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August 12, 2018

Marie Lemay

Deputy Minister

Public Services and Procurement Canada

11 Rue Laurier

Gatineau, QC J8X 4A6

Dear Ms. Lemay:

This report examines the feasibility of introducing a composting program to the Statistics Canada offices in the Ottawa region.

A survey was conducted to garner the opinions and attitudes of composting from Statistics Canada employees who are known to me. Since the sample is non-random, and the sample size is small, one should note that there could be sampling bias. Due to this potential bias, the results from the survey cannot be generalized to the entire Statistics Canada employee population.

Recommendations found in this report are established upon results from the survey, and responses from interviews with the City of Ottawa employees and other public servants.

Implementing a composting program at any government agency involves a lot of resources, time and planning, but nonetheless is an important practice in sustainable development. In fact, composting at work may be an excellent way to motivate employees to start composting at home if they are not already composting.

I hope you find this report helpful as you consider future initiatives that contribute to making government agencies in Canada more eco-friendly.

Sincerely,

Nancy Wu

**FEASIBILITY OF IMPLEMENTING A COMPOSTING PROGRAM AT STATISTICS CANADA**

for
Marie Lemay

Deputy Minister of

Public Services and Procurement Canada

by

Nancy Wu

UBC English 301 Student

August 12, 2018

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# Abstract

Composting reduces the amount of organic material that ends up in landfills, thereby minimizing the amount of greenhouse gas emissions formed from decomposing organic material. The Statistics Canada buildings in the National Capital Region currently do not have compost bins. The feasibility of implementing a composting program at Statistics Canada relies on the investigation of employees’ knowledge of composting, willingness to change, and amount of food waste produced.

Results from the survey sent to Statistics Canada employees show that many people participate in or are familiar with Ottawa’s Green Bin program. Most respondents are willing to take the time to sort out their organics into compost bins, and there is a non-trivial amount of waste produced by Statistics Canada employees.

The fact that surveyed employees suggest that there is a considerable amount of food waste, and are environmentally conscious with regards to organic waste, indicate Statistics Canada buildings have potential to successfully incorporate organics bins in the cafeterias, like the Bank of Canada building. Allowable items in the bins would be akin to those allowed in the city’s green bins, as most employees are familiar with the Green Bin program.

To curb the quantity of organic material that needs to be shipped to further facilities to be processed into compost, a small pilot project community garden may also be considered as part of future redevelopment plans.

#

# INTRODUCTION

## The Importance and Effects of Composting

The importance of composting has grown in public consciousness in recent years. Composting helps to reduce the amount of waste that is being directed into landfills, thereby reducing the amount of greenhouse gas emissions formed from decomposing organic material. Silven states that minimizing the amount of organic waste that is decomposing also leads to “a reduction of concentrated, toxic leachates and methane gas that is being released into the atmosphere, which equates to a decrease in overall pollution” (Silven). Composting can also mitigate the usage of chemical fertilizers, which can leach into water drainages that can be harmful to the water supply (Silven).

## Background on Organic Waste Management Initiatives in Ottawa

In 2010, the City of Ottawa introduced the Green Bin program as part of its long-term waste management strategy. The Green Bin program is an initiative set up by the City to divert residential organic waste away from landfills. The City of Ottawa estimates that about 45% of Ottawa’s garbage is organic material that can be put into green bins. The program is meant to make separating organic waste from recyclables and regular waste easy for residents. There are many types of materials allowable in the green bins. Items range from food scraps to yard waste to food-soiled napkins and dryer lint (*The City of Ottawa*).

Despite this program’s existence for over eight years, the CBC reports that only about 50% of households participate (*CBC News*). The CBC also reports that in 2016 Ottawa’s diversion rate (the amount of garbage diverted from landfills) was 44%, one of the lowest in Ontario (*CBC News*).

Not only are Ottawa residents unable to keep up with the growing need to reduce the amount of garbage in landfills, but so is Statistics Canada. The Statistics Canada offices at the Tunney’s Pasture Complex currently do not have a composting program.

## Statement of Problem at Statistics Canada

The Statistics Canada Ottawa offices currently do not have a composting program in their three buildings. Green bins would set precedence for forward thinking of reducing greenhouse gas emissions and would help make Statistics Canada a leader in environmental responsibility.

## Purpose of Report

The purpose of this report is to provide recommendations to Public Works Canada on feasible organic waste management strategies. As landfills continue to fill to capacity due to the ever-growing amount of residential and commercial waste, curtailing this issue has become a larger priority for municipal governments. Public Works Canada investigated bringing a composting program to Tunney’s Pasture nine years ago. Since much from the past investigation by Public Works may have changed within those nine years, this report seeks to investigate strategies that can be implemented in the future.

## Data Sources and Data Collection Methods

A voluntary survey comprised of 11 compost-related questions was sent to 30 Statistics Canada employees known to me. In total 23 people responded. The survey consists of opinions from temporary employees and permanent full-time employees. All 11 questions are multiple choice and reflect current knowledge and actions towards composting, and the likelihood of participation in composting at Statistics Canada (see Appendix A for full list of questions).

Two interviews were conducted with full-time employees at the Bank of Canada and Natural Resources Canada. Both agencies in Ottawa currently have organics bins in their buildings and the responses from the interviews assist in gauging the quality and success of composting at each agency (see Appendix B for full list of questions).

An email inquiry was sent to the City of Ottawa to inquire about the City’s community garden program, and the current policy of contracting organic waste removal from commercial facilities with the City of Ottawa (see Appendix C for full list of questions).

## Scope of This Inquiry

The inquiry of this report investigates four components of composting at Statistics Canada:

1. The current amount of food waste produced by Statistics Canada employees
2. The current composting practices of Statistics Canada employees and their willingness to participate in changes to make Statistics Canada a greener workplace
3. The feasibility of adapting a method of composting already implemented in other publicly-operated buildings
4. The feasibility of a community garden at Tunney’s Pasture to help divert organic waste

## Overview of the Final Recommendations

This report will make two recommendations to the problem:

1. Introducing a simple composting program using the City of Ottawa’s Green Bin program and current implementation of organic waste disposal at different agencies as a guide.
2. Installing a community garden on the Tunney’s Pasture complex as part of the redevelopment plans for Tunney’s Pasture. During the warmer months, small amounts of organic waste can be disposed of and turned into compost in local gardens without having to be shipped to further facilities.

# DATA COLLECTION AND ANALYSIS

## Statistics Canada Employee Survey

A survey was sent to 30 Statistics Canada employees, where 23 people responded. All 23 respondents answered all 11 questions on the survey. Questions on the survey pertained to employees’ knowledge of composting, current composting practices, and food waste habits. This section seeks to quantify and analyze responses to these questions.

### Measurement of Amount of Daily Food Waste by Employees

The survey was sent to individuals who eat lunch at work on most days (either at their desk, cafeteria, or kitchen lounge areas). As shown in Figure 1, more than 80% of employees surveyed indicated that they always, usually or sometimes have food scraps, such as leftover food, and fruit and vegetable peels at work.

Figure 1: Daily frequency of leftover food scraps at work

### Analysis of Employees’ Personal Composting Habits

Respondents were asked questions relating to their current knowledge of composting and their current composting practices. Overall, there were mixed opinions about personal importance towards composting. No respondent indicated that composting was not important to him or her; however, there was close to a 50-50 split between respondents feeling that composting was extremely or very important to them versus respondents feeling that composting was somewhat or not very important to them. Eighty percent of respondents said they sometimes, usually, or always compost outside of work (Figure 2). Most respondents who indicate that they always compost, also indicate that composting is very or extremely important to them (Figure 2). Regardless of how important composting is, most employees surveyed do some sort of composting outside of the workplace.

Figure 2: The counts of how individuals compost in their personal lives, stratified by the importance of composting

In general, respondents have some awareness of allowable items in Ottawa’s Green Bins, and many of the respondents can differentiate between regular garbage, recycling, and organic waste. Close to 70% of the respondents felt that they have some awareness of the various types of items such as pocket lint and food-soiled waste (e.g.: pizza boxes, paper plates, and muffin wrappers) that can be disposed into the City of Ottawa’s green bins (Figure 3).

Figure 3: Awareness of composting

Not all composting programs are identical; for example, sometimes leftover food scraps containing oils or fats, are prohibited to be disposed in compost bins. Most public compost bins have signs and labels indicating what may go into the bins. Clear labelling using pictures and text on bins may be an important tool to easily guide employees to separate waste into the correct bin.

### Employees’ Willingness to Compost at Work

Figure 4 shows that more than 50% of respondents indicated they would be very likely to separate their food scraps into separate bins, if compost bins existed in the kitchen on their floor and more than 50% of respondents indicated that they would be very likely to separate their food scraps into separate bins if compost bins existed in the cafeterias. None of the respondents indicated that they would not separate organic waste if given the opportunity. The locations of the bins do not seem to affect how likely a respondent would be to compost, and overall, surveyed employees will compost, if given the convenience and opportunity.

Figure 4: Likeliness of separating organics in different locations at Statistics Canada

### Employees’ Concerns about Composting

A main concern with composting is the bugs and odours which may arise from the organic waste, but this does not seem to be a deterrent for respondents to compost. Figure 5 illustrates that odours and insects are a concern to most surveyed individuals, even if they are already composting in their daily lives. Seventy five percent of the respondents who sometimes, rarely or never compost have at least a moderate amount of concern about pests and smells, and 67% of respondents who usually, or always compost have at least a moderate amount of concern about pests and smells. Since both groups have concern about this issue, odours and pests are unlikely to be the main deterrents to composting.

Figure 5: Concern about odours and pests from compost, stratified by importance of composting

### Employees’ Community Garden Participation

When asked about employee interest in a community garden located at Tunney’s Pasture, 78% of respondents have at least some interest in participating (Figure 6). Perhaps the demographic of the survey respondents lack experience or knowledge of gardening, causing hesitation to volunteer or participate. A community garden would be a way for employees to get involved in the community, help create sustainable food growth, as well as reduce the amount of greenhouse gases from shipping waste to facilities.

Figure 6: Survey participant interest in a community garden at Tunney’s Pasture

### Summary of Survey Responses

Overall, respondents indicated that they produce a non-trivial amount of food waste, and much of this waste could be diverted from landfills if Statistics Canada had compost bins. Most respondents are willing to take the time and effort to separate wastes accordingly. Many of the respondents already compost in their personal lives and do not find composting confusing. A poorly implemented program may be a concern, since many of the surveyed individuals worry about the attraction of odours and pests.

##

## Other Public Servant Questionnaires

A short questionnaire was sent to two public servants who work in Ottawa. One employee is from Natural Resources Canada, and the other employee is from the Bank of Canada. Both agencies have some composting initiatives in their respective buildings, and the interview questions are designed to gauge the quality, success, and scope of these initiatives.

### Natural Resources Canada

The Natural Resources building utilizes an economical approach to composting. The interviewed employee indicated that the extent of composting in the building consists of an organics container located in the kitchen close the employee’s office. All sorts of food scraps and food-soiled waste products are allowed in the organics container. The container is next to the trash and recycling bins, but there is no label on the bin. Not every floor has an organics container either. The employee indicated they use the bin often and that there are no odours or pests. The employee recalled that the bins are taken out a few times per week to prevent issues with odours or pests.

### Bank of Canada

The Bank of Canada building recently underwent major renovations. Since it’s re-opening, a compost bin was placed in the cafeteria. The employee indicated that the compost bin in the cafeteria is the only one in their building and the compost bin is located next to the garbage and recycling bins. All sorts of food scraps and food-soiled waste products are allowed in the compost bins. There is clear labelling on the bin and there are no odours or pests originating from the compost because the bin is collected daily.

### Overall Interpretations

Both agencies implement a simple composting initiative. There does not seem to be an excessive placement of bins in the buildings; however, the location of the bins still allow convenience for composting. Clearing the bins regularly is necessary to prevent odours and pests.

## City of Ottawa Interviews

### Arrangement of composting between larger companies and the City

I spoke with Anthony who manages waste disposal in the City of Ottawa. He informed me that the City’s Green Bin program is specifically for residential buildings only. The City does not contract with businesses or commercial facilities, since the Green Bin program is funded by municipal tax dollars. All commercial facilities who choose to compost would be required to find a privately contracted waste management company that can dispose of organic material properly.

### Community Gardens

There are over 80 community gardens in the City of Ottawa managed by Just Food's Community Gardening Network (*City of Ottawa*). There are many benefits to community gardens including: learning how to grow food, contributing to food security, reducing carbon dioxide emissions, and engaging with the community. One benefit that community gardens could potentially help with is reducing the need to transport organic waste to outside facilities.

I spoke with Jordan from the City of Ottawa, who is the Just Food Programs Coordinator. I inquired about the logistics of community gardens and the feasibility of a garden at Tunney’s Pasture. Community gardens are dormant during the winter months and the typical growing season is from May to September. Jordan believes that a community garden for the sole purpose of eliminating the need to transport organic waste to further facilities would be complicated. Heavy machinery and many hours of labour would be required to turn all the organic waste produced by employees into compost, due to the sheer volume of waste. The main purposes of community gardens in Ottawa are to provide food stability and bring passionate gardeners together, rather than convert organic waste to compost. Typically, garden vegetation, such as wilted plants, are the type of organic material used to convert into compost. Jordan says for his own garden at home he uses a 2:1 ratio of dry garden vegetation to wet fruit and vegetable peels. He says that items such as leftover food with oils and fats that may be allowable in the City’s Green Bins, are not compostable in community gardens. Jordan also mentioned that many community members worry about the gardens attracting unwanted wildlife, such as rats.

Overall, community gardens alone cannot prevent organic material from being shipped out of Tunney’s Pasture. There is not enough space, time, or man-power to convert all organic waste produced by employees; however, a smaller portion of the waste could be diverted. Realistically, Jordan says he envisions Tunney’s Pasture with a garden comparable to the size of the Nanny Goat Hill garden. This garden has 110 plots, where each plot is 100 sq ft in size. The garden is reasonably easy to manage, as there are about two to three leaders and a couple dozen additional volunteers for the garden.

# CONCLUSION

## Summary and Overall Interpretation of Findings

The organic waste materials produced by Statistics Canada employees can be diverted from landfills. Many employees have indicated that they are concerned about odours and insects caused by the organics bins. As the Bank of Canada and Natural Resources Canada buildings have demonstrated, this problem can be mitigated if the organics bins are collected frequently. Overall, reasons as to why individuals choose not to compost, may be due to other factors that are not odour or pest related. Surveyed employees have indicated that if compost bins were available to them, they are willing to take the time and effort to sort their organics. Labelling each bin is important and having clear pictures to show what can and cannot be disposed into the organics bin is crucial to prevent improper use. Likewise, implementing a system like the City’s Green Bin program that employees may be familiar with, can be beneficial.

Any arrangement of organic waste pick-up must be contracted through a private company and not with the City. The simplest solution may be to follow in the footsteps of other publicly-operated buildings that already have a separate organics collection, and tailor the program as necessary to the specific needs of Statistics Canada. If a community garden is a project that workers are interested in, then starting a small community garden initiative, as part of future redevelopment plans may be considered.

## Recommendations

From the overall findings there are two recommendations that may be considered to introduce composting at Statistics Canada:

1. Organics bins would be placed in each of the two cafeterias next to the recycling bins. Clear labelling of each organics bin would be required to prevent confusion about whether an item belongs in the regular waste bin, or in the organics bin. Similar types of organic waste allowable in residential green bins may be disposed in these bins. The organics bins would be collected at the end of the day, like the garbage bins, to prevent odours and insects.

Pros: The benefits to this approach is that the approach is simple, does not require too much additional planning, and is similar to implementations that have been proven to work at the Bank of Canada and Natural Resources Canada. The types of items discarded into the organics bins would be akin to items that can be disposed in Ottawa’s green bins, so there will be some familiarity for employees.

Cons: The one downside to this approach would be that a large amount of organic waste will have to shipped to further facilities to be processed. This process seems hindering to initiatives of eliminating carbon footprints, when large gas-powered vehicles are required to transport organic waste.

1. To mitigate the need of transporting organics to outside facilities, a community garden could be installed in the Tunney’s Pasture complex. As Jordan suggested, a smaller garden can first be installed as a pilot project. In this case, organics bins would be in the cafeterias; however, only fruit and vegetable peels/scraps would be acceptable. Items such as bones, leftover cooked food, and food-soiled napkins would not be collected in the organics bins, since they are difficult to turn into compost. Because of the discrepancy between what is allowable in Ottawa’s green bins and the organic bins at Statistics Canada, clear labelling on the bins and perhaps readily available posters and information may be required to send to all employees.

Pros: Community gardens provide many benefits such as learning how to grow food, contributing to food security, reducing carbon dioxide emissions, engaging with the community, and providing garden therapy as a stress-reliever. A community garden can help to reduce a small portion of the organics that would have to be transported to outside facilities.

Cons: Overall, this recommendation is more complex. More planning is necessary on many issues such as the best location, the size of the garden, and the number of volunteers required to manage the garden. The enforcement of proper disposal of organics would be difficult. If some incorrect items are turned into compost, this could damage the garden. Another con is that gas-powered vehicles will still be required to transport most of the organic waste unused in the garden. There is not enough space nor labour to compost all the organic waste produced, and the gardens are dormant in the winter months. Also, wildlife can pose a problem, since Tunney’s Pasture is home to many groundhogs, squirrels, and other small mammals.

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# Appendix A: Survey Questions

1. **How aware are you of the various types of items such as pocket lint and dirty tissues that can be disposed into greens bins?**

Extremely Aware, very aware, somewhat aware, not very aware, not at all aware

1. **How important is composting to you?**

Extremely important, very important, somewhat important, not so important, not important

1. **How often do you compost in your personal life (either organic food waste or yard waste)?**

Always, Usually, Sometimes, Rarely, Never

1. **How satisfied are you with the current green initiatives at Statistics Canada?**

Very satisfied, satisfied, neither satisfied nor dissatisfied, dissatisfied, very dissatisfied

1. **How often do you have food scraps or organic waste at work on a daily basis?**

Always, Usually, Sometimes, Rarely, Never

1. **How likely would you be to separate your organic waste into green bins in the Main building or Jean Talon cafeteria at Statistics Canada? (note on what a green bin is)**

Very Likely, Likely, Neither likely nor unlikely, Unlikely, Very unlikely

1. **How likely would you be to separate your organic waste into green bins on your floor’s kitchen at Statistics Canada?**

Very Likely, Likely, Neither likely nor unlikely, Unlikely, Very unlikely

1. **How difficult do you find sorting and disposing your organic waste, recyclables and regular waste into appropriate bins?**

Very easy, easy, neither easy nor difficult, difficult, very difficult

1. **How much do you worry about compost attracting bugs and accumulating smells?**

A great deal, a lot, a moderate amount, a little, none at all

1. **If you do not already compost at home, how likely would you be to start if you composted at Statistics Canada?**

Very Likely, Likely, Neither likely nor unlikely, Unlikely, Very unlikely

1. **How interested are you in constructing a community garden in the Tunney’s Pasture complex where local organic waste can be disposed?**

Extremely interested, very interested, somewhat interested, not very interested, not at all interested

# Appendix B: Interview Questions Public Servants

1. Can you explain the general set-up of the green bins? For example, where are the green bins located in your building? Are they next to the recycling and trash bins? Are they commonly found around the building? Are they accessible?
2. Do you find it confusing to know which bin to dispose your waste in? Are the labelling of the different types of waste disposals clear?
3. On average how many times per day do you use the green bins at work?

1. How often are the green bins taken out?

1. Have you ever smelled an odour coming from the green bins?

1. How long has there been an organic waste management program in your building?

1. Do you know if the contract of disposing the organic waste is with the city or with a private company?

# Appendix C: Interview Questions City of Ottawa

1. What are some of the initiatives that the City of Ottawa plans on implementing within the next five years, as they strive to become a greener city by reducing carbon footprints and greenhouse gases?
2. What is the City’s current policy for contracting commercial facilities' organic waste?
	1. If you contract with commercial facilities, can you explain the process of how the organic waste is collected, including how often green bins are collected from commercial facilities?
	2. If you currently only service municipalities, why do you not collect organic waste from commercial facilities?
3. Can you comment about the implementation of community gardens around the City? Does one require a permit or license for this type of activity? What typically happens to the gardens during the winter?