

## C40 Large Cities Climate Summit 2009 — from Seoul to Copenhagen

Special News Report

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About 500 mayors and delegates from major cities of 41 countries and four international organizations, including the United Nations Human Settlements Programme (UN-HABITAT) and the U.N. Environmental Programme (UNEP), participated in the biennial summit of the C40 Large Cities Climate Leadership Group on May 18-21, 2009, in Seoul, South Korea. Previous summits were held in London (2005) and New York (2007). The mayors also had an opportunity to discuss global climate initiatives during the Climate Summit for Mayors, which was held December 14–17, 2009 in Copenhagen, Denmark, concurrently with the U.N. Climate Change Conference, COP-15.

The primary objective of the C40 Group of the world's largest cities is to reduce emissions of greenhouse gases in urban areas. The purpose of the Seoul Summit, whose theme was *Cities' Achievements and Challenges in the Fight against Climate Change*, was to review progress by cities in reducing greenhouse gases and to assess future challenges.

Beginning with representatives from 18 world cities who met in London in October 2005, the C40 Group grew to have 40 participating cities (Table 1) and added 17 affiliate cities by May 2009. The Group was strengthened in August 2006 when it entered into a partnership arrangement with the Clinton Climate Initiative, a project of a foundation established by former U.S. president, Bill Clinton, who was keynote speaker at the Seoul Summit.

### Seoul Summit

Information on the Seoul Summit is available at <http://www.c40seoulsummit.com>, where 54 PowerPoint presentations are posted; on the websites of some of the participating cities; and in newspapers such as The Korea Times. We searched through these documents for evidence that delegates used knowledge or had appreciation of the link between urban climate, that is, micro- or local-scale climate (Oke 1987) and carbon emissions. Because tree cover influences urban climate (Heisler et al. 2006; Oke 1989), we also looked for applications of urban forestry to moderate urban climate or sequester carbon dioxide (CO<sub>2</sub>).

Among the urban-climate issues discussed during six plenary and 16 parallel sessions were green energy,

Table 1: C40 Cities

1. Addis Ababa	21. Lima
2. Athens	22. London
3. Bangkok	23. Los Angeles
4. Beijing	24. Madrid
5. Berlin	25. Melbourne
6. Bogota	26. Mexico City
7. Buenos Aires	27. Moscow
8. Cairo	28. Mumbai
9. Caracas	29. New York
10. Chicago	30. Paris
11. Delhi NCT	31. Philadelphia
12. Dhaka	32. Rio de Janeiro
13. Hanoi	33. Rome
14. Houston	34. Sao Paulo
15. Hong Kong	35. Seoul
16. Istanbul	36. Shanghai
17. Jakarta	37. Sydney
18. Johannesburg	38. Tokyo
19. Karachi	39. Toronto
20. Lagos	40. Warsaw

Source: <http://www.c40seoulsummit.com>

sustainable transport, and sustainable adaptation measures. Other presentations focused on the social and political aspects of urban life. Anna Tibaijuka, executive director of UN-HABITAT, praised South Korea's contribution to the International Urban Training Center in Hongcheon, Gangwon Province. "First, a city should be socially inclusive and think of the people living in the city," she said in an interview with The Korea Times. "Second, it should be governed in a democratically and participatory way." Other suggestions included preserving cultural heritages, providing efficient public transportation, and maintaining economic vibrancy.

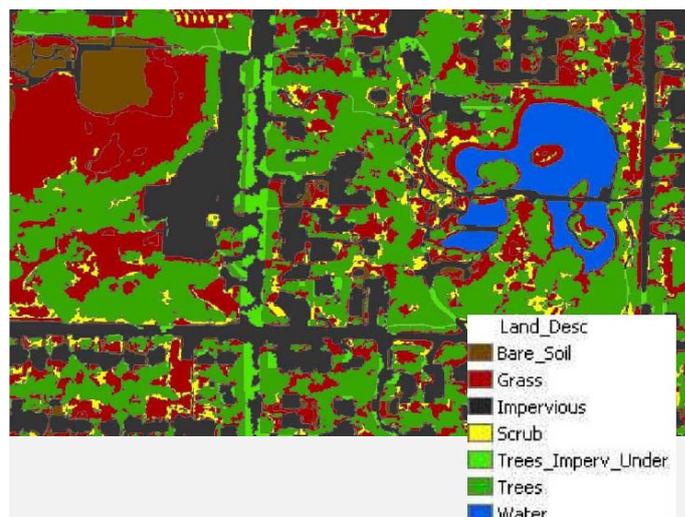
The rationale for the mayors' activism was reflected in remarks by David Miller, mayor of Toronto and chairman of the C40 Group. "Waiting for nations to take the lead with a new climate protocol in Copenhagen in December is not an option," he said. "If governments talk about reducing CO<sub>2</sub>, cities are the ones that show how it's done."

In some countries that did not ratify the Kyoto Protocol, cities took it upon themselves to reduce their own

carbon footprint. For example, the United States has not endorsed the Protocol, yet 1016 U.S. mayors have signed on to a climate protection agreement that embraces the goals of the Kyoto Protocol, according to the Mayors Climate Protection Center. Mayors Climate Protection Center is a subgroup of the U.S. Conference of Mayors, founded in 2007 to provide mayors with the guidance and assistance they need to lead their cities' efforts to reduce the greenhouse gas emissions that are linked to climate change.

With respect to urban forests, presentations by the cities of Seattle and Seoul stood out. Amanda Eichel, Seattle's climate protection advisor, discussed "Seattle reLeaf," the city's forest management program that was developed following a significant decline in the urban forest during the last several decades. In carrying out activities to enhance Seattle's urban forest, reLeaf officials recognize the need to achieve a balance among often conflicting goals for managing growth, enhancing livability, protecting the environmental, fostering economic growth, maintaining vibrant public spaces, and creating recreational opportunities.

Urban trees contribute to all of these goals in various ways (City of Seattle April 2007). For example, Seattle's current urban forest stores 52,400 tons of carbon at a value of nearly \$1.6 million. The planting of street trees, which shades pavement, is a cost-effective method for reducing zones of increased temperature (heat islands) in urban areas (Seattle reLeaf 2009). Seattle hopes to increase citywide tree canopy cover from 23 to 30 percent by 2037. This includes more than doubling tree cover in the downtown area (Table 2). As with many other cities, Seattle is using remote-sensing tools to determine the amount of urban land cover (Figure 1).



**Figure 1. Seven-class landcover classification of a portion of Seattle (Eichel 2009). Note the important category of trees over impervious ground surface, which often is not available in analyses of urban cover.**

Ahn Seung-II, director general of Green Seoul Bureau, presented Seoul's plan to enhance green spaces. As of May 2009, the area of urban forest is 166.05 km<sup>2</sup>, or 15.92 m<sup>2</sup> per capita. To expand its urban forest by 3.3 × 106 m<sup>2</sup> in residential areas, Seoul is developing large-size parks and plans to build roof parks (roof gardens) (Figure 2). According to Ahn, the driving forces behind the plan are the urban heat island effects and increasing price of land. Seoul Metropolitan Government will subsidize 90 percent of the cost of roof gardens for public buildings and 50 percent for private properties (Figure 2).

Boris Johnson, mayor of London, laid out that city's plan to make the 2012 summer Olympics the greenest sports event ever. "By 2012," he said, "the city will have the newest green park in Europe. It will also have 'Cycle

**Table 2: Canopy-Cover Goals for Seattle by Land Use (Eichel 2009)**

Land Use	Canopy Cover (%)		
	2002	2007	2037 Goal
Commercial/ Mixed Use	8.4	9.7	15
Developed Park or Boulevard	25.9	25.5	25
Downtown	4.2	4.7	12
Major Institution	18.4	19.4	20
Manufacturing/ Industrial	3.8	4.3	10
Multi-Family	16.6	17.1	20
Parks Natural Area	82.5	80.4	80
Single Family	25.2	25.7	31
<b>TOTAL</b>	<b>22.5</b>	<b>22.9</b>	<b>30</b>

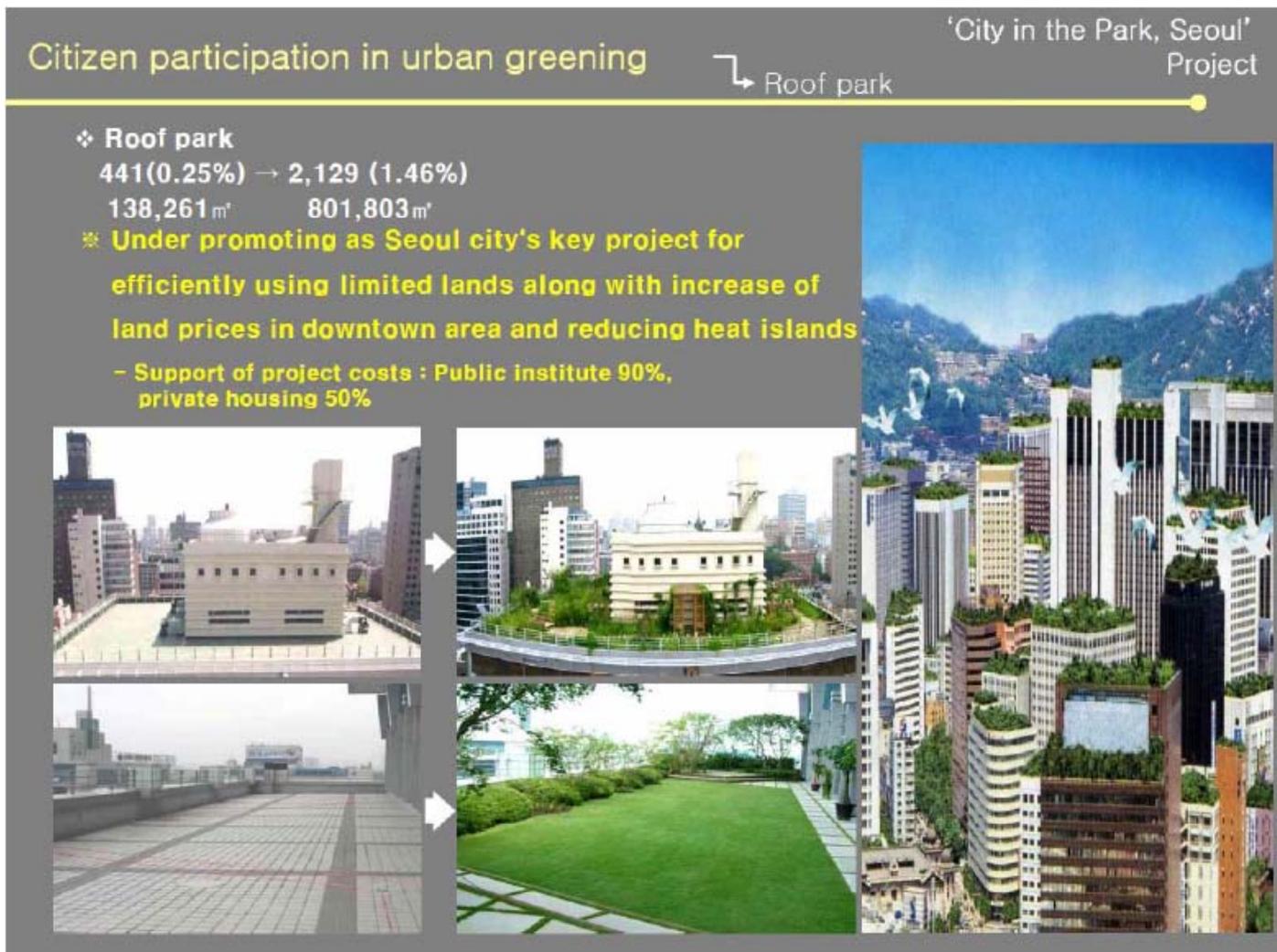


Figure 2. Artist's conception of plans for roof gardens in Seoul (Ahn 2009).

Superhighways,' a bike track at the Olympic sites that will allow spectators to move from one facility to another via bicycle." While in Seoul, Johnson toured the city that hosted the 1988 summer Olympic Games.

London's plan to develop a bicycle superhighway drew the attention of Laurel Prussing, mayor of Urbana, Illinois. "We also are working on the citywide revision of bicycle paths," she said. "We already have bicycle lanes but we plan to connect all of the paths. We are using LED (Light-Emitting Diode) traffic lights in the city and will use them in street lights as well." Urbana already has refurbished heating and cooling systems in public buildings, which now are more environmentally friendly and energy efficient, and currently is replacing lighting systems. According to Prussing, arborists maintain city trees and advise homeowners on what kinds of trees to plant. The city has long acknowledged community-wide benefits of urban trees in sequestering CO<sub>2</sub> and conserving building energy (City of Urbana 2009).

Although we were looking for presentations that specifically addressed urban-scale climate, most described

mixed activities at both urban and global scales. For example, Mayor Miller noted that the Seoul Summit provided opportunities for the participants to share their accomplishments and that it launched the Climate Positive Development Program, which is designed to build new neighborhoods that not only are carbon neutral but also offset emissions of greenhouse gas. Toronto plans to develop renewable energy such as solar hot water heating, and plant 6 million trees.

The C40 Seoul conference provided other evidence that many mayors of large cities are increasingly aware of the importance of global and urban climate issues and are responding with tangible actions. For example, Berlin is making a major push for solar power; Tokyo is adopting a carbon exchange program in conjunction with other Japanese cities; Helsinki is shifting to LED streetlights; and Seoul is implementing a retrofit plan for buildings, a 'green transportation' initiative that entails the increased use of bicycles and buses that are fueled by compressed natural gas, and an \$80 million climate-change fund for renewable energy and the construction

of parks on former wasteland.

In remarks on the topic of global climate change at the start of Seoul C40, Bill Clinton said; "If we let the worst happen, we won't be able to save the planet for our grandchildren unless we take extremely expensive measures which can be avoided if we move now. I think it's important to be as specific and swift as possible on this matter." The 'Seoul Declaration', which the mayors adopted on the final day of the summit, stressed that more than half of the world's population lives in cities, which account for 75 percent of global energy consumption and 80 percent of global emissions of greenhouse gases.

## Copenhagen Summit

The next C40 Summit will be held in Sao Paulo, Brazil, in 2011, but concurrently with the COP-15 U.N. Conference, the mayors also held the Climate Summit for Mayors, December 14–17, 2009 in Copenhagen. Although the dominant issue in Copenhagen was global-scale climate, mayors' awareness of urban climate challenges was recognizable. For example, Michael Bloomberg, mayor of New York City, said at a panel session that the city planted 300,000 of 1 million new trees, extended bike lanes over 200 miles of streets, and encouraged conversion to hybrid vehicles of 22 percent of the taxi fleet, among other emissions-saving steps (Olsen and Hanley 2009). In fact, New York City, through its 'Million-TreesNYC' project aiming to plant one million new trees across the city over the decade, is now ahead of schedule in meeting the goal (City of New York 2009 — see [related story](#)).

A couple of remarkable news items from Copenhagen are the announcement of the first Assessment Report on Climate Change in Cities (ARC3) and C40 Electric Vehicle Network (EVN). The ARC3 will be published by the Urban Climate Change Research Network (UCCRN), which explores how climate change will affect cities around the world, and what cities are doing to both mitigate and adapt to climate change. The EVN is a collaboration of 14 cities of C40 with the Clinton Climate Initiative and four leading vehicle manufacturers – BYD, Mitsubishi Motors Corporation (MMC), Nissan, and Renault. The EVN will coordinate consumer incentives for electric vehicle purchases, expand the number of electric vehicles in city fleets, and streamline the permitting process for electric charging equipment (Hammer 2009). Transportation has been found to make up more than 60% of the anthropomorphic heat flux in cities in summer (Sailor and Lu 2004), so the EVN may affect urban climate as well as reduce CO<sub>2</sub> emissions.

One conclusion we draw from the C40 activities is that urban climate researchers might find increasing opportunities for financial support from city governments. Also, cities may be increasingly amenable to the construction of towers and other infrastructure that are required to conduct urban-climate research.

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