www.e-Dialogues.ca
Royal Roads University

Waste Management: Sustainable Infrastructure
December 6, 2006
Moderated by Drs. Ann Dale and Marilyn Hamilton

Participants

Ann Dale, Trudeau Fellow, Canada Research Chair in Sustainable Community Development, Professor, Royal Roads University
Darren Gardham, Supervisor, Custodial Services, Royal Roads University
Marilyn Hamilton, Associate Professor, Royal Roads University
Chris Ling, Post-doctoral Scholar, Canada Research Chair in Sustainable Community Development, Royal Roads University
Dwight G. Mercer, Waste Minimization Co-ordinator, City of Regina
Jo-Anne St. Godard, Executive Director, Recycling Council of Ontario
Jerry Leonard, Executive Manager of the Edmonton Waste management Centre of Excellence
Alfred Von Mirbach, Waste Diversion Professional, Perth, Ontario

Dialogue

Ann Dale

Welcome e-panelists and e-audience to the third in our series of on-line real time dialogues on sustainable infrastructure in Canada. Our topic today is waste management, and I always think about the fact that 95% of any product produced is waste after six months (forgot the source). In natural systems, there is virtually no waste; everything is used for the life of something else.

I will be moderating the e-panel and my colleague, Dr. Marilyn Hamilton will be moderating the e-audience.

Can we start by each of you introducing yourselves and would you mind explaining for our audience why the topic of waste is so important to you?

Marilyn Hamilton

Good afternoon, my name is Marilyn Hamilton and I am the Moderator of the E-Audience. I have an interest in Waste Management because I live outside the major urban centre of Vancouver and I am increasingly concerned about its export of waste to distant environments and communities. This raises issues of ethics and responsibility for me. Also I live in Abbotsford where we had an exceptional waste management problem two years ago when we had to dispose of the millions of birds as a result of the Avian Flu. So I have interests in both day to day Waste Management issues, plus extreme situations.
I will be a conduit between this E-Panel and the E-Audience, bringing in their questions when appropriate.

Chris Ling

Hi, I am Chris Ling, a member of Ann's research team. I was invited to this panel as I was responsible for preparing the green bin case study. I am also personally interested in waste as a general sustainable development issue as I believe the attitude of a community to waste has strong implications to the attitude of a community to all aspects of the environment and consumption.

Dwight G. Mercer

I am Dwight Mercer and I am pleased to be able to interact with all of you from across the country. Cold and snowy in Regina - but getting warmer for the weekend.

During the past eight years I have been the Waste Minimization Coordinator for the City of Regina. This includes management of twelve operational and education programs – some operate 6 days per week.

Previously I was a Senior Urban Planner for the City (12 years) and part of the 4-person team which produced the 1991 Regina Development Plan – this was based largely on the principles of 1987 Brundtland Report entitled “Our Common Futures”. Previously, I was involved in floodplain management and land use control mechanisms to protect aquifer recharge areas.

URL Address for the Brundtland Report:
http://www.are.admin.ch/imperia/md/content/are/nachhaltigeentwicklung/brundtland_bericht.pdf?PHPSESSID=eb1230014aef9d0c8af8664a0bcd8f50

My interest in waste management. Within the context of solid waste management there is a hierarchy of priorities and functions. For the City of Regina and most municipalities they are as follows:

λ Providing for Public Health & Safety
λ Provision of Public Utility Collection Service
λ Protection of Natural Environment
λ Waste Minimization

Public Health and Safety is now largely transparent to the general public as we control the rats and no Black Plagues.

The provision of the Public Utility Collection service is high profile and is what the general public relates to.

Protection of the Natural Environment, or what happens around the solid waste processing, is also largely transparent --- except when trying to select a location for a new landfill.

The “weak sister” in this prioritized list is waste minimization in terms of access to funding.

Why is waste minimization important --- is also the only process which can address all of the three above elements and reduce impacts at the source.

Alfred Von Mirbach

Hi: I am Alfred Von Mirbach, a waste diversion professional based in Perth Ontario who has worked both as a municipal staff person launching blue box, composting and hazardous waste programs, and a consultant involved in helping municipalities and municipal waste organizations achieve better diversion rates. I look forward to the discussion

Jo-Anne St. Godard

Hello everyone, I am Jo-Anne St. Godard, Executive Director of the Recycling Council of Ontario where I've worked for the pasted 6 years. We are a not for profit, non-government organization that has worked on waste reduction and recycling issues for the past 28 years. We are actively involved in the development of waste reduction policies and programs at the municipal and provincial level. Our most recent focus is on extended producer responsibility and

stewardship.

I am looking forward to the discussions this afternoon.

Jerry Leonard

Hi : I'm Jerry Leonard, Executive Manager of the Edmonton Waste management Centre of Excellence (www.ewmce.com). This is a partnership of public and private organizations devoted to research, education and technology development across the broad spectrum of waste management.

Darren Gardham

Hello everyone, I am Darren Gardham, Supervisor Custodial Services at Royal Roads University in Victoria, BC.

Ann Dale

We certainly have a diversity of expertise and experience. Our first question, can each of you give me 2-3 examples of leading-edge waste management innovations in your community, or across the country, and could you describe why it is innovative, while we wait for our last colleague to join us?

Dwight G. Mercer

All of our waste minimization programs and almost all solid waste management activities are measured for unit costs and levels of service.

My first example is basic PERFORMANCE MANAGEMENT. Solid waste collection and solid waste disposal in the City of Regina is rather standard and routine. We have been working on maintaining an adequate level of service while continually reducing our unit costs for service. Our total net costs for all waste collection, all waste minimization and all waste disposal was only $87.35 in 2005. I think these unit costs are some of the best in Canada. In addition, annual public opinion surveys routinely place solid waste management only behind the Fire Department. How do we achieve these good numbers? MEASURE IT and THEN MANAGE IT by always knowing who your customer is.

Stating it in another fashion --- these results are from 80 percent perspiration and

20 percent inspiration.

A second innovation which is perhaps more unique is the City of Regina Big Blue Bin residential paper recycling program.

The Big Blue Bin program is a voluntary depot-based residential paper collection system with 21 bins (48 cubic yards) at 15 major shopping malls and high traffic municipal recreation sites.

These bins collect about 5500-6000 tonnes of paper product material, generate just under 475,000 vehicle trips with 38-41 percent of these trips being multi-purpose --- recycling and then shopping. They save the equivalent of about 90,000 trees per year and are sold to manufacture about 85 million cardboard egg flats. There is waiting list of shopping malls for their Big Blue Bins as the retail impact has been documented in several detailed marketing reports.

The total net operation cost (which includes the Glass Recycling Bins and Metal Recycling Bins) is almost breakeven within a non-subsidized market environment. We aggressively develop and maintain down-street markets for our paper product. Quality control and very good seasonal trend records make us a good source of paper for the private sector.

Jerry Leonard

Edmonton has taken an innovative and integrated approach to waste management. This includes the largest compost facility in North America, a highly developed recycling infrastructure, an award winning process for recycling the sand spread on our winter streets (last year not so much – this year a lot already!), and a wastewater recycling initiative. Very few other cities have taken such an integrated or forward looking approach. The establishment of our Centre is another example of this.

Ann Dale

Jerry, what is behind this integrated thinking, is there a particular champion, an overall vision, a plan in place?

Jerry Leonard

To be honest, the impetus came from difficulties encountered in the 1980's with locating a new landfill. Other alternatives had to be looked at and no single

technology/solution would do the trick - Hence the need to look at a combination of available solutions and combining these into an integrated system. Once embarked on this track the process has gathered momentum and a culture of continuous improvement seems to have evolved.

Chris Ling

It seems that most innovation occurs when landfills close - or other waste management options are lost - are landfills that have years of capacity left simply too cheap meaning municipalities simply don't see the need to prioritize waste issues?

Alfred Von Mirbach

The best example of effective "leading edge" waste management that I am aware of is Quinte's Blue Box 2000 program. It is a sad reflection on the state of waste diversion innovation that BB2000 is now well over 10 years old (despite its name). However, already back in 1995, they had achieved residential diversion rates in excess of 70%, which is as good or better than anything out there today. The key to BB2000 is very straightforward: an extensive, effective and on-going promotion and education campaign; simple, low-tech approach (e.g. blue boxes and free backyard composters); and once the first two were in place, a user pay system which gave people the stick to get them to eat the carrot.

It's successful because it leaves things in the hands of the residents, and treats them like people that can actually manage tasks like composting and recycling, not as incompetents who need everything done for them. The promotion and education was the key to building that trust and getting that "free" labour. Relying on technology via one or two stream systems just goes back to the old "out of sight - out of mind" that got us into this mess. Involving the residents as actively as possible in the solution also gives you a much better shot at tackling the real problem - rampant consumerism, with the real solution - waste minimization. Right, Dwight?

Ann Dale

Do you know if their program is breaking even or even making money?

Alfred Von Mirbach

Ann: Compared to what? It certainly proved to be much more cost effective than the alternative, landfill. It also had all kinds of community benefits, from job creation to new businesses to community pride at collection materials other municipalities were not collecting. That of course excludes the revenue from user pay, which is just taking money from a different pocket.

Ann Dale

Alfred, good point, to be sustainable in the long term, a program has to self-sustaining, that is, not dependent upon government subsidization. Your point is excellent, however, if current prices, especially of landfill fees do not reflect the true costs of that function, then that is a subsidy, something Jim MacNeill has referred to as ecologically damaging and economically perverse, and as Jerry has pointed out, their integrated program was initiated after difficulties of locating another landfill.

Dare I raise this difficult question? Jo-Anne, not to put you on the spot, but is it sustainable for Toronto to truck its garbage outside of the city?

Chris Ling

I would like to reiterate the examples from the case study.

The City of Whitehorse demonstrates that composting is possible in the most inhospitable of climates, in fairly small isolated communities. I would suggest this demonstrates there are few technical problems that need to be solved. The lesson from here however is that it hasn't proved cost effective to instigate municipal recycling as there is no access to the processing infrastructure without significant transportation to BC - consequently it has been left to private enterprise on voluntary basis.

The Province of Nova Scotia has a comprehensive waste program for wastes across the province, the aim being to minimize waste as much as possible. The main point to take from here is the frustration of the waste managers in province that there can't be more waste minimization through restriction on packaging as manufacturers are rarely prepared to take responsibility for the waste their products.

Ann Dale

Chris, I am a little confused, composting can stay on site, do you mean that Whitehorse cannot expand their program to include other recoverables because they don't have access to the resources to develop an infrastructure, but isn't that simply a question of scale. It certainly would not be sustainable if transportation costs are incurred.

Chris Ling

I meant that the municipality found that composting was the only waste management process that they could justify on cost and sustainability grounds. Other potentially recyclable waste items (eg glass and plastics) would have to be trucked to BC as there are no facilities nearby - nor I suspect are there likely ever to be so.

So the municipality instigated composting at a facility at the landfill, and left bottle recycling up to private enterprises and those residents who wished to use them - the private enterprises truck the bottles they collect to BC for processing.

Alfred Von Mirbach

Chris - not to dispute the realities of markets on viability, but I remember even 10 years ago seeing fairly successful depot recycling in Newfoundland, who also had no markets. I never did follow up on how they did it, but helped me keep an open mind about what actually can and can't work

Dwight G. Mercer

The City of Regina has placed major emphasis on backyard composting and grass-cycling for two reasons. It is cheaper and more cost-effective to have the residential generator process it within their property line --- and --- it forces the resident to become connected to their solid waste.

If you haul your own water you become a "steward of that resource" and will waste less.

We also have an internal municipal composting pilot project of sewage sludge. In this case we are looking at the economics.

Finally, for the Regina scenario --- almost anything is more expensive than land-filling.

Jerry Leonard

I agree with Dwight that, at least on the Prairies, the single biggest barrier to NOT land-filling is the cheapness of tipping fees- which stems from the availability of space for landfills.

Dwight G. Mercer

Yes, tipping fees and the lack of controlled landfills is a big issue.

Over the past 8 years the City of Regina has been increasing the tipping fees ($20 per tonne to $33 per tonne) with an interesting and expected result.

Smart businesses have started to conduct waste audits and are diverting their paper and cardboard. The slow adapters are placed in a modest disadvantage in terms of operating costs. All of the major shopping malls now divert cardboard from the dumpster to the cardboard recycling bin.

Ann Dale

Is there a role for governments to play then, in trying to stimulate this innovation, I think we are creatures of habit, we don't change unless we have to? But how does one sell this, especially to municipal politicians who are on the front line in the communities? Dwight, Alfred, Jo-Anne and Jerry, ideas?

Alfred Von Mirbach

From an Ontario perspective, I think the provincial government effectively did manufacture a landfill crisis in 1990, causing everyone to do massive wasteful waste management plans, which got the public up in arms with NIMBY which was then harnessed to diversion. I'm not sure it is easy to do again (or even ethical), though there may at some point be a carbon tax (we can but dream) that might have a direct impact on landfill tip fees (embodied energy, methane

emissions etc), and rampant consumerism generally.

Jerry Leonard

At least part of the answer is public education and raising awareness of more sustainable ways of managing waste. Edmonton's experience is that an educated public is willing to pay more for 'greener' solutions.

Darren Gardham

I feel that we have to make the general public aware of what we are doing as well as governments. But we all have to take responsibility.

Chris Ling

I'm not sure you can - unless you think it is reasonable to demand municipalities close all landfills by a certain date. If a landfill is open, why not use it?

More important I think is working out ways to reduce waste earlier in the system.

Marilyn Hamilton

Here is a comment from the e-audience that goes further upstream:

Thara asks: Looking at the three R's of the 80's, I feel that emphasis hierarchically is Recycle,, then reuse (composting) and then reduce. Focusing on recycling is creating an industry for consumption. When I think of waste minimization, I concurrently think consumption reduction...where does that concept fit in goals and policies for waste minimization?
Daniel's experience with Hornby Island's absolute garbage bags and the recycling depot encourages thinking twice about consumption. How can we bring this to light in major urban centres??

Jo-Anne St. Godard

Sorry for the silence, connection issues. Just reading back a few exchanges.
I think that far too often we are measuring our successes as it relates to waste

management from that which we divert vs. measuring the overall environmental impact from cradle to cradle of that which is produced. If all front end social, economical and short and long term environmental implications where accounted for we would make very different policy and program decisions.
Our focus at the moment is on integrating stewardship as it relates to waste into the commercial connections of a product or package. This calls for design change up front where the producer has the most influence. Why are we constantly focusing on the backend results and having debates on how best to manage waste rather than preventing it. This is where I believe most municipalities get caught.

Dwight G. Mercer

Here is what is in my email signature

Reduce > Reduce > then Recycle

Recycling is the last option of highest cost. However, it soothes the guilty conscience of the western society consumer.

Darren Gardham

If the cost of dumping garbage in the landfill was more expensive, would more people look for solutions?

Chris Ling

Probably - but would it be the right people? This would lead to interest from municipalities, and consumers - but surely solutions need to come from producers and manufactures to create products which preclude little waste and what waste is produced can be reclaimed by the manufacture where possible.

Alfred Von Mirbach

Great point. I spend a huge amount of time countering the big companies who waltz into small/medium sized municipalities (25,000 to 100,000) I deal with, touting their latest black box solutions (remember esdex, bedminster, thermotec ...) that appeal to narrow minded politicians who see a big building and the "out of

sight" solution that runs counter to reduction. In a crisis, municipalities are likely to grasp the first shiny toy offered to them, and pay the price down the road.

Jerry Leonard

Waste minimization certainly sits at the top of the hierarchy and we lag Europe in making the waste producers (manufacturers and packagers) more responsible in this regard.

Dwight G. Mercer

Cradle to Grave --- not when it will impact senior government revenues ...

There are few nation-wide PRODUCT STEWARDSHIP programs and/or EXTENDED PRODUCER RESPONSIBILITY programs in either Canada or the United States. Why is this? Why must the municipal level of government cover much of the cost?

It is my opinion this is the result of a systemic disinterest by the Government of Canada and really all of the Provincial governments.

There is lots of token discussion about solid waste management and waste minimization, however, little is either efficient or effective. Much talk at election time about “moving forward” with some new “green agenda” but little effective post-election programming. The programs that have been promoted are high profile but also only deal with a fraction of the percentage of solid waste and packaging being delivered.

It is important to understand the majority of funding for the respective Treasury Boards comes from consumptive taxation on new goods and services. Many of these items are over-packaged to facilitate marketing.

The consumptive taxation generates billions of dollars in personal and corporate income tax. In addition, the GST and provincial sales taxes also add to revenues for new items.

However, when the product becomes a discard and has little or no value --- then the municipal government is legislated to handle the solid waste collection, most waste minimization programs with internment in the municipal landfill. In Saskatchewan there is zero financial support from the Province to municipalities for either solid waste management or waste minimization programs.

Excessive consumption in over-packaged containers is good for senior government revenues. Let the consumer --- who also lives in a municipality ---

pay twice.

Ann Dale

Some very interesting points, everyone, and the question that Jo-Anne raised of front-end design is key, if we didn't see the planet as a source for our waste, then we would integrate recycling into every product? I believe German manufacturers now have cars that are 95% recoverable, but I go back to my earlier comment, surely it isn't economical to waste, something our parents taught we baby boomers, there are so many innovations we are capable of, if we can put a man on the moon. Washing machines without soap, using lasers, and so on. Seems to me we need incentives to produce less waste, both economically and ecologically, so folks, what are the barriers to this? Dwight has brought up the issue of systemic disinterest, okay, what do we need to have in place--all glass has a bottle deposit fee?

Dwight G. Mercer

This is very important ... before you start to collect and recycle anything ... you must have a down-stream, stable market for the commodity. Otherwise you have very expensive solid waste.

The deposit fee will bring the material back to you. However, there is then the high expectation that it will be recycled ... no matter the cost.

Find the market first. Real simple. Change Highway department specifications for use of crushed glass in asphalt. Instant demand. Most problems solved. Or require all new glass to have a minimum percentage of recycled glass.

Darren Gardham

If we are having problems recycling things like glass, perhaps we should use alternative means that is more recycle friendly. Such as plastic. Why don't we eliminate the glass?

Dwight G. Mercer

I can recycle glass for about $20 tonne. Plastic will cost me from $750 to $1500 tonne.

Jerry Leonard

I'm not an economist, but it seems to me that, ultimately, you have to make it too expensive to do the 'wrong' thing. However, the accounting system you use has to give full weight to environmental and social, as well as straight $$ costs.

Darren Gardham

Jerry, I agree with you. We make it too easy for people to do the wrong thing. We need to find a way to make it less expensive for people to do the right thing.

Chris Ling

I don't think it is just about $ cost - it is also about simplicity and convenience. It is sometime too hard to do the right thing. People can make quite sophisticated economic decision factoring time and effort into their personal cost assessment. For some the ethical issues outweigh the extra effort - but I suspect for most they don't.

Alfred Von Mirbach

The solutions are not that difficult (e.g. all products in standardized refillable containers) but taking on the billion dollar lobby and advertising industry to get there does fit in the category of difficult. We just don't have the clout, and won't until things get way worse, in my depressing opinion.

Chris Ling

But many people in Canada still have very inefficient top loader washing machines when there have been very efficient and much more economical front

loaders for ages - why haven't people changed - what does this mean for more innovations in washing machine design?

Individuals are only going to change their habits if it is easy to do so, so most people will recycle it there is a regular collection - but will they stop being good consumers. The product, and especially the packaging, design issue, I think is crucial.

Ann Dale

Chris, it is all about prices, to speak personally, I just changed my washer and dryer to machines that use 60% less water and energy, but they cost 4 times as much as 'normal, read more energy intensive' appliances. Ironically, when my family was young, I could not afford this extra cost. But what about if governments taxed the bads and not the goods, what if there was a tax rebate that reduced the pay back period?

Jo-Anne St. Godard

I believe the point of influence is on who make it and who buys it. Producers base their decisions on consumer behaviour and compliance with the law. Thus two tools are essentially available to us. Change producer decisions through regulations or change consumer behaviour through education.
While we wait for consumers to make the leap to purchasing based on environmental performance how about making producers responsible (physically and or financially) for the materials they put into the marketplace. This will create the price point that will make them integrate the price of end of life management into their general course of business and therefore re-look at how and what they make. Internalizing waste management costs into the product design and production a powerful tool for forcing design changes.
The innovators will then use their efforts to market their products which in turn supports consumer education and decision making. Design for recycling will stipulate all of the incentives to collect and process at the back end. Items will be built with enough value that the secondary markets will react accordingly.

Ann Dale

Dwight, you gave us some good solid policy advice, evaluate and change all government regulations that work against waste management, what about the biases for virgin materials and definitions of what constitutes waste, Jerry? Alfred, there must be a way to change demand, or am I dreaming in

technicolour?

Jerry Leonard

That is a good question - what is "waste"? maybe we would get further if we talked more about resource management and recovery than waste management. Maybe "resources" are inherently more valuable and more worth chasing than "wastes"

Alfred Von Mirbach

Ann: Very valid point - the waste minimization lobby is only one voice. There are many many examples where Health Canada regulations have nixed some great innovations (e.g. refillable PET because of a perceived or CYA need to ensure virgin materials next to the material, in spite of the European experience. There are many other examples where the environmental voice loses out, and not just to corporations, but to other departments trying to protect other interests. We unfortunately still have silo mentalities at most levels of government that have as working at cross-purposes. Again, I vainly hold out a glimmer of hope that climate change at some point may cause environmental impact to be truly factored in similar to cost in decision making at some point in the future. Things like the federal well being act are trying to speed that along.

Dwight G. Mercer

Hmmm.

Interesting counter-point to how to change the senior governments.

First reaction is to get them to share (1) the revenues and (2) share the pain of waste minimization and replacing landfill. Of course, when you get the revenues and also get to regulate and delegate the management of the resulting solid waste - why would you want to change anything.

In a light-hearted comment last year, I asked Saskatchewan Environment to "nationalize" all the landfills in Saskatchewan. That snapped back some heads.

If say Environment Canada / Public Works Canada owned all the landfills in Canada ... might we see a major Paradigm shift.

Each tonne of material would have to be factored into the depreciation of the said landfill and in the eventual replacement of the landfill. Therefore, I could be very extensive regulation, massive public education programs and effective programming. Of course, let's hope Gomery doesn't need to become involved. :)

Ann Dale

Are we unanimously agreed on a Canada-wide product stewardship or extended producer responsibility programs? What about when a product is composed of many components made in many different countries and then assembled in the country at point of sale? Or should we just let the companies figure that one out? Again, raised the question of design, love that language, Jerry, waste sure isn't sexy right now, but unless we make doing good by doing right for the environment, we are fouling our own nest. Language is critically important for changing behaviour.

Chris Ling

A good example of where exactly that type of product is subject to producer responsibility is Dell computers which will accept all redundant equipment from their (or anyone else's) products

http://www.dell.com/content/topics/segtopic.aspx/dell_recycling?c=us&cs=19&l=en&s=dhs

These are manufactured and used globally. If they can do it....

Ann Dale

I hate to raise a negative, and this is a little known fact. When I worked at the National Round Table on the Environment and the Economy, we stimulated a meeting between like minds that resulted in the development of a national waste management strategy, but it never saw the light of day. Why? Federal/provincial gridlock, so perhaps there is a key role for CCME to develop a consensus on such a strategy, if it still doesn't exist, don't forget that the provinces have more power in this area than the Feds. Are there other solutions, get the prices right, especially of landfill costs, product stewardship regulations, tax shifting for resource recovery and management, life cycle analysis?

Darren Gardham

Ann, can we not put more pressure on the Provincial Governments?

Ann Dale

Darren, I think that is where the pressure has to be put, given the federal/provincial arrangements. Key point, would you mind posting the case study on microfibre cleaning at Royal Roads University. I truly believe by communicating best practises, connecting practitioners such as this panel, that the real solutions will emerge?

Darren Gardham

I certainly would like to do that Ann, if I had an idea how to do that, but perhaps in the mean time I can pass on the information that this panel may want to know.

Ann Dale

Why don't you describe the program then?

Darren Gardham

Well as you know Ann, Royal Roads University has been using a chemical free cleaning system here, and have done so since April 2000. This has allowed the university to cut back considerably on chemical use, and what chemicals we are using, are rated as environmentally sound. Just this method alone, reduces the impact on the environment.

Ann Dale

I attach the case study in case anyone is interested, and we especially need hospitals to adopt this cleaning system, many small steps make for meaningful change. As well, Royal Roads staff are prepared to act as mentors to other

organizations in implementing a microfibre cleaning system. An example of waste avoidance.

Custodial.doc (21 KB)

Dwight G. Mercer

There is an old Arab proverb ... "Show them Death and they will accept the Fever".

If you want Industry to clamour for nation-wide product stewardship programs --- encourage consumers to return their discards and packaging to point of purchase. This is a very scary scenario for business. Where should I leave my insecticide

At first glance this might appear to be a frivolous comment ... but think about it. Such a posture would remove a lot of the inertia we are facing at the municipal level.

Chris Ling

That's a great way to deal with junk mail - tear it up put it back in the envelope and return to sender.

Dwight G. Mercer

Yes, packaging with up to seven types of plastic polymers which generally need to be sorted by hand.

Chris Ling

To go back to the Nova Scotian experience - they were of the opinion that they had done as much as they could to manage waste - the next step, the product design process could, in their opinion, only come from the Federal level.

Ann Dale

Are there concrete steps they articulated for the Federal Government?

Chris Ling

I'm unsure of how this was articulated, other than it was. The suggestion was that it was considered to difficult to draft suitable legislation - but I don't know if this was a provincial perspective or a federal perspective. It was however pointed out that there are some types of waste were producer responsibility does exist and has been legislated for, such as batteries, pharmaceuticals and tire - presumably these could be used as a model?

Alfred Von Mirbach

Some of you may not know, but starting in 2008, all Canadian municipalities will have to convert to capital cost accounting (or some term something like that), which will mean all assets will be officially on their books by 2009, and landfill capacity will have a value and show up as an asset. It is a HUGE change! It will also make the entire municipal infrastructure deficit very explicit, and give municipalities some clout to go back to the Fed/Prov with hard numbers that relate to their downloading. This might help make an economic case for minimization and diversion for some municipalities - maybe even cause one of those paradigm shifts we keep hoping for.

Jerry Leonard

I think the Feds and/or the CCME could serve a useful role in promoting harmonization between the various jurisdictions across the country. For instance there seems to be quite a wide disparity in systems for recycling of tires, beverage containers and e-waste.

Dwight G. Mercer

The change in the landfill accounting will be good. However, again it is my understanding all of the costs of implementation and operation will be borne by

over-taxed municipal officials.

Are you aware of any ongoing financial support to the municipalities for this system change?

Alfred Von Mirbach

Dwight: I'm still not sure I'm using this technology right, but will try this way.

No, it is too early to expect financial support programs until the level of the problem has been quantified officially. It is just that almost all municipalities will show major deficits, and will not be able to balance their books. The thinking is that it will no longer be just municipalities whining about deficits, but rather effectively having to declare bankruptcy, and that the feds and provinces will HAVE to respond. It’s still too early to say how the whole thing will role out though.

Ann Dale

I would now like to take some audience questions, Marilyn, if there are any?

Marilyn Hamilton

Here is a question from Daniel:
What is the state of the art for incineration and electricity by-product from the process? Is it smokes and mirrors or is there some real industrial ecology synergies possible there?

Jerry Leonard

The City of Edmonton recently announced that they are hoping to build a gasification plant to handle the residuals from their composter and MRF. I believe Ottawa are also building a gasifier. With gasification, electricity generation might not be the best use of the syngas produced - a better use might be as a chemical feedstock.

Dwight G. Mercer

Energy from Waste or Gold from Straw?

We have done some rough calculations of this option (usually as the result of a salesperson going to the Mayor).

Total solid waste management costs for Regina are $87.35 per tonne. Excluding the capital costs of the incineration plant and also ignoring emissions, we roughly estimate it would cost us at least $450/tonne.

Totally not economic for the City of Regina.

Chris Ling

I know nothing about state of the art - but I know the air quality considerations and emissions limits make it difficult to operate a waste incinerator cost effectively.

Dwight G. Mercer

The City of Regina is installing some methane collection systems at our Regina Landfill which will be coupled with solar energy to perhaps generate hydrogen.

This project is out of my scope of knowledge at present. If there is an interest, I could research the specific details of this pilot project

Ann Dale

Dwight, we would definitely be interested? Brings up the principle of closed loop systems, what is waste for one activity, becomes energy for another, which leaves Toronto out of the loop, if one imports one's garbage, gets back to the straw out of gold discussion.

I cannot comment technically, but would like to talk about the social imperative, we should be very careful as a society and question whether or not new industrial practises and be able to evaluate are sustainable. For example, computers were supposed to reduce paper, whereas paper use has actually doubled, if not more

now. Why, because people still believe they have to print a document to review it, for one, and boy, the old carbon copy typewriter system sure made one think before changing anything. As well, the originators of the blue box program never thought we would create a recycling industry, rather it was designed to get people to question their consumption, argues to me, for a lot of front-end innovation.

Marilyn Hamilton

The e-audience has had some side conversation about the importance of subjective and inter-subjective perspectives. We seem to agree that it is vital to effective messaging and motivation >> action. What are the e-panel's experience with effective messaging?

Here is an observation from Daniel to explain.

In my personal experience, my own waste management practices have been tied to how I feel about the world. In times of great stress or pressure at work or in my personal life, I don't really care how much I consumes or where the garbage ends up. However, in those periods of "personal sustainability", when I feel grounded and at peace with the world, I tend to consume less and be more mindful of where my by-products end up

Chris Ling

Is perhaps wastefulness therefore symptomatic of a society under stress - shopping till they drop and engaging in extensive retail therapy?

Marilyn Hamilton

One last question from the e-audience:

Dwight Owens aks: I'm also curious about compostable packaging. Are we now at a place where safe, clean, materials exist ... or is it more in the R&D realm? I'd certainly think twice about putting "biodegradable" plastic bags in my vegetable garden compost. (Similar to my second thoughts about capturing rain water from my asphalt or fiberglass roof to water a garden box.)

Alfred Von Mirbach

I wrote a wonderful long response, and then lost it somehow. Oh well, here goes again.

I'm a big GIGO (garbage in garbage out) believer, and have spent too many days in the last 10 years countering the efforts of the latest incinerator technologies being hawked to local small/medium municipalities (hello esdex, thermotech, bedminster...). Councillors love them, because they involve road trips, promise sod turning photo ops, and mean residents can continue consuming as much as they want and put it all at the curb for technology to solve.

All those nasties (PVC, HHW etc) are going in and have to come out somewhere - bottom ash, fly ash or emissions. Mixing and adding heat is not normally a good idea (hello dioxins), unless the new fancy names (gasification and plasma - very cool names, sound like TVs) are in fact alchemy and change molecular structure into inert products.

Then there is the fact that EFW plants are hungry, and require municipalities to commit to ongoing tonnage, just when we are all talking about reduction and minimization. You want to be stuck with penalties when the recession comes?

Darren Gardham

You may be interested to know that Bio bags are available and made of corn starch that is designed to degrade in a short period of time.

Chris Ling

Whitehorse were using biodegradable plastic bags to collect compostable material - but ironically found they deteriorated too quickly and made collecting the waste a rather messy operation - this is likely to mean they are still in R&D when it come to practical packaging for product (which in most cases doesn't need packaging in the first place.)

Jerry Leonard

This question (from Dwight Owens) is little more complex that it might seem. There are several different types of "biodegradable" plastics out there and their performance in composting systems is quite variable. You might try contacting

the Composting Council of Canada (http://www.compost.org/) for more info.

Dwight G. Mercer

The City of Regina operated an in-vessel composter during the 2005 Canada Summer Games. All of the food from the Athletes Village was served on compostable food containers made of virgin sugar cane.

We were able to achieve a substantially reduced "footprint" from this operation. Two 4th year environmental engineering students from the University of Regina conducted this project and wrote a report.

The material is cheaper than styrofoam.

Darren Gardham

Chris, we encounter the same problems with the bags, but knowing what we know, we get them out everyday so that this doesn't cause us too much of a problem.

Alfred Von Mirbach

Dwight Owens asks: I'm also curious about compostable packaging. Are we now at a place where safe, clean, materials exist ... or is it more in the R&D realm? I'd certainly think twice about putting "biodegradable" plastic bags in my vegetable garden compost.

In Europe there are three categories, degradable, biodegradable and compostable, with the last degrading the fastest and not including plastic. If they actually meet proper compostable standards, they should be fine in your backyard composter, although obviously only in reasonable quantities.

And yes, as in the Whitehorse comments, there are shelf life and operational issues, and they certainly cost more and weigh more. MEC now uses what I believe are compostable ones - I just put it in my composter, so check back with me!

Ann Dale

I am going to ask for concluding comments from everyone, I cannot thank you enough for a rich and informative discussion, and encourage people to continue to dialogue, perhaps what we need are different kinds of networks between practitioners, researchers and decision-makers for change. If we get our waste right, a lot of other dominoes will fall. As one of you said, "we have to make it less expensive to do the right thing." We will be publishing our final report on-line and in addition will mail a copy to each of you, as well, your rich discussion will be archived for younger scholars to access for future research and other members of the public.

Dwight G. Mercer

If you are going to effectively manage a program or deliver a service --- you must MEASURE IT and YOU MUST KNOW WHO YOUR CUSTOMER AT THE PRESENT TIME.

In providing a service and especially when changing public perceptions and then public behaviours --- you need long-term and stable funding for public information (basic program outline) and then public education (to change behaviours to waste minimization and then to do it well).

Jerry Leonard

Thank you for the opportunity to participate and may I invite everyone to our conference in May 2008 (11th-15th) – “Waste – the Social Context 2008”. Watch our website (www.ewmce.com) for details or send me an e-mail (jerry.leonard@edmonton.ca) to get on the conference mailing list. With this much advanced warning you all have time to come up with a paper (or two) to present!!

Darren Gardham

Ann, I would just like to say how great this was, and I hope we can continue to have these kinds of discussions in the future. If anyone is interested in our Chemical Free cleaning system or our Composting of paper towel initiatives, I would be more than willing to share what we do and know. Thank you to all!

Alfred Von Mirbach

Great thought and good clean fun!

Keep it simple, creatively promote and educate (with humour), don't under-estimate the public, and just do it! Action can lead to awareness, not just other way around (check out www.ecoperth.on.ca for an example of that from the climate change end of things).

Chris Ling

I would like to conclude very much with a comment that comes from thoughts popping about my head during this discussion. It seems that responsibility for waste is largely divided between good producers and good consumers, yet the unit that bares the brunt of the costs of waste management is the municipality - which is largely not responsible for the waste generation and has the least power to change the amount of waste generated, they are able to tinker round the edges diverting here, generating energy there but ultimately can have a limited maximum effect.

Dwight G. Mercer

Here is a plug for a great little book produced by one of my Master Composters (she just received her PhD).

Eco-Living: Your Guide to Sustainable Living
www.reginaecoliving.ca

It provides 101 small, first steps for any household to move towards a more sustainable lifestyle. First edition is almost sold out.

Ann Dale

Thank you and good night, everyone.