

Supports Item No. 1  
CS&B Committee Agenda  
July 14, 2011



ADMINISTRATIVE REPORT

Report Date: July 5, 2011  
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Meeting Date: July 14, 2011

TO: Standing Committee on City Services and Budgets

FROM: General Manager of Engineering Services in consultation with the Director of Corporate Communications

SUBJECT: Food Scraps Collection and Composting: Phase 2 Pilot Implementation

**RECOMMENDATION**

- A. THAT Council approve a pilot program to test the expansion of food scraps collection involving approximately 2,000 single-family homes and five to seven multi-family buildings and businesses starting in 2011, subject to the General Manager of Engineering Services and the Director of Supply Chain Management negotiating and entering into an amending agreement with Greater Vancouver Sewerage and Drainage District and Fraser Richmond Soil and Fibre for processing yard trimmings and food waste.
- B. THAT Council approve a project budget of \$383,000 to be funded by surplus commercial tipping fee revenue which will reduce the transfer to the Solid Waste Capital Reserve by an equivalent amount.

**GENERAL MANAGER'S COMMENTS**

The General Manager of Engineering Services recommends approval of the foregoing.

**COUNCIL POLICY**

May 5, 2009: Council received the Greenest City Action Team's Quick Start Recommendations report and directed staff to report back with implementation strategies among other things for city-wide food waste collection and composting, and shifting from weekly to biweekly garbage collection.

October 20, 2009: Council received the Greenest City Action Team's Vancouver 2020 A Bright Green Future report which encourages the City to accelerate work with Metro Vancouver to implement city-wide composting programs.

January 26, 2010: at an in-camera session Council authorized staff to negotiate and enter into a contract with Metro Vancouver for composting yard trimmings and food waste at Fraser Richmond Soil and Fibre in Richmond.

March 4, 2010: Council approved the first phase of city-wide food waste composting, including the addition of raw fruit and vegetable scraps to yard trimmings collection for single family residential properties.

January 5, 2011: Council adopted various Greenest City 2020 targets, including reducing total waste to landfill or incinerator by 50% from 2008 levels.

March 1, 2011: Council endorsed the general approach outlined in Metro Vancouver's draft Integrated Solid Waste and Resource Management Plan (ISWRMP) including municipal actions focussed on organics diversion with target implementation dates:

- *In collaboration with Metro Vancouver, develop and implement a work plan, including appropriate communication programs for the diversion of organic waste from:*
  - *single-family residences (2012)*
  - *multi-family residences (2015)*
  - *the industrial, commercial, institutional (ICI) sector (2015).*
- *Municipalities will divert organics from the waste stream to a Metro Vancouver or alternative licensed processing facility (by 2015).*

## **SUMMARY**

Food scraps and food soiled paper represent about 35% by weight of waste disposed to the Vancouver Landfill and which consequently contributes to the production of greenhouse gas. Diversion of food scraps to produce beneficial compost is an important part of Vancouver's strategy to reduce landfilled waste and meet our greenhouse gas reduction targets.

The primary purpose of this report is to respond to Council's direction to staff to develop an implementation plan for the second phase of the single family residential sector food scraps collection and composting program. This second phase involves:

1. expanding the City's current single family property compostables collection program to include all types of food scraps;
2. switching the collection frequency of garbage and compostables from single family properties so that compostables are picked up weekly and garbage biweekly; and
3. testing the diversion of food scraps from sample multi-family and commercial properties serviced within the City's Solid Waste Utility.

In developing the Phase 2 implementation plan, staff identified several elements with high levels of uncertainty that are increasing the complexity of the transition to a Phase 2 program city-wide, particularly in the areas of communication strategy and operational approach. Consequently, staff are recommending starting with a smaller-scale Phase 2 pilot to gain a better understanding of these elements, thereby ensuring a smooth roll-out of a subsequent full scale Phase 2 implementation.

The proposed pilot will enable staff to report back to Council with a more comprehensive, informed and effective plan for full implementation of Phase 2 for all single family homes, including a budget and implementation plan for Council approval.

The pilot will involve rolling-out Phase 2 to approximately 2,000 single family properties for six months. In addition, the pilot will test weekly compostables collection for a four month period at three to four low-rise apartment buildings and two to three small businesses, that currently have City garbage collection service. Including a sample number of multi-family and commercial properties in a Phase 2 pilot will help develop and enhance a regional understanding of barriers and opportunities for food scraps collection in these sectors, will demonstrate Greenest City leadership, and is aligned with Metro Vancouver's zero waste plans.

The proposed pilot implementation schedule targets July 18, 2011 to begin outreach and September 8, 2011 to begin service changes for single family properties. November 7, 2011 is targeted for the start of food scraps collections for the pilot multi-family and commercial properties.

The estimated cost of implementing operational changes for the pilot as described in this report is (up to) \$208,000, including a contingency of \$72,000. The estimated cost to fund the outreach program for the pilot is \$250,000 (\$75,000 for Phase 2 communications was previously approved by Council during Phase 1 implementation, and \$175,000 is requested in this report). Funding is to be provided from surplus commercial tipping fee revenues which will reduce the transfer to the Solid Waste Capital Reserve by an equivalent amount.

### ***PURPOSE***

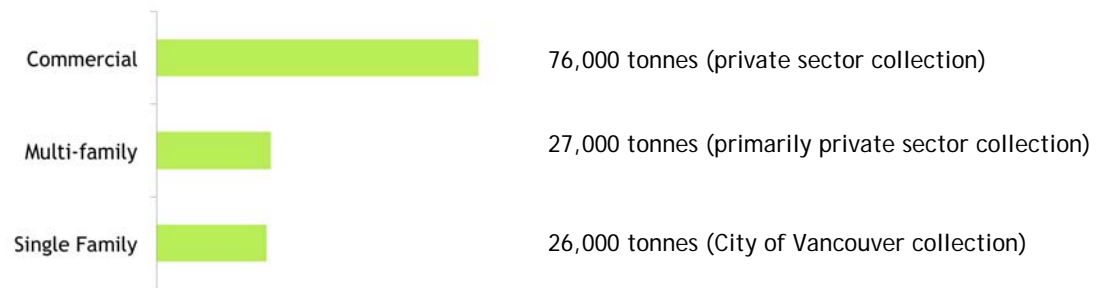
This report provides Council with information on the results of the Phase 1 food scraps collection program, and describes a recommended pilot program for Phase 2 to test operational and communications strategies and tactics for:

- expanding the City's current single family property compostables collection program to include all types of food scraps;
- switching the collection frequency of garbage and compostables from single family properties so that compostables are picked up weekly and garbage biweekly; and
- diverting food scraps from sample multi-family and commercial properties serviced within the City's Solid Waste Utility.

### ***BACKGROUND***

In the Metro Vancouver region, over 3 million tonnes of solid waste is generated each year, with about 55% of this diverted to recycling and composting. Still, about 1.4 million tonnes is sent for disposal. In Vancouver, compostable food scraps and food-soiled paper make up about 35% or 129,000 tonnes per year of solid waste from all sectors - commercial, multi-family, and single family residential sectors combined (Figure 1). Capturing compostables is an opportunity to reduce garbage, beneficially utilize a resource and reduce greenhouse gas from landfills. For example, it is estimated that generation of about 40,000 tonnes per year of greenhouse gas emissions (CO<sub>2</sub> equivalents) would be avoided at the Vancouver Landfill if all food scraps from Vancouver's Solid Waste Utility customers (single family properties) were diverted from disposal. About half of these emissions are currently captured by the Vancouver landfill gas collection system.

Figure 1: Vancouver Food Scraps by Sector (estimated tonnes per year disposed as garbage)



On April 22, 2010 the City launched the first phase of an expanded organics diversion program. This initiative allows all single family properties in Vancouver (approximately 110,000 homes) to add raw fruit and vegetable scraps to their yard trimmings cart for biweekly collection and composting. Material collected is processed into compost at Fraser Richmond Soil & Fibre (FRSF) in Richmond, under contract with Metro Vancouver.

The initiative included a public awareness campaign (primarily mass marketing), a media event with the Mayor, and community outreach, which is continuing. Findings and lessons learned in Phase 1, discussed later in this report, are being used to inform the development of the next phase of the program.

Eight municipalities in Metro Vancouver now provide weekly collection of all food scraps with yard trimmings from single family properties. The City collects about 40% of the combined total collection of approximately 60,000 tonnes.

When Council approved the Phase 1 initiative on March 4, 2010, staff were instructed to report back with an implementation plan for Phase 2. Phase 2 involves the full spectrum of food scraps (fruits, vegetables, meat, fish, dairy, bread, cereal products and food-soiled paper) to be collected with yard trimmings, and converting to weekly compostables collection and biweekly garbage collection from single family properties.

This report recommends starting with a neighbourhood-specific pilot to test the implementation of Phase 2. Subsequent reports will include information and recommendations for city-wide implementation of Phase 2, and the Phase 3 options being developed with Metro Vancouver to divert food scraps from the commercial and institutional sectors.

Appendix A provides a summary of estimated maximum possible food scraps diversion tonnages from each phase of the program.

## *DISCUSSION*

### **First Year Phase 1 Findings**

#### Participation & Diversion:

Based on post implementation surveys and a review of the Phase 1 communications campaign it has been concluded that the program was generally well received and successful in raising awareness among residents. For example, a survey of 500 households indicated that awareness increased from 41% to 66% in the first four months of the program.

Audits show, however, that while awareness increased, the desired behavioural change did not occur to the same degree. For example, Phase 1 results indicate that, in the first year of the program, residents diverted approximately 660 tonnes (5.5%) of food scraps (estimated based on a composition study conducted in March 2010 on samples of the compostables material being collected), and an average of approximately 12% of residents are participating. Based on the 2009 Metro Vancouver waste composition study it is estimated that approximately 12,000 tonnes of fruit and vegetable scraps are disposed as garbage from the Vancouver single family residential sector.

The relatively slow uptake in participation in the first year of the Food Scraps Phase 1 program is not dissimilar to the City's prior experience with implementing new waste diversion initiatives, such as blue box recycling, due to its large and diverse customer base (approximately 100,000 properties). Experience shows that without a focused communication and outreach strategy a number of years is often required before residents are fully committed and actively, consistently involved in any new program, and that this must occur before we can expect to see significant gains in diversion. For example, the blue box program was implemented in the early 90s and it was not until 15 years later that a diversion rate of 77% was achieved (see Figure 2). More recently, it took ten years for the City's yard trimmings collection program to reach 95% diversion (see Figure 3). Nevertheless, increasing the amount of food scraps collected in the next phase of the City's food scraps program is thought possible with sustained and strategic outreach (i.e. a community-based social marketing program rather than mass marketing which has been the approach traditionally used in the past) and a shift to bi-weekly garbage collection. This proposed approach is described in more detail below.

Figure 2: Vancouver Single Family Blue Box Recycling

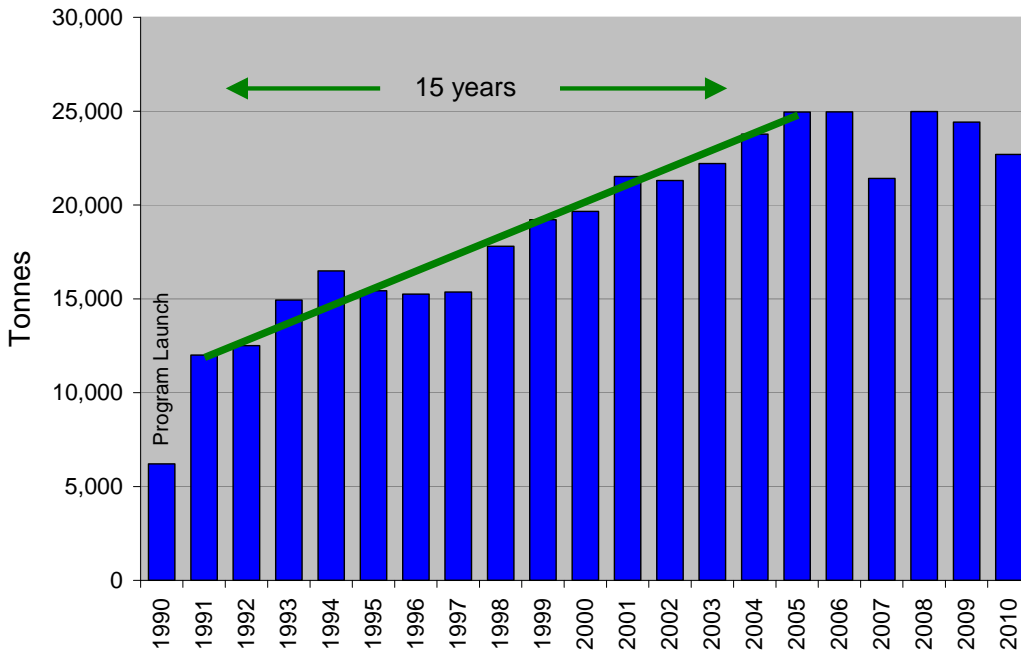
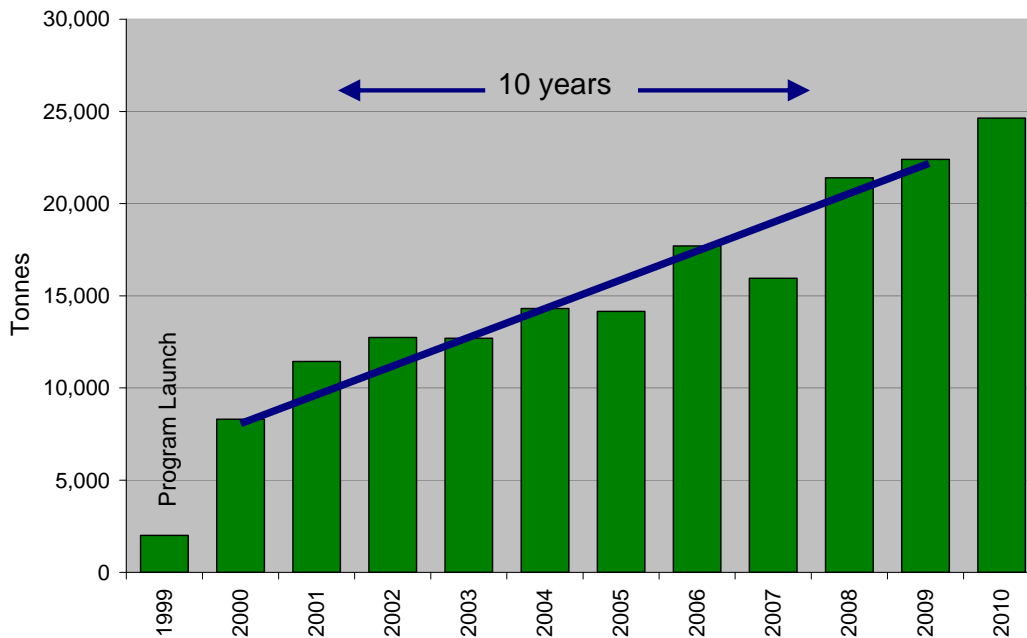


Figure 3: Vancouver Single Family Yard Trimmings Collection



Other jurisdictions with food scraps collection programs are experiencing participation rates ranging from 13% to 50% after a significant number of years after implementation (see Table 1), and food capture (diversion) rates ranging from 23% to 52%. Outreach designed to engage citizens and affect behaviour change in these jurisdictions is a strategy that helps overcome barriers which leads to higher participation and diversion rates. This finding was confirmed in Phase 1 when staff tested door-to-door promotion with about 80 homes in Arbutus Ridge after which participation increased from 15% to 32%.

**TABLE 1. FOOD SCRAPS COLLECTION PROGRAM PARTICIPATION OBSERVED IN OTHER JURISDICTIONS**

CITY	PROGRAM START	FOOD SCRAPS PARTICIPATION
Port Coquitlam, BC	2008 pilot	13% (2008 pilot results)
Alameda County, CA	2002	29% (2009)
San Francisco, CA	2000	30% (2009)
Seattle, WA	2005	50% (2009)

#### Contamination:

The amount of contamination in the compostables was found to be a challenge in Phase 1. FRSF conducted audits of compostables the City delivered to FRSF and reported an average of 0.51% contamination (July - September 2010).

Phase 1 also revealed that education tools and techniques directed to specific households help mitigate contamination issues at the collection cart level (i.e. reducing plastic bags and household waste disposed with food scraps and yard trimmings). Actions tested included:

- inspection of individual collection truck loads and removal of gross contaminants prior to bulk shipment of food scraps and yard trimmings to FRSF by transfer trailer,
- tagging and not collecting carts set out by residents that contain unacceptable materials, and
- providing information to residents on options other than plastic bags, such as paper bags, newspaper liners, and specially designed kitchen countertop food scraps containers.

Despite confirming the success of these actions and adopting them as standard operating procedures, the limit of 0.05% contamination contained in Metro Vancouver's agreement with FRSF for composting yard trimmings and food scraps at FRSF was found unachievable. Accordingly, an amending agreement is being developed to provide for an increase in the acceptable contamination limit that is tenable for the City, FRSF and Metro with an associated fee paid by the City to FRSF for removing and disposing excess contaminants. Once an amending agreement is completed and Council approves this report, the City will begin implementing outreach (this summer) and start the pilot.

For comparative purposes, research revealed contamination is an issue common to compostables collections programs in other jurisdictions and that the contamination levels experienced in Vancouver are relatively low (see Table 2).

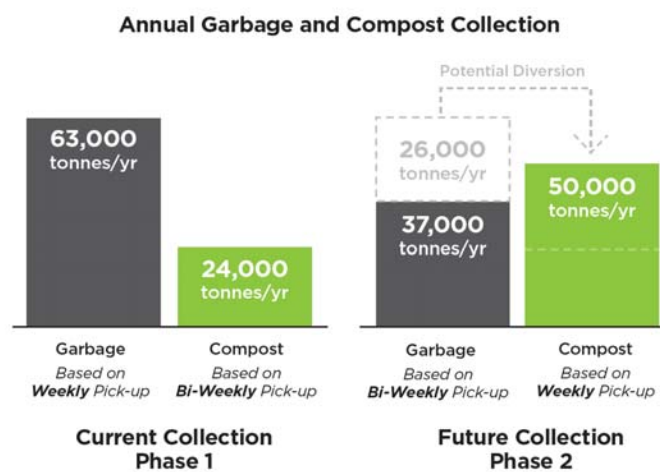
**TABLE 2. RESIDUAL CONTAMINATION REPORTED IN VANCOUVER AND OTHER JURISDICTIONS**

CONTAMINATION RANGE	FOOD SCRAPS COLLECTION PROGRAM
0.5% - 3%	San Francisco CA, Vancouver BC
2% - 5%	Peel ON, Hamilton ON, Halton ON, Kingston ON, Nanaimo BC, Berkeley CA, Christchurch NZ
5% - 7%	Hutchinson MN
2% - 10%	Halifax NS, Alameda County CA

### Phase 2 Food Scraps Diversion

Phase 2 involves maximizing the diversion of compostables from the single family sector by allowing all types of food scraps to be collected with yard trimmings, and switching to weekly compostables collection and biweekly garbage collection from single family properties. The net impact of Phase 2 in terms of potential diversion is shown in Figure 4.

Figure 4: Proposed Phase 2 Food Scraps Program - Maximum Possible Diversion



Based on the 2009 Metro Vancouver waste composition study it is estimated the total amount of food scraps disposed as garbage is approximately 26,000 tonnes per year from the Vancouver single family residential sector (consisting of approximately 12,000 tonnes of fruit and vegetable scraps, plus 14,000 tonnes of meat, dairy, bread and food soiled paper scraps). Based on food scraps collection program observations in other jurisdictions, capturing approximately 11,000 tonnes of food scraps per year is thought possible in about five years time with a fully developed program, assuming a 50% resident participation rate and a 42% food scraps diversion rate (e.g., levels observed in Ladysmith, Ottawa Valley and Seattle). The maximum food scraps diversion rate observed in other jurisdictions is 52% (Ottawa Valley after 7 years), which would equate to capturing approximately 13,500 tonnes per year.

In developing a Phase 2 implementation plan, staff has identified a number of major program elements that are uncertain and require testing prior to full scale implementation city-wide (further details are provided in Appendix B):

### Effectiveness of Communications & Outreach

- Public reaction to service level changes and impact on program participation
- Decrease in tonnage and volume of garbage requiring collection
- Increase in tonnage and volume of compostables requiring collection
- Potential changes in type and quantity of contamination in the compostables stream

### Transitional Impacts

- Extent of cart-change requests, cost of making cart changes, and size and type of cart inventory required to respond to public requests
- Number of utility billing adjustment transactions and associated resource requirements
- Extra garbage service demands and resource requirements
- Impact on 311 call volumes and associated resource requirements

### Ongoing Operational Impacts

- Garbage and compostables collections service labour and equipment requirements
- Cart cleanliness, odour and issues with flies and rodents
- Potential unforeseen implications related to transfer and processing of compostables containing putrescible materials (meat and dairy products).

Staff recommends a six month pilot to reduce planning uncertainty, and, measure impacts, test the effectiveness of outreach tactics, and develop a thorough understanding of resource requirements, before investing in a city-wide implementation of Phase 2. Based on pilot findings, staff will develop a detailed implementation plan and budget for city-wide roll out of Phase 2 and report back in 2012 for Council approval.

### **Phase 2 Pilot - Single Family Properties**

For testing Phase 2 for single family properties, staff recommends:

- a six month pilot with outreach starting July/August, 2011 and service changes starting September 8, 2011,
- pilot two neighbourhoods - Riley Park and Sunset, approximately 1,000 properties each,
- a transition period for the first three weeks of the pilot with both weekly compostables and garbage collection, and
- then in the fourth week move to compostables collection on a weekly basis, and garbage collection biweekly.

If the pilot proves successful, and to avoid confusion, at the end of the six month pilot program the service changes will continue in the pilot areas and become integrated with future city-wide implementation of Phase 2, however results will be reviewed and a recommendation will be reported to Council in early 2012.

A city map showing the pilot areas is provided in Appendix C. The two pilot communities were selected based on their representative demographics of Vancouver as a whole and their participation rates in the current Phase 1 program.

## Phase 2 Pilot - Sample Multi-family & Commercial Properties

Staff also recommends that a pilot would provide a good opportunity to measure the implications of diverting food scraps from multi-family and commercial properties. A number of private haulers already offer food scraps collection to these types of properties, but the number of multi-family and commercial buildings that receive this service is currently very limited. The private sector collects the majority of solid waste from the multi-family and commercial sectors, however, the City provides cart based garbage collection to a few, smaller multi-family and commercial buildings, and recycling collection to all multi-family buildings either directly or by contract. Including a sample of these properties in a City pilot will help develop and enhance our understanding of barriers and opportunities for food scraps collection in these sectors and is aligned with Metro Vancouver's and the City's zero waste plans.

To test food scraps collection from multi-family and commercial properties, staff recommend:

- a four month pilot with outreach starting July/August 2011 and collection service starting November 7, 2011,
- full compostables collection on a weekly basis at no additional cost to the property,
- no change to garbage collection schedules, and
- three to four low-rise apartment buildings and two to three small businesses that currently have City garbage collection service (so that diversion can be measured).

At the end of the pilot, multi-family and commercial properties will be encouraged to continue diverting food scraps and will be referred to information on a number of private haulers who offer this service. Findings of the pilot will be shared with Metro Vancouver and private sector waste management companies. Opportunities for the City to offer this type of service as an extension to the City's Solid Waste Utility customer base will also be considered.

### *COMMUNICATIONS PLAN AND TARGETS*

As part of the Phase 2 Pilot, staff recommends the planning and implementation of a Community Based Social Marketing program in each of the two pilot communities to encourage awareness and behaviour change. Social Marketing places a low premium on promotion and mass advertising, instead choosing activities that feature more direct and targeted communications the specific audiences. Our evaluation of the program in the pilot communities will be used to inform the eventual roll-out of Phase 2 city-wide.

Target outcomes for the six month pilot, based on cross-jurisdictional research and experience to date, include:

1. 35% PARTICIPATION: percent of properties adding food scraps to their compostables cart;
2. 25% FOOD SCRAPS DIVERSION: percent of food scraps diverted from garbage to compostables; and
3. LESS THAN 2.5% CONTAMINATION: percent by weight contamination in compostables.

For the purposes of the pilot, staff is suggesting the design of a Social Marketing program using similar techniques and tactics in each of the two pilot neighbourhoods that will take into consideration the cultural and language issues they present.

The use of consistent tools and techniques in the neighbourhoods will allow staff to contrast and compare results with the different demographics, choosing the more successful program elements for inclusion when rolling the program out to the city as a whole.

The Phase 2 Pilot for the Food Scraps Program has set an ambitious target of 35% participation in six months because Social Marketing is highly intensive and designed to generate much quicker participation than by public awareness programming alone. Participation in the two test neighbourhoods currently sits at 23% and 11%. It is only through a robust Social Marketing approach that we will discover what the barriers to participation are and how to overcome them.

The pilot will be monitored for the desired outcomes through weekly field surveys of cart setouts for participation and contamination, and monthly waste composition studies to determine the amount of food in the compostables collected. If progress towards the desired outcomes is not observed, additional tactics (e.g., door-to-door coaching, stickers on carts) will be designed and tested during the pilot.

The Social Marketing program will be designed immediately upon Council approval of this project, and implemented starting July/August through January, 2012 when evaluation of the pilot tactics takes place. Communication plan details are provided in Appendix D.

### ***IMPLEMENTATION PLAN***

Staff's proposed pilot implementation schedule is shown in Table 3.

**TABLE 3. COMPOSTABLES COLLECTION PILOT PRELIMINARY IMPLEMENTATION TIMELINE**

<b>ACTIVITY</b>	<b>TARGET START DATE</b>	<b>TARGET COMPLETION DATE</b>
1. Outreach: <ul style="list-style-type: none"> <li>• Research and preliminary design</li> <li>• Detailed design and implementation</li> </ul>	in progress July/Aug. 2011	July/Aug. 2011 January 2012
2. Negotiate and Enter into Composting Services Amending Agreement	in progress	August 5, 2011
3. Service Change: <ul style="list-style-type: none"> <li>• Single family: approx. 2,000 properties</li> <li>• Multi-family and commercial: approx. 5-7 properties</li> </ul>	Sept. 8, 2011 Nov. 7, 2011	March 9, 2012 March 9, 2012
4. Pilot monitoring and data gathering <ul style="list-style-type: none"> <li>• Single family</li> <li>• Multi-family and commercial</li> </ul>	in progress in progress	March 9, 2012 March 9, 2012
5. Report to Council: pilot findings and recommended next steps	Q2 2012	Q2 2012

Progress and outcomes will be routinely measured and tracked during the pilot. Performance metrics include but are not limited to:

- 311 call types and volumes,
- tonnage changes in garbage and compostables collected,
- participation, diversion and contamination rates, and
- type of volume of cart changes and associated resources required to accommodate those changes.

### *FINANCIAL IMPLICATIONS*

Garbage and compostables collection services discussed in this report reside within the City's Solid Waste Utility (SWU). The SWU recovers all costs associated with solid waste collection and disposal via SWU fees.

The City receives tipping fees for commercial garbage received at its disposal facilities. After deducting the cost of disposing of commercial garbage from Vancouver, surplus revenue is transferred to the Solid Waste Capital Reserve (SWCR) at year end. The primary purpose of the SWCR is to provide funding for Vancouver's share of Landfill closure and post-closure costs. The pilot project is proposed to be funded from the operating budget, which will reduce the annual surplus and transfer to the SWCR.

The City's solid waste collection services are fully funded through user fees. Solid Waste Utility fees are set annually to recover the cost of providing services. Different fees are assessed for different cart sizes, since the program is based on a user pay ("pay as you throw") model.

For the customers included in the pilot Solid Waste Utility fees billed for 2011 would not be adjusted for changes made to the number or size of carts.

The total cost of the pilot is estimated to be \$383,000. The estimated operational portion is (up to) \$208,000, and includes incremental funding for collection services and monitoring of the pilot areas, and contingency funding for potential incremental resources to manage cart change transactions, extra garbage collection, calls to 311 and updating utility billing accounts. A cost estimate breakdown is provided in Appendix E. Funding for these costs is to be provided from surplus commercial tipping fee revenue which will reduce the transfer to the SWCR by an equivalent amount.

The estimated cost to fund the communications and promotions for the pilot is \$250,000. This investment in developing materials and website pages would be utilized if full roll-out city-wide were to proceed. Funding for these costs is to be provided from surplus commercial tipping fee revenue which will reduce the transfer to the SWCR by an equivalent amount; \$75,000 has already been approved by Council (part of March 4, 2010 Council approval of Phase 1 implementation) and \$175,000 is requested in this report. Communication plan details are provided in Appendix D. This plan will create the platform for city-wide rollout of Phase 2.

TABLE 4. COMPOSTABLES COLLECTION PILOT IMPLEMENTATION COSTS

CURRENT REPORT RECOMMENDATIONS	\$ Estimate
<b>Pilot</b>	
Operations and Monitoring	\$136,000
Contingency	\$72,000
Community Based Social Marketing	\$175,000
<b>Total</b>	<b>\$383,000</b>

No changes to 2011 SWU fees are required for the implementation of the proposed pilot described in this report.

The General Manager of Engineering Services will report back to Council in mid 2012 with a detailed implementation plan and budget for city-wide implementation of a Phase 2 food scraps collection program.

### *CONCLUSION*

In response to the Greenest City Action Team's Quick Start Recommendations and to align with regional solid waste diversion goals and zero waste plans, staff are developing a plan for implementing expanded compostables collection and composting. This Phase 2 initiative involves expanding the categories of compostable materials in the single family residential collection program, decreasing the frequency of garbage collection from once a week to every two weeks, and increasing the frequency of compostables collection from once every two weeks to once a week. Given the complexity with this initiative and the uncertainty associated with the potential implications, it is recommended that a smaller-scale pilot be conducted starting in July 2011. A pilot will provide staff with valuable experience and empirical information about the customer needs and behaviours in preparation for full implementation. A future report to Council will provide recommendations for full implementation.

\* \* \* \* \*

**APPENDIX A**  
**TABLE 1. CITY OF VANCOUVER COMPOSTABLES COLLECTION PROGRAM, IMPLEMENTATION PHASES**

PHASE	DESCRIPTION	ESTIMATED MAXIMUM POSSIBLE DIVERSION (Food Scraps Disposed as Garbage*)	IMPLEMENTATION	STATUS
PHASE 1 CITY-WIDE	City-wide (approx. 110,000 homes): - Addition of raw fruit and vegetable scraps to the City's yard trimmings collection program.	12,000 tonnes per year	April 22, 2010	Implementation complete. Current diversion of food scraps estimated at 660 tonnes per year.
PHASE 2 PILOT	Pilot (approx. 2,000 homes): - Expand collection program to include the full spectrum of food waste (e.g., fruits, vegetables, meat, fish, dairy, bread, cereal products and food-soiled paper). - Convert garbage collection from weekly to biweekly. - Convert compostables collection from biweekly to weekly.	250 tonnes per year (incremental to Phase 1)	July 18, 2011	Proposed
PHASE 2 CITY-WIDE	City-wide (approx. 110,000 homes): - Expand collection program to include the full spectrum of food waste (e.g., fruits, vegetables, meat, fish, dairy, bread, cereal products and food-soiled paper). - Convert garbage collection from weekly to biweekly. - Convert compostables collection from biweekly to weekly.	13,750 tonnes per year (incremental to Phase 1)	Proposed 2012	Pending pilot results and Council approval
PHASE 3	- Utilize learnings from Phase 2 Pilot to develop strategies and programs for diverting food waste from multi-family residential and commercial buildings in cooperation with Metro Vancouver and in consultation with the private sector (requires expansion of regional organics processing capacity).	103,000 tonnes per year	Ongoing	Ongoing

\* based on 2009 GVRD Waste Composition Study

APPENDIX B  
COMPOSTABLES COLLECTION PHASE 2 OPERATIONAL IMPLICATIONS

Issues to explore further in the pilot:

Major operational elements for full implementation of Phase 2 are described as follows:

*A. Resources Required for Garbage and Compostables Collection Frequency Switch*

It is expected that the proposed service changes would generate incremental demand for garbage and compostables collection, which is expected to require additional labour and equipment.

Equipment and labour resource requirements associated with the proposed service changes depend primarily on the following two variables:

*1. VOLUME OF MATERIAL COLLECTED*

Collection vehicle and labour requirements are based on the number of collection points in a route required to fill a collection truck, the distance from the route to the Vancouver South Transfer Station (VSTS), and the number of loads that can be dumped at the VSTS in one shift. It is assumed that the total volume or tonnage of material collected (i.e. garbage plus compostables) will not change substantially once Phase 2 is implemented. The number of trucks ultimately required daily to service garbage and compostables carts depends on the actual amount of material diverted from garbage to the compostables program.

Reducing collection frequency from weekly to biweekly would result in City garbage collection crews collecting 70% to 100% more garbage (by weight) per collection from each property. An increase in weight collected per property would fill collection trucks more rapidly, resulting in an increase in trips between the collection route and VSTS for disposal. This would reduce the time that trucks are on the route collecting garbage and may require additional garbage crews to be deployed.

*2. NUMBER OF CARTS SET OUT FOR COLLECTION*

Resource requirements are also based on the frequency that a property sets out a cart for collection and the total number of carts in service. There is uncertainty with predicting the number of carts that would be in service and their set-out rate with Phase 2 implementation. There is considerable variability currently with how often yard trimmings carts are set out for collection; set out frequency is based largely on seasonal demand.

With full implementation of Phase 2, it is expected that compostables carts would be set out on a regular basis, since it is assumed unlikely that customers will want odorous food waste left sitting in their carts for prolonged periods of time.

An increase in the total number of carts in service may also arise for two reasons: (i) with less frequent garbage pickups, there would be some customers who want to add another garbage cart in order to have more storage capacity in between pickups, and/or (ii) with the addition of food scraps collection service, there would be customers who currently do not have a yard trimmings cart who would then opt to acquire a compostables cart.

### ***B. Managing Customer Demand for Garbage and Compostable Carts***

With the proposed changes to collection service, it is expected that a significant number of residents would want to acquire new carts and/or change the sizes of their existing carts. These cart transactions require significant planning, as the City would need to:

- anticipate, order and maintain an appropriate inventory of carts to meet customers' needs, and
- supplement our customer service and utility billing resources for a number of months in order to manage a spike in cart transactions.

#### ***1. ORDERING NEW CARTS***

Based on public consultation undertaken via a recent telephone survey, focus group study and website survey, staff estimates that as a result of full implementation of Compostables Collection Phase 2, the City could have to manage up to 30,000 cart size change transactions and approximately 11,000 new carts would be required, mostly in the larger 240 and 360 litre sizes.

#### ***2. MANAGING CART TRANSACTIONS***

An incremental investment in resources would be required in order to manage such a large number of cart transactions over a relatively short period of time. Staff currently perform about 25 transactions per day. Performing an estimated 30,000 transactions over a three-month period would require about 500 transactions per day (about 20 times normal activity levels).

### ***C. Transitional Extra Garbage Collection***

It is anticipated that there would be an initial adjustment period for residents to adapt to biweekly garbage collection and adjust their cart sizes, and for the City to provide sufficient inventory of carts to respond to customer demand. During this transition period staff expects that residents may need to set out extra garbage that cannot be accommodated by their current garbage cart volume. Additional resources would be required to respond to this temporary incremental demand.

### ***D Collections Program Labour Impacts***

To fully implement Phase 2, additional FTE's in Sanitation Services collections program could be required, depending on the rate of customer participation. Staff are planning meetings with CUPE 1004 to develop a plan for converting collections staff duties for the Phase 2 service changes being contemplated (weekly compostables collection and biweekly garbage collection).

### ***E. Communications Plan***

Reaching residents with concise, easy to understand information is key to ensuring the success of Phase 2. As such there is a significant communications component to implementing this service change. For example, residents need to clearly understand what categories of food should be diverted from their garbage to their compostables carts, how plastic bags are prohibited from the program, how they will be impacted by the changes to the garbage and compostables collection schedules, and how they can change the size of their current garbage and compostables carts, if necessary.

Communication plan details are provided in Appendix D.

*F. Impact on 311 Contact Centre*

The City's 311 contact centre regularly receives a significant number of inquiries concerning solid waste collection and disposal services - an average of approximately 3,400 calls per month. Changes proposed by the implementation of Phase 2 are anticipated to increase 311 call volumes.

Public communications and web pages will be developed in an effort to steer residents to the website for guidance and for submitting requests and questions to the City. Although full and clear information will be posted on the website to inform the public, homeowners and 311 staff, a considerable portion may seek information and guidance through 311. As well, it is anticipated that there will be calls from non-homeowners who may be curious if the program applies to them, or have other questions.

## APPENDIX C PROPOSED COMPOSTABLES PHASE 2 PILOT AREAS

The proposed single family sector pilot consists of providing compostables collection on a weekly basis with garbage collection biweekly for two collections beats each week, covering approximately 1,000 properties in each beat. Currently there are 95 collection beats used every week for garbage collection city-wide.

The two single family sector beats selected are located in the Riley Park and Sunset neighbourhoods.



## APPENDIX D COMMUNICATIONS PLAN FOR COMPOSTABLES COLLECTION PHASE 2 PILOT

As part of the Food Scraps Collection Phase 2 Pilot, staff recommends planning and implementation of a community-based social marketing (CBSM) program in the two pilot communities to encourage awareness of the program, participation, and behaviour change.. The evaluation of the pilot program will be used to inform the eventual roll-out of the Phase 2 program city-wide.

In 2010, during Phase 1, a mass marketing program was designed and implemented that was successful in raising awareness about the program among residents during the period when the marketing activities were taking place. Research shows, however, that while awareness increased about the Food Scraps program, the desired behavioural change was not forthcoming. Research also revealed that educational information directed to specific households at the collection bin level to address contamination issues yielded positive results and greater compliance. This is a typical example of successful CBSM techniques.

For the Phase 2 Pilot, another approach is required. CBSM is a recognized specialty field within professional communications and uses a variety of techniques designed to encourage and support behaviour change, as opposed to simply raising awareness. Some CBSM techniques include:

- providing audiences with prompts/cues that reinforce the desired behavior at the place/moment of decision (i.e. a sticker on the light switch to encourage reduced energy consumption)
- reinforcing positive behaviour/actions to encourage and support sustained action
- making small/achievable requests of audiences that allow them to succeed, before making larger more sustained requests over time
- testing different techniques on smaller samples and using the learnings from the results to design programs for a broader audience

CBSM also places a low premium on mass promotions and advertising, instead choosing activities that are more direct and targeted to the specific audiences and the behaviours being influenced.

For the purposes of the Food Scraps Phase 2 Pilots, staff is suggesting the design of a CBSM program the use of which will allow staff to choose more successful program elements for inclusion when rolling the program out to the city as a whole.

The CBSM program will:

- establish baseline awareness and activity levels in each of the two communities at the beginning to allow evaluation of the pilot program upon conclusion;
- design communications and educational materials specifically tailored to the predominantly two language community in Riley Park and the three language community in Sunset, going beyond direct literal translation and factoring in cultural barriers and apprehensions;
- create content that places the Food Scraps program within a broader strategy of Greenest City, the sound stewardship of resources, the benefits of increased organics diversion and the reduction of garbage heading to the landfill.

The CBSM program may include tactics similar to those used in other programs such as:

- purchasing and distributing counter-top sized containers for gathering food waste inside the home for transfer to the outside bins as a visible prompt to encourage the desired behaviour;
- using a series of bin hangers and information pieces on curbside bins to reward positive behaviour and flag contamination/problems (and adapting messaging/approach to each pilot site to allow comparison);
- creating a series of multi-lingual “how to” videos that can be shared through a variety of channel including social media channels and on City web sites;
- using social media to build community within the pilot areas and to encourage participation; ads and messages can be different for each community to allow for comparison

### **Timing**

The CBSM program will be designed immediately and implemented in July 2011 through to January 2012 when the pilot evaluation period concludes and evaluation of the tactics takes place.

### **Budget**

This pilot project to test CBSM includes the investment in a much bigger program that will eventually involve every household in the city. CBSM programs are resource intensive and require specifically designed collateral materials and messaging for each test area. This project involves two neighbourhoods of 1000 homes each.

The proposed budget for this program is \$250,000 or \$125 per household over the two pilot areas. \$75,000 of this budget was previously approved by Council (RTS 8427).

This budget represents a combination of one-time costs to develop materials and strategies that, if successful, can then be used for the broader city rollout.

APPENDIX E  
PILOT COST ESTIMATE

ITEM	\$ ESTIMATE
<b>Operational Costs:</b>	
Vancouver Sanitation Services	
• SF pilot incremental collection services	\$2,000
• MF and business pilot incremental collection services	\$7,000
• pilot participation surveys	\$22,000
Temporary Engineering Staff	\$33,000
Compostables Composition Studies (consultant)	\$72,000
• sampling 4 days/month for 6 months	
	\$136,000
<b>Potential Additional Operational Costs/Contingency:</b>	
Vancouver Sanitation Services	\$23,000
• incremental cart exchanges	
• extra garbage collection	
Incremental 311 resources	\$13,000
Temporary Utility Billing staff	\$5,000
• update utility billing accounts (process incremental cart changes)	
Contingency (15%)	\$31,000
	\$72,000
<b>Community Based Social Marketing</b>	
Pilot Communications New Funding Request	\$175,000
	\$383,000
<b>GRAND TOTAL</b>	<b>\$383,000</b>