Mémoire

On

Plan Directeur de Gestion des Matières Résiduelles de l'agglomération de Montréal 2008-2012

Presented by

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For the

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Executive Summary

This brief examines two of the six options put forth by CIRAIG as regards the treatment of garbage that remains after recycling and composting; namely, tri-composting followed by landfill and tri-composting followed by incineration. The low scores for the former with regards to the criteria of the handling of rejects and health, quality of life can be attributed to the fact that the stabilization achieved through tri-composting is not applied to all of the waste sent to the landfill. The low score on utilization of resources can be attributed to the fact that the large amounts of energy contained in construction, renovation and demolition waste are not recovered.

The tri-composting followed by incineration option is much more expensive than it need to be because some of the food-stock, such as food waste contains very little energy. This option also overestimates the amount of energy produced by incineration because, when potentially recyclable materials are burnt, considered from the standpoint of the life cycle of this material, there is a net loss of energy.

The brief makes a number of recommendations to increase the recycling rate, suggests that communications to the public be more direct and graphic with regards to both the problematic of garbage and the benefits of recycling, and highlights the need for personal contact in the quest to change attitudes with respect to the handling of garbage. This brief applauds the Agglomerations action plan to work with citizens and local authorities in implementing its waste management plan. Local initiatives with respect to composting are occurring and it is suggested that not only would such action bring about the further involvement of local groups, but reduce transportation and pollution costs as well.

It is recommended that producers of toxic materials be responsible for their products throughout their life cycle and contribute to the cost of disposal, as recommended by the Commission sur la gestion des matières résiduelles au Québec. Not only would this contribute to the high cost of disposal of toxic waste, but the higher costs for these products would allow consumers to make more informed choices about these products, and ultimately lead to research and development of new, less toxic products. Lastly the brief supports the notion of allowing local authorities to pass laws forbidding the disposal of hazardous waste in residential garbage.

The Plan Directeur cites its plan for re-employment as a means to change attitudes with respect to the treatment of waste. This, we believe, must be the ultimate goal of the Plan Directeur and it will have succeeded when the 3R's becomes the popular mindset.

Monsieur le président, membres de la commission, bonsoir. My name is Al Hayek and I am the Green Coalition-Coalition Verte spokesperson for waste issues. The Green Coalition-Coalition Verte is a non profit organization incorporated in 1990. It objectives are to promote the conservation, protection and restoration of the environment and to promote the wise use of green and blue spaces. We have been active participants in the discussions on solid waste since the early 90's. We welcome this opportunity to provide input to the Plan Directeur.

I will start with a discussion of the treatment of "les résidus ultimes" because it is through an understanding of the treatment proposed for this portion of the waste stream, that our recommendations for waste treatment will become clear. We begin with an adaptation of Table 10-2, "Comparaison des options de traitement des résidus ultimes par critères" (CIRAIG p. 74) and at this point I will refer to our power point presentation. According to the legal framework, the Agglomeration is responsible for the valorization and elimination of waste and these responsibilities are included in the Plan Directeur. We understand that the options for the treatment of residual waste are still under discussion.

Before beginning it is necessary to make a distinction between composting and tri-composting. The former is a composting process applied to food and yard waste in order to obtain quality compost that is suitable for horticulture. The latter is a composting process applied to garbage in order to render the organic materials inert and to reduce their volume.

Here are two of the proposed six treatments for residual waste (Slide 2). The first (L-TC) is the process of tri-composting garbage followed by landfilling. The second

treatment process also involves tri-composting, and it is followed by “incinération à lit fluidisé”. Scores have been developed for each of these two treatments based on the three pillars of environmental sustainability: the environmental pillar (denoted by the E), the social pillar (denoted by an S), and the economic pillar (dollars/ton and denoted by a T). With each of the three pillars there are a number of criteria on which the treatments have been judged. For example, under the criteria “utilization of resources”, the tri-composting and landfill option scores a 29% while tri-composting with incineration scores a 73%. The higher the score is, the more favorable the treatment option. Incineration scores high on this criterion because incineration captures the energy contained in the garbage and converts it to steam or electricity whereas landfill scores low because much less of the energy produced by the biogas in the landfill is extracted.

You can see that landfilling is much less desirable an option than incineration on the three criteria of utilization of resources, treatment of rejects and health, quality of life. Why is this so? Before answering this question, we need to look at the process of tri-composting.

Tri-composting (Slide 3) is proposed to be applied to the 148 200 t of garbage emanating from dwellings in buildings of nine units or more. The products of tri-composting are non-ferrous metals, ferrous metals, compost B (used as rubble in road beds) and rejects consisting of bits of metal, plastic and glass. What is immediately obvious is that the tonnage has been reduced and that with the organics stabilized, the garbage has been rendered relatively harmless.

So why does landfilling score so low on utilization of resources, treatment of rejects and health, quality of life issues? The answer to this question can be seen by

looking at the materials that it is proposed to send to the landfill (Slide 4). The rejects from tri-composting are not the problem, for as we have already said, this material has been stabilized and is inert. Landfilling has a low score on the utilization of resources because the material which contains most of the energy, the dry waste from Construction, Renovation and Demolition (CRD) is simply landfilled without first extracting its energy. Landfilling has a low score on the criteria of treatment of rejects and health, quality of life because organic material (household garbage from dwellings in buildings with eight units or less, residuals from the composting and recycling centres) which is not composted and which causes problems is going directly into the landfill without prior stabilization.

We propose that an additional treatment option be considered: one which would tri-compost all garbage containing organic material prior to landfilling and one which would remove and extract energy from garbage with high energy content, such as that contained in the CRD waste. This would increase the scores on utilization of resources, treatment of rejects, and health, quality of life considerably.

With regards to tri-composting all organic material prior to landfilling, it is helpful the recall what the Commission sur la gestion des matières résiduelles au Québec said in 1997: « En matière d'élimination par mise en décharge, la Commission a pose comme principe de privilégier l'approche préventive qui implique que les matières résiduelles les plus dommageables, soit les matière putrescibles et les résidus domestiques dangereux, doivent être retirées des matières à enfouir dans des sites d'enfouissement technique. » (Déchets d'hier, p 342)

Before we look at the treatment option for incineration, we need to look at the

mechanical/biological treatment of waste (TMB Slide 5) proposed for garbage prior to incineration. This treatment would be applied to the garbage emanating from dwellings in buildings of eight units or less and to refuse from the **regular** composting (as opposed to the tri-composting) centre. Through TMB 286 800 t plus 19 000 t would be reduced to 173 430 t and ready for the incinerator.

Now let us examine the waste stream for the incinerator (Slide 6). It consists of the output of the mechanical/biological treatment (TMB) of waste, plus food waste that was not composted, recyclable material that was not put into a recycling bin for recycling, along with other garbage. The first thing to note is that there is very little energy released by food waste through burning. By itself, burning food waste would not likely be viable economically because of the very small amounts of energy produced. The cardboard and wood from CRD contains four to five times more energy than the food waste. It is the CRD waste that makes the incineration option economically viable.

The second thing to note is that burning potentially recyclable materials actually results in a net loss of energy when the cycle of life of the recyclable material is considered. Let me explain. Here I have a piece of bond paper and a piece of raw timber. It took considerable energy to go from this (the raw timber) to this (the bond paper). When this is burnt (the bond paper), all this energy is lost. It is necessary to start again from this (the raw timber) to get this (the bond paper).

The approach of CIRAIG has been the “cycle de vie” referring to the costs associated with infrastructure, costs of transport etc. There is another “cycle de vie” to consider, however, and that is the life cycle of the product itself, such as paper.

We recommend that a second additional option be explored with respect to incineration and tri-compostage. In this option the waste emanating from dwellings in buildings of 8 units or less (286 800 t) and the rejects from the composting centre (19 000 t) would be tri-composted to render them inert and then landfilled. In addition, objectives would be set beyond 60% to recover recyclable materials that would otherwise be incinerated. As for the dry waste emanating from construction, renovation and demolition (CRD), the clean portion may perhaps be able to be sold as fuel for certain industrial processes.

Now, I would like to turn my attention over to question of how the recycling rate can be increased and I will do so by commenting on some of the action items contained in the Plan Directeur.

A little bit of history is in order. Back in the early nineties, when major public consultations were taking place on solid waste, there was much skepticism on what could be achieved through recycling. There were those who argued that 80% or more of the waste stream was recyclable (or compostable). At that time, the Quebec Government set as a goal a 50% reduction in waste by the year 2000. A prominent politician of the time called this “pie in the sky”. With time, however, what seemed unthinkable, became main stream and the media now accepts 60% reduction in waste through recycling as standard and normal.

Action 1.1

Informer la population des principales sources de production de matières résiduelles et des répercussions environnementales, sociales et financiers des modes de traitement de ces matières (le contenu du sac vert); sensibiliser la population aux

effets des choix de consommation et lui proposer des comportements susceptibles de réduire sa consommation.

Yes, indeed, citizens must be informed clearly and directly that both landfilling and incineration have detrimental effects on our health, and that citizens living near these infrastructures must put up with the noise, the smells, the unsightliness and the dust associated with these activities. We believe that we must be much more graphic in our communication. We believe that we must also publicize the positive benefits of doing so and that such communication needs to be simple and straightforward: That by recycling paper we preserve our forests. That by recycling metal and glass, we use less energy and create less pollution in fashioning new products, thus making life better for all of us. That by composting food and yard waste we reduce the greenhouse gases that would otherwise emanate from landfill sites.

Action 1.2

Mobiliser la population pour faire augmenter la participation, tout en poursuivant les objectifs de propreté en l'informant de l'existence des divers moyens de réemploi et de recyclage en l'invitant a participer activement a la récupération des matières recyclables et valorisables en lui communiquant une information concrète susceptible de favoriser l'adhésion a des pratiques encore relativement nouvelles, tel le compostage, ou trop peu répandues, tel le réemploi en l'informant sur les nouvelles infrastructures de gestion des matières résiduelles que seront mises en place, et en l'incitant a les utiliser.

Yes, indeed. With respect to « **en lui communiquant une information concrète »** we believe that emphasis needs to be placed on what happens within the

dwelling with respect to the recuperation of recyclable materials as much as with the bac that is placed on the curb for pick up. Recycling becomes easy when small recycling bins are as readily available in our homes as garbage cans. We need small attractive recycling bins wherever recyclable materials are generated: in the den, in the family room, in the kitchen. We can learn from successful businesses which have provided each of their employee's desks with a recycling bin to make recycling easy. We believe that the provision of small attractive recycling bins would be an effective part of a strategy of the Plan Directeur to provide a concrete means to augment the recycling rate.

Again, yes, indeed, "**en l'informant de l'existence des divers moyens de réemploi et de recyclage »** We believe that an ad on a bus or in the newspaper or a sign on the roadside asking citizens to recycle is not enough. Human contact is so important in informing citizens of the means and the importance of recycling. There are many individuals with access to recycling who do not recycle. Why? The Eco-Cartiers do a laudable job of promoting recycling and composting, but they are not everywhere on the Island. We need more of them.

In informing citizens of the various means of recycling, it needs also to be pointed out that a full recycling bin reduces collection costs and that citizens should be encourage to either fill up their bin with recyclables, or put it out, only when it is full.

Action 1.4

Valoriser les comportements socialement responsables

« …En outre, l'agglomération entend reconnaître, par le biais d'un concours, les efforts des citoyens et des autorités locales. »

Yes, we agree. We need to work with the energies and the initiatives of citizens, local groups, and local city and borough officials.

Action 5.5

Exploiter les infrastructures de traitement des matières organiques (résidus verts et alimentaires)

At Concordia University, Loyola Campus, there is a cylinder the size of a small truck sitting in the parking lot. It is an organic waste composter. At least two Cities, the Cities of Westmount and Cote-St.-Luc have initiated programs for the collection and valorisation of organic waste. The Montreal Mirror (060508) recently published an article (June 6, 2008) of Stephen McLeod, a young entrepreneur who started a business in St. Henri collecting and composting food. Such local initiatives are to be encouraged and funded. Local authorities must be consulted and local needs and interests considered in setting up composting sites. Not only do such initiatives sensitize neighbourhoods to waste management, but they reduce transportation costs by composting locally.

Action 7.1

Afin d'améliorer le rendement des collectes itinérantes par rapport a leur cout, il est prévu de les optimiser en réorganisant les territoires couverts, en proposant un nombre de jours adéquats et en étudiant les possibilités de partenariats ou de commandites.

While it is the duty of the citizen to dispose of hazardous products responsibly, the Commission sur la gestion des matières résiduelles au Québec also recognized the responsibility of the producer to these products: « Pour les producteurs, cette responsabilisation doit se manifester durant toute la durée de vie des produites dangereux

qu'ils fabriquent ou utilisent, depuis le choix du mode de fabrication jusqu'à l'élimination sécuritaire des résidus qu'ils génèrent. C'est une responsabilité totale qui doit se manifester sur le plan technologique, économique, informatif et légal. Ainsi, le producteur se porte garant de la qualité de son produit, des effets qu'il peut causer à la santé humaine et à l'environnement, **et il en assume les coûts de gestion à la fin du cycle de vie des produits**. » (Déchets d'hier, p 265)

We recommend that the Plan Directeur adopt these positions of the Commission so that the costs of disposable of hazardous products are borne by the producer of these products. No doubt these costs would be passed onto the consumer in higher prices for these hazardous products, but this is as it should be. The true costs of these products must be included in the purchase price so that the consumers have all of the information needed, including the economic costs of these products, in order to make informed decisions as to their purchase. To do otherwise is to distort the economics of these products.

There is an added advantage in adopting prices that reflect the cost of a product to society and the environment. True cost accounting would lead to research for more benign and less costly products.

I have two illustrative examples. The first, this "clumping cat litter" sold by Loblaw's as a President's Choice product. If you have a cat, you know that clumping cat litter in the form of clay must be put in the garbage and that a considerable amount is produced each week. This product is made from bio-degradable corncobs, can be either composted or flushed down the toilet. Cat litter makes up a significant portion of the waste stream.

The second example is a material called a “microfiber” (Business Week, May 30, 2008). Specially designed material in conjunction with water, removes dirt mechanically. No toxic chemicals are needed to provide cleaning power.

These are the kinds of innovations that will reduce costs of garbage disposal and at the same time improve the environment.

Action 7.4

Établir un cadre réglementaire qui permette aux autorités locales d’interdire de jeter des RDD dans les ordures ménagères.

This was the first recommendation with regards to household hazardous waste that was made by the Commission sur la gestion des matières résiduelles au Québec in 1997: l’enfouissement des RDD devrait être interdit, sans égard à leur origine et à leur seuil de production, à moins qu’ils n’aient reçu un traitement de neutralisation ou de stabilisation approprié; » (Déchets d’hier, p 267)

There are many positive elements in the Plan Directeur. We welcome the addition of composting of green and food waste to the handling of our garbage. We are disconcerted; however, that the full implementation of all of the measures contained in this document would not be realized before 2018 and then only if the Quebec Government provides adequate funding. We are disconcerted that the last of the eco-centres would only be opened in 2018. In the early nineties the objective was 50% reduction by the year 2000. In 1997 the objective was 60% reduction by the year 2008. Now the objectives have been set back yet again, to a 60% reduction by 2018. We deplore this lack of results on this most important dossier.

In conclusion, I think the theme of our presentation this evening is really the theme which the Plan Directeur itself states when it talks about its program of "Le Réemploi" (Plan Directeur, p. 43): "Au-delà de leur contribution, somme toute limitée à l'augmentation de la proportion des matières résiduelles réemployées, elles pourraient contribuer par effet d'entraînement à créer de nouvelles habitudes dans la population." It is not only through the process of re-employing that these new habits will develop, but through recycling to the maximum, through the proliferation of recycling bins, and through the process of composting. These habits will also develop by involving citizens, community groups, and local authorities in the process of setting up infrastructure on their territories to deal with the waste created. The success of the Plan Directeur will have been realized when the popular culture replaces, "throw it in the garbage" with a new mindset of reduce, re-employ, recycle and compost.

Bibliography

Développement et application d'un outil d'évaluation des scénarios de gestion des matières résiduelles, Centre interuniversitaire de recherche sur le cycle de vie des produits, procédés, et services (CIRAIG)

Déchets d'hier, ressources de demain, Rapport de la commission sur la gestion des matières résiduelles au Québec, Bureau d'audiences publiques sur l'environnement, 1997

Projet de plan directeur de gestion des Matières Résiduelles de l'agglomération de Montréal 2008-2012, Ville de Montréal.

Montreal Mirror, June 5, 2008,
http://www.montrealmirror.com/2008/060508/news1.html

Business Week, May 30, 2008,
http://www.businessweek.com/innovate/content/may2008/id20080530_961501.htm?chan=top+news_top+news+index_innovation+%2Bamp%3B+design