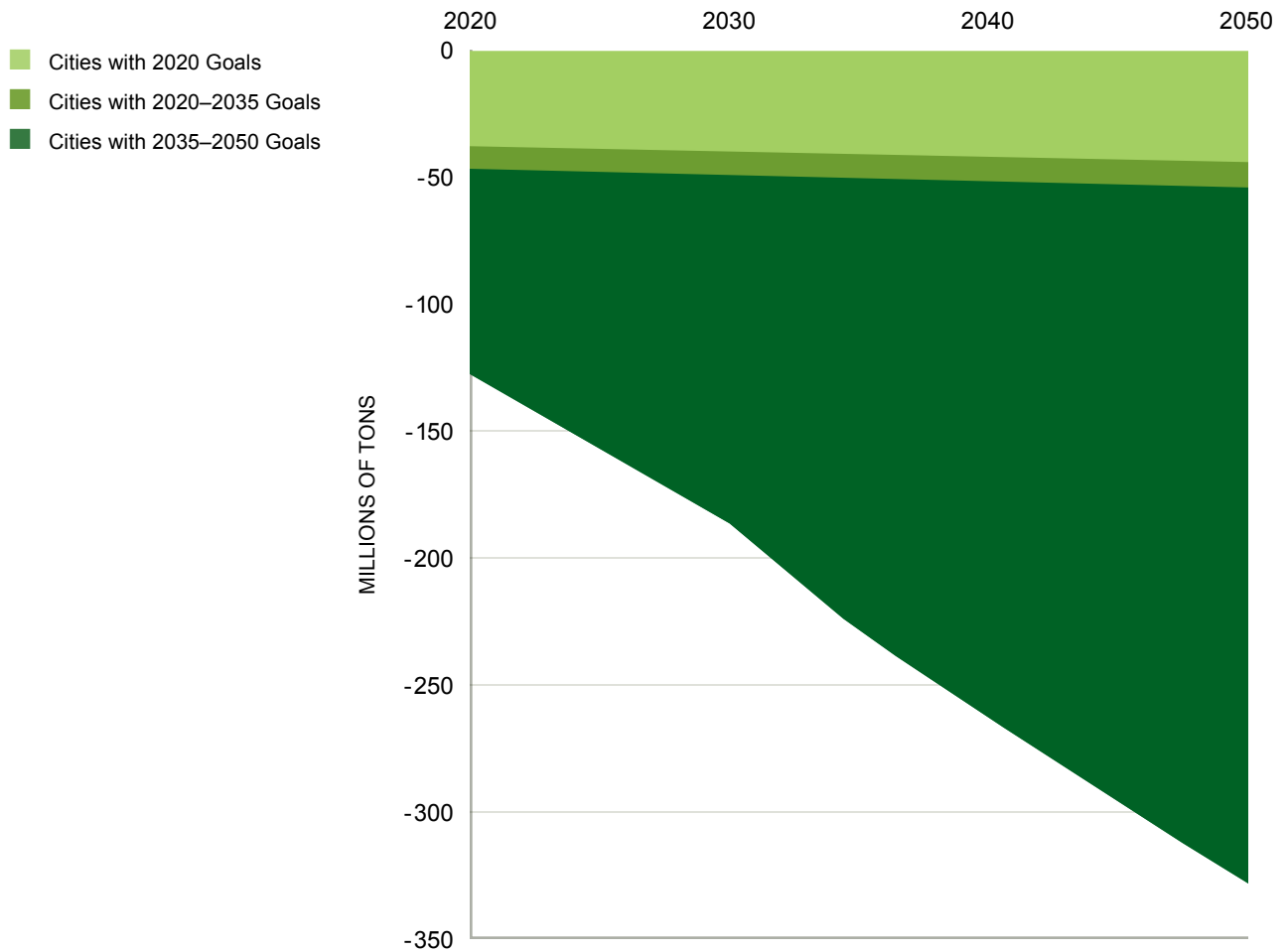
However, cities with long-range targets have the biggest impact in both the near and long term. By 2035, cities with 2050 goals are anticipated to reduce over 179 million tons of carbon dioxide per year, more than three times as much as the

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<sup>4</sup> This analysis includes data from local governments that have set an emissions reduction target *and* reported a baseline inventory of emissions for their cities. The number of local governments that have *either* set targets or completed a baseline inventory is larger, but they are not included in this analysis.



**FIGURE 1 Projected Reductions of Greenhouse Gas Emissions**



other cities. Going further, those cities are set to reduce an additional 6.5 million tons each year until 2050, bringing the collective reduction from all cities in this analysis to over 328 million tons per year.

Eliminating 328 million tons of carbon dioxide pollution each year starting in 2050 would be a significant accomplishment. For these cities, this number would represent a 54% reduction below their collective baseline year totals. These numbers don't take into account that cities would likely set additional reduction goals once they meet their initial near-term targets. Nevertheless, the potential 2050 emissions reductions demonstrated in figure 1 above are only the tip of the iceberg in terms of what a growing movement of communities can do to combat climate change.

Over 825 cities, counties, and regional associations representing a population of more than 141 million Americans have participated in ICLEI USA's climate programs. They represent enormous unrecognized potential to take action and formalize commitments if they are given the political support needed to succeed. Examples from California provide substantial evidence for state policies supporting city climate action. Programs established under the state's Global



Warming Solutions Act of 2006 (AB32) offer incentives for cities to consider climate in their planning decisions.

More than 100 communities have started taking advantage of climate resources through California's Statewide Energy Efficiency Collaborative, in which ICLEI and partners<sup>5</sup> assist local governments in moving through the Five Milestones. California is on track to reach its emissions reduction goal by 2020. In April 2015, California Governor Jerry Brown announced a significant increase in the state's reduction target, raising it to 40% below 1990 levels by 2030. Climate action at the state level provides a clear and supportive policy environment for cities to pursue their highest climate goals.

Nevertheless, cities are providing leadership regardless of incentives and support from higher levels of government. Fifty-two of the 132 cities that have reported to public platforms (see appendix) have reduction targets that are equal to or more ambitious than the US government's goal to cut emissions 26% to 28% below the total amount in 2005. These cities have established their goals with the support of their residents, business leaders, faith communities, and other stakeholders. These communities are ready to make a change that promises to expand local industries in energy services, technology, and infrastructure.

## Communities Leading on Climate Action

In the same way that bike share programs or good transit-oriented development can provide the critical "last mile" solution to making transportation systems work, local governments create the critical connections that bridge state and federal programs to the residents and businesses who benefit from them. Communities that have made ambitious climate commitments are best positioned to capture the economic development opportunities likely to result from stronger private sector investment and state and federal regulations.

One of the major components of federal action will be new rules under the Clean Air Act Section 111(d), expressed in the Clean Power Plan, to limit emissions from the electric power production sector. This will be achieved through a number of mechanisms, including investments in energy efficiency. The US Environmental Protection Agency technical documentation for the proposed 111(d) rules estimates reductions in energy use through efficiency measures at 1.5% per year on average.<sup>6</sup>

A 1.5% per year reduction in energy use applied to the 116 cities in this report would result in energy savings of 8 million megawatt hours reduced each year, saving consumers in those cities over \$860 million in the first year alone.<sup>7</sup>

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<sup>5</sup> The Statewide Energy Efficiency Collaborative (SEEC) is an alliance between ICLEI USA, the Institute for Local Government, the Local Government Commission, and California's four investor-owned utilities. The program is funded by California utility customers and administered by Pacific Gas and Electric Company®, San Diego Gas & Electric Company®, Southern California Edison Company®, and Southern California Gas Company® under the auspices of the California Public Utilities Commission.

<sup>6</sup> U.S. Environmental Protection Agency Office of Air and Radiation, *GHG Abatement Measures*, June 10, 2014, <http://www2.epa.gov/sites/production/files/2014-06/documents/20140602tsd-ghg-abatement-measures.pdf>.

<sup>7</sup> U.S. Energy Information Administration, *Electric Power Monthly: Table 5.3- Average Retail Price of Electricity to Ultimate Customers*, July 27, 2015, [http://www.eia.gov/electricity/monthly/epm\\_table\\_grapher.cfm?t=epmt\\_5\\_03](http://www.eia.gov/electricity/monthly/epm_table_grapher.cfm?t=epmt_5_03).



By 2030, those cities would retain over \$7 billion of today's dollars in reduced energy costs.

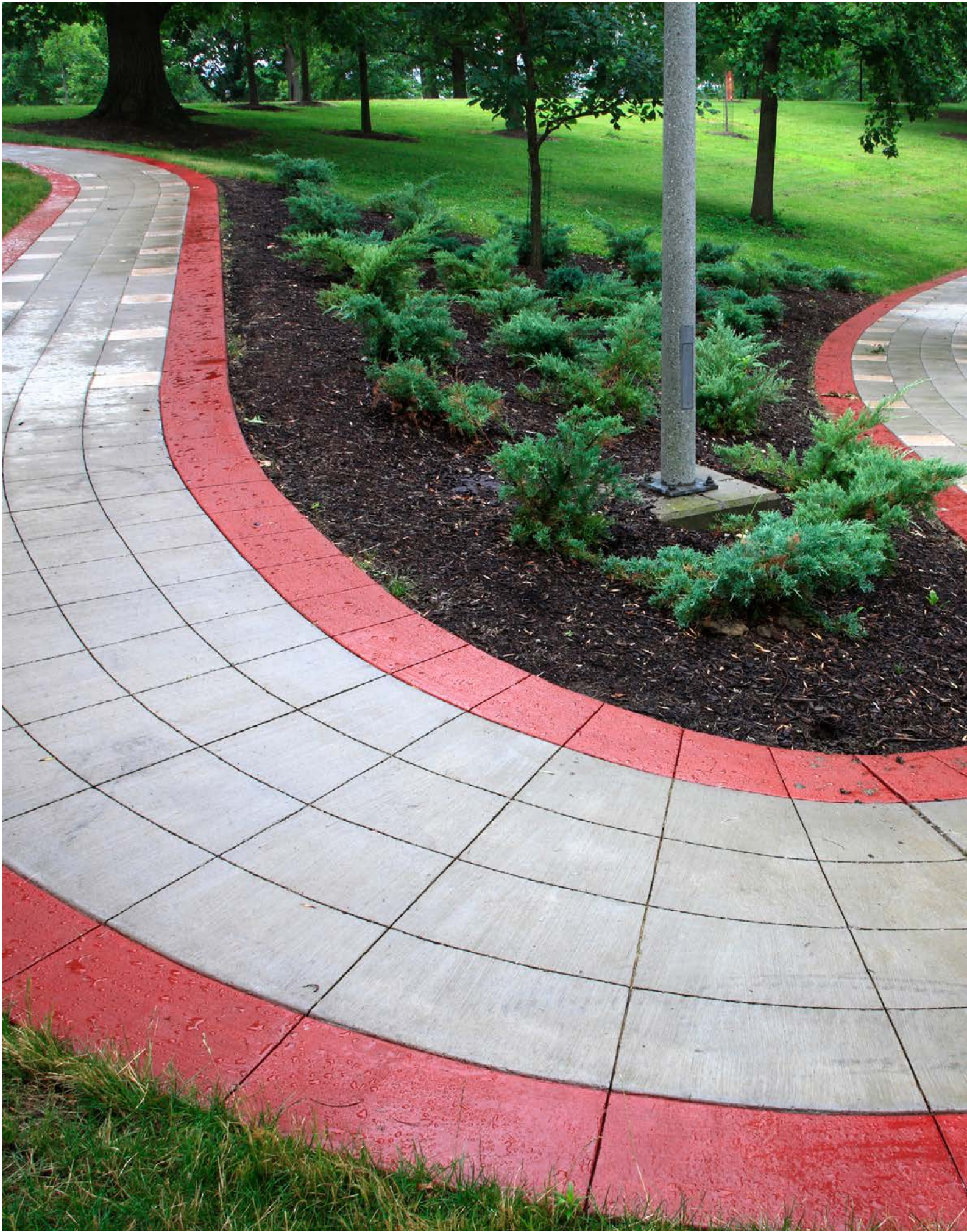
Achieving the energy efficiency reductions noted above would require an investment of around \$258 million per year.<sup>8</sup> That spending would directly create over 14,000 jobs in the cities profiled here, not including any wider, indirect employment impacts in supporting industries.<sup>9</sup> This is just a fraction of the potential economic development that should be realized at the national scale within the efficiency component of the Clean Power Plan. Similar investments in distributed renewable energy generation and smart grid technologies would also contribute to new business opportunities.

As with any economic and social changes, some within society emerge on the leading edge, and the cities profiled in this report are exemplary in that regard. From observing recent experiences in states with climate mitigation frameworks such as California and New York, it is apparent that there are substantially more communities that will act when supported and aligned within their state and federal frameworks. Bold commitments from the federal government can unleash a wave of local innovation as more cities include climate as a key performance metric, linked to the competitiveness of their businesses, health of their citizens, and efficiency of government services.



<sup>8</sup> U.S. Energy Information Administration, *Electric Power Monthly: Table 5.3- Average Retail Price of Electricity to Ultimate Customers*, July 27, 2015, [http://www.eia.gov/electricity/monthly/epm\\_table\\_grapher.cfm?t=epmt\\_5\\_03](http://www.eia.gov/electricity/monthly/epm_table_grapher.cfm?t=epmt_5_03).

<sup>9</sup> Calculated using 6.3 direct jobs created per \$1 million in spending in energy efficiency, applied to present value total of investment from 2017–2030. See Center for American Progress, Political Economy Research Institute, Robert Pollin, Heidi Garrett-Peltier, James Heintz, and Bracken Hendricks, *Green Growth: A U.S. Program for Controlling Climate Change and Expanding Job Opportunities*, September 2014, <http://cdn.americanprogress.org/wp-content/uploads/2014/09/PERI.pdf>.





# Learning From Leading Communities

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The goals set by US communities to limit their greenhouse gas pollution are bold and impressive. Aggressive emissions reduction goals prepare communities to take innovative and comprehensive climate actions that are resulting in significant achievements. These achievements—embodied in reduced energy and water costs, increased availability of clean-tech jobs, a better environment, improved health, and a more vibrant and thriving city—are encouraging local governments to take even bolder actions to reduce emissions.

A number of US communities are experiencing this kind of virtuous development cycle. Four of them have been profiled below. The following section shows how ambitious, long-term emissions reduction goals and other climate actions can readily reinforce each other and lead to even bigger steps. These four cities—though varying in size, population, and economic scale—have all set particularly ambitious emissions reduction targets and are mustering their creativity, resourcefulness, and initiative to make a difference.

## A Common Theme

Before looking at each city's individual climate actions, a few common themes are important to highlight here. When setting their 2050 targets, each of the four cities profiled below cited a goal of reducing their emissions by 80%.

Like many communities, the cities profiled in this report are looking to recommendations by the Intergovernmental Panel on Climate Change as well as comparing themselves to other communities of similar size, context, and leadership when establishing their target numbers. After creating ambitious emissions reduction targets, each city involved a wide variety of stakeholders to identify opportunities and develop concrete measures to achieve them. Generally speaking, the success of their climate actions could be attributed to the following factors:

**First**, strong government leadership was common. All four cities have articulated goals to reduce emissions by 80% and are leading by example in their efforts to achieve them. They have implemented strategies for city government operations, including for renewable energy, energy and water efficiency programs. They have also set stricter rules for their own buildings and operations.

A **second** key factor for success is when states institute mutually reinforcing policies with cities. For example, Minnesota's 80% emissions reduction target has inspired Minneapolis's "80% or more" reduction target. Oregon's setting statewide urban growth boundaries in 1970 has successfully encouraged its cities to develop more compact neighborhoods. Ohio's community choice aggregation rules have enabled Cincinnati to provide 100% green electricity to its residents.



### Local Climate Leaders Circle

For many years, WWF and ICLEI have actively supported a science-based international agreement to address climate change through the United Nations Framework Convention on Climate Change. Cities will play a bigger role than ever as advocates and sources of solutions in what will be a pivotal 2015.

WWF-US and ICLEI, along with the National League of Cities and the US Green Building Council, have partnered to form the Local Climate Leaders Circle, a group of leading US mayors and local elected officials to champion their international policy work.

Supported by the council's partner organizations, mayors will travel to Paris for the Conference of the Parties in December 2015, bringing the message of ambitious local leadership. Their example will help drive an impactful policy response to climate change well beyond the event itself.



All of these policies have created a conducive environment for cities to take further steps while continuing to generate new economic opportunities.

A **third** characteristic shared among the cities is that they have engaged the private sector to support their climate efforts. For example, Minneapolis entered into a public-private clean energy partnership with its utility companies. In Atlanta, commercial building owners actively participate in the Better Buildings Challenge program. In both of these examples, businesses have played a vital role in meeting the cities' emissions targets, motivated by energy security, efficiency and cost savings, health and sustainability concerns, as well as the costs of climate change itself. WWF-US has profiled the climate targets of 215 Fortune 500 companies in its 2014 report *Power Forward 2.0*.<sup>10</sup> The private sector will continue to be a critical partner for large-scale GHG reductions in cities.

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<sup>10</sup> World Wildlife Fund, Inc., *Power Forward 2.0: How American Companies Are Setting Clean Energy Targets and Capturing Greater Business Value*, June 19, 2014, <http://www.worldwildlife.org/publications/power-forward-2-0-how-american-companies-are-setting-clean-energy-targets-and-capturing-greater-business-value>.

A nighttime photograph of a city skyline. The sky is a deep blue. In the foreground, a street is lined with trees and streetlights, with some light trails from traffic. Several tall buildings are visible, including a prominent one with a glowing blue dome and a 'HYATT' sign. Other buildings have lit windows, and a bridge is visible on the left side.

**LEADERSHIP FROM ELECTED OFFICIALS,  
SUPPORTIVE STATE POLICIES, AND  
PARTNERSHIPS WITH THE PRIVATE SECTOR  
ARE KEY TO SUCCESSFUL CLIMATE ACTION IN CITIES.**

# Atlanta, Georgia

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*“Our city has always demonstrated an innovative spirit when faced with challenges. Working together, this community will once again tap into this spirit and transform Atlanta into a model city for conservation and clean energy. My vision for making Atlanta a top-tier city for sustainability is one that will endure beyond administrations, and live within the people and places that create the fabric of this urban metropolis.”* —Mayor Kasim Reed, Atlanta, Georgia

## The Target

In 2007, Atlanta became the first city in Georgia to develop inventories of its GHG emissions sources and amounts—also known as its carbon footprint. By 2010, the data showed that the city had reduced its carbon footprint by 12.5%, surpassing the 5.5% reduction goal set in 2006, when former Mayor Shirley Franklin signed the US Conference of Mayors Climate Protection Agreement.<sup>11</sup>

Atlanta’s long-term emissions reduction goals were first introduced in its 2010 sustainability plan, which was based on quantitative assessments of previous city emissions and reduction results. The city set and adjusted its goals based on the progress it had made up to that point and what was projected into the future.

Through forums hosted by the Urban Sustainability Directors Network, a peer-to-peer network of city staff working on sustainability, Atlanta looked to other cities of similar size when setting its emissions reduction goals. The city also looked at programs that aim to make commercial buildings as much as 20% more energy- and water-efficient by 2020. Since then, goal-setting has been an iterative process that has involved diverse groups of stakeholders.

## Actions and Results

Atlanta has focused much of its efforts to reduce carbon pollution in the building sector, as buildings are responsible for roughly 40% of Atlanta’s emissions.<sup>12</sup> In 2003, the city passed an ordinance requiring all city-funded projects over 5,000 square feet or over \$2 million to meet the silver-level LEED certification.

In 2010, the city launched the Sustainable Home Initiative for the New Economy. This program increased the demand for residential energy-efficient retrofits by providing incentives to single-family home owners. The program’s current target

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<sup>11</sup> Atlanta Division of Sustainability and U.S. Department of Energy, *Atlanta: Power to Change Sustainability Plan Executive Summary 2010–2011*, <http://clatl.com/images/blogimages/2010/10/26/1288116274-atlsustainplan.pdf>.

<sup>12</sup> City of Atlanta, “City of Atlanta Strengthens Commitment to Energy Efficiency Goals with City Energy Project and Data Accelerator,” news release, January 31, 2014, <http://www.atlantaga.gov/index.aspx?page=672&recordid=2583>.







## ATLANTA, GEORGIA

POPULATION 447,841 (2013)

AREA 132 square miles

MAYOR Kasim Reed

### EMISSIONS REDUCTION GOALS

percentage to be reduced below the 2009 baseline

20% by 2020

40% by 2030

80% by 2040



**Above:** *The Atlanta Streetcar traverses local neighborhoods, reducing carbon pollution and stimulating new investment in underserved communities.*

**Pages 20–21:** *Atlanta’s efforts to revitalize its neighborhoods include adding new downtown hotels and other businesses.*

is to stimulate a 10% increase in the number of residents completing home energy audits by the end of 2015.

The city is also a leader in the national Better Buildings Challenge program. By joining the program in 2011, Atlanta has more than 95 million square feet of commercial building space committed to achieving a 20% increase in energy and water efficiency by 2020. Nearly half of the buildings reached this goal in 2013, making it the first city to attain the program milestones required by the US Department of Energy.<sup>13</sup>

In early 2014, Atlanta joined the City Energy Project (CEP)—a 10-city effort initiated by the Natural Resource Defense Council and the Institute for Market Transformation—to dramatically improve the energy performance of its large public- and private-sector buildings. Working through the CEP could help lower energy bills by as much as \$146 million annually and cut carbon pollution from buildings by about 1.1 million tons each year.<sup>14</sup>

To further explore the potential of renewable energy and energy efficiency opportunities, the city is also working on Property Assessed Clean Energy (PACE) programs, in which financing is provided and repaid as an assessment on property tax bills. Clean Energy Atlanta (CEA) is a PACE financing program sanctioned by the City of Atlanta and administered by Ygrene Energy Fund.

This fund finances solutions that help building owners make energy-saving upgrades and integrate clean energy sources to offset energy-related operating costs. The CEA program is expected to create 2,800 new jobs, generate \$480 million in economic activity, and achieve large reductions in carbon dioxide.<sup>15</sup> A high achiever in the realm of reducing emissions, Atlanta also has the third-most ENERGY STAR® buildings certified by the Environmental Protection Agency in the nation.

Transportation is another focus area where the city is ramping up its emissions reduction efforts. With a statewide electric vehicle rebate and other incentive programs, Atlanta has emerged as the number one city in the nation for plug-in electric vehicles (PEV) sales. The city boasts more than 10,000 registered PEVs and 200 publicly available charging stations.

The city is working on a project called Atlanta Beltline to create a continuous 22-mile multimodal corridor with 11 miles of related arteries. Expected to be completed by 2030, the project will connect 45 neighborhoods with trails, a network of parks, and ultimately a light rail system.<sup>16</sup> This will greatly enhance mobility within the city while reducing driving and related GHG pollution. Due to its sizable economic and environmental benefits, the Atlanta Beltline has been recognized internationally as one of the best economic urban redevelopment and mobility projects.<sup>17</sup>

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<sup>13</sup> Atlanta Better Buildings Challenge, Annual Report, 2013, <http://atlantabbc.com/wp-content/uploads/2014/03/ABBC-2013-Annual-Report.pdf>.

<sup>14</sup> City of Atlanta, “City of Atlanta Strengthens Commitment to Energy Efficiency Goals with City Energy Project and Data Accelerator,” news release, January 31, 2014, <http://www.atlantaga.gov/index.aspx?page=672&recordid=2583>.

<sup>15</sup> Georgia, Clean Energy Atlanta program, <http://pacenow.org/resources/all-programs/>.

<sup>16</sup> City of Atlanta, “Sustainability Initiatives,” <http://www.atlantaga.gov/index.aspx?page=154>.

<sup>17</sup> Interview with City of Atlanta staff, December 2014.



**Above:** A solar photovoltaic installation near downtown Atlanta.

**Below:** Communities are coming to life through mixed-use development such as Atlanta's Atlantic Station.

All of these collaborative efforts have contributed to a 10% reduction in citywide GHG emissions in less than five years while simultaneously creating more than 33,000 clean-tech jobs.<sup>18</sup> Atlanta is becoming more livable, resilient, and adaptable to the threats of climate change as it progresses rapidly toward becoming a sustainable city.

## Moving Forward

Based on the results achieved so far, the Mayor's Office of Sustainability is in the process of completing a more comprehensive and aggressive climate action plan. This plan will include up-to-date strategies and policies to achieve more aggressive emissions reduction goals while growing the city's economy and creating new jobs.

Recognizing the significant potential for improvement in the commercial sector, the city is in the process of passing a comprehensive energy efficiency ordinance and is advancing plans that could triple its renewable energy capacity by the end of 2015. Finally, to further reduce its transportation emissions, Atlanta plans to double its alternative fuel infrastructure by 2015 and double its miles of bicycle lanes by 2016.

To keep track of its GHG emissions and climate action results in a timely manner, the city intends to annually produce a GHG inventory and a sustainability report. In response to the great interest in climate-friendly activities shown by its residents, the city will also expand a public engagement program launched in 2013 called the Power to Change Ambassador Program. The city plans to broaden current initiatives and facilitate more education and awareness activities at the local level. Atlanta is stepping up its engagement with stakeholders to ensure that all segments of the community embrace its environmental efforts.



<sup>18</sup> Interview with City of Atlanta staff, December 2014.

# Cincinnati, Ohio

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## The Target

Cincinnati made local history by adopting its first **Climate Protection Action Plan (CPAP)** in 2008, also known as the Green Cincinnati Plan. The plan has short-, medium-, and long-term emissions reduction goals. Within the CPAP there are five identified sectors that include more than 80 emissions reduction measures.

The City of Cincinnati referred to three factors when setting its emissions reduction goals:

1. the consensus reached by the Intergovernmental Panel on Climate Change that says we need to achieve 80% global emissions reductions by 2050 to stabilize the world's climate
2. the goals set by other cities and states
3. what is realistic and achievable for Cincinnati

Cincinnati is committed to reducing emissions, but is ensuring it does so in a way that is cost-effective and produces simultaneous benefits, such as job creation and economic growth.

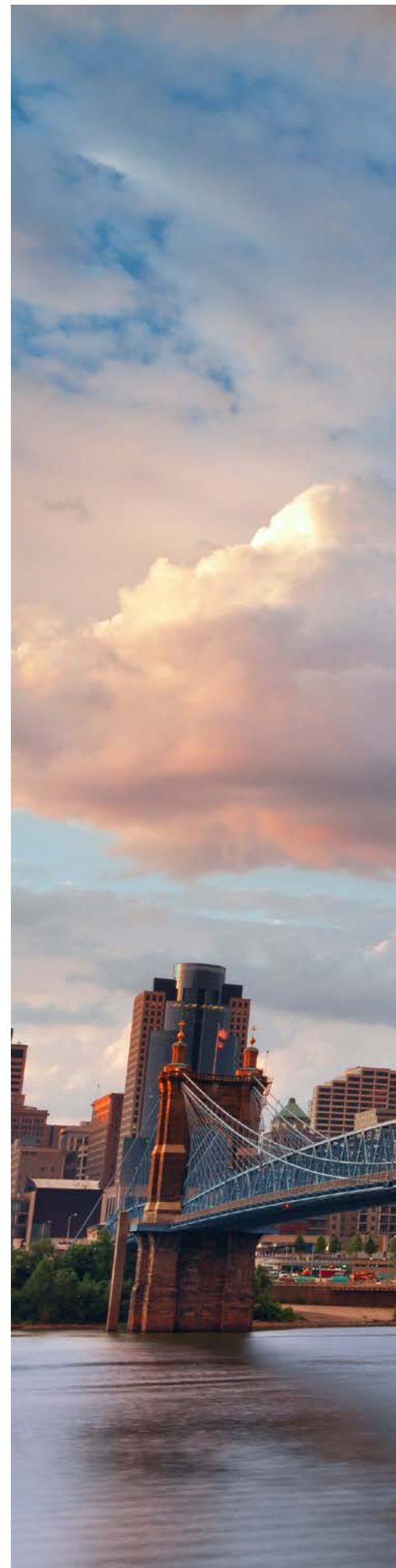
The Green Cincinnati Plan was developed with input from a variety of stakeholders, including nonprofits, utility companies, academia, and labor leaders. The city sent open invitations to the community so that professionals and volunteers could join the team and identify action steps for each sector. With strong government leadership, together with the active involvement of a broad community, this team created a plan that was widely supported at the time of its adoption.

## Actions and Results

The 2008 Green Cincinnati Plan has 82 concrete recommendations, with two-thirds of them currently implemented. In 2013, Cincinnati updated the 2008 plan to have 60 recommendations that strengthen the connection between GHG emissions reductions and sustainability.

Among the city's various climate programs, the electricity aggregation program has been one of the most successful. **Ohio is one of six states that allow community choice aggregation (CCA)**. CCA programs combine the purchasing power of residential and small business electricity accounts to secure preferable contracts with electricity suppliers. CCAs have been used to buy electricity from clean, renewable sources while saving customers money.

**In 2012, Cincinnati became the largest city in the nation to opt for 100% clean, green energy by requiring all energy providers seeking a contract with the new CCA to include a renewable energy option in their proposals.** Through a



## CINCINNATI, OHIO

POPULATION 297,517 (2013)

AREA 79 square miles

MAYOR John Cranley

### EMISSIONS REDUCTION GOALS

percentage to be reduced below the 2006 baseline

8% by 2012

40% by 2028

84% by 2050





**Above:** Cincinnati's new bike share program, Red Bike, is encouraging residents to explore alternatives to driving.

**Pages 24–25:** Downtown Cincinnati.

competitive bidding process, the city delivers only green electricity to its residents and small businesses at the lowest price available. Cincinnati's example shows that cost savings and environmental benefits can be realized at the same time.

Electricity aggregation saves the average Cincinnati household 23% on its utility bill,<sup>19</sup> and the city now has 500,000 megawatt hours of certified renewable electricity that goes to 60,000 customers.<sup>20</sup>

Cincinnati has also been utilizing energy performance contracting to improve energy efficiency in its city government buildings. Working with Honeywell and Ameresco, the city uses projected future energy savings to pay for capital costs associated with its energy efficiency projects. This setup solves part of the upfront investment challenge. So far, Cincinnati has completed three phases of performance contracts and produced an average of \$2 million to \$3 million worth of energy savings per year with a total investment of \$22 million.<sup>21</sup> This program has not only saved energy and cut utility bills, but has also greatly reduced Cincinnati's carbon footprint.

Solar power is also burgeoning in Cincinnati. Power purchase agreements allow solar power developers to use the rooftops of government buildings in exchange for charging the city grid price for solar power. Because of the arrangement, there are now solar panels on 23 buildings, and soon the city will launch a "Solarize" group-buy program that will give residents discounted pricing.

Following its proactive efforts on renewable energy and green buildings, Cincinnati broke ground on a new, net-zero energy police station in October 2014. The new building was designed to achieve net-zero energy consumption and reduce potable water consumption by 30% through a series of innovative designs and technologies, including geothermal heating and cooling systems, solar panels, and advanced building materials.

Recognized as one of the three US finalist cities by WWF's Earth Hour City Challenge Program in 2013, Cincinnati has realized impressive GHG emissions reduction results in recent years. These achievements have been attained despite the fact that going green is much harder in Cincinnati than in many other cities. An abundance of cheap electricity from coal, gas, water, and land resources make it difficult to convince the community to conserve and recycle. However, Cincinnati has managed to outperform the emissions reduction goals set for 2012 and has realized an 8.2% carbon dioxide emissions reduction, mostly from community choice aggregation efforts.

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<sup>19</sup> City of Cincinnati. *Green Cincinnati Plan (2013)*, June 12, 2013.

<sup>20</sup> Interview with City of Cincinnati staff, August 2014.

<sup>21</sup> Ibid.

**Below:** Solar panels at the Cincinnati Zoo and Botanical Garden.

## Moving Forward

Building on the successes achieved thus far, Cincinnati is planning to increase its percentage of alternative fuels by powering its trash collection fleet with compressed natural gas. To encourage the purchase of electric vehicles, the city plans to pass an ordinance that will grant them free parking. Following its newly launched bike-share program, the city will also further promote bicycling and public transportation.

Cincinnati recently launched a PACE program for commercial buildings, and there are more programs in the pipeline. By allowing property owners to use a portion of their property taxes to pay off energy loans over time, PACE will be an effective way to finance more energy efficiency and the use of renewable energy in commercial buildings.



# Minneapolis, Minnesota

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*“Residents across Minneapolis are doing their part to combat climate change. Congress should be right there with us and take action to reduce carbon pollution at power plants. The world must see that the US is committed to tackling this problem if we hope to have real outcomes at the global climate accord in December—and we need real outcomes. Minneapolis will continue to do its part to tackle this challenge while supporting national and international efforts.”*

—Mayor Betsy Hodges, Minneapolis, Minnesota

## The Target

Minneapolis has a long history of implementing climate change initiatives. The first of its climate actions can be traced back to the Minneapolis-Saint Paul Urban CO<sub>2</sub> Project Plan adopted in 1993. In 2004, former Mayor R.T. Rybak signed the US Conference of Mayors Climate Protection Agreement, pledging to reduce GHG emissions. Most recently, Minneapolis adopted the 2013 Minneapolis Climate Action Plan (MCAP).

This plan outlines strategies that will help the city achieve its goals of reducing GHG emissions by 15% in 2015 and by 30% in 2025. These targets are in line with what the Intergovernmental Panel on Climate Change says is necessary to address climate disruption in the near term. As the result of successful collaboration from the entire community—including representatives from the public, private, and nonprofit sectors—the plan seeks to address a variety of issues, including transportation, energy efficiency, waste disposal, and environmental justice.

In April 2014, to supplement its short- and mid-term emissions reduction goals, the city adopted a long-term goal of 80% or more by 2050. This target was inspired by the state of Minnesota’s long-term emissions reduction goal of 80%. The city’s new goal is significantly more challenging than its 2025 goals, yet it is determined to tap its full potential and collaborate with other government entities to exceed its goals.

## Actions and Results

To reach its emissions reduction goals, Minneapolis is pledging to reduce energy use by 17% while simultaneously doubling the use of local renewable energy. In early 2013, the city passed a ground-breaking benchmarking and disclosure ordinance. Minneapolis is the first Midwestern city to pass an ordinance of this kind, which requires commercial buildings over 50,000 square feet and public buildings over 25,000 square feet to annually benchmark and report their energy and water consumption.







## MINNEAPOLIS, MINNESOTA

POPULATION 400,070 (2013)

AREA 58.4 square miles

MAYOR Betsy Hodges

### EMISSIONS REDUCTION GOALS

percentage to be reduced below the 2006 baseline

15% by 2015

30% by 2025

80% or more by 2050



**Above:** *Organic waste recycling in Minneapolis.*

**Pages 28–29:** *Downtown Minneapolis.*

Based on the reported data, opportunities for improvement will be identified, high performers will be recognized, and progress toward the city’s climate action plan goals will be determined. Considering that large commercial buildings make up over half of the city’s energy use,<sup>22</sup> and that the energy efficiency investments in city buildings from 2009–2012 have already saved more than \$6 million in energy costs,<sup>23</sup> the ordinance should not only help Minneapolis meet its GHG emissions goals, but also create local jobs and save money for businesses and building owners.

The city is also working with utility companies on a partnership model for renewable energy and energy efficiency programs. Through negotiations of a franchise agreement, Minneapolis is exploring options to achieve its goals for sustainable energy, improved air quality, equity building, and green jobs. In October 2014, with the active participation and strong support of the local community, the city entered an agreement with two utility companies, setting in motion an innovative, first-in-the-nation, public-private clean energy partnership. The focus of the partnership will be on the emissions reduction goals it set forth in the MCAP while at the same time making energy more affordable and reliable.

Another major step in reducing GHG emissions is the city’s call for a 30-mile network of protected bike lanes to reduce the amount of cars on the road. Widely known to be a bike-friendly city, Minneapolis launched the nation’s first large-scale bike-sharing system in 2010. According to 2012 census data, Minneapolis ranks second in terms of the percentage of commuters who bike to work. The next step is to make bicycling safer and more accessible, and thus entice more residents to use bikes as one of their main modes of commuting, in addition to recreation or exercise. Minneapolis plans to start this program in 2015.

Waste management is another focus area in the overall emissions reduction plan. The city has proposed a number of programs, such as expanding the types of acceptable materials for recycling, implementing financial incentives, pushing for a 15% composting rate, and conducting more educational campaigns.<sup>24</sup>

Minneapolis has a good record of meeting its emissions reduction goals. While the concrete results of the 2013 MCAP are yet to be seen, the data for 2012 show that it is already quite close to its 2015 goals. In addition to direct local government action, it is believed that much of this achievement comes from switching to wind and natural gas for providing the city’s electricity and from increases in new federal vehicle fuel efficiency standards.

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<sup>22</sup> City of Minneapolis, “Commercial Building Benchmarking and Transparency,” <http://www.ci.minneapolis.mn.us/environment/energy/>.

<sup>23</sup> City of Minneapolis, *2012 Energy Benchmarking Report: Public Buildings*, November 2013, <http://www.ci.minneapolis.mn.us/www/groups/public/@citycoordinator/documents/webcontent/wcmsip-117371.pdf>.

<sup>24</sup> City of Minneapolis, *Minneapolis Climate Action Plan*, June 28, 2013.



*Above: Solar energy development in Minneapolis.*

## Moving Forward

The city plans to solidify its partnership with utility companies to collaborate on renewable energy projects as well as on new and enhanced energy efficiency programs for residential and commercial buildings. In addition to their environmental benefits, these programs could also be a boon for low-income families that have a high-energy burden, but not the financial resources for renewable energy investments. The city is prioritizing climate action strategies that can promote social equity and address broader environmental justice issues.

Minneapolis is planning to expand its pilot curbside organic waste recycling program. It currently covers eight of its more than 80 neighborhoods, but will become a citywide effort in 2015, progressing toward its long-term goal of recycling half of all municipal solid waste.

# Portland, Oregon

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*“The region is about to complete the first new bridge in downtown Portland in 30 years, and it will carry light rail, streetcars, buses, bicycles and pedestrians ... but not private vehicles. This is the kind of investment that will help us make our healthy, connected city a reality. And while we’re proud of recent progress, there’s a lot of hard work ahead to reach our goals.”*

—Mayor Charlie Hales, Portland, Oregon

## The Target

The City of Portland has created and implemented strategies to reduce GHG emissions for more than 20 years. In the early 1990s, it became the first city in the country to adopt a comprehensive carbon dioxide reduction strategy. In 2001, Multnomah County and the City of Portland passed their joint Local Action Plan on Global Warming.

In 2009, Multnomah County and Portland adopted an updated climate action plan (CAP) with expanded categories for actions and more rigorous reduction targets. The plan identifies 93 action steps in eight categories to reach its emissions reduction goals, ranging from curbside pickup of residential food scraps to expanding the city’s streetcar and light rail system.

Thanks to strong government leadership, science-informed policymaking has long been practiced in Portland. To avoid the catastrophic consequences of climate change, the city set its latest emissions reduction target by referring to current science from the Intergovernmental Panel on Climate Change (IPCC). Portland adopted an 80% emissions reduction target by 2050 with an interim goal of 40% by 2030. In line with IPCC recommendations, 1990 was set as the baseline year for the reduction target.

## Actions and Results

Portland has developed a broad set of policies and programs to achieve its ambitious emissions reduction targets. In the 1970s, Oregon adopted a statewide land-use policy to prevent urban sprawl by establishing urban growth boundaries. Guided by this policy, cities were encouraged to develop more dense urban neighborhoods while preserving farmland and wilderness. This successful policy set the stage for a series of effective GHG emissions reduction programs in Portland.

With a focus on development that aims to provide accessible transportation options to people within its city limits, Portland has made the expansion of streetcar and light rail systems a priority in the past several decades. Since 1990, Portland has added four major light rail lines (with the fifth line currently under construction) and the Portland Streetcar. Construction is nearing completion





## PORTLAND, OREGON

POPULATION 609,456 (2013)

AREA 145 square miles

MAYOR Charlie Hales

### EMISSIONS REDUCTION GOALS

percentage to be reduced below the 1990 baseline

40% by 2030

80% by 2050



**Above:** *Ecorooftops replace conventional roofing with a living, breathing vegetated roof system. This type of roof significantly decreases stormwater runoff, saves energy, reduces pollution and erosion, and helps preserve fish habitat.*

**Pages 32–33:** *Downtown Portland, Oregon.*

on the nation’s first multimodal bridge that is off-limits to private automobiles, but will carry bikes, pedestrians and public vehicles over the Willamette River.<sup>25</sup>

In addition, Portland now has 319 miles of bikeways, including 59 miles of neighborhood greenways; 181 miles of bike lanes, cycle tracks and buffered bike lanes; and 79 miles of dedicated bike paths. Portland received the League of American Bicyclists’ highest rating for being a bicycle-friendly community. In addition, *Bicycling* magazine designated Portland as the number one bike-friendly city in the United States.<sup>26</sup>

As a result of these efforts, Portland drivers travel fewer vehicle miles than those in most other similarly-sized cities. Transit ridership has more than doubled in the past 20 years (100 million rides in 2013), and today, at least 12,000 more people bike to work daily in Portland than in 1990. Six percent of Portlanders commute to work by bike, nine times the national average. While the population of Portland has increased by 31%, gasoline sales actually decreased by 7% compared to 1990.<sup>27</sup>

In addition to efforts to providing more transportation options, Portland has implemented a series of clean energy and energy efficiency programs. A strong focus on green buildings has led to more than 180 certified green buildings. The data for 2012 also showed that Portland had more LEED Platinum certified buildings than any other city in the US.<sup>28</sup> The city is also expanding the application of solar energy in its facilities and neighborhoods; the number of solar energy systems has increased to 2,775 today from only one in 2002.<sup>29</sup>

Clean Energy Works (CEW) is another acclaimed energy efficiency program in Portland. Started with 500 pilot homes and an aim to reduce energy consumption 10% to 30%,<sup>30</sup> CEW provides long-term, low-interest financing to homeowners for whole-home energy upgrades with on-bill utility repayment of the loan. Because of its innovation and success since its launch in 2009, CEW attracted \$20 million from the US Department of Energy to scale up the pilot into a statewide effort.

The program has realized multifaceted benefits. As of April 2014, more than 3,700 homes in Oregon had been upgraded for energy efficiency. These upgrades help avoid more than 5,000 tons of GHG emissions each year, equal to powering nearly 500 homes for a year. Meanwhile, the program has generated \$70 million in economic activity and created about 428 jobs.<sup>31</sup>

Stormwater, the runoff created by rainfall, is another challenge faced by modern cities. Like many older cities, Portland has a combined stormwater and

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<sup>25</sup> Interview with City of Portland staff, August 2014.

<sup>26</sup> City of Portland Bureau of Transportation, “Bicycles in Portland Factsheet,” <https://www.portlandoregon.gov/transportation/article/407660>.

<sup>27</sup> Interview with City of Portland staff, August 2014.

<sup>28</sup> City of Portland and Multnomah County, *Climate Action Plan 2009: Year Two Progress Report*, April 2012.

<sup>29</sup> Interview with City of Portland staff, August 2014.

<sup>30</sup> American Council for an Energy-Efficient Economy, *Clean Energy Works Portland*, March 2011, <http://www.aceee.org/sector/local-policy/case-studies/clean-energy-works-portland>.

<sup>31</sup> Interview with City of Portland staff, December 2014.

**Below:** *One of downtown Portland's most attractive features is the Willamette River, featuring bridges with bike lanes and walking paths.*

wastewater system, which has resulted in the pollution of local rivers and streams when high storm volume causes the system to overflow. To protect rivers and natural systems, Portland voted to enforce a series of policies that promote green infrastructure, including requiring all new construction to manage 100% of stormwater onsite through structures such as green streets and ecoroofs.

Thanks to these new policies and the city's ongoing promotion of ecoroofs, a number of buildings and structures in Portland now have living, vegetated roof systems that decrease runoff and offer aesthetic, air quality, habitat, and energy benefits. Portland is now home to over 390 ecoroofs, covering nearly 20 acres of rooftops. The city has also invested heavily in green infrastructure, such as bioswales and rain gardens, with more than 1,200 such facilities in the public right-of-way. Portland uses green infrastructure to manage millions of gallons of stormwater each year.<sup>32</sup>

Portland is also a national leader in recycling efforts. It has a 70% overall recycling rate for residential and commercial waste. Due to the addition of a weekly food scrap composting service and a shift to every-other-week garbage collection in 2011, residential garbage taken to the landfill has decreased by over 35%, and collection of compostable materials has more than doubled.<sup>33</sup>

Leading by example, Portland has also been setting more aggressive emissions reduction targets for its own operations. Through efficiency improvements, including traffic lights, water and sewer pumps, and building lighting systems, the city has realized energy savings totaling over \$6.5 million a year, which adds up to around 30% savings for Portland's annual electricity costs.<sup>34</sup>



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<sup>32</sup> Interview with City of Portland staff, December 2014.

<sup>33</sup> Ibid.

<sup>34</sup> Ibid.

**Opposite:** *A green street facility is a small rain garden that collects stormwater runoff from streets. Green streets keep stormwater out of the sewer system and local streams, which helps protect and improve the efficiency of the city's water and sewer infrastructure.*

Contrary to the widely held assumption that pursuing emissions reduction goals will likely slow down the local economy, the experience in Portland shows that climate actions have actually reduced the cost of doing business and created more equitable, healthier, and livable neighborhoods. The number of green jobs are growing in Portland. Over 12,000 jobs in Portland can be attributed to the clean technology sector, including green building, energy efficiency, and clean energy. Portland is a national leader in innovative bicycling product manufacturing and services as well.<sup>35</sup>

Portland's emissions reduction programs have been successful: Local GHG emissions in 2013 were 11% below the 1990 levels (equal to a 32% reduction on a per person basis), and Portland homes now use 11% less energy per person than in 1990.<sup>36</sup> With all of these efforts and achievements, the City of Portland became one of the 16 local jurisdictions to receive recognition as a Climate Action Champion from the White House in 2014. In the same year, Portland was among 10 cities worldwide to receive the Climate Leadership Award for its Healthy Connected City strategy. The award honor cities all over the world for excellence in urban sustainability and leadership in the fight against climate change.<sup>37</sup>

## Moving Forward

Multnomah County and the City of Portland are in the process of reviewing and revising their 2009 climate action plan. Building on previous successes and lessons learned, the 2015 update incorporates recommendations for action and social equity into the development process.

For the energy program, the city is planning to advance net-zero energy buildings and require energy disclosure for large commercial buildings. The focus on solar and low-carbon fuel sources will remain, and efforts to encourage the adoption of electric vehicles will be enhanced.

The city is now seeking reductions in global life-cycle emissions from consumption. Life-cycle emissions are those created by the production and use of products from furniture to computers to appliances. For this, Portland has taken the innovative step of measuring life-cycle emissions generated through consumption by households, public agencies, and businesses. The consumption-based inventory revealed that Portland's global GHG emissions are double the in-boundary emissions traditionally measured.

The consumption-based inventory also illustrates how people's food choices and the burgeoning "sharing economy" hold substantial potential for reducing global GHG emissions. Portland is planning to increase its efforts in these areas. The next step for the city is to find an effective way to communicate these findings to the local community. There is also a need to help businesses and residents better understand that their consumption choices significantly contribute to global emissions.

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<sup>35</sup> Interview with City of Portland staff, December 2014.

<sup>36</sup> Interview with City of Portland staff, August 2014.

<sup>37</sup> C40 Cities Climate Leadership Group. "City Climate Leadership Awards 2014," <http://cityclimateleadershipawards.com/2014-ccla-winners/>.





TO "GO GREEN," CITIES ARE LITERALLY TURNING GREEN. PARKS, TREES, AND NATIVE LANDSCAPING IN URBAN AREAS HELP MANAGE STORMWATER, RELIEVE SUMMER HEAT, AND IMPROVE OVERALL QUALITY OF LIFE FOR LOCAL RESIDENTS.





## Conclusion

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Although vulnerable to climate change, **local communities are at the forefront of mitigating its impact.** They offer unique opportunities for promoting sustainability and reducing GHG emissions. In the US, a number of cities are doing an exemplary job at combating climate change, as demonstrated by data from 116 communities representing 14% of the American population.

In combination with the four city profiles in this report, our data analysis shows that local communities are at center stage for taking initiative, mobilizing resources, and achieving ambitious emissions reduction goals. In many cases, cities' innovative and practical climate actions are creating jobs as well as more robust and sustainable local economies.

WWF, ICLEI and others supporting climate action in cities will continue to examine the role local governments play in reducing greenhouse gas pollution. The data gathered for this report represent a small portion of the total emissions from US cities. Cities that have voluntarily reported their carbon footprint are helping advance our collective understanding. To discover new solutions and address common challenges in the ways we plan and build our cities, we will need for many more US communities to share their emissions data.

However, cities can't do it on their own because they operate in a broader context that can either slow down or accelerate their climate actions. Federal programs for urban development and sustainability are encouraging local governments to innovate. The EPA's Clean Power Plan rules for cutting GHG pollution in the electricity sector are a leap forward, and commitments offered through international climate forums are a strong indication of the nation's intentions.

Many local governments are gearing up to support and take advantage of this movement. But an even more ambitious, long-term, and comprehensive national climate strategy formulated through bipartisan cooperation is required to slow the pace of climate change. A more holistic approach can engage cities in a "race to the top," with the goals of becoming healthier, more resilient, and more prosperous.

We hope that decision makers will look to leading communities, such as the ones in this report, as examples to follow. We also hope that these model communities' governments and stakeholders will utilize their creativity and redouble their efforts. We are racing against the clock. The time is now for bold, comprehensive action in every sector and at every level of the government.

**Left:** *The City of Evanston, Illinois, was named 2015 US Earth Hour Capital by WWF from among 44 other US cities based on its success cutting emissions and addressing its climate challenges.*



**THE TRANSFORMATIONAL IDEAS FOR BUILDING  
TRULY SUSTAINABLE CITIES CAN COME FROM  
ANYWHERE. CITIES ARE ORGANIZING AT A GLOBAL  
SCALE TO LEARN FROM ONE ANOTHER AND  
MAKE COLLECTIVE PROGRESS.**



## SPOTLIGHT

# The Carbon Neutral Cities Alliance

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Cities striving for carbon neutrality are taking into account the Intergovernmental Panel on Climate Change's conclusion that averting the worst impacts of climate change will require cutting at least 80% of GHG emissions by 2050. Because urban areas are responsible for nearly three-quarters of humanity's emissions, reaching this goal will depend in large part on our ability to reimagine and reinvent cities in ways that promote economic prosperity, social equity, enhanced quality of life, and climate resilience.

The Carbon Neutral Cities Alliance (CNCA or "the Alliance") is a collaboration of international cities committed to achieving aggressive long-term carbon reduction goals. The Alliance aims to strategize how leading international cities can work together to attain emissions reductions more effectively and efficiently.

The Alliance was born in June 2014 at an organizing meeting in Copenhagen of the following cities:

- Berlin, Germany
- Boston, USA
- Boulder, USA
- Copenhagen, Denmark
- London, United Kingdom
- Melbourne, Australia
- Minneapolis, USA
- New York City, USA
- Oslo, Norway
- Portland, USA
- San Francisco, USA
- Seattle, USA
- Stockholm, Sweden
- Sydney, Australia
- Vancouver, Canada
- Washington, DC, USA
- Yokohama, Japan



These cities came together to share lessons learned and to plan for implementing deep carbon reductions. They agreed upon the following ways to accelerate best practices in the Alliance's first year:

**Developing carbon neutrality planning standards**

Creating approaches, analysis, and tools to support carbon neutrality; standardizing measurement and verification methodologies for tracking progress

**Advancing transformative change in key urban sectors**

Sharing and implementing best practices for achieving game-changing, deep carbon reduction strategies in urban transportation, energy use, and waste systems

**Advocating for policy change**

Identifying and advocating for policies at the state, regional, and federal levels to reduce emissions sources not controlled directly by cities; engaging with other external stakeholders who are critical to cities' success

**Speaking with a common voice**

Helping CNCA cities demonstrate their leadership and communicate with a common voice

**Creating a CNCA innovation fund**

Investing in high-potential, city-led projects that develop, test, implement, and amplify de-carbonization strategies and practices (currently funded at \$500,000)

**Increasing the Alliance's impact**

Sharing Alliance lessons with a broader audience to benefit the next wave of cities striving for carbon neutrality

The Carbon Neutral Cities Alliance is staffed by the Urban Sustainability Directors Network in partnership with the Innovation Network for Communities (INC) and the C40 Cities Climate Leadership Group (C40). The Alliance is supported by the Kresge Foundation, the V. Kann Rasmussen Foundation, the Summit Foundation and the Rockefeller Brothers Fund.

For more information on the Carbon Neutral Cities Alliance, email CNCA Director Johanna Partin at [johannapartin@usdn.org](mailto:johannapartin@usdn.org).



## APPENDIX

# Community Emissions Targets

The following table provides data on 132 local governments that have set greenhouse gas emissions reduction targets for their communities. Most of these governments have set short-term targets to be achieved by 2020 or earlier. Some have also set medium- and long-term reduction targets. Thirty-three of these local governments have established targets of an 80% or greater emissions reduction by 2050 or earlier. Sixty-two communities have set an emissions reduction target equal to or greater than the US target of 26% to 28% reduction below 2005 levels by 2025.

† Cities with an emissions reduction target equal to or greater than the US government's target

\* One of the 116 cities included in this report's analysis of emissions reductions



Community	Base Year	SHORT-TERM TARGET		MEDIUM-TERM TARGET		LONG-TERM TARGET	
		Decrease	Year	Decrease	Year	Decrease	Year
Albany, CA*	2004	25%	2020				
Albemarle County, VA†*	2007	24%	2020			80%	2050
Albuquerque, NM†*	2000	20%	2012	30%	2020	80%	2050
American Canyon, CA*	2005	15%	2020	15%	2020		
Amherst, MA†*	1997	35%	2009	67%	2020		
Annapolis, MD†*	2006	25%	2012	50%	2025	100%	2050
Ann Arbor, MI*	2000	25%	2025			90%	2050
Antioch, CA*	BAU Forecast	25%	2020				
Arcata, CA†*	2005	20%	2010	40%	2020		
Aspen, CO†*	2004	30%	2020			80%	2050
Atlanta, GA†	2009	20%	2020	40%	2030	80%	2040
Austin, TX*	2007					Net Zero	2050
Baltimore, MD*	2010	15%	2020				
Bedford, NY*	2004	20%	2020				
Bellingham, WA†*	2000	7%	2012	28%	2020		
Benicia, CA*	2000	10%	2020				
Berkeley, CA†*	2000	33%	2020			80%	2050
Boston, MA†*	2005	25%	2020			80%	2050
Boulder, CO*	1990	7%	2012	10%	2020	80%	2050
Brattleboro, VT†*	2000	10%	2010	20%	2020		
Brookline, MA†*	1995	20%	2010	33%	2020		
Broward County, FL	2005	17%	2020			82%	2050



Community	Base Year	SHORT-TERM TARGET		MEDIUM-TERM TARGET		LONG-TERM TARGET	
		Decrease	Year	Decrease	Year	Decrease	Year
Burlington, VT*	2007	20%	2020			80%	2050
Calistoga, CA*	2005	15%	2020	15%	2020		
Cambridge, MA**	1990	20%	2010	30%	2020		
Carbondale, CO**	2004	25%	2012	50%	2020		
Charleston, SC**	1994	10%	2002	30%	2020		
Charlottesville, VA*	2000			10%	2035		
Chattanooga, TN**	1990	7%	2012	20%	2020		
Chevy Chase, MD*	1990	7%	2012				
Chicago, IL**	1990	25%	2020			80%	2050
Chula Vista, CA**	1990	20%	2010	30%	2020		
Cincinnati, OH**	2006	40%	2028			84%	2050
Cleveland, OH**	2010	16%	2020	40%	2030	80%	2050
Collier County, FL*	2007	10%	2020	20%	2030	50%	2050
Columbia, MO*	2000	7%	2012	12%	2020		
Columbus, OH	2013	20%	2020				
Dallas, TX**	2005	30%	2020	30%	2020		
Denver, CO*	1990	0	2020				
Des Moines, IA*	2008	15%	2015				
East Palo Alto, CA	2005	15%	2020				
Edina, MN	NA					80%	2050
El Cerrito, CA	2005	15%	2020	30%	2035		
Emeryville, CA**	2004	25%	2020				
Eugene, OR**	1990	10%	2020	50%	2030	75%	2050
Evanston, IL+	2005	13%	2012	20%	2016		
Falmouth, MA*	2001	10%	2020	10%	2020		
Falmouth, ME**	2007	24%	2020			80%	2050
Fitchburg, WI*	1998	7%	2012	11%	2020		
Flagstaff, AZ*	1990	7%	2012	10%	2020		
Fort Collins, CO*	2005	20%	2020			80%	2050
Foster City, CA	2014	10%	2018				
Fremont, CA**	2005	25%	2020				
Galloway, NJ**	2007	24%	2020			80%	2050
Grand Rapids, MI	1990	1%	Annual				
Hamden, CT*	2001	10%	2015	14%	2020		
Hamilton Township, NJ	2008	20%	2020				
Hartford, CT*	2001	10%	2011	19%	2020		
Haverford, PA**	2005	30%	2020	30%	2020		
Hawthorne, CA	2005	15%	2020				
Hayward, CA*	2005	12%	2020			82%	2050

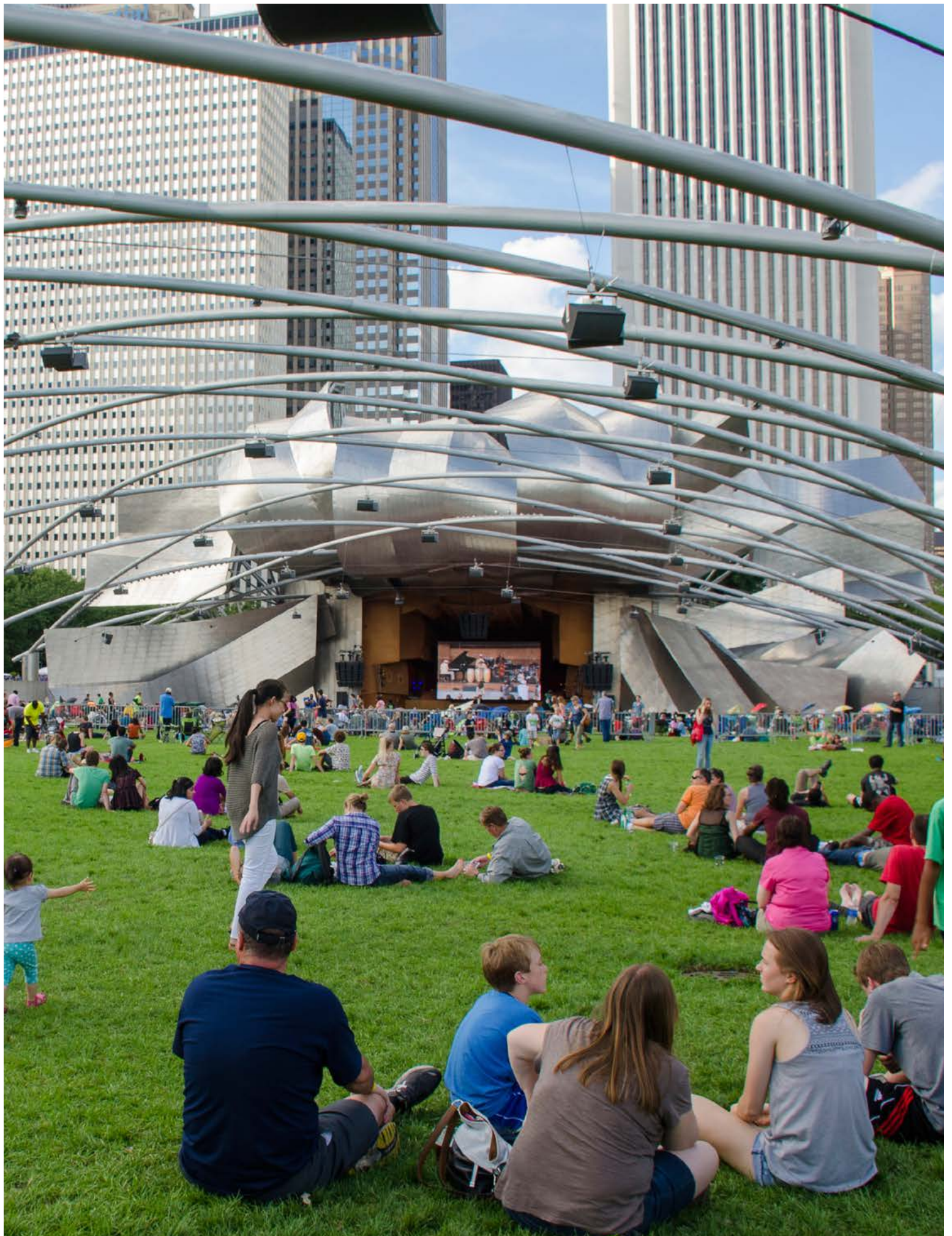
Community	Base Year	SHORT-TERM TARGET		MEDIUM-TERM TARGET		LONG-TERM TARGET	
		Decrease	Year	Decrease	Year	Decrease	Year
Homer, AK*	2000	12%	2012	20%	2020		
Janesville, WI	2005					75%	2050
Kansas City, MO <sup>+</sup> *	2005	4%	2010	15%	2015	30%	2020
Keene, NH*	1995	10%	2015	13%	2020		
Key West, FL <sup>+</sup> *	2005	15%	2015	23%	2020		
Kirkland, WA*	2005	10%	2012	20%	2020	80%	2050
Knoxville, TN*	2005	20%	2020				
La Plata County, CO <sup>+</sup> *	2005	30%	2020				
Lawrence, KS <sup>+</sup> *	2002	30%	2020	50%	2030	80%	2050
Lexington, MA	2010	20%	2040				
Los Angeles, CA <sup>+</sup> *	1990	26%	2020	35%	2030		
Madison, WI <sup>+</sup> *	1990	20%	2010	30%	2020		
Manhattan Beach, CA	2005	7%	2020				
Marin County, CA*	1990	15%	2020	15%	2020		
Martinez, CA	2005	15%	2020				
Medford, MA*	1998	10%	2010	18	2020		
Miami, FL*	2006	20%	2020				
Miami-Dade County, FL	2005	10%	2015	20%	2020	80%	2050
Middlebury, VT*	2002	10%	2012	18%	2020		
Minneapolis, MN <sup>+</sup> *	2006	15%	2015	30%	2025	80%	2050
Mission, KS*	2005	20%	2020	20%	2020		
Montgomery County, MD <sup>+</sup> *	2005	80%	2050	27%	2020		
Montgomery County, PA*	2004	4%	2012	15%	2017	32%	2025
Napa County, CA*	2005	15%	2020	15%	2020		
Napa, CA*	2005	15%	2020	15%	2020		
Nashville, TN*	2005	20%	2020				
New Haven, CT*	1999	10%	2020	10%	2020		
New York, NY <sup>+</sup>	1990	30%	2030	80%	2050		
Newton, MA*	1998	7%	2010	13%	2020		
North Little Rock, AR	2008	10%	2015				
Northampton, MA <sup>+</sup> *	2000	8%	2010	25%	2017		
Northfield, MN <sup>+</sup> *	2005	15%	2013	50%	2028	100%	2033
Novato, CA*	2005	15%	2020	15%	2020		
Oak Park, IL <sup>+</sup>	2007	30%	2020				
Oakland, CA <sup>+</sup> *	2005	36%	2020			80%	2050
Olympia, WA <sup>+</sup> *	2005	50%	2020	70%	2035	80%	2050
Palo Alto, CA*	2005	5%	2012	15%	2020		
Park City, UT*	2005	15%	2020				
Philadelphia, PA <sup>+</sup> *	1990	10%	2010	20%	2015		

Community	Base Year	SHORT-TERM TARGET		MEDIUM-TERM TARGET		LONG-TERM TARGET	
		Decrease	Year	Decrease	Year	Decrease	Year
Piedmont, CA	2005	15%	2020				
Pinecrest, FL*	2010	7%	2020				
Pittsburg, CA*	2005	15%	2020				
Pittsburgh, PA*	2003	20%	2023				
Portland, OR**	1990	10%	2010	40%	2030	80%	2050
Richmond, VA+	2008	30%	2025				
Riverside, CA**	2007	26%	2020	49%	2035	80%	2050
Roanoke County, VA**	2007	30%	2020				
Roanoke, VA*	2005	10%	2015	15%	2020		
Sacramento County, CA*	2008	15%	2020				
Sacramento, CA**	2005	15%	2020	38%	2030	83%	2050
Saint Helena, CA*	2005	15%	2020				
San Diego, CA*	2010	15%	2020	49%	2035		
San Francisco, CA**	1990	25%	2017	40%	2025	80%	2050
San Luis Obispo, CA*	2005	15%	2020				
San Rafael, CA**	2005	25%	2020				
San Ramon, CA	2008	15%	2020				
Santa Cruz County, CA	2009	21%	2020	43%	2035	64%	2050
Santa Cruz, CA**	1990	30%	2020			80%	2050
Santa Monica, CA*	1990	15%	2015				
Seattle, WA**	1990	30%	2020	58%	2030	100%	2050
Snohomish County, WA*	2000	20%	2020				
Sonoma County+	1990	25%	2015			80%	2050
Spokane, WA*	2005			30%	2030		
St. Louis, MO*	1990	7%	2012				
Stamford, CT**	1998	20%	2018	22%	2020		
Sunnyvale, CA	2008	15%	2013				
Tacoma, WA**	1990	15%	2012	40%	2020	80%	2050
Tucson, AZ	1990	7%	2012				
Upper Dublin, PA*	2007	10%	2017	13%	2020		
Washington, DC**	2006			50%	2032		
Westchester County, NY**	2005	20%	2015			80%	2050
Whatcom County, WA*	2001	10%	2012	17%	2020		
Williamstown, MA*	2000	10%	2010	20%	2020		
Worcester, MA**	2002	11%	2010	25%	2020		
Yountville, CA*	2005	15%	2020				

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