Advancing Solutions for Sustainability in Municipalities

"In our every deliberation, we must consider the impact of our decisions on the next seven generations." --- The Great Law of the Iroquois Confederacy

Sustainable practices can prevent environmental destruction. Municipalities are on the cutting edge of sustainable thinking and practices in their choices about policy, planning, infrastructure and investment. Many communities have 'sustainability plans' for greenhouse gas (GHG) reduction, watershed management, community energy, housing and more.

The UN defines a sustainable society as one that: "…*meets the needs of the present without sacrificing the ability of future generations to meet their own needs*." [i] In light of the growing consensus that global warming and contamination are endangering the planet's land and waters, increased action is required to protect our environment. Meanwhile, Canada, one of the wealthiest nations in the world, has the third biggest "ecological footprint".[1]

Recent federal investments in sustainable municipal infrastructure have been limited. The gas tax transfer, federal infrastructure programs, a fund for public transit and the Green Municipal Fund are important beginnings, but more is needed. Municipalities need *new permanent funding arrangements* to provide quality services while protecting the environment. Nevertheless, with or without federal support, municipal councils are uniquely positioned. Services such as water infrastructure, roads, transit, waste and property management, zoning and urban planning can be designed and delivered with a view towards sustainability.

Public ownership and operation ensure that municipalities have sufficient control and flexibility to advance strategic initiatives. Ceding control to private, for-profit companies by contracting out and 'public private partnerships' or P3s, compromises councils' ability to protect their communities and future generations.

This document explores some key policy and program areas for opportunities to advance solutions for sustainability to protect and restore our environment.

[1] An ecological footprint is a measure of human beings' impact on the natural environment. The footprint is the biologically productive area needed to produce all the products a person or group consumes and to absorb all their waste. September 2004, FCM.

Better Community Planning: Limiting the effects of Urban Sprawl

Sprawling communities are big contributors to climate change. Urban sprawl damages the environment and human health.[2] Including facets of community life in regional planning can curtail its impact.

Suburban housing plans often don't include amenities, requiring transportation of goods and services, and forcing dependence on cars. Water and natural gas are pumped in, and waste is pumped out over long distances. A typical subdivision is built with large lots and large single-family homes that are expensive to heat. Yet demographics are changing to smaller families, single parent families and 'empty-nesters'. Servicing denser, more integrated communities is more environmentally sound and cost efficient. [ii]

Sustainable policy initiatives include: reviewing building codes and zoning by-laws to encourage green development, cleaning up 'brownfields' [3] for re-development; encouraging the building of modest scale homes through graduated property taxes; mixed zoning and compact urban planning.

Sustainable community plans include: sidewalks, local job creation, shops and other amenities; energy-efficient housing construction, preservation of green spaces, investment and diversification of existing downtown-centres, and effective public transportation alternatives.

Expanding Public Transportation

Municipal leaders face important decisions daily about transit investment: whether to invest in new roads and superhighways or in better public transportation systems.

More roads and bridges made necessary by urban sprawl increase traffic gridlock and pollution. Greenhouse gas emissions associated with transportation constitute 35% of Canada's energy demands on nature. Passenger vehicles are responsible for the greatest increase in GHG emissions in the transportation sector.[4] People own twice as many vehicles and drive twice as much as they did 40 years ago. And gas guzzling, diesel-fuelled truck have replaced fuel-efficient trains in the transportation of goods and services back and forth across the country.[iii]

[2] A recent study by the Ontario College of Family Physicians (OCFP) documents health risks linked to urban sprawl including an increase in respiratory and cardiovascular disease, due to pollution and obesity, high blood pressure and diabetes. Other studies have found a strong and direct link between air pollution and human health problems including asthma in young children, delayed lung growth and function and even premature death.

[3] Brownfield are contaminated lands that lie unused and unproductive throughout Canada are called *brownfields*. Left as they are, brownfields can harm local economies and pose threats to human and environmental health. They can and should be redeveloped and used to generate significant economic, environmental, and social benefits for communities.

[4] A recent study commissioned by Transport Canada found that a conservative estimate of the cost of recurrent urban traffic congestion is between $2.3 and $3.7 billion per year. This cost is based on calculations of time lost by drivers and passengers, fuel consumption and greenhouse gas emissions. It is conservative because it only looked at traffic during peak periods, while many larger municipalities have off-peak congestion too.

Sufficient resources and sustainable infrastructure planning are our best tools to curb dependence on fossil fuels, which contributes to Canada's ecological footprint. [iv] The Canadian Urban Transit Association estimates that transportation infrastructure will need $20 billion over the next 5 years.[v] Until recently, Canada was the only country in the G-8 without substantial direct federal investment in public transit. Some money was dedicated to municipal transportation infrastructure in 2005 by the Federal Budget bill C-48. However, the Federal Conservatives have taken some of those funds to create a new "public transit capital trust", with a one time investment of just $900 million.[vi]

Sustainable municipal planning still requires permanent funding arrangements in order to improve and expand public transit. But Canada has examples of cost-efficient municipal level strategies that work. In 2005, for example, the City of Toronto, encouraged greener and healthier transportation by not increasing fares, creating a bike plan and a pedestrian comfort and safety program, and so on.[vii]

Most people use public transit from time to time, while young people, people with disabilities, low-income families, and seniors depend on it to participate in community life. A system that encourages increased ridership by everyone benefits the public and the environment.

Greening Municipal Fleets

It seems inevitable that municipalities own and operate GHG-emitting vehicles. One of the most unpredictable costs in a City's budget every year is fuel for the municipal fleet. But as vehicles need replacing, more fuel-efficient choices, amongst other policy initiatives, can reduce the burden the fleets impose on air quality.

The City of Ottawa provides some good examples.

- An anti-idling policy mandates that idling be reduced by 5 minutes per day in city vehicles, reducing GHGs by 384 tonnes, saving $80,000 in fuel costs.
- Most of the City's refueling sites have converted to ethanol blend gasoline, reducing carbon monoxide and carbon dioxide by 250 tonnes per year.[viii]
- A hybrid car was provided to the mayor. Fuel savings of over $2400 per year and a GHG emission reduction of 5 to 6 tonnes per year were reported.[ix]

The City of Toronto is also exemplary with plans underway to replace 313 of its light duty vehicles (84%) with natural gas and hybrid-electric ones. Bio-diesel blends will be used in all diesel vehicles. According to their 2004 plan, the Toronto Transit Commission was to start integrating hybrid busses into its fleet in 2006.[x] Together these initiatives are expected to reduce pollution causing smog and GHG emissions produced by the City's fleet by 23%.[xi]

Leading by Example: Retrofitting Public Buildings

As the owner and operator of buildings and public spaces, municipal governments can promote green solutions by example.

Undertaking building and vehicle retrofits improves air quality by reducing GHG emissions, waste, and costs over time.[xii]

Some choices for sustainable building design and retrofits include:[xiii]

- Location: Utilize existing infrastructure whenever possible (transit and utilities, building shells or brownfields) and maximize natural daylight.
- Utilities: Integrate fuel-efficient and green technologies for heating water and for building heat and ventilation.
- Water conservation: Low-flow/dual flush toilets, efficient water fixtures, and grey water recycling
- Choice of materials: Use of local and/or recycled building materials.

The Municipal Operations building in White Rock, BC features a green roof to keep the building cool and gravel parking lots to maximize infiltration of rainwater. Storm water is used to flush toilets and to help heat and cool the building. Solar electric power is generated onsite. High efficiency fixtures, and a mechanical system to reduce the energy consumption are in place. Natural ventilation, operable windows, and direct ventilation in high contaminant areas improve air quality. New building materials were manufactured locally and ninety-nine percent of the original building was recycled. Almost a million tonnes of waste were diverted from the landfill.[xiv]

Sustainable Solid Waste Management

We create more garbage than we know what to do with. Landfills and incineration emit toxic fumes and contaminate our soil and water.

Solid waste collection is often targeted for privatization through contracting out and competitive bidding to cut costs and improve service. However, landfills and incineration, harmful to the environment, are quick-fix solutions more likely to be used when services are privatized. Quality goes down and costs increase.

The largest private company doing this work in Canada, Canadian Waste Services,[5] has a poor environmental record.[xv] In Stoufville, Ontario, it disposed of hazardous industrial waste in a WMI/CWS landfill site that sat on top of underground water supplies. Miscarriages, birth deformities and cancers were documented before the company was forced to close the site. One landowner is suing the company and the local government because the land and water is unsafe for human use as a result of contaminants leaking from garbage dumping.[xvi]

Public operation of waste management ensures that leaders have the authority they need to make choices that put the local environment first. Municipalities can develop comprehensive waste management plans to reduce, compost and recycle waste, diverting as much as possible from landfills. Cities across Canada whose waste management services are publicly delivered are moving forward with innovative programs, developing sustainable ways to manage and reduce waste.

[5] Also known as Waste Management of Canada Corporation. CWS is a subsidiary of Waste Management Incorporated (WMI), a multinational company.

In the fall of 1999, CUPE Local 416 and the Toronto Environmental Alliance (T.E.A.), proposed a 'wet-dry' recycling program that is now up and running. Modeled on the City of Guelph's successful public program, solid waste is separated into three streams[6], allowing Toronto to divert 70% of its residential waste through recycling and composting at *no increased cost to the City* over the long-term. Guelph, Halifax, Vancouver and Edmonton also use wet-dry recycling waste disposal systems.[xvii]

Keeping Water Operations Clean and Transparent

Like waste management companies, water companies are eager to take over public services. Since privatization has failed to turn a profit in developing countries where people can't afford high rates, companies are shifting focus to developed countries like Canada for opportunities to profit from community water services.

Multinational water companies like Suez (United Water), Veolia, RWE Thames (American Water) and others that specialize in privatizing water and wastewater services, exploit the infrastructure funding challenge facing many communities. Expensive financing is offered in exchange for long-term contracts to control services in what are known as public private partnerships (P3s).

But the outcome for Canadian and US communities that have tried water privatization has been a lack of accountability, environmental degradation and higher costs. Rates to residents increase, maintenance is neglected, local community needs and broader sustainability concerns are ignored, all in the interest of profit.

Financing from all levels of government is needed to expand and upgrade Canada's municipal water systems and to keep them public and accountable.

Municipalities can work with other governments to pool capital and issue low cost bonds to finance major capital expenditures. Public ownership is essential if local governments are to safeguard the public's interest.

Banning Cosmetic Pesticides

Pesticides kill more than just weeds. When used cosmetically, they are harmful to all, including children, pets, and local wildlife. Toxic chemicals make their way into water tables, contaminating drinking water, and into the food production chain. Pesticides degrade the overall health of lawns, parks, gardens and surrounding ecosystems by attacking beneficial organisms that naturally nourish the land. Chemical pesticides are expensive and unnecessary.[xviii]

Municipalities can take measures to limit the impact of pesticides by restricting their cosmetic use and enforcing strong anti-pesticide by-laws. In 2001, the Supreme Court ruled in favour of the town of Hudson, Quebec, after a chemical lawn care company challenged their 10-year old by-law.[xix] Since then, a number of communities across

[6] Two/three stream wet-dry recycling systems: "Dry" includes paper, cardboard, plastic, aluminum, glass and cans (recyclable and non-recyclable), and "wet" includes yard and organic kitchen waste.

Canada have passed by-laws banning their cosmetic-use.

Among them is the city of Halifax where many chemical pesticides became illegal for home use in April 2003.[xx] The City of Montreal followed suit, banning the use of pesticides for esthetic reasons in April 2004.[xxi] The Ontario Court of Appeal upheld a Toronto bylaw banning pesticide use on lawns in May 2005.[xxii]

Energy Conservation

Most municipalities are not responsible for energy production, but almost every choice has energy considerations.

Decisions about land use, zoning, roadway design, recycling, solid waste disposal, water conservation, sewage treatment, building design, affordable housing, taxation, traffic congestion, personal safety, air quality, wilderness and green space preservation and unemployment, all have impacts on energy consumption. Different ways of resolving these issues result in different levels of consumption.

Municipal decision-makers can ask for non-energy issues, how energy sustainability can be promoted and, as a result, costs reduced.

Privatization is Unsustainable

Downloading and tax-cutting by other orders of government have left municipalities with limited funds to invest in sustainable public initiatives. Some communities are exploring private financing and contracting out as solutions. But privatization of public services reduces the power of elected officials to make sustainable development and cost effective choices by tying current and future municipal officials into long term, expensive and undemocratic deals.[7]

Public control is an important ingredient in the recipe for sustainability. When multinational corporations provide public services, they redirect public money to profits and their shareholders, depleting communities of their collective wealth. The sustainability of local ecosystems and watersheds, and reducing GHGs are rarely top corporate priorities, placing all of us at risk.

Public Sector Solutions for Strong Communities

Public control ensures that governments can enforce environmental standards and green initiatives and help create and protect green jobs in the public sector. CUPE encourages municipal decision makers to systematically apply *'7th generation thinking'*, to all areas of municipal jurisdiction.

We will continue to lobby for the provision of low-interest loans and grants, and new permanent funding arrangements for green municipal initiatives that are publicly funded, owned, operated and delivered. In the meantime, communities need leadership that puts the interest of the public and the environment first.

[7] For more information about cost of privatization, problems of accountability and transparency with P3s, and more, please visit www.cupe.ca

RESOURCES FOR SUSTAINABLE PLANNING

BetterBricks
http://www.betterbricks.com. BetterBricks is a not-for-profit initiative designed to help commercial building professionals achieve sustainable high performance buildings. Includes guidelines, tools and case studies.

Brownfields
Cleaning up the Past, Building the Future: A National Brownfield Redevelopment Strategy for Canada, National Round Table on the Environment and the Economy, 2003:
www.aboutremediation.com/PDFS/National_Brownfield_Redevelopment_Strategy_Feb_10_2003.pdf

Building Retrofits program
http://www.fcm.ca/scep/support/building_retrofit/mbrp_index.htm. The FCM will provide guidance through all stages of the building retrofit process.

Climate Change and the Kyoto Accord
David Suzuki Foundation www.davidsuzuki.org; Natural Resources Canada, 'What is Climate Change?' http://adaptation.nrcan.gc.ca/posters/cc_en.asp

Ecological Footprint
Ecological Footprints of Canadian Municipalities and Regions, 'A report prepared for the Federation of Canadian Municipalities (FCM)' Mark Anielski and Jeff Wilson of Anielski Management Inc., September 2004. http://www.fcm.ca/qol3/eco.pdf

Green Buildings
Canada Green Building Council:
http://www.cagbc.ca/green_building_projects/leed_certified_buildings.php?
'Retrofitting a City: A Guide for Municipalities to Implement a Building Retrofit Program'
http://www.cmhcschl.gc.ca/en/imquaf/hehosu/sucopl/loader.cfm?url=/commonspot/security/getfile.cfm&PageID=42236. The Canada Housing and Mortgage Corporation published this guide, which includes guidance on: defining the scope and delivery method of your retrofit program, staffing requirements, funding options, regulations, and promotion.

Green Buildings Canada http://www.greenbuilding.ca/. Green Buildings Canada is Canada's national green building initiative. The website contains a number of tools, including a building assessment program called GBTool.

Pesticides
Canadian Association of Physicians for the Environment http://www.cape.ca/. Free or low cost organic alternatives are available. Find out about green lawn care and pest control strategies: http://www.sierraclub.ca/national/programs/health-environment/pesticides/index.shtml

Privatization
www.cupe.ca; www.publiccitizen.org; www.psiru.org; www.polarisinstitute.org

Urban Sprawl
David Suzuki Foundation 'Understanding Urban Sprawl, A Citizen's guide', David Suzuki Foundation, 2003, www.davidsuzuki.org/climate_change/solutions/transportation.asp; Ontario College of Family Physicians, Report on Public Health and Urban Sprawl in Ontario, January 2005, http://www.ocfp.on.ca/English/OCFP/Urban-Sprawl/default.asp?s=1

Waste management
Natural Resources Canada, 'Recycling in Canada', http://www.recyclage.rncan.gc.ca/
Environment Canada, 'The 4 R's: Reduce, Reuse, Recycle and Recover, http://www.ns.ec.gc.ca/udo/reuse.html

Water Conservation
Council of Canadians, www.canadians.org
City of Toronto commercial and residential incentives programs, http://www.city.toronto.on.ca/watereff/index.htm

ENDNOTES

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[ii] David Suzuki Foundation, 'Understanding Urban Sprawl, A Citizen's guide', 2003
[iii] David Suzuki Foundation, 'Solutions: Transportation', www.suzuki.org, 05/11/2005
[iv] Anielski and Wilson, 'Ecological Footprints of Canadian Municipalities and Regions, ' prepared for the Federation of Canadian Municipalities (FCM), Anielski Management Inc, September 2004. http://www.fcm.ca/qol3/eco.pdf
[v] Canadian Urban Transit Association, "Transit Infrastructure needs are $20 Billion for next five years," 09/05/2006, http://cutaactu.ca
[vi] Federal Budget 2006, www.fin.gc.ca
[vii] Toronto Environmental Alliance, 'Toronto Smog Report Card 2005', http://www.torontoenvironment.org/node/288
[viii] City of Ottawa, 'Fleet Emission Reduction', Enviro Workplace, www.ottawa.ca/city_services/environment/
[ix] Ottawa Citizen, 'Mayor reflects on changes and challenges over 150 years: In state-of-the-city address, Bob Chiarelli sees promise,' 01/14/2005: E10
[x] City of Toronto, "Greenguide", www.toronto.ca/greenguide/cleaner_air.htm (May 12, 2006)
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[xiii] The Basics of Sustainable Building Design, http://www.greenbuildingsbc.com/
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Canada Green Building Council, LEED Certification Buildings, 2003 http://www.cagbc.ca/green_building_projects/leed_certified_buildings.php?id=10&press=1&draw_column=3:3:2
[xv] Dawn Cuthbertson, "Protesters Bemoan lack of potable water near landfill:.." Kingston Whig-Standard, January 10, 2005: 3.
[xvi] Ken Gray, "Landfill lawsuits soar beyond $45 million: One $30 million suit names Ottawa, Ontario, Canadian Waste Services," Ottawa Citizen, November 18, 2004. B1 Front.
[xvii] RECYCLING TRENDS IN ONTARIO Published by the Recycling Council of Ontario, March 2000
[xviii] World Wildlife Fund, 2006/05/14, http://www.wwfcanada.org/satellite/prip/factsheets/factsheets.html
[xix] World Wildlife Fund, 2006
[xx] Halifax Daily News, "After phase-in, full pesticide ban starts today " Kim Moar, 04/01/2003
[xxi] Montreal Gazette 'City adopts pesticide law', 04/28/ 2004: A6
[xxii] Landscape Management, Week in Review, 'Toronto Pesticide Bylaw Upheld, 05/19/2005 'http://www.landscapemanagement.net/landscape/article/articleDetail.jsp?id=162471

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May 26, 2006