

FCM Sustainable
Communities
Conference 2008

Conference Report

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FEDERATION OF CANADIAN MUNICIPALITIES
Sustainable Communities
Conference and Trade Show 2008

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Introduction

The FCM Sustainable Communities Conference and Trade Show 2008 took place February 14–16, 2008 in Ottawa, Ontario at the Fairmont Château Laurier and Government Conference Centre. The conference theme of “Moving Innovation into Practice” focused on building municipal capacity in the areas of social, economic, and environmental sustainability.

This report documents some of the key workshops, keynote speeches and presentations.

Keynote Address: Sheila Watt-Cloutier

Brock Carlton
Chief Executive Officer
Federation of Canadian Municipalities

Sheila Watt-Cloutier
Advocate on Arctic climate change
Nobel Peace Prize nominee

Brock Carlton introduced Sheila Watt-Cloutier, who thanked the leaders attending the conference for their commitment to the balance she and others are working to create in Canada and beyond. She acknowledged the presence of those from Nunavut, including the mayor of Iqaluit. In the Arctic, she said, “we are in the midst of an historic transformation.” This winter, which has been colder than recent years, is welcomed in the Arctic. The ice is forming very well, in contrast to the last few years, when icescapes and landscapes were disappearing fast. Watt-Cloutier said she would share some observations about that experience and the ways in which people have adapted for millennia to life in the Arctic, and how they have to adapt now.

In the 1980s, the North weathered the onslaught of Western organic pollutants. She said, “We were being poisoned from afar.” As the toxins began to show up in blood and breast milk, “it became a health issue, not just an environmental issue.” CFCs depleted the ozone layer “directly above our homes, and we began to see stronger rays from the sun.” Some changes have managed to reduce the levels of toxins in people’s bodies, but now Northern residents are facing climate change.

Even in this cold winter, she said, communities are struggling with issues such as slumping beaches and melting permafrost which, in Watt-Cloutier’s own region, was causing some homes to buckle inward. Foundations are starting to shake, and there are reports of school buildings, roads, and other infrastructure crumbling because of the melting permafrost.

Projections made only two years ago by scientists now seem too conservative. A few years ago, they foresaw a seasonally ice-free sea in the North by 2050. Then it was revised to 2040. After last year’s melt, which stunned everyone, the new forecast is the end of this decade. “We must act.”

To adapt to a low or even carbon-neutral future, Watt-Cloutier said, people must recognize “that the global affects the local, and the local affects the global.” Northern residents are a very adaptable people, she said, and have weathered the storm of industrialization very well. In her own and other Northern communities, throughout problems related to substance abuse, health, and suicide, there has always been the land. “We have never disconnected from it. We have, up to now, had our predictable weather.”

She said hunting is a training ground for young people; the values taught on the land are passed down generation to generation. It teaches young people to be courageous, to withstand stress, and to have sound judgement—skills necessary on the snow and the ice, and skills that transfer to the modern world as well.

Northern residents speak from experience, she said, “from a position of human rights and climate change. As our culture is based on the land, on the ice and snow, we know that our rights to safety, security, culture, history, and way of life are at risk of being destroyed.”

Watt-Cloutier said after the Inuit Circumpolar Council (ICC) launched its climate change petition in 2005, she was asked to speak at the first historical hearing on the link between climate change and human rights. The most important historical change, she said, is that people in the United States have started to listen. “The citizens of America are well ahead of their own government ... they want to do the right thing.” Canada, however, has strayed from its commitment to climate change. By going back on its commitment to Kyoto, Watt-Cloutier said, this government has chosen to put the rights of commercial interests ahead of the rights of its own citizens.

The Arctic acts as the climate stabilizer for the world, a sort of global cooling system, she said. Now the actions of Canada and the United States “are turning it into a destabilizer.” The ice and snow usually reflect much of the sun’s rays, but as they melt, the darker ground underneath becomes warmer. Watt-Cloutier said islands in the southern regions of the world are sinking as the Arctic ice sheet melts. Only three years ago, very few natural disasters were climate related, but 13 of the disasters that occurred in 2007 were linked to climate.

“Principles and ethics matter in a world that often teeters on the edge of chaos,” she said. As a wealthy nation, Canada has a responsibility to lead in the issue of climate change. “By failing ourselves, we are ultimately failing the world.” Each community has an obligation, as does the government, to take a stance and establish climate-neutral practices. Of the ICC, she said, “We are only a small group of Inuit, only about 150,000 people at the top of the world, but our influence springs from our ethical authority.”

She said every Canadian community must assume control over its own development, its greenhouse gas (GHG) emissions, and the lasting impact it will have on the local landscape and environment. Watt-Cloutier said a young man at a conference once asked her whether it would not be better for “your people to abandon their inefficient lifestyle” and join the modern world, to become engineers and scientists. “I said to him, as I always do, that the solution for our communities is in finding balance for everyone.” Modern technology is not an “either or” situation for the Inuit or anyone else, she said, but it does not have to be a choice between developing an economy and leaving the environment pristine. Young people should be trained as hunters and engineers, to be scientists and doctors with a connection to the land. If the world consisted of more hunter-gatherers than engineers, she said, “We wouldn’t be having this conversation about climate change.” In time to stop the destruction of the Arctic, communities around the world will have to adapt to the food production lessons that are already practised in the Arctic, and by indigenous people around the world. This means blending the best of the traditional ways with the newest and cleanest ways. Watt-Cloutier cited dependence on fossil fuels instead of renewable energy as a major problem. “Now, against a backdrop of climate change, we have to find the solution that ends the cycle of victimhood of indigenous people around the world.”

She said climate change is now, ironically, viewed as a massive investment opportunity in the North, and with governments and organizations rushing to claim the newly exposed resources, Canada feels the need to defend its sovereignty. The fabled Northwest Passage is not an incredible shipping opportunity; the melted route is an environmental disaster, Watt-Cloutier

said, and should be recognized as such. Instead of sending armed ships and troops to the Northern sea, Canada can best defend its sovereignty by slowing down climate change and providing the tools for its citizens to survive and thrive. Among these tools is the management of the land, she said. The North is one of the last pristine and peaceful places in the world. There is no war; there is no fighting. Icebreakers filled with armed soldiers have no place there.

Watt-Cloutier recommended a strong focus on principles. She said she remains an optimist, looking forward to seeing the wealthy nations that surround the Arctic using foresight in deciding how to use the new ocean at the top of the world. Returning to the focus on community, she said, “Our local communities must lead where Ottawa fails and falls behind.”

She closed with an invitation to the participants to join an upcoming symposium on climate change (<www.planningforclimatechange.ca>) to be held by the city of Iqaluit in tandem with the Canadian Institute of Planners (CIP) and the Alberta Association of CIP. The event’s workshops will explore local, national, and international planning practices.

Climate change, Watt-Cloutier said, “undermines our simpleminded notion that unrestrained commercial growth is best for the world.” Those who contribute least to the problem have the most to lose—not only in Northern communities, but around the world.

Carlton thanked Watt-Cloutier, calling her speech “an amazingly insightful and wise call to action.” Having once experienced the vastness of the North, he said, he used to wonder how he could possibly have an impact on that land. Now, he said, he would ask instead how he could possibly live a lifestyle that could damage that beautiful land.

Community Sustainability Plans I

Facilitator:

Karen Leibovici
Councillor, City of Edmonton
Chair, Green Municipal Fund Council

Presenters:

Ken Melamed
Mayor
Resort Municipality of Whistler, British Columbia

Adam Ostry
Director General
Policy and Strategic Initiatives, Infrastructure Canada

Dr. Nola Kate Seymoar
President and CEO
International Centre for Sustainable Cities

Before introducing the presenters, Karen Leibovici reminded the participants that the Government of Canada has allotted provinces Federal Gas Tax funds, and to gain access to them, municipal governments may have to develop Integrated Community Sustainability Plans (ICSPs).

Adam Ostry gave the participants an overview of the federal government's Building Canada Plan. This plan includes the Building Canada Fund, a long-term \$33 billion investment to help finance infrastructure projects across Canada. The Building Canada Fund, which involves a partnership between all three levels of government, contributes to eligible infrastructure investments that fall into one of three categories: Growing Economy, Cleaner Environment, and Prosperous and Secure Communities. The fund is divided into two sub-components. The "communities" component includes smaller, community-based projects, while the major component, "infrastructure," addresses larger strategic projects of national or regional significance.

Ostry said Integrated Community Sustainability Plans (ICSPs) are a "key enabling tool created by the federal government to help achieve greater community sustainability under the Building Canada Plan."

Ostry discussed the Gas Tax Fund aspect of the Building Canada Plan. Investments in this fund are targeted to environmentally significant projects, and the money flows to municipalities through agreements with the provinces and territories, and in some cases with municipal associations. Ostry said there is no federal approval for these projects. Municipalities simply report on the use of these funds, which can serve to develop an ICSP.

On the issue of Integrated Community Sustainability Plans, Ostry said the federal government is working with its partners to promote knowledge, research, best practices, long-term planning, and capacity building. He defined an ICSP as a long-term plan, developed in consultation with community members, providing direction for the community to realize sustainability objectives in the environmental, cultural, social, and economic dimensions of its identity. This long-term strategic framework coordinates all decision-making and planning processes to work towards desired outcomes. ICSPs should respect and build on existing planning approaches, and

involve members of the community, including those who do not traditionally participate, such as youth.

ICSPs, Ostry said, should not simply be considered a mandatory requirement for gaining access to the Gas Tax Fund. They are valuable tools for enhancing municipal planning, removing planning and jurisdictional silos, encouraging long-term thinking, empowering citizens, and providing information for business cases required to apply for grants and contributions.

An ICSP is a true umbrella plan that assists planning and links key sustainability issues, enabling users to budget and plan for enhancements, and constant community feedback allows them to make adjustments. In fact, Ostry said, ICSPs allow the federal, provincial, and municipal governments to work together to heighten their planning capacity in sectors such as culture, engaging youth and new Canadians, managing energy supplies and land use, and dealing with climate change.

Ostry gave a brief overview of the monitoring and reporting components of the program and listed other federal programs of interest to municipalities. He said the federal government would continue to support sustainable community development, while keeping in mind that municipalities are in the best position to determine what works in their communities. Infrastructure Canada would remain steadfast in its efforts to share knowledge with municipalities and other key stakeholders and would continue to serve as a clearinghouse to support the development of tools and sharing of information. Community sustainability is important to everyone.

Ken Melamed

Ken Melamed told the participants he would give an overview of how Whistler used the Natural Step Framework to hone its priorities and values, and give it a vision for the future.

He said for sustainability to move forward successfully, a shared language is needed. “We have to realize we are partners in a global challenge,” he said. “We should all be cautious about business as usual, because it has gotten us to this disastrous brink.”

Melamed said increased pressures on the Resort Municipality of Whistler—such as unchecked population growth, increased economic activity, and management of the upcoming Olympic Games—led to the realization that a new future path for the municipality is needed, one that would reflect its residents’ wishes, respect the environment, and be viable in the long term. Melamed said sustainability must be considered as an integration of social, economic, environmental, and cultural values and priorities. The process known as “Whistler 2020” is under way. This community-wide, comprehensive sustainability planning exercise includes a shared vision of what Whistler will look like in 2020, and strategies for how it will achieve this vision.

Melamed said to get buy-in from community, several task forces have been created. Community feedback played a part in designing five future scenarios for the Resort Municipality of Whistler, including the potential impact of each scenario. The Natural Step Framework’s process of “backcasting,” working back from the desired future outcome, helped establish the municipality’s five priorities: Enriching Community Life, Enhancing the Resort Experience, Protecting the Environment, Ensuring Economic Viability, and Partnering for Success.

The municipality used Natural Step as a strategic planning framework in making the right decisions to move Whistler towards its sustainability goals. This framework, said Melamed, helped to demystify sustainability, since it was considered to permeate every aspect of community life. He said rather than seeing the economic, social, cultural, and environmental considerations as separate entities, the Natural Step Framework considers them a nested

hierarchy, each with its own value and importance, but each dependent on the other. From this stems a model for building a sustainable community that responds to its population's current needs with an eye to the future.

Melamed said this framework has enabled his municipality's decision makers to understand the scope of their decisions when taking on sustainable actions. Now the municipality or its partners in the community ask four strategic questions whenever they are making a decision, to ensure everyone makes viable, sustainable choices. These questions are:

- Does this action move Whistler toward our shared description of success?
- Does this action move Whistler toward our sustainability objectives?
- Does the action present a flexible platform for further progress toward success and sustainability?
- Is the action a good financial investment?

"We have a sustainable purchasing policy [and] worksheets for staff. We discuss how sustainability influences the conduct of business in Whistler. Our plan is alive and active in everything we do," said Melamed.

Looking ahead, Melamed urged participants to conduct similar exercises in their communities. Canada must show a willingness to change to encourage other nations to follow. "Creativity within constraints allows for continued prosperity in a globally responsible context," he said.

Melamed's municipality has learned several lessons on the road to Whistler 2020, including the importance of a shared vision, a shared language, and a long-term plan using science-based principles and proven methods. He said while the plan is called Whistler 2020, its vision for the future extends beyond that timeframe. "Whistler took a 60-year long view, and imagined that there is a place we can succeed. We don't know if we'll get there, but we jumped in with both feet."

Dr. Nola-Kate Seymoar

Dr. Nola-Kate Seymoar's presentation focused on sustainable cities, and on the PLUS Network as a tool to foster urban sustainability.

Seymoar said a sustainable city enhances the economic, social, cultural, and environmental well-being of current and future generations. She said the mission of the International Centre for Sustainable Cities was to "catalyze action" on urban sustainability through practical demonstration projects, peer learning networks, affiliations, and high profile events.

She gave the example of the 100-year plan developed in 2001 for Metro Vancouver. Vancouver borrowed from other cities to develop its own vision of the future. She said it was quickly apparent that changing the timeframe "changed everything." The idea of looking 100 years into the future and backcasting from a future definition of success means moving beyond terms of office, budgets, and agendas, and instead considering and adapting to long-term trends and generating new approaches using "systems thinking" and creativity.

Seymoar said this process was not only useful in the very long term, but could be the starting point for developing medium-term strategies, for example for the next 30 years on issues such as roads and housing, and five-year implementation plans.

At the heart of this process lies the sharing of best practices by cities and municipalities. This, Seymoar said, is where the PLUS Network comes into its own. She described it as a network of over 30 cities and communities from around the world that share their learning and best

practices about integrated long-term planning for sustainability. Member cities of the PLUS Network commit to building on their existing planning process using a long-term lens. While each city's approach is different, the process typically includes developing 50- to 100-year visions, with 30-year strategies, and five-year implementation plans. She said each city or region identifies at least one immediate demonstration project that will revitalize and renew the community. Members participate in regular peer exchanges, which give them opportunities to share their work and learn from one another's experiences regarding city and community planning issues.

Seymoar said the collaborative experience of the PLUS Network helps cities deal with economic, ecological, and social shocks and stresses. Members of the network range in size, meaning lessons and best practices can be shared and tested in different settings.

Seymoar outlined the various frameworks and tools available in Canada to begin such a long-term planning process, saying these are easily adaptable to various municipalities. She linked these tools to ICSPs, which include several similar components, such as the integration of the four elements of sustainability and the alignment of existing and new plans in the areas of water, land use, transportation, and air, for example.

Seymoar said this process was taking the ideas of community visioning, of building on the assets of each community and community sustainability and making them mainstream. "It's seeing community planning through the sustainability lens," she said.

She said seeing this process as a generic planning cycle, moving from awareness to visioning to strategies to implementation and finally feedback, emphasizes the "work in progress" aspect of the planning exercise, as opposed to the final outcome. She concluded her presentation by urging the participants to begin assessing their community's current situation, building their own capacity to minimize the role of consultants, sharing information, and engaging youth. This, she said, would help to guide current actions and decisions while building a long-term plan.

Discussion

Leibovici thanked the presenters and the session moved on to questions.

A participant asked Melamed how regional growth strategies fit into sustainability plans for small communities. Melamed replied that integrated sustainability plans are more exhaustive. While he agreed moving from community to region would be a step in the right direction, he said it is difficult to align priorities and get buy-in.

When asked what the impact of a cap on population growth such as Whistler's would be on prosperity and a community's tax base, Melamed replied that looking to 2020, "it is difficult to gauge the effect of such a policy." The challenge would be to explore new ways to generate revenue without increasing population. "It can't just be about property taxes," he said.

A participant asked the presenters to comment on inter-municipal planning. Seymoar replied that any long-term plan, such as the 100-year plan she suggested, must look beyond municipal boundaries. Ostry added it is virtually impossible to equate political boundaries with the functional boundaries of a community. Melamed gave an example from his region, saying, "We have a common goal to protect our natural environment recreation resource for economic prosperity. This follows smart growth planning and future growth potential."

When asked whether a municipality's "Official Plan" qualifies as ICSP, Ostry replied the requirements for ICSPs are deliberately fluid, because communities are diverse and at different points in the planning process.

A participant asked about the possibility of drawing boundaries within communities regarding greenhouse gas emissions. Ostry answered there must be accountability in this area, and taxpayers “need to know who is doing what.”

In closing, Melamed outlined the positive benefits of working through the planning process and moving beyond the electoral timeframe, saying, “short-term thinking is dangerous.” He said the Natural Step Framework is “powerful and empowering, and it’s amazing to hear the excitement of communities experiencing its transformative benefits.”

Seymour added “smart planning” is evolving in British Columbia, and the process will generate useful information for the whole country.

Mayors’ and Councillors’ Panel on Sustainability

Facilitator:

Lucy van Oldenbarneveld
Host of CBC News at Six, Ottawa
Canadian Broadcasting Corporation

Presenters:

Kevin Edwards
Mayor
Town of Three Hills, Alberta

Sheila Fougère
Councillor
Halifax Regional Municipality, Nova Scotia

Mark Heyck
Deputy Mayor
City of Yellowknife, Northwest Territories

Louise Poirier
Councillor
City of Gatineau, Quebec

Richard Walton
Mayor
District of North Vancouver, British Columbia

The speakers answered a series of questions posed by interviewer Lucy van Oldenbarneveld and responded to questions from the floor.

What must change?

Asked what must change for municipalities to adopt sustainable practices, Richard Walton said the first step is to increase community awareness and invest time in community engagement. A municipality must have a clear strategic community vision for sustainability, arising from the wishes of the community and established through consultation. The strategy can be expressed in terms of individual projects or as a broader plan.

Provincial governments should provide assistance in the form of “carrot and stick” legislation, Walton said. The mayor must work with city council to develop a united political will. Increased collaboration with First Nations communities and regional districts is critical.

Kevin Edwards said municipal officials must understand the value of planning for sustainability, as many still see such planning as an expensive add-on to existing planning processes. In addition, planning for sustainability must produce visible and practical benefits. Everyone involved must have the same expectations and a shared definition of success.

Sheila Fougère said planning for sustainability can be overwhelming for a community, both financially and conceptually. Municipalities must recognize that they *can* do something: “They don’t need to look at the global picture. They need to look inward and see what can be done to improve the local situation.”

Municipalities must cooperate more closely with provinces, non-governmental organizations (NGOs), and community groups, Fougère said. They should consider putting a price on “bad behaviour” and rewarding sustainable practices. As community leaders, municipal officials must show stewardship, analyze their sustainability footprint, and lead the way in education and community buy-in.

Mark Heyck said the cost of bringing sustainability initiatives to fruition is one challenge for smaller communities. Most municipalities base their financial models on property taxes, and municipalities must diversify their revenue stream to afford sustainability initiatives. Such initiatives may save money in the long term, but require considerable initial investment. Other governments can also be a source of funds.

Louise Poirier said the municipality must set an example—not just by writing policies, but also by putting those policies into practice in municipal operations. The municipality also must educate city councillors and citizens. Often councillors are not aware of the new technologies available. In addition, municipalities must influence citizens to support new rules and policies. “They all say yes, but when it’s their backyard, they all say no,” Poirier said. “We have to help them change their minds.”

How can citizen awareness and political will be increased?

Asked how to raise citizen awareness and build political will in support of sustainable practices, Fougère gave the example of the Halifax harbour cleanup. The city had been dumping millions of litres of raw sewage into the harbour and learned that cleaning up the harbour would cost \$333 million. Other orders of government provided a portion of the funds, but the municipality still needed to secure the bulk of the funding. The municipality engaged the community, which agreed to pay for the cleanup through a surcharge on the water bill. Engaging the community—asking people what they wanted and what they were willing to bring to the table—was key.

Edwards said the municipal council of the Town of Three Hills worked closely with the municipality’s senior management and staff, who had great influence in the planning process. The community has a “forward-thinking attitude.” To encourage change, the municipality emphasized two facts: times are good financially, and change is inevitable. The municipality identified its own simple definition of sustainability, which guided the discussion.

Walton said North Vancouver began working with the Natural Step framework for sustainability planning about four years ago. This helped the municipality develop its own internal capacity before engaging the community. North Vancouver is now embarking on a two- to three-year process during which it will update its community Official Plan. As part of this process, it will engage the community to develop support for sustainability initiatives.

Poirier said the population of Gatineau is very concerned about environmental sustainability, and supports municipal initiatives in this area. The city’s challenge is to develop a clear policy and ensure the public service as a whole is working in the same direction. Municipalities must

take a systematic approach in implementing policies, to limit the tax burden on citizens. They should also look for funding from other levels of government.

Heyck said the residents of Yellowknife also support sustainability initiatives. The municipality recently completed a Smart Growth Development Plan; as part of the consultation process, it sent out questionnaires, to which there was a high response rate. The term “Smart Growth” was helpful in expressing the additional benefits of sustainability: it can create a more efficient city, with less stress on infrastructure and more efficient energy use. Education has helped win over city councillors who were not convinced of the benefits of sustainability.

Asked about securing buy-in for sustainability initiatives, Edwards said once the process of sustainability planning began, the town council and the community realized it would be a long-term commitment and a lot of work. Early successes were very important in generating the motivation to continue.

Poirier said it helps if the municipal council supports the sustainability initiatives unanimously. Communicating messages to the public clearly, directly, and repeatedly is crucial. People want to be proud of their city, she said, so the municipality should consider the emotional aspect of its decision-making process.

Walton said sustainability does have a cost, and local citizens will have to pay part of that even when other levels of government provide funding. “There is a major change coming in how our communities live, and our children will have to adapt,” he said. “We can’t borrow from future generations any longer.” At the same time, sustainability has benefits. “We can’t just preach to them, we’ve got to give reasons and engage them.”

Heyck said conferences offer councillors an opportunity to engage. They should then go back and spread the word to councillors who have not taken the initiative on sustainability issues. He said Yellowknife residents are more interested now in innovative techniques such as geothermal heat recovery. Strong public support for energy-efficient building standards has influenced the direction of the city council.

Fougère said Halifax had identified healthy, vibrant, sustainable communities as something the public wants. As a result, the municipality has adopted a green corporate culture internally, educating its employees and applying greening to its own procurement and operations. The city has also completed a land use plan, engaging 108 community groups in the planning process. In addition, Halifax produces a quarterly newsletter, “Naturally Green.” A couple of major weather events—unprecedented in the city’s history—also played a part in convincing the community of the need to take action.

What lessons have been learned?

When asked to discuss lessons learned, Poirier said simple, concrete measures are most effective in gaining community support. For example, Gatineau’s mayor promised to plant 100,000 trees as part of his mandate if elected. Gatineau also has its own green fund, which provides up to \$25,000 to non-profit organizations working to protect green spaces. Explain to people that every little act counts, she said. In addition, municipalities cannot work alone—they must work on a regional level to solve problems such as waste management.

Heyck said a key issue is the strength of municipal administrations. For years, administrative staff was told to stick to the status quo. Over the last 10 to 15 years, urban planners and engineers have been educated differently, and they want to do things differently. Councillors must give them the resources to operate more creatively. Heyck said another lesson learned is the need to include implementation strategies in sustainability plans, including detailed budget figures. This will ensure action is taken and progress made.

Fougère gave the following advice:

- Measure, collect data, get baseline information, and identify the goal.
- Evaluate progress by comparing the current situation to the baseline.
- Involve the public.
- Do not repeat past efforts. Information on past efforts is collected by FCM and available for all municipalities.
- Lead by example: as a municipality and as elected officials, adopt sustainable practices.
- Communicate information about green technologies and approaches in industry and green procurement practices. Educate and train municipal councillors and employees.
- Do not give up.

Edwards agreed with other speakers that “citizen engagement is paramount.” Citizen engagement is critical but difficult to sustain over the long term, Edwards said. “You have to make sure that your citizens hear themselves in what it is you are now planning to do together as a community.” He also agreed with Heyck that urban planners are principal proponents of sustainability.

Walton said “there is tremendous appetite for change” and “communities are crying out for leadership.” Community leaders can act as champions and should talk about sustainability in terms that are meaningful to the community. Sustainability is related to not only the environment, but also jobs, the aging population, and other issues. “Create your own vision,” he said. “As a locally elected person, you’re the communicator.”

During the discussion, a participant asked about the challenge of making short-term tradeoffs in exchange for long-term benefits. Heyck said Yellowknife used a software package to educate the public about those kinds of tradeoffs. Walton said financial costs are associated with change, as well as “intangibles” to consider. “You have to tirelessly engage and repeat messages. It takes time, but is necessary.”

Another participant said smaller communities may not have the internal capacity to take on the challenge of sustainability planning. She asked for advice on overcoming this challenge. Heyck said the most important step Yellowknife took was to hire an energy coordinator. A consultant can cut across departmental lines and talk to different people. Municipal associations also play a role. The Northwest Territories employs a sustainability advisor who can lend services to other municipalities in the territories.

Fougère said Halifax partnered with the Union of Nova Scotia Municipalities.

Edwards said that with a population of 3,500, the Town of Three Hills does face some challenges. The sustainability plan calls for three citizen-driven committees as part of the implementation plan. This is a long-term commitment, and community engagement at the front end is essential. Resources are always a challenge, especially for small local governments.

Another participant asked how the municipalities created their sustainability plans and how they engaged citizens, particularly when using the Natural Step framework.

Walton said initially, North Vancouver focused on building capacity and “walking the walk” internally, and is now completing an action plan for citizen engagement. Other communities have done the opposite, engaging citizens first and then developing capacity within the municipality.

Fougère said Halifax was also using the Natural Step framework. The municipality engaged the organization to carry out a sustainability analysis and learned it needed to become more coordinated internally in its approach to sustainability. Halifax's Regional Planning Stakeholder Committee completed a 25-year land use planning exercise, which took four years and involved extensive community consultation. The municipality based all policies and long-term initiatives on what it learned from that public consultation. Fougère emphasized the importance of reaching out to the public by identifying community groups and asking them for input.

A participant asked for additional comments on the challenges faced by smaller municipalities. In Newfoundland and Labrador, he said, 75% of municipalities have one full-time employee, or none. Some municipalities have no water or sewage system in place. "For them, it's not about sustainability, it's about survival," he said.

Edwards said sustainability planning for very small communities is not the same as for larger communities. Some very simple principles should be followed: "If people believe it's worth doing, if it expresses their shared vision for the future, and if it's fairly simple, then even the limited resources of very small communities can be brought to bear to do something. Not all things, but some things." If these actions produce early benefits, the whole process is given traction for the long term, he added.

Walton said the Natural Step framework offers principles and decisions that can be understood through a very simple filter of three or four strategic questions. The framework works in communities of nine or nine million.

Beyond Brochures: Fostering Sustainable Behaviour

Brock Carlton
Chief Executive Officer
Federation of Canadian Municipalities

Doug McKenzie-Mohr
Environmental Psychologist and Professor
Author of *Fostering Sustainable Behaviour*

Doug McKenzie-Mohr

Doug McKenzie-Mohr said as a resident of New Brunswick, he deals with a great deal of snow. In the fall, he had chosen to locate the household composter in the far corner of the backyard, but during winter, he had to shovel a path through the backyard after every snowfall, and this was a lot of work. McKenzie-Mohr said this story illustrates some of the factors that can affect attempts to create sustainable behaviour changes. Without understanding such issues and creating effective changes, there is a much lower chance of a sustainable future.

Most programs focus on pushing information to people, with the hope it will change their behaviour. He outlined two behaviour models: the attitude-behaviour change approach and the economic self-interest model. The first model relies on changing attitudes in order to change behaviour. Unfortunately, McKenzie-Mohr said, studies have generally found no correlation between attitude and behaviour. People's attitudes do need to change, but it is not enough to change their behaviour. He cited a Virginia Tech study that measured attitudes and knowledge before and after participating in an energy efficiency workshop. Forty people participated in the event and were given low-flow showerheads, but only eight later installed them. Two participants had insulation blankets on their hot-water tanks, but they had installed them before

the workshop. One participant lowered the temperature on his hot-water tank. A three-hour, intensive workshop filled with information had nearly no impact on behaviour at all.

In another case, McKenzie-Mohr said a handbook describing wasteful water use, detailed conservation methods, and the relationship between energy and water (in Australia, a large proportion of energy is used for moving water) cost \$50,000 to produce and resulted in no reduction in water use at all; no change in behaviour.

The flaw in the economic self-interest approach, he said, is the assumption that people are rational. It assumes people systematically evaluate information and act in their own self-interest. "Enlightenment is supposed to equal behaviour change." McKenzie-Mohr said a massive residential conservation program delivered across the United States by gas and electric utilities offered household audits, loans, and contractors. An evaluation of the data from all states showed that only 6% of eligible households requested audits and only 50% of households acted at all, and for those that did, the energy savings constituted only 2 to 3% per household. This program cost \$300 per household. In Sudbury, Ontario, a program also costing \$300 per household had a much higher success rate as it was carried out in person. Going door to door, the team included plumbers and workers who arranged times that day to enter the home and insulate the hot-water tank, lower its temperature, install low-flow showerheads, and caulk windows. This approach guaranteed an energy savings of 10 to 15%, because the work was done immediately and professionally.

Advertising is another area in which spending has little impact, McKenzie-Mohr said. California utilities spend \$200 million annually on energy efficiency advertisements to encourage the public to change its habits. Evaluation of this approach shows there is frequently little impact. In his work with the Canadian government's One-Tonne Challenge, McKenzie-Mohr advised against running ads. Shortly thereafter, the Rick Mercer ads were released. Then, McKenzie-Mohr said, "just as the program was about to have an effect, the Harper government killed the program."

McKenzie-Mohr said he coined the term "social marketing" nearly 20 years ago. A core lesson from psychology is that people are more likely to change behaviour when provided with information from other people in their own community. He outlined five steps to this approach:

- Selecting the behaviour to target
- Uncovering the barriers and benefits to each behavior
- Developing the strategy
- Piloting the strategy, before thinking about a broader implementation
- Implementing the program on a broad scale and then evaluating it

McKenzie-Mohr identified four broad categories of behaviour change:

- A one-time behaviour change, brought about by implementing policy that by its nature locks in environmental benefits.
- Voluntary changes that lead to policy changes. This is more difficult, as it requires sustaining the behaviour over time.
- Implementing programs to gain compliance with stricter regulations.
- Strictly voluntary changes.

After asking the participants to call out ideas for desired behaviour changes, he told them the first step is to list the behaviour changes they want to see. Then, list the impacts these changes

could, or will, have. These changes often must be scrutinized across several areas, because a change that affects watershed quality can also affect public health. The behaviour that has the greater and broader impact must be determined. He recommended then assessing the connection between the impact a behaviour might have, and the probability that behaviour will be adopted. He suggested estimating probability by looking at other programs in other jurisdictions to see how they delivered the programs, and the percentage of people who participated. If the focus is on behaviour change over time, perhaps a behaviour that has greater probability and lower impact is a better choice. Over time, that behaviour can be built on to move forward to changes with greater impact.

McKenzie-Mohr, responding to participants' questions, said the strategy selected will affect the amount of impact and probability that a behaviour will be adopted. Unfortunately, most programs do not measure probability. To approximate it, existing case studies that evaluate probability can be examined, or the target audience should be surveyed: ask them to evaluate some potential behaviour changes and rank them according to the likelihood they would make that particular change. Even with a normal distribution of error, the averages are a better indication of actual probability. "Keep in mind," he said, "people will often overestimate what they will do." He advised against bringing people into groups to obtain these rankings because they may be influenced by other responses.

In selecting the behaviour to target, he said a careful analysis of potential options gives confidence that the behaviour selected will have the best impact. Too often, this selection is made without analysis, based only on personal interest.

The second step in social marketing is uncovering the barriers and benefits related to the behaviours selected in step one. There are four ways of doing this, including literature search, observation, focus groups, and surveys. Using a combination of methods—what social scientists call triangulation—compensates for the weak areas in each.

McKenzie-Mohr recommended this method to clarify the mandate and specify desired behaviours, as well as to discover the barriers and benefits unique to each mandate point. He suggested sources such as trade magazines, governmental and NGO reports, and academic articles. He also suggested speaking to authors to find other materials that might prove useful, and consulting websites. His own website (www.cbsm.com) includes information in categories such as conservation, transportation, and water. Registration for the site is free and registered users will see lists of articles under each topic on the home page. The site tracks the user's visits and shows articles added since they were last there. It also tracks registered users' questions and displays any new responses each time the user logs in. McKenzie-Mohr said the conversations on the site are archived to allow users to review discussion threads from recent years. This enables users to find reports on other municipalities working on similar issues. The list of strategy reports on the site includes low-flow showerhead installation and the Canadian anti-idling project, as well as analyses of the results of these programs. Beginning in 2008, he said, the site will host papers from international experts on bringing about specific behavioural changes. He said he is currently working on a way to update that information by building discussion forums into each report section, so site visitors can share experiences about each particular behavioural change. With the collaboration of academic colleagues, he said, doctoral students will have to write reports for this site as a term requirement.

Asked about a website called Change Everything, McKenzie-Mohr said that although good information is not always enough to attract people's attention, if the information is useful, people will use a site.

To uncover barriers, unobtrusive observation is important. If people know they are being observed, they are more likely to alter their behaviour. Making an appointment to view a

composter in 10 days' time increases the chance there will be organic material in it by then. He said behaviour should be broken down into specific actions, then the barriers to those actions uncovered. Installing a programmable thermostat, for example, requires three actions: buy a thermostat, install it, and program it. McKenzie-Mohr said barriers to the first action can include cost and ability to go to the store. For the installation action, barriers might include time or the tools to do it, or the cost of hiring a professional. Programming the thermostat involves learning how to do so. He described what a programmable thermostat should ask for when it is first turned on: it should offer options for programming for a normal workweek, a night out, or a vacation—the three most common requirements.

“Use what you learn in your literature search to run your focus groups,” McKenzie-Mohr said. The group should be limited to eight individuals, with a note-taker and facilitator present. He also advised limiting the extent to which people offer different answers based on what they hear others say. One of the strongest indicators for using a backyard composter is convenience. If one group member composts and casts judgement on those who do not, this may affect other responses. Generally, he said, avoid combining active and inactive groups, and genders. In mixed-gender groups, men are more likely to dominate the conversation. This then requires four focus groups: active composters who are women, active men, inactive women, and inactive men.

Focus groups provide rich, detailed information, but with a host of limitations. First, they are not random. The people who decide to participate will not be representative of the wider community. A second limitation is group effect, when people alter their answers based on what they hear. To limit this, he suggested telling the group the note-taker cannot keep up with all the responses. Each participant receives a notepad, writes an initial response in point form on the pad, then reads the answers. At the end of the session, these pads are collected and compared with the note-taker's notes. This process increases the chances of participants sharing their own barriers and opinions, rather than responding to what someone else said.

Various survey types offer various benefits and limitations. A face-to-face survey has higher participation rates, and can facilitate a longer survey, but it can be expensive to conduct. A telephone survey is less expensive but also has lower participation rates and only allows for a shorter time. Mail-in surveys have very low participation rates and long wait times until the surveys are returned. Internet-based surveys work for target audiences that are all online. McKenzie-Mohr suggested calling people and asking them to participate in the survey, then sending out the web link. Surveys, he said, give the best read on who is likely to be active in a particular behaviour change. They allow for comparison of active and inactive participants, using multivariate statistics. This allows for the weighting of non-equal factors, but also requires an equal number of active and inactive participants.

McKenzie-Mohr said a refusal survey can be created for people who elect not to participate in the full survey. When they decline the full survey, they are asked if there is a more convenient time to call back. If they still refuse, they are asked if they will take 30 seconds to respond to a few questions. He said this helps to find if any important differences exist between people who participate in the full survey, and those who do not.

In the second part of the session, McKenzie-Mohr said he would discuss successful case studies, but said participants should be careful not to convince themselves that a method that worked elsewhere would work in the same way in every community. He repeated his core message: carefully select the behaviours to be influenced, research the barriers and benefits associated with those core behaviours, and then choose the appropriate strategies. Choosing a strategy without doing the necessary research is “just guessing,” he said.

Regulations should be used when they allow a municipality to address a barrier more effectively than it would otherwise. To motivate the public to remove recyclables and organics from garbage, Halifax began requiring the use of clear garbage bags. Garbage collectors left behind bags that contained recyclables or organics. The inconvenience of sorting through garbage again quickly motivated people to change. “You decide what regulations to use, whether to use them or how to fashion them, based on the barriers and benefits,” he said.

The idea is to reduce the barriers and increase the perceived benefits associated with a specific behaviour, McKenzie-Mohr said. In Toronto, McKenzie-Mohr Associates worked on the project to reduce idling of vehicles. Research showed the main motivator was improved air quality, not the reduction of carbon emissions. The team’s strategy was to increase the barriers to idling a vehicle and decrease the perceived benefits—as well as decreasing the barriers and increasing the perceived benefits associated with turning vehicles off.

McKenzie-Mohr described a study in social psychology in which researchers worked with two groups. They asked one group to sign a petition committing to a cause, but did not ask the second group. They then approached both groups with a request to place a large billboard on their front lawns. In the group not asked to sign the petition, 17% agreed to the billboard. In the group asked to sign the petition, 76% agreed to the billboard. The study suggests that asking people to make a small pledge can increase participation when later they are asked to make a larger commitment.

Returning to the anti-idling pilot project in Toronto, McKenzie-Mohr said his team carried out “barrier and benefit” research and found several barriers:

- People forgot to turn off their engines.
- People believed engines should idle for more than three minutes before it is more fuel efficient to turn them off and on again (untrue).
- People believed restarting the engine would stress the starter (a non-issue with later-model cars).

The primary perceived benefit to ceasing engine idling was improved air quality.

The team delivered the pilot project at several sites, using different approaches. At some sites, they used signs that read, “Turn your engine off for our health.” The signs alone did not change behaviour. The next method tested was a combination of signage and personal contact. Representatives approached drivers and explained they were delivering an anti-idling program to improve air quality. They then said if idle time is more than 10 seconds, it is more fuel efficient to turn off the engine. They also explained that restarting an engine has no impact on the starter.

The representatives asked the drivers if they would be willing to make a commitment to turn their car engines off in the future. Over 80% agreed to do this. The representatives asked the drivers to attach to their cars a removable sticker that would advertise the driver’s commitment and serve as a reminder to turn off the engine.

The program resulted in a 32% reduction in the number of vehicles idling. For vehicles that were still left idling, the length of idling time was reduced by 73%.

After this successful pilot project, Toronto extended the program to cover the municipal fleet, schools, and parking lots. Natural Resources Canada decided to create an anti-idling turnkey toolkit, which is now available online for any municipality in the world to download free. Now 100 Canadian communities are delivering anti-idling programs and 50 communities in Canada have declared themselves idle-free.

McKenzie-Mohr reminded participants that each community should carry out its own “barriers and benefits” testing to ensure that the strategy will work locally.

McKenzie-Mohr Associates is also working with the Climate Project, which is training people to deliver Al Gore’s presentation on climate change. McKenzie-Mohr said Gore’s presentation and film are not very effective from a behavioural change perspective because they offer little information on what people can do. The Climate Project recently agreed to a plan for community-based social marketing. A new page on its website will promote three primary actions: “reduce my emissions,” “reduce my community’s emissions,” and “request a presentation in my community.” McKenzie-Mohr Associates is working with the Climate Project to create a series of 10 to 15 pre-packaged turnkey initiatives, including the Natural Resources Canada anti-idling initiative. McKenzie-Mohr Associates is also suggesting one web page for each suggested personal action, focusing on actions with the best probability of being adopted and making an impact.

When users click on an activity on the website, they will get a pop-up form inviting them to pledge to take that action. This initial commitment is an opportunity to begin an ongoing dialogue with a household about the range of actions in which they might engage over time. As people commit to each action, the information goes into a database and they receive follow-up e-mails suggesting other actions.

Another project, the Residential Conservation Service (RCS) program home audit, has shown the effectiveness of making a public commitment, McKenzie-Mohr said. The RCS home audit divided households into two groups. One group received the normal audit; the other was asked if their names could be published in the local newspaper so friends and colleagues would be inspired to ask about the audit.

One year later, the gas and electricity usage at the audited households was measured without the knowledge of the residents (so they would not adjust their usage). Those whose names had not been published showed virtually no change in natural gas or electricity usage. Those whose names had been published showed a 15% reduction in natural gas usage and a 20% reduction in electricity usage.

A commitment should be public and durable, said McKenzie-Mohr. For example, as part of a Waterloo program, representatives go door to door, speaking about the importance of pesticide use and asking residents to post a sign saying their lawns are pesticide free. McKenzie-Mohr said promotional signs are important because most of the encouraged behaviours are invisible (such as composting and water-wise gardening). One important aspect of this approach is to ask for permission to place the stickers or signs, rather than requesting the resident to place them, to ensure the action is taken.

McKenzie-Mohr provided a checklist for using commitment as a behaviour-changing method:

- Avoid coercion: Commitments work because they are voluntary. Using incentives and disincentives in the proper context is reasonable, but these cannot be coupled with the practice of obtaining public commitments. In this case, if people feel pressured to engage in the action, they will not “internalize the motivation.”
- Request callbacks: When making calls, ask when the person might have time to think about the issue, and ask to call back to discuss it after that time. Building callbacks into the initial contact dramatically increases the likelihood people will act.
- Make the commitment public and durable.

- Promote involvement: “Self-perception theory” shows behaviour drives attitudes and beliefs rather than the other way around.
- Enhance self-perceptions: Encourage people to see themselves as environmentally concerned. A key step is to tie different actions and programs together as part of a larger picture, branding the different initiatives so the links are visible. This helps to create clear connections between actions currently being taken and behavioural changes to be encouraged in the future.
- Facilitate social diffusion: Community-based social marketing is effective because people are most likely to adopt new behaviours based on what they see other people doing.

McKenzie-Mohr gave the example of a study in the field of social diffusion. In the 1930s, the US Department of Agriculture wanted farmers to change their tillage patterns. Representatives of the Department asked community members to identify the most respected person in each farming community. They visited that person and worked with him or her personally to change tillage methods, knowing the ideas would then diffuse to others. The point is to identify the people who are both well known and well respected in their communities, McKenzie-Mohr said, and invite them to assist in showcasing the new behavioural changes.

The second way of bringing about behavioural change is through a public and durable commitment. People pick up actions because they see others they know taking the same actions.

Inconveniences and adjustments are associated with the behaviour change, but it is possible to assist people in dealing with them. Prompts can be used to habituate people to the new behaviour over time until it becomes automatic. Prompts are not designed to change attitudes or even to increase motivation, but as reminders about the new behaviour. To be effective, a prompt has to be as close as possible in space and time to the desired action. For example, by placing signs in retail stores reminding shoppers to buy recycled products, researchers found an increase in such purchases of 58% in grocery stores and 74% in stationery stores. In Europe, this process is much more efficient: each product has an LED display that immediately displays digital information when the bar code is scanned.

McKenzie-Mohr said success should not be measured in terms of broad reach, but by the actual return on investment (i.e. whether a program actually results in changed behaviour). He described a project in Durham Region, in which researchers compared information-intensive programs to community-based social marketing. For this project, the researchers selected three communities. In the first, they asked community members to post an information-intensive sticker that prompted them to reduce their lawn watering. In the other two communities, students or government representatives visited residents personally to discuss the issue. The program achieved a 1% reduction in water usage in the community using the information-intensive stickers, a 32% reduction with students going door to door to talk to residents personally, and a 45% reduction when government staff went door to door. It was not determined why the government representatives were more effective, although a different study found the public responded better to those who were older because they were perceived as more credible.

In another study, stickers posted in a university residence prompting people to take shorter showers and turn off the lights proved very effective. This was because the signs were posted in the right places—inside shower stalls and beside light switches.

McKenzie-Mohr discussed some key elements of effective communication:

- Create vivid messages: These use imagery, capture people's attention, and increase the likelihood of the message going into people's long-term memory.
- Avoid extreme messages: Everyone has a "latitude of acceptance" and the message must fall within those constraints.
- Proceed carefully regarding fearful messages: These can work to encourage individual health-related behavioural changes, but they do not work in relation to the environment, where there is a high likelihood that people will perceive their actions as ineffective. It is better to focus on a positive image or vision of the future.
- Use feedback to reinforce repetitive behaviour, build public support, and develop community norms.
- Frame the message to motivate: Many programs talk about saving money, but most people are more motivated to avoid losing money than to secure an equivalent gain. In other words, the message should say, "by failing to act, you'll lose \$200 a year," rather than, "by acting, you'll save \$200 a year."

Studies show newspapers are the least persuasive medium, followed by radio, then television, then face-to-face communication, McKenzie-Mohr said. The best approach is to use cost-effective personal communication to get the public to pay more attention to more information-intensive printed material (for example, calling people on the phone and securing a personal commitment to review the material).

McKenzie-Mohr closed with a summary: identify a strategy based on addressing barriers to behaviour change, pilot test it, implement the plan and measure the results.

The Future of Planning: Discussing New Tools and Approaches in an Interactive Setting

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Daniel Savard

Daniel Savard began by pointing to his feet and indicating he was not wearing dress shoes, because as someone who implements conservation designs for subdivisions, he has to walk the site. "You will have to look at something other than a map," he said. He described the work of Randall Arendt, the designer of "conservation subdivisions" for a wide variety of clients in 21 states. Arendt's innovative community designs succeed both economically and environmentally, earning them a reputation for being "twice green."

Savard said he would condense a full-day's training into half an hour for this presentation, to enable participants to consider how they might implement conservation initiatives without consultants—instead, he suggested brainstorming as much as possible.

To explain conservation subdivisions, Savard started with a generic example. He asked the participants to imagine that in their municipality, they had a 10-acre property they wanted to develop. He laid out the steps:

- Find out from municipal planners what regulations apply to the property.
- After collecting information about floodplains, endangered species, or other regulatory regimes, the next step is to ask how many units could be built with the available zoning.
- If the zoning officer permits 75 units, it will then be possible to build a legal subdivision parsed out over the entire property.

Savard said when only environmental constraints are considered for subdivision planning, municipalities create communities that can make inhabitants sick. The inhabitants tell municipalities they want no more building in the area, he said, but they are really trying to express a fear of losing what is important to them: the views, cultural sites, wildflowers, or oak

tree around which community members congregate. Savard asked whether this issue is really related to building more subdivisions, or to aspects the inhabitants value about the property.

Savard and his team presented the conservation model to a group of grade six students, showing them that the model takes the same number of units and densifies them into a particular area to preserve green space. "Why don't we see this in our own communities?"

The conservation model provides the same number of units as a more typical subdivision. Savard said bringing new models to Canada is difficult because there is often a demand for a pilot project to demonstrate the theory works. The participants agreed and listed common responses: "it's too expensive," "it doesn't fit our model," and "it's in the United States, in the south, where they don't have snow." Savard said these excuses about conservation subdivisions are common, but the city of Dieppe, New Brunswick, can be cited as an example.

In making the case for conservation subdivision, the greenhouse gas issue can also be used. Many say the solution to greenhouse gas is to diminish fuel use and to drive cars that are more efficient. However, Savard said the third component to reducing greenhouse gas is reducing vehicle movement. The average North American family leaves home an average of 13 times per day. Common sense dictates that the further people have to travel from home, the more likely they are to use the car for services such as the doctor. If people live closer to services, Savard said, they are more likely not to use their cars.

Savard said New Brunswick uses a four-part test to determine whether communities are sustainable or not. The first test is the Halloween test. Savard said children can ascertain where the housing density is best at Halloween, where they can take the minimum number of steps to obtain the maximum number of candy. Municipalities should try to duplicate roads with this type of density. The second test is the ice cream test. Savard said planners should walk with an ice cream cone from the building development area to the closest area with high-frequency commercial use or activities; if the ice cream melts before they reach their destination, Savard said, that is a bad sign. The third test is the parade test. Parades do not go through Wal-Mart parking lots; instead, they take place on streets, where the public is. This third test relates to an inviting public space, where people want to live. The fourth test is the date or amenities space. Savard said people meeting for a date initially want to be in a quiet green space, but soon thereafter want to go to a restaurant within walking distance.

If a community meets all four of the tests, it is sustainable. If it meets three of the four tests, its subdivisions need some improvement. "What do we see most often in Canada?" Savard asked. "Zero out of four tests."

Savard said municipalities should start a subdivision project by asking community members what is important to them. With conservation subdivision planning, and only after identifying environmental constraints, the team should walk the site to understand its important features, as Savard's team did in Dieppe. Examining the site might also include obtaining a biological or historical assessment of the site, and teams should document GPS readings of the features. For conservation subdivision planning, looking at the open space first to take advantage of the site is key; houses are planned second. Savard said this is contrary to the "cookie cutter" approach exemplified all over North America. With conservation subdivisions, no two sites are the same.

After a municipality has decided where to place the houses, the municipality should "connect the dots" to plot out roads. Savard said a maximum number of dots should correspond with a minimum length of lines. The final step in conservation subdivision planning is to create the lot lines. Savard described the sequence for conservation planning as the reverse of conventional planning; as a result, municipalities end up with very different products.

In Dieppe, Savard's team wanted to know how much of the site was going to be set aside for pure conservation. The developer said there would be 147 sites, and that 75% of the site was protected from building, leading to an estimated carbon saving of 1,260 tonnes. The subdivision in Dieppe is walking distance from commercial activities; there are fewer roads per unit, streets running from east to west to take advantage of the sun, and strategic shading and protection from winds. The Dieppe subdivision is very successful, said Savard, and this prompted the municipality to implement its conservation model in the rest of its developments. Community members asked to reserve spaces in the Dieppe subdivision.

There are many environmental benefits. The neighbours also grow to know each other well because of the spacing and density of homes. Realtors can use the environmental orientation of the subdivision as a selling point; in addition, the Dieppe subdivision will appreciate in value quicker than conventional developments. He cited an example in Delaware, where developers realized conservation development required one third the infrastructure cost at one half the lot size for conventional development.

As an interactive exercise, Savard showed the participants a map with three colours they were to use for planning: red areas should not be built upon at any time; yellow areas should not be built upon if possible; and green areas were fine for building. Savard said the exercise required the participants to put houses in green areas and infrastructure in yellow areas. They should not think about where to build roads; first, they should place the houses on the map, and then locate roads and sewage systems.

The participants divided into four smaller groups for the exercise. Afterwards, group members presented their own maps to the room, and highlighted features like buffer zones to keep green views, diversity of housing options, access to water, connection with the larger community, wildlife migration, and community commons. Although one map won the most votes from the larger group, Savard said no one option was perfect. Instead, to create a true conservation subdivision, the best features from all the maps should be combined into an ideal model.

Douglas Pollard

Douglas Pollard introduced a life cycle costing tool developed by Canada Mortgage and Housing Corporation (CMHC) for the purposes of community infrastructure planning. The tool is easy to use, Pollard said, and gives municipalities 75-year life cycle cost projections of various initiatives. However, Pollard said, it is a planning-level tool and not a budgeting tool. Its purpose is to estimate the major costs of community development, or the key costs that can change over the course of a project. In addition, the tool enables municipalities to compare alternate scenarios. Pollard said in the conservation subdivision exercise, the groups could have used the tool to produce cost scenarios for the four communities created.

The tool works for a range from a cluster of homes to a subdivision composed of 1,000 units. To determine whether to use the tool, municipal planners should consider whether there are factors that might result in different densities for the community in question. Pollard said the CMHC had tried to build a tool everyone could use.

The tool can calculate various costing factors, including hard infrastructure, such as roads and municipal services; private user costs, such as home heating; external costs, such as pollution; and green infrastructure alternatives. The key costs are set as defaults in the tool, but users can customize their own. The tool includes revenues from municipalities and produces 75-year life cycle costs. Pollard said a life cycle of that length embraces the cost of replacement of roads, which might act to prevent increases in parking fees to replace bad roads.

Pollard explained the tool works in two required steps. In the first, the planner creates the scenario by choosing the most appropriate of the six choices, saving it, then modifying it to resemble the potential development project. "You can change the scenario with as much as you know at a given time," Pollard said. Optional steps can also be used to make the scenario more region specific. The tool allows users to allocate different income sources, such as if costs are shared with the developer, and also allows users to input savings and work with green infrastructure.

The tool does not automatically recognize tradeoffs. For example, Pollard said, the tool will not pick up the fiscal benefits of different types of sewers. The cost benefit or cost trade-off concepts are reasonably new to the market, but while they are not built into the tool, users can enter them manually.

Pollard also used Dieppe, New Brunswick, as an example. He demonstrated that a user can input the statistics for the base site, and then calculate the development coverage for both conventional and conservation subdivision plans. This will immediately generate the capital costs for both plans, which CMHC calls a "costing direction." Many other propositions fall in between these two polarities, including various unit densities and lengths of road. All of this can be put into the tool. The result is a cost difference between the proposed plans, although they might appear the same.

The tool also enables users to look at village design, which tends to be more compact, and to move from moderate to upper to urban density in determining costing directions. The clear winner for affordable planning is the urban density compact village, which coincides with the idea of conservation.

To summarize, Pollard said many factors affect the cost of a project, including the amount of land used and roads built. Generally, the conservation developments are the most cost effective. Analyzing an entire scenario at one glance is difficult, and CMHC developed the tool for that reason. "If you do your analysis really well at the beginning," Pollard said, "you don't have to come back to fix mistakes." Planners can return to the tool for detailed planning, continuing to tinker with the scenario; every time a plan is adjusted, it can be input into the tool before the presentation is finally made to city council. Finally, Pollard said groups can use the tool, as it can be stored on a network or database accessible by different individuals.

Discussion

Moderator Louise Poirier asked the group for feedback on whether the tool would be useful for their communities. A participant from Nunavut asked about the tool's extensibility, since his region's communities have very specific development needs. Pollard said CMHC created the tool to be flexible so it could be applied to the differing communities all over Canada. It is primarily a comparator tool; if the base elements are the same, communities will always be able to make a solid comparison between the options available to them.

Another participant asked about the possibility of obtaining other indicators from the tool, namely a calculator for greenhouse gases. Pollard answered it was a single-issue tool, to keep it simple for users. He added CMHC was developing a sustainable community development tool to bring other issues into the dialogue on municipal development. A city councillor from Manitoba said his community had begun a serious growth spurt after years of inaction. CMHC's tool had been useful for his community because it enabled them to create financial numbers with different models in a market where homebuyers have fixed ideas on what they want, why they want it, and why they should expect it from their municipality. Pollard said the tool was designed exactly for the councillor, planner, and resident stakeholder. A case for sustainable housing developments could be built and reports generated very quickly in the high-pressure situation the Manitoba city councillor described.

Ken Church

Ken Church introduced the concept of a Factor 2 Community as a community designed to reduce dependency on fossil fuels by 50%. While participants had heard presentations on how to create good development, Church said he wanted to provide another perspective on residential growth. When cities think of energy, many aspects should come to mind, such as food, arable land, and transportation; the use of gasoline in a car is not the sole issue. To change energy use, cities need to create plans. Community energy plans must be developed by thinking about how different parts of the city work together. It is a departure from traditional approaches, where planners put the roads down, fit the sewers, and put the houses in the gaps. Energy reduction requires conceptualizing communities, “like Sudoku puzzles,” Church said; everything must correspond.

Church told the participants their goal should be to create a paradigm shift for Factor 2 Communities. Communities have a dilemma: they want to reduce their impact on the local environment by 50%, but at the same time, they want to grow. “This isn’t just about turning lights off,” he said. In order to assess energy use, several factors must be considered: how the community is operating, if there is a better way of providing electricity, and the means by which people get around in the community. Communities that truly want to achieve the 50% reduction cannot do it through incremental increases in efficiency alone. The necessary savings will be gained only through systematic changes.

People who plan and manage communities are used to hearing debates about cost versus value, Church said. He asked the group to consider the true cost of oil. A barrel can be priced at \$100, but what is done with the oil makes the difference to its value; if it just sits in the middle of a room, it has no value. In the same way, communities can start to think about energy in different ways, apart from kilowatt values, if they consider how the energy is used. Economic developers think about economic leakage from towns; direct leakage occurs when a resident buys something from another city, whereas indirect leakage occurs when a resident buys components for a locally purchased product from another city. Optimal economic development takes place when all the products and components are created and purchased in the same community. Church asked the participants to think about energy in the same way, saying, “It should be an industry for each community.”

He said the technologies available for building improvement are useful when considering energy reduction. The technologies range from unlicensed, more dubious products to mainstream products to the Energy Star label. Developers can build efficient systems using affordable technology rather than the very expensive and high technology products available.

The role of the city is to coordinate energy reduction efforts. It is not up to the private sector to undertake these changes. The city is the actor mandated to provide quality of life to all its residents.

Church suggested standards or criteria that could be used in community energy plans, including transportation goals, urban form, employment, water, waste, and energy generation. In Ottawa, city employees should determine the percentage of residents who ride the bus on a weekly basis, and ask what it would take to get all the city’s residents to use the bus once per week. Church also told the participants they should be thinking of criteria not directly related to energy; for example, he said, think of employment patterns in particular neighbourhoods. What could the city do to create efficient traffic in and out of those communities? Could the city move light employment to other areas to take traffic loads off overworked arteries? What could the city do to get people to walk to commercial districts, instead of driving?

In terms of greenhouse gas, the fact that emissions come from the production, transportation, and sale of food is often forgotten. That is also part of the city, Church said. Communities like Iqaluit are highly conscious that their food travels a long distance to their tables. This also occurs in places like Ottawa. Church said cities must be active about the way food is consumed in their cities, and take on new initiatives such as urban gardens.

Church discussed the connection between urban form and road vehicle use. The amount and frequency of road vehicle use is linked to factors like density, percentage of single-occupancy homes, the distance to local business districts, and road complexity (meaning people are less inclined to walk down the road to take the bus if the stop is further away from their home). All these factors should be raised with city developers as part of a community energy plan.

Cities can set targets, as in Vancouver, to determine whether they are meeting their goals. Church suggested that in terms of benchmarking progress, more data could mean more work for cities. Keep the benchmarks simple, obvious, and easy to understand. In addition, cities should set targets for their economy, for their environment, and for their society.

Church said everything is a system. Communities are organic; as such, each part of the city has a purpose in that system. Energy is expended in numerous ways, many of which have yet to be measured by cities. Finally, Church said local resources should be used where possible, to maximize internal gains for energy production.

A question-and-answer session followed. A participant asked Pollard whether CMHC was involved in the “RETscreen” program. He answered it was not. He said the RETscreen program is a great tool, because it is snapshot software that evaluates different energy technologies, but it is limited to use as a scoping tool.

Another participant asked whether municipalities will see more shared services for heating in the future. Church answered that district energy heating, the heating of multiple buildings from a single source of energy, is a promising development. It can be implemented by the municipality or through the private sector. Church said district energy heating is efficient, enables users to control emissions, and can be a revenue generator for the municipality. The system is more efficient because users aggregate the energy demand for a number of buildings, and the furnace quality is typically better.

A participant asked whether the waste heat from industry could be used to heat residential areas. Church said Natural Resources Canada is working on this type of initiative, which is already used in places like Malmö, Sweden.

Keynote Address: Larry Beasley

Larry Beasley
Urban Planner (ret'd)
City of Vancouver

Berry Vrbanovic
Vice President at Large
Federation of Canadian Municipalities

Berry Vrbanovic said Vancouver is recognized globally as a leader in planning, thanks to Larry Beasley, who is a world-renowned planner, a member of the Order of Canada, and revered worldwide. “Thanks to leaders and visionaries like Larry Beasley, the very best solutions can be found right in our backyard,” Vrbanovic said.

Sustainability is the most used, even over-used, term in the English language, particularly by municipalities, said Larry Beasley. The City of Vancouver studied sustainability, brought in experts, and found it to be real, possible, and economical. He said, “I think it is safe to say we know what we have to do for sustainability and for the future. It’s about the structure of the city and the infrastructure of the city.”

Beasley said sustainability means balancing the books, and balancing the present and the future with the past. For those in municipal government, he said, the emphasis is about to shift to doing what is necessary “to make it possible to deliver to our children not only a world they want to live in, but one that it is possible to live in.”

He talked about ways of motivating other people to sustainable action and motivating acceptance of another way of life in consumers and businesses. He called humanity an increasingly urban species, but said people want to escape from the cities that are being built, rather than commit to them. Canada cannot allow development to continue unfolding by chance. “The accidental city that is the result of random forces will never become the sustainable city of the future.”

He said he is not a scientist of sustainability and does not know the technical side in great detail. When Vancouver first awoke to this issue, he said he convened a group of experts at a series of breakfasts. They told Beasley they could look after many of the detailed points, but could not do the necessary planning or administrative jobs. He said collaboration between science and politics is critical for changes to occur. This is not a universally applicable proposition. Sustainable solutions have to be tailored to the specifics of a place, circumstances, and people.

Beasley said different ways exist of revising the relationships within an organization—to bypass the backward parts of the organization or to “dive in and reform the organization itself.” He said the City of Vancouver considered creating a new department for sustainability, but that would have led to “that’s not my department” excuses for other departments to continue as before. Instead, to make the necessary changes within the necessary timeframe, they formed a tiny sustainability office with very few staff. It is not an implementation agency, he said; “it keeps the other departments hopping. It is the government’s conscience of sustainability.”

Vancouver reinvented city Hall based on sustainable methods, establishing a project steering committee made up of the major department heads, with actions taken through their authority. The sustainability office itself is chaired by a variety of departments. Beasley said efficiencies in the city are up, morale is better, and sustainability is unfolding because of these integrations.

Still, he said, that leaves the matter of the politicians and staff to be addressed. Bringing final points forward to politicians for decision making does not work, he said; to be able to manage, they must be involved in a continuing stream of communication. Relationships between the organization and the public must also be adjusted. The city administration must inspire its citizens to foster sustainability and widespread acceptance. "Often we have found our citizens are ahead of us on these issues of sustainability."

Community engagement must occur on terms to which the citizens can agree, especially if those changes are contentious, such as densification of neighbourhoods. Vancouver's mayor has created what Beasley called "a compelling theme for the continuing sustainability of the city," tying sustainability to densification. This proposition, he said, becomes more difficult in neighbourhoods where densification is going to occur. "They don't buy that what is good for the planet will be good for them when it's right next door." Sustainability must be addressed on a personal level, in terms of what is happening in their community, where its members will live when they leave their single home, where their children will live when they form their own families. The public dialogue must be genuinely interesting.

Beasley said bickering is very disruptive and expensive, defeating to those who want to be innovative and making that innovation too difficult. He said the developers must be on board with the sustainability issue, because ultimately they are the ones who build the city. City Hall must act as a facilitator between the developers and the citizens, to find solutions. "I'm talking about working together, rather than working at cross purposes."

An announcement on regulations requiring green communities created an uproar in the development community, he said, so the city reached an agreement that each point would be vetted by the development community before being instituted into law. The city and developers together discovered that costs were not what they expected for a green building. Efficiencies are there, "if you know where to look for products." Now the developers are moving forward on building a sustainable community.

On the regulatory front, Beasley said the sustainably structured city will need more flexibility as cut-and-dried rules become less and less viable. Building codes now create a straitjacket that makes it difficult to reuse old buildings. For heritage, he said, those rules must be relaxed and the concept of equivalencies be embraced; building officials are just beginning to toy with this. He commended Seattle's approach of giving a bonus for green construction.

No matter which government is in power, this has to be on the agenda. Although changes like these will not happen quickly, Beasley said the sustainable agenda requires immediate action and money. He said capital-leveraging programs are still the greatest untapped source of wealth to secure a sustainable city. In Vancouver, the city never touched the profit in the developers' pocket, but only took part of the increased land value because of the development.

Sometimes the best way to get direct action is to show people how to proceed. In Vancouver, he said, the council made all secondary suites legal. Now the same must happen for granny houses. Streetscapes that prioritize cars must be dealt with. One community simply reduced street widths by 10% and "the sky did not fall," he said. This created more space for walkways and green space. Another new community model will have a sustainable plan for water use, waste management, stewardship, and learning. It shows leaders and consumers that sustainability can work and be desirable.

He said a sustainable city will be a challenge for many citizens. It will be dense and socially diverse, and will ask them to get out of their cars more often and give up that single-family home—many things taken for granted today. Beasley said his fear is that many people will hate

this new city, even if it is better for the planet, the future, and their children. The challenge is to design a city people will be attracted to and want to live in.

He called this “experiential planning,” saying this kind of planning involves engaging citizens—thousands of people—in a massive discussion. It also involves making sure laws take design into consideration, as well as health and safety. Planners must also be flexible enough to take direct action when and where it belongs.

“I always say, you get the city that you decide you want. This is your call to action to hang onto the future.” The city must meet the culture test, environmental test, and the experiential test, then today’s children will grow to know what is at stake, embrace the city, and work to make it an even better place to hand to their children. “When that happens, we will have accomplished the great promise of sustainability.”

Bob Willard: Communicating the Business Case for Sustainability

Brock Carlton
Chief Executive Officer
Federation of Canadian Municipalities

Bob Willard
Author
The Sustainability Advantage and *The Next Sustainability Wave*

Bob Willard discussed ways of engaging the business community and communicating the business case for sustainability initiatives. Language is a key consideration, he said, adding that the language related to sustainability is not helpful. He reviewed several definitions of sustainability and said they all refer to the same elements: the present and the future, the earth, the need for ecosystems or systems thinking to manage resources appropriately, and social justice. Accordingly, the three lenses of sustainability are economic, environmental, and social/cultural.

The word “sustainability” is not the strongest term for communicating the message, Willard said. Other good terms are “quality of life,” “genuine wealth,” and “genuine progress.” From a municipal perspective, an example of a meaningful term is “smart growth.” For the business community, sustainability has multiple labels, including “sustainable development,” “corporate social responsibility,” and “triple bottom line.” The three lenses of sustainability in the business world are as follows:

- Economy/profits: growth, jobs, taxes, products, and services
- Environment/planet: eco-efficiencies and eco-effectiveness
- Equity/people: employees, community, and culture

Willard said the best way to talk to the business community is to use language that business people will understand. “Language is critical,” he said. “Sustainability has six syllables; profit has two.” Business people understand the concept of asset management—a “wonderful synonym for sustainability.” The best way to talk to business people about sustainability is to talk about capital: financial, natural, and social capital.

Social capital is the hardest to measure, but it is the most important. “If you lose your social capital, you don’t get any other capital,” Willard said. Businesses are increasingly concerned about their “social license to operate.”

Willard said as organizations embrace sustainability, they go through several stages:

- Pre-compliance: prior to compliance with regulatory enforcement.
- Compliance: a bureaucratic and expensive process.
- Beyond compliance: the introduction of eco-efficiencies that can save money, improve public relations, and reduce the need for regulations.
- Integrated strategy: the integration of sustainability measures through all aspects of an organization for enhanced business value.
- Purpose/passion: a business created by a values-driven founder or run by a values-driven CEO.

A company driven by purpose and passion skips the first four stages, because it is controlled by people who understand the importance of sustainability. Generally, such businesses are small- and medium-sized enterprises (SMEs).

Willard said some companies move beyond compliance when facing a public relations crisis. For example, Nike was forced to improve its reputation when non-governmental organizations (NGOs) began holding it accountable for the conditions in its supply chain. Although Nike did not own the companies that were its suppliers, NGOs held it accountable for their operations, too. “The rules had just changed,” Willard said. “The rules are changing faster than the business community can keep up with ... A PR crisis can come flying at you from out of the blue for something that you had no clue you were accountable for.” Avoiding a “PR crisis” is now a major business concern, because it is hard to recover from a damaged reputation.

Most companies in the world are at the compliance and beyond-compliance stages. The great majority of companies (98%–99%) are SMEs, Willard said, adding that engaging with them is a challenge because they are fully occupied with staying afloat. Municipalities, however, have the power to engage SMEs, because “no business exists outside a municipal jurisdiction,” Willard said.

Willard discussed the value of a company as if it were an iceberg: the part above the water line is the balance sheet (the tangibles, or the book value of the company). The larger part, below the water line, is the company’s market capitalization (the intangible or non-financial elements, such as brand image, reputation, and stakeholder relationships). To determine the financial value of the intangible aspects, the number of shares can be multiplied by the share value.

Increasingly, the value of companies is intangible. Company image is becoming more important, and the issue of sustainability is getting the attention of senior executives. “Most sustainability issues swim around the bottom of that iceberg,” Willard said, “in a sea of stakeholders that can erode the value of those intangibles.”

Historically, NGOs have taken the most action to influence businesses toward more sustainable practices. In the last 18 to 24 months, however, some other important voices have joined NGOs: key stakeholders, such as customers, investors, banks, and the media, expect companies to clean up their acts proactively. Willard said a “perfect storm” is brewing around this group of shareholders and stakeholders, which is beginning to put more pressure on companies.

Willard highlighted two key motivators in the business community: avoiding risk and capturing opportunity. For both these reasons, businesses are rapidly trying to “green” themselves.

Areas of concern to stakeholders include pollution, a looming water crisis, the erosion of trust in business (aggravated by scandals involving companies like Enron), pandemics, the climate crisis, and the energy crisis.

The climate crisis and the energy crisis are getting the most attention from customers and investors, and therefore from business. Risks associated with climate change include the threat of regulation, litigation, interruptions in the supply chain, and physical events such as weather. The greatest concern for business is the risk to reputation and revenue stream, and the loss of access to capital (loss of market value) if investors view a company as risky.

Willard said consumer behaviour is changing significantly. In 2006, the number of people actually switching to green companies jumped from 10% to 20%, said Willard. "This is a critical mass and a wake-up call," he said.

Lifestyles of Health and Sustainability (LOHAS) is the name given to a market segment focused on health and fitness, the environment, personal development, sustainable living, and social justice. This market segment had \$200 billion in spending power in 2007. That number will double in 2010 and again by 2015. "The real behaviours are actually changing," Willard said. "That is the big news."

Sustainable building is "hot" too. The Vancouver Evaluation Accord tries to give extra value to commercial buildings that have high sustainability standards. Willard said 94% of people in the United States and Canada want to work in green buildings because of the improved air quality. A green building for the head office is also becoming a badge of honour in business.

Willard referred to the argument that "if we go too far too fast" with action against climate change, "we could do real damage to the economy." He said this is not what economists are saying, in fact. The Stern Review on the Economics of Climate Change states that if the world acts now, the cost of mitigating climate change will only be 1% of the annual global GDP by 2050. If the world acts later, it will cost 5%–20% of annual global GDP. There will be \$2.5 trillion in benefits if the world acts now—or a global depression if no action is taken. The report says greenhouse gases must be stabilized through carbon taxes or a cap and trade system and by deploying low-carbon technologies and removing barriers to energy efficiency.

Willard reviewed the three main types of government regulation: a carbon cap and trade system, carbon taxes, or a carbon intensity system. The current US approach is based on a voluntary target of an 18% reduction in carbon intensity by 2012—but an absolute rise of 12% is forecasted. Using manufacturing as an example, Willard said "carbon intensity" refers to the amount of carbon emissions generated per product. If a business reduces the carbon emissions generated for each product, but significantly increases the number of products manufactured, its total carbon emissions will rise. Carbon intensity targets, therefore, are "not what we're looking for."

In a cap and trade system, the government sets a cap on emissions for each company, but a company exceeding the target can sell emission "credits" to another company that was not able to drop its emissions enough. Between the two companies, the target is met. This type of system has been tried and shown to work well in many jurisdictions. This offers "a real revenue stream" for those companies with credits to sell, Willard said.

The largest investor institutions in the world support the Carbon Disclosure Project. They understand that climate change will affect share price. When governments bring in some kind of regulatory system (either a carbon tax or a cap and trade system), businesses could lose 40% of their market value. Companies are now self-assessing their carbon footprint because they are aware this issue could later jeopardize company value. Investors are asking the Securities and Exchange Commission to require listed companies to disclose their climate change risks in their

financial performance reports. Investors are concerned about this issue because of the risk to their investments, and investment houses are putting out information on how to evaluate climate change risk.

Although the European Union is leading the way in dealing with climate change, a great deal is actually happening in the United States at the municipal, state, regional, and corporate levels, Willard said. The US Mayors' Climate Protection Agreement (January 2008) applies Kyoto targets at the municipal level to 780 US cities, aiming to lower greenhouse gas emissions by 7% below 1990 levels by 2012. The Western Regional Climate Action Initiative (February 2007) involves five west-coast US states, as well as B.C. and Manitoba. The region has instituted a cap and trade system, aiming to reduce greenhouse gas emissions by 15% by 2020. The Regional Greenhouse Gas Initiative (RGGI) (September 2003) involves 10 east-coast US states in a cap and trade system. These are just some of the agreements in place.

Those in the United States at the municipal, state, and corporate levels are pressuring the federal government to standardize these different approaches. Willard called this momentum "pretty exciting."

Other unusual threats driving sustainability include national security and the need for alternative energy, the competition for talent and the desirability of working for a sustainable company, revenue pressure and the potential revenue from carbon trading, and the trend toward "sustainability reporting."

If businesses say it is too expensive to address environmental risks, identifying the opportunities associated with taking action can help: opportunities for profit, increased share price, innovation, speed to market, compliance, productivity, and recruitment of talent. Companies have a long list of things to do, Willard said. "We want them to understand that we aren't asking them to do one more thing: this is an enabling strategy to help them improve on all the other things on the list by bringing a sustainability lens to all of them."

A small- or medium-sized enterprise can increase profits by at least 66% over five years through an integrated sustainability strategy, said Willard, and this is a conservative estimate. That number comes from hundreds of case studies of real companies that adopted integrated sustainability strategies, but it does not take into account advances in technology over the last five years.

Willard listed six areas in which companies can benefit from having an integrated sustainability strategy: reduced recruiting costs, reduced attrition costs, increased employee productivity, eco-efficiencies (savings in energy, water, materials, and waste handling), increased market share and revenue, and lower insurance and borrowing costs.

Willard said within the next five or six years, the business community will reach a tipping point in terms of embracing sustainability, with about 20% of businesses adopting an integrated sustainability strategy. "This is happening," he said. "It's not going to go away."

He said a good approach is to engage stakeholders, particularly youth, who can strongly influence their parents. Willard suggested municipal leaders work with schools and educate students, who in turn will educate their parents in the business community.

Many willing, helpful partners and opportunities for leadership exist, he said, and added, "the leadership is coming from you ... The action is happening at the municipal level."

Municipalities are on the cusp of the new changes, Willard said. He applauded and encouraged the kind of leadership municipalities are showing in their jurisdictions, "because collectively you are going to make it happen."

Community Sustainability Plans II

Facilitator:

Linda Bruce
Mayor
Airdrie, Alberta

Presenters:

Jill Pelton
Policy Analyst
Alberta Association of Municipal Districts and Counties

Patrick Robson
Director, Community Integration
Regional Municipality of Niagara

Mike Stolte
Executive Director
Centre for Innovative and Entrepreneurial Leadership

André Tremblay
Director of Advocacy, Policy, and Communications
Alberta Association of Municipal Districts and Counties

André Tremblay

André Tremblay gave an overview of the Alberta Association of Municipal Districts and Counties (AAMDC), which represents Alberta's 68 municipal districts and counties. He briefly outlined the federal government's "Building Canada" initiative and its three components, which includes support for integrated planning through its requirement for communities to create an Integrated Community Sustainability Plan (ICSP).

He said his association has developed an ICSP toolkit that complies with provincial and federal requirements. He urged the session participants from all provinces and territories to take advantage of the work done by his organization.

Tremblay said every Alberta municipality must submit an ICSP to the provincial government by 2009. This long-range plan, which addresses how municipalities will foster sustainability through environmental, economic, social, and cultural initiatives, should be developed with public input.

The toolkit will allow municipalities to do more than simply conform to the program. "We wanted to get municipalities to think and plan ahead," he said. The toolkit is partner driven and addresses a variety of needs and situations, since in this case "one size does not fit all." He said, "We had to make sure that any tool we developed embraced the municipal planning process."

Because many municipalities deal with resource constraints, the tool Tremblay's association developed had to be meaningful, but not too onerous. The results and the process also had to make the best use of municipalities' time and resources.

Tremblay outlined the ICSP Toolkit Vision: to create a computer-based, single-source data entry system that is interactive and adaptable to the needs of communities of various sizes.

Preformatted report templates ensure that reports generated are cohesive and reflect provincial reporting requirements. The objective, said Tremblay, is to ask the fundamental questions

required for the development of an ICSP. The toolkit takes into account the work already done by municipalities, and points the way for future action. “We want to allow municipalities to set their own goals, but while looking at all four quadrants, so that when you are looking at an initiative or decision, you can see its environmental, economic, cultural, and social impact.”

Tremblay said this product is not a “silver bullet,” but it does provide a flexible blueprint for creating and managing sustainable communities. Tremblay asked Jill Pelton to give the participants an overview of the software.

Jill Pelton

Overall, Pelton said, the software asks municipalities where they are now, where they would like to be, and how they will get there. The software includes an application to determine that the strategy not only responds to ICSP requirements, but is also viable for the municipality. Progress tracking ensures the process remains dynamic, and the variety of reports that can be generated allows users to view issues or decisions through several lenses. She said the software features additional applications that exceed ICSP minimum requirements, and concluded by saying her organization was working to develop the environmental aspect of the toolkit further. “We feel this toolkit is a robust one that municipalities can benefit from, no matter their size.”

Mike Stolte

Mike Stolte’s presentation focused on his work with the Centre for Innovative and Entrepreneurial Leadership (CIEL), a non-profit organization providing tools, training, and innovative solutions that allow communities and organizations to realize their potential. Stolte said his organization developed the Communities Matrix and Green Light, two useful tools for assessing communities’ readiness to build effective ICSPs.

Stolte said the development of the Communities Matrix came out of the realization that many of the communities in his region had peaked 100 years ago. These communities had to reinvent themselves, but required a flexible process. Some communities simply needed a tool to help them organize their ideas into a workable plan. In others, Stolte said, decision makers “are throwing chairs at each other and bringing concealed firearms to council meetings.” These communities, he said, needed a bit more assistance with moving from chaos and conflict to a place where goals can be set and action taken.

Stolte and his team realized, in working with various communities, that some basic characteristics were consistent. The team developed the “Communities Life Cycle Matrix” as a grid for communities to use in assessing their current situation and moving forward. The grid provides a basic understanding of the process required to progress from a chaotic, divided environment into a highly functioning one in which a community can achieve its vision.

This tool, along with training and technical assistance, can help decision makers “paint the vision of what they want their municipality to look like,” said Stolte. It encourages small successes through simple actions at the beginning of the process, to build trust and respect, and moves on to the more challenging work of developing a common vision, and making this vision reality.

Stolte said this process was “like an exercise regime.” Municipalities have to keep working to ensure the capacity they have built through this tool remains active. “Communities are all at different stages,” he said. “Most communities are just trying to respond to basic needs.”

Once communities have started down this path, the Green Light process can help them progress towards sustainability and the creation of an effective ICSP. Stolte discussed a 2006 study by Industry Canada, which found ICSPs were weak in areas such as public education, sustainable business practices, regional planning, and ecological infrastructure. The Green Light process can be useful for determining key environmental issues in the community, how well the municipal government is doing in a range of environmental areas, and the community's economic, social, and cultural progress.

Stolte said the Green Light process:

- Assesses a community's readiness to undertake sustainability planning and action.
- Identifies any sustainability successes that should be acknowledged and built upon.
- Lays out a community's strengths, weaknesses, and available resources.
- Flags obstacles, challenges, and areas of sensitivity for leaders to be aware of throughout the subsequent planning process.
- Allows comparison or reference with a group of other communities.
- Helps to identify next steps and priority actions to move the community along.

The goal, said Stolte, is to assist communities with engaging local government and individuals to set priorities, make a plan, and act. Having gone through this process, and with the help of Stolte's organization, communities can develop a Community Sustainability Initiative, a Business Vitality Initiative, and a Community Vitality Initiative.

Stolte urged participants to take advantage of CIEL's free resources and to engage in this process, saying, "We have to find the solutions within ourselves."

Patrick Robson

Patrick Robson shared his municipality's experience in the area of sustainability planning and practice at the local level. He said his presentation would focus on explaining his municipality's process of assessment against the Melbourne Principles, and Niagara's efforts on the sustainability front.

Robson said prior to forming a partnership with Environment Canada and being chosen as one of three pilot sites in which the Melbourne Principles would be applied, Niagara had started down the road to sustainability, through its *SmarterNiagara* initiative. Niagara benefits from a diverse physical and human geography, and while embracing this diversity is easy, managing it is another matter.

Robson said the Melbourne Principles articulate long-term guidance statements that, taken collectively, view a community as an interconnected, interdependent system. They include social, environmental, economic, political, and democratic aspects of what defines a community.

The principles are an entire package, "as opposed to a menu," said Robson. Environment Canada challenged Niagara to "road test" the principles to see if they were relevant and applicable. Niagara found the Melbourne Principles attractive because they underlined the concepts of continuous improvement and planning as an ongoing process.

Robson's municipality began by conducting an inventory of what it dubbed "Good Things Happening," and worked on innovative community engagement.

When municipal staff was engaged in supplying an inventory of policies, programs, and practices that could be considered, Robson said a number of significant things happened:

- Staff became self-policing in terms of applying critical assessment of activities.
- Staff was cross educated about policies, programs, and practices.
- It served as an exercise in self-affirmation—people were understandably proud of their various accomplishments.
- It became the base for meaningful dialogue with the community.

Robson said his municipality is also involved in a variety of measurement platforms, and this is an important part of the Melbourne Principles. It provides a solid base from which they can gauge continual improvement, and fulfills the municipalities' obligations under the Gas Tax agreement.

Robson identified several challenges encountered during this process, saying, "During this journey, we've had one foot nailed to the floor." Challenges include defining sustainability and incongruity between the level of responsibility, accountability, and recognized authority. "This is particularly challenging in an area where aspects of the community extend across an international boundary."

Robson said his municipality discovered that while the Melbourne Principles were undoubtedly not devised based on Niagara's particular set of circumstances, the Principles did accommodate them—especially in relation to good governance. "Good governance is not the same as good governments," Robson said. "Rather, it's about alignment among the various sectors or factions within a community."

Among the lessons learned throughout this process, Robson noted the need to take advantage of opportunities to build connections, to work more closely with the broader public sector, and to create the sense of a larger community in a cross-border setting.

Robson gave an overview of the various initiatives under way in his municipality, which include harmonizing the various measurement platforms, developing a community relations framework, and improving intergovernmental relations, including bi-nationally. He briefly touched on his region's Greenbelt Plan, Places to Grow initiative, and Provincial Policy Statement. "It is essential is to secure buy-in, to allow people to understand the tradeoffs they have to make."

Robson said the journey continues for his municipality, and urged participants to keep their eye on Niagara in the future.

Discussion

Facilitator Linda Bruce thanked all the speakers, and asked the participants for their questions and comments.

A participant asked Robson how, in regional municipalities with a diverse constituency, the integrity of the spheres of influence could be maintained. "How do you make your plans compatible with a diversity of needs?"

Robson said while this is challenging, political champions that engage stakeholders are crucial. Since nothing can be accomplished in isolation in a multi-tiered environment, a clear message must filter through to the various parties. This requires significant vigilance on the part of municipal staff and an ironclad commitment to the ultimate objective. "Make sure you keep your eye on the puck," he said.

A participant whose municipality is just beginning to design its ICSP asked the presenters if they had been able to identify common elements in the various planning models presented to the Conference's participants.

Robson replied the commonality between these tools does not lie with the language, but with the will to act. Without a commitment to action, and a lot of hard work, these models are simply an academic and political exercise.

Pelton added that in the case of her organization, “Our tool defines the process and links to other planning models.”

Stolte said the common thread, in his opinion, is engagement and education. These models require municipalities to look beyond the basic needs of their population to issues that are outside their realm and engage this population, particularly youth, in a meaningful process. “Those who take that challenge will succeed,” he said.

In answer to a question regarding whether the greenbelt legislation in his municipality complements the sustainability process, Robson replied, “We used to have the perception that we have all the answers, but if planners want to be leaders, they have to come up with the questions.” In this particular case, Robson said while there was initial grumbling about this legislation, his community not only accepts the decision, but understands its rationale.

Winter Walkability

Facilitator:

Jeff McConnell
Councillor
Town of Virden, Manitoba

Presenters:

Paul Baskomb
Manager, Community and Strategic Planning
City of Greater Sudbury, Ontario

Jacky Kennedy
Director of Walking Programs
Green Communities Canada

David McIsaac
Senior Advisor, Urban Transportation and Special Projects
Transport Canada

Jody Rosenblatt Naderi
Department of Landscape and Urban Planning
Texas A&M University

New and innovative winter-walking initiatives are being implemented all over Canada, with the aim of creating a culture of walking in urban or residential environments. “I have a two-year-old Labrador Retriever that’s always ready for a walk,” facilitator Jeff McConnell quipped as he introduced the Winter Walkability session, “so I know the difference between winter walking and winter walkability.” Walkability not only has positive impacts on climate and energy use, but also adds to social cohesion: as cities encourage people to leave their cars behind, those people will experience the social benefits of walking.

David McIsaac

Walkability is one of the key foundations of a sustainable transportation system, said David McIsaac. He identified Transport Canada's role as one of sharing information, saying the Ministry wanted municipalities to learn about best practices on walkability in Canada. It is a small but growing part of the Ministry's mandate, due to walking's importance as part of sustainable transportation plans.

He asked the participants to consider the definition of a pedestrian. Pedestrians can be characterized as individuals who walk to work, which in 2001 comprised almost 6% of Canada's population. This number varies in urban environments. However, individuals who use public transit, which is an estimated 15% of the population, can also be characterized as pedestrians, as they walk at both ends of the transit system. McIsaac said the key indicator for increased use of public transit is the level of accessibility of transit for people who walk. Finally, he highlighted the difference between utilitarian pedestrians—defined as people who walk when doing most activities in their lives—and recreational pedestrians, who might walk after work or after supper in order to get some exercise. McIsaac said these two types of pedestrians need the same amenities and design for walking; as a result, cities can design walkable spaces for both the utilitarian and recreational pedestrian.

Transport Canada has created two programs to increase pedestrian activity: the Urban Transportation Showcase Program and the Moving on Sustainable Transportation Program. Transport Canada designed the programs to support emission reduction in municipalities, and is promoting them in various communities around the country.

Whitehorse Moves is an example of a Transport Canada-supported program. To begin, the community identified the barriers to walking in Whitehorse, other than the weather; these barriers included the cliff on one side of the city, the presence of only one bridge to carry traffic across a central river, and the relative distance of some communities without appropriate pathways to them. The community subsequently put in roundabouts to slow traffic in key areas, and created walking paths through the city. A staircase was built up the cliff, which, as McIsaac said, "is supposed to be a great workout!" In the downtown area, where there is no space to build new paths, the city repainted lines on the road to accommodate pedestrian traffic.

Another example of a walkability initiative is in Greater Vancouver, where the city is redesigning existing transit stations to make them more inviting to the community. McIsaac showed the group slides of the Metrotown Sky Train station, and of the Broadway and Commercial station, and highlighted features that discourage pedestrians, such as graffiti and a garbage collection point. The city is taking steps to connect the stations to the street and make pedestrians comfortable in those spaces.

Further examples are the city of Halifax and the Region of Waterloo, where the city governments are trying to attract residents to use public transit by making the transit stations more accessible to them. As a result, Halifax has attracted about 30% of public transit users from people who formerly drove to work.

McIsaac suggested municipalities can increase walking by giving the public more information through community-based social marketing. He participated in a study in Vancouver, interviewing people at their homes about their methods of travel and providing information on other travel options. The study showed that more people bicycled and walked after receiving this information.

Transport Canada is also considering a national active transportation strategy. It is currently in the consultation stage, with the involvement of the provinces, federal departments, and

municipalities. McIsaac said the engagement of many jurisdictions makes a potential strategy a challenge. The Ministry has implemented a national campaign to increase safety in walking, called “Road Safety Vision 2010,” which aims to decrease the number of fatally or seriously injured vulnerable road users.

Jacky Kennedy

Jacky Kennedy continued the discussion on walkability by introducing her organization’s “Walkability Roadshow,” which took place in 10 Canadian communities over a three-week period in 2007. Green Communities Canada began working on walkability after comparing Canada to other countries that share the same weather and terrain. Canada’s shares of walking and cycling were disproportionately lower than other northern countries, and Kennedy’s organization realized the profile of walkability must be raised in Canada.

The goal of the Walkability Roadshow was to provide professional training to municipal representatives and planners, to inspire decision makers to support walking, and to hold public forums with a team of experts. More generally, the roadshows were meant to set the groundwork to create communities where people choose to walk.

Kennedy said the International Charter for Walking provides benchmarks against which communities can measure their progress. While eight principles are identified in the Charter, the first and most important is a culture of walking. “Ask yourself,” Kennedy said, “is there an understanding of the benefits of walking in your community?”

As part of the process, the participating communities completed questionnaires, attended a needs analysis workshop, developed ideas, and ultimately hosted the roadshow in their community. Stakeholders from different areas had an opportunity to collaborate for the first time. Common themes included the revitalization of the downtown area, shifting perceptions of walking from a leisure activity to active transportation, tackling big-box and sprawling suburban development, and addressing road safety and public health. Of course, Kennedy commented, another common theme was “what to do about the snow?”

Paul Baskomb

Paul Baskomb, whose community had participated in the previous year’s Walkability Roadshow, described it as a good opportunity for Greater Sudbury. In the past, due to its history as a mining town, the city took a great deal of ecological damage; about 35 years ago, the community undertook a greening program to reclaim the land. Through this, the community learned that real change is possible, which aided it from a walkability perspective.

Sudbury has now embraced the “healthy community model,” which espouses active living as one of its pillars. Walkability works with the general principles behind the healthy community model: health, environment, and quality of life. Baskomb said other groups or communities are also calling for increased walkability. The Ontario Professional Planners Institute states that current built environments contribute to obesity, whereas the Heart and Stroke Foundation calls for people to simply walk more.

The roadshow took place in Sudbury in April 2007. The community’s goals were to establish walkability as an important component of quality of life, and to bring stakeholders together to garner more support for a walkable community. Sixty-five participants took part in the daylong workshop, ranging from city councillors and other municipal employees, to educational, health, and other provincial employees, to citizen groups and stakeholders. As a result of the workshop, participants identified a number of issues pertaining to walkability in Sudbury. They decided the community should make better use of trail systems. The municipality must raise public

awareness about the benefits of walking, and to retrofit the existing transportation network to encourage walking. The city's environment must be improved by creating different streetscapes with appropriate street furniture. Finally, the workshop participants discussed the need for improved winter maintenance. Baskomb acknowledged Sudbury is a winter community, and so the latter issue is crucial for walkability. The primary winter-related issues include snow removal and, more particularly, the timeliness of snow removal and varying standards between communities; transit stops, because Public Works ploughs them at very different times; and the general needs of an aging community, such as the fact that not everyone is physically capable of navigating snow banks.

Because of the roadshow, participants are making a report to Sudbury city Council in the spring of 2008 on the city's sidewalk and walkway maintenance. There was also agreement to create an Active Transportation Plan for Sudbury, so residents could outline where the city should set priorities for walkability. The city distributed pedometers to various groups in the community as part of a walking challenge, signed on to the International Charter for Walking, and a city councillor challenged Sudbury to becoming the most walkable community in Ontario by the year 2015.

The Sudbury roadshow included a half-day walkabout in the community, which Baskomb described as a focus for media activity. "We walked around downtown Sudbury," he said, "and we had cameras following us around for a portion of the walk." He said the walkabout was a great way to raise the profile of the event in the community, and of walkability in general.

Jody Rosenblatt Naderi

Jody Rosenblatt Naderi echoed the idea that people who walk are in the best position to tell municipalities what they need and want. She also discussed practical design features for walkable cities. She showed the group two slides of different roads, one of which appeared to be a highway, while the other was small and local in character. Naderi said when larger governments build roads in smaller municipalities, conflicts can often develop, because their designs and goals are different. In small communities, people use shortcuts and clearways to travel by foot, and their paths vary based on their susceptibility to seasonal changes. Winter road maintenance might eliminate the very paths on which people travel. The challenge is knowing how to manage the conflict between transportation design and local needs.

Naderi described walking as "natural and organic." She said a pedestrian makes contact with nature by looking for things like a blooming flower, or a growing puppy. When travelling by car, the natural realm is outside a bubble. A motorist moves through nature, completely disconnected.

There are practical advantages to designing roads with pedestrians in mind. In Toronto, where Naderi was allowed to re-work 30 kilometres of roads per year, it was found that crash frequencies and intensities diminished on her redesigned roads. A more intelligent design can save lives.

If municipalities want real data about designing walkable cities, they must ask real people what they want. Her students approach people who are out walking and ask them questions about their paths, since people tend to walk based on their perceptions of the landscape's features. Her students found that the edge of space makes people think. The perception of being somewhere makes people comfortable, Naderi explained. If the area for walking is well defined, and there is seating available, it is a good environment for walking. Similarly, people's walking patterns depend on the weather, which can be adjusted by creating shade in some places, and encouraging walking at different times of the day.

Her students also learned through their study that the presence of a buffer between the vehicular way and the sidewalk is an important feature for parents who allow their children to walk to school. Parents prefer spaces where their children can walk out of the way of cars to sidewalks with certain lengths or widths. A buffer of trees is a significant feature of equitable, safe, and sustainable year-round sidewalks. Naderi said, “Anything less is not good for our children or our older residents.”

Changing pedestrian design policy will not cost municipalities more; in one street Naderi examined, it cost an extra two cents on every dollar to create a roadside landscape that was appropriate for children who travelled it. Other non-traditional transportation policies can be used, like increased contact with nature, the inclusion of benches and trees, and an overall network of good civic space. “We must design and maintain walking facilities for the joy, dignity, and health of everyone,” Naderi said. She also urged participants to provide equitable access to streets and paths that are used in the winter.

Canada has the opportunity to establish a high benchmark for walkability because the country already has such good leadership regarding bringing nature trails into urban environments, Naderi said in her concluding remarks. This is the direction for the creation of pedestrian networks. “Being able to understand what nature is—that’s something we can give children in our cities!”

Tools and Resources for Implementing Municipal Projects

Facilitator:

Andrew Cowan
Senior Manager, Knowledge Management Unit
FCM Centre for Sustainable Community Development

Presenters:

Matt Horn
Senior Technical and Policy Advisor
Pembina Institute, Vancouver, British Columbia

Megan Jamieson
Director
ICLEI-Local Governments for Sustainability Canada

Emmanuel Machado
Deputy Director of Development Services
City of Dawson Creek, British Columbia

James McQueen
Senior Economist
Policy and Planning Department, Metro Vancouver, British Columbia

Megan Jamieson

Megan Jamieson began the session by describing the tools and resources available to municipalities participating in FCM’s Partners for Climate Protection (PCP) program, which is a framework consisting of five milestones. Over 155 Canadian municipalities are members, and

over 700 cities internationally are taking part in Cities for Climate Protection, the affiliated international program. The milestones are:

- Creating a greenhouse gas inventory
- Setting a target for emission reductions
- Developing a plan
- Implementing the plan
- Monitoring the plan

The first three milestones are for communities that need to start greenhouse gas emission reductions. Online guides at ICLEI-Local Governments for Sustainability describe the milestone process and tell readers why they should engage in the PCP program. The site also features guides that make the “business case” for cutting greenhouse gas from municipal operations. The financial savings are easy to quantify, but the guide also points to co-benefits in health and society. Jamieson said ICLEI is renewing this particular guide because the body of health information supporting greenhouse gas emission reduction keeps growing.

ICLEI also provides a quick action guide, which shows how many initiatives have quick payback; ICLEI created this guide in recognition of the fact that many cities see the first milestone as onerous, so they fail to begin the milestone process. The quick action guide lists activities such as installing LED traffic lights, or supporting stakeholder groups that work to reduce emissions using alternative fuels.

Support materials for the milestones themselves are also available on the website. Jamieson showed the group an inventory spreadsheet, in which municipalities can see the emissions from all their corporation operations, and from their residential, commercial, and transportation sectors. The inventory tools are supported by another set of resources. ICLEI’s mandate is to provide cities with the technical support necessary to work through the framework. Many of the topics ICLEI commonly receives calls and e-mails about are documented in a “frequently asked questions” page on the website. A very recent publication titled “Developing Inventories for Greenhouse Gas and Energy Consumption” is a guidebook including model information and instructions on how to arrange data and interpret it effectively. Finally, the website features an international local government greenhouse gas emissions analysis protocol, which Jamieson said was very high level and theoretical. However, this protocol enables ICLEI to carry out its mandate to make tangible improvements in global greenhouse gas emissions through cumulative local impacts. It ensures that all the participating municipalities are using the same process. “This document is really our bible,” Jamieson said.

She described all these documents as tools geared towards the first two milestones; other tools exist for designing and implementing the PCP plan in a municipality, like the Model Climate Change Action Plan, which addresses constraints and challenges in the program. ICLEI also provides a Citizen Engagement Guide, which gives municipalities strategies for engaging with their citizens, and with stakeholders. This is important because “local governments don’t have total control over emissions in their community,” Jamieson said.

Finally, ICLEI provides technical assistance through its PCP-trained personnel. ICLEI has been offering support to cities for almost 12 years. Some of the participating cities are now at the fifth milestone step and thus able to share their experience with other cities.

In conclusion, Jamieson said the PCP is not a prescriptive program. ICLEI does not tell cities how to implement greenhouse gas emission reduction measures, but it does give cities a framework and invites them to innovate, since those action plans must reflect local communities.

James McQueen

James McQueen spoke about the City of Metropolitan Vancouver's use of business casing tools. The first is a "screening-level business case" tool, which is applied to the stage at which projects are brought in to the capital budgeting process for approval. It provides a brief outline of the project and accounts for risks associated with regulations, health and safety, property, basic utility, environment, and non-risk.

McQueen demonstrated an example of the tool and said it could be useful for managers who have hundreds of projects to consider. The screening-level business case tool provides a consistent framework that managers can use to examine those projects. He highlighted features of the tool, such as its ability to encompass staffing requirements, which can be a constraint similar to financial requirements. The tool can also provide a prioritization matrix, which is akin to an engineer's perspective on risk. Generally, McQueen said, the tool helps managers cover a lot more ground in a shorter time.

The second tool used in Metro Vancouver is the more comprehensive "sustainability business-casing tool". It is applied to projects estimated at over \$1 million, because it enables the city to compare several options. In practice, the city uses it primarily to compare routes for linear projects. However, McQueen said that while consultants typically case big projects, such as drinking-water treatment plants, the city has asked them to begin using the sustainability business-casing tool. This allows the city to find the relevant data easily and provides an opportunity for the consultants to give feedback on the tool.

McQueen described the tool as employing a triple bottom line: it considers the financial, environmental, and societal aspects of a project. He said, "Just because there are no financial numbers associated with environmental and social effects does not mean that these effects don't have value." McQueen listed examples of the environmental criteria the tool takes into account, such as noise and vibration, natural system disturbance, air emissions, odours, and solid or liquid waste. Under social criteria, the tool considers aspects such as worker health and safety. Users can pick their criteria, and then input their environmental data. The tool also touches on politically sensitive issues, like the statistical value of a life, of which users should be aware.

Municipalities using the tool will have a detailed financial analysis of comparative projects. The winners are highlighted for each category; the tool does not make decisions for users. Municipalities must decide what tradeoffs they want to make as an organization. The lowest-cost option is not always the best in every category.

McQueen said while the sustainability business-casing tool was useful, outstanding issues do exist, which might change the make-up of the tool in a few years. He said the tool needed to include more quantification of effects and monetize more effects, akin to a benefit-cost analysis. He also noted the tool might attach a monetary value to greenhouse gas emissions soon, based on opportunity costs and carbon credit trading.

Emanuel Machado

Emanuel Machado spoke about the City of Dawson Creek's framework for sustainability and planning. He said a few years ago, the municipality asked its residents to describe what kind of community they wanted to have within 10 years. The residents said they wanted to be environmentally sustainable, they wanted their community to pursue renewable energy, and they wanted to reduce emissions. "All of this before sustainability was fashionable," Machado said. The benefits of managing the community's own energy were numerous, ranging from cleaner air and water to healthier people and community, along with the positive economic impact of managing the community's own industry.

After consulting with residents, Dawson Creek undertook a baseline assessment to see how the municipality used its energy, the cost of this energy, and its environmental impact in terms of greenhouse gas. To the city's surprise, the combined costs of energy were over \$1 million per year, contributing 2,400 tonnes of greenhouse gas.

Natural gas made up one quarter of the entire cost of energy, but it contributed two thirds of existing emissions. The biggest use of natural gas was heating buildings and ice rinks. Dawson Creek began its strategy by conserving natural gas, since every dollar spent on conservation saves \$4 to \$5 in expenditures. Machado said Dawson Creek wants to use natural gas to heat its water. The municipality also believes there is high value in bioenergy, so it is starting to work with solid waste.

Electricity occupied one half of the municipality's energy budget, although emissions are low because of British Columbia's hydroelectric dams. Machado said Dawson Creek participated in a joint project with B.C. Hydro last year, during which municipal staff were asked to turn off their lights and computers when out of the office. This resulted in a savings of 9% on electricity bills. "That's good for a few workshops to teach people what should be common sense!" Machado said. He added the municipality intends to be energy independent within five years, so it is exploring other alternatives to electrification, such as solarization.

Finally, the municipality wanted to change the way it consumes fuel. Machado said its rule of thumb is to buy the most efficient car possible while still meeting operational needs. About 10 to 15% of the savings that Dawson Creek intends to see will come from a reduction in vehicle idling. He said the municipality is working with its own staff and with other service providers, such as school boards, to ensure the same anti-idling initiatives take place on their own properties. Dawson Creek has also implemented a policy of right-sized fleets. In the past, municipal supervisors driving single-occupancy cars with no load were provided with trucks. Machado said the cumulative effects of the purchase price, the price on fuel, and carbon meant the municipality was paying almost \$52,000 per car within five years. Dawson Creek now buys smaller vehicles for its supervisors; with the same life cycle analysis, the municipality pays \$37,000 per car within the same period.

Matt Horn

Matt Horn spoke about the policies that underpinned Dawson Creek's sustainability practices. As an example, its Green Building policy has been particularly successful. Municipalities must have good and steady information on emissions, and must examine the opportunities for new building or for retrofitting existing buildings. Horn said municipalities should also look at the full life cycle costs of building. Finally, municipalities must ensure the resources for green building initiatives are set aside in their municipal budgets.

Similarly, Dawson Creek's Green Vehicle policy ensures the vehicle's life cycle costs are accounted for. A green vehicle policy also requires handling vehicle maintenance and operation using best practices.

Carbon pricing policies are garnering significant attention at the federal level, Horn said, with recognition that simply looking at these decisions from a dollar and cents perspective does not take the environmental effects into consideration. A carbon pricing policy adds a cost to the energy numbers to add a value for carbon emissions. As a result, more efficient options become more attractive. Horn said carbon pricing policies could also act as an investment vehicle to ensure some of these renewable energy initiatives are funded when they come up for a decision at the municipal level.

Finally, Dawson Creek's Green Building Code ensures that any new buildings can have their direct needs met by sustainable energy.

Apart from specific municipal policies, Horn emphasized the importance of community-wide initiatives. Corporate issues are important, but the biggest buy-in should be from the community. Horn said municipalities must consider what initiatives they should be supporting, and how information about those initiatives will be communicated to the community. Outreach to the community is also needed, in the form of engagement and consultation. "Outreach is the best way to success for traction on these issues," Horn said. In Dawson Creek, advisory groups engage community participation. Finally, municipalities should work towards education and capacity building, both of which ensure that the skills and abilities necessary to implement these initiatives exist in the community.

Discussion

A participant asked how the use of solar panels could be encouraged in municipalities. Machado said Dawson Creek is initiating a "local improvement charge" in which the community pays upfront for solar panels, but the house pays for that investment over the next 15 to 20 years. He said their local community charter enabled them to do this. Putting the money into the homes upfront is a great role for municipalities to play, since they can borrow money relatively cheaply, and then enjoy important energy savings.

Another participant from Iqaluit, Nunavut asked how many of the tools were applicable to his communities. Dawson Creek supports Machado travelling to share knowledge, and he could come to those communities to work with them. Andrew Cowan added that the FCM Centre for Sustainable Development offers online presentations in which experts from around the world provide valuable information for hard-to-reach communities.

Capacity Building in Waste Management: An Interactive Workshop

Facilitator:

Don Grant
Senior Consultant--Sustainability
Jacques Whitford Limited

Presenters:

Michael Cant
Ontario Region Waste Sector Leader
Golder Associates

Sally McIntyre
Environmental Programs Manager
City of Ottawa, Ontario

Pat Parker
Manager of Solid Waste Planning
City of Hamilton, Ontario

Michael Cant

Michael Cant discussed the current trends in waste generation, the available options for managing that waste, and the relationship between waste and GHGs. The amount of municipal solid waste (MSW) generated in Canada is increasing each year, with about 40% of that waste coming from households. Presenting statistics from 2000 to 2004, Cant said the amount of waste diverted from landfills is also increasing, and at an even greater rate. In 2004, about 24% of all MSW was diverted. He attributed Ontario and Alberta's higher provincial waste generation amounts to their increased economic activity. The oil sands, he said, can produce generally three times the average amount of MSW. Gant said nearly half of all waste is potentially recyclable—mostly paper, food, and yard materials. He estimated the market value of those materials at between \$1 and \$2 billion each year. With reduce, reuse, and recycle well established across Canada, Cant said he would focus on information about composting, anaerobic digestion (AD), waste to energy, landfill, and mechanical biological treatment (MBT).

The two main composting methods are reactor and non-reactor. Non-reactor composting typically occurs outdoors and can include wind-row or aerated static pile methods, the latter involving air piped into the pile to facilitate the composting process. Non-reactor methods have the advantage of being relatively inexpensive; they can also produce good quality compost. Cant said odour is the largest issue with this approach, with the potential to create offsite nuisances.

Reactor composting has the advantage of producing compost quickly while containing and treating the odorous off-gases. Its disadvantage is cost. The process typically takes place indoors and involves the use of an enclosed channel and a container or tunnel. A non-reactor composting system usually costs about \$30 to \$60 per tonne, while a reactor system can cost between \$90 and \$160 per tonne. Cant said a shortage of composting capacity is leading to an increase in the price of composting.

Anaerobic digestion (AD) is mainly used for organic materials. They are broken down in enclosed tanks, in the absence of oxygen. The biogas produced is about 60% methane. AD also produces digestate, which is generally composted to make it more stable (less malodorous); the compost is then sold for various landscaping uses. AD technology is well established for wastewater treatment biosolids (sludge) and industrial food processing operations in the United States. There are 50 to 70 digesters for animal manures in the United States. In the past decade, Cant said, facilities in Europe and Japan have used AD for municipal solid waste with growing success. The only two AD facilities for MSW in North America are both located in Canada, near Toronto. He said AD will continue to develop in Europe and that energy concerns and a new focus on biomass energy are leading to extensive interest in the United States as well. AD in Canada is expensive, but interest will continue. Cant said co-digestion with animal manure and biosolids is appropriate in some circumstances.

The waste to energy (WTE) process involves the thermal recovery of energy through combustion, gasification/pyrolysis, or plasma systems. Each technology offers a different way of releasing the energy in waste. Cant said WTE systems are essentially power plants that use waste as fuel instead of coal, natural gas, or uranium. He said WTE is frequently viewed as the last treatment of waste before land disposal, applied after recycling and organics management. It recovers the remaining energy and converts it to heat and electricity, which can be sold, and also holds the potential to offset fossil fuel use for power generation.

Cant said the rising energy costs and environmental concerns associated with landfills may make WTE more attractive for power and heat generation. Energy recovery is increasingly recognized as a logical and integral part of the waste management process. More and more, waste is seen as renewable energy.

Two types of landfill exist: sanitary and bioreactor. The latter accelerates the biodegradation process on the site. In theory, this process reduces the contamination lifespan by years, even decades, after the landfill is closed.

Mechanical biological treatment (MBT) was created as a way to treat municipal solid waste. It is a generic term for a range of processes used to treat MSW with a combination of mechanical separation and biological treatment. MBT can be built with thermal treatment in mind, or landfill. The process drives the moisture out and composts the underlying components. Up to half the original waste is recovered as fuel; 10% is recovered as glass and metals; and 20–30% is lost initially as water during the drying stage. In theory, the final product is more stable for landfill, with lower gas emission. In England, Cant said, where the processes are better known, the costs are slightly lower and more energy is recovered from the waste. The economics of MBT in Canada are not yet known.

Responding to a participant's question, Cant said for every tonne of material composted in a wind-row facility, "the benefit, from a CO₂ perspective, is in the range of one to two tonnes." Another participant asked about capturing the gases in a trench system, but Cant said no one has really examined what is in those gases. The trench system filters the air and channels it through; it does not capture gases.

Table discussions

Facilitator Don Grant opened the table discussions by distributing three questions for each group to consider:

- Which of the technical options discussed in the presentation do you prefer? Why?
- What opportunities and barriers do waste management technologies offer communities?

- How could the waste management technologies discussed in the presentation be successfully pilot-tested in a community?

Two groups reported their discussion findings to the room. The first included participants from the Toronto region, Vancouver and surrounding region, Regina, and Thompson, Manitoba. Of the four municipal representatives at the table, no two had similar circumstances to consider. They all agreed their answer to the first question is “we don’t know.” The participants said they did not even have a base of knowledge from which to express a preference. The second table reported the same problem as the first; instead, they had discussed what information they did have and how the proper knowledge might have changed some decisions they had made.

Pat Parker

Pat Parker addressed the participants next. As the manager of solid waste planning for the City of Hamilton, Parker works with planning and implementation as well as community outreach. She talked about Hamilton’s process for building capacity. The city, she said, includes a mix of urban, suburban, and rural areas in its population of 504,000 people. The six waste collection zones include multi-residential properties, commercial properties, schools, single-family homes, and municipal facilities. In 2006, the city managed 253,000 tonnes of waste. Parker said although surrounding municipalities are shipping waste out of the country, Hamilton did not want to do that. In 2002, the Solid Waste Area Reduction Unit (SWARU) closed and left the municipality with a limited landfill capacity. She said the major steps taken then included a three-stream collection facility for recyclables, community recycling centres, and outreach initiatives. “To meet our target, we needed participation from the public. We also needed to lead by example,” Parker said, adding they had to persuade the citizens using convincing outreach programs.

In 2003, three phases were implemented. Phase One involved background research to look at practices in other municipalities. During Phase Two—demographic research—Parker and her staff met with community and environmental groups. Phase Three involved developing recommendations based on the research. The result was a three-year program with topping-up programs in the fourth year.

Parker said the green cart research involved a social marketing demonstration project and addressed perceived barriers. The first perceived barrier was convenience. Consumers preferred wheeled containers, so the city issued a Request for Proposals (RFP) to obtain a cart that would address that barrier and improve participation. Other barriers—such as cleaning the cart, vermin, storage space, and odour—were addressed in newsletters to assist residents with seasonal issues regarding the carts. Parker said this approach improved participation, as did community events and festivals. “We raised some eyebrows because we pushed the envelope ... on traditional community advertising.” By working to communicate with residents in the best way possible, Parker said they discovered a lot of excitement in Hamilton about the green cart program.

Parker emphasized the importance of the first impression, to ensure that in 10 years’ time, people will remember information from the first phases of the program. She said they advised residents when the carts would be arriving, and used advertising and attendance at ward council meetings to get the word out. Four to six weeks after the launch of the program, Parker said they knew what needed to change. One year after the launch, they asked residents what challenges they had faced in the first four seasons of the program, and what needed to change.

Parker said she wanted to let residents know why the city was implementing the program—to conserve landfill space—and that composting facilities were also being built. The small booklet they produced became the flagship communications piece. Once green carts were becoming

visible at the curb, the next step was implementation. Parker said the outreach program used university co-op students trained to speak with residents about the new program. They followed the green cart distribution truck and talked with residents. The program also used “Oops!” stickers on the bins to advise residents what they had done incorrectly and what to do differently in future.

In developing a storybook/operating manual, Parker said they looked to Dr. Seuss for inspiration. Adopting Seuss’ technique of addressing a complex issue in a manner simple enough for children but engaging enough for adults to read and understand, the city used humour to present the perceived barriers and possible solutions. This helped members of the public who did not immediately warm to the program. Parker described the four television commercials, also humorous, which presented solutions and told residents “It Doesn’t Have to Be That Difficult.”

Parker said the city offered several customer service channels, including a dedicated customer contact centre (546-CITY) that provided general information on all city programs. In 2006, there were some 500,000 calls, 185,000 of which were bumped up to the Waste Management Division for answers. This line took over from the student teams in providing customer service over the longer term.

Parker’s group also used community involvement and partnerships to involve the community and obtain input. Committees include a public advisory committee, waste reduction task force, and Glanbrook landfill coordinating committee. Methods for receiving input on waste management initiatives included workshops, focus groups, and surveys. Parker said a Hamilton resident sent a letter to Maxwell House coffee, which led to the company changing to a recyclable lid on its coffee containers. Planter’s Peanuts has made a similar commitment to change its container to recyclable material. Parker said these are examples of the community’s influence to create change.

Community partnerships in Hamilton include recycling centres, such as one that refurbishes and recycles bicycles. Parker said her department works with the Clean City Liaison committee to hold community litter pick-ups in the spring, participates in community events, and conducts tours of waste and recycling facilities. Education and viewing areas at the composting and recycling centres allow tours without putting people in the production areas. Parker said her department has also implemented a reward program to recognize good recycling behaviour in residents. All nominees who show they divert at least 65% of their waste get a gold recycling box for curb use. One winner gets a cheque for the average amount of waste-management taxes paid by households, approximately \$122. Hamilton’s Vision 2020 program focuses on reducing and managing waste.

Parker said the city continues to work to improve sustainability, including getting green carts into apartments and schools, festivals, and events. Green carts are already in city staff offices and Parker said the local farmers’ market is looking to the city for ways to take their green waste material.

One participant asked whether there were any differences in the green cart program for older and newer neighbourhoods. Parker said in areas with on-street parking and smaller roads, they used smaller containers that could be hand-carried to the curb. Discussion took place on the use or prohibition of compostable bags in bins. Parker said in April 2008, Hamilton will start accepting compostable bags.

From her experience, Parker’s tips are to research and plan ahead, think like a resident, take it one step at a time to build momentum, use a planning calendar, and know the value of thinking

and planning ahead. She also said face-to-face communication was most effective, as they discovered when the students went door to door to talk with residents.

Table discussions

In Part II of the session, participants broke into two groups for discussion and reported back on specific questions.

Table One

What are the lessons learned from your previous experiences with community-based social marketing initiatives?

- Mass marketing (fliers in the mail or enclosed in a bill) does not work well. The best way to communicate a message is face to face. This method is effective, but costly.
- Peer pressure works. People do not want to be out-done by their neighbours. An example of the successful use of peer pressure is the Gold Box Program in Hamilton.
- There are challenges to behaviour modification: people do not like to be told how to behave. They need to become aware themselves of what needs to be done.
- There are challenges in multi-residential buildings, including lack of regulation and infrastructure. A code must be in place to support diversion, but currently it is not possible to check compliance.

Table Two

What are the lessons learned from your previous experiences with community-based social marketing initiatives?

- Public meetings and face-to-face communication, supported by follow-up letters and information, are the most effective methods of community-based social marketing. Letters and information on their own are of limited value.
- Face-to-face communication is best, preferably on the scene where a product is being rolled out, with motivated, interested individuals available to explain the benefits and interact with people. Ads and brochures on their own are of limited value.
- People want feedback on the impact of their actions. Feedback should be as localized as possible.
- The design of the system is important in ensuring uptake. For example, a recycling box must be designed to fit into kitchens in a variety of households.

In your experience, what are the best methods to ensure buy-in from a community on waste diversion initiatives?

- Locate depots in central locations (a strategy used successfully in Regina).
- Provide monetary incentives (consumer refund programs) for bottles, cans, milk jugs, and other items.

What recommendations can you offer other communities on how to ensure the success of their community-based social marketing initiatives?

- Education
- Incentives

- Enforcement if necessary
- Fostering peer pressure
- Charging a fee for tags to attach to extra bags of garbage (to send the message that there is a cost associated with extra garbage)

Sally McIntyre

Sally McIntyre said that she was currently finalizing the contract for Ottawa's new composting program and developing a strategy for the city's industrial, commercial, and institutional (IC&I) sector.

She listed the main factors driving increased waste diversion:

- An increasing population and decreasing waste disposal capacity
- Limitations on the trans-boundary and inter-jurisdictional movement of waste
- Movement toward sustainable resource management (legislative, public)
- The limitations of alternative approaches (financial limits and "not-in-my-backyard" syndrome)

Five landfills currently serve Ottawa: four are located within the city and one is located to the east of town. Two are owned by the City, while the other three are owned by private corporations. Two of the privately owned landfills recently requested expansions.

Ottawa's population is approximately 800,000 and the city generates about one million tonnes of waste per year. About 70% is IC&I waste—this is greater than the national average.

McIntyre showed a chart displaying projected waste and demand for landfill capacity. Beginning in 2011, she said, Ottawa will no longer have sufficient landfill capacity to meet the demand in the community. That is a significant driver for increasing waste diversion.

Ottawa does send some waste to a Quebec landfill outside the city but "it is only matter of time" before borders to Quebec and the United States are closed or restricted with regard to waste, said McIntyre.

Municipalities must now think of waste as a resource or commodity and consider its composition and market value, how to extract what is valuable, and how to get those components to market, she said.

Two major waste streams in Ottawa are IC&I waste and construction and demolition (C&D) waste. Over 50% of IC&I waste is organics and paper. In theory, then, 50% waste diversion can be achieved by focusing on those two components.

C&D waste is a subset of waste produced within the larger IC&I sector. In Ottawa, almost half of C&D waste is wood and drywall. Metals, concrete, asphalt and cardboard are some of the other components. Wood can be recycled if it is clean, but it must be transported.

There is a good market for metals recycling, but McIntyre said she did not know what percentage of metals waste was being recycled.

Discussing commodities waste, McIntyre said that aluminum cans are trading for \$1,500 to \$2,000 per tonne. People are strongly encouraged to recycle their aluminum cans, said McIntyre: "This is what pays for our recycling programs." There has also been an increase in the market for steel cans.

The price of plastics is “all over the map,” making plastic recycling more of a challenge, said McIntyre. “It’s one thing for municipalities to take on the risk of price variability, but another to ask small businesses and institutions in the community to pay individual contractors to collect and dispose of waste when there is this kind of market variability.” Although HDPE and PET plastics can be recycled for consistently good prices, municipalities must deal with other materials that bring in little or no revenue, thus paying to dispose of them.

Residential waste makes up about 30% of Ottawa’s waste, while IC&I waste makes up about 70%. For residential waste, the city runs a blue and black box recycling program, a source separated organics (SSO) pilot program, and a leaf and yard program. The City has full control of those waste streams and sends them to four of Ottawa’s five landfill sites (the fifth site is a C&D facility). Bylaws are in place to tell residents to source-separate their waste. Municipalities get the recyclable material to market, and someone buys and remakes those materials into products consumers will buy again.

The City does not collect or manage the remaining 70% of waste generated by the IC&I sector, which is dealt with on a free market. This means that when choosing between a landfill and a gasifier, the IC&I sector will choose the cheapest option, “so it’s not as easy as just telling people they have to divert,” said McIntyre. Waste diversion for this sector involves getting 24,000 businesses and institutions to source-separate their waste and find a way to collect, transfer and process all that material—all assuming a market exists for the recycled materials.

This underlines the need for an integrated system that involves all three levels of government (municipal, provincial, and federal). Without such integration, “we are missing pieces of the pie,” said McIntyre. Federal legislation is needed to upgrade packaging laws and provide guidance on product composition, including which plastics to use. Approval of collection, transfer, and disposal of waste occurs at the provincial level. The challenge faced by Ottawa is that Ontario will approve the expansion of the two landfills located within the City’s jurisdiction. If this happens, the City will have to compete with the landfills when trying to divert waste.

Industry does not like the idea of flow control, said McIntyre, but at some point the City will have to institute such a policy if it is to put competitive facilities in place to address the waste issue. “What works in your market won’t necessarily work here.” She said Halifax went to court and was granted the ability to impose flow control. Now anyone generating waste in Halifax must use the City landfill. This is a monopoly, but there is a purpose behind it.

McIntyre suggested a number of strategies for dealing with price elasticity and market variability:

- Provincial landfill bans (e.g. banning organics from landfills so that they have to go somewhere else)
- Flow control
- Identifying a market for compost (e.g. Halifax is located on rocky terrain and people like to garden)
- Proximity to markets
- Proximity to alternatives

Ottawa did a study of the IC&I sector to look at opportunities for municipal intervention and identified three key themes: mandating diversion, enabling diversion, and leading by example. Ottawa’s strategy will likely comprise all three tools.

For mandatory diversion, the top three options for Ottawa are to increase levies on loads containing target recyclable materials, enact “three ‘R’s” bylaws at the municipal level, and ban landfill disposal of target materials (e.g. no longer accepting organics at landfills).

To enable diversion, the top three options are promotion and education programs, provision of technical support, and strategic partnerships (e.g. getting construction companies to put all their asphalt shingles in one bin, deposit them in a depot, and send them off to a facility).

Ottawa’s top three options for leading by example are enhanced service delivery at municipal facilities, a municipal green procurement policy (including a component that addresses solid waste), and a waste diversion certification and awards program to recognize those who promote or undertake diversion.

The operating cost for Ottawa’s residential waste management program was \$44.5 million in 2006. The program was funded through several sources:

- A fixed fee for service applied to residential dwellings for residential waste management (42.4%)
- Property tax applied to all tax classes (28.1%)
- Revenue from recycled goods (16.4%)
- Transfer from Waste Diversion Ontario (8.1%)
- Tipping fees and royalties from the two municipally owned landfills (5.2%)

New programs will require new monies and the mechanisms to raise those funds.

Table discussions

Participants broke into two groups for discussion and reported back on specific questions.

What legislative options are available to a community looking to implement waste diversion initiatives?

Table One

- Stewardship programs
- Garbage pickup contingent on participating in a recycling program (this was done in Regina for multi-residential developments)
- Legislating permit approvals for multi-residential developments to ensure that appropriate infrastructure for waste diversion is in place and accessible
- Landfill bans on certain materials
- Flow control on IC&I waste

Table Two

- By-law enforcement: A website on “smart bylaws” is available on the Internet
- Non-legislative options

What options are available to a community looking to finance waste diversion initiatives?***Table One***

- Waste diversion must be managed at the provincial level and more provincial leadership is needed.
- The FCM Green Municipal Fund can help.
- A utility should be developed with greater authority to focus on the IC&I sector. The utility should focus on solid waste generated by the IC&I sector, taking this service out of the tax base and providing a structure that would deal with the IC&I sector separately from the municipality.
- Different financing schemes should be developed through partnerships with industry and other stakeholders.

A group member said Regina is initiating a pilot project with the Solar Hydrogen Energy Corporation to combine methane from the landfill with solar energy to generate a thermo-chemical reaction. The company will then strip off the methane and provide hydrogen. This captures hydrogen without dispersing it (reducing greenhouse gas emissions). When the “hydrogen economy” arrives, the municipal landfill will be a source of hydrogen and the municipality will benefit financially.

Table Two

- A utility bill should be generated that is separate from the tax bill, tying the service to a cost, and there should be incentives for early payment.
- Fees should be charged for extra containers, and large containers should be required for large garbage producers. This associates greater use of the service with higher payment.
- Non-legislative approaches include social marketing, using peer pressure, and getting neighbours to advocate for the program.
- Municipalities can generate revenue from the capture of methane when a landfill closes.

The Soft Path to Water Demand Management

Facilitator:

Lynn Barber
Senior Program Manager
Friends of the Earth Canada

Presenters:

Oliver M. Brandes
Senior Research Associate, Associate Director, POLIS Project on Ecological Governance
University of Victoria, British Columbia

Carol Maas
Innovation and Technology Director, POLIS Project on Ecological Governance
University of Victoria, British Columbia

Lynn Barber said Friends of the Earth is an international organization and part of an international network of environmental organizations representing 70 member countries. Barber's focus is on water. She said delivery and treatment costs are one reason her organization is concerned with saving water. Municipalities account for 80% of capital spending of the \$88 billion needed for upgrades and new water and wastewater systems, Barber said. Water shortages and quality are serious issues in many Canadian communities.

The impetus for developing a soft path came from concern for ecological health, and from community leaders who have to deal with growth and development. Barber said she hoped this presentation would present some ways to balance these two priorities and show how the soft path provides the community with control and flexibility to achieve a sustainable water future.

Oliver Brandes

Oliver M. Brandes began with a prediction that greater efficiency and conservation will provide the largest source of new water for Canadians in the coming decades. POLIS, he said, is a think-tank group that originated at the University of Victoria, established in 2000 by the Eco-Research Chair of Environmental Law and Policy. He described POLIS as the place where academic and policy research meets community action.

Brandes said ecological governance plays a role at all levels of decision making, including government, society, schools, church groups, and businesses. He used the Water Sustainability Project as an example. Established in 2003, this project looks at urban water use and helps reorient from a supply to a demand-side approach. This research is continued through the water governance and soft path themes at POLIS.

One in four Canadian communities—a significant percentage, according to Brandes—has faced water quantity issues. Canada is facing supply limitations. A number of surface and groundwater bodies have reached or are near their limit for withdrawals, and there is uncertainty because of the changing global climate. He said development projects such as dams and diversions can destroy aquatic and terrestrial habitats, introduce non-native species, and block the migration of fish. Quoting *Water* by Marc de Villiers, Brandes said, “The trouble with water—and there is trouble with water—is that they aren’t making any more of it.”

Brandes said the response to the water challenge must include an approach on the supply side and the demand side, as well as a soft-path approach. Any water management, he said, is

naturally a blend of some of these. The supply-side approach tends to be reactive, he said, with a view toward meeting projected needs for water, given trends in water use, and population growth. The demand-side approach views water as a finite resource and is often a short-term and temporary approach, looking at reducing current and future water needs to conserve, save money, and reduce environmental impacts. The soft-path approach, Brandes said, sees water as a finite resource with ecological impacts, and is a proactive response. The core idea—different ways of providing the services currently supplied by water—becomes “the nexus to innovation.” Brandes said with this approach, “we aren’t outside the box; we are considering we don’t even need a box.”

The paradigms of water management—supply development versus managing demand and the soft path—require new thinking: thinking of the toilet as part of the infrastructure, for example, or of rainwater as part of a natural resource. Brandes said this is a bumpy road, but the approach does work. Victoria, B.C., is beginning to move along this continuum, having embraced demand-side management six to eight years ago. The population is increasing, but water demand is not. “That is the key challenge; how do we do that?”

Brandes described the soft path as a planning approach based on the “soft energy paths” ideas of the 1970s. People tend to think of water in terms of showering, drinking, washing, or growing food—in terms of the services it provides. Brandes said many methods of delivering those services exist, and that way of thinking opens up a whole new approach to service delivery. Potable water is not necessary for most of those uses, and less than one third of all water usage actually requires drinking quality water. He said ecological sustainability should be a fundamental criterion through an emphasis on green infrastructure. “Each drop should be doing more work.”

The soft path, he said, starts with a vision. Vision 2050 is his shorthand for the need to plan backward. Calling it “backcasting,” Brandes said planning should begin with the desired future, and move backward to the present. There are many paths to the desired future, he said, and each community must be engaged in defining its own. He cited the example of a hotel in Vancouver that replaced some basic infrastructure pieces—what Brandes called the Residential Magic Six: toilets, showers, faucets, dishwashers, laundry machines, and lawns. After the retrofit, the hotel reduced its water use by 47% and customers reported increased satisfaction.

The POLIS Top 10 lists immediate opportunities for communities to take action on water conservation. It is the result of more than three years of study. Each action meets the basic criteria of being technically feasible, broadly applicable, socially acceptable, and cost effective, while emphasizing decentralized technologies, lasting local behaviour change, and increased water productivity.

The key, Brandes said, is to focus on a new kind of infrastructure that complements the existing water supply. This includes looking at rainwater as a new source, one that is almost entirely neglected in most communities. People tend to over-consume water, he said, because of flat-rate water prices—“like an all-you-can-eat buffet.” Canadians on a flat-rate system use 74% more water than those on a volume-based system. A soft path, he said, consumes less steel and concrete, solves natural resource problems with ingenuity and innovation, and asks why, rather than how. It works with nature instead of against it.

Brandes said details of the soft-path research done, and concepts drawn from it, are available on the POLIS website (www.polisproject.org). Some of the research results show that urban water use could drop by 45% with no new water, despite a 50% growth in population, and fully recycling pulp and paper mills in Ontario could cut water use by 95%. Dietary changes, he said, could cut water use by one-third to one-half. The first of five broader conclusions reached is that comprehensive programs take years, sometimes a decade, to develop, and it is vital they start

now. He also said community engagement increases the effectiveness of programming, and good programs require a lasting commitment, vision, collaboration, and leadership. They can save both water and money, which is good news for municipal leaders.

Lynn Barber

Barber said there are seven steps to the soft-path process. These steps can be applied out of order, depending on the specific needs of a community. Step one is identifying water-related services. This includes municipal uses; residential uses; institutional uses, including schools and hospitals that may use water for cooling and heating, for example; commercial uses for malls or stores; and industrial uses, if relevant. Some industrial installations, she said, have their own water system. She said determining the desired water future means engaging not only current industrial stakeholders, but future ones as well.

The next step involves an iterative process. This is taking a first approach at the goal of fresh water without having to worry about it in 20 to 50 years. It is key for the community to become involved in the process to give its vision of the desired future, but the municipality controls and drives it. “Think of it as a wish list,” she said. Backcasting then comes in, to ascertain what is needed to reach that point.

Barber included analyzing water quality and available quantity in the next step, as well as flagging sources to reduce the potable water required. Next is probably the most time consuming and expensive step in the process: looking at water sources and their ecological integrity—essentially, working within a water budget. A water budget is important, Barber said, because it involves knowing what is coming in and what is going out and keeping them in balance to build sustainability. This process can include choosing water efficiency, incentives, restriction, and other approaches to achieve the desired future. At this point, a consultant can take the information and design a water system. This, she said, is the best way to retain control and retain the trust and engagement of the community.

Closing Address: Beyond Environmentalism

Charley Beresford
Executive Director
Columbia Institute

Brock Carlton
Chief Executive Officer
Federation of Canadian Municipalities

Gord Steeves
President
Federation of Canadian Municipalities

Adam Werbach
Founder
Act Now

Charley Beresford

Charley Beresford of the Columbia Institute, sponsor of the day’s keynote address, said alarming weather events have brought awareness to the public that climate change is real. The next step, she said, is to increase public awareness on how little time remains to act on climate

change. “We are going to burn up if we don’t change our ways,” she said. This change must happen in communities, but in their efforts to tackle climate change, municipalities must leave no one behind. Local decision makers can make a significant impact in this area, Beresford said. “We know the leadership you provide will shape your community and our future.”

Adam Werbach

Canada and its municipalities are poised to take a leadership role in the global sustainability movement, said Adam Werbach. The question is what type of leadership it would provide.

Werbach said leadership from the ground up is necessary. “Our hope is going to come from citizens and municipalities, and will filter upwards,” he said. “We need to actually be aggressive in demanding what we need and move toward that.”

He added that notions of time and of what is essential to everyday life have changed dramatically, and the pace at which society embraces and discards ideas has become vertiginous. “We’ve moved from whale oil to petroleum, from coal trains to electric trains, from Marilyn Monroe to Britney Spears,” he said.

Werbach said, “We are witnessing the painful death of the industrial revolution.” All the business systems created during and since the industrial revolution were built on the concept of limitless resources. Now we know there are limits to the resources, and “our charge as civic leaders is to enhance the quality of life of our citizens and the global public through the possibilities allowed by these limits.”

He said while it is difficult to acknowledge history while it is happening, another revolution is currently under way. Werbach dubbed this “the sustainability revolution”; it refers to understanding how human culture will harmonize its relationship with the living world. Werbach warned this concept is still vague and not widely understood. The word “sustainability” itself, he said, has little meaning to the public. While climate change and impending carbon legislation will force changes in the way individuals live, work, and play, sustainability is not, and cannot be, simply about the environment.

The concept of sustainability, said Werbach, includes not only the environment, but also the economy, our communities, and our health. Unlike activists or businesses, municipalities have the opportunity to implement big and small changes to improve the quality of life in their communities. Even small steps are necessary. “The stories I’ve been hearing here give me hope that you’re making progress,” he said.

He said the industrial revolution will be overcome when the sustainability revolution fields better policies, products, and experiences and makes sustainability irresistible. “It’s not too hard, because we actually don’t have much of a choice,” he said.

“Today, the world releases about 30 billion tons of CO₂ a year into the atmosphere. Each day we lift about 84 million barrels of oil out of the ground and then burn it. China is now opening one new coal-fired power plant a week. Every minute, 60 football fields of trees are being cut down. Cutting in the rain forest has intensified. This is our world,” he said.

Werbach said he spent his entire life as an activist, but realized his efforts were not yielding results. After founding the largest student-run environmental group in the United States and becoming the youngest President of the Sierra Club at 23, he concluded he was trying to implement a strategy concocted by the previous generation. This strategy, he said, had lost people along the way and become complaint based, unpopular, and too slow for the pace at which the problem was growing.

Werbach said today's problems require a far greater solution, which solves not just narrowly defined environmental problems, but provides answers across a range of concerns and uses the environment as a mechanism for change.

To illustrate, Werbach gave an overview of his work with Wal-Mart, the world's largest corporation. Through his discussions with the retail giant, Werbach realized Wal-Mart sincerely wanted to lead and not just go through the motions of becoming more environmentally responsible. He said Wal-Mart has established three goals in the United States and in Canada: to produce zero waste, use reusable energy, and sell only green products in its stores. Step by step, said Werbach, it began. Wal-Mart started working in its stores to enclose dairy freezer cases, make its trucks more fuel efficient, and boost recycling. In fact, Werbach said, Wal-Mart Canada is now the country's largest purchaser of green energy.

Werbach said the work occurring internally at Wal-Mart is slowly being pushed down into the supply chain. Efforts are being made to reduce packaging, and Wal-Mart suppliers are now required to be green. While market systems are coming along and the corporate sector is taking the lead on sustainability, Werbach said a major change is occurring. "The next step is to make consumers care," he said, and added, "Our battle is not between the organic carrot and the regular carrot. Our battle is between the organic carrot and the double-stuffed Oreo cookie. That's what people want right now."

The big challenge is figuring out how to make consumers want to purchase products with reduced environmental and social impact. This is where the Personal Sustainability Project comes into play, Werbach said.

The Personal Sustainability Project involves changing perceptions to make sustainability desirable to individuals at a variety of levels. Its premise is that by taking repeated visible actions in their communities to help sustain the planet, individuals will become happier and more organized in all areas of their lives. "If you can figure out how to recycle every day, you can figure out to balance your cheque book. This is a pathway not just to protecting the planet, but to more joy, and a better life," said Werbach.

The opportunity exists to apply sustainability across a variety of disciplines. If we embrace his vision, according to Werbach, we can create the type of change the planet needs. He said it is essential that we learn to speak about the issues differently, in a way that resonates with the majority. "Obscure and important language doesn't capture the hearts of people who need this to organize their lives," he said.

"There is no question Canada will be a leader in the global sustainability movement. I hope you'll be the type of leaders who will embrace sustainability as a means of solving the other challenges you face in your communities. Your challenge is to make sustainability irresistible."

Discussion

Brock Carlton thanked Werbach and asked the audience for questions and comments.

A participant said his municipality was just completing a Sustainability Charter and asked Werbach how to ensure buy-in from constituents. "People look into cars and plasma televisions for hours and hours before making a purchase. How do we get them to take the same time on the planet and environment?"

Werbach replied the issue of igniting consumer demand for sustainability remains a challenge, and that a Personal Sustainability Plan is a good tactic for getting individuals involved. "The truth is that people have a closer relationship to their toilet paper than to their elected officials.

It's the lust [for] buying things. We need to find a way to make the things they buy environmentally irresistible."

Another participant asked if Werbach foresees the day when sustainability will be the "issue of traction" in an election, in Canada or in the United States.

Werbach answered he has "a lot of hope" for this primary season, and there is a need to challenge people, and to accept challenges, in order to change outcomes. However, sustainability should not be the issue; he would prefer sustainability to infuse and permeate every other issue, he said.

Several participants commented on Werbach's work with Wal-Mart, asking how they could influence Wal-Mart's decisions in their communities. They also expressed concern regarding Wal-Mart's purchasing practices and its role in small communities.

Werbach replied communities have an incredible opportunity to use Wal-Mart's strength to their advantage, and to work with local management to resolve issues. On Wal-Mart's foreign suppliers and their practices, Werbach said this was an ongoing process and Wal-Mart is making efforts to build a green manufacturing base in China and India. He added this conversation should not be reduced to the "place of Wal-Mart in society," but rather broadened to showcase a business model that is working towards sustainability. Once internal changes are made, and once employees get on board, the public's engagement can begin.

Another participant congratulated the FCM for organizing such an interesting exchange of ideas, and said it should continue this grassroots movement.

Brock Carlton thanked Werbach and concluded the conference by saying, "It doesn't matter what you work on; the real question is what you will influence." He added, "We've heard about change and have been challenged to change." This, he said, has been a call to arms. "It is incumbent on us to take our moral commitment, go back to our communities, drive the dialogue, and drum up support."

Speakers and Presenters

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The Honourable Gilles Duceppe
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