



## City of Richmond

## Report to Committee

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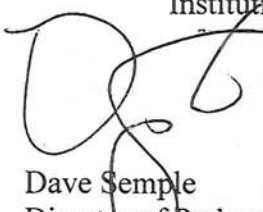
**To:** Public Works and Transportation Committee      **Date:** March 24, 2009  
**From:** Dave Semple      **File:** 10-6405-04-02/2009-Vol  
Director of Parks & Public Works Operations      01  
**Re:** Metro Vancouver's Zero Waste Challenge

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### Staff Recommendation


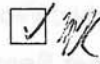

That the Metro Vancouver Board be advised of the City of Richmond's comments relative to the Zero Waste Challenge Goals, Strategies and Actions document as contained in their March 13, 2009 letter as follows:

1. The City of Richmond generally supports the overall intent of the Zero Waste Challenge to further waste reduction and enhance recycling.
2. The cost implications of the Zero Waste Challenge should be more clearly defined and considered prior to adoption of the strategies and actions.
3. A strategy and supporting actions to foster market development for recycled materials should be added to the Zero Waste Challenge. This should include a regional role in processing and marketing, a potential land acquisition strategy for required recycling facilities, and enhanced policy-based initiatives to promote local recycled content in consumer goods.
4. That Metro Vancouver evaluate whether economies of scale could be realized for a regionally-controlled recycling program for the Industrial, Commercial and Institutional sector.



Dave Semple  
Director of Parks and Public Works Operations  
(604-233-3350)

Att. 1

FOR ORIGINATING DEPARTMENT USE ONLY		
CONCURRENCE OF GENERAL MANAGER		
		
REVIEWED BY TAG	YES <input checked="" type="checkbox"/> 	NO <input type="checkbox"/>
REVIEWED BY CAO	YES <input checked="" type="checkbox"/> 	NO <input type="checkbox"/>

## Staff Report

### Origin

Correspondence has been received from Metro Vancouver advising of planned public consultation, commencing in April, regarding waste reduction, reuse and recycling initiatives to divert materials from disposal. The Zero Waste Challenge -- Goals, Strategies and Actions (Attachment 1) will be used as the basis for these public discussions. The goal of the consultation phase is to establish consensus on a diversion target. Metro Vancouver has also invited comments from local councils and staff as part of this process.

This report presents the Zero Waste Challenge (ZWC) document and outlines recommended comments for furtherance to Metro Vancouver.

### Analysis

#### *Background*

The ZWC is a component of the regional Solid Waste Management Plan, currently under active development by Metro Vancouver. Such plans are a requirement of the Environmental Management Act. The region and its member municipalities are bound by the commitments outlined within a provincially-approved plan. The existing regional solid waste management plan was approved in 1995. The strategies and actions were designed to meet the provincially mandated per-capita waste reduction target of 50% by 2000. As these objectives have principally been met and the region works to establish and address disposal capacity challenges, development of a new plan is appropriate. Metro Vancouver has established three goals for the new solid waste management plan:

1. Minimize waste generation
2. Maximize reuse, recycling and material/energy recovery
3. Extract maximum benefit from the disposed waste stream

The ZWC outlines the strategies and actions designed to address goals 1 and 2 with a view toward achieving the interim target established by the Metro Vancouver Board of 70% diversion from disposal. Local municipalities and the public have been consulted in the development of this strategy. Goal 3 is being addressed through a separate process at Metro Vancouver and involves evaluation of various short and long-term options for facilities to manage the disposed portion of the waste stream.

#### *Zero Waste Challenge – Goals, Strategies and Actions*

##### Goal 1 Strategies and Actions:

The ZWC outlines various strategies within each of the first two goal areas. Goal 1 strategies include actions to promote expansion of extended producer responsibility programs, reviewing the impact of banning waste products which affect environmental standards of disposal facilities, and enhanced social marketing activities to promote waste reduction to individuals and businesses. These are positive strategies which will help to create more accountability to



manufacturers and producers of products as well as enhance education and awareness among consumers. Richmond's programs and service levels are not as comprehensive as would be required to support the identified strategies within Goal 1. As each strategy is further evaluated and the scope more clearly defined, staff will seek Council direction to determine the desired level of service and associated costs. Additional annual operating costs for the City's direct involvement could be as high as \$300,000, depending on the level to which Council chooses to support the actions relating to Goal 1. There could also be added capital costs.

#### Goal 2 Strategies and Actions:

Key strategies within Goal 2 include harmonizing recycling programs across the region; establishing recycling drop off centres; encouraging siting of municipal solid waste facilities (including loss of the municipal veto ability); mandating recycling of demolition land clearing wastes; organics recycling and municipal involvement and enforcement of multi family, industrial, commercial and institutional recycling programs. As with Goal 1, actions within the strategies would need to be further evaluated and defined in order to determine cost and resource requirements. Additional annual operating costs for the City's direct involvement could be as high as \$1.2 million. These are preliminary estimates only, and require further evaluation as the actions and required resources are more clearly defined.

The ZWC also suggests an expanded municipal role in Industrial, Commercial and Institutional (ICI) recycling, however, does not require a municipal role in providing collection service. Richmond and other municipal programs have typically been aimed at the single-family residential sector. The ICI sector is principally serviced by the private sector, however, Metro Vancouver has delivered social-marketing based programs to promote ICI recycling. Should this strategy lead to an expanded City role to provide recycling services to the ICI sector, there would be added resource and program costs which would need to be recovered from this customer group. The strategy actions at this time are limited to a combination of education/social marketing, material bans and bylaws to require ICI recycling. Most of these actions, with the exception of bylaw enforcement, could be accommodate in the Goal 2 costs outlined above. However, service delivery to the ICI sector would add costs which are not estimated at this time. An alternative to municipal service delivery to the ICI sector would be a regionally-controlled program. This model could be evaluated to determine potential economies of scale and other benefits.

#### Outstanding Issues:

The ZWC document does much to divert materials from disposal and generate more materials for recycling. However, the goals, strategies and actions lack policy-based approaches to ensure the creation of sustainable markets for recycling materials. As evidenced in the last year, the recycling processing market is vulnerable to economic conditions based on export markets. A regional role in this regard would centralize this function and foster the creation of local markets to ensure a more robust processing and marketing system. To support this, greater emphasis is needed on legislative actions to require minimum post-consumer content in order to foster demand for recycled materials. This latter point is referenced in the plan (Strategy 2.3, Item 14.4) but requires strengthening and more urgent attention than currently outlined. It is also clear that as the Lower Mainland region develops, available land space for recycling facilities is



becoming less available. An approach to secure land for this purpose should also be added to the ZWC.

Richmond staff therefore recommend that a new strategy be added to the ZWC: "Foster Market Development for Recycled Materials", which includes actions to have the region assume responsibility for processing and marketing of recycled materials, greater and more immediate emphasis on legislative actions to require post consumer content in consumer goods, and acquisition of lands for current and future recycling facilities. These actions will ensure the overall sustainability and integrity of recycling programs in the longer term and foster creation of locally-based processing and marketing capacity for recyclables.

### **Financial Impact**

The financial impact of Richmond's direct costs associated with the ZWC document is estimated at \$1.5 million annually. These are costs that would be introduced gradually over the course of the decision making process in implementing the ZWC/new Solid Waste Management Plan actions. Council will have the opportunity to influence these costs by establishing the desired service levels for each item through the normal budget approval process and as specific actions are brought forward for consideration.

In addition to increased City costs, there would be regional costs associated with implementation of the ZWC/new Solid Waste Management Plan which would be imposed on the City. For example, the regional tipping fee is expected to increase from \$71/tonne in 2009 to \$75/tonne in 2010, \$80/tonne in 2011, \$88/tonne in 2012 and \$103/tonne in 2013. This is consistent with Metro's 5-year plan which was presented to Council last fall. The overall impact to Richmond of these increases will depend on the success of any new waste reduction/recycling initiatives. In addition, there will likely be other regional costs associated with implementation of ZWC strategies which would also be imposed on the City. The ZWC document states that full implementation of all action items could increase municipal costs for solid waste management by over \$20 million, or 20% over current costs. These costs are not clearly defined at this time. Metro Vancouver tipping fee increases are over and above the estimated increased direct costs for Richmond. Metro Vancouver should undertake a further detailed review of costs prior to adopting and implementing any of the ZWC strategies and actions.

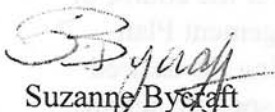
### **Conclusion**

Metro Vancouver is in the process of seeking feedback on the ZWC through public consultation sessions. The ZWC is a key component of the new Solid Waste Management Plan being developed by Metro Vancouver on behalf of member municipalities. The strategies and actions are based on targeting 70% diversion from disposal. The 70% target is achievable, but not without new programs and initiatives to enhance waste reduction and recycling activities. There will be costs associated with implementing these activities at the local and regional level. These costs should be reviewed in more detail prior to adopting the ZWC.

Initiatives to support the ongoing sustainability of recycling programs through market development is lacking in the current ZWC document. The region should assume a processing role for recycled materials. Strong policy actions to stimulate market demand for recycled materials are also required and should be pursued in a more timely manner than that currently

defined. A strategy and supporting actions to address these issues should be identified and included in the ZWC.

Goal 3, which is not addressed in the ZWC, will address the actions necessary for dealing with disposal of the non-recycled portion of the waste stream. Disposal capacity will continue to be an ongoing need and therefore, a solution is required as part of the overall Solid Waste Management Plan. The difficulties associated with siting new disposal facilities/options are clear indicators that on-going and continued support and growth of waste reduction and recycling programs, which are designed to divert materials from disposal, will be required over the long term.



Suzanne Bycraft  
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(604-233-3338)

SJB:





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TO: MAYOR & EACH  
COUNCILLOR  
FROM: CITY CLERK'S OFFICE

Greater Vancouver Regional District  
Greater Vancouver Water District  
Greater Vancouver Sewerage and Drainage District  
Greater Vancouver Housing Corporation

PC: R. Gonzalez  
S. Bycraft

S. Bycraft

for appropriate

action.

Office of the Commissioner/Chief Administrative Officer  
Tel. 604 432-6210 Fax 604 451-6614

Note: Response Deadline is May 15, 2009

March 13, 2009

File No.: PE-13-01-SW-007 &  
CP-16-01

Mayor Malcolm Brodie and Council  
City of Richmond  
6911 No. 3 Road  
Richmond, BC V6Y 2C1

PHOTOCOPIED

MAR 19 2009

**& DISTRIBUTED**

Dear Mayor Brodie and Council:

101-0157-20-WMAN1

**Re: Upcoming public meetings on Metro Vancouver's Zero Waste Challenge**

Metro Vancouver will be hosting meetings for the public and for Mayors, Councils and staff, to provide information and invite comments on Metro Vancouver's Zero Waste Challenge, Goals, Strategies and Actions.

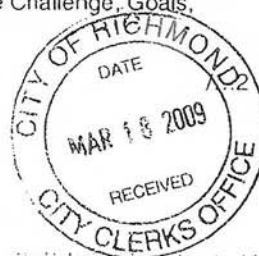
The Zero Waste Challenge is the second phase in the development of Metro Vancouver's new Draft Solid Waste Management Plan. Metro Vancouver is committed to achieving a sustainable future for the region, and a key element is the reduction and effective management of solid waste.

The purpose of this phase of consultation is to gain public input into the extent to which an array of initiatives to reduce, reuse and recycle waste should be implemented to successfully divert materials from disposal. The consultation will be based on the attached report, Zero Waste Challenge, Goals, Strategies and Actions. The goal is to establish a consensus around a diversion target that will set the context for later consultation phases.

This phase will be conducted in April of this year, followed by consultation in May and June on the management of the remaining waste that cannot be recycled. The results of these phases of consultation will be integrated into a new Draft Solid Waste Management Plan that will be presented for a final round of consultation in the fall of 2009.

Metro Vancouver encourages and welcomes participation from Mayors, Municipal Councils, staff and the broad public in our upcoming public meetings. We have planned eight meetings across the region during April. Four will be held during weekday afternoons for municipal elected officials and staff, and four will be held during weekday evenings for the public. A calendar of meeting times and locations is attached.

Metro Vancouver staff will also make arrangements to present the Zero Waste Challenge, Goals, Strategies and Actions to individual Councils if that is requested.



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**Upcoming public meetings on Metro Vancouver's Zero Waste Challenge**

March 13, 2009

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Written comments from your Council or staff are also welcome. The deadline for all comments is May 15<sup>th</sup>, 2009. Please submit your comments by mail, email or fax to:

**Mail:** Metro Vancouver  
4330 Kingsway  
Burnaby, B.C. V5H 4G8  
*Attention: Sarah Howarth, Corporate Relations*

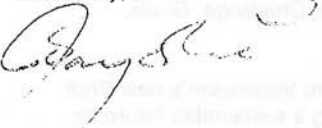
**Email:** [Sarah.Howarth@metrovancover.org](mailto:Sarah.Howarth@metrovancover.org)

**Fax:** 604-432-6399

Metro Vancouver's website contains background documents and related Board reports that have been created during the development of the attached report, and downloadable copies of the report. As the consultation program progresses, we will continue to post information to the site. Please visit [www.metrovancover.org](http://www.metrovancover.org) and follow the Zero Waste Challenge link.

I look forward to your participation in creating a Solid Waste Management Plan that takes a significant step towards a sustainable region.

Yours truly,



Johnny Carline  
Commissioner/Chief Administrative Officer  
JC/dh/sh

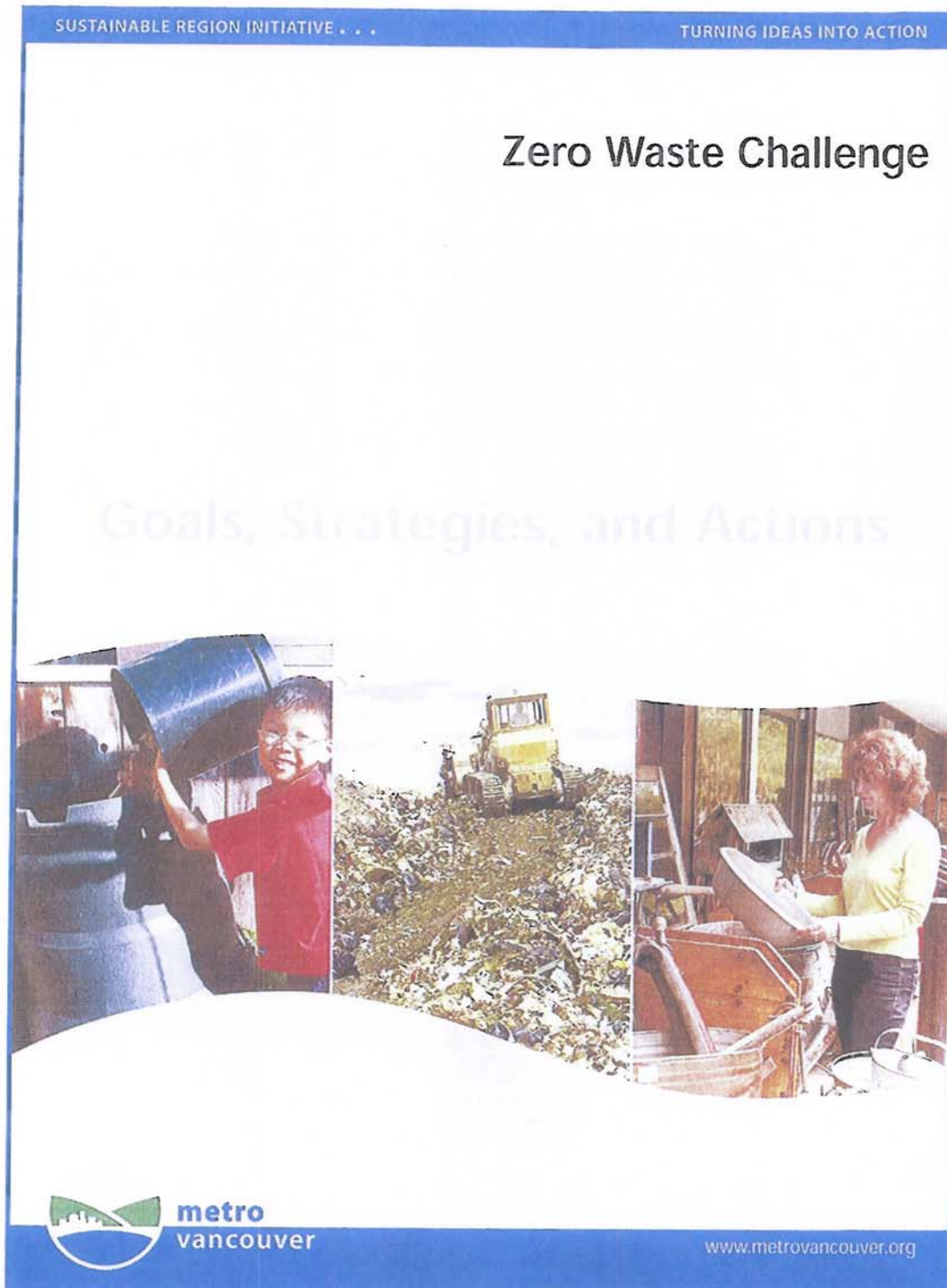
cc: Municipal Clerks

**Attachments:**

1. Zero Waste Challenge, Goals, Strategies and Actions (eRIM 004902618)
2. Calendar of Meeting Times and Locations (eRIM 004906831)

004906797









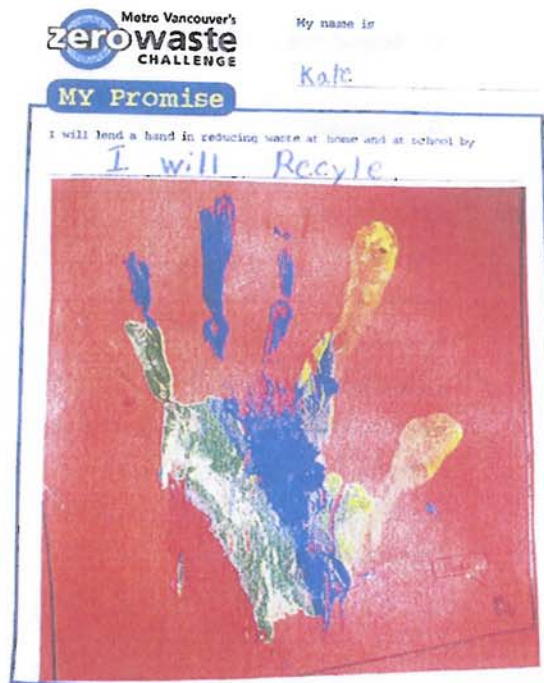
## Vision Statement

### Sustainable Region Initiative

Metro Vancouver has a vision to achieve what humanity aspires to on a global basis – the highest quality of life embracing cultural vitality, economic prosperity, social justice and compassion, all nurtured in and by a beautiful and healthy natural environment.

We will achieve this vision by embracing and applying the principles of sustainability, not least of which is an unshakeable commitment to the well-being of current and future generations and the health of our planet, in everything we do.

As we share our efforts in achieving this vision, we are confident that the inspiration and mutual learning we gain will become vital ingredients in our hopes for a sustainable common future.



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## A. The Zero Waste Challenge

Metro Vancouver is committed to achieving a sustainable future for the region. The Sustainability Framework articulates this commitment and charts the course of action (Appendix 1). A key component of that commitment is the reduction and effective management of solid waste in our growing metropolitan area.

One mechanism in dealing with the garbage we collectively produce is the periodic development of Solid Waste Management Plans that set out the broad principles and specific actions that Metro Vancouver and its member municipalities will use in meeting shared responsibilities. Plan development is underway, and this discussion paper is intended to lay a foundation for public input to an initial set of goals, strategies and actions that will form the core of a new Solid Waste Management Plan (SWMP).

Based on a hierarchy commonly referred to as the five Rs, with reduction of waste at the top of preferred approaches, followed by recycling and reuse, then recovery and the management of residuals, Metro Vancouver's SWMP will set the course for waste management in the region for the future.

This initial phase of plan development and public discussion is focused on the first three of the five Rs – the reduce, recycle and reuse activities that allow us to divert waste from disposal. Those activities are embodied in Metro Vancouver's Zero Waste Challenge – a concerted effort to focus on ways of reducing and diverting the amount of waste produced.

In adopting the Zero Waste Challenge as its priority, the region's Board of Directors expressed a bold commitment to reduce solid waste in Metro Vancouver to the absolute minimum.

But the board also recognized that there are practical realities concerning how, and how long it will take, to reach that desired state of Zero Waste. As a result, it began a process of engaging the community in an examination of the challenges and opportunities that will contribute to realizing a truly Zero Waste region.

A series of public workshops were held to identify novel approaches to waste diversion, and participants in a recent Sustainability Summit were invited to set a vision for waste reduction and priority actions to achieve it. Municipal partners were consulted, and the diversion rates and practices of leading communities throughout North America and Europe were reviewed.

Arising from the wisdom gained in that engagement, the board identified an interim target of 70 % diversion from disposal as a signpost on the journey to Zero Waste. It instructed staff to propose ways in which current diversion rates might be increased (with the interim target as a starting point); to identify the implications of increasing diversion; and to actively pursue public input in refining the goals, strategies and actions necessary in accomplishing that increase. Responsible alternatives for managing the inevitable volumes of waste left over until Zero Waste can become a reality – the remaining two Rs – will form the second phase of plan development and public consultation later in 2009.

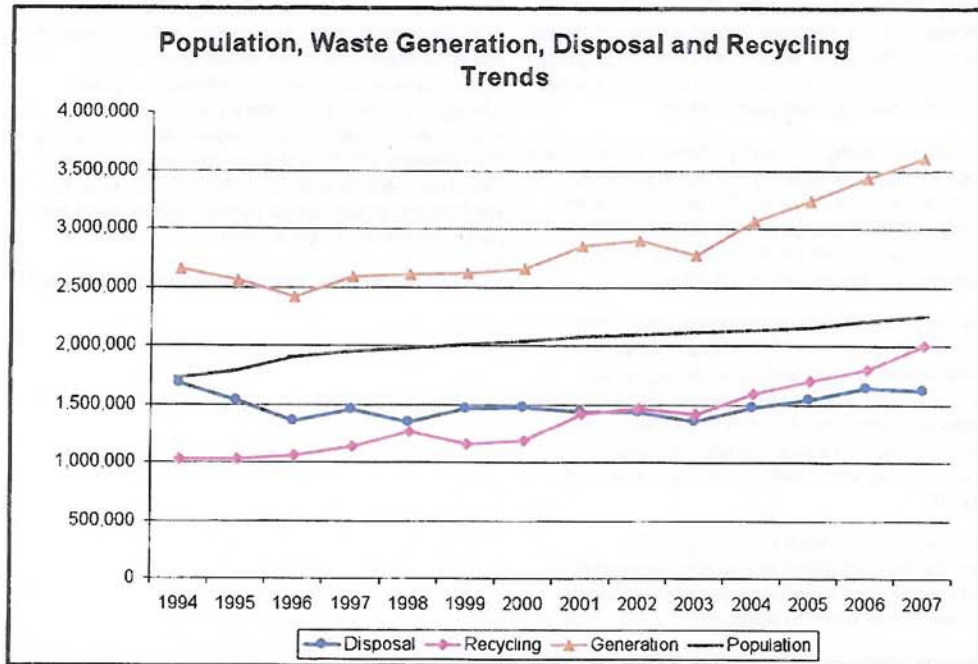
So where are we now, and where do we intend to go?

## B. Waste Reduction Current Status

Although the Zero Waste Challenge was adopted only two years ago, Metro Vancouver and its member municipalities, many non-government organizations, and waste management and recycling businesses have been working hard to reduce waste in the region for several decades. As a result, the region has already made significant strides toward the zero waste goal.

Recycling programs – like the Blue Box – have existed in the region since as early as 1988. And in 1995, the region's Solid Waste Management Plan set a target of diverting 50% of its waste from disposal by the year 2000.

This goal was met and exceeded in 1999 through a broad array of waste reduction programs. These have included residential recycling programs, municipal recycling depots, yard waste collection, disposal bans and private efforts in the commercial and institutional, and demolition and construction sectors. The result of these efforts is that in 2007, 55% of Metro Vancouver's waste was diverted from disposal. Appendix 2 provides a list of diversion initiatives, as well as details of waste quantities, composition, and method of management.





The emphasis on recycling has been successful, with the volume of materials recycled increasing by about 70% over the last decade. However, during the same time period, a growing population and an upward trend in the amount of waste generated per person has caused the total volume of waste being generated to increase significantly. As a result, despite the continued increase in recycling volumes, the proportion of waste being diverted has remained close to 50% for nearly a decade, and the volume of waste needing to be disposed continues to climb. In terms of Metro Vancouver's goal of achieving zero waste, the region has reached a plateau where just over half of its waste is diverted from disposal. This level represents a good step forward from the region's performance during the early 1990s, but it needs to be improved upon in order to move closer to the Zero Waste target.

Moving beyond the 50% diversion level holds significant challenges.

First, of all, recycling alone cannot be the answer. To reduce the volumes needed to be disposed, the total amount of waste generated in the first place needs to come down. As long as total waste generation climbs in parallel with recycling volumes, we will not make progress toward Zero Waste. In other words, more improvement needs to be made in the first two Rs – reducing and reusing.

However, experience has shown that despite decades of public information on the need to reduce and reuse before one takes the step of recycling, our society tends to produce more, consume more and dispose more.

Without specific regulations by higher levels of government that require manufacturers, distributors and retailers to take greater responsibility for the lifecycle of the materials used in their products, a growing economy will continue to produce more waste that needs to be reused, recycled or sent for disposal.

Consumers have significant influence on manufacturers and suppliers through the purchasing choices they make. For instance, if consumers choose to purchase longer-lasting products, they not only reduce waste directly through that action, but they also reinforce the market signal to producers to shift their range of products towards more durable ones. This in turn influences other consumers to consider choosing

longer-lasting products, and so the trend towards such products (and therefore towards waste reduction) can snowball. Similarly, trends to reduce excess packaging or towards products that are inherently designed to be more recyclable can occur if there are strong consumer movements to initiate them.

The question becomes: how can public policy help foster the initiation and continuation of such movements in consumer choices? Education is critical, but efforts must go beyond basic awareness campaigns to embrace social marketing tactics that foster significant, lasting change. Consumers may also need incentives (financial and other) to do so.

Secondly, the recycling system faces a number of limitations that pose challenges for overall waste reduction. These limitations relate to market demand for recycled materials.

For recycling to work effectively, there must be adequate and sustainable markets for the materials. Recyclable materials are commodities that rise or fall in value; if values fall far enough, markets will collapse. Recent economic fluctuations have placed the viability of some material markets in jeopardy and reduced the overall demand for all recyclable commodities. In addition, the current dependence of the North American recycling system on foreign markets adds to its vulnerability.

Another limitation within the recycling system is rooted in the quality of materials captured. Some materials are considered waste and have no recycling value. A portion of recyclables is typically unmarketable due to contamination. Commingled collection systems and lack of knowledge or commitment by users can elevate levels of contamination. And, recycling operations themselves produce residual materials that require disposal.

Finally, it is a truism that the success of recycling and other diversion programs depends on the degree to which individuals participate in those recycling and diversion programs. The 70% target would be achieved if everybody recycles or diverts 70% of their waste, or if 70% of the population recycles or diverts absolutely all of their waste. But if 70% of the population recycles or diverts 70% of their waste, the overall recycling rate drops all the way back to below 50%. This is just simple arithmetic; but it is a powerful illustration that each new step toward the zero waste goal of having 100% of the population recycling 100% of the time will become increasingly difficult.

Solutions to these challenges will be multi-faceted. Demand for recycling markets may be increased by imposing "recycled content" regulations for manufactured goods. Extended Producer Responsibility (EPR) programs will put the onus on producers to find viable markets for their waste or alter their product or packaging to reduce waste. Business opportunities for recycling will also be created and supported by disposal bans. And effective education and community based social marketing programs can help to ensure higher recycling participation levels.





## C. Moving Beyond 55%

To take the next steps toward the Zero Waste goal, the region must take a series of deliberate steps to increase diversion rates beyond the current plateau of slightly over 50%. The rate at which we progress along the continuum towards Zero Waste is a focus of the Solid Waste Management Plan and the consultation on waste reduction initiatives. The remainder of this paper is a discussion of how the region could move beyond the 55% rate of diversion achieved in 2007.

In order to determine how to best progress toward Zero Waste, Metro Vancouver has studied successful examples of 3R initiatives – reduction, reuse and recycling – in other municipalities across North America and Europe, in addition to hosting workshops within the region to gather ideas from local sources.

Actions that are predicted to have the highest potential for reducing waste in Metro Vancouver include:

- Adding food waste to organics collection programs. Most Metro Vancouver municipalities collect yard trimmings from residents at the curb side. Adding food waste will increase diversion. Communities that have added food waste collection have found that many of the anticipated barriers turned out to be no problem in actual implementation. However, to increase organics diversion, processing infrastructure must be improved.
- Commercial strategies. Working with the commercial sector with tools such as regulations and user fees can provide significant opportunities for increases in diversion.
- Bans. Expanding the number of banned items and decreasing tolerances for the amounts of banned materials accepted in garbage should increase diversion by sending powerful signals to both consumers and producers to change behaviour.
- Education and outreach. Social marketing initiatives to further identify barriers to waste diversion and strategies to overcome such barriers will be needed to increase the success of many waste diversion efforts.

- Refinements to curb side recycling and collection elements. Container size, collection frequency, and pay as you throw (PAYT - or User Pay) enhancements can provide powerful incentives to divert waste.

In order to set targets for waste reduction, it is helpful to consider the diversion rates achieved and projected by other jurisdictions. In 2007, Metro Vancouver commissioned a comparative study of waste management programs in jurisdictions across North America. Diversion rates ranged from 17% to 69%, with an average reported rate of 48%. However, the definition of diversion rates varies depending upon the composition of the waste that is reported.

The European Union has adopted new recycling targets. By 2020, member states must recycle 50% of their household, commercial and institutional waste and 70% of their construction and demolition waste. Member states must design and implement waste prevention programs for their countries which comply with the directive, and they are required to transpose the directive into national law within two years.

In 2007 the Netherlands, Germany and Belgium reported recycling rates of over 60% for household, commercial and institutional waste, but the average recycling rate was 39% for the 27 member states in that year.



## D. Goals Strategies and Actions

Two goals have been identified under the Zero Waste Challenge framework:

1. Minimize waste generation
2. Maximize reuse, recycling and material/energy recovery

Each goal is supported by a comprehensive grouping of strategies, actions and implementation tasks. The detailed list of Strategies and Actions for Goals 1 and 2 are included in Appendix 4. A summary of the Goals and Strategies specifically relevant to the Zero Waste Challenge are provided below for discussion purposes.

### Goal 1: Minimize Waste Generation

#### Strategies:

Advocate that senior governments transfer additional waste management responsibilities to producers and consumers.

Metro Vancouver will continue to work with senior levels of government to expand and improve Extended Producer Responsibility programs and will ensure that municipalities are involved and updated on new initiatives. A system of Eco-Centres will be established to provide convenient take back facilities.

Reduce or eliminate materials entering the solid waste system which hinder or limit opportunities to achieve reuse, recycling, or energy recovery, or that may exacerbate environmental impacts of disposed residuals.

Metro Vancouver will work with disposal facility operators to identify and remove specific waste streams and/or products that interfere with the facility's ability to maintain high environmental standards or reduce the facility's ability to optimize reuse, recycling or recovery activities.

Provide social marketing based information and education on purchasing options to reduce waste.

A communication strategy will be developed by Metro Vancouver with input from municipalities and delivered by both regional and local governments. New communication and education activities targeting businesses and institutions will be added. This strategy will encourage businesses and individuals to adopt Zero Waste Challenge principles into their operations and daily life.

Existing staff will carry out much of the work on this strategy; however, in order to substantially broaden the reach and scope of information and education campaigns, including an intensive and long-term commitment to social marketing programs, Metro Vancouver will incur some costs for specific research and additional resources.

## Goal 2: Maximize Reuse, Recycling and Material/Energy Recovery

### Strategies:

#### Increase the opportunities for reuse

Metro Vancouver and municipalities will investigate the effectiveness and adequacy of existing exchange programs and the financial and regulatory barriers that prevent or discourage reuse.

#### Increase the effectiveness of existing recycling programs

This strategy aims to increase the incentives to utilize existing recycling programs through greater enforcement of material disposal bans, harmonized services between municipalities, improved recycling convenience by providing "one-stop drops," and increased recycling opportunities at large events.

#### Facilitate increased private sector recycling

Local recycling businesses will be supported by addressing local opposition and assisting recyclers in the siting of their facilities. This will be done by changing regional and municipal bylaws and fostering community acceptance. Senior governments will be encouraged to examine policies that encourage the use of recycled material, such as the 40% post consumer recycled content requirements for newspapers in California.

#### Target demolition, land clearing and construction (DLC) sector for increased reuse and recycling

Metro Vancouver will work with municipalities to develop regional and municipal policies that promote minimizing and recycling waste at construction and demolition sites. In addition, support will be provided to facilities that recover, process and market useable materials.

#### Reduce paper and paperboard being disposed

Junk mail and other unwanted publications will be targeted for recycling, and food contaminated paper and paperboard for composting.

#### Target organics for recovery

Metro Vancouver will establish an organics processing facility suitable for managing waste food and municipal programs will be implemented to collect food waste from residents and businesses. Alternative uses for organics will continue to be investigated. Home and work place composting will continue to be encouraged.

#### Target plastics for increased recycling

Metro Vancouver staff will work with senior levels of government to increase Extended Producer Responsibility programs for plastic packaging in order to reduce the use of hard-to-recycle plastics and to increase recycling levels.

#### Target multi-family and industrial, commercial and institutional (ICI) sectors to improve diversion rates

Metro Vancouver will work with municipalities to enact bylaws to require recycling in all multi-family and commercial buildings and complexes.

These goals, strategies and actions can be summarized into material categories and associated diversion potential, yielding an additional 18% diversion. The following table summarizes the diversion potential for each targeted material.

Waste and Potential Recycling Opportunities			
	Disposed from all Sectors (tonnes)	Diversification Program	Estimated Capture (tonnes)
Wood Waste	240,000	Modifications to Demolition and Building Permit Process Provide Wood Drop Off Facilities at Transfer Stations	85,000 70,000
Paper and paperboard	305,000	Enhanced Disposal Bans Composting	115,000 50,000
Food Waste	335,000	Composting	170,000
Plastic Waste	190,000	Expansion of Plastics Recycling	30,000
Yard Waste	85,000	Disposal Bans	60,000
E-Waste and Small Appliances	27,500	CPR - E-Waste EPR - Small Appliances	10,000 10,000
<b>Total</b>			<b>600,000</b>

## E. The Cost of Getting to 70%

The Zero Waste Challenge strategies presented in this report have associated costs for both Metro Vancouver and municipalities. Full implementation of all of the action items could increase municipal costs for solid waste management by over \$20 million, or an increase of about 20% over the current net municipal costs for solid waste.

Costs associated with reduction and reuse are difficult to quantify on a per tonne basis, but resources allocated in this analysis will also be partially offset by savings of both disposal and recycling costs.

TURNING IDEAS INTO ACTION

Sustainable Region Initiative . . .

metro Vancouver

zero waste CHALLENGE

LONDON DRUGS

SABC

Retail BC

Return your unused medications and vitamins to our pharmacy for safe disposal.

metro Vancouver

www.metrovancover.org



## F. Beyond 70%

The analysis of the feasibility of proposed actions outlined above is based on achieving a 70% diversion. To go beyond 70% will require further work to address the following barriers.

First, without intervention by governments, efforts to gain a competitive edge in the marketplace typically drive producers to create products at the lowest cost and with little regard to the waste they produce. This may result in excessive packaging, integration of many different materials into products so that recycling becomes virtually impossible, or the use of lower quality materials which result in shorter product life spans.

The primary factors that consumers consider in making purchasing decisions are cost and value. The environmental impact of products, including the amount of packaging, durability, and ease of recycling are often secondary issues or even overlooked entirely. What happens to the product at the end of its life is not typically considered when purchases are made.

Perhaps the most promising method of overcoming both of these barriers is to expand Extended Producer Responsibility programs, as identified in the second strategy noted above. To be truly effective, EPR programs must include incentives and requirements for both waste reduction and material recovery and be convenient for consumers to use. This can be achieved by requiring producers to focus on both product design and disposal. Without this focus EPR can simply be a transfer of cost for end-of-life management from the producer to the consumer in the form of higher purchase prices.

However, we live in a global economy with materials bought and sold around the world. The provincial influence upon producers in other countries is clearly limited and local producers and suppliers may have to compete for markets here and abroad with producers elsewhere with less restrictive regulations. In the pursuit of Zero Waste, therefore, Metro Vancouver will not only have to continue to advocate for other levels of government in Canada to implement new regulations, it may have to support similar efforts at the international level, while recognizing that the realities of a global economy may from time to time temper the extent and effectiveness of local Zero Waste Challenge programs, including EPR.



Mandatory recycling at demolition and construction sites

## G. Conclusion

Clearly, the citizens and businesses of Metro Vancouver have achieved much in reducing waste, and our current rate of diversion of over 50 % compares favourably with progressive metropolitan areas in North America and abroad.

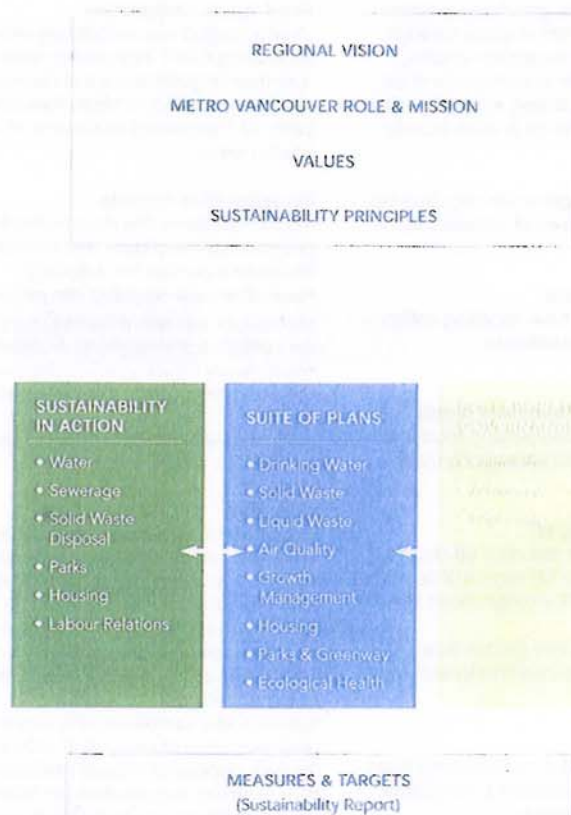
But much of the 'low hanging fruit' in terms of reduction, recycling and reuse has already been plucked. More participation in existing programs and the implementation of additional regulatory, educational, and operational activities will result in some incremental gains, but it will become progressively more difficult as the diversion rate increases.

So, is 70 % a reasonable target for diversion in the near term? Is some other target, greater or smaller than that, more reasonable? How prepared are we, as a community, to accept the costs and lifestyle changes a truly Zero Waste region requires, and what will it take to change external factors – not the least of which is a market-based and consumer-driven global economy – that are beyond our direct influence?

Tackling these questions will help both in advancing the goals of the Zero Waste Challenge itself, and in understanding how we will address the final two Rs – the recovery of energy and useful materials and the management of residuals – that form the remainder of the waste management hierarchy and the second phase of SWMP development.

Metro Vancouver seeks to arrive at a public understanding and informed agreement on the means by which we will work towards Zero Waste, and ensure the results are achievable within the context of the draft Solid Waste Management Plan.

## Appendix 1 Metro Vancouver Sustainability Framework





## Appendix 2a

### Current 3R initiatives

More than half of the total waste generated in Metro Vancouver is already diverted from disposal through residential recycling programs, municipal recycling depots, and private efforts in the commercial and demolition/construction sectors. Existing waste diversion initiatives and Zero Waste Challenge actions include:

#### Residential recycling.

-Combined, the Blue Box and apartment recycling programs divert about 400,000 tonnes of materials from disposal each year.

#### Recycling for schools, businesses

-About half of all municipalities have recycling collection programs for schools and businesses.

#### Backyard composting

-135,000 backyard composters have been distributed to Metro Vancouver residents. Composting food and yard waste can reduce household garbage by up to one third.

#### Yard Waste collection and drop off

-Yard waste collection programs and drop off depots exist in most municipalities. 200,000 tonnes of organic material are diverted from landfill through these programs.

-Reduced drop-off fees for yard and garden waste (as compared to garbage) create an incentive to separate and compost.

#### Disposal Bans

-A number of materials that can be recycled have been banned from landfill, including cardboard, newspaper, office paper, drywall, and car batteries.

-Additional Bans were carried out in 2008 for computers, desk-top printers and TVs, paints, solvents, gasoline, pesticides and other household hazardous waste, yard trimmings, all blue box recyclables and refundable beverage containers, medication, tires, oil, oil filters and containers.

#### Extended Producer Responsibility (EPR)

-Provincial policies have been implemented that shift the responsibility for the entire lifecycle of certain wastes and packaging materials to the producer and away from local governments. EPR programs are now in place for beverage containers, car batteries, paints, solvents, flammable liquids, gasoline and pesticides, tires, and medication.

-Electronic waste EPR was initiated in 2007 and the future inclusion of small appliances, CFL light bulbs and other mercury containing products was announced in 2008.

#### Food Waste Composting

-A pilot project was successfully undertaken in early 2008 using GORE composting technology.

-Contract negotiations are underway to establish a composting facility in Metro Vancouver that is capable of composting food waste as well as yard and garden waste.

#### Recycling Pilot Projects

-Metro Vancouver has initiated the following pilot programs to investigate and test new opportunities for waste reduction and recycling:

- asphalt shingle recycling into paving mixes.
- eco-depot trial with a building supply company for the collection and recycling of renovation waste.
- multi-family recycling to identify the barriers to increased recycling in multi-family homes and complexes.
- reduction of waste from large public events and festivals.

#### Education

-Metro Vancouver and the municipalities deliver ongoing education initiatives to raise awareness of the 5Rs, and encourage sustainable choices.

-Communication campaigns include

- efforts to reduce Christmas waste in 2007 and 2008
- a community-based social marketing pilot program targeted at increasing recycling rates in the multi-family housing sector;
- point of sale campaigns with retailers aimed at appropriate reuse or disposal of used computers and the safe disposal of unused medications, and
- the launch of a comprehensive web-based database presenting, in a map format convenient for users, all of the reuse and recycling facilities in the region.

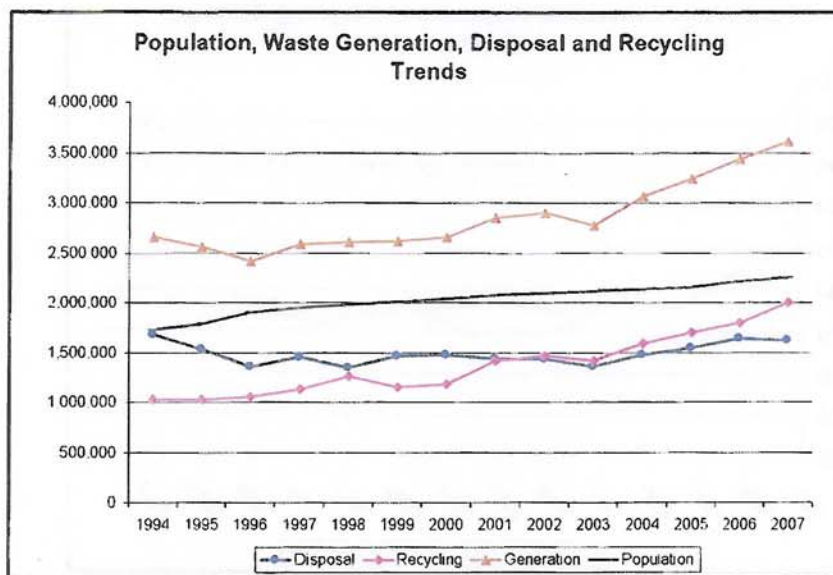
#### Concrete, Asphalt and Gypsum Recycling

-Private businesses in Metro Vancouver recycle over 600,000 tonnes per year of concrete and asphalt recovered from demolition projects.

-Each year over 100,000 tonnes of waste gypsum wallboard are recycled

## Appendix 2b

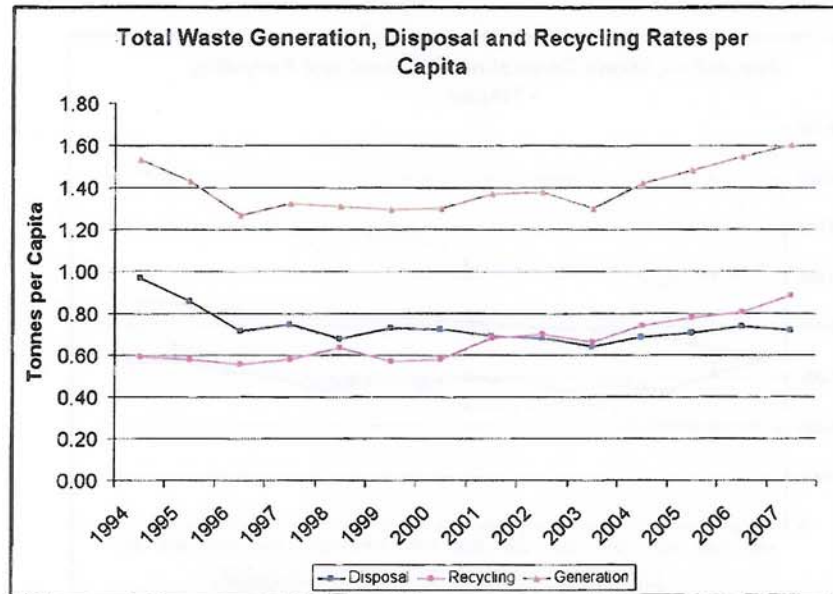
A growing population means more waste.



Today, more than three and a half million tonnes of solid waste are generated annually in Metro Vancouver. The upward trend reflects a growing population and a decade of prosperity in the region.

The waste quantities in Metro Vancouver are increasing every year as the population expands and particularly since 2003 when the economic fortunes of the region improved. Currently over three million tonnes of waste are generated annually in Metro Vancouver. Recycling quantities have been increasing steadily since the 1990s; however waste generation has also been increasing. The figure above illustrates the trends in waste generation, recycling and disposal and the effect of a growing population.

By 2030, Metro Vancouver's population is predicted to exceed 3 million. With a 'status quo' approach to waste management, combined garbage and recycling volumes would increase from the current 3.6 million to 4.5 million tonnes per year.

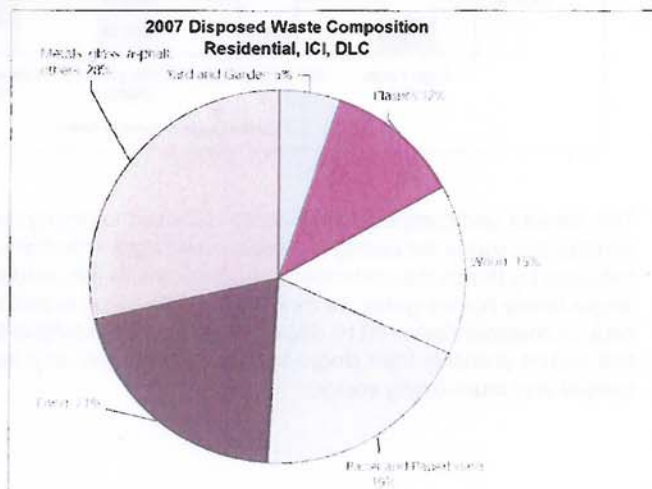
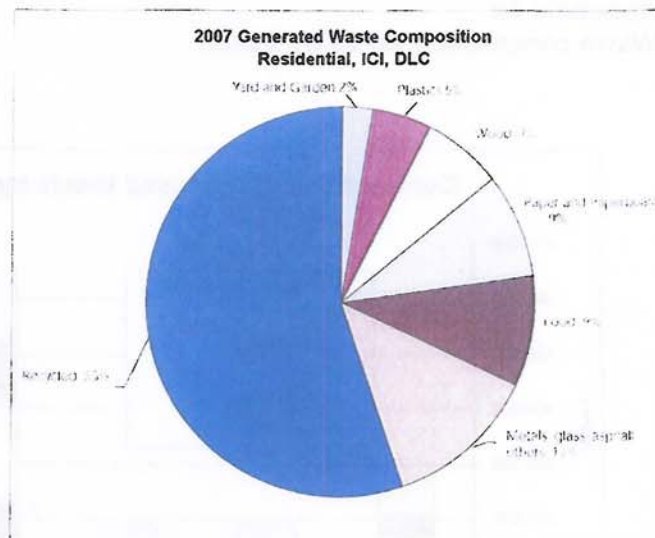


Per capita information shows that while individuals are recycling more, they are also generating more waste in the first place. As a result, despite the increased recycling efforts, the waste that needs to be disposed, per person, is still gradually rising.



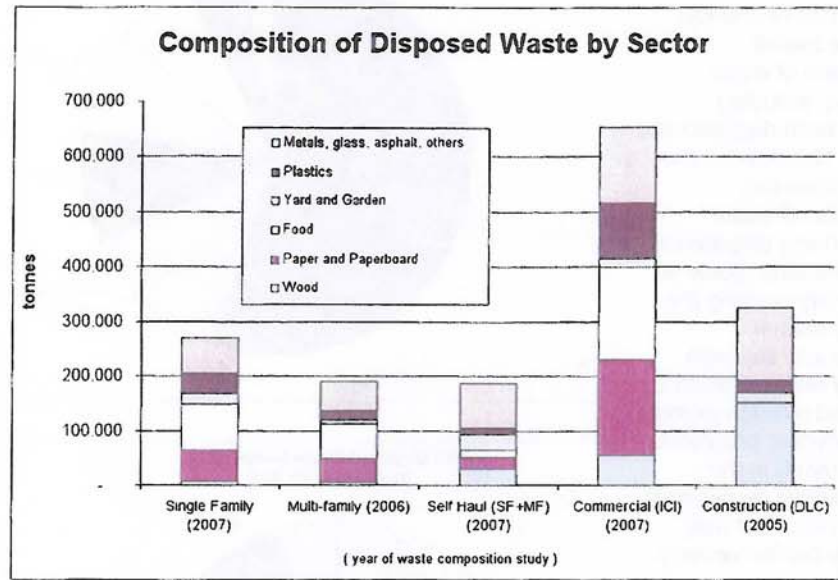
### Appendix 2c What is in our waste?

The pie chart on the top shows the overall composition of waste generated, including materials both disposed and recycled. The chart on the bottom shows the composition of waste currently being disposed in Metro Vancouver. Some of the materials entering the disposal stream are recyclable and can, with additional recovery efforts, be diverted through existing or new recycling programs. Other materials in the disposal stream do not have recycling value, but may have potential for recovery of energy.



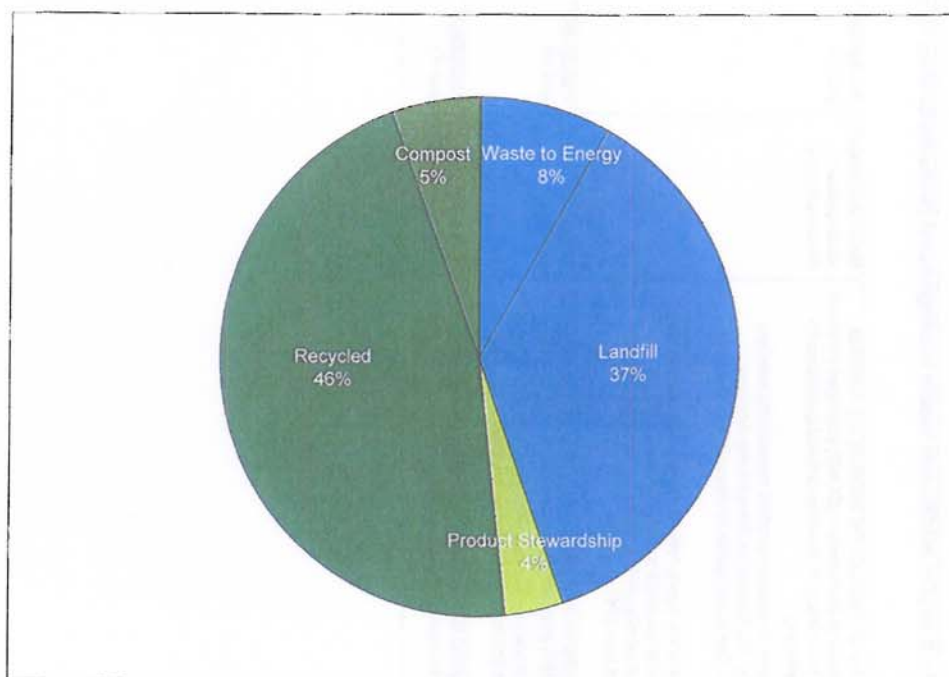
The data presented here is from waste composition studies conducted by Metro Vancouver on the Residential and Industrial, Commercial and Institutional waste streams in 2007 and on the Demolition, Land Clearing and Construction waste stream in 2004.

Appendix 2d  
Waste composition varies by sector.



The amount and composition of waste disposed varies by community sector. The commercial sector (including institutions and light industry) produces the most waste, followed by the construction/demolition sector. In the residential sector, those living in single-family homes generate more than those living in multi-family residences. Self-haul, or material delivered to disposal facilities by individuals, is a growing category that comes primarily from single-family residents and, to a lesser extent, from the commercial and multi-family sectors.

Appendix 2e  
Where does our waste go?



Just over half of our solid waste is diverted through recycling, extended producer responsibility and composting initiatives. The remainder goes to energy recovery at the Metro Vancouver waste-to-energy facility in Burnaby or to landfill at the Vancouver Landfill, Cache Creek Landfill or private demolition and construction waste landfills.



<b>Goal 1: Minimize Waste Generation</b>					
<b>Strategy 1.1: Advocate that senior governments transfer additional waste management responsibilities to producers and consumers.</b>					
1	Be a strong advocate for Extended Producer Responsibility (EPR) through active membership on stewardship advisory committees and provincial and national EPR strategies.	1.1 Continue participation on Federal EPR initiatives e.g. Canadian Council of Ministers of Environment (CCME) Extended Producer Responsibility Task Group, to develop national guidelines for sustainable packaging.	Metro Vancouver/ Municipalities/ Province/CCME	Residential and ICI	On-going
		1.2 Continue participation on industry product stewardship advisory committees, e.g. BC Electronics Stewardship Advisory Committee, BC Tire Stewardship Advisory Committee, and others.			
		1.3 Work as a member of the newly-formed BC Product Stewardship Council to provide feedback to the Province on the effectiveness of existing EPR programs and assisting in the development of new EPR programs			
2	Partner with Ministry of Environment to implement EPR programs	2.1 Initiate a formal partnership with the Ministry of Environment (MOE) to accelerate EPR program development and implementation. 2.2 Contingent on approval of a formal partnership, add a new Metro Vancouver position to be dedicated to this task.	Metro Vancouver and MOE	Residential and ICI	2010
3	Establish a system of Eco-Centres linked to EPR on a voluntary municipal basis.	3.1 Establish a work group to determine the terms and conditions for participating municipalities and industries.	Metro Vancouver and municipalities	Residential and ICI	2010

<b>Strategy 1.2: Reduce or eliminate materials entering the solid waste system which hinder or limit the opportunities to achieve reuse, recycling, or energy recovery, or that may exacerbate environmental impacts of disposed residuals.</b>				
<b>4</b>	<b>Work with disposal facility operators to prevent particular waste materials from affecting the ability of the facility to maintain high environmental standards or to optimize reuse, recycling or recovery opportunities.</b>	<p>4.1 Determine the impact and source of the waste product or waste stream</p> <p>4.2 Determine the impact and feasibility of banning the waste product or waste stream from the disposal facility and the other options available for recycling or disposal.</p>	Metro Vancouver and municipalities	All
				Ongoing
<b>Strategy 1.3: Provide social marketing based information and education on purchasing options to reduce waste.</b>				
<b>5</b>	<b>Deliver a program to inform and educate consumers.</b>	5.1 Develop a consumer guide to inform on purchasing and other reduction activities.	Metro Vancouver	Residential
				2010
<b>6</b>	<b>Deliver a program to inform and educate businesses.</b>	6.1 Develop a business guide to inform on purchasing and other reduction activities.	Metro Vancouver	ICI
				2011
<b>7</b>	<b>Encourage personal and corporate action through voluntary reduction goals for individuals, families and businesses. Develop and publicize practical methods for reaching these goals.</b>	<p>7.1 Promote 70% diversion goal over all sectors- feature in communication materials</p> <p>7.2 Work with municipalities to deliver reduction goals through existing information channels with residents</p> <p>7.3 Work with and through business improvement associations and sectors to encourage corporate Zero Waste actions</p>	Metro Vancouver	All
				On-going

<b>Goal 2: Maximize Reuse, Recycling and Material/Energy Recovery</b>				
<b>Strategy 2.1: Increase the opportunities for reuse</b>				
8	Reduce the impediments to reuse	8.1 Investigate the financial and regulatory barriers that prevent or discourage reuse. 8.2 Investigate the effectiveness and adequacy of existing material exchange networks.	Metro Vancouver	2011
<b>Strategy 2.2: Increase the effectiveness of existing recycling programs</b>				
9	Continue the monitoring and enforcement of the disposal bans	9.1 Routinely review and report on program results. 9.2 Analyse effectiveness of disposal bans and review alternative enforcement models. 9.3 Expand the material disposal ban program to include materials included in EPR programs and materials for which new recycling markets are developed.	Metro Vancouver and municipalities	Ongoing
10	Inform businesses and residents of recycling opportunities	10.1 Provide municipalities with the latest information on recycling collection and drop-off facilities and significant changes to policies and facilities. 10.2 Continue and upgrade a central phone and web-based database with latest information which will serve as a reference for the public.	Metro Vancouver and municipalities	Ongoing
11	Undertake a business case review of harmonizing the residential and ICI waste and recycling collection levels of service over the region so that there is consistency between the municipalities.	11.1 Work with member municipalities to review the list of materials collected from residences and ICI sources. Develop a strategy to harmonize levels of service in all Metro Vancouver municipalities	Metro Vancouver and municipalities	2012
12	Establish new one-stop-drop centres for recycling.	12.1 With municipalities determine the terms and conditions for participating municipalities and industries.	Metro Vancouver, municipalities, RCBC, BC MoE, the BC Product Stewardship Council and the BC stewardship agencies	2011
13	Continue to work with municipalities, EPR groups and local community groups to minimize waste and improve recycling at community and/or regional festivals and events including conferences and tradeshow.	13.1 Conclude the pilot study on Zero Waste festivals and events. 13.2 Develop a Zero Waste tool kit for festivals and events.	Metro Vancouver and municipalities	Ongoing



<b>Strategy 2.3: Facilitate increased private sector recycling</b>				
<b>14 Encourage private sector recycling activities.</b>		<b>Metro Vancouver and municipalities</b>	<b>ICI and DLC</b>	<b>2011</b>
	<p>14.1 Municipalities will review their zoning bylaw to encourage recycling and material recovery activities in appropriately zoned areas.</p> <p>14.2 Review the GVS&amp;DD Solid Waste Regulatory Bylaw to facilitate the siting of MSW facilities that meet municipal bylaws.</p> <p>14.3 Review the opportunity for establishing a non-profit organisation that can facilitate the development of recycling business and recycling markets such as the "London Remade" model in London England or "Recycling Market Development Zones" in California.</p> <p>14.4 16.4 Work with the Provincial and Federal governments to identify and establish minimum post-consumer recycled content in consumer goods.</p>			

<b>Strategy 2.4: Target demolition, land clearing and construction (DLC) sector for increased reuse and recycling</b>				
15 Develop incentives for re-use and remove barriers to re-use of wood waste	15.1 Work with the Province to expand the inclusion of re-use wood in building codes.	Metro Vancouver	DLC	2010
16 Develop a policy to regionally mandate DLC recycling at the job site.	15.2 Provide information and education programs to enable more effective recycling of DLC waste.			
	16.1 Review existing permitting structures for construction and demolition in the region	Metro Vancouver, municipalities and DLC Sector	DLC	By 2012
	16.2 Review options with respect to including a deposit system or other financial incentives to increase follow-through of waste management plans			
	16.3 Change municipal building and demolition permitting processes such that a waste management plan is a requirement of such permits.			
	16.4 Bring forward a policy by December 2011. When the policy is approved by the Board and signed off by the Minister, it will be deemed to be part of the SWMP and will be implemented by member municipalities.			
17 Address future DLC recycling and processing capacity	17.1 Carry out an assessment of existing DLC processing facilities.	Metro Vancouver and DLC Waste Management Sector	DLC/ICI	2011
18 Implement waste reduction strategies directed toward diverting DLC waste from disposal while supporting opportunities for beneficial use.	17.2 Review long-term recycling, processing and disposal needs and opportunities for DLC waste.			
	18.1 Evaluate pilot work with retailers and producers with the objective of identifying retailers that can assist in the collection of DLC materials and identifying ways of recycling DLC waste that will work for waste producers.	Metro Vancouver	DLC and Residential	On-going
	18.2 As transfer stations are upgraded consider providing an area for separated DLC material drop-off			

<b>Strategy 2.5: Reduce paper and paperboard being disposed</b>					
19 Reduce unwanted junk mail and other publications.	19.1 Conduct education and information programs on how to reduce unwanted junk mail.	Metro Vancouver and ICI	Residential and ICI	On going	
20 Promote reduced paper use and increase paper recycling opportunities in schools and businesses	20.1 Target, paper and paperboard as part of a community based social marketing campaign to determine barriers to recycling. 20.2 Provide targeted outreach program to businesses on how to increase paper recycling. 20.3 Target School Districts and private schools for conducting pilot assessments promoting waste reduction and recycling	Metro Vancouver/ school districts/ municipalities	ICI	On-going	
21 Divert food contaminated paper and paperboard to organics management facilities.	21.1 Identify which paper and paperboard products are suitable for processing at an organics management facility.	Metro Vancouver and municipalities	Residential and ICI	Following implementation of Action 22	
<b>Strategy 2.6: Target organics for recovery</b>					
22 Divert organics from the waste stream.	22.1 Establish an organics processing facility 22.2 Develop a work plan for the implementation of municipal food waste collection from single family residences.	Metro Vancouver and municipalities	Residential and ICI	2009	
23 Evaluate options for processing of organics with biosolids and other utility residuals.	23.1 Complete trials on commingling food waste with wastewater solids. 23.2 Determine the cost and benefits of commingling bio-solids with other residues	Metro Vancouver	Residential and ICI	2010	
24 Promote existing residential and office programs such as backyard composting and grasscycling	24.1 Promote existing programs such as composting, grasscycling, mulching, and worm composting and support with appropriate communication activities.	Metro Vancouver and municipalities	Residential and ICI	2011	



<b>Strategy 2.7: Target plastics for increased recycling.</b>				
25 Expand the recycling of plastics in the residential and commercial sectors.	25.1	Encourage EPR programs for plastics that provide incentives for alternatives to non-recyclable plastics.	Metro Vancouver	Residential and ICI/DLC
	25.2	Work with Provincial and Federal governments to require all plastic material sold in BC to have a material code identifying it's composition.		
	25.3	Standardize municipal programs for collection of plastics.		
26 Review options for reduction of plastic bag usage.	26.1	Incorporate plastic bags into the EPR framework.	Metro Vancouver and MOE	Residential and ICI
	26.2	Undertake communication activities to reduce the use of plastic bags.		
				2010
<b>Strategy 2.8: Target multi-family and industrial, commercial and institutional (ICI) sectors to improve diversion rates</b>				
27 Develop bylaws to require recycling in all multi family and commercial buildings and complexes.	27.1	Produce a model bylaw to require multifamily and commercial buildings to recycle.	Metro Vancouver and municipalities	ICI/Residential
	27.2	Make available an advisory service for recycling programs for multifamily and commercial buildings.		
				2011

# Appendix 4 Zero Waste Challenge - goals/strategies - March 2

MATERIAL	TARGET TONNAGE	SUB CATEGORIES	MAIN SOURCE	PROPOSED ACTIONS IN SWMP	Sector Targeted by Future Action				Type of Action						Responsibility				ESTIMATED TIMEFRAME					
					Construction	Commercial	Single Family Residential	Multi-Family Residential	Outreach	Regulatory	Financial	Capital Program	Assessment	Metro Vancouver	Municipalities	Private Sector	Others	< 1 yr	1-3 yrs	3-5 yrs				
Wood	155,000	Source Separated wood	Construction and ICI	Address future DLC recycling and processing capacity.	x																			
				Develop incentives for re-use and remove barriers to re-use of wood waste	x																			
				Develop a policy to regionally mandate DLC recycling at the job site.	x																			
				Implement waste reduction strategies directed toward diverting DLC waste from disposal while supporting opportunities for beneficial use.	x	x	x																	
				Encourage private sector recycling activities.	x	x	x																	
				Reduce the impediments to reuse.	x	x	x																	
				Develop & disseminate sector specific information	x	x	x																	
Paper	165,000	ICI, SFR, MF	DLC/SFR	Address future DLC recycling and processing capacity.	x																			
				Develop a policy to regionally mandate DLC recycling at the job site.	x																			
				Implement waste reduction strategies directed toward diverting DLC waste from disposal while supporting opportunities for beneficial use.	x	x	x																	
				Encourage private sector recycling activities.	x	x	x																	
				Reduce the impediments to reuse.	x	x	x																	
				Develop & disseminate sector specific information	x	x	x																	
				Reduce unwanted junk mail and other publications	x	x	x																	
Paper	165,000	ICI, SFR, MF	DLC/SFR	Promote reduced paper use and increased paper recycling opportunities in schools and businesses.																				
				Divert food contaminated paper and paperboard to organics management facilities		x	x																	
				Develop bylaws to require recycling in all multi-family and commercial buildings and complexes		x																		
				Be a strong advocate for Extended Producer Responsibility (EPR) through active membership on stewardship advisory committees and provincial and national EPR strategies.		x	x																	
				Partner with Ministry of Environment to implement EPR programs.		x	x																	
				Establish a system of Eco-Centres linked to EPR on a voluntary municipal basis		x	x																	
				Develop & disseminate sector specific information		x	x																	
				Reduce unwanted junk mail and other publications		x	x																	
				Promote reduced paper use and increased paper recycling opportunities in schools and businesses.		x																		
				Divert food contaminated paper and paperboard to organics management facilities		x	x																	

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