



City of Richmond

Report to Committee

To: General Purposes Committee
From: Tom Stewart, ASCT.
 Director, Public Works Operations

Date: October 18, 2011
File: 01-0370-01/2011-
 Vol01

Cecilia Achiam, MCIP, BCSLA
 Interim Director, Sustainability and District Energy

Re: Sustainability Framework - Proposed Solid Waste Strategic Program

Staff Recommendation

That the Solid Waste Sustainability Strategic Program, as presented in **Attachment 1** to the report dated October 18, 2011, be endorsed as the solid waste component of the City's Sustainability Framework.

Tom Stewart, ASCT.
 Director, Public Works Operations
 (604-233-3301)

Cecilia Achiam, MCIP, BCSLA
 Interim Director, Sustainability and District Energy
 (604-276-4122)

Att. 7

FOR ORIGINATING DEPARTMENT USE ONLY			
CONCURRENCE OF GENERAL MANAGER		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

This report presents a recommended Solid Waste Strategic Program to fulfill a key piece in City's Corporate Sustainability Framework (**Attachment 1**). The Sustainability Framework is being developed in support of the following Council Term Goal:

Council Term Goal #7: "Sustainability and the Environment – Demonstrate leadership in and significant advancement of the City's agenda for sustainability through the development and implementation of a comprehensive strategy that among other objectives includes incorporating sustainability into our City policies and bylaws".

In addition, at their meeting on May 24, 2011, Council directed that the City's "Report 2010: Towards Excellence in Recycling and Solid Waste Management" ("Report 2010")¹ be used as the basis to prepare the solid waste component of the City's Sustainability Framework. This report addresses this request.

Background

The City's Sustainability Framework and Policy

The City is developing a Sustainability Framework to bring together the City's individual components of sustainability into a unified and coherent program. The Sustainability Framework developed to-date, inclusive of the proposed Solid Waste Strategic Program, is provided in **Attachment 2**.

The Framework captures the multiple actions at various levels throughout the organization to provide a 'one-stop' overview of the City's activities as they relate to achieving sustainability. It also serves to collate and develop performance-based targets and establish an overall system for measuring and reporting progress across the many objectives of sustainability. By having the targets clearly defined in one place, the City will be able to maximize opportunities for collective and multi-objective based action.

The Framework is being developed in phases with the incorporation of new components as they become developed. On January 25, 2010, Council adopted the conceptual structure for the Sustainability Framework which identified 9 goal areas that span across the full breadth of sustainability². On April 26, 2010, Council adopted the City's Corporate Sustainability Policy 1400 – the first major component of the Sustainability Framework (**Attachment 3**). This Policy provides an overall vision of sustainability and establishes overarching sustainability principles to help guide City decision-making and activities.

¹ "Report 2010: Towards Excellence in Recycling and Solid Waste Management". Printed copies of the report can be found at customer service desk and electronically at http://www.richmond.ca/_shared/assets/Report_201030546.pdf.

² The goal areas adopted by Council are climate change, sustainable resource use, mobility, green built and natural environment, local agriculture and food, sustainable business, leadership in municipal practices, vibrant communities and inclusive, safe and accessible communities.

In order to complete the sustainability framework, Strategic Programs are being developed for each of the identified goal areas. The Strategic Programs serve to establish baseline conditions, targets, strategies and actions. These incorporate and build upon the City's existing initiatives in a manner that supports a particular goal area but also aligns with other sustainability goal areas. A key objective in developing the Sustainability Framework is to better enable the City to identify interconnections between goal areas and advance actions that support advancement of multiple sustainability objectives. Each of the Strategic Programs are being developed in a consistent format to support coherence and enable greater understanding of how the full suite of activities contribute to an overall program.

To-date, Council has adopted two Strategic Programs:

1. Climate Change Strategic Program (June 28, 2010)
2. Sustainable Resource Use – Energy Strategic Program (July 26, 2010).

Combined these two Programs have established 8 targets, including:

- community-wide greenhouse gas emission reduction targets of 33% by 2020 and 80% by 2050 from 2007 levels; and
- 10% community energy use reduction by 2020.

This report presents the Solid Waste Strategic Program to complete another major component within the overarching goal area of "Sustainable Resource Use".

Analysis

In order to develop the Solid Waste Strategic Program component of the framework, it is helpful to understand its relationship to sustainability as well as provide an overview of current activities in this already well-developed program.

Solid Waste Management & Sustainability

Effective solid waste management is critical for advancing overall sustainability. It preserves resources and supports long-term supply. It also helps to reduce greenhouse gas emissions and the impacts of climate change. In addition, effective solid waste management helps ensure that toxic materials are managed appropriately to protect the health and safety of people and the natural environment. Given these considerations, effective waste management was identified as a priority component to be included in the City's Sustainability Framework.

Further background on solid waste and its implications for sustainability is provided in **Attachment 4**. A key finding in this backgrounder is the achievement of Richmond community's residential recycling rate of 50%. This is a significant achievement, particularly when compared with Canada's national recycling average of 30%.

Solid Waste Management – Current City Activities

On May 24, 2011, Council endorsed the “Report 2010: Towards Excellence in Recycling and Solid Waste Management” (‘Report 2010’).

The ‘Report 2010’ highlights the significant advancements and results achieved through the City’s various recycling and solid waste management programs. Through these programs, the City achieved 50% waste diversion and has maintained this level of recycling despite population growth. A summary of the City’s current solid waste and recycling services are provided in **Attachment 5**.

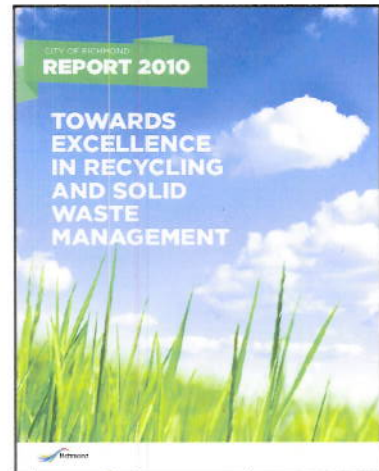


Figure 1: Report 2010: Towards Excellence in Recycling and Solid Waste Management

Recognizing the achievement of the 50% waste diversion goal and the need to move forward with new waste diversion targets and other strategies for managing waste and residuals, a new plan was developed by Metro Vancouver in consultation with Richmond and other Lower Mainland municipalities. The municipal actions outlined in the new plan, “Integrated Solid Waste and Resource Management Plan” (ISWRMP) were endorsed by Council on October 25, 2010. The ISWRMP received provincial approval on July 22, 2011. The ISWRMP establishes a new waste diversion target of 70% by 2015 and an aspirational target of 80% by 2020.

In order to help guide the City toward achievement of these new targets, the ‘Report 2010’ serves to outline key expected focus areas such as: increased emphasis on education; enhanced recycling depots or Eco Centres; expanding recycling to public spaces; evaluating options for recycling programs for business; targeting organics for recycling and energy recovery; targeting demolition, land clearing and construction waste for increased reuse and recycling, etc.

The establishment of a new waste diversion target and the direction outlined in the ‘Report 2010’ presents the opportunity at this time to embed solid waste as a strategic component within the sustainability framework.

Proposed Solid Waste Strategic Program

The proposed Solid Waste Strategic Program is outlined in **Attachment 1**. The proposed Program incorporates the commitments and actions from the ‘Report 2010’ and Council’s endorsement of the ISWRMP.

The Program proposes an overarching City’s goal statement in the solid waste area to be: “A Recycling Smart City” – ‘where excellence in recycling and solid waste management is continuously pursued to ensure waste generation is minimized and reuse, recycling and material recovery opportunities are maximized and accessible for the community’.

It proposes that the City incorporate a corporate waste management target and embed the community target of 70% waste diversion by 2015. The benefit of establishing a corporate waste management target is that it will help the City to measure how, as a business, our own actions are

contributing to the larger community target. It will also help the City manage its own carbon footprint.

In summary, the proposed Solid Waste Strategic Program:

- articulates an overarching goal statement (as noted above);
- embeds the City's long-time existing strategies: Reduce, Reuse and Recycle into the City's broader sustainability action agenda;
- formalizes one Solid Waste and Recycling Program that encapsulates both corporate and community activities;
- establishes a commitment to set a corporate waste management target by the end of 2012;
- embeds the community target to achieve 70% waste diversion by 2015;
- establishes baseline conditions for reporting progress based on a benchmark year consistent with other core sustainability objectives.

The City's progress in expanding and advancing recycling services and initiatives have been continuously pursued and done in a manner which demonstrates leadership in the region. By embedding and populating the Sustainability Framework with the proposed Solid Waste Strategic Program, the City will continue to be leaders in the region in capturing this important element as part of the broader sustainability agenda.

Implementation

As with the activities outlined in the 'Report 2010', the proposed Solid Waste Strategic Program will be managed by the City's Fleet and Environmental Programs Manager. A proposed 5-year implementation plan is provided in **Attachment 6**.

Resource Considerations

There is no direct financial impact associated with the adoption of the proposed Solid Waste Strategic Program. At the corporate-scale, the Solid Waste Strategic Program includes a commitment to develop a corporate waste management target. Council will determine what target to adopt depending on resource and funding implications.

At the community-scale level, the proposed Solid Waste Strategic Program embeds an existing target previously endorsed by Council (i.e. 70% waste diversion by 2015). New initiatives and resources will be required to reach the community target, which were outlined when Council considered adoption of the municipal actions in the ISWRMP. Key activities include expanding recycling into the multi-family and commercial sector, and most likely developing an Eco-Centre to expand recycling depot servicing. Other activities will also be required. The cost and resource implications will be identified and reported to Council for evaluation and approval as each item is considered. The existing model of cost recovery from those who benefit from the services and programs will be maintained.

Sustainability Framework – Next Steps

The City’s Sustainability Framework is being developed in phases through the work of staff across City departments. Components of the Sustainability Framework are being brought forward as they are developed.

To date, the Sustainability Framework includes an overarching Sustainability Policy and completed Climate Change goal area. A Strategic Energy Program has also been developed as part of Sustainable Resource Use. The addition of the proposed Solid Waste Strategic Program would further complete this goal area. Sustainable Resource Use will be completed with the future development of the Water Strategic Program.

The anticipated timeline for developing the remaining goal areas of the Sustainability Framework is provided in **Attachment 7**.

Financial Impact

There is no direct financial impact associated with adopting the Solid Waste Strategic Program.

Conclusion

By bringing the pieces of sustainability together into one unified and coherent program, the City’s Sustainability Framework helps the City adopt a holistic and integrated approach to sustainability and achieve a new level of sustainability performance. Based largely on the findings from the City’s recent “2010 Report: Towards Excellence in Recycling and Solid Waste Management”, the proposed Solid Waste Strategic Program completes another major milestone in the development of the City’s Sustainability Framework.



Suzanne Bycraft
Manager, Fleet & Environmental Programs
(604-233-3338)

MD:md



Margot Daykin
Sustainability Manager
(604-276-4130)

City of Richmond's Corporate Sustainability Framework – Solid Waste Strategic Program (Overview) –

The Solid Waste Strategic Program consists of:

Goal: A Recycling Smart City – “where excellence in recycling and solid waste management is continuously pursued to ensure waste generation is minimized and reuse, recycling and material recovery opportunities are maximized and accessible for the community”

Strategies:

- Reduce – *reduce waste at source*
- Reuse – *convert waste to a new use (including energy)*
- Recycle – *re-introduce into the supply change*



Action Program:

- Solid Waste and Recycling Program (Corporate & Community)

Targets:

- To develop a corporate waste target by the end of 2012.
- To achieve a community-wide waste diversion rate of 70% by 2015.

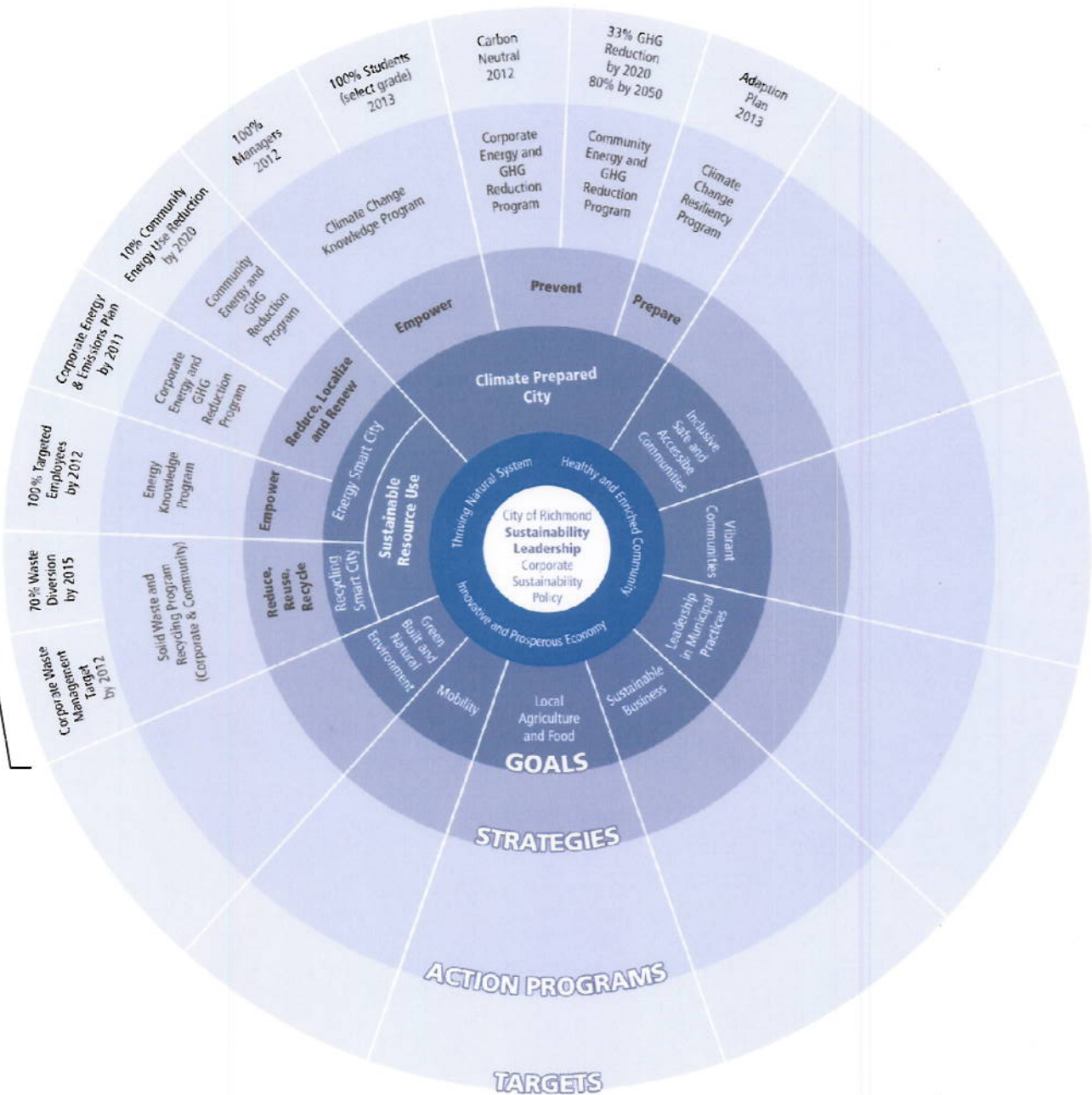
Baseline*:

- Corporate waste generation (2007): @ 6,175 tonnes
- Community waste generation (2007): @ 125,000 tonnes
- Residential recycling rate (2007): 50% (collectively, residents are recycling approximately half of the overall waste generated)


* To establish a common benchmark, 2007 has been selected as the base year for each of the goal areas in the Sustainability Framework.

City of Richmond's Corporate Sustainability Framework – Solid Waste Strategic Program –


Proposed
 New Solid
 Waste
 Strategic
 Program



City of Richmond's Corporate Sustainability Frame Work – Corporate Sustainability Policy –

		Policy Manual
Page 1 of 3	Adopted by Council: April 26, 2010	Policy 1400
File Ref: 10-6125	Corporate Sustainability Policy	
<p>Policy 1400:</p> <p>It is Council's Policy that:</p> <ol style="list-style-type: none"> 1. The City of Richmond's Corporate Sustainability Policy provides the commitment, shared vision, guiding principles and corporate strategic practices for how the City of Richmond embraces and advances sustainability. <p>Corporate Commitment</p> <ol style="list-style-type: none"> 2. The City of Richmond recognizes that a sustainable community is essential for achieving the City's Corporate Vision of "being the most appealing, liveable and well-managed community in Canada". <p>The City of Richmond is committed to becoming a recognized leader in sustainability, advancing local community sustainability through excellence in local governmental sustainability practice and serving as an inspiration for greater collective change.</p> <p>Envisioning Sustainability</p> <ol style="list-style-type: none"> 3. The City of Richmond is guided by the following Vision of a Sustainable Richmond: <ul style="list-style-type: none"> <i>"A sustainable Richmond community is a healthy, safe and enriched island community with thriving natural systems and a responsible and prosperous economy, sustained for current and future generations."</i> <p>The City recognizes that the realization of this Vision is dependant on the collective achievement of three interdependent conditions:</p> <p>Social Sustainability – the condition where "basic needs are met, wealth and resources are distributed justly, equitable opportunities exist for social enrichment at the individual and community level and resiliency exists to address challenges"</p> <p>Environmental Sustainability – the condition where "the integrity of the life support systems of the Earth are maintained and enriched by socio-economic choices"</p> <p>Economic Sustainability – the condition where "social, natural and economic capital is managed to produce benefits that are enriching, non-eroding, equitable and fiscally responsible"</p> <p>Realizing Sustainability</p> <ol style="list-style-type: none"> 4. The City will act according to the following Sustainability Principles (RESES): <ul style="list-style-type: none"> • Respect - There is respect for humans (individuals, the local community, the global community and future generations) and biodiversity. 		

2009154

		Policy Manual
Page 2 of 3	Adopted by Council: April 26, 2010	Policy 1400
File Ref: 10-6125	Corporate Sustainability Policy	
<ul style="list-style-type: none"> • Equity - It is recognized that no one should be constrained from realizing a just and acceptable standard of living. Decisions and actions will be made to result in a just distribution of resources and costs, among communities today and in the future. • Social Inclusion and Cultural Enrichment - Diversity is respected and celebrated, everyone is able to fully participate in and enjoy all aspects of community life and act on their responsibilities, and people enjoy and are supported by strong and vibrant human interactions. • Ecological Integrity - Ecological health is recognized as an essential foundation for social and economic well-being and decisions and activities are managed to achieve positive environmental outcomes. • Security and Adaptability - Individuals and communities are supported by resilient socio-economic systems, including a responsible economy based on renewable and reliable inputs (e.g., energy, water, food and raw resources), fiscal resilience and social effectiveness. Life-supporting systems, such as atmospheric conditions, are secure and both individuals and communities are able to anticipate and effectively respond to change. <p>5. The City will adhere to the following Sustainability Practices:</p> <ul style="list-style-type: none"> • Demonstrating Leadership - The City will set sustainability-based goals of significance, adopt leading-edge practice and deliver results of substantive sustainability benefit. • Being Accountable - The City will advance a robust sustainability-driven management program, one which leads by need, focuses action investment on areas of high sustainability importance, takes action based on its established sustainability principles and measures performance against well-defined targets. • Conducting Integrated Decision-Making - The City will integrate sustainability throughout the organization, working in partnership with internal and external parties. The City will undertake <i>triple bottom line decision-making</i>, the practice of considering the socio-cultural, economic and environmental benefits and costs to current and future generations. • Learning and Being Innovative - The City will grow long-term organizational capacity and foster a culture of sustainability awareness and responsibility that promotes new ways of thinking. The City will challenge established norms, share knowledge, adopt emerging technologies and practices and drive progress through continual improvement. • Engaging the Community - The City recognizes that Sustainability requires collective action by all. Over time, the City will encourage greater levels of participation of the community, business, academia and other sectors to create a more sustainable community through partnerships and supportive programs. <p style="text-align: left; margin-left: 20px;">2888154</p>		



Page 2 of 3	Adopted by Council: April 26, 2010	Policy 1400
File Ref: 10-6125	Corporate Sustainability Policy	

- **Equity** - It is recognized that no one should be constrained from realizing a just and acceptable standard of living. Decisions and actions will be made to result in a just distribution of resources and costs, among communities today and in the future.
 - **Social Inclusion and Cultural Enrichment** - Diversity is respected and celebrated, everyone is able to fully participate in and enjoy all aspects of community life and act on their responsibilities, and people enjoy and are supported by strong and vibrant human interactions.
 - **Ecological Integrity** - Ecological health is recognized as an essential foundation for social and economic well-being and decisions and activities are managed to achieve positive environmental outcomes.
 - **Security and Adaptability** - Individuals and communities are supported by resilient socio-economic systems, including a responsible economy based on renewable and reliable inputs (e.g., energy, water, food and raw resources), fiscal resilience and social effectiveness. Life-supporting systems, such as atmospheric conditions, are secure and both individuals and communities are able to anticipate and effectively respond to change.
5. The City will adhere to the following Sustainability Practices:
- **Demonstrating Leadership** - The City will set sustainability-based goals of significance, adopt leading-edge practice and deliver results of substantive sustainability benefit.
 - **Being Accountable** - The City will advance a robust sustainability-driven management program, one which leads by need, focuses action investment on areas of high sustainability importance, takes action based on its established sustainability principles and measures performance against well-defined targets.
 - **Conducting Integrated Decision-Making** - The City will integrate sustainability throughout the organization, working in partnership with internal and external parties. The City will undertake *triple bottom line decision-making*, the practice of considering the socio-cultural, economic and environmental benefits and costs to current and future generations.
 - **Learning and Being Innovative** - The City will grow long-term organizational capacity and foster a culture of sustainability awareness and responsibility that promotes new ways of thinking. The City will challenge established norms, share knowledge, adopt emerging technologies and practices and drive progress through continual improvement.
 - **Engaging the Community** - The City recognizes that Sustainability requires collective action by all. Over time, the City will encourage greater levels of participation of the community, business, academia and other sectors to create a more sustainable community through partnerships and supportive programs.

2888154



Page 3 of 3	Adopted by Council: April 26, 2010	Policy 1400
File Ref: 10-6125	Corporate Sustainability Policy	

Policy Scope

6. The scope of the City of Richmond Corporate Sustainability Policy is as follows:
- The policy applies to all City decision-making and activities.
 - The policy recognizes the City's responsibility to operate in a manner that is socially, environmentally and financially sound and its broader ability to influence others to make more sustainable living choices.

Policy Review

7. This Policy will be reviewed and revised regularly.

Solid Waste Backgrounder

Canadian Solid Waste Management Trends

- Canadians generate approximately 31 million tonnes of solid waste each year, of which only 30% is recycled. Most solid waste is disposed of in landfills and takes many years to decompose (RCBC, 2010).
- While landfilling is the most common way to dispose of waste in Canada, existing landfill space is reaching capacity and many residents are opposed to having landfills created close to their communities. This presents a challenge for all Canadian communities.
- Compared to 17 other developed countries, Canada ranks last on the municipal waste generation indicator by the Conference Board of Canada (Figure 1).

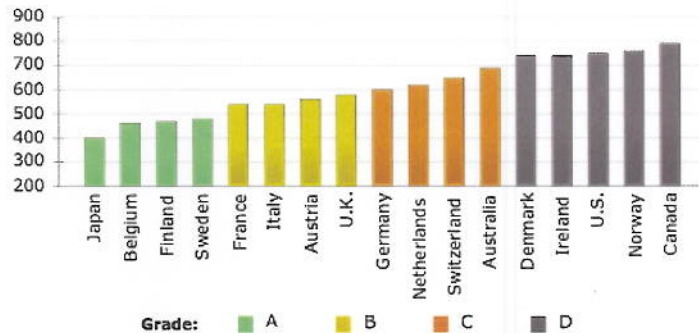


Figure 1. Municipal Waste Generation, 2005 or Most Recent Year (kilogram per capita) Source: *The Conference Board of Canada*

Regional Trends in Metro Vancouver

- Waste generation has been on the rise with population growth; however recycling efforts have increased steadily and successfully prevented further increases in waste disposed.
- The cost to dispose garbage is growing. Tipping fees have increased by almost 50% since 2007 and are projected to rise to over \$180/T by 2015 as landfill space continues to decrease in the region (Figure 2) (City of Richmond, 2010).
- Metro Vancouver developed an *Integrated Solid Waste and Resource Management Plan* with an aggressive goal to reduce waste generated per capita to at least 90% of 2010 levels by year 2020, and waste diversion (recycling) targets of 70% by 2015 with an aspiration target of 80% by 2020³ (City of Richmond, 2010).

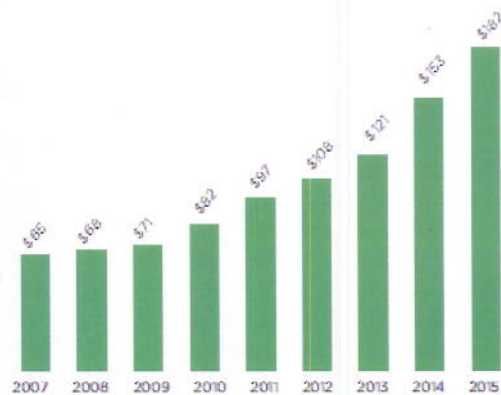


Figure 2 Tipping Fees, Current and Projected, Per Tonne Source: *City of Richmond, 2010*

³ The overall 70% diversion target implies a 30% diversion rate by multi-family home residents, 65% by single-family home residents, 70% by institutional, commercial and industrial operators, and 80% by demolition, land clearing and construction industry operators.

Richmond Solid Waste Management Trends

- Compared to a national average of 30%, Richmond residents recycle more than 50% of unwanted material (Figure 3).
- Despite significant population growth, the City of Richmond's solid waste management programs have successfully increased recycling and decreased waste generation for single family homes since 1990 (Figure 4). Recycling, yard trimming and food scraps collected have all seen steady growth since implementation of various programs (City of Richmond, 2010).
- Total residential waste sent to landfill fell from 27,236 tonnes in 1990 to 16,633 tonnes in 2010 as a result of the successful implementation of comprehensive recycling programs (Appendix A) and full-service Recycling Depot (City of Richmond, 2010).

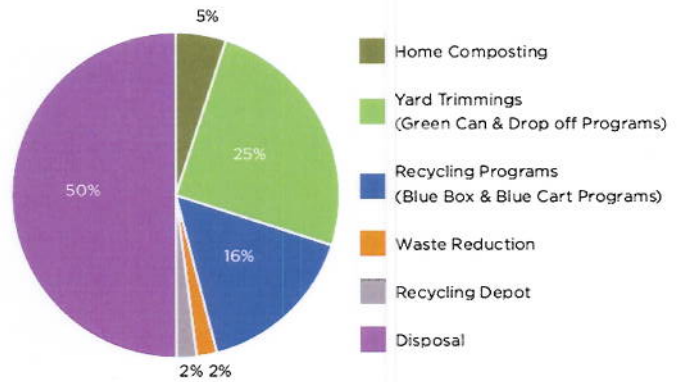


Figure 3. Richmond Residential Recycling
Source: City of Richmond, 2010

Solid Waste, Natural Resources and Climate Change

- Solid waste decomposing in landfills contributes to climate change directly through the emission of methane, a greenhouse gas (GHG) that is 21 times more potent than CO₂ in terms of its global warming potential (RCBC, 2010; Environment Canada, 2010).
- Solid waste is estimated to be responsible for 14% of Canada's annual GHG emissions (EPIC, 2002; Environment Canada, 2010). In Richmond, solid waste contributed about 4% of community GHG emissions (2007) and to about 9% of corporate GHG emissions (2007) (Province of British Columbia, 2007; City of Richmond, 2011).
- Recycled materials require fewer resources, such as energy and water, and emit fewer GHG during manufacturing processes than virgin raw materials⁴ (Roseland, 2005; RCBC, 2010). Waste prevention and recycling can also delay the need to extract raw materials, which decreases GHG emissions from the extraction process and the transportation of raw materials⁵ (RCBC, 2010).

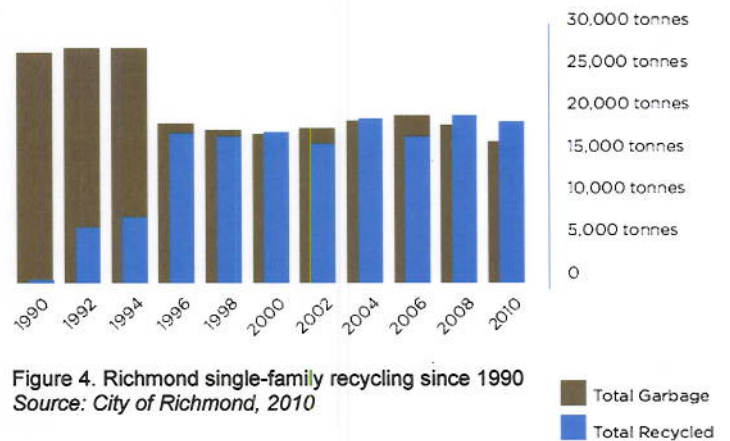


Figure 4. Richmond single-family recycling since 1990
Source: City of Richmond, 2010

⁴ For instance, research has found a 90% energy use savings in the manufacturing of aluminum when using recycled materials as the input rather than using raw resources.

⁵ By recycling beverage containers, consumers help reduce the amount of CO₂ emissions by 135,000 tonnes, which is equivalent to taking 39,000 cars off BC's roads for a year.

Solid Waste and the Economy

- Much of the solid waste produced in the US and Canada is not directly generated by consumers, but is generated through the manufacturing and distribution phases of consumer products production⁶ (Roseland, 2005). As such, opportunities exist for producers and manufacturers to reduce waste from its source.
- While Recycling and Reuse programs can lead to job creation and business opportunities, governments also benefit from savings in tipping fees⁷ (Roseland, 2005).
- Recycling and Reuse programs help transition communities from unsustainable open loop systems (cradle-to-grave) to closed loop systems (i.e., cradle-to-cradle).

Sustainable Solid Waste Management Characteristics

- A hierarchy of strategies exists. Source reduction should be the first priority; secondly, efforts should be made to reuse resources; thirdly, materials that cannot be reuse should be recycled; finally, when materials can no longer to reused nor recycled, options to recover energy should be explored (Roseland, 2005).
- It is important to note that waste diversion strategies (recycle and recover) only delays the onset of landfill crises in communities, while reduce and reuse offer the greatest opportunities for eliminating pollution and depletion of natural resources (Roseland, 2005).

Solid Waste Backgrounder References:

- City of Richmond. (2011). Corporate GHG emissions and Energy Inventory for 1995, 1999 & 2007. Richmond, BC: City of Richmond
- City of Richmond. (2010). *Towards excellence in recycling and solid waste management: report 2010*. Richmond, BC: City of Richmond.
- Conference Board of Canada. (2011). *Environment - municipal waste generation*. Retrieved July 7, 2011, from Conference Board of Canada: http://www.conferenceboard.ca/hcp/details/environment/municipal-waste-generation.aspx#_ftn8
- Environment Canada. (2010). *Municipal solid waste and greenhouse gases: methane gas and landfills*. Retrieved July 7, 2011, from Environment Canada: <http://www.ec.gc.ca/gdd-mw/default.asp?lang=En&n=6F92E701-1>
- EPIC. (2002). *Opportunities for reducing greenhouse gas emissions through residential waste management*. Mississauga, ON: Environment and Plastics Industry Council .
- Metro Vancouver. (2010). *Integrated solid waste and resource management plan: a solid waste management plan for the Greater Vancouver Regional District and member municipalities*. Burnaby, BC: Metro Vancouver.
- Province of British Columbia. (2007). *Richmond City Updated 2007 Community Energy and Emissions Inventory* . Victoria, BC: Province of British Columbia.
- RCBC. (2010). *RCBC recycling fact sheets: recycling and climate change*. Retrieved July 7, 2011, from Recycling Council of British Columbia: http://rcbc.bc.ca/files/u6/rg_100212_Recycling_and_Climate_Change.pdf
- RCBC. (2010). *RCBC recycling fact sheets: think twice! where does our garbage go?* Retrieved July 7, 2011, from Recycling Council of British Columbia: http://rcbc.bc.ca/files/u6/rg_100128_Think_Twice.pdf
- Roseland, M. (2005). *Toward sustainable communities: resources for citizens and their government*. Gabriola Island, BC: New Society Publishers.

⁶ For every 100 pounds of products manufactured in the US, at least 3,200 pounds of wastes are produced.¹⁰

⁷ Montreal created five eco-centres where residents can dispose of items not accepted in regular garbage or recyclables. These eco-centers received almost 85,000 tonnes of materials from 1997-2000, saving \$400,000 a year in every 1,000 tonnes of materials collected.³⁴



Current City Solid Waste and Recycling Initiatives

Targeted User Groups		Initiatives	Description
Community			
Residents	All residents	Waste & Recycling Collection Services	Provides curb-side waste collection services.
		Blue Box/Cart Recycling Services	Provides convenient collection services for single-family homes and multi-family complexes to collect and recycle newspaper, paper products and cardboard along with tin, aluminium and glass food and plastic containers.
		Food Scraps & Yard Trimmings Services	Provides curb-side collection services for food scraps and yard trimmings. Provides drop-off locations for yard trimmings.
		Composting Services	Provides free composting workshops from January to November and compost bins for sale at the Recycling Depot.
	Single-family homes	Green Can Services	Provides curb-side collection services and 80L or smaller containers (with Green Can decals) for residents to collect food scraps.
Multi-family Homes	Multi-Family Building Guidelines	Supports consistent standards at all multi-family residential and mixed-use buildings. Guidelines identify basic service requirements, minimum container size and measures to enable access.	
Commercial Buildings	Commercial Building Guidelines	Provides design considerations for recycling and garbage in commercial properties to support waste management activities in these facilities. The guidelines specify: <ul style="list-style-type: none"> • design of storage facilities for garbage & recycling, • selection of containers for garbage and recycling, and • planning of access for both tenants and collection service providers. 	
Residents & Small Commercial Businesses	Recycling Depot Services	Offers central drop off recycling services for residents and small commercial waste generators to collect a range of various recycling materials, including yard trimmings, paint/solvents/pesticides, compact fluorescent lamps (CFLs) and appliances.	
General Public	Public Spaces Collection Services	Provides garbage services in public spaces, disposes and recycles litter and illegally-dumped materials.	
	Public Spaces Recycling Services	Provides collection services and containers for public spaces recycling and special events recycling.	
	Compost Demonstration Garden	Provides education on composting and compost bins to community work.	
	Product Stewardship Service	Supporting product stewardship (e.g., policy development, using municipal infrastructure to collect products on cost-recovery basis, etc.)	
	Community Outreach Services	Organizes presentations and displays on environmental awareness for community events and school classes.	
Corporate			
City Corporate	Corporate Recycling and Waste Services	Provides recycling and waste collection services in corporate buildings. Promotes waste reduction behaviour with employees.	

**City's Sustainability Framework – Solid Waste Strategic Program
- Implementation Plan and Short-term Deliverables -**

Table 1: 5-Year Implementation Plan

Action		2011	2012	2013	2014	2015
Reduce, Reuse & Recycle	Solid Waste and Recycling Program (Corporate and Community)					
	Manage	Oversee Program through Fleet & Environmental Programs Manager				
	Inventory	Establish and Manage Corporate Inventory System				
		Manage Community Inventory System				
	Action Plan	Corporate & Community Solid Waste & Recycling Strategic Plans (Towards Excellence)				
	Targets	Develop Corporate Waste Target				
		Community Waste Reduction Target (completed)				
	Action	Continued Delivery of Existing Waste Reduction and Recycling Services (corporate and community)				
		Implement Additional Services (per Strategic Plans)				
	Report, Innovate & Improve	Research and Explore Innovations/Best Practices				
Annual Report						Review

 Anticipated to be funded within current resources
 Requires additional resources

Attachment 6 (Cont'd)

Table 2: Solid Waste Strategic Programs – 2012 Short-Term Deliverables

Deliverable	Action Program	Lead Department	2012 Timeline
Townhouse Organics Pilot Program – Review and Service Recommendations (RTC)	Community Solid Waste and Recycling Program	Fleet and Environmental Services	1 st Quarter
Eco Centre Concept – Review and Recommendations (RTC)	Community Solid Waste and Recycling Program	Fleet and Environmental Services	2 nd Quarter
Public Spaces Recycling Initiative – Review and Recommendations (RTC)	Community Solid Waste and Recycling Program	Fleet and Environmental Services	3 rd Quarter
Communications Strategy - Waste Reduction and Recycling Services	Community Solid Waste and Recycling Program	Fleet and Environmental Services	3 rd Quarter
Evaluate Carbon Value Benefits for Organic Recycling	Community Solid Waste and Recycling Program / Corporate Energy & Emissions Program	Sustainability Services	3 rd Quarter

City of Richmond's Corporate Sustainability Framework - Development Timeline⁸ -

The City is currently developing an overarching Sustainability Framework to establish a comprehensive set of sustainability goals, action programs and targets for the City. The current timeline for developing the Framework is provided in Table 1.

Table 3: Schedule for the Development of the City of Richmond's Sustainability Framework

Development Phase	Schedule	Progress*
<i>Phase 1: Conceptual Framework</i>	Jan 2010	✓
<i>Phase 2: Sustainability Foundations – Corporate Sustainability Policy</i>	April 2010	✓
<i>Phase 3: Climate Change Strategic Program</i>	June 2010	✓
<i>Phase 4: Sustainable Resource Use - Energy Strategic Program</i>	July 2010	✓
<i>Phase 5: Sustainable Resource Use – Solid Waste Strategic Program</i>	Nov. 2011	
Framework Launch		
<i>Phase 6: Mobility Strategic Program</i>	March 2012	
<i>Phase 7: Local Agriculture and Food Strategic Program</i>	Sept. 2012	
<i>Phase 8: Sustainable Resource Use – Water Strategic Program</i>	Dec. 2012	
<i>Phase 9: Green Built & Natural Environment Strategic Program</i>	March 2013	
<i>Phase 10: Sustainable Business Strategic Program (Resilient Economy)</i>	Sept. 2013	
<i>Phase 11: Social Inclusion, Safe Communities & Accessibility Strategic Program</i>	Dec. 2013	
<i>Phase 12: Vibrant Communities Strategic Program</i>	March 2014	
<i>Phase 13: Municipal Leadership Governance**</i>	Dec. 2014	

*: ✓ denotes complete; shading denotes current phase

** : this strategic program area will focus on reviewing city decision-making process and practices, and developing further tools for assisting the corporation in conducting triple bottom line decision-making.

⁸ Amended October 2011

