



**Office of the Auditor General: Review of the  
Source Separated Organics Program Business  
Case, Tabled at Audit Committee – June 14, 2018**

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### **Acknowledgements**

The team responsible for this review, comprised of Christian Dugas of Samson and Associates under the supervision of Ed Miner, Deputy Auditor General and the direction of Ken Hughes, Auditor General, would like to thank those individuals who contributed to this project, and particularly, those who provided insights and comments as part of this review.

Original signed by:

Auditor General

## Executive summary

### **Purpose**

Following several pilot projects, staff were directed in 2005 to examine and report back on the implementation plan for a Source Separated Organics (SSO) program in the City. The intent of the program was to move the City's overall residential waste diversion rate from 32% towards the 60% Provincial target.

A 20-year contract was awarded to Orgaworld Canada (Orgaworld), and the Green Bin program was implemented in 2010. The Office of the Auditor General (OAG) conducted the Audit of Procurement Practices related to the SSO Contract in 2011. The audit work was updated, and the report was issued in 2014. One of the OAG's recommendations was that City staff examine the impact and cost of exercising the early termination clause in the contract and assess other service delivery options, including the construction of a City-owned and operated facility.

Consequently, the City reviewed various SSO processing options, and the Public Works and Environmental Services Department prepared a business case which identified and examined potential move-forward options.

The OAG reviewed the SSO business case that formed the basis for City staff's March 26, 2018 report to Committee and Council. This report presents the results of the OAG's review of the 2018 SSO business case.

### **Objectives and scope**

The objectives of our review were to assess the reasonableness of the key assumptions made in the business case and the accuracy of its calculations.

Much of the analysis supporting the SSO business case was undertaken prior to 2018. For our purposes, the March 5, 2018 version of the SSO business case that was provided to us by City staff is considered final and represents our scope.

### **Conclusion**

The business case states that upon consideration and evaluation of the options considered, City staff recommend that a renegotiated contract with Orgaworld be approved and that the Green Bin program be expanded to include the processing of plastic bags and dog waste. Staff believe that this approach will provide an improved

contract for both the City and its taxpayers as it offers service enhancements that will assist in meeting the City's organic waste diversion goals and the proposed Provincial waste diversion targets.

Our review of the business case identified areas for improvement. One of the inputs into the analysis of the various options considered in the business case is the base-case tonnage of household organics to be processed each year. These tonnage figures were calculated using the percentage of residents' household organic waste expected to be diverted into green bins (a.k.a. capture rate). We found that the capture rate in the business case was assumed to increase over time at an unrealistic rate. We had staff re-run the figures in the business case using more realistic capture rates to ensure that the option that they were recommending was still the highest ranked.

We also found that the report to Council provided informative detail on the SSO options reviewed, however, it focused on the year one budgetary impact rather than on the total operating and capital costs of the proposed project. A net present value analysis is a superior method for comparing the financial impact of options such as these. Staff analyzed the net present values in assessing each option, but did not include them in the report to Council. Net present value analysis also supported the renegotiated contract option.

Our original audit included a recommendation to analyze the option of separate leaf and yard waste collection and processing. Staff estimated that changing the collection pattern would involve such costs that they would more than offset the estimated savings in processing costs, particularly when contract termination costs are considered. We expected to see this option presented and thoroughly analyzed in the business case.

We observed that the source of much of the analysis work was done by a consulting firm on behalf of the City. We expected to find evidence of a more robust challenge of the consultant's work.

Lastly, our work assumed that the City will change its Green Bin program to add plastic bags and dog waste when the Orgaworld facility is ready. It is important that the City coordinate its change to the Green Bin program with the modifications to Orgaworld's facility to avoid paying higher processing fees to process the same organics stream.

The OAG did not perform a detailed review of the report to the Environment and Climate Protection Committee, however, we did confirm that it was generally consistent with the March 5, 2018 version of the SSO business case that we had reviewed. The OAG's

observations are limited to the review of this business case. Our observations are not significant enough to alter the City's overall recommended option.

## **Recommendations and responses**

### **Recommendation #1**

That the City continually challenge consultants' statements and assumptions to ensure they are reasonable and supported by data that corroborates the key statements and assumptions. The results of the challenge function should at a minimum be documented and form part of the City's project's record keeping.

#### **Management response:**

Management agrees with this recommendation.

City staff will ensure that all records challenging or questioning Consultants' assumptions and/or findings are retained and properly stored.

Specific to the work undertaken by Dillon Consulting, City staff have stored all relevant communications with Dillon Consulting (including instances and results of the challenge function).

### **Recommendation #2**

That the City monitor the tonnage of source separated organics versus the "put-or-pay" limit on an ongoing basis and begin changing its collection and processing methods for leaf and yard waste when cost effective to do so.

#### **Management response:**

Management agrees with this recommendation.

PWESD staff will monitor the tonnage of source separated organics versus the "put-or-pay" limit, and – with support from Corporate Finance – will determine when it is cost effective to begin changing its collection and processing methods for leaf and yard waste. This evaluation is contingent on several factors, including but not limited to: pending provincial legislation, Council-approved service levels, future collection contracts, and program participation.

This recommendation will be implemented on an ongoing basis, with full implementation expected by no later than Q2 2021 when the curbside collection contracts are renewed and provincial legislation is likely to be confirmed.

**Recommendation #3**

That the City coordinate its change to accept plastic bags and dog waste in green bins with the completion of the modifications to the Orgaworld facility.

**Management response:**

Management agrees with this recommendation.

As committed at Environment and Climate Protection Committee on March 26, 2018, PWESD staff intend to work very closely with Orgaworld Canada to understand the pace of their progress (including approvals, procurement, construction, etc.) in order to coordinate the implementation of the enhanced organics program.

This recommendation is expected to be fully implemented by the end of Q2 2019.

## Detailed review report

# **Review of the Source Separated Organics Program Business Case**

## **Introduction**

Following several promising pilot projects, the development of the Integrated Waste Management Master Plan, and the establishment of a 60% diversion target by the Province, staff were directed in 2005 to examine and report back on the implementation plan for a Source Separated Organics (SSO) program in the City. The intent of the program was to move the City's overall residential waste diversion rate from a stagnant 32% towards the 60% Provincial target.

A 20-year contract was awarded to Orgaworld Canada (Orgaworld), and the Green Bin program was implemented in 2010. The Audit of Procurement Practices Related to the Source Separated Organics Contract was included as part of the Auditor General's 2011 Audit Plan (approved by Council in April 2011) and was subsequently audited by the Office of the Auditor General (OAG).

The OAG audited the SSO program in 2011. The audit was updated and released in 2014 and identified a number of issues with the City's contract with Orgaworld. It recommended that staff undertake an analysis of the City's options for how this program could be delivered more effectively and with better value to taxpayers. One of the OAG's recommendations was that City staff examine the impact and cost of exercising the early termination clause in the contract and assess other service delivery options, including the construction of a City-owned and operated facility. When the audit report was presented on July 9, 2014, the Joint Finance and Economic Development Committee and Audit Sub-Committee provided direction to the Auditor General to undertake an independent peer review of the potential changes in management work related to the future of the contract.

In 2014, the City engaged Dillon Consulting Limited (Dillon) to assist with its review of the SSO program and the development of recommendations to Council that would allow the City to meet its organic waste diversion goals and provide a Green Bin program that would provide better value and service.



A 2014/2015 Seasonal Single Family Residential Curbside Waste Composition Study found that approximately 40% of Ottawa's curbside household organics (i.e. excluding leaf and yard waste) were being placed in the green bin. Therefore, roughly 60% of household organics from curbside homes and nearly all household organics from multi-residential buildings were going to the City's Trail Road landfill facility.

In 2017, the Province released a draft organics framework under the *Waste-Free Ontario Act* that established a target of 70% diversion of curbside organics by 2023, 50% of multi-residential organics by 2025 and a phased-in ban on organics going to the landfill starting in 2022. City staff believe a logical next step to increase the diversion of organics is to allow plastic bags and dog waste in the Green Bin program to increase the number of residents participating in the program.

The City has reviewed various available SSO processing options, and in 2018, the Public Works and Environmental Services Department prepared a business case which identified and examined five potential move-forward options. The options presented were:

- Option 1: Status quo
- Option 2: Current contract with plastic bags and dog waste
- Option 3: Renegotiated Orgaworld proposal with plastic bags and dog waste
- Option 4: New processing contract with plastic bags and dog waste
- Options 5a & 5b: City-owned processing facility (aerobic/anaerobic)

The business case states that upon consideration and evaluation of these options, City staff recommend that the City enter into a renegotiated contract with Orgaworld (Option 3). Staff believe that this approach will provide an improved contract for both the City and its taxpayers. It offers service enhancements that will assist in meeting the City's organic waste diversion goals and the proposed Provincial waste diversion targets.

Projections of the tonnage of organic material to be collected and processed were prepared by Dillon in 2014. Its projections included estimates under the current program (i.e. with no plastic bags and dog waste) and for a program that included plastic bags and dog waste. The business case considered curbside waste tonnages in the analysis, as well as the limited organic material collected from multi-residential buildings under the curbside contracts.

In January 2018, City staff requested that the OAG review their SSO business case that would form the basis for their March 26, 2018 report to Committee and Council. This report presents the results of the OAG's review of the SSO business case.

## Objectives and scope

The objectives of our review were to assess the reasonableness of the key assumptions made in the business case and the accuracy of its calculations.

Much of the analysis supporting the SSO business case was undertaken prior to 2018. For our purposes, the March 5, 2018 version of the SSO business case that was provided to us by City staff is considered final and represents our scope.

## Review methodology

The OAG's review assessed the overall reasonability of the SSO program business case and gathered supporting documentation to provide sufficient and appropriate evidence to support our findings and conclusions. Our procedures were developed to address the areas of highest risk (key assumptions) that we identified within the SSO program business case. Procedures included interviews with key City stakeholders, as well as, but not limited to, a review of:

- Volume projections (tonnage) of organics available for processing
- Rates (tipping or processing fees) used in the analysis
- Consultant's reports (Dillon's Task Memorandum #1 to #4)
- Documentation of the City's review and challenge to substantiate the consultant's findings

We also verified the mathematical accuracy of the business case's supporting spreadsheets.

The review also included a high-level comparison to the costs in the City of Calgary and the City of Edmonton in order to assist in assessing the reasonability of the City's assumptions regarding costs of a City-owned facility. Calgary processes its SSO at a newly constructed facility, which is operated by a P3<sup>1</sup> partner. Edmonton's SSO facility is City owned and operated.

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<sup>1</sup> P3: Public-Private Partnership

## Observations

### 1. Assumptions used in waste projections

The City's business case presents a number of options available to the City. The estimated costs associated with each of these options is impacted by tonnage of organic waste forecasted to be collected each year from 2019 to 2030. We found that the capture rate assumptions used in the waste tonnage forecasts were not adequately supported such that the achievability of the forecasts were not demonstrated to be attainable, and thus, not reasonable.

The waste volume projections used in the business case were prepared by Dillon in 2014 based on historical data provided by the City and data that Dillon gathered from other Canadian municipalities. The projections of SSO volumes are driven by two key factors: the increase in the number of households with curbside collection and the expected rate of organics captured in the green bin from the participating residents.

The extent to which organic matter is diverted into green bins is the organic waste "capture rate". Dillon estimated capture rates from 2014 to 2030 using population projections and historical waste tonnage and composition data provided by the City. In 2014, the actual capture rate for the organic waste was estimated by the City to be 32%. In their determination of the waste outputs, it was assumed in the base case that the organic capture rate would increase by approximately 1% per year culminating in a 50%<sup>2</sup> capture rate in 2030.

Conceptually, the premise that the residents will become, over time, more proficient in capturing their organic waste and diverting it from the garbage stream is a possibility. However, the OAG believes this concept needs to be supported by evidence in Ottawa or other municipalities in order to conclude that it is reasonable.

Determining the actual SSO capture rate is a difficult proposition. This is because, while the total waste output can be measured, the extent of the organic waste is not easily done. Contributing factors to this include the commingling of the organics (leaf and yard waste and SSO) and the inclusion of organic matter in the garbage stream. The extent of the organic matter included in the latter can only be estimated with comprehensive waste audits. Such comprehensive waste audits were done prior to the contract award to Orgaworld and only once since then in 2014/2015 which had a sample size of 10

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<sup>2</sup> An increase to 50% under scenario 1 whereby no plastics and dog waste are being collected; and an increase to 65% under scenario 3 whereby plastics and dog waste are being captured.

groups of 10 households. We believe that waste audits should be performed more frequently in order to better understand trends and changes in residents' behaviour with respect to the diversion of the organic waste.

The experience of the other Canadian municipalities included by Dillon in its memo also did not clearly support the reasonableness of increasing capture rates without program changes designed to alter a resident's behaviour<sup>3</sup>. In fact, some of the municipalities listed in the memo reflect a decrease, over time, in the capture rate of organic waste.

Consequently, the OAG requested that the City re-perform its analysis using a constant and reasonable SSO capture rate for purposes of tonnage projections. This resulted in forecasted organics volumes available for processing that only increased to the extent that new households are expected to be built (i.e. a 0% increase in capture rate).

Staff re-performed this analysis, and this was reviewed by the OAG. Based on this revised analysis, we agreed with staff's conclusion that the re-negotiated Orgaworld agreement (option 3) remained the "best" option, given the City's desire to change the program to accept plastics and dog waste. To determine the best option, we selected the option that had the lowest net present value (NPV)<sup>4</sup> of operating cash outflows.

This analysis was referred to by staff as a sensitivity analysis, however, it was not included in the business case supporting the Council submission.

## **2. Communication to Council**

The information presented to the Environment and Climate Protection Committee and to Council was consistent and true to the facts presented in the business case we reviewed.

The business case's conclusions were communicated to the Environment and Climate Protection Committee on March 26, 2018 in a report to the Committee. Several documents were presented including a confidential legal opinion on the contractual issues. The business case itself was not submitted to the Committee, but was available upon request.

The report to the Committee included, among other elements, an informative background component and a summary of qualitative factors. The report to the

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<sup>3</sup> Examples of such program changes include bag limits, monetary fines, clear bags, and refusal to collect garbage if it contains organics.

<sup>4</sup> NPV represents the value in today's dollar the sum of future net cash outlays including both one-time and annual amounts.

Committee subsequently discussed various options along with their merits and disadvantages, their estimated cost and included a recommended course of action.

The OAG found that the report to the Committee was true to the business case. We found however that the discussion surrounding the cost of each option was focused on the expected costs to be incurred in the first year of operations (2019). While the first-year budgetary increase requirement may be easier to understand, “Year 1 Costs” are not the best way to identify a preferred financial option. “Year 1 Costs” do not necessarily reflect or is indicative of the future annual costs, nor of the total cost of the option being considered where both operating and capital costs need to be considered as a whole.

A better method for comparing alternatives is to compare their NPVs. By comparing the total cost outlay of each option in today’s dollar, the City can make an informed decision as to which option presents the most advantageous financial implication, qualitative factors aside. The NPV was calculated and presented in the business case, however, it was not included in the report to the Committee. As a result, Committee members were unable to appreciate the total costs of the options being presented as well as the future budgetary impacts in the years to come. It should be pointed out that our NPV analysis also supported Option 3.

The OAG appreciates that ideally business cases are prepared with the best information available at the time. As such, a certain degree of uncertainty always exists in the decision-making process. The uncertainty cannot be removed, however, it can be discussed in the business cases so that readers are aware of the uncertainties and risks imbedded in the proposal. NPV best presents the total net costs of the options given the known facts and uncertainties at the time.

### **3. Evidence of challenge of consultant’s work**

The consulting firm, Dillon, was hired by the City and tasked to investigate various components of the SSO program in order to determine, analyze and present viable options available to the City. The consultant’s activities included:

- Estimating future expected waste volumes available for collection
- Reviewing available SSO processing technologies
- Analyzing SSO collection and processing options
- Reviewing other nearby SSO facilities
- Reviewing service delivery options

During the course of the engagement, staff held meetings, teleconferences and engaged in email correspondence to guide and, when necessary, support the consultant. The City provided clarification, feedback, as well as generic support, such as historical data collected by the City.

During our review of the business case, we observed evidence of review and feedback and that findings presented and assumptions were discussed. The OAG found that the level of the documentation, however, to support the challenge function with respect to some key areas lacked an appropriate level of veracity. These key areas included the assumptions used in the volume projections, the estimated processing operating costs for City-owned facilities and the class D estimates<sup>5</sup> provided for the construction costs. While City staff were confident that the information provided by the consultant was reasonable and within the anticipated range, we expected that there would be documentation showing City staff either questioned facts and assumptions that were inconsistent with other information that the City staff knew or obtained, or confirmation that facts and assumptions were consistent, or not overly optimistic.

For example, we expected to see records documenting why staff found the organics capture rate assumptions to be reasonable<sup>6</sup> and achievable. One method to corroborate this would have been to research and document what other municipalities experienced and the relevant timeframe it required to reach this level of organic capture (e.g. Canadian municipalities “X” and “Y” have programs roughly similar to Ottawa, and they both eventually achieved 50% capture rate of organic waste). We also expected to see that City staff compared the per tonne processing fee (tipping fee) rates that Dillon

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<sup>5</sup> Cost estimate classification systems exist to attempt to define the accuracy of the cost estimate at different stages. The following definitions form the basis for the recommended enhanced cost-estimate classification system.

Class A Estimate: Pre-Tender.

Class B Estimate: Design Level Estimate.

Class C Estimate: Planning Level Estimate.

Class D Estimate: Conceptual Level Estimate. A rough order-of-magnitude estimate used for comparison purposes between alternative solutions that have been prepared on the same basis. The estimate includes a 40% to 50% contingency.

<sup>6</sup> During our review, we noted that City staff reduced the consultant’s tonnage projections in order to bring them in line with actual tonnages experienced. This was deemed necessary as the consultant’s estimates were somewhat dated at the time of the drafting of the business case.

reported to obtain from the alternate organics processor were reasonable by comparing them to a survey of tipping fees being paid by other nearby municipalities. None of these tipping fees had been used by City staff in their review, but some were produced for our review.

### **Recommendation #1**

That the City continually challenge consultants' statements and assumptions to ensure they are reasonable and supported by data that corroborates the key statements and assumptions. The results of the challenge function should at a minimum be documented and form part of the City's project's record keeping.

### **Management response:**

Management agrees with this recommendation.

City staff will ensure that all records challenging or questioning Consultants' assumptions and/or findings are retained and properly stored.

Specific to the work undertaken by Dillon Consulting, City staff have stored all relevant communications with Dillon Consulting (including instances and results of the challenge function).

## **4. Analysis of separate leaf and yard waste processing**

The City's business case did not include analysis of an option that was identified in the OAG's 2014 audit. City staff informed us that this option was assessed, and they found that it was not currently cost effective. We reviewed the logic behind this assessment<sup>7</sup> and concurred with staff's conclusion, however, we believe that it should have been included in the business case.

As indicated above, the business case included five options, four of which included plastics and dog waste. In the OAG's 2014 audit, we recommended<sup>8</sup> *"that the City conduct the necessary analysis to determine [...] the marginal cost implications for separate leaf and yard waste collection."* This analysis was not included as an option in the business case.

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<sup>7</sup> The assessment performed by the City was largely based on the work of the consultant. The OAG believes that this option should have been included in the business case and been thoroughly analyzed in a comparable fashion to the other options.

<sup>8</sup> Recommendation 2 from the 2014 SSO Audit.

The two main components making up the cost of leaf and yard waste processing are the cost to collect and the on-site, or processing, costs. The on-site costs to process leaf and yard waste collected are significantly less expensive at the City's own Trail Road and adjacent Barnsdale locations compared to the tipping fees paid to Orgaworld contract (approximately \$15.30 versus \$110.35 and rising to \$124.00, respectively, per tonne).

Staff's analysis of the impact on collection costs to facilitate this separate processing suggests that the increase in the collection costs would more than offset the savings in on-site costs. Additionally, in the short term, the City's collection contracts limit its flexibility. Changing the collection pattern would involve such costs, estimated between an additional \$5 million and \$10 million per year, that they would more than offset the estimated savings in on-site costs, particularly when contract termination costs are considered. The OAG expected to see this option presented and thoroughly analyzed in the business case.

The current collection process is to commingle SSO and leaf and yard waste in one side of each truck<sup>9</sup> and bring it to Orgaworld for processing. This commingling was done in order to increase the organics volumes close to the 80,000 tonne "put-or-pay" threshold, which the 2014 audit found was set too high in the original contract. The logic of this commingling is that the City should have Orgaworld process leaf and yard waste because it will have to pay for the tonnage in any event. Therefore, when SSO tonnages are less than the "put-or-pay" threshold, the relevant incremental processing cost for leaf and yard waste at Orgaworld is \$0, which is less than \$15.30 per ton at Trail Road/Barnsdale.

An exception to this collection and processing model is in the spring and fall during peak leaf and yard waste period. In these peaks, usually 10 weeks per year, the City dispatches separate trucks to collect solely the leaf and yard waste. Staff then monitor the commingled tonnage delivered to Orgaworld each day and deliver just enough leaf and yard waste to maximize the daily processing limit<sup>10</sup>. The excess leaf and yard waste is delivered to Trail Road/Barnsdale for processing.

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<sup>9</sup> The other side of each truck is used for the blue or black box, depending on the week. The remaining garbage is collected separately and brought to the City's Trail Road landfill. Commingling is also encouraged through the City's use of green bins that are larger than most households require for SSO.

<sup>10</sup> Currently set at 540 tonnes per day.



With the introduction of plastic bags and dog waste and the new contract with Orgaworld, it is possible that, in the future, the tonnage of SSO by itself (i.e. excluding leaf and yard waste) will come close to the new lower “put-or-pay” limit of 75,000 tonnes annually. As such, at some point, it may become cost effective to move more of leaf and yard waste out of the commingled stream and process it separately at a much lower cost at Trail Road/Barnsdale.

## **Recommendation #2**

That the City monitor the tonnage of source separated organics versus the “put-or-pay” limit on an ongoing basis and begin changing its collection and processing methods for leaf and yard waste when cost effective to do so.

### **Management response:**

Management agrees with this recommendation.

PWESD staff will monitor the tonnage of source separated organics versus the “put-or-pay” limit, and – with support from Corporate Finance – will determine when it is cost effective to begin changing its collection and processing methods for leaf and yard waste. This evaluation is contingent on several factors, including but not limited to: pending provincial legislation, Council-approved service levels, future collection contracts, and program participation.

This recommendation will be implemented on an ongoing basis, with full implementation expected by no later than Q2 2021 when the curbside collection contracts are renewed and provincial legislation is likely to be confirmed.

## **5. New service provider option**

Option 4 in the business case is to assess terminating the contract with Orgaworld and establish a new contract with another organics processor. We found that a key factor in this option, the expected per tonne tipping fee that another processor would charge the City, while reasonable, could have been better supported.

Dillon and City staff determined that for another processor to be considered feasible, the site must be within 100 km from the centroid of Ottawa. Currently, only one processor had the potential to meet the available capacity requirements within the maximum distance requirement. To use this facility however, Dillon and staff determined that direct hauling of the organics by the City waste collectors would not be feasible due to the additional distances travelled and safety concerns associated with the current collection vehicles’ configurations. As a result, this option included the direct hauling of

the organic material to a third-party transfer station and then hauling the consolidated organic material to the alternative service provider's facility.

As a result, the total cost of this option consisted of the service provider's tipping fees plus transfer and haulage fees. In order to obtain planning level cost estimates, Dillon contacted the processing facility and a transfer station company. The rates obtained by Dillon, while done in an anonymous and confidential fashion (i.e. the new service provider was not informed from which municipality the waste would come from), they were not obtained under a competitive procurement process: one informal quote was received for each of the services requested. The OAG recognizes that it would have been inappropriate to conduct research through a formal procurement process.

City staff were comfortable that the prices obtained were within a reasonable range of what was expected based on their knowledge of the industry. While the OAG finds that the tipping costs appear to be reasonable<sup>11</sup>, there was no documentation available for us to review, beyond Dillon's report, such as rates paid by other municipalities.

Notwithstanding the above, it is unlikely that the combined prices for tipping fees and transportation would be low enough to make option 4 the preferable course of action. The added costs of the transfer and transportation, together with the costs of terminating the existing contract, would likely more than offset any possible savings in tipping fees.

## **6. Inclusion of plastic bags and dog waste in the Green Bin program**

Our review was limited to an assessment of the reasonableness of the key assumptions made in the business case and the accuracy of its calculations. The decision to add plastic bags and dog waste in the processing of organics is a policy decision subject to Council approval. It is our understanding that it is the City's desire to include these elements into the organic processing stream.

We also understand from City staff that the renegotiated Orgaworld proposal may only be accepted as a whole. For example, the City cannot take the lower put-or-pay threshold without agreeing to the higher tipping fee rates. The higher tipping rate in the renegotiated proposal will also apply once the Orgaworld's facility has been modified to process plastic bags and dog waste in the organics stream. Our assessment of Option 3

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<sup>11</sup> Tipping fees (2019 \$117.30/tonne) appear reasonable considering the renegotiated Orgaworld tipping fee (2019 \$126.48/tonne). Transportation costs (2019 \$31.50/tonne) appear reasonable based on general industry knowledge.

reflects the assumption that the City will change its Green Bin program to add plastic bags and dog waste when the Orgaworld facility is ready. It is important that the City coordinate its change to the Green Bin program with the modifications to Orgaworld's facility. Failure to do so could result in the City paying the new higher tipping fee to process its current organics stream.

**Recommendation #3**

That the City coordinate its change to accept plastic bags and dog waste in green bins with the completion of the modifications to the Orgaworld facility.

**Management response:**

Management agrees with this recommendation.

As committed at Environment and Climate Protection Committee on March 26, 2018, PWESD staff intend to work very closely with Orgaworld Canada to understand the pace of their progress (including approvals, procurement, construction, etc.) in order to coordinate the implementation of the enhanced organics program.

This recommendation is expected to be fully implemented by the end of Q2 2019.