CLIMATE CHANGE: Canadian Cities are doing their share

by the Intergovernmental Committee on Urban and Regional Research (ICURR)

Summary

Climate change is occurring and municipalities are strategically positioned to adopt adaptive measures and to initiate environmentally sustainable practices. 'Anticipatory adaptation' rather than 'reactive adaptation' is suggested as being the most cost-effective and efficient plan of action. Cities have a large role to play in developing and implementing policies that address climate change and its impact, and their success in this area will have a direct impact on citizens' quality of life.

Résumé

Les changements climatiques sont une réalité et les municipalités sont stratégiquement bien placées pour adopter des mesures d'adaptation et mettre en œuvre des pratiques écologiquement viables. Une adaptation proactive plutôt que réactive est suggérée à titre de plan d'action le plus rentable et le plus efficace. Les municipalités ont un rôle important à jouer dans l'élaboration et l'application de politiques s'attaquant aux changements climatiques et à leurs répercussions, et le succès des municipalités à cet égard aura un effet direct sur la qualité de vie des citoyens.

Municipal, provincial/territorial, and federal levels of government alike are becoming more interested and concerned with climate change issues. With climate change being intrinsically linked to municipal structures and processes, such as built and natural systems, local economies, and human health, local governments in particular are beginning to recognize that climate change is an important local issue that needs to be addressed. Consequently, municipalities have begun adopting integrated planning approaches that will be more apt to face these ever growing challenges. It is no longer acceptable to consider landscape design as an issue to be dealt solely within the mandate of parks and recreation departments.[1] In fact, integrated planning approaches depend on the collaboration of almost all departments in order to better take into account all dimensions of planning (economic, social, environment, etc.). This short article presents an overview of such practices and other climate change related measures taken by Canada's three largest cities. Although climate change is not exclusive to Toronto, Vancouver or Montréal, these case studies should provide examples of typical initiatives being implemented by Canadian municipalities.

Toronto

In the last few years, Toronto has stepped up efforts to become a leader among local governments in environmental sustainability, the reduction of greenhouse gases, and the improvement of local air quality. For example, the city intends to reduce greenhouse gas emissions by 6% from 1990 levels by 2012, 30% by 2020, and 80% by 2050.[2] The action plan includes such initiatives as developing a business plan for a model green-industry park and establishing an eco-roofs program to make a minimum of 10% of industrial, commercial, and institutional roof space more environmentally friendly by 2020. The plan also includes a strategy for increasing the tree canopy from 17% to 34%, and targeting the city's 1,500 buildings and landfill sites for

renewable energy initiatives. Toronto has also drafted the Transit City Plan, an ambitious endeavour to build a sustainable transportation system and plans to expand its 300 kilometres of bike lanes and trails to 1,000 kilometres.

Toronto has partnered with Enwave Energy Corporation to create the Deep Lake Water Cooling system to cool Metro Hall using water from 83 metres below Lake Ontario. Forty-six other high-rise buildings in Toronto have signed onto the project, with 27 already connected, including the Air Canada Centre and the Metro Toronto Convention Centre. The project reduces carbon dioxide emissions as well as energy consumption by 90% in comparison to conventional chillers. Over the past four years, the city's Green Fleet Transition Plan has been used effectively to reduce fleet emissions by 23% by switching to alternative fuel and hybrid gas/electric vehicles. The city's Retrofit Program, using low-interest loans for funding, updates older city buildings so that they use more energy efficient materials and processes, and consume less water and natural resources. The program will use the savings generated to pay back the loans over an eight-year period.[3]

Toronto has also developed a strategy to invest and support a strong green economic sector. The strategy and action plan, "People, Planet and Profit: Catalyzing Economic Growth and Environmental Quality in the City of Toronto" offers a vision of how Toronto can become globally recognized as a green industry hub. Proposed initiatives include stimulating green market demand, marketing the advantage Toronto has in key economic clusters (e.g. the environment and renewable energy technology), and promoting green business practices to existing companies.[4]

In early 2007, Toronto partnered with Zerofootprint to create Zerofootprint Toronto, a program intended to engage citizens to fight against climate change. The program is designed to allow citizens to decrease their own environmental footprint by graphically illustrating the impacts on the environment by their daily actions. Zerofootprint Toronto will be implemented in two phases. In the first phase, all city employees will be invited to calculate their environmental footprint and create goals to reduce and track this footprint over time. The second phase of the program will offer the service to all Torontonians (www.zerofootprinttoronto.org).

Finally, Toronto has incorporated pollution prevention planning requirements within its sewer use by-law that require companies that discharge certain metals and organic compounds into the sewer system to have detailed pollution prevention plans. Failure to comply will result in heavy fines applied daily. Surcharge agreements are utilized in order to recover the related costs for caring for those treatable wastes that come from industries and, as a result approximately $8 million annually is recovered.[5]

Vancouver

In the case of Vancouver, the city is developing an innovative neighbourhood energy utility that uses sustainable heat in its South East False Creek redevelopment area. The first phase of the project, to be completed by May 2009, involves recovering heat from its municipal sewer system in order to heat water. It will be a local, renewable energy source that significantly reduces greenhouse gas emissions at the same time as being cost-competitive with traditional building heat and hot water systems.[6]

Vancouver has also created an EcoDensity Draft Charter to guide future development, which is also referred to as ecological densification. The idea is to ensure that the city is liveable, competitive, adaptable, and healthy in the face of climate change challenges. One of its guiding principles is to "use ecological sustainability as the primary consideration in making decisions about planning and development in the city." Ecological sustainability insists that development planning be based around densification, sustainable transportation, and energy and affordable housing, and that high quality amenities and services must be provided along with densification. Tax shifting from property towards pollution, sprawl, and waste is being considered in order to encourage sustainable business practices.[7]

Vancouver is also greening its municipal vehicle fleet by using alternative fuels, electric cars and hybrid vehicles, as well as pursuing energy-saving retrofits for its 400,000 square feet of city-owned facilities. The city is embarking on its Still Creek Enhancement Plan, which involves rehabilitating one of only two creeks that are visible in urban Vancouver. By beautifying, protecting and restoring the creek, issues such as improving water quality, reducing flooding and reconnecting people to the creek will be addressed.[8] Moreover, between 2000 and 2003, the City of Vancouver implemented a large scale landfill gas recovery and cogeneration project that reduced solid waste related greenhouse gas emissions by 75% (a reduction of 200,000 tonnes per year) while simultaneously generating enough electricity to power 11,000 homes and to heat a nearby greenhouse.[9]

Finally, the City of Vancouver has developed a green building strategy that will ensure that all municipal buildings in the future will offer better environmental performance as well as better performance for the occupants of the building.

Montréal

The City of Montréal has successfully transformed a 200 hectare garbage dump filled with 35 million tons of waste into a major park called Saint-Michel Environmental Complex. The

new location of the Cité des Arts du Cirque (known as TOHU) is an innovative case of green building construction. Moreover, the city used waterfront land acquisitions and agreements to create 15 new water contact projects, and Montréal planted 9,000 trees of a wide variety, to increase its urban forest in 2006.[10] The city's First Strategic Plan for Sustainable Development was partly produced in order to incorporate sustainability within its planning initiatives. With implementation dates running through 2009, actions include minimizing automobile through traffic in certain areas, promoting car sharing, and reducing and recovering waste.

The City of Montréal's 2004 Master Plan outlines numerous ambitious endeavours to protect and enhance the environment and further sustainable planning. For example, in order to reduce automobile dependency and help further densification, Montréal is promoting and advancing the use of public transportation. Two Metro line extensions were planned and construction on one of them has already been completed. The City is studying the possibility of improving the access to the Old Montréal area from the Champ-de-Mars metro station. Real estate development will be intensified near metro and commuter train stations and public transit corridors, and the city will introduce preferential reserved lanes for public modes of transportation. Wider sidewalks, more trees, and the redesign of public spaces will help make the city more pedestrian-friendly. Bicycle parking facilities and additional bike lanes will be created to further promote bicycles as a viable alternative means of transportation within the city. Eleven square kilometres of vacant land will be developed throughout the city, underutilized sectors such as railroad yards and brownfields will be reclaimed, and older industrial areas will be converted to new uses that are more compatible with residential areas.[11]

Conclusion

Climate change is occurring and municipalities are strategically positioned to adopt adaptive measures and initiate environmentally sustainable practices. Toronto, Vancouver, and Montréal have taken the ramifications of their policies on climate change and the environment very seriously. Positive, proactive, and practical measures are being utilized to reduce further impacts of climate change and, instead, enhance the natural and built environments. Mehdi *et al* put forward a variety of adaptive methods that municipalities can undertake to address climate change. The researchers noted that "anticipatory adaptation is the most cost-effective and efficient plan of action" rather than reactive adaptation.[12]

Obviously, initiatives to fight climate change are not limited to the country's three largest cities. Most Canadian cities are also considering measures such as those illustrated above and there are many such examples across Canada. Cities have a large role to play in developing and implementing policies that address climate change and its impact, and their success in this area will have a direct impact on the quality of life for their citizens. ■

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