

actions to improve upon the existing approaches. In addition, this document formed the basis of an extensive consultation process by MV over the course of the spring of 2009. The consultation process involved residents, municipal elected officials and staff, First Nations, business representatives, and interest groups.

Organics Diversion

As a component of the SWMP and to increase waste diversion, MV announced in June 2009 that it had partnered with Fraser Richmond Soil and Fibre for the provision of the first regional organics facility. In addition, the City of Surrey is exploring a partnership with Metro Vancouver to establish the first regional bio-fuel facility in Surrey. Most MV municipalities are currently reviewing their waste collection contract requirements with a view to deploying a full organics curbside collection program as soon as practical. It is expected that the above efforts, along with MV managed commercial recycling and organics waste diversion initiatives, will drive the region's waste diversion to the 70% goal by 2015. A separate Corporate Report (Curbside Residential Organics Collection Service – Proposed Public Consultation and Pilot Collection Program) on this topic is on the same agenda as this report for Council consideration.

Management of Residual Waste (the remaining 30%)

Metro Vancouver requires replacement capacity for Cache Creek Landfill both as a means for interim disposal of waste and for long-term waste residual management. As part of this, MV is considering the establishment of waste-to-energy facilities. To this end, MV had retained the services of AECOM Consulting Ltd. to rigorously establish the pros/cons of a variety of alternatives, including waste-to-energy, to manage the region's residual waste. The findings of the AECOM report, which assessed all options (including landfilling), are that an increasing emphasis on waste-to-energy is the superior option (against all other alternatives) in terms of air emissions, energy generation and costs.

While waste-to-energy facilities are being considered, it will be a number of years to design, construct and commission such facilities. Due to the impending closure of the Cache Creek Landfill in 2010, an interim solution to the disposal of the region's waste will still be necessary. In this regard, the use of the Vancouver Landfill has been considered; however, it would require the support of the City of Vancouver, Delta and the Ministry of Environment, which, at this time, appears highly unlikely. Metro Vancouver, as part of a Request for Proposals process in 2006, received several private landfill proposals including one in Washington State. As a result, and further to a series of public consultations, MV had announced earlier in 2009 that it intended to transport a portion of the region's waste to Washington State on an interim basis while the region continues to plan the establishment of waste-to-energy facilities.

As of late August 2009, these plans have been placed on hold due to the Provincial Government announcing as part of the Throne Speech that the Provincial Government would not support the exporting of the region's waste to Washington State. MV staff is now working with Provincial officials to determine an appropriate alternative.

In an effort to expedite the establishment of waste-to-energy facilities within the region, MV hosted a series of public forums (involving a panel discussion and a question and answer period at each forum) in mid-September 2009, the objective of which was to present and discuss the options for managing the waste that remains after all steps to reduce, reuse and recycle have been exhausted.

These forums were well attended by the public. However the feedback received by MV was not entirely positive.

Highlights and concerns voiced during the discussions included the following:

- Perceived lack of balance amongst the panellists with respect to the waste-to-energy issue (the panellists were perceived by the public as being “pro waste-to-energy”);
- Greater emphasis needed on increasing recycling rates and reducing waste;
- Waste-to-energy emphasis could discourage increased efforts in waste reduction;
- Health implications;
- Effects of emissions from incineration on agriculture;
- Climate change implications; and
- Management of the ash from incineration.

In addition to the above, it was apparent that the public is generally unaware that Metro Vancouver and its member municipalities are working towards an amendment to the SWMP.

As a result of the above, MV’s Waste Management Committee endorsed a Draft Solid Waste Management Plan Communications Framework. The main elements of the communications framework are:

- Face-to-face presentations with key stakeholders;
- A dialogue or forum series on waste management;
- Website and social media outreach;
- Media relations; and
- Advertising and outreach regarding the public consultations.

By way of the above-listed efforts, MV anticipates that it will gain greater public support and consensus in relation to its goals to manage residual waste via waste-to-energy facilities as well as to establish a greater understanding of the region’s direction with respect to waste diversion goals and strategies.

Waste Disposal Fee Increases

In October 2009, MV announced that it will increase the regional garbage disposal rate (i.e., the “tipping fee”) from \$71/tonne to \$82/tonne effective January 1, 2010. In addition, MV announced that the disposal rate would increase annually and peak in 2014 at \$130 /tonne.

MV has indicated that these increases are necessary due to an overall reduction to waste tonnages in the region which has impacted the overall revenues derived to offset operating costs as well as the higher costs associated with educating the public and promoting waste diversion with the objective of achieving the 70% diversion target by 2015.

The impact of the increased (\$82/tonne) rate to Surrey will be an increase of approximately \$700,000 in the waste disposal budget, which will require an increase in the garbage collection rate charged to homeowners.

CONCLUSION

Metro Vancouver is presently working on amendment to the Regional Solid Waste Management Plan (SWMP). The Zero Waste Challenge, which forms a part of the SWMP, targets an increase in waste diversion throughout the region from the present rate of 55% to 70% by the year 2015. Metro Vancouver is exploring a number of strategies to achieve this and other goals outlined in their draft SWMP as well as the impending issues that the region is facing with respect to closure of the Cache Creek Landfill in 2010.

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General Manager, Engineering

VL/RAC/brb

Appendix I: Metro Vancouver Sustainability Framework

Appendix II: Metro Vancouver Discussion Document on the Zero Waste Challenge – Goals, Strategies and Actions

Metro Vancouver Sustainability Framework



Zero Waste Challenge

Goals, Strategies, and Actions





PRINTED IN CANADA ON RECYCLED PAPER

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.

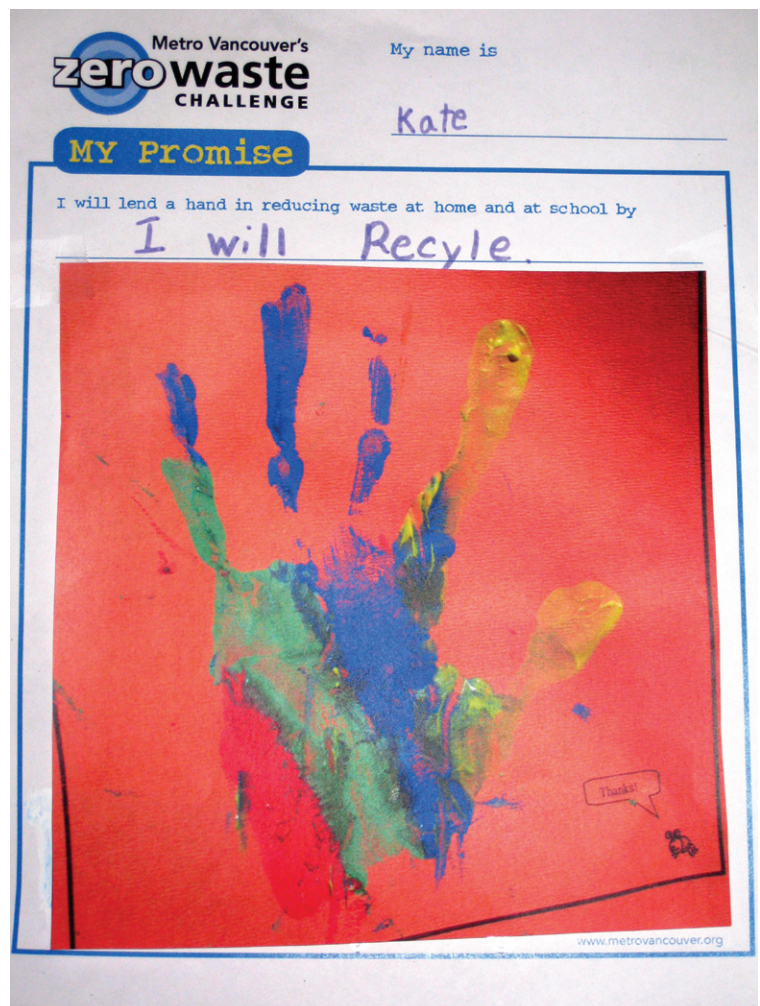


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A. The Zero Waste Challenge

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.

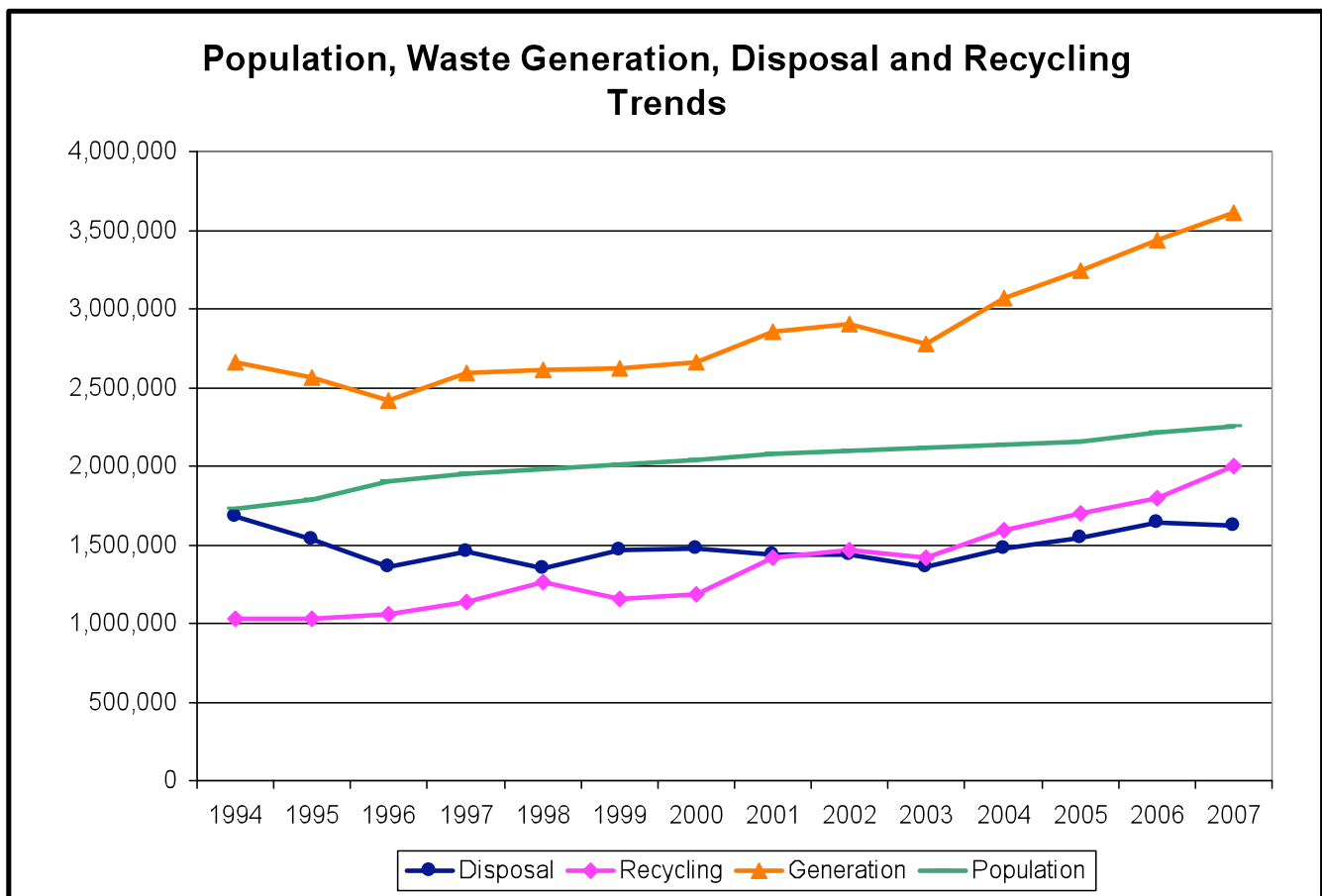
So where are we now, and where do we intend to go?

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:

Diversion Potential from Targeted Materials			
	Disposed from all Sectors (tonnes)	Diversion 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	EPR - E-Waste EPR - Small Appliances	10,000 10,000
Total			600,000

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 . . .

zero waste CHALLENGE

Metro Vancouver's

LONDON DRUGS

ESABC
ELECTRONICS SUSTAINABILITY ASSOCIATION OF BRITISH COLUMBIA

Retail BC

metro vancouver

TURNING IDEAS INTO ACTION

SUSTAINABLE REGION INITIATIVE . . .

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

zero waste CHALLENGE

Metro Vancouver's

MRP

British Columbia Pharmacy Association

metro vancouver

www.metrovancouver.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.

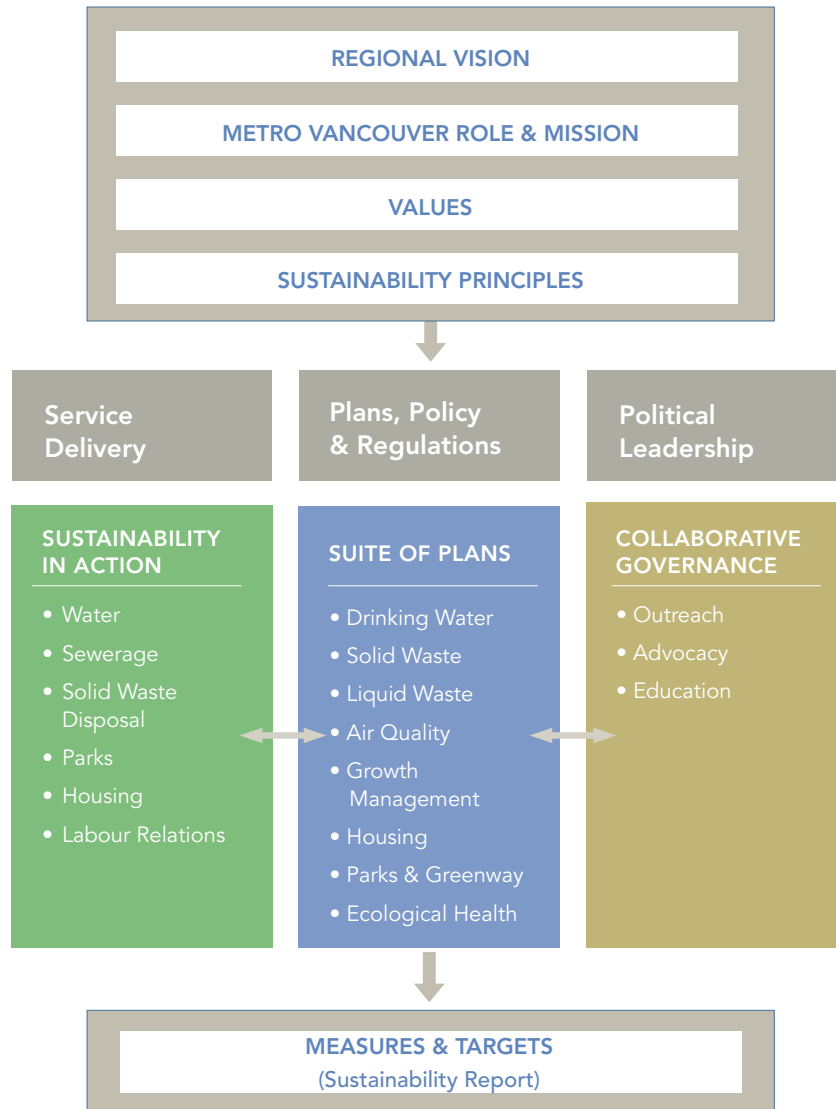
But much of the 'low hanging fruit' in terms of reduction, recycling and reuse has already been plucked. More participation in existing programs and the implementation of additional regulatory, educational, and operational activities will result in some incremental gains, but it will become progressively 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 on-going education initiatives to raise awareness of the 5Rs, and encourage sustainable choices.

-Communication campaigns include

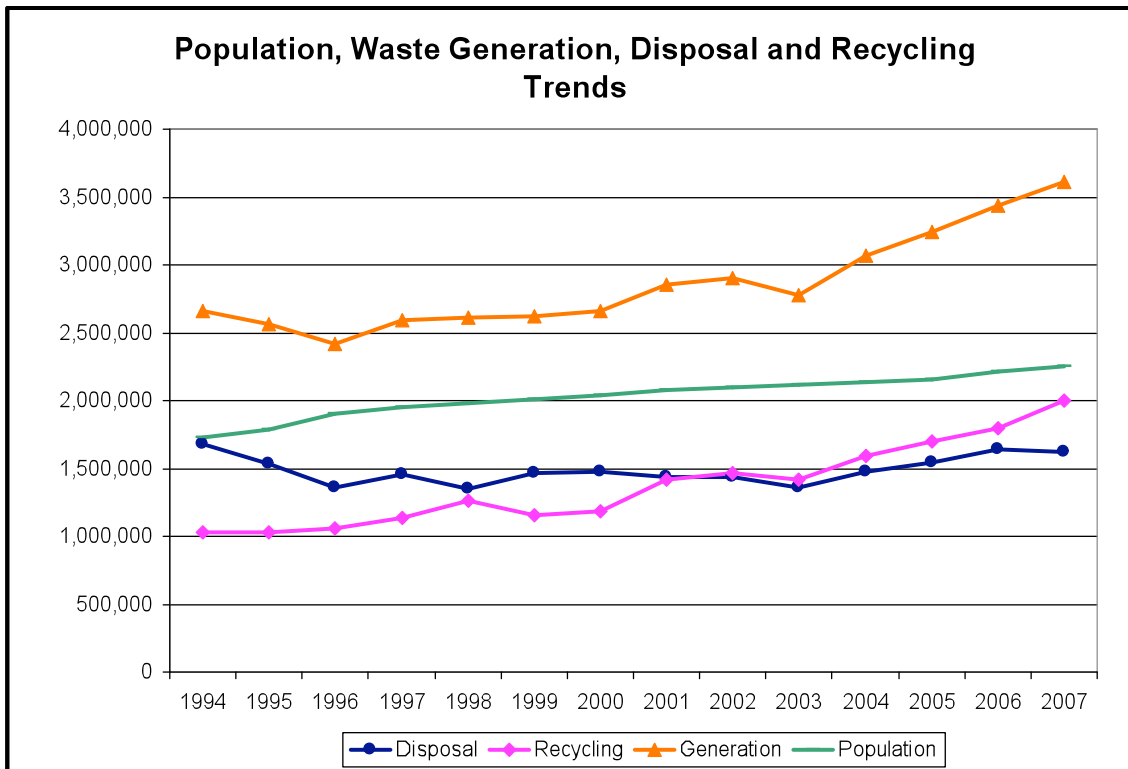
- efforts to reduce Christmas waste in 2007 and 2008
- a community-based social marketing pilot program targeted at increasing recycling rates in the multi-family housing sector;
- point of sale campaigns with retailers aimed at appropriate reuse or disposal of used computers and the safe disposal of 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

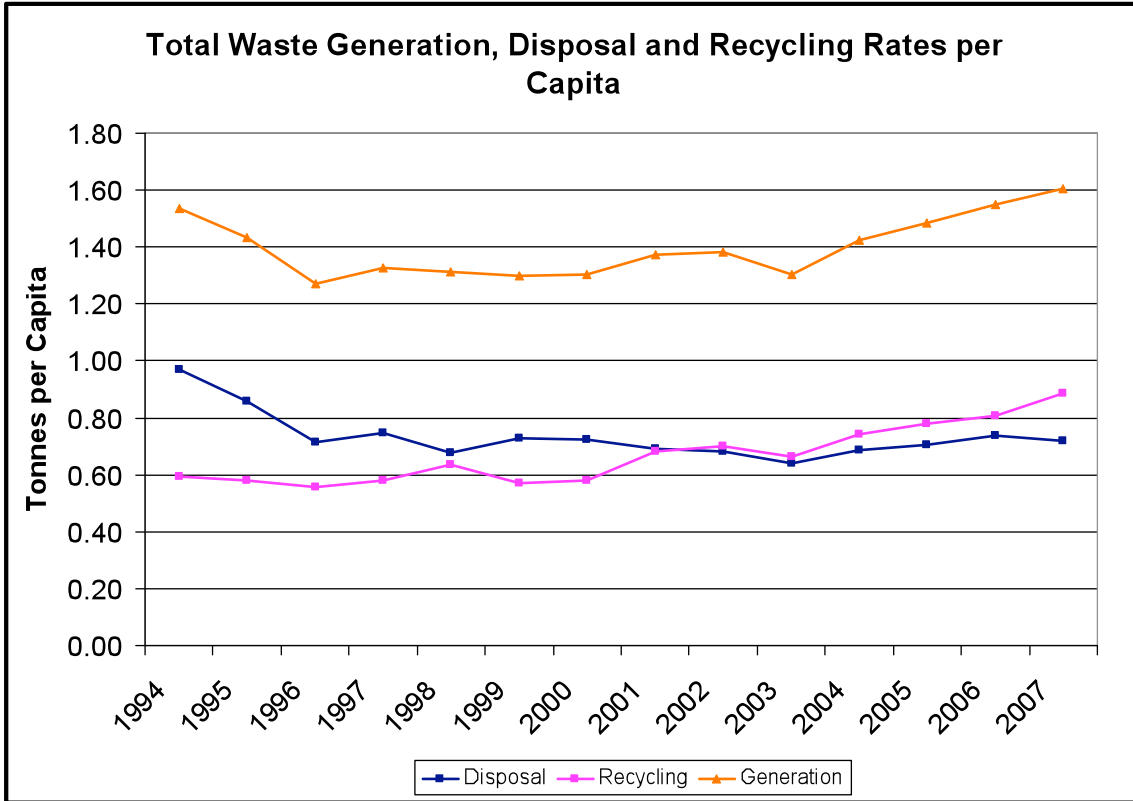
Appendix 2b A growing population means more waste.



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.

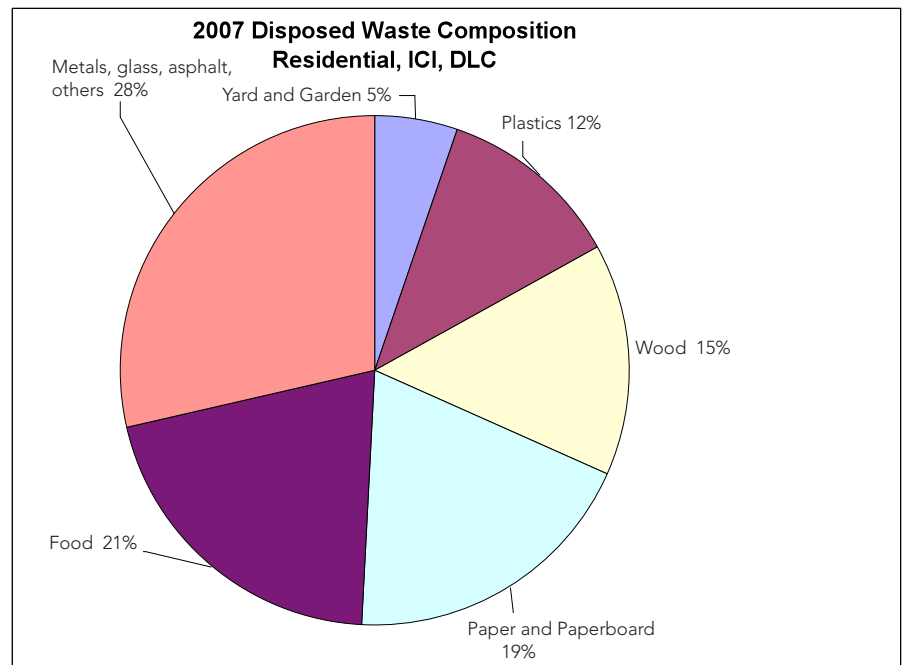
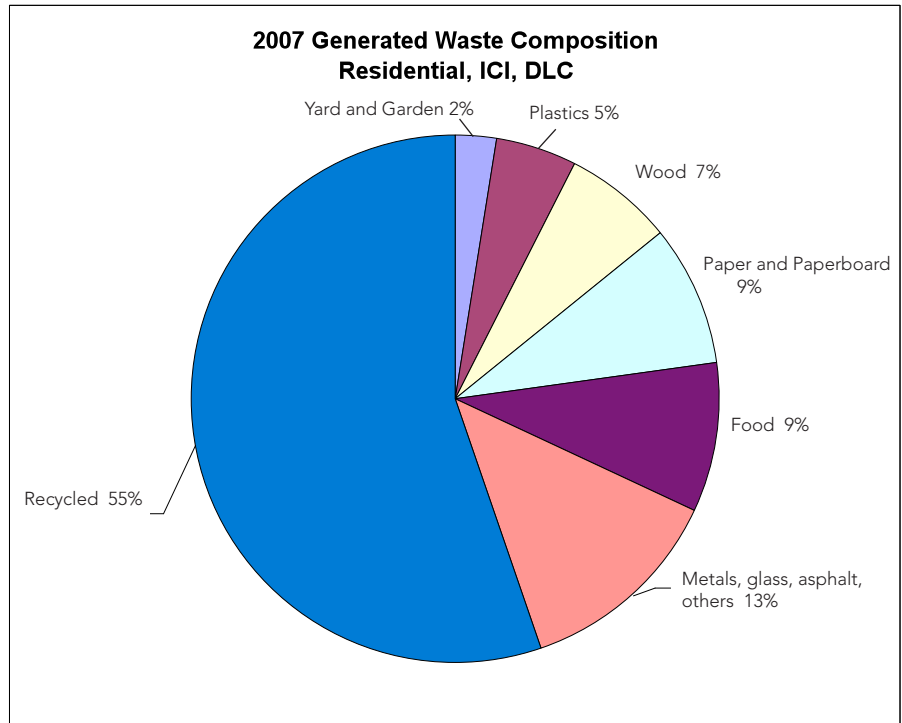
By 2030, Metro Vancouver's population is predicted to exceed 3 million. With a 'status quo' approach to waste management, combined garbage and recycling volumes would increase from the current 3.6 million to 4.5 million tonnes per year.



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?

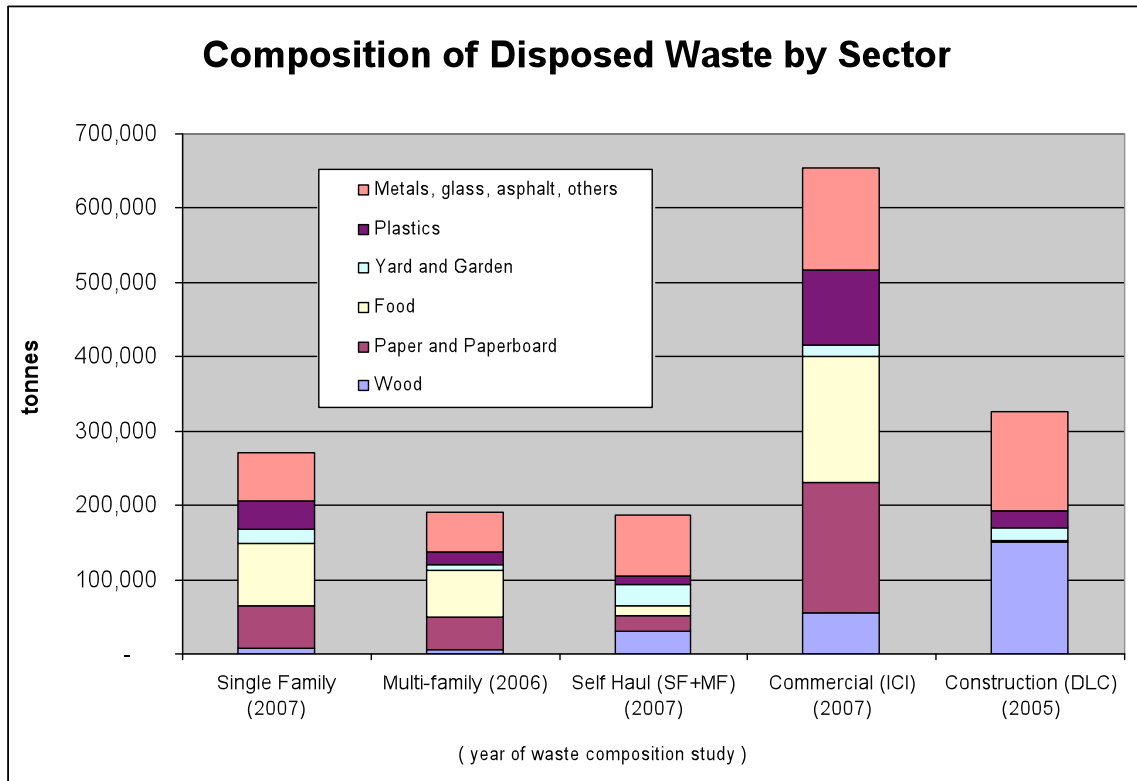
The pie chart on the top shows the overall composition of waste generated, including materials both disposed and recycled. The chart on the bottom shows the composition of waste currently being disposed in Metro Vancouver. Some of the materials entering the disposal stream are recyclable and can, with 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.

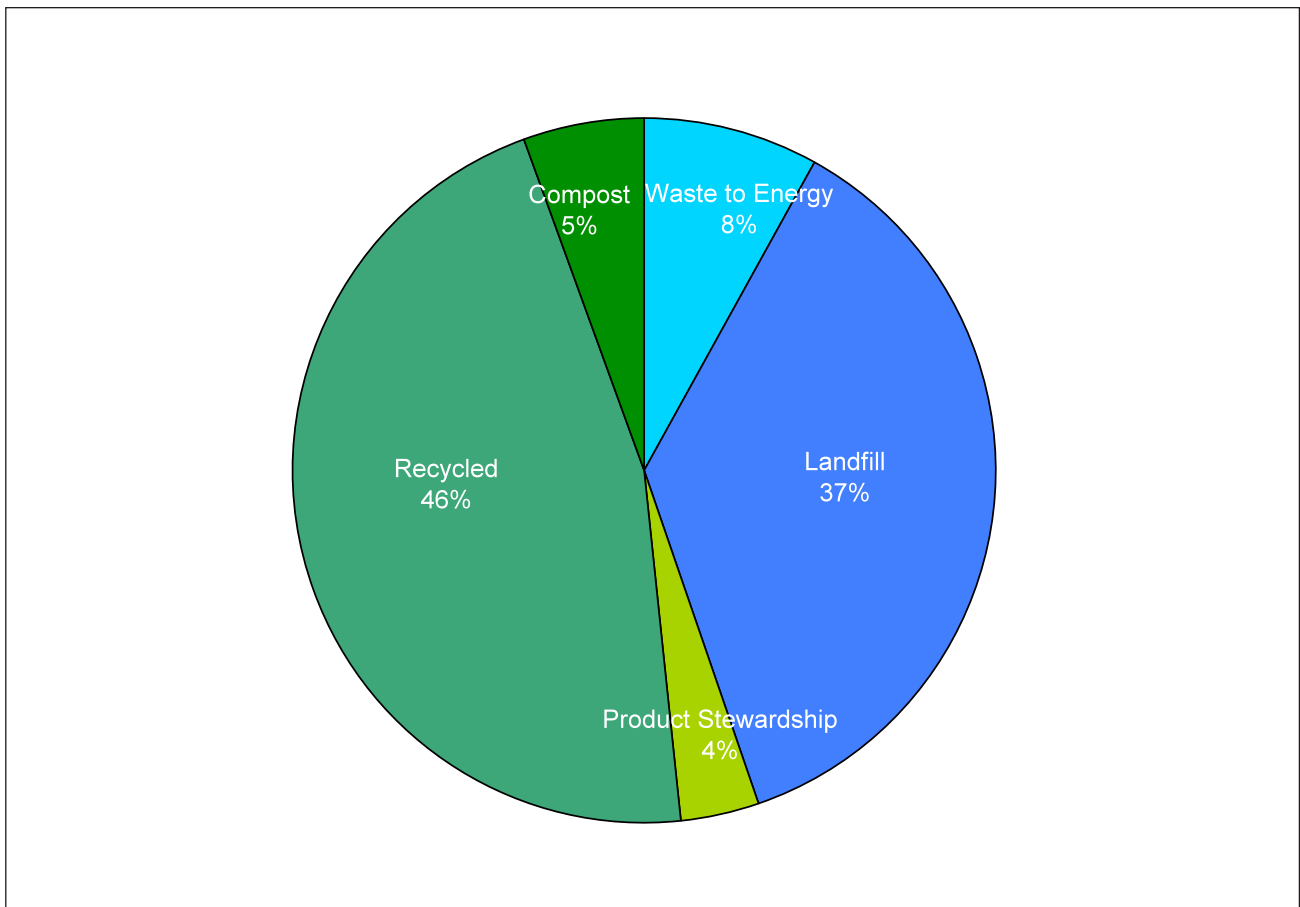
Appendix 2d

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.

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

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.			
4	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.	4.1 Determine the impact and source of the waste product or waste stream 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.	Metro Vancouver and municipalities All Ongoing
Strategy 1.3: Provide social marketing based information and education on purchasing options to reduce waste.			
5	Deliver a program to inform and educate consumers.	5.1 Develop a consumer guide to inform on purchasing and other reduction activities.	Metro Vancouver Residential 2010
6	Deliver a program to inform and educate businesses.	6.1 Develop a business guide to inform on purchasing and other reduction activities.	Metro Vancouver ICI 2011
7	Encourage personal and corporate action through voluntary reduction goals for individuals, families and businesses. Develop and publicize practical methods for reaching these goals.	7.1 Promote 70% diversion goal over all sectors- feature in communication materials 7.2 Work with municipalities to deliver reduction goals through existing information channels with residents 7.3 Work with and through business improvement associations and sectors to encourage corporate Zero Waste actions	Metro Vancouver All On-going

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

Strategy 2.1: Increase the opportunities for reuse

8 Reduce the impediments to reuse	<p>8.1 Investigate the financial and regulatory barriers that prevent or discourage reuse.</p> <p>8.2 Investigate the effectiveness and adequacy of existing material exchange networks.</p>	Metro Vancouver	All	2011
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Strategy 2.2: Increase the effectiveness of existing recycling programs

9 Continue the monitoring and enforcement of the disposal bans	<p>9.1 Routinely review and report on program results.</p> <p>9.2 Analyse effectiveness of disposal bans and review alternative enforcement models.</p> <p>9.3 Expand the material disposal ban program to include materials included in EPR programs and materials for which new recycling markets are developed.</p>	Metro Vancouver and municipalities	All	Ongoing
10 Inform businesses and residents of recycling opportunities	<p>10.1 Provide municipalities with the latest information on recycling collection and drop-off facilities and significant changes to policies and facilities.</p> <p>10.2 Continue and upgrade a central phone and web-based database with latest information which will serve as a reference for the public.</p>	Metro Vancouver and municipalities	Res / ICI	On-going
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.	<p>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</p>	Metro Vancouver and municipalities	Residential and ICI	2012
12 Establish new one-stop-drop centres for recycling.	<p>12.1 With municipalities determine the terms and conditions for participating municipalities and industries.</p>	Metro Vancouver, municipalities, RCBC, BC MoE, the BC Product Stewardship Council and the BC stewardship agencies	Residential and ICI	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 tradeshows.	<p>13.1 Conclude the pilot study on Zero Waste festivals and events.</p> <p>13.2 Develop a Zero Waste tool kit for festivals and events.</p>	Metro Vancouver and municipalities	ICI	On-going

Strategy 2.3: Facilitate increased private sector recycling

<p>14 Encourage private sector recycling activities.</p>	<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&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>	<p>Metro Vancouver and municipalities</p>	<p>ICI and DLC</p>	<p>2011</p>
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Strategy 2.4: Target demolition, land clearing and construction (DLC) sector for increased reuse and recycling

<p>15 Develop incentives for re-use and remove barriers to re-use of wood waste</p>	<p>15.1 Work with the Province to expand the inclusion of re-use wood in building codes.</p> <p>15.2 Provide information and education programs to enable more effective recycling of DLC waste.</p>	<p>Metro Vancouver</p>	<p>DLC</p>	<p>2010</p>
<p>16 Develop a policy to regionally mandate DLC recycling at the job site.</p>	<p>16.1 Review existing permitting structures for construction and demolition in the region</p> <p>16.2 Review options with respect to including a deposit system or other financial incentives to increase follow-through of waste management plans</p> <p>16.3 Change municipal building and demolition permitting processes such that a waste management plan is a requirement of such permits.</p> <p>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.</p>	<p>Metro Vancouver, municipalities and DLC Sector</p>	<p>DLC</p>	<p>By 2012</p>
<p>17 Address future DLC recycling and processing capacity</p>	<p>17.1 Carry out an assessment of existing DLC processing facilities.</p> <p>17.2 Review long-term recycling, processing and disposal needs and opportunities for DLC waste.</p>	<p>Metro Vancouver and DLC Waste Management Sector</p>	<p>DLC /ICI</p>	<p>2011</p>
<p>18 Implement waste reduction strategies directed toward diverting DLC waste from disposal while supporting opportunities for beneficial use.</p>	<p>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.</p> <p>18.2 As transfer stations are upgraded consider providing an area for separated DLC material drop-off</p>	<p>Metro Vancouver</p>	<p>DLC and Residential</p>	<p>On-going</p>

Strategy 2.5: Reduce paper and paperboard being disposed

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 municipalities	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.	Metro Vancouver/ school districts/ municipalities	ICI	On-going
	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			
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

Strategy 2.6: Target organics for recovery

22 Divert organics from the waste stream.	22.1	Establish an organics processing facility	Metro Vancouver and municipalities	Residential and ICI	2009
	22.2	Develop a work plan for the implementation of municipal food waste collection from single family residences.			
23 Evaluate options for processing of organics with biosolids and other utility residuals .	23.1	Complete trials on comingling food waste with wastewater solids.	Metro Vancouver	Residential and ICI	2010
	23.2	Determine the cost and benefits of comingling bio-solids with other residues			
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

Strategy 2.7: Target plastics for increased recycling.			
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
	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.	Residential and ICI/DLC
	25.3	Standardize municipal programs for collection of plastics.	2011
26 Review options for reduction of plastic bag usage.	26.1	Incorporate plastic bags into the EPR framework.	Metro Vancouver and MOE
	26.2	Undertake communication activities to reduce the use of plastic bags.	Residential and ICI
			2010
Strategy 2.8: Target multi-family and industrial, commercial and institutional (ICI) sectors to improve diversion rates			
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
	27.2	Make available an advisory service for recycling programs for multifamily and commercial buildings.	ICI/Residential
			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											
					Demolition	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	<p>Address future DLC recycling and processing capacity.</p> <p>Develop incentives for re-use and remove barriers to re-use of wood waste</p> <p>Develop a policy to regionally mandate DLC recycling at the job site.</p> <p>Implement waste reduction strategies directed toward diverting DLC waste from disposal while supporting opportunities for beneficial use.</p> <p>Encourage private sector recycling activities.</p> <p>Reduce the impediments to reuse.</p> <p>Develop & disseminate sector specific information</p>	X						X				X				X									
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Paper	165,000	ICI, SFR, MF	DLC/SFR	<p>Address future DLC recycling and processing capacity.</p> <p>Develop a policy to regionally mandate DLC recycling at the job site.</p> <p>Implement waste reduction strategies directed toward diverting DLC waste from disposal while supporting opportunities for beneficial use.</p> <p>Encourage private sector recycling activities.</p> <p>Reduce the impediments to reuse.</p> <p>Develop & disseminate sector specific information</p>	X						X				X													
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