

AUDITOR GENERAL'S REPORT

Review of the Green Lane Landfill Operations

Management of Contracts Needs Improvement

June 28, 2018



Beverly Romeo-Beehler, CPA, CMA, B.B.A., JD, ICD.D, CFF
Auditor General



TABLE OF CONTENTS

EXECUTIVE SUMMARY 1

BACKGROUND..... 7

AUDIT RESULTS..... 10

 Areas where Solid Waste Management Services is Operating Well 10

A. PROCUREMENT 10

 A.1. Opportunities for Cost Savings in Design of Future Contracts 10

 A.2. Best Value for Money Not Achieved Due to Ongoing Sole Sourcing of Waste Haulage Services 13

B. CONTRACT MANAGEMENT 15

 B.1. Opportunities for the City to Reduce Landfill Operation Fees 15

 B.2. Issues with Haulage of City Waste 20

 B.3. Contractor Invoices are not Effectively Reviewed and Processed 23

 B.4. Ineffective Change Order Process 28

 B.5. Improve Governance Over Certain Business Practices at Green Lane 33

CONCLUSION 35

AUDIT OBJECTIVES, SCOPE AND METHODOLOGY 36

APPENDIX 1: Management’s Response to the Auditor General’s Report Entitled: “Review of the Green Lane Landfill Operations – Management of Contracts Needs Improvement” 38

EXECUTIVE SUMMARY

The City of Toronto, through its Solid Waste Management Services Division (SWMS), manages the Green Lane Landfill Site (Green Lane) for the disposal of its solid, non-hazardous waste. In 2017, 495,000 tonnes of solid waste was landfilled at Green Lane. Eighty-eight per cent of the waste landfilled was from the City's seven transfer stations. The annual tonnage of waste forecasted to be landfilled at Green Lane is declining, which will extend the useful life of Green Lane.

Contracted services are used extensively for landfilling operations and construction at Green Lane

The City has contracted out landfilling, construction, haulage and engineering consulting services related to the handling of its solid waste material. The total value of these multi-year contracts is approximately \$373 million over the contract terms (up to 10 years including possible extensions). Daily site supervision and contract management is performed by SWMS staff stationed at Green Lane and supported by staff located in Toronto.

Audit focused on procurement and contract management

The objective of this audit was to assess the effectiveness of the management of landfill operations to ensure the City's interests are adequately protected. This included a review of procurement and contract management processes and controls.

This audit primarily covered the period from March 1, 2014 to March 31, 2018. For contracts entered into prior to March 1, 2014, we extended our review to original contract procurement.

We were unable to obtain sufficient information relating to the procurement of haulage services in 2009. We will review this information once it is provided and issue a separate report if required.

This report presents the results of our review.

Apply audit recommendations to Green Lane construction activities

Based on the results of our review of operations and maintenance processes and controls, it appears that Green Lane operations are relatively well managed by City staff. As a result we have decided not to proceed with a review of construction processes and controls at Green Lane. Such a review is not considered necessary at this time since the processes and staff involved are the same as included in the current review. Therefore, it is likely that the findings of a review would be similar to the findings of this review. In the expectation that is the case, the Division should assess the applicability of the recommendations in this report on landfill operations to the construction activities related to Green Lane.

Areas where Green Lane is operating well:

- Green Lane is the 2017 Bronze winner of the "Landfill Management Excellence Award" from the Solid Waste Association of North America ([SWANA](#)).
- The City has secured contingency landfill capacity for 10 years with other landfill service providers.
- The invoice validation process for the waste haulage contract is effective and diligently performed.

The main findings of our audit relate to procurement and contract management.

Areas of Improvement in Procurement

The design of the haulage fuel surcharge could be improved in the future in a manner that is fair yet more beneficial to the City

The City's cost per load for haulage is adjusted by a fuel surcharge for changes in fuel prices. When the haulage request for quotation was issued in 2009, the base fuel price of \$0.80/litre and a discount of \$0.06/litre, (based on a discount of 7.5 per cent), was set for the life of the contract. The fuel surcharge essentially subtracts this base price from the current market price to adjust the payment per load to the contractor. Savings could be realized in two ways: first, by setting a higher discount rate, (which is entirely possible given other discount rates we are aware of), and by including in the contract periodic revisions to reflect changing market prices.

For example, had the discount been set at 10 per cent the City could have reduced its fuel cost by \$0.4 million to date and a further \$0.114 million over the remaining two years of the contract. Given the steadily increasing price of fuel, even greater savings could have been achieved by ensuring the

fuel price discount was based on current market prices. In preparing the procurement documents for the next haulage contract, there is a need to consider this risk carefully and develop a fuel surcharge calculation that ensures the City shares in increases in fuel price discounts as a result of rising prices.

Contingency amounts in contracts were not supported by analysis

The contingency amount in the Landfilling Operations and Maintenance contract is \$20 million or 20.5 per cent of the contract value, (\$6.3 million spent as of February 28, 2018). The contingency amount was set based on an estimate provided by one proponent in a cancelled request for proposal. The Engineering Consulting contract also has a 20 per cent contract value contingency. Both are higher than the 5 to 15 per cent general range set for contract contingency. Having large sums available as a contingency may result in spending that might not occur if funds were not readily available.

Best value for money was not achieved due to ongoing sole sourcing of waste haulage services

Since 2007, SWMS has sole-sourced waste haulage services from the same contractor three times. The haulage services, especially for smaller volumes, could be obtained through a competitive procurement process. The existing sole-source arrangements are priced at premium rates and for extended periods. Our experience has been that better pricing is achieved through competitive procurement. As haulage and volume of waste disposal is more settled and predictable now, sole-source procurement practices should be avoided.

Areas of Improvement in Contract Management

The City could landfill more waste at no additional current cost by optimizing the tonnage of waste landfilled at Green Lane

The City has guaranteed the landfilling contractor a minimum landfill volume payable monthly at the highest per tonne unit rate. Therefore, the City could reduce current costs by shipping at least the monthly equivalent tonnage to meet the guaranteed minimum.

Further, additional savings on current costs could be achieved by optimizing monthly tonnage to take advantage of lower prices for higher tonnages as set out in the contract. Tonnage has not been optimal because of fluctuating volumes at different times of the year and because a certain amount of City waste has been shipped to contingency sites. The main reason for this is to divert waste from the Green Lane site to extend its useful life.

As an example of the impact of optimizing, had the City optimized tonnage to Green Lane in 2017 savings of \$319,500 would have been realized but would have resulted in an additional 21,300 tonnes of waste being sent to Green Lane.

Note that these savings are on current costs only. This does not include any allocation of the initial capital cost to acquire Green Lane. If the historical capital cost is allocated to current shipments, the savings noted above are virtually eliminated.

Once Green Lane reaches capacity, the City will need to find a replacement solution for its solid waste and this will, in all likelihood, be both difficult and expensive.

All costs should be considered in evaluating landfilling options

We understand City Council's approved Long Term Waste Management Strategy is to increase diversion to contingency sites in order to extend the life of Green Lane. The purpose of the high-level analysis above and in the body of this report is to put some numbers to alternatives given that the City's waste profile has changed dramatically since the Green Lane contract was established and also since redirection to contingency sites was put in place. There is a need to review opportunities to reduce costs, while at the same time giving consideration to the impact of any decisions on the City's long-term waste disposal needs.

Overall, there are a number of strategic and operational factors facing SWMS. We recommend that SWMS review and propose amendments where appropriate to its strategic and business plans related to landfilling options.

Fuel surcharge adjustments were not applied to the monthly minimum landfill fee

The Operations and Maintenance contract specifies that the landfill operations unit rate per tonne is to be adjusted for changes in the Consumer Price Index and the Fuel Surcharge. For the past four years, fuel surcharge adjustments were not applied to the calculation of the monthly minimum landfill fee, resulting in a loss of \$86,000 to the City. If the City fails to make this fuel surcharge adjustment over the remaining life of the contract, we estimate that the City could lose an additional \$107,000.

Operational risks exist in managing waste haulage

With respect to the haulage of the City's waste to Green Lane:

- The Ontario Highway Traffic Act, places limits on the maximum gross weight of commercial vehicles travelling on the Province's roads. From 2011 to 2017, 2,849 of 90,300, (3.2 per cent), loads from City transfer stations to Green Lane were over this limit.
- SWMS does not have a back-up hauler readily available to mitigate the risk of operational interruptions. Under the Environmental Compliance Approval (ECA) permit from the Ministry of Environment and Climate Change (MOECC), the City's transfer stations can only hold solid waste for a specified number of days, with the longest holding period being five days.
- The haulage contractor is expected to be the primary service provider. However, 22 subcontractor trucks (through four subcontractors) are being used to execute the haulage contract, performing 63 per cent of the services. There was no proper documentation of City approval of the four subcontractor companies.

Change order requests did not provide sufficient information and were not approved timely

A well-defined change order process does not exist for the Operations and Maintenance and Engineering Consulting contracts. As a result, the current documentation of change order requests does not sufficiently support SWMS management's timely involvement, work rationale and reasonableness of pricing.

Change order requests were not always submitted for approval prior to making vendor commitments. Competitive vendor quotes were not obtained and it is unclear whether the City obtained the best value for money. In addition, Contractors charged markup on change orders inconsistently and incorrectly, thus increasing costs. The errors and inconsistencies identified in our samples were not material. However, their existence demonstrates a need for improved diligence on the part of the City and warrant a review of past change orders to identify and recover any incorrect charges.

Review and processing of invoice and payment requests was not diligent and effective

The Operations and Maintenance and Engineering Consulting contractors issue monthly invoices for regular contract activities and change order work completed in the month. The detailed invoice packages did not include sufficient documents or information to support the quantities and prices billed. Having sufficient back-up information is

important to verify the millions of dollars being paid to Green Lane contractors.

With the exception of the haulage contract where we found no invoice errors, the SWMS invoice review and validation process is not well established, resulting in undetected payment errors. For the identified payment errors, the correction practice is not properly communicated and documented, leading to inaccurate financial information and difficulty in tracking, monitoring and reconciling contract line item spending. The SAP system contains errors due to incorrect coding of contract line items and general ledger accounts, and inappropriate grouping of multiple contract line items as a single line item. SWMS staff need to be properly trained and/or supervised on performing diligent and effective invoice review.

A comprehensive operations manual is required

A governance framework outlining roles and responsibilities, process and control activities, including a set of performance metrics is required for Green Lane site management and oversight. There are environmental, safety, and daily operational activities performed by contractors and City staff that need to be clearly defined, documented and understood.

Conclusion

18 recommendations were made to improve procurement and contract management

In this audit report, we make 18 recommendations pertaining to the procurement and contract management of operations and maintenance processes and controls at Green Lane. We believe that the implementation of these recommendations will help SWMS to reduce costs, enhance efficiency of site operations and monitoring, and strengthen compliance with regulations, policies and procedures.

Given that the same staff and processes are used to manage construction work at Green Lane, our recommendations should also be applied to construction processes and controls.

We express our appreciation for the co-operation and assistance we received from management and staff of Solid Waste Management Services and Purchasing & Materials Management Divisions.

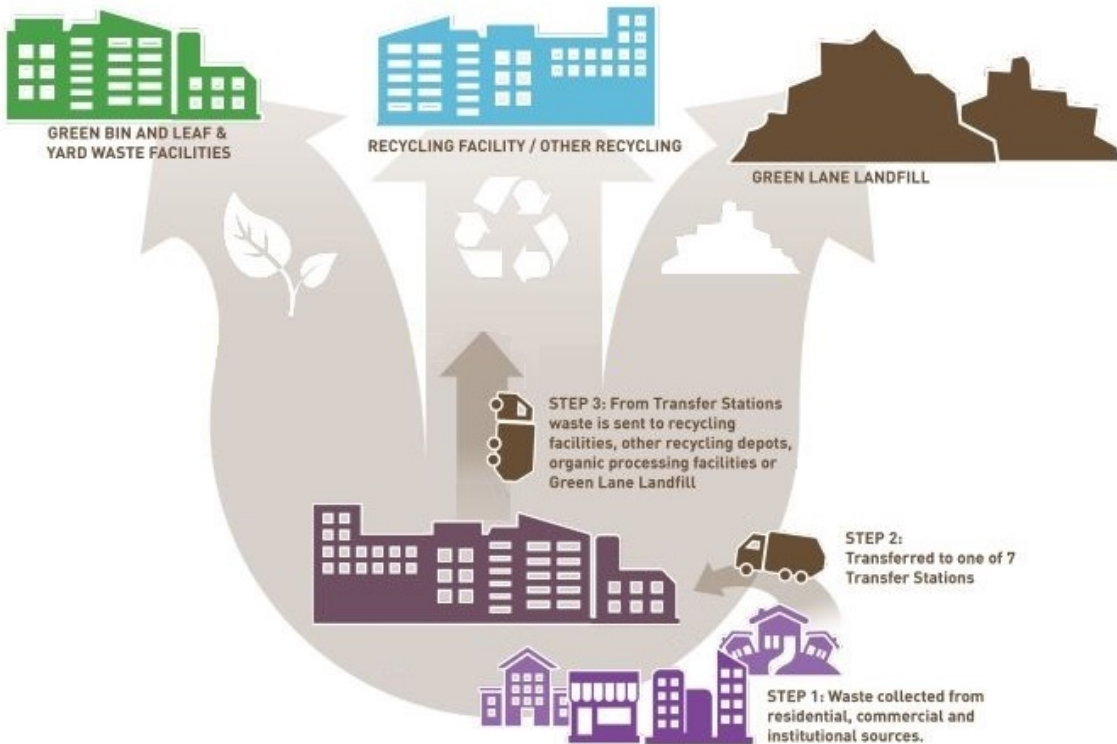
BACKGROUND

In 2007, the City of Toronto purchased the Green Lane Landfill to secure a site for the long-term disposal of its solid, non-hazardous waste. Green Lane is located in St. Thomas, Ontario, 200 km from Toronto.

Green Lane operates under three Environmental Compliance Approval permits issued by the Ministry of the Environment and Climate Change (MOECC). These permits require full regulatory compliance and comprehensive environmental monitoring. SWMS has reported 100 per cent compliance since 2015 on all three of its MOECC permits.

Figure 1 provides an overview of the waste management process.

Figure 1: Solid Waste Collection, Transfer and Disposal



Source: SWMS Long Term Waste Management Strategy

Contracted services are used extensively for landfilling at Green Lane

The City has contracted out the following services at Green Lane:

- landfilling operations and maintenance
- construction activities
- haulage between the City’s transfer stations and Green Lane
- engineering consulting and construction design

Table 1 provides contract terms and values of the three main contracts reviewed in this audit.

Table 1: Terms and Values of Contracts Reviewed

| Contract | Type of Service | Term (Final Year) | Value (in \$millions)* |
|---|---------------------------|-------------------|------------------------|
| Landfill Operation, Maintenance and Construction Services | Operation and Maintenance | 9 Years (2023) | \$97.5 |
| | Construction | | \$108 |
| Engineering Consulting and Design Services | Engineering Consulting | 10 Years (2023) | \$4 |
| | Design Services | | \$5.2 |
| Waste Haulage | To Green Lane | 9 Years (2020) | \$132 |
| | To Contingency Sites | 10 Years (2021) | \$26 |
| Total | | | \$372.7 |

* Net of tax, including provisional items, contingencies and extension years

The City has guaranteed the Green Lane operator a minimum of 400,000 tonnes per year

The Green Lane site accepts solid waste from internal customers (i.e. the City's seven transfer stations and Toronto Water Division) as well as from a few other external contract or cash customers. Based on the current contract with the landfill operator, the City guarantees an annual minimum of 400,000 tonnes of waste landfilled at Green Lane.

Owning and operating its own landfill site is an expensive undertaking for the City. However, the volume of waste needing to be landfilled for a City the size of Toronto means the City needed to secure significant landfilling capacity. Once the Green Lane site reaches capacity, the City will need to find an alternative for disposing of its waste. Acquiring such a site has been difficult in the past. Thus, prolonging the life span of Green Lane defers the need to find an alternative.

In September 2011, the City entered into agreements with four landfill sites for contingency waste disposal of up to a total of 325,000 tonnes of waste per year. Waste can be redirected in order to extend the life of Green Lane or for other operational reasons.

In July 2016, City Council approved the Long Term Waste Management Strategy. A priority of this strategy is to maximize the life of Green Lane by minimizing the amount of solid waste sent to the site. It is estimated that the implementation of the strategy will help to extend the lifespan of Green Lane from 2029 to 2040.

Table 2 shows tonnage of waste received or to be received from 2011 to 2023.

Table 2: Tonnage of Waste Received



Source: (1) 2011-2017: Solid Waste Management Services Data
 (2) 2018-2023: Solid Waste Management Services 2018 Tonnage Map

AUDIT RESULTS

This section of the report contains the findings from our audit work followed by specific recommendations.

Areas where Solid Waste Management Services is Operating Well

- Green Lane is an industry award winner**
 - Green Lane is the 2017 Bronze winner of the “Landfill Management Excellence Award” from the Solid Waste Association of North America ([SWANA](#)) in recognition of its outstanding solid waste programs and facilities. SWANA is the leading professional association in the solid waste field.
- The City has secured alternative landfill capacity**
 - The City has secured contingency landfill capacity for 10 years by contracting with different service providers for up to a total of 325,000 tonnes of solid waste per year. This greatly mitigates the risks of operational disruptions at Green Lane.
- No errors were found in review of haulage invoices**
 - The invoice validation process for the waste haulage contract is effective and diligently performed. We examined one hundred haulage invoices and found no errors.

A. PROCUREMENT

A.1. OPPORTUNITIES FOR COST SAVINGS IN DESIGN OF FUTURE CONTRACTS

Design of Fuel Surcharge Calculation for Haulage Contract Could be Improved

Haulage fuel surcharge calculation does not allow flexibility to address changes in market conditions

The fuel surcharge calculation in the current contract does not allow the City to participate in higher fuel discounts achieved as a result of rising fuel prices. The current contract does not allow the City any flexibility to change the \$0.80/litre base price set in 2009. A fuel discount of 7.5 per cent, was set for the life of the contract based on that price. This resulted in a discount of \$0.06/litre.

Fixing the discount based on a fuel price set in 2009 eliminated any opportunity to ensure the discount reflected fuel prices as they changed. Future contracts should consider applying the discount to market prices rather than a set base price.

We are aware of other City contracts that achieve more favourable discounts on fuel prices.

For example, had the discount been set at an achievable rate of 10 per cent the City could have reduced its fuel cost by \$0.4 million to date and a further \$0.114 million over the remaining two years of the contract. Given the steadily increasing price of fuel, even greater savings could have been achieved by ensuring pricing reflects current market prices. In preparing the procurement documents for the next haulage contract, there is a need to consider this risk carefully and develop a fuel surcharge calculation that equitably shares the risk of fuel price increases between the City and its vendors.

It may be possible for the next haulage contract to coordinate with other City Divisions to improve the fuel pricing achieved on City contracts. In considering the fuel surcharge, we are aware that the City has bulk fuel purchase agreements through the Fleet Services Division that should be considered. It may be possible to pass on savings achieved through the City's bulk purchase agreements to contractors with significant fleet operations, such as the waste haulage contract. This would reduce the overall cost to the City. Should this prove beneficial, it may be possible to extend it to other contracts with significant fleet components such as winter snow clearing.

Recommendation:

1. City Council request the General Manager, Solid Waste Management Services to:

- a. include in the next waste haulage contract the flexibility to allow the City to periodically adjust the fuel surcharge to reflect market conditions**
- b. engage Fleet Services Division for their specific subject-matter expertise to assist in haulage call document development.**

2. City Council request the General Manager, Fleet Services to consult with City Divisions with major fleet intensive contracts, to determine if there is any opportunity to realize savings by taking advantage of bulk fuel purchase agreements.

Criteria for Determining Contract Contingency Amounts were not Clearly Defined

Contingency amounts in contracts are provisions for unforeseen events or circumstances. Landfill operations and construction involves potential environmental, social and financial risks. Therefore, a proper analysis of risk impact and likelihood is important for determining contract contingency amounts.

The contingency amounts in the Landfilling Operations and Maintenance and Engineering Consulting contracts are both higher than the general contingency range between 5 and 15 per cent of contract values.

Contract contingency amounts are high

For the Landfilling Operations and Maintenance contract, a flat 20 per cent contingency percentage was used in the original request for proposal rather than basing the required contingency on an analysis of risks and uncertainties related to the contract. This request for proposal had to be cancelled and in the re-issued request for proposal the contingency was set at a fixed amount of \$20 million, (\$6.3 million spent to February 28, 2018). We were advised that this was based on the \$19.4 million contingency amount submitted by the highest bidder in the first request for proposal.

The external consultant assisting the City in preparing the Landfilling Operations and Maintenance request for proposal recommended approximately \$15 million for contingency. A flat 20 per cent was used for the Engineering Consulting contract.

Establishing a basis for developing contract contingency is important to limit the impact of unnecessary spending and commitment of City funds over an extended period of time. It is difficult to justify the higher than normal contingency amounts given the lack of clearly defined criteria for determining it.

Recommendation:

- 3. City Council request the General Manager, Solid Waste Management Services to establish a defined process to conduct and document the basis for developing contract contingency amounts or percentages.**

A.2. BEST VALUE FOR MONEY NOT ACHIEVED DUE TO ONGOING SOLE SOURCING

Several long-term sole source contracts were used to obtain waste haulage services

Over the past few years SWMS has sole-sourced waste haulage service from the same contractor three times. These sole-sourcing arrangements are, as noted below, for millions of dollars and long periods of time. Transportation of waste, especially for smaller volumes, should be competitively sourced to obtain best value for money.

Sole-sourcing Haulage to Green Lane

A sole-source contract for haulage was entered into for an extended period of time during the transition to Green Lane from the former landfill site in Michigan. This contract was for \$3.5 million and for a considerable duration, from August 31, 2007 to December 31, 2010. The rates charged were not competitive when compared to the rates in a 2011 competitive bid from the same vendor, for the same services, to the same location. The average 2010 rate per load in the sole-source contract was 30 per cent or \$200/load higher than the average 2011 rate per load in the competitively procured contract.

Competitive procurement yields better pricing for the City

We do note that the rate per load achieved in the 2011 contract is based on a ten year contract. It is not certain that the full savings of \$200 per load could have been achieved through competitive procurement from 2007 to 2010 because contracts of longer term generally yield better rates. However, our experience is that competitive procurement yields better pricing than non-competitive procurement.

Sole-sourcing to Contingency Sites

Haulage to contingency sites was sole-sourced

As a result of a change in approach, contingency landfill sites are being used on a regular basis, rather than as an exception as originally intended. Therefore, redirected haulage to contingency sites is more predictable, and better haulage rates could have been obtained on a competitive basis.

In June 2011, based on SWMS' staff recommendation, Council approved the contract awarding haulage to contingency sites to the existing hauler without market competition. This recommendation was based on the reasoning that contingency haulage services might not necessarily be needed. The sole-source haulage contract was for up to \$2.6 million per year for a term of five years plus five optional years. The Director, SWMS confirmed that a premium was included in the haulage rates because this work was unpredictable and required more scheduling efforts by the haulage contractor.

Using contingency sites increased haulage costs by \$2.1 million in total for two years

SWMS redirected solid waste to contingency sites in 2014 and 2017. The related haulage cost for these two years was \$3.5 and \$1.7 million respectively. These costs were \$2.1 million higher than what it would have cost to haul the waste to Green Lane. Based on the review of SWMS 2018 tonnage map, the Division is forecasting to redirect 60,000 tonnes/year of solid waste from 2018 to 2023. The General Manager, SWMS, advised that haulage to contingency sites is being considered for inclusion in the next haulage call document.

Sole-sourcing work to a company associated with the Operations and Maintenance contractor

No competitive sourcing of work awarded to a company associated with the landfilling contractor

There was no competitive sourcing or proper justification for awarding a job of \$72,000 to a company associated with the Operations and Maintenance contractor. This work could have also been performed by the Engineering Consultant currently hired by the City to perform similar work at Green Lane.

The City purchasing policy requires competitive quotes for goods and services purchased over \$3,000. There was no formal analysis or supporting documentation to justify the additional benefits of awarding this work to the associated company on a sole source basis. The quote provided by the associated company did not have sufficient detailed breakdown of labour rates and expected hours and, therefore the amount quoted could not be verified for reasonableness.

We were informed by City staff that the associated company had prior experience with Green Lane and had completed the previous Soil Management study in 2009. It was unclear whether the City received the best value for money.

Recommendation:

- 4. City Council request the General Manager, Solid Waste Management Services to:**
 - a. use a competitive procurement process for the acquisition of goods and services in compliance with the City's approved procurement process**
 - b. ensure, when non-competitive procurement is necessary, that the need to do so, and the basis for agreed upon pricing, is fully documented.**

B. CONTRACT MANAGEMENT

B.1. OPPORTUNITIES FOR THE CITY TO REDUCE LANDFILL OPERATION FEES

Landfill Fuel Surcharge Adjustment Not Included in Guaranteed Minimum Monthly Payment Calculation

Financial loss to City due to not adjusting unit rates for fuel surcharge changes

The City pays the contracted landfill operator a set unit rate per tonne, (based on the volume shipped), for material landfilled at the site. The Operations and Maintenance contract requires the unit rates to be adjusted for changes in Consumer Price Index and Fuel Surcharge. For the past four years, City staff did not apply the fuel surcharge adjustment when calculating the guaranteed minimum monthly landfill fee. This resulted in a financial loss to the City.

Based on our calculation, had the fuel surcharge adjustments been properly applied to the unit rates the total

Landfill Operation Fee would have been reduced by \$86,000 over the past four years. If the City fails to apply fuel surcharge adjustments to future monthly guaranteed minimum landfill fees, we estimate a further \$107,000 could be lost over the remaining five years of the contract.

Recommendation:

5. City Council request the General Manager, Solid Waste Management Services to:

- a. recover any overpaid landfill fees from the past**
- b. apply the fuel surcharge adjustment to the landfill operation unit rates for the remainder of the contract.**

Closer Management of Tonnes Shipped Can Lower Landfill Fees

In order to provide a certain level of financial security to the Landfill Operator, the Landfill Operations and Maintenance contract requires the City to guarantee a minimum tonnage be sent to Green Lane at a contracted price.

In addition to the contracted rate for the guaranteed minimum tonnage, the contract has a sliding scale of price per tonne in increments of 50,000 tonnes per year. There is a significant decrease in the price per tonne from the guaranteed minimum level to the next tonnage tier.

Better management of shipments to Green Lane would result in savings

Based on current costs, the City would benefit by meeting the minimum guaranteed tonnage. While doing so is advisable, the tiered pricing structure of the contract makes it financially advantageous, in terms of current costs, to go beyond that and determine an optimal tonnage level that minimizes the cost to the City.

110,000 additional tonnes above the guaranteed minimum annual volume could be shipped at no additional landfill fee

In considering the fee calculation methodology set out in the contract, the City could ship approximately 110,000 tonnes per annum more than the guaranteed minimum tonnage for no additional landfill fee. This anomaly occurs as a result of the tiered pricing in the contract. Note that to take full advantage of the tiered pricing, it would be necessary to meet at least the optimal tonnage every month. With declining waste volumes, and lighter waste collection

months during the year, it may be advisable to consider basing the fee on annual rather than monthly shipments in the next contract.

Table 3 is a presentation of a hypothetical example of the issue described above.

Table 3: Hypothetical Example of Tiered Pricing

| Estimated Annual Quantity (tonnes) | Unit Price (per tonne) |
|---|-------------------------------|
| 0 – 399,999 | \$20.00 |
| 400,000 – 450,000 | \$20.00 |
| 450,001 – 500,000 | \$16.00 |
| 500,001 – 550,000 | \$15.90 |
| 550,001 – 600,000 | \$15.75 |

As can be calculated from this table, 400,000 tonnes, (the guaranteed annual minimum), would cost \$8.0M. Based on the tiered pricing, 503,145 tonnes at \$15.90 per tonne would also cost \$8.0M. Thus, in this hypothetical example, the City could landfill an additional 103,145 tonnes at no additional cost.

There are two main issues to consider in regards to optimizing tonnage shipped to Green Lane in order to reduce fees.

Waste needing to be landfilled has declined dramatically over the past several years

First, the waste the City must landfill has declined dramatically over the past few years. This is because less waste is generated by homes and businesses and higher waste diversion is being achieved. For several months during the year the amount collected has been insufficient to meet the minimum required. While it may be possible to hold some waste over from high collection months to make up this shortfall, there are limits to the extent that this technique can be used. This will require more study by SWMS.

Contingency sites are in place in case of an emergency and to help extend the life of Green Lane

Second, increasing the tonnage shipped to Green Lane in order to reduce fees will shorten the estimated useful life of the site. Currently, the City ships a discretionary amount of tonnage to several contingency sites. This has the benefit of having alternatives to Green Lane and also helps to extend its life. This does however come at a price as the City pays more to ship to the contingency sites compared to Green Lane.

In order to give the reader a sense of the issues involved, the table below is an analysis of the impact of modifying tonnage shipped to Green Lane and includes the impact on haulage fees.

Table 4: Impact on Costs and Tonnage from Optimizing Shipments & No Use of Contingency Sites

Optimizing Shipments

| | 2014 | 2017 | Total |
|---------------------------------------|-------------|-------------|--------------|
| Total Landfill and Haulage Savings | \$764,400 | \$319,500 | \$1,083,900 |
| Additional Tonnage sent to Green Lane | 54,600 | 21,300 | 75,900 |

No Use of Contingency Sites

| | 2014 | 2017 | Total |
|---------------------------------------|-------------|-------------|--------------|
| Total Landfill and Haulage Savings | \$1,846,300 | \$885,000 | \$2,731,300 |
| Additional Tonnage sent to Green Lane | 131,900 | 59,000 | 190,900 |

Note: no waste was shipped to contingency sites in 2015 or 2016

To put some context on this, had the City optimized tonnage to Green Lane in 2017 savings of \$319,500 would have been realized. Had the City not sent waste to contingency sites, it would have saved \$885,000. Realizing these savings would have meant, respectively, 21,300 and 59,000 more tonnes of waste going to Green Lane.

Reducing costs by shipping more to Green Lane reduces Green Lane’s useful life

Assuming these scenarios were in place for the approximately 20 years left in the expected life of Green Lane, optimizing would reduce costs by approximately \$6.4 million and increase waste to Green Lane by about 426,000 tonnes reducing Green Lane’s life by about 10 months (based on 2023 projected annual tonnage of 527,000 tonnes). Shipping 100 per cent of the waste to Green Lane would reduce costs by almost \$17.7 million, but add about 1.18 million tonnes to the site, thus reducing its life by about 2.2 years.

Information necessary for reviewing alternative tonnage scenarios

We understand the Council approved Long Term Waste Management Strategy is to increase diversion to contingency sites in order to extend the life of Green Lane. The purpose of the analysis above is to put some numbers to two alternatives given that the City's waste profile has changed dramatically since the Green Lane contract was established and also since redirection to contingency sites was put in place.

There is a need to review opportunities to reduce costs, while at the same time giving consideration to the impact of any decisions on the City's long-term waste disposal needs. While this may not change the decision, it will allow for an informed consideration in light of current circumstances.

All costs should be considered in evaluating landfilling options

Note that the analysis above considers only current costs and does not include any allocation of the acquisition cost of the Green Lane site. If that acquisition cost is allocated across the capacity of Green Lane at the time of purchase, the savings calculated above are essentially eliminated.

Further, once Green Lane reaches capacity, the City will need to find a replacement solution for its solid waste and this will, in all likelihood, be both difficult and expensive.

Overall, there are a number of strategic and operational factors facing SWMS management. We recommend that SWMS assess the current costs and benefits of its landfilling options and where appropriate, propose refinements to its strategic and business plans.

Use of contingency landfill sites should be assessed based on current information

As noted above, contingency landfill sites have been put in place to both help extend the life of Green Lane and also to serve as an option in the event of an urgent need for an alternative to Green Lane. However, every tonne sent to the contingency sites costs the City approximately \$14 more per tonne, in current landfilling and haulage costs, compared to Green Lane.

The City is under no obligation to send any solid waste to contingency landfill sites. The contracts with contingency landfill sites grant them the right to request reciprocal

contingency disposal services at Green Lane at the same rate they charge the City.

Since arranging for the contingency sites in 2011, the City's waste profile has changed dramatically with a significant reduction in the amount of waste that needs to be sent to landfill. Given this change, and the opportunity for significant savings from optimizing tonnage at Green Lane, the volume of material shipped to contingency sites should be reviewed.

While it is likely still prudent to maintain a certain level of shipments to contingency sites, Table 4 above demonstrates the savings of current funds that could be achieved by maximizing the use of Green Lane. The review of the use of contingency sites would also need to look into the future as to the impact of potentially advancing the date that Green Lane reaches capacity.

Recommendation:

- 6. City Council request the General Manager, Solid Waste Management Services to review, and report back to Council, on opportunities to reduce costs through optimizing the tonnage of waste landfilled at Green Lane. The review should concurrently assess the immediate and long term financial and other impacts of modifying the volume of waste being redirected to contingency landfill sites.**
- 7. City Council request the General Manager, Solid Waste Management Services to consider including annual, rather than monthly, reconciliation of the guaranteed tonnage in the next contract for landfill operations.**

B.2. ISSUES WITH HAULAGE OF CITY WASTE

Non-compliance with Highway Traffic Act

2,849 loads were over highway weight limit

The City must comply with all laws and regulations to maintain public safety and trust. Since the inception of the haulage contract in 2011, 2,849 of 90,300 loads (3.2 per cent) from the City's transfer stations to Green Lane exceeded the vehicle weight limit allowed under the Highway Traffic Act. Although the waste haulage contractor advises they have not incurred any overweight fines on the

City's contract, public safety risks must always be minimized.

The City is responsible for loading the contractor's trucks. For loads over or under the contracted net weight range, transfer station management have to approve the release of the contractor's transport equipment from the City's transfer stations. SWMS staff advised that weight variation was expected and could result from the composition of solid waste (e.g., wet waste is heavier), weather conditions or fuel usage. It is also acknowledged that it is very difficult to remove a small quantity of waste after it is compacted into a trailer used to haul the waste.

Recommendation:

8. City Council request the General Manager, Solid Waste Management Services to load the waste haulage contractor's and subcontractors' transport equipment in accordance with regulation and contract requirements.

No back-up hauler

The City has no back-up hauler

The City does not have a back-up hauler readily available to mitigate an operational crisis if the haulage contractor fails to perform on the contract. The City's transfer stations have minimal stockpiling capacity, and under its MOECC permit, they cannot hold solid waste for more than five days.

The City has a \$4 million irrevocable letter of credit from the contracted hauler and the first option to purchase its transport equipment in the event of a contract dispute. However, there are no other arrangements in place to mitigate this operational risk. We were advised by the General Manager, that the City is considering methods to mitigate the risk of relying on one contractor to supply all haulage services in the next haulage proposal.

Recommendation:

9. City Council request the General Manager, Solid Waste Management Services to further develop the plan for back-up waste haulage services.

Haulage Subcontractor Risk is Increasing

63% of the haulage services are now being performed by subcontractors

The haulage contractor is expected to be the primary service provider in delivering services under the contract. The contractor indicated in its bid that it would dedicate 37 tractor-trailers to the City's contract. However, currently, 22 subcontractor trucks (through four companies) and only 13 contractor trucks are being used to execute the contract. In other words, 63 per cent of the services are now being performed by subcontractors.

It is the primary contractor's responsibility to ensure the competence and reliability of any subcontractors they engage. While the City's consent is required for the use of subcontractors, and we have been advised that the City gave verbal approval, there is no documentation supporting approval.

The use of multiple subcontractors increases the risk to the City of unsafe vehicles and unsafe vehicle operation. Staff should consider requesting the primary contractor to provide evidence of their due diligence before approving any subcontractor.

Recommendation:

10. City Council request the General Manager, Solid Waste Management Services to:

- a. maintain proper documentation of approval for using subcontractors**
- b. define the conditions for subcontractor usage in the next waste haulage contract.**

B.3. CONTRACTOR INVOICES ARE NOT EFFECTIVELY REVIEWED AND PROCESSED

Sufficient Information is not Provided to Allow for an Effective Review of Contractor Invoices

Insufficient supporting documentation to allow a proper review of invoices

Green Lane contractors bill the City on a monthly basis for regular contract line item work. There is a lack of sufficient back-up documents to support invoices, making it difficult for City staff to adequately review invoices. This means there is a risk that the City is not identifying potential billing errors.

City staff located at Green Lane perform a first level review of invoices to confirm the work was completed, and the amounts billed appear correct. SWMS Operational Support staff perform an independent review of invoices, meant to verify the accuracy of contract rates billed and ensure the correct contract and general ledger codes are recorded for input into SAP. This includes ensuring sufficient supporting documentation is available for invoice validation.

Examples of inadequate supporting documentation

We noted the following control weaknesses from our review of a sample of 25 Operations and Maintenance and 25 Engineering Consulting invoices:

- For irregular contract activities invoiced, contractors did not provide sufficient back-up documents to support the amounts and quantities billed. SWMS Operational Support staff were unable to perform any verification of these contract line items. They were just checking the accuracy of contract rates billed and coding the items.
- For recurring monthly or annual work, there were no back-up documents in the invoice packages to support the amounts being billed. Although staff were able to explain how the contractors performed the work, this information was not available in the invoice packages for further review and validation by SWMS Operational Support staff.
- For quantity based landfill operation work, insufficient documentation was included in the invoice packages to support the quantities being invoiced. Staff indicated that quantities were discussed at the semi-annual site development meeting attended by SWMS Green Lane staff and contractors.

Recommendation:

11. City Council request the General Manager, Solid Waste Management Services to:

- a. require contractors to include sufficient documents in the invoice package for staff to conduct adequate review and validation of monthly invoices**
- b. use the City's external engineering consultant for work oversight and verification if needed.**

Undetected Payment Errors in Invoices

Undetected payment errors were identified

Our review of sample invoices identified the following payment errors:

- The Engineering Consultant billed the City for work at an incorrect annual rate of \$24,912, instead of \$12,934. The City overpaid \$12,576 which includes five per cent markup.
- The Engineering Consultant billed the City for work at an incorrect quantity. The amount should have been \$3,465, but the City was billed for a quantity of two units. The City overpaid \$3,465.
- The Operations and Maintenance contractor billed the City twice for subcontractor work done on a change order. The same subcontractor's invoice was submitted twice for payment. The City overpaid \$4,455.

These errors should have been detected by the staff review of invoices prior to payment. SWMS staff need to strengthen their invoice review processes to ensure payment errors are detected, corrected and overpaid amounts are recovered from contractors on a timely basis.

While the errors identified are not significant in dollar terms, three errors in a sample of 50 invoices is a relatively high error rate and indicates that the review process needs to be strengthened.

Improper Correction of Past Payment Errors

Need to maintain documentation to support payment error correction

There needs to be more transparency and improved documentation to record arrangements between Green Lane staff and contractors to correct payment errors. Informal arrangements without documentation make it difficult to accurately track, monitor and reconcile contract line item spending. It also makes it more difficult to correct payment errors.

For example, a payment for \$60,885 was made in 2014 to the Engineering Consultant for some work. A change order was later issued in November 2015 for the same cost, resulting in a duplicate payment. Rather than recovering the overpayment and reversing the impact of the duplicate change order, the overpayment was recovered by not recording and paying multiple subsequent billings. Since these billings were for different, regular contract line items, these expenses were never properly recorded, compounding the error in recording expenses properly.

There needs to be more documentation and appropriate approval of these arrangements. It is in the City's financial interest that overpayments to vendors be returned as quickly as possible.

Recommendation:

12. City Council request the General Manager, Solid Waste Management Services to:

- a. ensure staff responsible for review of the Operations and Maintenance and Engineering Consulting monthly invoices are properly trained and supervised**
- b. ensure expense and payment errors are corrected timely and appropriately such that the accounting records accurately reflect actual transactions.**

Transaction Recording Errors in SAP Financial System

Contract spending cannot be accurately tracked and SAP records contain errors

We noted contract line items were entered incorrectly into the City's SAP financial system making it difficult to accurately track, monitor and reconcile contract spending against the contract line items. Multiple contract line items from invoices were grouped together and incorrectly recorded as a single line item in SAP as "miscellaneous contingency". As a result, the financial information in SAP is incorrect.

We identified the following SAP recording errors from our sample of invoices reviewed:

- For the Operations and Maintenance contract, one sample had six contract line items, including costs for "topsoil and seed interim cover" and "utilities", grouped together, and recorded as a single SAP transaction of just under \$446,000 under "contingency". We identified from the SAP payment data that there was another invoice with multiple line items incorrectly booked as a single line for approximately \$195,000.
- For the Engineering Consulting contract, three samples had multiple contract line items incorrectly grouped together in SAP. There were 11 more invoices with line items incorrectly booked to "miscellaneous contingency" in SAP, with a total value of \$338,000.

Other SAP control issues noted include:

- There is risk of overspending when contract line item expenses are not properly allocated to the contract and monitored appropriately by SWMS staff. 31 Operations and Maintenance contractor invoices, totaling \$15,778,000, for the monthly guaranteed minimum landfill fees were not correctly linked to the associated contract in SAP. This occurred from April 2014 to October 2016 because staff omitted completion of one specific field during data entry.
- The "utilities" contract line item codes prepared by SWMS Operational Support staff were incorrect in three samples examined. In these cases "utilities" were incorrectly coded as "landfill operation" or "contingency".

- A revision to the Engineering Consulting contract resulted in a re-coding of all line items. The costs from the previous contract should have been amended to reflect the new coding but were not. This means that the total expenses for each line item cannot be relied on for the year of the change.

Coding errors in financial information systems make it difficult to track project expenditures and also will hamper future efforts to monitor project performance and present accurate information in future procurements.

Recommendation:

13. City Council request the General Manager, Solid Waste Management Services to:

- a. reallocate the costs grouped together and incorrectly booked under Miscellaneous Contingency to their correct contract line items**
- b. enter the correct contract number for the monthly guaranteed minimum landfill fee payments in the Interface system to link them to the SAP contract**
- c. correct the line item coding for the transferred transactions impacted by the change to the Engineering Consulting contract**
- d. once the coding corrections have been made, review the contract spending to date to ensure contract line items are not over-spent**
- e. improve and monitor the accuracy of coding of contract line items.**

B.4. INEFFECTIVE CHANGE ORDER PROCESS

Change orders are not approved on a timely basis

Change order requests were not submitted and approved on a timely basis

We reviewed 37 out of 133 Operations and Maintenance change orders for the period 2014 to 2017 and 10 out of 29 Engineering Consulting change orders for the period 2013 to 2017.

We noted some change orders were approved by the SWMS Director after commitments to purchase goods and services from vendors were already made, or the work had commenced or was completed. Although Green Lane staff review all change orders before submitting them to the Director for approval, approximately 60 per cent (28 out of 47) of the change orders sampled committed the City to work prior to obtaining the SWMS Director's approval, contrary to City policy.

There were four Engineering Consulting change orders, whose written requests were submitted and approved up to three years after the work was completed. We were advised this occurred because of staff transition issues at the Engineering Consulting firm. In addition, an uncooperative construction contractor hired by the City to do work at Green Lane failed to provide proper and timely documents to the Engineering Consultant, who was hired by the City to perform engineering oversight over this construction contractor. The integrity of change order information and records become increasingly difficult to verify as time passes, especially under these circumstances.

Details of the delayed change orders are as follow:

- 1) 1.5 years later for \$3,497
- 2) 8 months later for \$4,578
- 3) 2 years later for \$17,884
- 4) 3 years later for \$42,266

Justification for change orders were not always clear

Proper justification for change orders was not always clear

There needs to be clearer explanation of rationale to support the decision making process for including certain maintenance-type work as change orders. The monthly landfill operating fee payable to the Operations and Maintenance contractor includes certain maintenance activities, such as, building and maintaining roads; however, there were a few change orders relating to these activities.

An understanding of what is included in the contract under the term "maintenance" needs to be clarified to ensure the City is not billed extra for work that should be included in the base level of service required at no extra charge. For example, road construction is a basic service yet road construction change orders for \$113,700 to upgrade perimeter service road, and \$11,860 for an all-weather access road were submitted to the City for approval and payment.

The Landfill Operations and Maintenance contract requires that a change order log be maintained. While a log is maintained it lacks detailed information that would be helpful for future analysis of change order activity. The existing log, with some enhancements, could provide valuable information and insights to manage site operational risks and to inform future contracts. Essential change order information such as the initiator and trigger event, the date on which the change order was proposed (i.e. concept), the start and completion dates of the proposed work, and information on competitive quotes could be included.

Recommendation:

14. City Council request the General Manager, Solid Waste Management Services to:

- a. ensure all change order requests are supported by appropriate documentation and approved at the staff level and timeframe required by the Division's procedures**
- b. implement additional review and approval by Solid Waste Management Services senior management for change order requests submitted after the work is completed**
- c. enhance the change order log to include key information related to each change order. This log should be analyzed and used to inform the scope of work for future contracts.**

Competitive vendor quotes are not obtained for change orders

No competitive vendor quotes were obtained for change order work

Competitive vendor quotes were not obtained for goods and services purchased through change orders. The City's procurement policy requires three quotes for purchases over \$3,000. In our sample of 47 change orders, the requirement to obtain multiple quotes applied in 26 samples. None of these samples had competitive vendor quotes.

Insufficient details in vendor quotes

There was insufficient break-down of labour, material and equipment in some vendor and subcontractor quotes, including details on labour rates, number of hours and quantities. Quotes submitted sometimes provided only a lump sum amount. In our sample of 47 change orders, 17 samples had insufficient details.

Although SWMS staff review all change orders before Director approval, the extent of change orders with insufficient details makes it impossible for these staff to perform a thorough review yet the change orders were submitted for approval without further enquiries. We noted instances where key information such as the necessity and reasonableness of hours and material quantities charged was not provided with change orders. There is a need for staff to ensure sufficient details in support of change orders are provided, and where they are not, staff should request the required information and perform their due diligence prior to submitting the change order request for approval.

Recommendation:

15. City Council request the General Manager, Solid Waste Management Services to:

- a. comply with the approved procurement policy and obtain the necessary quotes for purchases over \$3,000**
- b. obtain vendor and subcontractor quotes with sufficient details to enable reasonable evaluation of quantities and pricing for labour, materials and equipment. Quotes should be dated.**

Incorrect markup charged by contractors

Contractors' markup on change order work done by subcontractors was not applied in accordance with the contract

The City pays contractors a markup on subcontractors' and third-party vendors' work required as a result of changes in the work, extra work, or additional work as defined in the contract. We identified the following process and control issues regarding the application of this markup:

- The markup charged on materials purchased by the Operations and Maintenance subcontractor could not be verified. The subcontractor did not provide specific material price information to allow for verification of any markup charged by the subcontractor. Staff advised that the subcontractor does not charge a markup on material, however, this could not be verified, because the subcontractor does not bill the City directly.
- The Operations and Maintenance contractor also charges the standard markup on the materials purchased by the subcontractor, which could further inflate the price of materials charged to the City. In addition, the Operations and Maintenance contractor's markup should not be applied to the named subcontractors' labour and equipment rates, because their labour and equipment rates are already included in the Operations and Maintenance contractors pricing schedule, as outlined in the contract. We identified 10 instances where the Operations and Maintenance contractor charged markup on the subcontractors' labour and equipment.
- The contract requires that the 10 per cent Operations and Maintenance contractor markup should be applied to the first \$10,000 of the total change order price regardless of how many subcontractors work on one change order. Also, this same rule applies to the first \$10,000 of the total price quoted when the change order was paid through multiple contractor invoices. The City paid for unintended markup in four samples reviewed, totaling \$1,538.
- The Operations and Maintenance contractor charged markup inconsistently. For example, the same type of work done by the same subcontractor was charged 10 per cent plus 5 per cent markup in one instance and 1 per cent pass-through in another instance.

- The Operations and Maintenance contractor billed the City for a landfill-related job in an inconsistent manner. The work was performed by a subcontractor to the Operations and Maintenance contractor. The total cost of this work was \$407,060 plus \$20,853 markup.

The Operations and Maintenance contractor charged markup on this job but billed the City for its payment using regular contract line items. Markups are only applicable to change order work which requires SWMS Director approval and is booked under the Contingency contract line item. On the other hand, if it were regular work as indicated on the invoice, then no markup should have been charged and the \$20,853 needs to be refunded to the City.

As previously noted, the errors we have identified are not significant. However, the number of errors found is indicative of a need for closer review of change orders.

Recommendation:

16. City Council request the General Manager, Solid Waste Management Services to:

- a. conduct a thorough review with the contractors to properly understand and apply markups in change order work**
- b. use a risk-based approach to review invoices related to past change orders to determine if markups were properly applied and to recover any overpaid amounts immediately.**

Insufficient supporting documents were provided for change order payment requests

Insufficient supporting documents were provided for change order payment requests

Contractors bill for change orders via monthly invoices. Based on our review of a sample of change orders we noted that insufficient back-up documentation was provided in monthly invoices to support change order payment requests.

- Subcontractor and vendor invoices were not provided to verify the work was completed and the actual costs were incurred.

- For change orders being paid based on percentage completion, insufficient evidence was provided to support the basis for determining the percentage of work completed in the month.
- Timesheets for labour used and equipment deployed were not always provided. It was difficult to determine how work for regular hours and additional change order hours were differentiated for contractor staff and management.
- For quantity-based work, such as soil transportation and road construction, there was insufficient documentation to support the amount of work performed. There was no independent verification of quantities. The Green Lane Engineering Consultant could provide this oversight.

Recommendation:

17. City Council request the General Manager, Solid Waste Management Services to obtain from contractors adequate supporting documents for verification of change order payment requests (including progress payment requests).

B.5. IMPROVE GOVERNANCE OVER CERTAIN BUSINESS PRACTICES AT GREEN LANE

Operational Manual for Management at Green Lane Site is required

A comprehensive governance framework does not exist

An operational manual that documents key regulatory and operational requirements in landfill site management and oversight has not been developed. Landfill site operations and maintenance involve the deployment of a variety of resources, processes, and control activities that need to be effectively and efficiently performed and monitored.

Such information, including performance metrics, is currently not documented and is only demonstrated through staff and contractors' knowledge and experience. With multiple stakeholders involved in operating and monitoring the landfill site, it is beneficial to clarify roles and responsibilities, operational procedures and site performance monitoring and measurements.

Landfill site issues are currently documented in separate sources such as monthly inspection reports, meeting minutes and emails, without being summarized into a single register for tracking, monitoring and follow-up. Maintaining a comprehensive record of site issues is useful to inform the scope of work in future contracts and identify areas of operational improvement.

Recommendation:

18. City Council request the General Manager, Solid Waste Management Services to:

- a. develop an operational manual that outlines key processes and controls, taking into consideration the various stakeholders involved in activities and contract requirements**
- b. establish a set of key performance metrics to track and monitor site performance.**

CONCLUSION

The handling of the City's solid waste material after it is collected is a complex and significant operation requiring continuous scrutiny and management.

The City's waste profile has changed dramatically since the Green Lane contracts were established and also since redirection to contingency sites was put in place. There is a need to review opportunities to reduce costs, while at the same time giving consideration to the impact of any decisions on the City's long term waste disposal needs.

Overall, there are a number of strategic and operational factors facing SWMS management. We recommend that SWMS assess the current costs and benefits of its landfilling options and where appropriate, propose refinements to its strategic and business plans.

**18 recommendations
were made to improve
procurement and
contract management**

In this audit report, we make 18 recommendations pertaining to the procurement and contract management of operations and maintenance processes and controls at Green Lane. We believe that the implementation of these recommendations will help SWMS to reduce costs, enhance efficiency of site operations, maintenance and monitoring, and strengthen compliance with regulations, policy and procedure requirements.

Given that the staff and processes used in operational activities are the same or similar to those used for construction activities related to Green Lane, these recommendations should also be considered applicable to construction processes and controls.

AUDIT OBJECTIVES, SCOPE AND METHODOLOGY

The Auditor General's 2017 Audit Work Plan included a review of the Green Lane Landfill Site Operations, which is managed by the Solid Waste Management Services Division.

The objective of this review was to assess the effectiveness of the management of landfill operations to ensure the City's interests are adequately protected. This included a review of procurement and contract management processes and controls to ensure:

- Open, fair and transparent procurement
- Delivery of contracted services in accordance with the established terms and conditions and regulatory requirements
- Proper approval and execution of changes
- Accurate payments for contracted services

This audit did not include an assessment of Green Lane's environmental compliance, because internal monitoring processes and independent external inspections reveal no significant issues to date.

In addition, we were unable to obtain sufficient information relating to the procurement of the haulage services in 2009. We will review this information once it is provided and issue a separate report if required.

This audit primarily covered the period from March 1, 2014 to March 31, 2018. For contracts entered into prior to March 1, 2014, we extended our review to the starting date of the contract procurement.

Our audit methodology included the following:

- A review of relevant Committee and Council minutes and reports
- A review of relevant legislation, bylaws, policies and procedures
- Site visits
- An examination of relevant procurement documents

- Interviews with key staff and management personnel to understand processes and control activities
- Review of change orders
- An examination of invoices and payments
- An evaluation of management controls and practices

Compliance with generally accepted government auditing standards

We conducted this performance audit in accordance with generally accepted government auditing standards. Those standards require that we plan and perform the audit to obtain sufficient, appropriate evidence to provide a reasonable basis for our findings and conclusions based on our audit objectives. We believe that the evidence obtained provides a reasonable basis for our findings and conclusions based on our audit objectives.

APPENDIX 1: MANAGEMENT’S RESPONSE TO THE AUDITOR GENERAL’S REPORT ENTITLED: “REVIEW OF THE GREEN LANE LANDFILL OPERATIONS – MANAGEMENT OF CONTRACTS NEEDS IMPROVEMENT”

Recommendation 1: City Council request the General Manager, Solid Waste Management Services to:

- a. include in the next waste haulage contract the flexibility to allow the City to periodically review and adjust the fuel surcharge calculation on a fair basis to reflect market conditions
- b. engage Fleet Services Division for their specific subject-matter expertise to assist in haulage call document development.

| |
|---|
| <p>Management Response: <input checked="" type="checkbox"/> Agree <input type="checkbox"/> Disagree</p> |
| <p>Comments/Action Plan/Time Frame:</p> <p>a. The current waste haulage contract provides for weekly calculations for fuel surcharges to reflect market conditions. The next RFQ for haulage services will continue to reflect this and will also ensure the fuel price discount is based on changing market prices.</p> <p>b. A meeting was held by Solid Waste Management Services (SWMS) staff with the General Manager, Fleet Services, and Fleet staff to discuss items that may be considered in the development of haulage contracts.</p> |

Recommendation 2: City Council request the General Manager, Fleet Services to consult with City Divisions with major fleet intensive contracts, to determine if there is any opportunity to realize savings by taking advantage of bulk fuel purchase agreements.

| |
|---|
| <p>Management Response: <input checked="" type="checkbox"/> Agree <input type="checkbox"/> Disagree</p> |
| <p>Comments/Action Plan/Time Frame:</p> <p>SWMS staff have discussed with the General Manager, Fleet Services and staff. SWMS staff will work with Fleet Services staff to explore opportunities, costs, infrastructure and agreements required to allow contractors to purchase fuel from the City. Further detailed analysis will be conducted to determine the overall cost/benefit of this recommendation.</p> |

Recommendation 3: City Council request the General Manager, Solid Waste Management Services to establish a defined process to conduct and document the basis for developing contract contingency amounts or percentages.

| |
|--|
| Management Response: <input checked="" type="checkbox"/> Agree <input type="checkbox"/> Disagree |
| Comments/Action Plan/Time Frame: SWMS will engage with staff in Engineering & Construction Services (ECS) on the development of the next RFPs for Green Lane's Operate & Maintenance and Construction contracts to review what constitutes suitable contingency amounts. |

Recommendation 4: City Council request the General Manager, Solid Waste Management Services to:

- a. use a competitive procurement process for the acquisition of goods and services in compliance with the City's approved procurement process
- b. ensure, when non-competitive procurement is necessary, that the need to do so, and the basis for agreed upon pricing, is fully documented.

| |
|--|
| Management Response: <input checked="" type="checkbox"/> Agree <input type="checkbox"/> Disagree |
| Comments/Action Plan/Time Frame: SWMS will continue to utilize competitive and non-competitive processes, when applicable and as appropriate to the circumstances, in compliance with the City's approved procurement process. SWMS will refrain from using non-competitive processes wherever practical and the rationale for deciding which process is appropriate will be fully documented. |

Recommendation 5: City Council request the General Manager, Solid Waste Management Services to:

- a. recover any overpaid landfill fees from the past
- b. apply the fuel surcharge adjustment to the landfill operation unit rates for the remainder of the contract.

| |
|---|
| Management Response: <input checked="" type="checkbox"/> Agree <input type="checkbox"/> Disagree |
| Comments/Action Plan/Time Frame: SWMS will review the past invoices to determine and confirm the recovery rate as applicable. All recoveries will commence by Q4 - 2018 and SWMS will apply this for the remainder of the contract. |

Recommendation 6: City Council request the General Manager, Solid Waste Management Services to review, and report back to Council, on opportunities to reduce costs through optimizing the tonnage of waste landfilled at Green Lane. The review should concurrently assess the immediate and long term financial and other impacts of modifying the volume of waste being redirected to contingency landfill sites.

| |
|---|
| Management Response: <input checked="" type="checkbox"/> Agree <input type="checkbox"/> Disagree |
| Comments/Action Plan/Time Frame: SWMS will report to City Council, should they be requested, in Q1 – 2019 on the opportunities to reduce costs through optimizing the tonnage of waste landfilled at Green Lane and will include the immediate and long term financial impacts. |

Recommendation 7: City Council request the General Manager, Solid Waste Management Services to consider including annual, rather than monthly, reconciliation of the guaranteed tonnage in the next contract for landfill operations.

| |
|---|
| Management Response: <input checked="" type="checkbox"/> Agree <input type="checkbox"/> Disagree |
| Comments/Action Plan/Time Frame: This recommendation will be considered during the development of the next RFP for the next Operate & Maintenance contract. |

Recommendation 8: City Council request the General Manager, Solid Waste Management Services to load the waste haulage contractor's and subcontractors' transport equipment in accordance with regulation and contract requirements.

| |
|--|
| Management Response: <input checked="" type="checkbox"/> Agree <input type="checkbox"/> Disagree |
| Comments/Action Plan/Time Frame: Since the identification of this concern, the City's weighscale system has been programmed to immediately signal a report for immediate investigation by the site supervisor on outbound loads scaled with a Gross Vehicle Weight over 62,000 Kg and 63,500 Kg based on vehicle registration. |

Recommendation 9: City Council request the General Manager, Solid Waste Management Services to further develop the plan for back-up waste haulage services.

| |
|---|
| Management Response: <input checked="" type="checkbox"/> Agree <input type="checkbox"/> Disagree |
| Comments/Action Plan/Time Frame: An RFQ to be posted by Q3 - 2018 will provide for back-up haulage services to commence January 1, 2021. To achieve this under the current term, a low value quotation or non-competitive procurement will be conducted in Q3 - 2018 for contingent haulage (if and when required) to transport waste up until the end of the current haulage contract. |

Recommendation 10: City Council request the General Manager, Solid Waste Management Services to:

- a. maintain proper documentation of approval for using subcontractors
- b. define the conditions for subcontractor usage in the next waste haulage contract.

| |
|---|
| Management Response: <input checked="" type="checkbox"/> Agree <input type="checkbox"/> Disagree |
| Comments/Action Plan/Time Frame: <ul style="list-style-type: none">a. The RFQ to be posted by Q3 – 2018 provides the requirement for the vendor to maintain proper documentation and approval for using subcontractors in the next waste haulage contract to commence Q1 - 2021.b. SWMS will include the requirement to define the extent of subcontractor usage in the next RFQ. |

Recommendation 11: City Council request the General Manager, Solid Waste Management Services to:

- a. require contractors to include sufficient documents in the invoice package for staff to conduct adequate review and validation of monthly invoices
- b. use the City's external engineering consultant for work oversight and verification if needed.

| |
|---|
| Management Response: <input checked="" type="checkbox"/> Agree <input type="checkbox"/> Disagree |
| Comments/Action Plan/Time Frame: <ul style="list-style-type: none">a. SWMS will require the contractors to include additional supporting documents in the invoice package for staff to conduct a more adequate review and validation of monthly invoices by Q3 – 2018.b. SWMS will expand the use of the external engineering consultant for oversight and verification of work related to change orders where appropriate. |

Recommendation 12: City Council request the General Manager, Solid Waste Management Services to:

- a. ensure staff responsible for review of the Operations and Maintenance and Engineering Consulting monthly invoices are properly trained and supervised
- b. ensure expense and payment errors are corrected timely and appropriately such that the accounting records accurately reflect actual transactions.

| |
|--|
| Management Response: <input checked="" type="checkbox"/> Agree <input type="checkbox"/> Disagree |
| Comments/Action Plan/Time Frame: a. SWMS will review and administer additional training and supervision where appropriate to relevant staff to perform this function. b. As part of the review of monthly invoices, any errors will be corrected in a timely manner. These items will be provided to staff by Q4 - 2018. |

Recommendation 13: City Council request the General Manager, Solid Waste Management Services to:

- a. reallocate the costs grouped together and incorrectly booked under Miscellaneous Contingency to their correct contract line items
- b. enter the correct contract number for the monthly guaranteed minimum landfill fee payments in the Interface system to link them to the SAP contract
- c. correct the line item coding for the transferred transactions impacted by the change to the Engineering Consulting contract
- d. once the coding corrections have been made, review the contract spending to date to ensure contract line items are not over-spent
- e. improve and monitor the accuracy of coding of contract line items.

| |
|---|
| Management Response: <input checked="" type="checkbox"/> Agree <input type="checkbox"/> Disagree |
| Comments/Action Plan/Time Frame: SWMS, working with our partner divisions, will proceed to review all items and ensure the completion of the required corrections by Q4 - 2019. |

Recommendation 14: City Council request the General Manager, Solid Waste Management Services to:

- a. ensure all change order requests are supported by appropriate documentation and approved at the staff level and timeframe required by the Division's procedures
- b. implement additional review and approval by Solid Waste Management Services senior management for change order requests submitted after the work is completed
- c. enhance the change order log to include key information related to each change order. This log should be analyzed and used to inform the scope of work for future contracts.

| |
|---|
| Management Response: <input checked="" type="checkbox"/> Agree <input type="checkbox"/> Disagree |
| Comments/Action Plan/Time Frame: SWMS will implement this in accordance with the Divisional and Corporate policies by the end of Q3 - 2018. |

Recommendation 15: City Council request the General Manager, Solid Waste Management Services to:

- a. comply with the approved procurement policy and obtain the necessary quotes for purchases over \$3,000
- b. obtain vendor and subcontractor quotes with sufficient details to enable reasonable evaluation of quantities and pricing for labour, materials and equipment. Quotes should be dated.

| |
|---|
| Management Response: <input checked="" type="checkbox"/> Agree <input type="checkbox"/> Disagree |
| Comments/Action Plan/Time Frame: SWMS will implement this in accordance with the Divisional and Corporate policies by Q3 – 2018 where appropriate and in recognition of any contractual requirements. |

Recommendation 16: City Council request the General Manager, Solid Waste Management Services to:

- a. conduct a thorough review with the contractors to properly understand and apply markups in change order work
- b. use a risk-based approach to review invoices related to past change orders to determine if markups were properly applied and to recover any overpaid amounts immediately.

| |
|---|
| Management Response: <input checked="" type="checkbox"/> Agree <input type="checkbox"/> Disagree |
| Comments/Action Plan/Time Frame: a. SWMS will review with the contractors to apply markups in accordance with the agreement. b. SWMS will review past change orders, where applicable and staff resource availability exists, to determine if recoveries are warranted The items are scheduled to be reviewed and corrected by Q1 – 2019. |

Recommendation 17: City Council request the General Manager, Solid Waste Management Services to obtain from contractors adequate supporting documents for verification of change order payment requests (including progress payment requests).

| |
|--|
| Management Response: <input checked="" type="checkbox"/> Agree <input type="checkbox"/> Disagree |
| Comments/Action Plan/Time Frame: SWMS will ensure all pertinent supporting documentation is included with all change orders and payment requests by Q3 – 2018. |

Recommendation 18: City Council request the General Manager, Solid Waste Management Services to:

- a. develop an operational manual that outlines key processes and controls, taking into consideration the various stakeholders involved in activities and contract requirements
- b. establish a set of key performance metrics to track and monitor site performance.

| |
|---|
| Management Response: <input checked="" type="checkbox"/> Agree <input type="checkbox"/> Disagree |
| Comments/Action Plan/Time Frame: SWMS will commence to develop the operational manual by Q4 – 2018. |