

# WEALTHIER, HEALTHIER CITIES

How climate change  
action is giving us  
wealthier, healthier cities

Based on the CDP responses  
from 110 global cities



“By reducing greenhouse gas emissions and better managing water resources, we will also have cleaner creeks, less air pollution, and other ancillary benefits.”

Austin USA

The city government of Austin, Texas made the above remark this year as part of its response to CDP’s annual questionnaire on climate change. The city’s comment succinctly captures a feature that extends across many cities’ CDP responses in 2013: the co-benefits of taking action on climate change in cities. Just as Austin finds additional health and air quality advantages in reducing greenhouse gas (GHG) emissions, many other cities around the world are finding that tackling climate change yields similar co-benefits, from improving efficiency to attracting new businesses.

In this report, CDP, C40 and AECOM present the results of our analysis of these benefits, based on the responses of 110 global cities to the 2013 CDP questionnaire.<sup>1</sup> The cities in this sample span the globe—from megacities like London, Tokyo, New York, and Jakarta to the small city of Oristano in Italy and Ouagadougou, the capital of Burkina Faso in West Africa. The sample includes more than 80% of the membership of C40 and represents the largest and most comprehensive collection of self-reported data on cities and climate change assembled to date by CDP.

The data from these cities makes clear that the benefit of taking action on climate change at the city level is not limited to reducing emissions or adapting to warmer temperatures. The cities in the survey are engaged on the issue of climate change, and, as a result, are saving money, creating more attractive investment environments, and enabling citizens to live healthier lives. In short, climate change action by local governments around the world is creating wealthier, healthier cities.

<sup>1</sup> CDP invited 240 cities to report this year; 110 responded by the deadline. To read the full-text response of any city in the survey, or for more information about any aspect of CDP’s work with cities, please visit [www.cdp.net](http://www.cdp.net). A full list of all reporting cities is available on page 16 of this report.

## Key findings

### 1. Climate change action is making cities leaner and richer.

One out of every two actions that cities are taking to reduce emissions in their municipal operations is focused on efficiency. Cities report over \$40 million in savings per year from tackling climate change.

### 2. Emissions reduction activities by cities are pro-business.

62% of actions that cities are taking to reduce GHG emissions at the city-wide level have the potential to attract new business investment and grow the economy. Furthermore, 91% of cities believe that working to combat climate change will lead to economic opportunities for their cities. Inaction could be costly—98% of cities say that climate change poses physical risks to their cities, including impacts to business.

### 3. Reducing emissions and adapting to climate change makes for healthier citizens.

More than half of reporting cities (55%) are undertaking emissions reduction actions that promote walking and cycling, which directly and indirectly lead to improved public health. And over three-quarters of cities’ reported adaptation actions will protect human health from the negative effects of climate change.



C40 is a network of the world’s megacities taking action to reduce GHG emissions. In 2013, CDP and C40 Cities Climate Leadership Group (C40) mark three years of partnership on the effort to engage cities in climate change data reporting. C40 Chair, New York City Mayor Michael R. Bloomberg invited all 63 C40 Cities to participate through CDP’s reporting platform — 53 cities responded. CDP and C40 will publish specific analysis on the C40 data in this year’s sample later. For more information, please visit [www.c40.org](http://www.c40.org)

**A Note on the Text.** All analysis and conclusions presented in this report derive from data reported by 110 cities in response to the CDP Cities 2013 questionnaire, unless otherwise noted. Percentages are based on the total number of cities that responded to the survey (110 cities), unless otherwise noted. Currency figures are given in US dollars. For question-by-question results of the survey, please see our accompanying report, “CDP Cities 2013: Summary Report on 110 Global Cities.”

## Driving efficiency and cost savings

In its drive to reduce its carbon footprint, the City of Sydney in Australia recently turned its attention to its electricity consumption. The city found that public lighting—including lighting for streets, parks, and walkways—accounted for roughly a third of its total electricity use. As a result, the city became the first in Australia to roll out new, energy efficient LED lighting for its streets and parks. Over the next few years, Sydney will replace 6,450 conventional lights with LED technology, reducing its GHG emissions from lighting by 70%. The earth’s atmosphere is not the only beneficiary—the city expects to save \$800,000 per year on its electricity bill.

As cities like Sydney strive to reduce GHG emissions, they are undertaking a diverse array of actions—from promoting renewable energy to expanding public transportation.

But the most common actions reported by cities focus on improving energy efficiency. Our research reveals that the three most popular activities to reduce emissions in municipal operations all focus on improving energy efficiency:

1. Reducing energy demand in buildings;
2. Improving fuel efficiency in municipal fleets;
3. Lowering energy consumption and maintenance costs of outdoor lighting.

These three specific activities alone comprise 25% of the more than 700 actions that cities are undertaking to reduce emissions in their municipal operations.<sup>2</sup> All together, one out of every two actions (54%) that cities are taking to reduce emissions in their municipal operations is focused on efficiency.<sup>3</sup>

These efficiency actions are leading to more savings for local governments—a powerful message for political leaders to send to their constituents. Los Angeles retrofitted 4,400 traffic signals and more than 100,000 streetlights, saving \$11 million per year in electricity and repair costs. Houston replaced the incandescent bulbs in its signalized intersections, realizing \$10,000 per day in savings. But it is not just LED street lighting that delivers a payback—cities are also cutting wasted energy from their buildings. Washington, DC, for example, began in 2004 to retrofit the 8,700 residential building units owned by the DC Housing Authority. To date, the program has retrofitted 5,400 units, saving \$3.9 million in electricity costs annually, as well as another \$2.4 million in operations and maintenance costs—all while leading to warmer, less expensive homes for residents. Cape Town has just secured more than \$1 million to invest in municipal building

**Fig 1** Reported annual energy efficiency savings  
By city (\$USD)

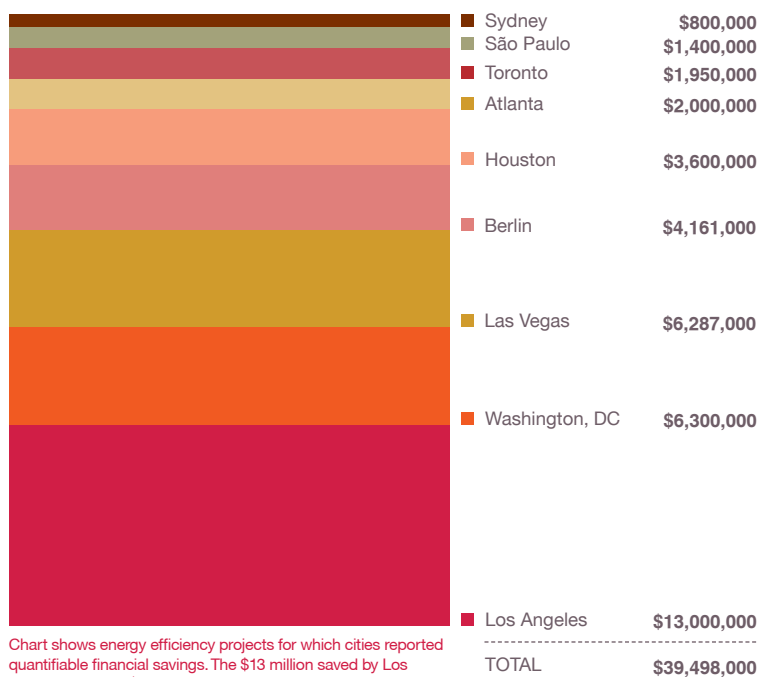


Chart shows energy efficiency projects for which cities reported quantifiable financial savings. The \$13 million saved by Los Angeles includes \$11 million in savings from LED technology and \$2 million in savings from reduced hauling costs.

<sup>2</sup> Note that the 700 actions referred to here are for municipal government operations. City governments are often responsible for two types of emissions reduction actions: those focused on the municipal government’s own operational emissions, and those focused on reducing emissions in the city as a whole. CDP asks cities to report these two types of activities in separate places.

<sup>3</sup> We define efficiency as any action that is designed to accomplish the same outcome with less input, usually in relation to energy. For a more complete definition, see Park, Chris, *Dictionary of Environment and Conservation*, Oxford University Press, 2007.

energy efficiency retrofits over the next three years, and St. Louis is in the process of improving the energy performance of its City Hall. Taken together, cities report that they are saving or plan to save nearly \$40 million per year on energy efficiency measures.

Data from these 110 cities shows that cities' actions to reduce GHG emissions also benefit the bottom line. In many places, these savings will provide a much more persuasive message than reductions in GHG emissions.

**EXPERT INSIGHT**

**Leveraging finance for sustainable growth.**

The world's cities face an immediate need to drive green growth, economic development, and build infrastructure that mitigates the causes and risks of climate change. The financing to do so, however, remains one of their most pressing needs – and challenges.

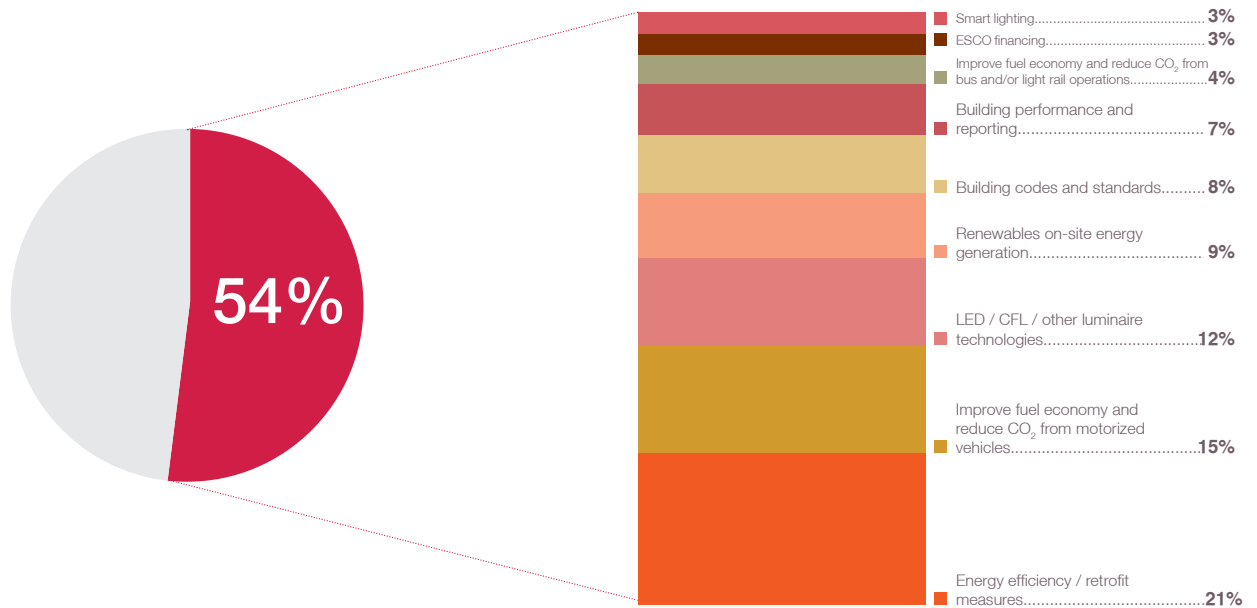
That's why last year C40 launched the Sustainable Infrastructure Finance Network, chaired by Chicago Mayor Rahm Emanuel and co-chaired by Basel Mayor Guy Morin. This network brings together C40 megacities and innovator

cities from around the world to collaborate and build the capacity to meet urban infrastructure financing needs. The network has initially focused on sharing the successes and challenges of several cities, which have leveraged public and private investment – these include Chicago's Infrastructure Trust, London's Green Fund, and Melbourne's Sustainable Melbourne Fund. The network is also working with private financial institutions, multilateral development banks and other investment experts to broker access to existing funds, and shape city-focused financial mechanisms for

the future. The dynamic exchange among cities and partners within C40's Sustainable Infrastructure Finance Network provides cities with the contacts, concepts, frameworks, and relationships to access the finance they need to grow.

C40 Cities

**Fig 2** Municipal emissions reduction actions focused on efficiency  
% of actions





# Cities can work to decouple GDP growth from growth in GHG emissions.

## SPOTLIGHT

### Decoupling GDP and GHG growth.

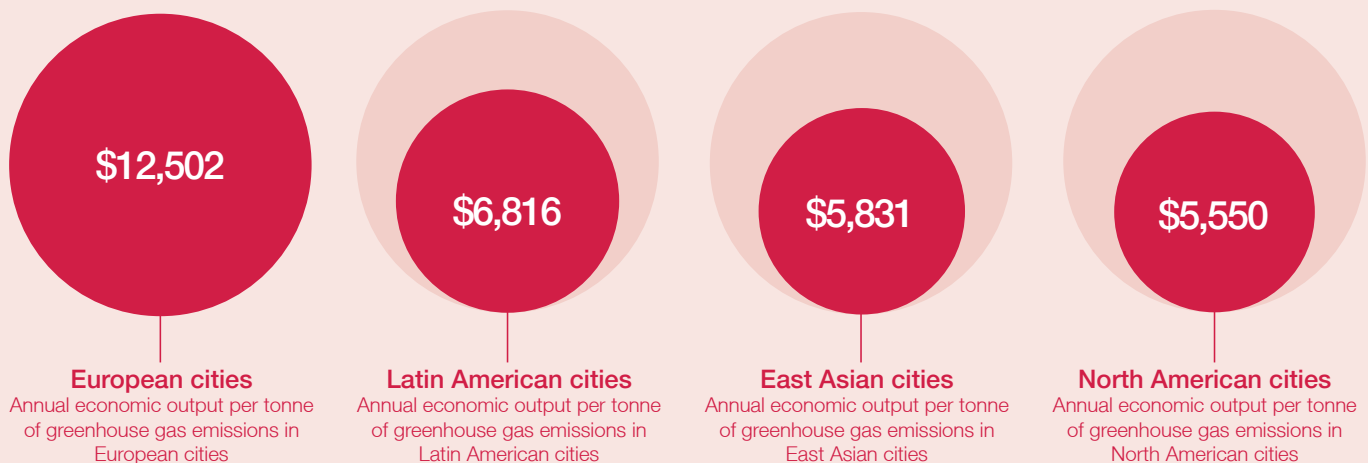
Saving energy in municipal operations is not the only way that cities can improve their efficiency. They can also work to decouple GDP growth from growth in GHG emissions. We suggest one metric for comparing efficiency across cities—what we call “economic efficiency.” CDP and AECOM analyzed cities in four regions to determine which cities create wealth most efficiently. We examined the total GHG emissions of a city as

well as its GDP and noted which cities produced the largest amount of GDP per tonne of GHG emitted. Then we took an average of the cities in each region.

Our analysis reveals that North American cities lag their European peers significantly in the amount of wealth that they produce per unit of GHG emitted. North American cities produce \$5,550 worth of GDP per tonne of GHG emitted, while European cities produce more than double that amount. In fact, both Latin American cities and East Asian cities—think of Buenos Aires and

Montevideo, Seoul and Tokyo —also outperform North American cities in terms of economic efficiency per tonne of GHG. As cities continue to invest in emissions reduction activities, they can expect to wring more wealth out of each tonne of emissions.

**Fig 3** Economic efficiency of greenhouse gas emissions  
City GDP in \$USD / metric tonnes CO<sub>2</sub>e



European cities sample: Amsterdam, Athens, Barcelona, Basel, Berlin, Copenhagen, Greater London, Hamburg, Istanbul, Lisbon, Madrid, Greater Manchester, Milan, Naples, Oslo, Paris, Rotterdam, Stockholm, Turin, Venice, Vilnius, Warsaw, Zaragoza, Zurich.

Latin American cities sample: Belo Horizonte, Bogotá, Buenos Aires, Cali, Caracas, Goiânia, Mexico City, Montevideo, Rio de Janeiro, Santiago, São Paulo.

East Asian cities sample: Kaohsiung, Hong Kong, Taipei, Tokyo, Seoul, Yokohama.

North American cities sample: Atlanta, Baltimore, Chicago, Cleveland, Dallas, Denver, Los Angeles, Miami, Minneapolis, Montreal, New Orleans, New York, Philadelphia, Portland, San Diego, San Francisco, St Louis, Toronto, Vancouver.

Source: GDP data from <https://cgidd.com/>

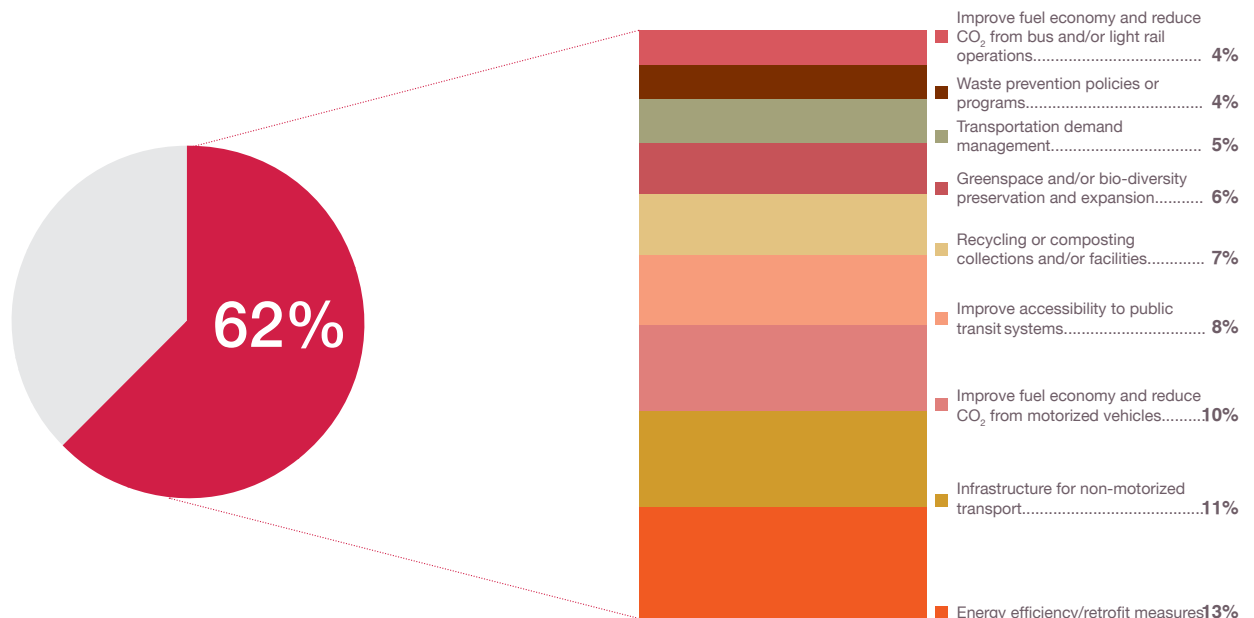
## Attracting new business and investment

Energy efficiency alone is not enough to create wealthier cities—they also must attract and retain strong businesses that provide jobs and grow tax revenue. In addition, cities must protect their existing businesses from the increasing risks associated with warmer temperatures. CDP’s review of city responses suggests that tackling climate change—through actions that both reduce GHG emissions and protect the city from the expected effects of climate change—is also helping cities to attract and retain business investment.

CDP, C40 and AECOM analyzed the more than 800 individual actions that cities are taking to reduce GHG emissions at the

city-wide level to find out how many of these actions might make the city a more attractive location for business. We considered an activity to be helpful in making a city more attractive to business if academic research suggests that it can have an impact on economic growth in a city.<sup>4</sup> For example, research shows that positive economic outcomes often stem from investments in public transit, increasing green space, and building infrastructure for walking and cycling, among other initiatives.<sup>5</sup> Our analysis shows that 62% of all reported emissions reduction activities being undertaken by cities have the potential to make cities more attractive to businesses.

**Fig 4** Emissions reduction actions that will make cities more attractive to business  
% of actions



4 The Organization of Economic Cooperation and Development (OECD), for example, defines “green growth” as: “Green growth means promoting economic growth while reducing pollution and GHG emissions, minimising waste and inefficient use of natural resources, and maintaining biodiversity.” <http://www.oecd.org/greengrowth/48224539.pdf>

5 See, for example, a 2007 study from California, which linked light rail development to an increase in commercial property values near the light rail stations. See also a recent study by CEOs for Cities, which found that walkability also directly correlates with higher real estate values. Research on a project-by-project basis is needed to determine if each individual emissions reduction project cited here will yield economic benefits. <http://www.ceosforcities.org/research/walking-the-walk/>  
<http://trb.metapress.com/content/1832g82m232t4818/?genre=article&id=doi%3a10.3141%2f1805-02>

“

A city that is not paying attention to climate change will not be able to attract investors because the business environment is not conducive for sustainability. ”

**Pietermaritzburg**  
South Africa

“

The pursuit of advanced energy has become a centerpiece of economic development efforts in Northeast Ohio. ”

**Cleveland USA**

City governments also anticipate that these improvements will make their cities better places to invest. 91% of cities believe that working to combat climate change will result in economic opportunities for their cities. The most frequently cited opportunity is the development of new businesses in the city—63% of cities report that they anticipate investment from businesses in new industries.

New York City, for example, reports that its “energy efficiency initiatives will result in new clean tech businesses.” Changwon expects a similar co-benefit—the South Korean city hopes that its plans to utilize sewage sludge for bus fuel and to install solar power plants in unused areas will drive new business growth. Houston expects that the planned expansion to its light rail (a \$4 billion dollar investment) will bring economic benefits for both businesses and residents in the city, while Dallas sees the number of green jobs in the city rising as GHG emissions fall. Nearly every reporting city this year understands that climate change action creates economic opportunities—a powerful rebuke to constituencies that associate climate action with economic harm.

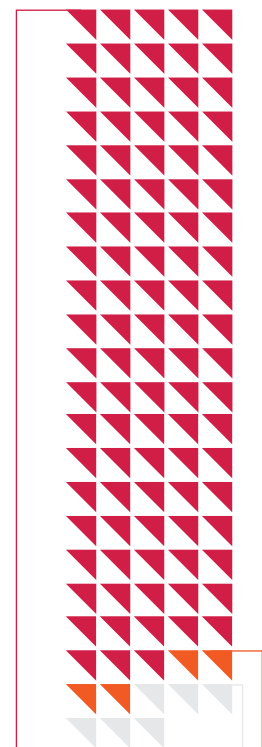
Is the investment paying off for cities? For some, the payback in new business has already begun. In Greater Manchester, one of the UK’s largest cities, some 2,000 businesses employing 37,000 people supply low carbon goods and services in the city. According to the city government, the low carbon and environmental goods and services sectors are growing at over 4%, despite the ongoing UK recession. São Paulo, the largest city in Brazil and its financial hub, reports that the city has “already seen

the arrival and development of an industry that promotes environmentally friendly goods and services, such as the clean energy industry associated with ethanol and electrical vehicles.” The Detroit Free Press recently documented how growing interest in cycling in Detroit and elsewhere has given rise to a new business industry in Detroit—bicycle manufacturing. The Press reports that one of the entrepreneurs who launched a new bicycle manufacturing company was inspired by “urban planning trends.”<sup>6</sup>

While tackling climate change presents a great chance for cities to attract new business, changes in the climate also bring about serious risks. 98% of reporting cities believe that their cities face physical risks from climate change, the highest percentage of cities in the three year history of the CDP questionnaire. Cities classify nearly half (48%) of these risks as both near-term and serious / extremely serious. Cities also believe that many of these risks may directly threaten the ability of businesses to operate. As a result, identifying and addressing these physical risks has an important co-benefit—helping protect businesses and ensuring an attractive business climate for the long-term.

The city of Belo Horizonte in Brazil, for example, is currently experiencing an increase in flooding due to storms. Among other effects, these floods result in losses for small business operators in the city, who lose product as well as other investments like furniture. Storms and flooding also snarl traffic, which prevents employees from reaching their workplaces. “If this situation persists or gets worse,” notes the city government, “it may alienate potential

**Fig 5** Cities that say climate change presents an economic opportunity  
% of cities



**Yes**

91%

Don't know  
6%

**No**  
4%

<sup>6</sup> “Metro Detroit Draws 2-wheel Makers as Bicycling on the Rise,” *Detroit Free Press*, 6 May 2013.  
<http://www.freep.com/article/20130506/BUSINESS06/305060015/bicycle-making-detroit-bike-trend>



**Fig 6** Economic opportunities reported as a result of climate change  
# of cities

**Development of new business industries**

**71**

cities

**Increased attention to other environmental concerns**

**45**

cities

**Increased efficiency of operations**

**39**

cities

**Increased infrastructure investment**

**38**

cities

**Additional funding opportunities**

**32**

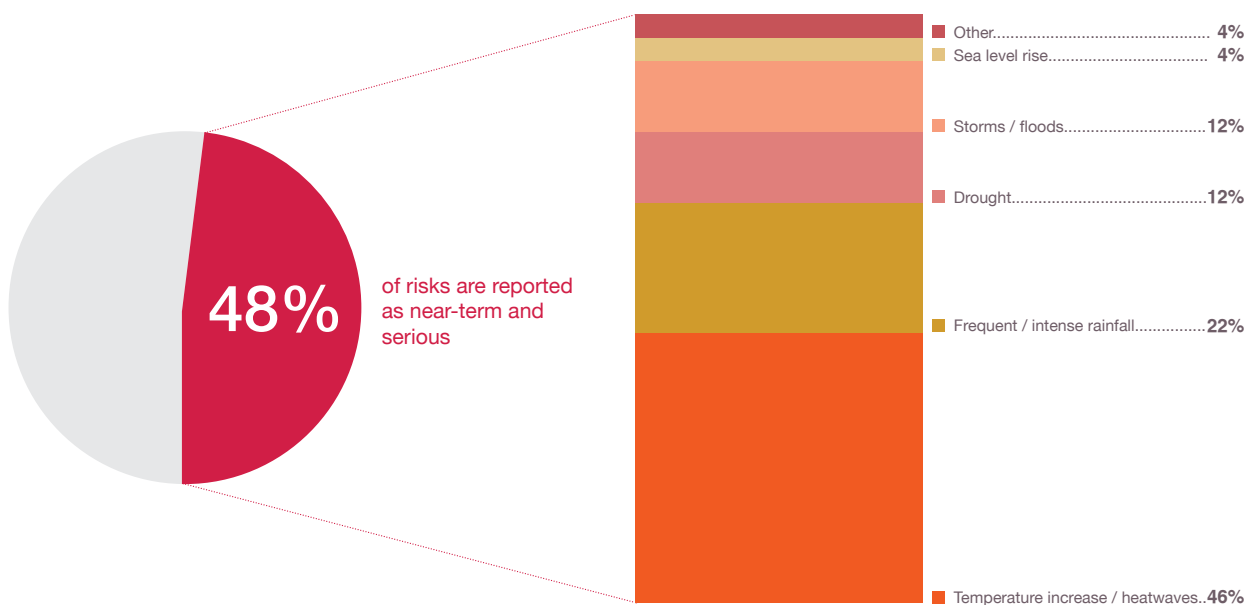
cities

**Increased energy security**

**31**

cities

**Fig 7** Physical risks reported as near-term and serious  
% of risks



entrepreneurs.” Guayaquil, Ecuador’s largest city, also reports that businesses in the city center have suffered physical and infrastructure damage as a result of adverse weather conditions. Even when storms and flooding do not cause damage, they reduce the flow of consumers, which has an adverse effect on sales.

The governments of Belo Horizonte and Guayaquil are making special efforts to protect their cities from the effects of climate change. Many of these efforts also have the added benefit of protecting

businesses. Belo Horizonte is working to improve the city’s storm water and transport infrastructure, which will reduce flooding and keep its traders safer. San Francisco is undertaking studies to account for how climate change may affect the city, then taking action accordingly. The city will build new infrastructure to deal with storm surge, storm intensity, and sea level rise, ensuring maximum resiliency for businesses, among others. Cities’ efforts to protect their residents and infrastructure from climate change are keeping cities safe for business.



## EXPERT INSIGHT

### Recovering from Hurricane Sandy

When it comes to climate change, New York City has long been considered a leader in long-term sustainable planning, but Hurricane Sandy was a wake-up call to all New Yorkers. In December 2012, Mayor Bloomberg announced the Special Initiative for Rebuilding and Resiliency (SIRR) and tasked it to address how New York City can rebuild to be more resilient in the wake of Sandy but with a renewed focus on: how to improve citywide infrastructure and

building resilience in the medium and long term; and how to rebuild locally in order to help Sandy-impacted communities become more resilient. SIRR addresses these challenges by investigating three key questions:

- 1) What happened during and after Sandy and why?
- 2) What is the likely risk to New York City as the climate changes and the threat of sea level rise, future storms and severe weather increases?
- 3) What do we do with citywide infrastructure

and buildings? And in Sandy-impacted neighborhoods?

In New York City alone, direct and indirect losses from Sandy amounted to around \$19 billion in damages. Using the best science available to forecast long-term risk, there will likely be a greater number of the most intense hurricanes. The probability of a storm causing New York City as much economic damage as Hurricane Sandy will increase by 17% by the 2020s and by 40% by the 2050s. In the face of this incentive to act now, SIRR has produced a comprehensive final

report directed at mid- and long-term resiliency measures that presents policy recommendations, infrastructure priorities, and community plans, and identifies sources of long-term funding. You can find the report on [www.nyc.gov/resiliency](http://www.nyc.gov/resiliency)

New York City  
Office of Long-Term  
Planning and Sustainability

“

The economic damage of flooding will rise four-fold by 2050. Commercial and industrial sectors will suffer substantially. ”

**Bangkok** Thailand

“

Chicago is investing in creating jobs and economic growth through sustainability. Building a healthier, more livable and economically vibrant city will be aided by more than \$8 billion in public and private investments being made over the next decade. ”

**Chicago** USA



Bangkok



Chicago

#### EXPERT INSIGHT

##### When it comes to sustainability and business growth is the choice still either/or?

City governments around the globe must constantly balance the need to improve the environment while driving business growth. For a long time, there was the belief that measures that addressed climate change would be a burden on business.

But recent advances in technology that make buildings smarter and more efficient are both good for the environment and equally good for business. Internet technology that transformed communications and commerce is now

entering an industrial phase that will transform how machines communicate and buildings operate.

For example, we are providing technology that observes how a building is used. With flexible, dynamic work forces, buildings aren't always operating from 9 to 5, Monday through Friday. Smart Building technology enables productivity by waking up the building when and if employees are present and shifting to energy saving mode when the workforce is away. Smart Building technology can also observe the weather and adjust lighting levels to respond to a sunny or gray day. And by remotely monitoring building systems and

equipment, we help drive cost effective, preemptive equipment adjustments that save energy. All this will drive important carbon reductions but will also drive business growth.

At Jones Lang LaSalle, we believe that Smart Buildings are a no-brainer. First and foremost they're good for business - which will ultimately drive emissions reduction too.

**Dan Probst**  
Chairman, Energy and Sustainability Services  
Jones Lang LaSalle

## Building healthier cities

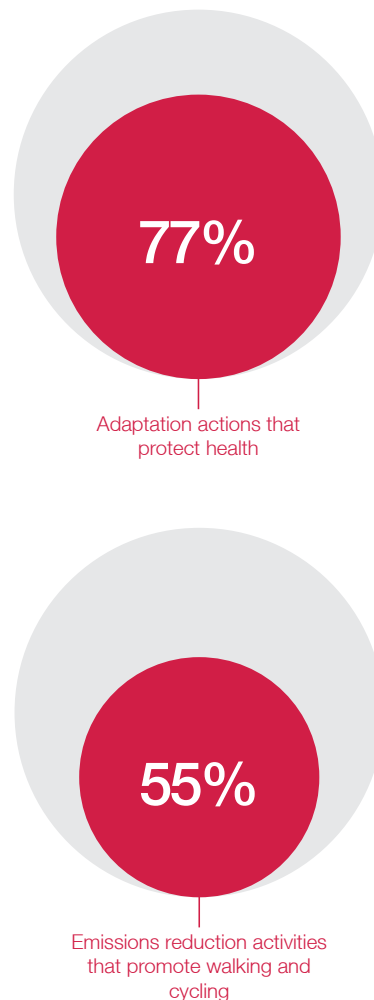
Natural disasters threaten business continuity in cities; more importantly, they pose serious risks to the health and safety of city residents. By taking steps to protect urban infrastructure from the impacts of climate change, city governments are also protecting their residents' life and health. At the same time, city governments' activities to reduce GHG emissions are encouraging healthier citizens. Taken together, our analysis shows that the efforts that city governments are making to reduce their GHG emissions and adapt to the effects of climate change are creating healthier cities.

CDP, C40 and AECOM first examined the efforts that cities are making to adapt to the effects of climate change. We analyzed which of these efforts might also yield the welcome co-benefit of improving human health or protecting human life. The analysis shows that more than three-quarters (77%) of reporting cities are undertaking actions to adapt to climate change that will also protect life and health. Cities are improving infrastructure, like storm water management, which is designed to reduce flooding, thereby reducing the spread of contaminated water. Cities are also battling the poor air quality that comes with hotter days by, for example, restricting automobile use on certain days. Fewer automobiles on the road means fewer particulate emissions, a leading cause of asthma and other respiratory illnesses.<sup>7</sup>

Mexico City, for example, is confronting the climate-related spread of disease head-on. The city expects more frequent heat waves in the short-term; these events present an increased risk of the spread of disease in the city. So the city has worked to improve its epidemiological monitoring during summers. This monitoring has helped the city to uncover a major cause of gastrointestinal sickness: street food that is inadequately preserved during periods of warmer temperatures. "The impact derived of warmer

days has been verified recently," reports the city government. "The local Secretary of Health reports more gastrointestinal cases in the population." The city has recently increased its prevention actions during heat waves to reduce the spread of these germs, especially among the elderly. As a result of these efforts, residents will benefit from reduced risk of illness when heat waves strike.

**Fig 8** Cities undertaking actions with health co-benefits  
% of cities



<sup>7</sup> NRDC Website, "Asthma and Air Pollution." Accessed on 6 June 2013. <http://www.nrdc.org/health/effects/fasthma.asp>



Flooding also presents an immediate health risk for many city governments across the world, and many cities are battling the health effects that accompany rising waters. Cape Town, for example, is experiencing flooding as a result of increased rainfall and storm surges. “Flooding in informal settlements,” notes the city government, “is a major health risk as it increases the spread of water-borne diseases such as cholera and typhoid.” The city is confronting this threat through stringent “no-development” lines, coastal vulnerability mapping, and by maintaining its storm water runoff infrastructure.

Adaptation actions are not the only activities that are helping local governments to create healthier cities. Cities’ GHG mitigation actions are also leading—both directly and indirectly—to improved citizen health. More than half of reporting cities (55%) are undertaking emissions reduction actions that directly or indirectly promote walking and cycling. These cities are building infrastructure for pedestrians and cyclists, improving access to public transit, and increasing density. Research shows that these types of activities can have a direct impact on the health of city residents. For instance, a study from the University of Utah showed that more walkable cities reduce the risk of obesity in citizens.<sup>8</sup> And a study of New Yorkers’ commuting habits showed that good health was more common among residents who walked or biked to work.<sup>9</sup>

Buenos Aires has invested heavily in infrastructure to promote cycling and decrease private vehicle ownership. The city has installed more than 100km of bicycle paths, which intersect with major

public transit access points. And the city’s free bicycle program—launched in 2010—currently features more than 1,000 available bicycles, which can be accessed at 28 docking stations. Porteños (as residents refer to themselves) make 4,200 trips a day using the system. According to the city government, “Bicycles are one of the most economical means of transport, while at the same time improving health.”

Emissions reduction activities can have beneficial effects for human health in other areas as well. Air quality, for example, can improve significantly as cities close coal-fired power plants. Chicago has recently announced that it will close two coal-fired power plants—called Crawford and Fisk—by the end of 2014, working in conjunction with public health groups. Similarly, other cities, including Stockholm, Oslo, Montreal, Baltimore and New York, are looking to replace old, dirty fuel oil burning boilers in buildings with natural gas burning appliances. Not only do these actions decrease GHG emissions but there are often considerable air quality and public health benefits. Traffic management is another win-win. Los Angeles has synchronized 100% of its traffic lights to reduce the amount of time drivers spend waiting at red lights, saving one million tonnes of CO<sub>2</sub>e and reducing particulate emissions. By tackling climate change, city governments can also address some of the pressing health issues in their cities.

## SPOTLIGHT

### Maximizing wealth and health through master planning

One of the methods that cities use to manage the intersecting demands of reducing GHG emissions, preparing for climate change, and promoting and protecting healthy lifestyles is through master planning. Houston, for instance, is aiming to develop multi-use urban centers in many locations throughout the city. The city government expects its plans to lead to “improved air quality, reduced GHG emissions and better public health which results in an enhanced quality of life for all Houstonians.”

Stockholm also uses master planning to promote health and quality of life. The city government writes that “an important basic idea within the city’s Masterplan is that it should be easy, safe and pleasant to walk in the city.” Overall, 64% of cities (71 cities) report that they incorporate GHG reductions into their master planning process, suggesting that many cities are already well-placed to maximize benefits from emissions reductions.

8 “This Old Healthy House: Obesity Linked to Newer, Less Walkable, Neighborhoods,” University of Utah website. Accessed 6 June 2013. <http://unews.utah.edu/old/p/072808-1.html>

9 “New Report from the Health Department Links Active Transportation to Better Health,” NYC.gov website. Accessed 6 June 2013. <http://www.nyc.gov/html/doh/html/pr2009/pr077-09.shtml>



“

Every flood that brings dirty water inside houses will bring the risk of some diseases like leptospirosis, and even dengue fever and, thus, more demand for public health service.”

**Belo Horizonte** Brazil

“

Untreated waste water pollutes surface and underground water sources, which affects the community health and business activities.”

**Hanoi** Vietnam

“

The projected increase in heavy rainfall events will increase the probability and impact of surface water and tidal flooding. This is likely to impact on the health of Londoners and visitors.”

**Greater London** UK

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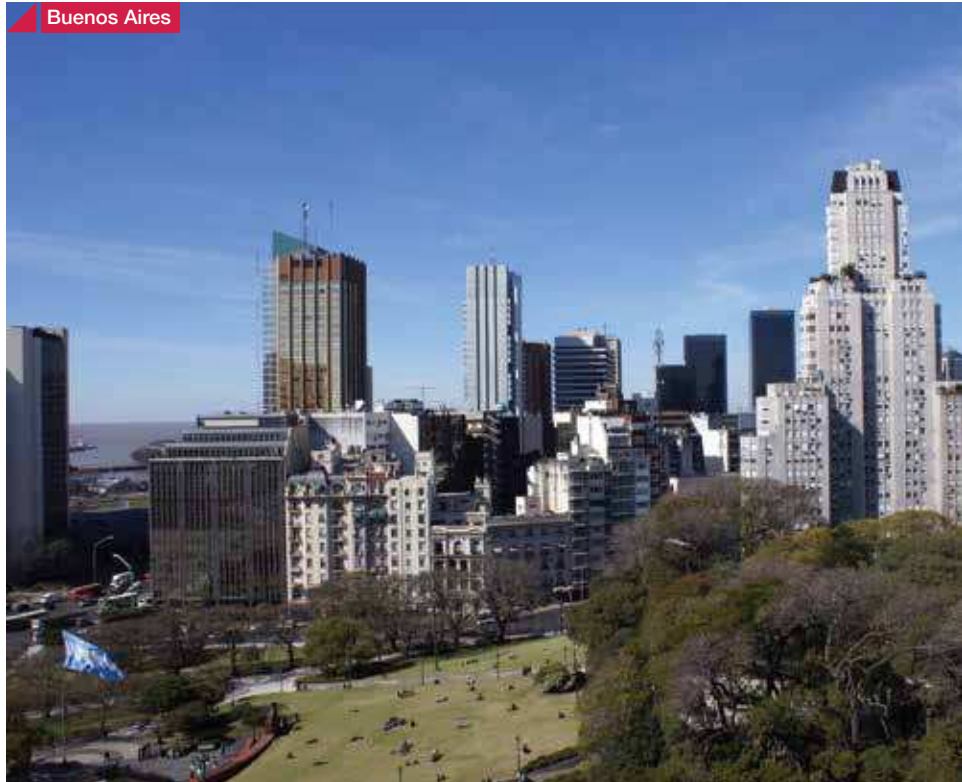
Bearing in mind the benefits of a city with fewer private cars and more bicycles, regarding travel time, air quality, population health, among others, the city has launched zero interest rate loans for bike purchase.”

**Buenos Aires** Argentina

Belo Horizonte



Buenos Aires



## Conclusion

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Climate change action by city governments can yield strong and clear advantages for their citizens and businesses beyond simply being good for the planet. Our analysis shows that cities are realizing additional gains by acting to combat climate change in their cities—gains that are helping them create wealthier, healthier cities.

We acknowledge that, in some cases, cities are pursuing activities in part because of the co-benefits associated with the investment. For example, the financial payback on an energy efficiency project may drive its adoption, especially in cities where climate change action is unpopular. Similarly, ensuring public health and safety in cities has long been an objective of many local governments—witness the investments in policing, road safety, urban design, and traffic management that mayors have undertaken around the world in the last 50 years. Our conclusions serve to underscore the link between acting to mitigate climate change and the broader economic, social, and environmental benefits that can accrue to cities as a result. Further, our conclusions point to potentially catastrophic costs arising from inaction—costs that could harm businesses and drive up health costs.

There is a link between acting to mitigate climate change and broader economic, social and environmental benefits.

The story is just beginning. More research is needed to determine the cumulative effect of this climate change action in cities. For example: Does climate change action by a city lead to better health outcomes over the long term? Are cities with advanced climate change action efforts more likely to grow their economies faster? These questions are beyond the scope of our research, but they present intriguing opportunities to examine the theme of cities and climate change in more depth. More robust city data is crucial to these future efforts. We encourage more cities around the world to take up the call of reporting annually on their climate change efforts through CDP.

## List of reporting cities in 2013:

City of Abidjan	Greater London Authority*
Abuja, FCT	City of Los Angeles*
Addis Ababa City Administration*	Ayuntamiento de Madrid*
Ansan Metropolitan Government	Municipalidad de Magdalena del Mar
Antananarivo	Greater Manchester
City of Amsterdam*	City of Melbourne*
Município de Aparecida	Mexico City*
City of Athens*	City of Miami
City of Atlanta	Comune di Milano*
City of Austin*	City of Minneapolis
City of Baltimore	Ville de Montréal
Bangkok Metropolitan Administration*	Moscow Government*
Ajuntament de Barcelona*	Municipalidad de Montevideo
Alcaldía Distrital de Barranquilla	Comune di Napoli
Basel-Stadt*	City of New Orleans*
Municipality of Belo Horizonte	New York City*
City of Berlin*	Comune di Oristano
Bogotá Distrito Capital*	City of Oslo*
Bornova Municipality	Commune de Ouagadougou
City of Buenos Aires*	City of Paris*
Municipality of Campinas	City of Philadelphia*
Municipality of Curitiba*	City of Phoenix
Santiago de Cali	Comune di Piacenza
City of Cape Town	City of Pietermaritzburg
Alcaldía Metropolitana de Caracas*	City of Portland, Oregon*
Changwon City*	Municipality of Porto Alegre
City of Chicago*	Prefeitura do Rio de Janeiro*
City of Cleveland	Municipality of Recife
City of Copenhagen*	Gemeente Rotterdam*
City of Dallas	City of Salvador
City of Denver	City of San Diego
City of Detroit	City of San Francisco*
Ville de Douala	City of San José
Dublin City Council	San Salvador
City of Durban	Región Metropolitana de Santiago*
City of Edina	Prefeitura de São Paulo*
City of Goiânia	City of St Louis
Santiago de Guayaquil	Seoul Metropolitan Government*
Free and Hanseatic City of Hamburg	City of Stockholm*
Hanoi City*	Singapore Government*
Ho Chi Minh City*	Suwon Metropolitan Government
Government of the Hong Kong Special Administrative Region*	City of Sydney*
City of Houston*	Taipei City Government
Incheon Metropolitan Government	Tokyo Metropolitan Government*
Istanbul Metropolitan Municipality*	Comune di Torino
Prefeitura Municipal de Jaguaré	City of Toronto*
Jakarta City Government*	City of Vancouver*
City of Johannesburg*	Comune di Venezia*
Village of Kadiovacik	Vilnius City Municipality
Kampala City	City of Warsaw*
Kaohsiung City Government	Washington, DC*
City of Lagos*	Wonju Metropolitan Government.
City of Las Vegas	City of Yokohama*
Metropolitan Municipality of Lima*	City of Zaragoza
City of Lisbon	Stadt Zürich

\*Denotes C40 city

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