



AUDITOR GENERAL'S REPORT ACTION REQUIRED

Improving the Tendering Process for Paving Contracts

Date:	June 27, 2016
To:	Audit Committee
From:	Auditor General
Wards:	All
Reference Number:	

SUMMARY

The Auditor General's 2015 Audit Work Plan included a review of City-wide major contracts for road construction and resurfacing. The audit focused on a review of 55 local road resurfacing (also known as paving), 94 utility cut, and 14 sidewalk repair contracts, totaling \$169 million, \$187 million, and \$27 million respectively, in contract value delivered by the Transportation Services Division since 2010.

The objectives of the audit were to assess whether proper management controls were in place to ensure fair and competitive tendering processes, and whether the City received value for money in acquiring road resurfacing, utility cut, and sidewalk repair contracted services.

Our findings underscore the importance of identifying and addressing potentially unbalanced bids during a tendering process to protect the City from financial loss and ensuring a level playing field for bidders.

RECOMMENDATIONS

The Auditor General recommends that:

1. City Council request the General Manager, Transportation Services Division, in consultation with the Director, Purchasing and Materials Management Division, to implement a process to assess the impact of awarding construction contracts to materially unbalanced bids tendered by the Division. Steps to be included in the process should consist of:

- a. Performing a reverse bid analysis of unit price Transportation contracts on an annual basis to quantify the negative financial impact of materially unbalanced bids; and
 - b. Performing reconciliations between planned and actual road construction contracted services and costs to identify negative impact of materially unbalanced bids on service delivery, such as cancellations or delays in work.
2. City Council request the General Manager, Transportation Services Division, to take steps to ensure quantity estimates in tender documents are reasonably accurate. Steps to be taken should include but not be limited to:
 - a. Analyzing historical information on prices and quantities;
 - b. Ensuring that road resurfacing tender documents contain actual field measurements such as original handwritten notes and drawings from the field, and documented rationale for changes to the estimated quantities;
 - c. Ensuring staff justify the significant variances between estimated and actual quantities and such explanation clearly indicate why the variances could not have been anticipated;
 - d. Requiring staff responsible for estimation to sign off on the estimated quantities and any subsequent changes to the estimated quantities; and
 - e. Ensuring measurements taken for estimation purposes are reviewed by management for reasonability.
3. City Council request the Director, Purchasing and Materials Management Division, in consultation with the General Manager, Transportation Services Division, to:
 - a. Develop and implement specific criteria for identifying potentially unbalanced bids in road related contracts;
 - b. Ensure appropriate data is captured to allow unbalanced bid analysis;
 - c. Train staff on how to apply the criteria; and
 - d. Develop a decision framework for accepting or rejecting materially unbalanced bids.
4. City Council request the General Manager, Transportation Services Division, and the Director, Purchasing and Materials Management Division, to ensure that bid

information and contract documents are organized in a manner that facilitates analysis of historical tender information.

5. City Council request the Director, Purchasing and Materials Management Division, in consultation with the City Solicitor, to develop and implement an effective policy to address potential risks arising from sub-contracting arrangements between competitive bidders.
6. City Council request the General Manager, Transportation Services Division, to review differences in district practices in relation to preparation of tender estimates and record keeping with a view to ensuring best practices are incorporated in all district offices.
7. City Council request the City Manager to forward this audit report to other relevant City divisions and major agencies and corporations which acquire contracted construction services on a regular basis for information.

Financial Impact

The implementation of the recommendations in this report has the potential to reduce road resurfacing contract costs. The extent of the reduced costs cannot be accurately determined at this time.

ISSUE BACKGROUND

The City's Transportation Services Division has a limited number of construction crew, and the majority of road resurfacing, utility cut, and sidewalk repair work is contracted out to private contractors through the City's competitive procurement process. Since 2010, the Division, through the City tendering process, has issued 55 local road resurfacing, 116 utility cut, and 17 sidewalk repair contracts for the total contract value of \$169 million, \$235 million and \$33 million respectively.

The Auditor General has previously issued a number of reports related to construction contracts. In particular, the Auditor General's report, dated January 10, 2007, highlighted the issue of "unbalanced bids", and recommended the establishment of specific criteria for identifying unbalanced bids.

COMMENTS

The current audit report highlights several issues in the tendering of road resurfacing contracts. Based on our analysis, 15 of the 55 local road resurfacing contracts (27 per cent) were won by bidders who appeared to have submitted materially unbalanced bids. Had these 15 contracts been awarded to different bidders (who did not submit a materially unbalanced bid), it is possible that the City might have procured the same amount of work with \$4.5 million, or 3 per cent, less in contract costs over the past five and a half years.

Based on additional audit work performed on utility cut and sidewalk repair contracts, the issue of materially unbalanced bids extends beyond road resurfacing contracts. Our analytical review suggests that utility cut and sidewalk repair contracts incurred an additional \$6.1 million, or 3 per cent, in contract costs since 2010 due to unbalanced bidding.

Overall, the City might have been able to avoid \$10.6 million, or 3 per cent, in additional road resurfacing, utility cut, and sidewalk repair contracts costs over the past five and a half years had the City timely addressed the issue of unbalanced bidding.

A reasonably accurate tender estimate makes unbalanced bidding less advantageous to bidders, and helps protect the City from incurring additional charges. Grossly inaccurate tender quantity estimates could potentially increase contract costs.

In our analysis of road resurfacing contracts, we noted significant discrepancies between engineering estimates and actual quantities in approximately 15 per cent of the bid items with high contract value. These discrepancies ranged from +/- 100 per cent to over 1,000 per cent of the estimated quantity.

The report contains seven recommendations along with a management response to each of the recommendations. The implementation of these recommendations will assist management in improving the tendering process for road resurfacing contracts and result in potential cost savings.

The Auditor General's report entitled "Improving the Tendering Process for Paving Contracts" is attached as Appendix 1. Management's response to each of the recommendations contained in the report is attached as Appendix 2.

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SIGNATURE

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ATTACHMENTS

Appendix 1: Improving the Tendering Process for Paving Contracts

Appendix 2: Management Response to the Auditor General's Review of Improving the Tendering Process for Paving Contracts

AUDITOR GENERAL'S REPORT

Improving the Tendering Process for Paving Contracts

June 27, 2016

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



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EXECUTIVE SUMMARY

This report focuses on paving related contracts

This report focuses on the procurement of paving services administered by the Transportation Services Division.

Between 2010 and 2015, the Transportation Services Division administered 55 local road resurfacing contracts totaling \$169 million contract value. During the same period, the Division also administered 116 utility cut and 17 sidewalk repair contracts for a total contract value of \$235 million and \$33 million respectively.

Audit Objectives

The objectives of the audit were to assess whether proper management controls were in place to ensure fair and competitive tendering processes, and whether the City received value for money in acquiring road resurfacing, utility cut, and sidewalk repair contracted services.

Our findings underscore the importance of identifying and addressing potentially unbalanced bids during a tendering process to protect the City from the risk of financial loss and ensuring a level playing field for bidders.

Preparing reasonably accurate quantity estimates is a key control for unbalanced bidding

A key step in minimizing the risks from unbalanced bidding is preparing reasonably accurate quantity estimates for tender documents by City staff. This is part of the expected functions of Transportation Services staff. Management staff should also put in place criteria and processes to assist staff in identifying unbalanced bids and properly managing contract quantities.

Materially Unbalanced Bids

Bidders can use unbalanced bids to gain extra profits

Unbalanced bidding occurs when a bidder quotes unreasonably high prices on certain items and unreasonably low prices on other items in the same bid in order to maximize profits. Unbalanced bidding is not illegal. A bid is **materially unbalanced** if there is a reasonable doubt that the bid will not result in the lowest ultimate cost to the City despite the total bid amount being the lowest. For the purpose of our analysis, we defined a bid as “materially unbalanced” if it resulted in more than \$100,000 in additional cost to the City.

Unbalanced bidding not only exposes the City to higher ultimate contracts costs but it may also undermine a fair and objective procurement process.

Unbalanced bidding in transportation contracts has been an issue in the past

The concerns about unbalanced bidding by contractors are not new. City staff have been aware of unbalanced bidding practices among contractors.

- 2006 – The City was involved in a litigation by a contractor who had submitted a materially unbalanced bid.
- 2007 – The City Auditor General's Office issued a report highlighting the issue of unbalanced bidding and recommended the establishment of specific criteria for identifying unbalanced bids.
- 2007 – The City Auditor General's Office issued letters to Transportation Services Division advising of unbalanced bid concerns as a result of Fraud & Waste Hotline complaint investigations.
- 2012 – City Council adopted a staff report from Purchasing and Materials Management Division (PMMD) recommending that City Council bypass the lowest bidder who had submitted a materially unbalanced bid for a tender issued in 2012, and award the contract to the second lowest bidder. This was the only instance when the City bypassed the lowest bidder for unbalanced bidding.
- Our current audit review found that materially unbalanced bids continue to exist in a number of contracts issued from 2010 to 2015. The City has yet to implement effective measures to improve tender estimates and minimize the risks associated with unbalanced bidding.

27% of road resurfacing tenders were awarded to contractors submitting "materially unbalanced" bids

Based on our analysis, 15 of the 55 local road resurfacing contracts (27 per cent) were won by bidders who appeared to have submitted materially unbalanced bids. Had these 15 contracts been awarded to different bidders (who did not submit a materially unbalanced bid), it is possible that the City might have procured the same amount of work with \$4.5 million, or 3 per cent, less in contract costs over the past five and a half years.

Materially unbalanced bids also exist in utility cut and sidewalk repair contracts

Our review of utility cut and sidewalk repair contracts also identified materially unbalanced bids which resulted in additional \$6.1 million, or 3 percent, in contract costs since 2010.

Based on our analysis of 55 road resurfacing, 94 utility cut, and 14 sidewalk repair contracts, the City has potentially paid \$10.6 million, or 3 percent, in excess cost over the past five and a half years due to unbalanced bidding.

Average \$2 million annual costs from awarding contracts to materially unbalanced bids

This equates to an average of about \$2 million in annual road resurfacing, utility cut, and sidewalk repair contract costs that might have been avoided had the materially unbalanced bids been detected and addressed.

Service Delivery Impact Caused by Materially Unbalanced Bids

Awarding contracts to materially unbalanced bids may also negatively impact service delivery. As unbalanced bids frequently result in higher than budgeted costs when the actual quantities significantly exceed the estimated quantities, staff in their efforts to deliver the planned work within budget may need to either seek additional funding or cancel a portion of the planned work.

Unbalanced bids can indirectly cause delays or cancellations of planned work

In reviewing five contract files where the winning bids appeared to be materially unbalanced, we noted that in two contracts the resurfacing work for four local streets was cancelled. The impact of unbalanced bids on service delivery and total project costs did not appear to be readily identifiable by management.

Inaccurate Quantity Estimates in Tender Documents

Reasonably accurate quantity estimates in tender documents minimize adverse impact from unbalanced bids

A reasonably accurate tender estimate makes unbalanced bidding less advantageous to bidders, and helps prevent the City from incurring additional charges.

For road resurfacing contracts, municipal construction inspectors and supervisors of the Transportation Services Division are responsible for preparing reasonable quantity estimates for tender documents.

Files reviewed suggested no evidence of actual field measurements

We selected 15 road resurfacing contract files for a detailed review to determine how estimates were prepared. In 12 of the 15 files, there was no evidence suggesting actual measurements were taken by inspectors. In 5 of the 15 files, we found multiple versions of estimates with significant revisions. No explanation were documented in files to support these revisions.

Tender information not captured in a manner that allows for proactive analysis

Currently the City does not have a centralized database capturing procurement calls and contract and sub-contract information that would enable staff to proactively monitor and detect questionable bidding patterns. In addition, contract documents are not stored in an organized manner.

Conclusion

Audit recommendations to help improve procurement processes

This report presents the results of our review of road resurfacing contracts awarded since 2010. The report contains seven recommendations to help ensure a fair and objective procurement process and value for money for the City in acquiring road resurfacing, utility cut, and sidewalk repair contracted services.

BACKGROUND

Local Road Maintenance and Repair Services

Transportation Services issues and manages road resurfacing contracts

One of the key responsibilities of the Transportation Services Division is regular maintenance and repair of local roads. The Division's local road network includes:

- 5,600 km of roads
- 7,945 km of sidewalks
- 600 bridges and culverts
- 504 pedestrian crosswalks
- 418 km of bike lanes, trails and routes

Four district offices oversee local road maintenance and repair services

Local road maintenance and repair is part of the summer maintenance program carried out by the Division's four district offices. Each district office is also responsible for permanent repairs to utility cuts, and winter maintenance including snow removal.

Almost all resurfacing work is contracted out to private companies

Transportation Services contracts out the majority of this work to private contractors through the City's competitive procurement process. Each district has a staff team consisting of inspectors, engineers, and supervisory staff responsible for preparing tender specifications and overseeing contractor work.

Between January 2010 and June 2015, the Division, through the City tendering process, awarded 188 road construction contracts for paving, utility cut, and sidewalk repairs. Table 1 provides a breakdown of these contracts by service type and contract value.

Table 1: Road Construction Contracts Issued by Transportation Services Division, January 2010 to June 2015

Service Type	Purpose	Number of Contracts Issued	Contract Value
Resurfacing local roads (paving)	Grinding and repaving road surface to restore it to original state; resurfacing is usually done every 15 years until the roads need to be re-constructed	55	\$169 million
Permanent repairs to utility cuts ¹	Utility cuts involve excavation of road surface to repair underground utilities; City contractors perform permanent road repairs 18 months after temporary repairs done by utility companies	116	\$235 million
Sidewalk Repairs	Include activities such as repairs to sidewalks but exclude traffic signal installation and repairs, general landscaping, and minor bridge repairs etc.	17	\$33 million
	Total	188	\$437 million

Tendering Process for Road Construction Contracts

District staff prepare tender documents including estimated quantity and cost per line item

The tendering process for road construction contracts generally involves two stages:

Stage One – Preparation of tender documents

Transportation district staff prepare technical specifications for a tender document that includes:

- A list of specific work such as laying asphalt, and repairing cracks and sidewalks. These items of work are also referred to as “**line items**” in a tender process.

¹ The City is reimbursed by utility companies for a portion of utility cut contract costs that were incurred on their behalf.

- An **estimated quantity** for each line item. These quantities are included in the tender document prepared by the Purchasing and Materials Management Division (PMMD).
- An **estimated cost** for each line item. The estimated costs are used by Divisional staff to prepare the budget, and are kept confidential from bidders.

An excerpt of a typical tender price form is provided in Exhibit 1.

Contracts are awarded to bidders providing the lowest overall costs while meeting tender requirements

Stage Two – Bid evaluation and contract award

After the required work has been tendered, PMMD, in conjunction with Division staff, evaluate the bids and award the work to the bidder providing the lowest overall costs while meeting City tendering requirements.

AUDIT OBJECTIVES, SCOPE AND METHODOLOGY

The Auditor General’s 2015 Audit Work Plan included a review of City-wide major service contracts for road resurfacing, utility cut, and sidewalk repairs.

Audit focused on local road resurfacing, utility cut, and sidewalk repair contracts

This audit focused on the tendering process for local road resurfacing, utility cut, and sidewalk repair contracts administered by the Transportation Services Division.

Audit Objective

The objective of this audit was to assess the extent to which proper management controls were in place to ensure:

- local road resurfacing, utility cut, and sidewalk repair contracts are tendered through a fair and competitive process
- City receives the best value for its money for the contracted services.

Audit Scope

This audit covered the period from January 2010 to June 2015 and focused on local road resurfacing, utility cut, and sidewalk repair contracts tendered and awarded within this period. Since 2010, the Division, through the City tendering process, has issued 55 local road resurfacing, 116 utility cut, and 17 sidewalk repair contracts for the total contract value of \$169 million, \$235 million and \$33 million respectively.

Audit Methodology

The audit methodology included:

- Review of relevant legislative, policy requirements, procedures and guidelines
- Review of literature and studies, and other city audit reports pertaining to road resurfacing, utility cut, and sidewalk repair services
- Review and analysis of tender documents including bid proposals and prices
- Meetings and interviews with staff of the following Divisions:
 - Transportation Services Division
 - Purchasing and Materials Management Division
- Site visits of Transportation Services district offices
- Review of best practices in other jurisdictions.

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.

AUDIT RESULTS

A. MATERIALLY UNBALANCED BIDS

A.1. Significant Number of Bids Were Materially Unbalanced

Definition of an Unbalanced Bid

An unbalanced bid can occur in a unit price contract. A bid is unbalanced when the bid prices for certain contract line items of work are significantly lower than market prices while the bid prices for other items are significantly inflated.

A bidder can use an unbalanced bid to maximize profits

A bidder can use an unbalanced bid to maximize profits while keeping the overall bid price low in order to win the contract. The bidder is able to do this by overpricing bid items the contractor believes will be used in greater quantities than the City's tender estimates and underpricing items the contractor believes will be used in significantly lesser quantities. Unbalanced bidding is not illegal, particularly if it is based on information publically available to all bidders.

Definition of a Materially Unbalanced Bid

Materially unbalanced bids can be costly to the City

A bid is *materially unbalanced* if there is a reasonable chance that it will not result in the lowest ultimate contract cost. Awarding a contract to a materially unbalanced bid could potentially result in the City paying additional contract costs, as well as undermining a fair procurement process.

Our analysis defined >\$100,000 extra cost as materially unbalanced

There is no established dollar threshold to determine whether a bid is “materially” unbalanced. It is often a matter of judgement and tolerance as to when a bid becomes unacceptable for the reason of being “materially” unbalanced.

For the purpose of our analysis, we defined a bid as “materially unbalanced” if it resulted in more than \$100,000 in additional cost to the City.

Reverse Bid Analysis

All 55 local road resurfacing, 94 utility cut, and 14 sidewalk repair contracts were included in our analysis

Neither PMMD nor Transportation Services had a database to capture bid prices by line items and other bid information necessary for analysis. To assess whether the bids were materially unbalanced, we conducted a reverse bid analysis of 55 local road resurfacing, 94 utility cut, and 14 sidewalk repair contracts (totaling 163 contracts) issued between January 2010 and June 2015.

We compiled approximately 30,000 bid prices, and analyzed approximately 5,000 line items across all 163 contracts. We analyzed the data to determine whether a particular line item bid price appeared to be unreasonably high or low in relation to the engineering estimate or average bid price for the item.

How the reverse bid analysis was conducted

In the reverse bid analysis, we used the actual quantities to calculate what the final cost would have been for each bidder.

27% of road resurfacing contracts appeared to have been awarded to materially unbalanced bids

After applying the reverse bid analysis to 55 road resurfacing contracts, we found that 24 contracts were won by bidders who appeared to have submitted unbalanced bids. Of the 24 unbalanced bids, 15 (27 per cent) were considered materially unbalanced (based on the \$100,000 dollar threshold).

Similarly, we found 21% of the utility cut and sidewalk repair contracts were materially unbalanced based on the above threshold.

Table 2 shows the results of an application of reverse bid analysis for three contracts as an example, and the amount City might have saved had the second lowest bidder been selected.

Table 2: Examples of Reverse Bid Analysis Results on Three Contracts Won by Materially Unbalanced Bids

Road Resurfacing Contract	Actual Amount Paid to the Winning Bidder	Amount that would Have Been Paid to the Second Lowest Bidder*	Estimated Savings Had the Second Lowest Bidder Been Selected
Contract 1	\$4,322,657	\$3,326,767	\$995,890
Contract 2	\$5,104,115	\$4,585,334	\$518,781
Contract 3	\$2,729,233	\$2,371,167	\$358,065

*Amount calculated as the sum of the second lowest bidder's proposed cost for each line item based on the actual quantities used.

\$4.5 million additional costs in road resurfacing contracts over past five and a half years

Using the reverse bid analysis, we were able to quantify the additional costs of awarding the 15 road resurfacing contracts to materially unbalanced bids. Had these 15 contracts been awarded to the second lowest bidder, the City could have procured the same amount of work for \$4.5 million, or 3 per cent, less in contract costs over the past five and a half years.

The issue of unbalanced bids exists in construction contracts for other types of road services

We performed additional audit work to determine if the issue of unbalanced bidding was equally prevalent in utility cut and sidewalk repair contracts as it was in road resurfacing contracts. After analyzing 94 utility cut and 14 sidewalk repair contracts, we found that 21 per cent of these contracts were materially unbalanced, resulting in additional \$6.1 million in contract costs since 2010.

Table 3 below, summarizes the excess contract costs paid by the City due to unbalanced bidding.

Table 3: Excess Costs Paid by the City Due to Materially Unbalanced Bidding

Contract Type	Total Number of Contracts Issued	Number of Contracts Analyzed*	Total Value of the Contracts Analyzed	Estimated Excess Costs Paid by the City Due to Materially Unbalanced Bidding	Percentage of Excess Costs
Road Resurfacing	55	55	\$169 million	\$4.5 million	2.7%
Utility Cut	116	94	\$187 million	\$5.1 million	2.7%
Sidewalk Repairs	17	14	\$27 million	\$1 million	3.7%
Total	188	163	\$383 million	\$10.6 million	2.8%

*Selection of the contracts was based on the availability of data at the time of review

Average \$2 million additional annual costs from unbalanced bidding

Based on our reverse bid analysis of 55 road resurfacing, 94 utility cut, and 14 sidewalk repair contracts, the City has potentially paid \$10.6 million in excess cost over the past five and a half years due to materially unbalanced bidding. This equates to an average of about \$2 million in annual contract costs that might have been avoided by preparing reasonably accurate quantity estimates and ensuring that the materially unbalanced bids are detected and addressed.

Work Delays or Cancellations Due To Unbalanced Bids

Unbalanced bids for road resurfacing contracts can indirectly cause work delays or cancellations

Not only can a materially unbalanced bid directly result in additional contract cost to the City, it can also, in certain circumstances, delay completion of planned road resurfacing work.

To understand the indirect impact of unbalanced items on local resurfacing work, we analyzed five contracts where the winning bids were highly unbalanced and the actual quantities delivered by contractors significantly exceeded the estimated quantities.

We noted that whenever the actual quantities exceeded the estimated quantities by a significant margin for unbalanced items, the Division either obtained additional funds or scaled back on the originally planned work.

In three of the five road resurfacing contracts, additional funds were obtained. The project budgets were exceeded and significant discrepancies were noted between the estimated and actual quantities.

Planned work was scaled back to stay within budget due to additional costs as a result of unbalanced bids

For the remaining two road resurfacing contracts, it would appear that staff managed to keep the contract cost within budget by eliminating resurfacing work for four streets that were originally included in these contracts. There might have been legitimate reasons for eliminating these streets. However, if the work for these streets were to be carried out as planned, the budget would have been exceeded due to unbalanced items.

Since Transportation Services staff do not regularly perform reconciliation between work originally planned and work subsequently added or reduced, work cancellation indirectly caused by unbalanced bids does not appear to be readily identifiable by management staff.

Recommendation:

- 1. City Council request the General Manager, Transportation Services Division, in consultation with the Director, Purchasing and Materials Management Division, to implement a process to assess the impact of awarding construction contracts to materially unbalanced bids tendered by the Division. Steps to be included in the process should consist of:**
 - a. Performing a reverse bid analysis of unit price Transportation contracts on an annual basis to quantify the negative financial impact of materially unbalanced bids; and**
 - b. Performing reconciliations between planned and actual road construction contracted services and costs to identify negative impact of materially unbalanced bids on service delivery, such as cancellations or delays in work.**

A.2. Grossly Inaccurate Estimates in Tender Documents

Reasonably accurate quantity estimates in a tender help protect the City from unnecessary costs

The incentive for a contractor to submit an unbalanced bid is to gain extra profit while winning the contract by being the lowest bidder. To achieve this, the bidder overprices bid items that he believes will be used in greater quantities than the engineering estimate, and conversely under prices items he believes will be used in significantly lesser quantities. Therefore, preparing reasonably accurate quantity estimates makes unbalanced bidding less advantageous to the bidders, and helps protect the City from financial loss.

For road resurfacing, utility cut, and sidewalk repair contracts, the municipal construction inspectors and supervisors of the Transportation Services Division are primarily responsible for providing reasonable quantity estimates in tender documents.

Divisional Inspection Manual requires staff to undertake pre-engineering assessment

According to the Transportation Services Road Operations – Contract Inspection Manual, an inspector is required to undertake pre-engineering assessment and prepare spreadsheets containing specific tender item quantities. A district supervisor is responsible for estimating quantities and costs for tender preparation.

Inaccurate estimates were found in 15% of major line items in 53 contracts

In our bid analysis, we noted significant discrepancies between engineering estimates and actual quantities in a large number of major line items² in road resurfacing contracts. These discrepancies ranged from +/- 100 per cent to over 1,000 per cent. Fifteen per cent or 83 out of 541 major line items in 53 contracts had a variance of greater than +/- 100% between the estimated and actual quantities.

Table 4 provides examples of grossly inaccurate engineer estimates when compared to actual quantities used.

Table 4: Examples of Grossly Inaccurate Estimates in Road Resurfacing Contracts

	Estimated Quantity	Actual Quantity	Actual Quantity Exceeded the Estimated Quantity by
Concrete Sidewalk	10 m ²	1,097 m ²	109 times
Crack Repair	100 m	7,372 m	73 times
Cold Milling of Asphalt Surface	200 m ²	10,203 m ²	50 times
Crack Repair	100 m	5,332 m	52 times
Cold Milling of Asphalt Surface	350 m ²	7,407 m ²	20 times

Quantity Estimates for Crack Repair Work were Significantly Inaccurate in Road Resurfacing Contracts

Crack repair is a common type of road resurfacing work

Road resurfacing work often involves repairing cracked asphalt surface. The main causes of cracks appearing in asphalt surface are freeze and thaw cycles in extreme winter conditions, and structure fatigue due to heavy traffic. As some cracks may not be visible on the surface, it may be difficult to accurately estimate the amount of work required to repair these cracks.

² Major line item means any individual item of work that has an estimated line item cost, calculated as the product of estimated unit price and estimated or actual quantity (whichever is greater), that is equal to or greater than \$100,000 or 5% of total estimated contract value.

Crack repair item was frequently used to unbalance bids in road resurfacing contracts

Our audit found that often crack repair items were unbalanced by a significant margin. In most cases where the tendered quantity for crack repair was underestimated, an exorbitantly high price for the repair was charged. Since the actual quantity of crack repair completed was significantly higher than the estimate, just this item alone cost the City \$2.5 million more than what it would have paid if the bid prices were not materially unbalanced.

Table 5 shows the engineering estimates for crack repair in four contracts issued for the same district over four years. Year over year, the quantity estimates by staff were significantly understated.

Table 5: Examples of Road Resurfacing Engineering Estimate for Crack Repair in the Same District over a Four-Year Period

Line Item	Year	Estimated Quantity (meter)	Actual Quantity (meter)	Actual Quantity Exceeded Estimate by	Estimated Unit Price	Winning Bidder's Price	Price Range Among Bidders	Amount that City Might Have Saved on the Line Item*
Crack Repair	2012	1,000	6,379	5 times	\$25	\$42.50	\$13.80- \$42.50	\$183,080
Crack Repair	2013	1,000	13,356	13 times	\$25	\$46.00	\$13.60- \$46.00	\$432,745
Crack Repair	2014	1,000	5,662	5 times	\$25	\$58.00	\$23.05- \$58.00	\$197,887
Crack Repair	2015	3,500	19,756	5 times	\$25	\$56.00	\$21.29- \$56.00	\$476,118

*Amount that City might have saved on the line item had the contract been awarded to the second lowest bidder.

In our view, the City could have saved a significant amount of contract costs had better estimates been prepared

Had more reasonable engineering estimates been prepared, another bidder might have been awarded the contract and the City could have saved a substantial amount of contract costs. Our analysis of other types of Transportation contracts indicates that the issues of quantity estimate and unbalanced bidding are not isolated to road resurfacing contracts.

To minimize the financial risk associated with unbalanced bids, the Division needs to review and enhance its current processes and management controls to ensure engineering estimates in tender documents are reasonably accurate.

A.3. Need for Documentary Evidence to Support Tendered Quantities

In conducting a detailed review of the 15 most unbalanced road resurfacing bids and their related contract files, we noted a number of issues in how the quantity estimates were prepared by staff. These issues include:

a. Estimates prepared without actual field measurements

In 12 of the 15 files we did not find information suggesting actual field measurements were undertaken

In all of the 15 road resurfacing contract files reviewed, the estimated quantities for many major line items were expressed as rounded figures (e.g. 1000, 1500, 3000, etc.) raising questions whether actual measurements were taken.

Furthermore, in 12 of the 15 contract files reviewed, we did not find information to support that actual field measurements were undertaken for the purpose of estimating quantities. In the remaining three files, we found Excel spreadsheets showing a break-down of quantities by street but no details on how these quantities were ascertained. Further, the quantities used in the tender documents were different from the quantity estimates on file with no trail or explanation as to the reasons for the changes.

b. Multiple versions of tender estimates on file

In five of the 15 road resurfacing contract files reviewed, we found multiple tender estimates on file each showing different quantities for some of the items without any explanation. Among these five files with multiple estimates, three files contain significant revisions to estimated quantities but there were no notes explaining the revisions.

Initial estimates were frequently revised to meet the budget

According to staff, on some occasions, they or their supervisors reduced the estimated quantities in an effort to keep the estimated cost within capital budget allocation. Consequently, the tendered quantities were not reflective of actual work required. This decision could have inadvertently created opportunities for contractors to use unbalanced bids to maximize their profits against artificially low quantity estimates.

***Insufficient
explanation for
overruns***

c. Significant quantity variances without adequate explanation

It is expected that the actual quantities used will vary to some extent from the tender estimates. In our review of 10 road resurfacing contracts with significant quantity variances after the work had been completed, five contract files contain no notes explaining the significant variances. Further, where we did find staff notes in the other files, these notes did not explain why the variances could not have been foreseen.

Recommendation:

- 2. City Council request the General Manager, Transportation Services Division, to take steps to ensure quantity estimates in tender documents are reasonably accurate. Steps to be taken should include but not be limited to:**
 - a. Analyzing historical information on prices and quantities;**
 - b. Ensuring that road resurfacing tender documents contain actual field measurements such as original handwritten notes and drawings from the field, and documented rationale for changes to the estimated quantities;**
 - c. Ensuring staff justify the significant variances between estimated and actual quantities and such explanation clearly indicate why the variances could not have been anticipated;**
 - d. Requiring staff responsible for estimation to sign off on the estimated quantities and any subsequent changes to the estimated quantities; and**
 - e. Ensuring measurements taken for estimation purposes are reviewed by management for reasonability.**

B. STRENGTHENING CORPORATE OVERSIGHT

B.1. The City Has Been Aware of Unbalanced Bidding Practices

Unbalanced bidding in transportation has been an issue in the past

The issue of unbalanced bidding is not new to the City.

In a 2006 contract, the City awarded the contract to a bidder who submitted a materially unbalanced bid. The quantity of materials estimated by the City inspector appeared to have been grossly inaccurate. The City's estimated quantity for a line item was 100 units whereas the contractor's own estimated quantity was 1,500 units.

The Contractor unbalanced its bid by pricing the item for \$2,000 per unit, while the normal cost for the item was between \$40 and \$80. The extent of unbalancing was so significant that it could have cost the City an additional \$2.8 million over the budget cost had the City allowed the Contractor to complete 1,500 units of work.

When the City restricted the work for this line item, the contractor sued the City for damages and lost profit.

In summary the Contractor argued that:

- Once the bid was accepted, even if it was unbalanced, the City must allow the contractor to complete the work for the price that was bid, regardless of the actual quantity required.
- It was expected of the City to extend the contract to ensure completion of the planned work.
- It was industry practice to bid in this manner. This approach to bidding has been in place for many years and this practice was known to the City.

The City settled the claim with the Contractor. The terms of settlement was not disclosed.

Auditor General's report in January 2007

In January 2007, the Auditor General issued a report relating to another contract involving unbalanced bidding. The Auditor General recommended the establishment of specific criteria for identifying unbalanced bids.

City has the right to reject a materially unbalanced bid

In response to the audit recommendation, PMMD added a new provision to the call document template giving the City the right to reject a materially unbalanced bid. The provision also defines what constitutes a 'materially unbalanced bid'.

PMMD has not established criteria to identify unbalanced bids

PMMD and Transportation staff, however, have not developed any criteria that could assist staff in identifying materially unbalanced bids.

August 2007 Transportation Division was advised of concerns about unbalanced bidding

In August 2007, in response to a Fraud and Waste Hotline complaint about unbalanced bidding, the Auditor General informed the Head of the Transportation Division that a contractor had consistently exceeded quantities for higher unit priced items and underutilized the lower unit priced items. The Auditor General recommended that "senior management develop accurate and complete tender specifications to minimize the possibility of significant additional costs in these construction contracts."

Despite the 2006 claim by the contractor and the 2007 Auditor General's report and subsequent communication, the issue of grossly inaccurate quantity estimate continues in City contracts. In 2012, City Council adopted a staff report from Purchasing and Materials Management Division (PMMD) recommending that City Council bypass the lowest bidder who had submitted a materially unbalanced bid for a tender issued in 2012, and award the contract to the second lowest bidder. This was the only instance when the City bypassed the lowest bidder for unbalanced bidding.

Estimates continue to be inaccurate allowing contractors to benefit from unbalanced bidding

Our current audit found that between 2010 and 2015, tender quantity estimates prepared by City staff continued to be grossly inaccurate in a considerable number of tenders enabling contractors to take advantage of unbalanced bidding. The City has yet to implement specific measures to improve tender estimates to minimize the risks associated with unbalanced bidding.

B.2. Key Controls in Minimizing Risks Associated with Unbalanced Bidding

To prevent materially unbalanced bids from negatively impacting the City, three key controls need to be in place in the tender process.

***First Control:
Prepare a
reasonably
accurate estimate***

First, the most important step is for staff to prepare reasonably accurate quantity estimates. We noted in one district office staff were able to provide reasonable estimates and encountered few materially unbalanced bids over the years. In comparison, we noted a history of materially unbalanced bids in the other three district offices.

***Second Control:
Develop criteria to
reject materially
unbalanced bids***

Second, once the tender process has closed, there is an opportunity to examine bids to detect those that appear to be materially unbalanced. As indicated in the Auditor General's 2007 report, City staff should develop criteria for identifying materially unbalanced bids and a decision framework for accepting or rejecting bids deemed unbalanced.

***Several U.S.
jurisdictions have
developed specific
criteria to identify
unbalanced bids***

We recognize that it can be difficult to determine whether or not a bid is materially unbalanced and, if so, to what extent.

To address issues relating to materially unbalanced bids after a tender has closed, several U.S. States have implemented specific criteria to screen for potentially unbalanced bids. We applied a set of criteria used by one U.S. State to road resurfacing tenders to assess whether we could identify with reasonable accuracy materially unbalanced bids without the advantage of knowing actual quantities to be used.

***It is possible to
pre-screen
unbalanced bids***

Our test showed a high degree of correlation between results from the screening criteria and the reverse bid analysis. This suggests that it is possible to pre-screen potentially unbalanced bids in a road resurfacing tender prior to awarding a contract. We have discussed our test details and shared the screening criteria with PMMD and Transportation staff.

After a line item is identified as potentially unbalanced, it would be prudent to have an independent engineer review the estimate to verify its accuracy.

Keep in mind that in certain circumstances it may be appropriate to accept an unbalanced bid if the City is confident that the unit quantities are not likely to change during the contract.

***Third Control:
Manage the
contractor***

Third, after a contract has been awarded, it is important to manage the contract quantities to avoid contractors from gaining extra profits by significantly exceeding the estimated quantities, particularly for line items with unreasonably high bid prices.

Recommendation:

- 3. City Council request the Director, Purchasing and Materials Management Division, in consultation with the General Manager, Transportation Services Division, to:**
 - a. Develop and implement specific criteria for identifying potentially unbalanced bids in road related contracts;**
 - b. Ensure appropriate data is captured to allow unbalanced bid analysis;**
 - c. Train staff on how to apply the criteria; and**
 - d. Develop a decision framework for accepting or rejecting materially unbalanced bids.**

B.3. Need for Standardized Bid Information and Centralized File Organization

***Road Operations
Manual requires
staff to maintain
comprehensive
contract records***

The need for City staff to maintain comprehensive contract related records is clearly stated in the Transportation Services Road Operations Manual:

“Records should be comprehensive and accurate so that they will stand before any court of law. The Inspector should always assume that the City may be required to show documents in court and the Inspector shall keep up to date records accordingly.”

Lack of centralized and standardized information hinders staff's ability to analyze bids

Our review noted that there was a lack of centralized information and standardized data to allow for proper analysis of bid and pricing information over time.

- Tender document line item numbers and descriptions are not standardized across contracts.
- Line items and descriptions differ between districts and change from year to year within a district, making it difficult to analyse bid information across the City and between districts.
- Supporting documentation is often deficient, as discussed earlier.
- Contract documents, including engineering estimates, are haphazardly stored in three of the four district offices. Figure 1 shows an example of the state of file organization in one district office.
- Contract and bid information is stored in different places making it difficult to monitor contracts.
- Some original bid documents are stored at PMMD while others are stored at the district offices. Records of actual quantities used are maintained in a database that Transportation Services uses for tracking the contract progress.
- Subcontracting information is not captured centrally.

The lack of standardization of tender information and centralization of contract files could significantly hinder staff's ability to analyse bid information.

Figure 1: State of Contract File Organization in One District Office



B.4. Need for Centralizing and Tracking Sub-Contractor Information

Sub-contractor information should be centrally tracked to monitor potential bidding issues

Subcontracting is not unusual for road resurfacing companies.

It is important to collect subcontracting information in a centralized database to enable PMMD staff to systematically analyze and detect problematic subcontracting arrangements. The information that should be collected includes the subcontractor name, the nature of the work, and the approximate value of the subcontracted work. Such information is critical to understanding who is actually performing the City's work and monitoring the market bidding practices.

Although PMMD has recently updated its standard tender call document template to require bidders to pre-disclose any subcontracting arrangements, contractors may also appoint or replace subcontractors anytime during the contract with Transportation staff approval, without necessarily notifying PMMD.

Since the amount of work undertaken by subcontractors is not tracked in a centralized database, neither PMMD nor Transportation Services is in a position to monitor the extent of subcontracting by contractors in a meaningful way.

Recommendations:

- 4. City Council request the General Manager, Transportation Services Division, and the Director, Purchasing and Materials Management Division, to ensure that bid information and contract documents are organized in a manner that facilitates analysis of historical tender information.**
- 5. City Council request the Director, Purchasing and Materials Management Division, in consultation with the City Solicitor, to develop and implement an effective policy to address potential risks arising from sub-contracting arrangements between competitive bidders.**

B.5. Modeling Best District Practices

During our audit, we noted considerable differences among the four district offices in how they prepared estimates for tender documents.

Better estimation practices at one district

One district appears to be able to consistently provide reasonable quantity estimates and encounter fewer unbalanced bids. For this district, we reviewed additional contracts and noted that the tendered quantities were sufficiently supported with field measurements, including hand written notes and drawings. The contract files in this district were also better organized compared to the other three districts.

Efforts should be made to incorporate the best practices from this district into standard business process across all districts.

Recommendation:

- 6. City Council request the General Manager, Transportation Services Division, to review differences in district practices in relation to preparation of tender estimates and record keeping with a view to ensuring best practices are incorporated in all district offices.**

Recommended changes may be applicable to other construction contracts

While the focus of this audit was on local road resurfacing, utility cut, and sidewalk repair contracts issued by the Transportation Services Division, a number of the issues identified, such as materially unbalanced bidding, inaccurate quantity estimates in tender documents, and the need to put proper measures in place to proactively perform contract analysis, may be relevant to other City divisions which contract out construction services on a regular basis. Where applicable, management in other divisions may use the findings and recommended actions in this report as a starting point to review their own procurement processes to identify improvement opportunities, and minimizing risks.

Recommendation:

- 7. City Council request the City Manager to forward this audit report to other relevant City divisions and major agencies and corporations which acquire contracted construction services on a regular basis for information.**

CONCLUSION

The audit focused on local road resurfacing contracts

The audit focused on 55 local road resurfacing, 94 utility cut, and 14 sidewalk repair contracts awarded by the Transportation Services Division between January 2010 and June 2015.

***Important for staff
to address
unbalanced
bidding and
inaccurate
quantity estimates***

The audit identified significant issues in unbalanced bidding and tender estimates. In particular, through a reverse bid analysis, the audit identified that the City could save nearly \$2 million per year for road resurfacing, utility cut, and sidewalk repair contracts by addressing materially unbalanced bids and ensuring accurate quantity estimates in tender documents. These will also help ensure sufficient monies are available to complete planned work.

Implementation of the seven recommendations contained in the audit report will help strengthen the existing City policies and procedures governing the procurement of construction services.

EXHIBIT 1

<u>Excerpt of Tender Pricing Form*</u>					
Item	Description	Unit	Quantity (A)	Unit Bid Price (Excluding All Taxes) (B)	Total Bid Price (Excluding All Taxes) (A) x (B)
00001	Supply, place and compact 40 mm HL3 (PGAC 64-28) & 40 mm HL8 (HS) (PGAC 58-28) asphalt on all Local Roads. Pro-rated from 80 mm TS 310, OPSS 1212, AASHTO MP1, AASHTO PP6	m ²		\$ _____ _____	\$ _____ _____
00002	Supply, place and compact 40 mm HL1 (PGAC 64-28) & 40 mm HL8 (HS) (PGAC 58-28) asphalt for Arterial and Collector Roads. Pro-rated from 80 mm. TS 310, OPSS 1212, AASHTO MP1, AASHTO PP6	m ²		\$ _____ _____	\$ _____ _____
00003	Supply and place 12 bag mix concrete road base Pro-rated from 200 mm. TS 3.40, TS 3.45	m ²		\$ _____ _____	\$ _____ _____
00004	Supply, place and compact HL1 asphalt with spreader including PGAC 64-28. TS 3.20, TS 310, TS 1150, TS 1003, OPSS 1212, AASHTO MP1, AASHTO PP6	Mg		\$ _____ _____	\$ _____ _____
00005	Supply, place and compact HL3 asphalt with spreader, including padding for various thickness including PGAC 64-28. TS 3.20, TS 310, TS 1150, TS 1003, OPSS 1212, AASHTO MP1, AASHTO PP6	Mg		\$ _____ _____	\$ _____ _____
00006	Remove, supply, place and compact two (2) lifts of asphalt for boulevards and driveways as follows: 40 mm of HL8(HS) (PGAC 58-28) and, 40 mm of HL3 (PGAC 64-28). (Pro-rated from 80 mm) TS 3.20, TS 3.30, TS 310, TS 1150, TS 1003, OPSS 1212, AASHTO MP1, AASHTO PP6	m ²		\$ _____ _____	\$ _____ _____
Summary of Tender					
GRAND TOTAL (sum item 1 - 70)				\$	
HST Calculation (1.76) %				-	
Total Amount of Tender				\$	
(bring Total Amount of Tender forward to the Tender Call Cover Page)				-	
Company GST/HST Registration Number:					

**Tender pricing form is part of a standard tender package that is used by Transportation Services Division to invite price quotes from vendors for road resurfacing contracts.*

**Management’s Response to the Auditor General’s Review of
Improving the Tendering Process for Paving Contracts**

Rec No.	Recommendations	Agree (X)	Disagree (X)	Management Comments: <i>(Comments are required only for recommendations where there is disagreement.)</i>	Action Plan/Time Frame
1.	<p>City Council request the General Manager, Transportation Services Division, in consultation with the Director, Purchasing and Materials Management Division, to implement a process to assess the impact of awarding construction contracts to materially unbalanced bids tendered by the Division. Steps to be included in the process should consist of:</p> <p>a. Performing a reverse bid analysis of unit price Transportation contracts on an annual basis to quantify the negative financial impact of materially unbalanced bids; and</p> <p>b. Performing reconciliations between planned and actual road construction contracted services and costs to identify negative impact of materially unbalanced bids on service delivery, such as cancellations or delays in work.</p>	X			<p>Transportation Services, in consultation with Purchasing and Materials Management Division (PMMD), will prepare a report for senior management on the performance of Transportation Services' road resurfacing contracts, with such a report to include:</p> <ul style="list-style-type: none"> • a reverse bid analysis of unit price transportation contracts, that are determined to be materially unbalanced based on the procedure referenced in recommendation 3, on an annual basis to quantify the negative financial impact of materially unbalanced bids, and • documenting the negative impact of materially unbalanced bids, as identified by the procedure referenced in recommendation 3, on service delivery, such as cancellations or delays in work <p>The first report will be in 2017 for the 2016 construction season.</p>

Rec No.	Recommendations	Agree (X)	Disagree (X)	Management Comments: (Comments are required only for recommendations where there is disagreement.)	Action Plan/Time Frame
2.	<p>City Council request the General Manager, Transportation Services Division, to take steps to ensure quantity estimates in tender documents are reasonably accurate. Steps to be taken should include but not be limited to:</p> <ul style="list-style-type: none"> a. Analyzing historical information on prices and quantities; b. Ensuring that road resurfacing tender documents contain actual field measurements such as original handwritten notes and drawings from the field, and documented rationale for changes to the estimated quantities; c. Ensuring staff justify the significant variances between estimated and actual quantities and such explanation clearly indicate why the variances could not have been anticipated; d. Requiring staff responsible for estimation to sign off on the estimated quantities and any subsequent changes to the estimated quantities; and e. Ensuring measurements taken for estimation purposes are reviewed by management for reasonability. 	X			<p>Transportation Services has taken steps to:</p> <ul style="list-style-type: none"> a) review the prior year contracts to identify variances for local road resurfacing contracts; Completed. b) Transportation Services will maintain a district file system to document project files including original handwritten notes and drawings from the field, and documented rationale for changes to the estimated quantities. Completed. c) ensure that any significant differences between actual quantities and estimates are documented with appropriate explanations and sign off including Manager. Completed Develop and implement an "Items Overruns/Under Justification Report" to ensure staff justify the variances between estimated and actual quantities and such explanation focus on why the variances could not have been anticipated.by Q3 2016. d) Ensure records are comprehensive and accurate with appropriate sign off and ensure all tender quantities are sufficiently supported with field measurements. Completed. e) ensure measurements taken for estimation purposes are reviewed by management (Supervisor and Senior Engineer) for reasonability. Completed.

Rec No.	Recommendations	Agree (X)	Disagree (X)	Management Comments: (Comments are required only for recommendations where there is disagreement.)	Action Plan/Time Frame
3.	<p>City Council request the Director, Purchasing and Materials Management Division, in consultation with the General Manager, Transportation Services Division, to:</p> <ul style="list-style-type: none"> a. Develop and implement specific criteria for identifying potentially unbalanced bids in road related contracts; b. Ensure appropriate data is captured to allow unbalanced bid analysis; c. Train staff on how to apply the criteria; and d. Develop a decision framework for accepting or rejecting materially unbalanced bids. 	X			<p>In the short term, for the 2016 Local Road Resurfacing Contracts, PMMD has applied the Unbalanced Bidding criteria to Transportation Services to identify items that might be significantly unbalanced. Completed.</p> <p>In the medium term, PMMD, in consultation with Transportation Services:</p> <ul style="list-style-type: none"> a) has develop an unbalanced bidding analysis procedure including a decision framework for accepting or rejecting materially unbalanced bids for Local Road Resurfacing contracts; b) has determined the appropriate data to be captured to allow for the analysis; and c) has rolled out the appropriate training to staff in PMMD who do Transportation Services construction procurement and Transportation Services on the procedure. <p>Completed.</p> <p>In the long term, PMMD will roll out the unbalanced bidding procedure to analyze other contracts issued by the City for unbalanced bidding, including training the appropriate staff in PMMD on the application of the procedure. Timeframe Q4, 2016</p>

Rec No.	Recommendations	Agree (X)	Disagree (X)	Management Comments: <i>(Comments are required only for recommendations where there is disagreement.)</i>	Action Plan/Time Frame
4.	<p>City Council request the General Manager, Transportation Services Division, and the Director, Purchasing and Materials Management Division, to ensure that bid information and contract documents are organized in a manner that facilitates analysis of historical tender information.</p>	X			<p>The General Manager, Transportation Services, and the Director, Purchasing and Materials Management Division will review the existing procedures related to both tender file retention and contract file retention, to ensure the procedures are in alignment, and make the necessary changes to ensure that the information is organized in a manner that adheres to proper record retention and allows for review of historical tender information. Timeframe Q4, 2016</p> <p>PMMD will also ensure as part of the Supply Chain Management Transformation Project, that bid information is organized in a manner that facilitates analysis of bid information. Timeline Q4, 2017</p>
5.	<p>City Council request the Director, Purchasing and Materials Management Division, in consultation with the City Solicitor, to develop and implement an effective policy to address potential risks arising from subcontracting arrangements between competitive bidders.</p>	X			<p>PMMD, in consultation with Legal Services, have recommended, as part of Amendment to the Purchasing By-law Report, changes to address potential risks arising from subcontracting arrangements between competitive bidders. With the approval of the changes, PMMD and Legal Services will develop the related procedures to operationalize ways to address the risk.</p> <p>Timeframe Q4, 2016.</p> <p>PMMD, as part of the Supply Chain Management Transformation Project, will also consider how to appropriately track the use of subcontractors. Timeline Q4, 2017</p>

Rec No.	Recommendations	Agree (X)	Disagree (X)	Management Comments: <i>(Comments are required only for recommendations where there is disagreement.)</i>	Action Plan/Time Frame
6.	City Council request the General Manager, Transportation Services Division, to review differences in district practices in relation to preparation of tender estimates and record keeping with a view to ensuring best practices are incorporated in all district offices.	X			Transportation Services will review differences in district practices in relation to preparation of tender estimates and record keeping with a view to ensuring best practices and standardization are incorporated in all district offices as soon as possible. Timeframe Q4 2016
7.	City Council request the City Manager to forward this audit report to other relevant City divisions and major agencies and corporations which acquire contracted construction services on a regular basis for information.	X			The City Manager will request Division Heads and Chief Executive Officers of agencies and corporations review the issues and recommendations included in this report and consider the relevance to their respective operations. – Q3 2016