And the Winners Are...

San Francisco is the greenest city in North America, followed by Vancouver and New York. Many other cities lack an extensive public transit system.

According to the *U.S. and Canada Green City Index,* North America boasts some very eco-friendly cities. In terms of water infrastructure, air quality, and recycling, they even beat many European cities. But there's still room for improvement when it comes to resource use, CO_2 emissions, and public transport.

Top Projects

Green targets: In 2005 the mayor of Seattle launched the U.S. Conference of Mayors Climate Protection Agreement, in which cities pledge to reduce CO_2 emissions in line with the Kyoto Protocol. More than 1,000 mayors have signed the agreement so far.

Green havens: In order to improve air quality and the quality of life in New York City, one million trees will be planted within the next ten years by the city, private organizations, and citizen groups.

Green electricity: In 2010 the largest solar park in the United States was established in Chicago. More than 32,000 solar panels there produce 10 megawatts of electricity for 1,200 homes.

Green transportation: In one of the largest transportation development projects in U.S. history, Denver has invested over €1 billion in the expansion of its public transportation network. Siemens has supplied 55 light rail trains for the project. By 2017, an additional €4.6 billion will be invested in order to triple the length of the light rail network and set up lanes for the city's Bus Rapid Transit system.

Every summer the Aspen Ideas Festival attracts flocks of visitors to a town that is better known as a popular winter resort. The focus of the festival? Building a better future. At the end of June 2011 the *U.S. and Canada Green City Index* was presented here. The study was commissioned by Siemens and conducted by the Economist Intelligence Unit (EIU), which compared 27 cities across the U.S. and Canada in terms of nine environmental categories: CO_2 emissions, energy, land use, buildings, transport, water, waste, air quality, and environmental governance. Similar studies have already been conducted in Europe, Asia, and Latin America (see *Pictures of the Future*, Spring 2010, p. 17 and Spring 2011, p. 9).

American cities are often portrayed as a huge resource drain, blighted by urban sprawl and a lack of environmental awareness. But that stereotype no longer applies. "Today's mayors have realized that action is needed and are working toward a sustainable future," says Alison Taylor, Chief Sustainability Officer at Siemens for North and South America. "Of course some of them have just started, while others are further along."

San Francisco is the greenest city according to the Index, followed by Vancouver, New York, Seattle, and Denver. Surprisingly, all of these cities vary considerably in terms of their size, number of inhabitants, population density, and annual income, and yet they all did well. For instance, New York has 12 million inhabitants, while Boston and Seattle have just over 600,000. And while Vancouver has a gross domestic product of almost $37,000 per capita, the other cities achieve closer to $60,000. One thing they all have in common, though, is ambitious environmental planning. For instance, San Francisco has opted to work closely with the private sector and has implemented strict recycling laws.

Huge Gains. Interestingly, lower-ranking cities on the Index have made huge gains:

→ Atlanta is ranked in 21st place overall, but it has the highest number of LEED-certified (Leadership in Energy & Environmental Design) buildings.

→ Miami (in 22nd place) takes second place in terms of carbon emissions, thanks to the clean energy generated by its power plants.

→ Detroit, which came in last, actually boasts one of the best public transportation systems — better than New York's or Seattle's.

"Altogether, North American cities rated well compared to other parts of the world, especially thanks to measures to improve air quality, waste management, recycling, and water infrastructure," says Tony Nash, Head of the EIU. For instance, at 13 percent, water loss due to leakage is lower than it is in Asia (22%), Europe (23%), and Latin America (35%). And at 26 percent, North America's recycling rate is approximately a third higher than in the European Green City Index.

But despite these success stories, a lot remains to be done — particularly when it comes to resource consumption, CO_2 emissions, and transport. For instance, the average North American uses 590 liters of water a day, more than twice as much as people in Europe, Asia, or Latin America. Canadian cities in the survey produce an average of eight tons of CO_2 per capita annually. American cities generate about twice that amount. While these cities beat the national U.S. average, which according to the World Bank is 20 metric tons, cities in Europe and Asia produce only about five metric tons of CO_2 per capita per year. The good news is that 21 of the 27 cities in the Index have set their own targets to reduce carbon emissions in coming years.

Commuting and Urban Density. Many transportation challenges can be traced back to the problem of urban sprawl. To avoid this, the ideal city should have a combination of high population density, plenty of green spaces, and short commutes to work and recreational activities. That's a rough description of New York City, which has almost 11,000 inhabitants per square kilometer (km^2) and green spaces that make up around a fifth of its area. However, most of the cities in the Index are comparatively thinly populated, with 3,000 inhabitants per km^2. In Europe, that number is 3,900, and in Asia it's 8,100. In the United States, many people live in suburbs and use their cars often. Only one out of ten Americans and one out of four Canadians commute to work by public transportation, bicycle or on foot. In Europe, over 60 percent do. Canada already has some good public transportation systems in place, so that approximately 1.5 kilometers of bus, rail, and subway lines are available per square kilometer. That's more than three times as much as in U.S. cities.

Other positive signs are the excellent results achieved in environmental governance, which can hold their own with those attained in Europe. Almost every city on the *Index* has appointed a sustainability officer and has developed a comprehensive environmental policy. NGOs are also extensively involved in these efforts. A prominent example is the U.S. Green Building Council, a nonprofit organization based in Washington that developed the LEED guidelines for buildings, which are being used all over the world today. ■ *Karen Stelzner*

German Cities Rank among Europe's Most Environmentally-Friendly Places to Live

About 74 percent of Germans live in metropolitan areas. The German Green City Index analyzed twelve cities throughout the country, and the results show that decades of growing environmental awareness and support from policymakers for sustainable city planning have made a lasting impact. Ten out of the twelve cities that were studied achieved a better overall result than their European counterparts in the 2009 *European Green City Index*. Ambitious regulations to reduce energy consumption in buildings and a proactive transportation policy have proved especially effective. Yet even though Germany's local public transportation systems are exceptionally well-equipped, almost half of all commuters get to work by car. Munich and Berlin (pictured) are positive exceptions, since about 40 percent of their inhabitants take public transportation to work while another 17 percent ride bicycles or walk. Water conservation is another area in which Germany excels. Compared to the European average, Germans consume only half as much water. What's more, policies to reduce waste and encourage recycling are common. In Leipzig, the recycling rate is 81 percent — the highest in Europe. On the downside, German cities produce unusually high CO_2 emissions due to a high percentage of industry and a heavy reliance on electricity from coal. The average German produces 9.8 metric tons of such emissions, almost twice as much as the inhabitants of other European cities (5.2 metric tons). However, many cities have now set ambitious emissions-reduction targets. Munich, for example, plans to cut per capita carbon emissions in half by 2030. ■ *Nicole Elflein*