

# **AUDITOR GENERAL'S REPORT**

## **Detection of Warning Signs for Potential Bid Rigging Should be Strengthened**

**March 17, 2017**

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Auditor General**



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## EXECUTIVE SUMMARY

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### **Money spent on road work is significant**

The City of Toronto awards public contracts worth over \$1 billion annually for construction of vital infrastructure including bridges, roads, and water supply. Between 2010 and 2015, the Transportation Services Division spent on average over \$100 million annually on road repair and maintenance work.

### **Two reports related to paving tendering practices**

The Auditor General's Office commenced an audit of the City's paving contracts in 2015. The audit results are contained in two separate reports:

- A first report, entitled "*Improving the Tendering Process for Paving Contracts*", was issued in June 2016. The report brought to light the issue of materially unbalanced bidding in the award of road resurfacing contracts.
- This second report focuses on ensuring value for money through fair and competitive bidding practices.

### **The focus of this audit**

Central to this audit report is the question whether proper monitoring and management controls are in place to ensure a competitive tendering environment allowing the City to obtain the best value for money.

Our audit of paving contracts identified a number of red flags which should raise concerns about the potential for bid rigging by contractors and conflicts of interest associated with certain contractors and employees.

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

Our key audit findings contained in this report are highlighted below:

Due to a lack of a centralized database capturing basic tendering and subcontractor information, the City cannot analyze the market properly to identify questionable bidding patterns or activities.

**Addressing  
materially  
unbalanced bids  
could reduce  
annual contract  
cost**

In our previous audit report, we noted that 15 (27 per cent) of 55 road resurfacing contracts awarded between 2010 and June 2015 were materially unbalanced and 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.

Further analysis showed that 14 of the 15 materially unbalanced bids were submitted by one contractor (hereafter referred to as Contractor A), and the remaining one contract was won by a different contractor who routinely subcontracts for Contractor A. Contractor A was also the dominant player in the market.

In our analysis of bid prices for eight different tenders, we noted that many prices from Contractor A were grossly inflated, some were as high as three times more than the second lowest bidder. With just these eight contracts alone, Contractor A was able to gain an extra \$2.5 million from City contracts over five years.

**Warning signs of  
potential bid  
rigging by certain  
contractors for  
road resurfacing  
contracts**

An informed analysis of bid submissions is critical to identifying bid rigging red flags that are indicative of suppressed competition and to inflated prices.

While bid rigging by its nature is difficult to prove, based on our review and analysis of bid documents and winning patterns over five years, we noted a number of potential red flags of bid rigging by certain contractors engaged in road resurfacing work for the City. These include:

**Market Domination**

Local road resurfacing contracts in the City of Toronto were dominated by two contractors who together won 71 per cent of all local road resurfacing contracts issued between 2010 and June 2015. In District 1, Contractor A's odds of winning was nearly 92 per cent, winning 11 out of 12 bids it submitted.

## **Market Division**

In District 4, the work in the District appeared to be geographically split between Contractor A and Contractor B.

- Contractor A won every contract in the eastern segment of the District from 2010 to 2015;
- Contractor B won every contract in the western segment of the District from 2010 to 2015, except in 2011.

These two Contractors together won 93 per cent of all road resurfacing contracts awarded between 2010 and June 2015 in District 4.

## **Bid Suppression**

The bidding patterns between two Districts were very different:

- In District 2, of the 13 tenders issued, there were a total of 16 unique bidders with 8 different winners;
- By comparison, of 14 tenders issued by District 4, they attracted only five unique bidders, and over the past five years, Contractor A and Contractor B won all but one contracts in that District.

## **Cover Bids**

Also known as complementary bidding, cover bids give the impression of competitive bidding, but in reality, contractors agree to submit token bids that are usually too pricey to stand a chance to win.

A typical red flag would be repeated bids by certain bidders who rarely win. In our review, we noted one contractor who bid 24 times but never won, resulting in zero odds of winning. While we are not asserting that these are cover bids, this should call for a closer examination by city staff as to whether such bids were reasonably competitive.

### **Coordinated Bids**

During our review we noted in at least three tenders where two contractors appeared to coordinate their bids. For example, in a tender with 198 line items, a block of 44 line items had exactly 10 per cent price difference on each line item between the two contractors. In other words, when one contractor quoted \$5,365.00 for an item, the other contractor quoted exactly 10 per cent higher, i.e. \$6,198.50.

### **Characteristics of Bid Documents**

We noted that one particular contractor frequently used white-out to alter bid prices before submitting bids. This may be indicative of a last-minute change. Certain white-out changes appeared to help the contractor win the work or gain extra profits.

### **Sub-contracting**

**One contractor routinely hired competing bidders as sub-contractors**

In eight local road resurfacing contracts in one District, the bidders had included several bidders as subcontractors such that whoever won the tender, certain losing bidders got a share of work. This can undermine the competitiveness of the procurement process, when bidders don't need to rely on winning the tender from the City as they can split the work amongst themselves.

**Other procurement controls that need changing**

**Conflict of Interest**

It is not unusual for the City to retain employees who have previously worked for contractors or the employees' family members work with contractors. Equally, there could be long standing working relationships between City employees and contractors. It is however the City's responsibility to track all current and former relationships that may cause a potential conflict of interest so that duties can be properly segregated and monitored.

During the course of our audit, we became aware of instances of potential conflict of interest arising from:

- Former City employees working for contractors
- Former employees of contractors working for the City
- Close relatives of City employees working for contractors

The City needs to further improve its management of conflicts of interest.

**Conclusion**

Our audit identified significant control deficiencies and a lack of routine analysis of bid submissions and bidding patterns. This, combined with findings in our first report that highlighted a lack of accurate quantity estimates by staff in issuing road resurfacing tenders, leave the City vulnerable to inflated prices and potential bid rigging by contractors.

There were many telltale signs of bid rigging and inflated pricing and even more concerning was the fact that most District contracts were consistently dominated by a small group of contractors over the past five years.



**Audit recommendations to help improve procurement processes**

The City needs to ensure adequate measures are in place to deter and detect potential bid rigging between bidders. Implementation of the six recommendations in this report will help ensure a fair and competitive procurement process enabling the City to obtain best value and fair market prices.

We express our appreciation for the co-operation and assistance we received from management and staff of the Purchasing and Materials Management, Transportation Services, and Engineering and Construction Services Divisions.

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## **WHY WE ISSUED THIS REPORT**

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**Auditor General commenced an audit of paving contracts in 2015**

The Auditor General's Office commenced an audit of the City's paving contracts in 2015 in accordance with its 2015 Audit Work Plan.

The two-part objective of the audit was to assess whether:

- paving contracts were tendered through a fair and competitive process, and
- City received the best value for its money for the contracted services

The audit results are contained in two separate reports:

- A first report, entitled "*Improving the Tendering Process for Paving Contracts*", was issued in June 2016. The report brought to light the issue of materially unbalanced bidding in the award of road resurfacing contracts.
- This second report focuses on ensuring value for money through fair and competitive bidding practices.

During the course of our audit, we identified a number of issues relating to one particular contractor.

Over the years, the Auditor General's Fraud and Waste Hotline has also received numerous complaints involving this contractor, although the complaints could not be substantiated.

Given the sensitive nature of the past allegations and our audit findings, we referred the matter to the City Manager and the City's Legal Services Division for consideration.

In February 2016, the City Manager agreed to investigate the issues identified by our audit.

In light of the ongoing investigation, the Auditor General deferred reporting of audit findings on matters related to fair and competitive procurement until the City had an opportunity to conduct its own investigation.

**Auditor  
General's 2016  
audit reported  
only on  
unbalanced  
bidding**

In her June 2016 audit report on paving contracts, the Auditor General reported only on the issue of unbalanced bidding and related findings and recommendations.

The June 2016 audit report is available at:  
<http://www.toronto.ca/legdocs/mmis/2016/au/bgrd/backgroundfile-94704.pdf>

**Results of  
Investigation**

The management investigation concluded in December 2016. The investigation confirmed the concerns raised by the Auditor General in her June 2016 audit report.

On the basis of its investigation, management also concluded that Transportation staff possessed a poor understanding of the red flags indicating contractors may be engaged in fraud, bid rigging and collusion.

**Findings  
excluded from  
the paving  
contract audit  
report are  
contained in  
this report**

This second report contains findings and recommendations that were excluded from the previous paving contract audit report pending the investigation.

It is recommended that this second report be read in conjunction with the June 2016 audit report as this report builds on the issues and findings discussed in the previous report.

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## BACKGROUND

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### 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 include:

- 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**

Since Transportation Services has a limited number of construction crew, the majority of road resurfacing work is contracted out to private contractors through the City 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.

Since 2010, the Division, through the City tendering process, has awarded 398 road contracts for paving, utility cuts and ongoing maintenance. Table 1 provides a breakdown of these contracts by service type and contract value over five and a half years.

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

<b>Service Type</b>	<b>Purpose</b>	<b>Number of Contracts</b>	<b>Total Contract Value</b>
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	\$168 million
Permanent repairs to utility cuts	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
Other maintenance	Include activities such as emergency repairs, asphalt patching, traffic signal installation and repair, general landscaping, and minor bridge repairs	227	\$191 million

Given the significant amount spent on construction contracts, they can be a prime target for corruption and collusion activities. It is important for City staff to be vigilant in monitoring and detecting unusual bid patterns.

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## AUDIT RESULTS

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### A. Signs of Collusive Bidding

#### **\$1 billion for construction and vital infrastructure contracts**

The City of Toronto awards public contracts worth over \$1 billion annually for construction of vital infrastructure including bridges, roads, and water supply. Between 2010 and 2015, the Transportation Services Division spent on average over \$100 million annually on road repair and maintenance work.

#### **Bid rigging is a major risk in awarding large public contracts**

Bid rigging, also known as collusive bidding, is a major risk when awarding large government contracts. According to the Canadian Competition Bureau, "*Bid-rigging occurs when two or more persons agree that, in response to a call for bids or tenders, one or more of them will: not submit a bid; withdraw a bid; or submit a bid arrived at by agreement.*"

#### **Bid rigging is a criminal offence**

Under the *Competition Act*, it is illegal for competitors to conspire. Penalties can be as much as a fine up to \$25 million and up to 14 years in jail.

#### **Cost of non-competitive bidding**

Bid rigging provides an opportunity for the winner to artificially inflate prices of goods and/or services by eliminating real competition. This, according to studies, can raise the price of a product or service between 15 and 30 per cent above fair market prices. In addition, contractors may no longer have the incentive to perform quality work on time if they know they will likely win the next contract through the same colluding scheme with other bidders.

#### **Lessons from the Charbonneau Commission**

During 2011-2015, The Charbonneau Commission Inquiry examined widespread allegations about corruption and collusion within Quebec's construction industry. Its mandate, in part, was to:

*"Examine possible solutions and make recommendations establishing measures to identify, reduce and prevent collusion and corruption in awarding and managing public contracts in the construction industry."*

**Findings of the Charbonneau Commission**

The Commission highlighted, amongst other things, several important risk areas:

1. a **significant lack of internal expertise within the government to analyze the market properly** to identify overspending and potential problems
2. for several years, a **selected group of companies** were awarded public construction contracts at **highly inflated prices**, and
3. **weaknesses in the contract award process** allowed companies to indulge in collusion and corruption, including bid rigging and kickbacks to government officials.

Some of these telltale signs were evident in our review of paving contracts. Our findings are discussed below:

**A.1 Lack of a Centralized Database to Enable Market Analysis**

**City does not have a database tracking basic tendering information**

A major shortcoming in the City's tendering process was a lack of a centralized database capturing basic information such as procurement calls, contract numbers, bidders' pricing information, estimated and actual quantities used, and subcontractor information. In fact, the City did not even have a complete, chronological list of paving contracts for the past five years. Without this critical information, City staff were not able to conduct any meaningful market analysis to identify questionable bidding activities or patterns.

As noted in our 2016 report:

- Data was neither standardized nor centralized to allow for proper analysis of bid and pricing information over five years
- Tender document line item numbers and descriptions were not standardized across contracts
- Line items, the descriptions used on tender documents to describe different types of work, differed between Districts and changed from year to year within a District. This made it difficult to compare bid information across the City, between Districts, or with other municipalities.

**Audit staff compiled a comprehensive database of contracts for analysis**

In order to proceed with our audit, audit staff made a concerted effort to build our own database through analyzing, matching, and scanning records from a large volume of documents. In total we analyzed 30,000 bid prices from 163 tender calls over five years using our own database. We have provided the audit-built database to management as a starting point to commence proper market analysis. A multi-year database of bid information needs to be developed by staff to conduct robust analysis of bidding patterns.

**A.2 A Selected Group of Contractors Winning with Inflated Prices**

**Contractors inflating prices through unbalanced bidding to maximize their profits**

In our June 2016 report entitled "*Improving the Tendering Process for Paving Contracts*", we analyzed the bid prices for all winning contractors to determine if the contracts were awarded at highly inflated prices.

**27% of contracts were awarded to materially unbalanced bids**

We reported that 15 (27 per cent) of 55 road resurfacing contracts awarded between 2010 and June 2015 were materially unbalanced and 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.

Fourteen (14) of the 15 materially unbalanced bids were submitted by one contractor (hereafter referred to as Contractor A), and the remaining one contract was won by a different contractor who routinely subcontracts for Contractor A.

Table 2 highlights the inaccurate estimated quantities in tender documents by City staff.

Reasonably accurate estimates of the cost of work are crucial to detecting grossly inflated prices.

It also shows the inflated price from Contractor A on the work for crack repair in eight different contracts. The grossly inflated prices from Contractor A were as high as three times more than the second lowest bidder's prices. With the inaccurate estimates and the exorbitant price, in these eight contracts alone, Contractor A was able to gain an extra \$2.5 million from City contracts.

<b>Tender</b>	<b>City Estimated Quantity</b>	<b>Actual Quantity</b>	<b>Overrun</b>	<b>Winning Bidder's (Contractor A) Price (\$)</b>	<b>Second Lowest Bidder's price (\$)</b>	<b>Paid to Contractor A (\$)</b>	<b>Second Lowest Bidder's Quote (\$)</b>	<b>Excess Paid to Contractor A (\$)</b>
1	1,000	13,356	1,236%	46.00	13.60	625,204	184,843	440,361
2	3,500	19,756	464%	56.00	24.10	1,125,804	484,498	641,306
3	100	7,372	7,272%	60.00	12.00	450,104	90,021	360,083
4	1,000	4,403	340%	75.00	21.30	336,037	95,434	240,602
5	100	5,332	5,232%	59.00	12.00	320,095	65,104	254,991
6	1,000	5,662	466%	58.00	23.05	334,158	132,799	201,359
7	1,000	3,353	235%	55.00	15.35	187,650	52,371	135,278
8	1,000	6,379	538%	42.50	13.80	275,883	89,581	186,302
					Total	3,654,935	1,194,651	2,460,282

*\*Savings that could have been realized if the second lowest bidder was awarded the contract (calculated as the difference between the actual contract amount paid to Contractor A based on inflated prices and the amount that would have been paid to the second lowest bidder for the line item). All amounts include taxes.*

We also performed a further analysis showing how year-over-year Contractor A won when the City would have saved money by going with the second lowest bidder. The excess costs are shown in the last column in Table 2.

These results became more concerning given that Contractor A was also a dominant player who won most of the tenders in certain Districts.



**A.3 Weaknesses in the Contract Award Process Decrease the Chance to Detect Bid rigging**

**Bid rigging can be difficult to prove**

Bid rigging arrangements are by their nature secret and are therefore difficult to prove conclusively.

The Canadian Competition Bureau and other regulatory agencies across the globe have developed “suspicious indicators or warning signs” to aid procurement firms in identifying possible bid rigging.

Table 3 lists the bid rigging “red flags” identified by the Canadian Competition Bureau and the U.S. Department of Justice, along with a summary of our key audit observations.

Our observations in relation to each one of the above red flags are discussed below:

**Table 3: Bid Rigging Red Flags**

Characteristic	Red Flag Noticed	Summary of Key Observations
<p><b>1. Market Domination:</b> <i>over a series of awards, one bidder always wins, regardless of competition</i></p>	Yes	<p>Two contractors who together won 71 per cent of all local road resurfacing contracts issued between 2010 and June 2015.</p> <p>In District 1, Contractor A's odds of winning was nearly 92 per cent, winning 11 out of 12 bids it submitted.</p>
<p><b>2. Market Division</b> <i>an agreement among suppliers not to compete in designated geographic regions or for specific customers</i></p>	Yes	<p>In District 4, the market appeared to be divided into east and west segments with two contractors each winning almost all of the contracts in their respective segment year-over-year.</p>
<p><b>3. Bid Suppression</b> <i>or withdrawal is an agreement among suppliers either to abstain from bidding or to withdraw bids.</i></p>	Yes	<p>In District 4, there were only 5 unique bidders for all tenders over 5 years, averaging 4 bidders per tender.</p> <p>By comparison, District 2 had 16 unique bidders and on average 6 bidders per tender.</p>
<p><b>4. Cover Bidding</b> <i>gives the impression of competitive bidding, but, in reality, suppliers agree to submit token bids that are usually too high.</i></p>	Yes	<p>One contractor bid 24 times but never won - i.e. zero odds of winning. Another contractor bid 49 times and only won three times, a 6% chance of winning. Contractors submitting high prices with rounded numbers, or submitting an exceedingly high price for one line item in one bid and a low price for an identical line item in another bid.</p>
<p><b>5. Coordinating Bids</b> <i>Competitors' bids are received together or showing signs of working together</i></p>	Yes	<p>Pricing, at times appeared to be coordinated such that the prices of two bidders were either 10 percent above or 10 percent below each other on many items.</p>
<p><b>6. Bid Rotation</b> <i>is a process whereby the pre-selected supplier submits the lowest bid on a systematic or rotating basis</i></p>	Not Evident	
<p><b>7. Physical Characteristics of Bids</b> - <i>Two or more proposals contain similar handwriting, typos, or mathematical errors; Bids may contain white-outs or other physical alterations indicating last-minute price changes</i></p>	Yes	<p>One contractor frequently made white-out changes to the bid and the change sometimes favored the contractor. For three different tenders, two companies submitting different bids but</p> <ul style="list-style-type: none"> <li>• the presidents had the same last name,</li> <li>• the companies shared the same address on their websites</li> <li>• both contractors submitted their bids at exactly the same time – to the minute.</li> </ul>
<p><b>8. Subcontracting</b> <i>When the winning contractors hire other contractors to carry out the work</i></p>	Yes	<p>Contractors included subcontractors in their bids that are competing for the same contract. The winning contractors hired bidders who lost as their subcontractors.</p>

**A.3.1. Market Domination**

The Charbonneau Inquiry was concerned that for several years, a selected group of companies were awarded public construction contracts at highly inflated prices.

The U.S. Department of Justice states that bidding patterns raise a concern when *“the same company always wins a particular procurement. This may be more suspicious if one or more companies continually submit unsuccessful bids.”*

**Two dominant market players control 70% of the market share**

Of the 55 local road resurfacing contracts tendered since 2010, one particular company, Contractor A, was awarded 27 contracts (47 per cent) totaling \$78 million. Another company, Contractor B, was awarded 12 contracts (23 per cent) totaling \$38 million. These two contractors combined won 70 per cent of all City local road resurfacing contracts over the past five-year period.

Table 4 below shows the bid results of the top five frequent bidders of road resurfacing contracts since 2010. The odds of winning for Contractor A was 63 per cent or almost two-thirds of the times it bid, whereas the odds for Contractor E was zero out of 24 bids. The odds for another company, Contractor C was 6 per cent out of 49 bids.

**Contractors bid but do not win**

**Table 4: Bidding Frequency and Bid Results of Top Five Frequent Bidders, January 2010 To June 2015**

<b>Contractor</b>	<b># of Times Bid</b>	<b># of Times Won</b>	<b>Odds of Winning</b>
<b>A</b>	<b>43</b>	<b>27</b>	<b>63%</b>
<b>B</b>	<b>52</b>	<b>12</b>	<b>23%</b>
<b>C</b>	<b>49</b>	<b>3</b>	<b>6%</b>
<b>D</b>	<b>35</b>	<b>5</b>	<b>14%</b>
<b>E</b>	<b>24</b>	<b>0</b>	<b>0%</b>

The paving contracts in the Transportation Division are not procured centrally. Each District prepares its own engineering estimate and manages the contracts locally. As a result, the contract management practices vary greatly between the Districts and so do bidding outcomes.

**Marked differences in bidding patterns between Districts**

We noted marked differences in bid patterns between Districts. For instance, in District 2, of the 13 competitive tenders issued, they attracted 16 unique bidders, and 8 different winning companies were awarded the contracts over the five years.

By comparison, in District 4, among its 14 tenders, only 5 contractors submitted bids, and over the five years only three contractors ever won District 4 contracts.

**Table 5: Bidding Patterns in Four Districts (2010 to 2015) for the 55 Local Road Resurfacing Contracts:**

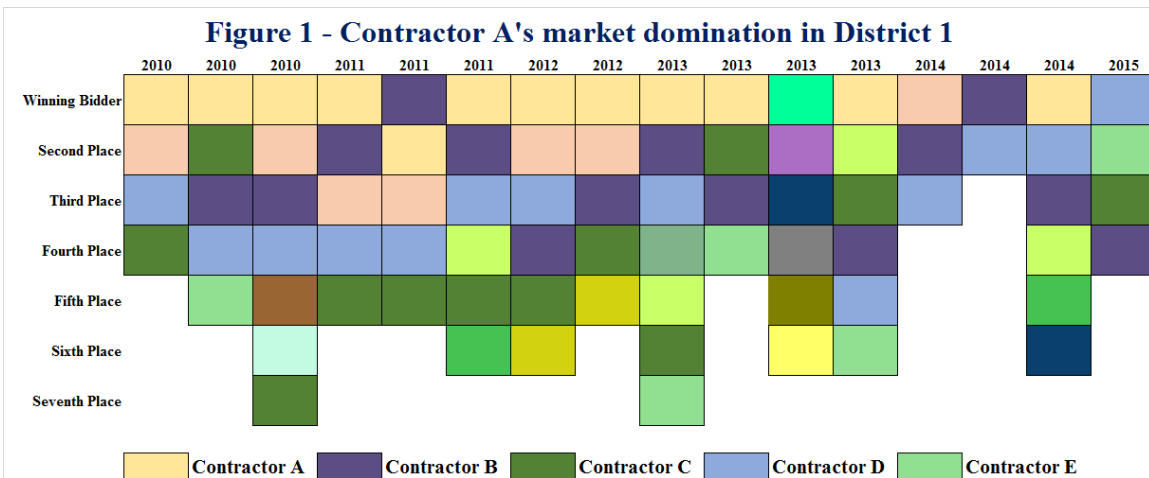
	District 1	District 2	District 3	District 4
<b>Tender Calls Issued</b>	16	13	12	14
<b>Unique Bidders</b>	18	16	9	5
<b>Winners</b>	5	8	4	3
<b>Number of times Contractor A bid</b>	12	5	12	14
<b>Number of bids won by Contractor A</b>	11	1	7	8

In District 1, Contractor A won 11 of the 16 tenders, or nearly 70 per cent of the market. The odds of winning for Contractor A was about 92 per cent when it bid in District 1.

Contractor A would have won a 12<sup>th</sup> time but it was disqualified because the District supervisor who prepared the tender then commenced work with Contractor A, and the City deemed this to be a conflict of interest, and disqualified Contractor A.

As can be seen in Figure 1 below, there was a clear sign of market domination by Contractor A in District 1. Each column is a different tender and each color represents one unique bidder.

Of the 16 contracts issued between 2010 and 2015 in District 1, Contractor A bid 12 times and won 11 contracts.



### A.3.2 Market Division

The Competition Bureau identifies market division as a possible red flag for bid rigging schemes:

*"Market division is an agreement among suppliers not to compete in designated geographic regions or for specific customers."*

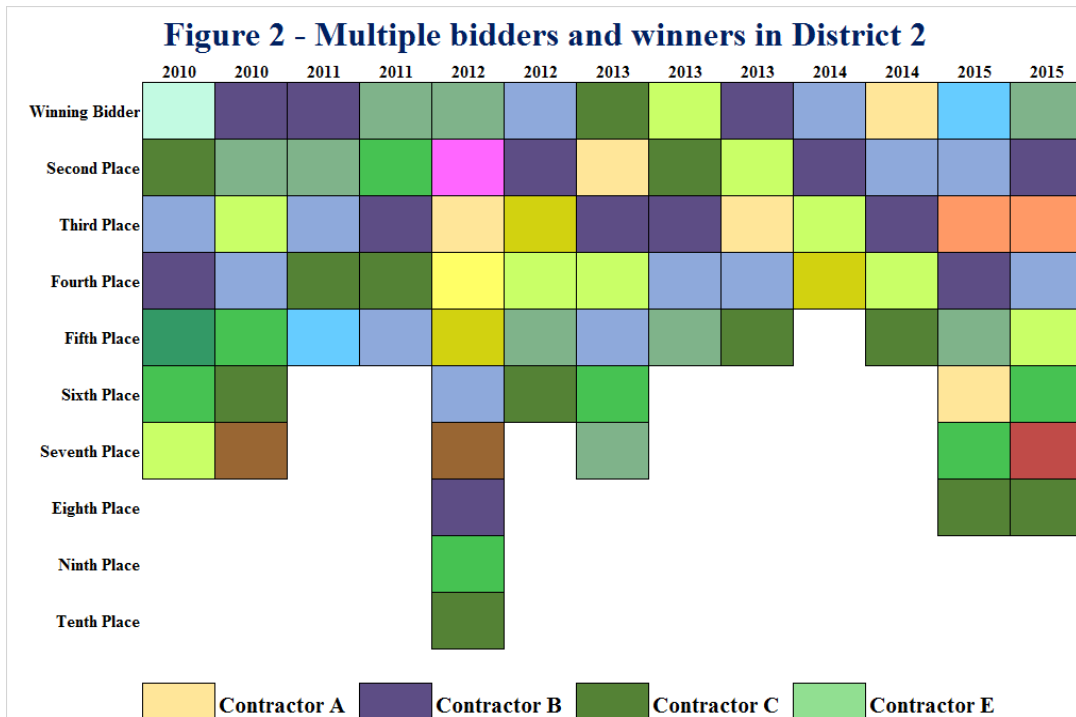
According to the U.S. Department of Justice, market division occurs when

*“...co-conspirators agree to divide up customers or geographic areas. The result is that the co-conspirators will not bid or will submit only complementary bids when a solicitation for bids is made by a customer or in an area not assigned to them.”*

**Two Districts – different outcomes**

Figure 2 depicts the bidding pattern of District 2, where there appeared to be a competitive market with a range of different bidders for each tender and different winners over the years. Each column is a different tender and each color represents one unique bidder.

Of the 13 contracts issued for District 2, Contractor A bid 5 times and won only once. There appeared to be no single contractor dominating the market in District 2 with more bidders participating in the competition compared to other Districts.

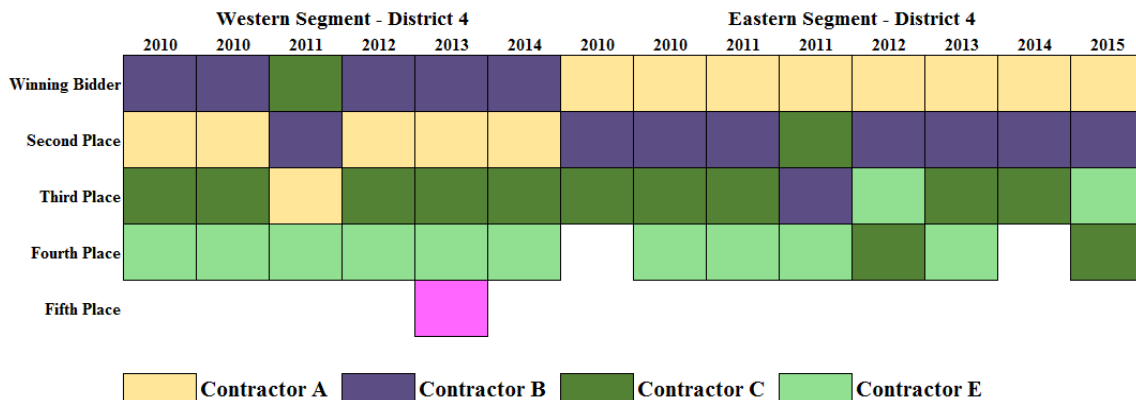


**Work in one District appeared to be split between two contractors**

In comparison, the bidding and winning pattern in District 4, was drastically different from District 2. Figure 3 shows market division where the eastern and western segments of District 4 were split between Contractors A and B, respectively:

- Contractor A won every contract in the eastern segment of the District from 2010 to 2015.
- Likewise, Contractor B won every contract in the western segment of the District from 2010 to 2015, with the exception of one contract in 2011.

**Figure 3 - Geographic split of work between Contractor A and Contractor B in District 4**



It should also be noted that in nearly every contract when Contractor A won in the Eastern Segment, Contractor B was the second lowest bidder. The same reversed relationship between Contractor B and A can be seen in the Western Segment.

Although we cannot be certain, based on the patterns, one would question whether there was an arrangement between Contractor A and Contractor B to split the contract work in District 4 between themselves.

This segregation of contracts has existed for a long period of time. City staff in charge of tendering and managing the contracts could provide no plausible explanation for the apparent market domination and split by two contractors in one specific District.

At first, senior staff theorized that by owning asphalt plants in the Districts, these contractors could keep their costs down because of shorter distances between the plant and the job location. This in turn allowed them to lower their asphalt bid prices to become more competitive to win more contracts.

**Higher asphalt prices by two contractors**

Our analysis however showed that the asphalt pricing from these two contractors was not lower when compared to other bidders. Among the 18 unbalanced road resurfacing contracts won by Contractor A, the City paid on average 20 per cent more for Contractor A's asphalt costs than the second lowest bidders' asphalt quotes.

We also examined the locations of Contractor A's asphalt plants in the City and found other unusual bidding patterns.

**Grinding equipment**

Another theory raised by staff was that Contractor A won more often because it owned grinding equipment and this allowed Contractor A to provide better pricing on cold milling, which is the work to remove the top surface of a road before paving.

Our review of 18 unbalanced contracts found that total grinding costs paid to Contractor A were on an average 40 per cent more expensive than what were quoted by the second lowest bidders.

**A.3.3 Bid Suppression**

Bid suppression is when a contractor purposely refrains from bidding to allow another contractor to win. Contractors who agree not to bid may receive some sort of benefit, including being a subcontractor on the project.

By keeping bidders out of the process, bidding firms can charge more for their services without fear of being out bid by competitors.



Comparing the number of bidders between District 2 and District 4, District 2 had 16 unique bidders, with eight different winners. District 4, on the other hand, had on average only four bidders. Among them:

- Two bidders dominated as winners, and together winning 93 percent of the time
- One bidder bid on 86 per cent of the calls and never won.

In our view, there was a high risk of bid suppression in District 4.

#### **A.3.4 Cover Bidding**

Cover bidding, also known as complementary bidding, gives the impression of competitive bidding, but in reality, contractors agree to submit token bids that are usually too pricy to stand a chance to win. In general cover bids are made in exchange for monetary benefit or subcontract work.

#### **Contractor E bid 24 times but never won**

A typical red flag would be repeated bids by certain bidders who rarely win. As shown in Table 4, Contractor E, who bid 24 times but never won had zero odds of winning. Contractor C bid 49 times and won only three times.

We are not asserting that these are cover bids. However, given that it could be a red flag when a contractor bid multiple times but never or rarely won, staff should have looked into these cases and reviewed the bids carefully to determine if there were any anomalies.

As part of the audit, we reviewed an additional small sample of road construction tenders which also involved Contractor A. These contracts were similar to road resurfacing contracts except that they involved more comprehensive rehabilitation work.

#### **Examples of cover bid**

We noted additional examples of what we believe to be possible indications of cover bidding. Table 6 below provides an illustrative example of a possible cover bid in a road construction contract.

Note that Contractor G's prices are consistently the same value for several line items regardless of the type of work, and many of its bid prices are rounded, exaggerated numbers with little relevance to the work item or the City's estimated prices. These may be signs of a cover bid.

### A.3.5 Coordinated Bids

#### Other unusual pricing patterns

In addition, the U.S. Department of Justice also notes that *... "suspicious indicators of bid rigging include when we notice the same increment between the bids of each company"*. This was also observed in our review of bid documents.

#### Bid prices were extremely close or identical from two different bidders

Table 6 shows an example of a coordinated bid. Note Contractor A's price is consistently 10 per cent above Contractor F. In a tender with 198 line items, we found that a block of 44 line items had exactly 10 per cent price difference on each line item between these two contractors. For example, if Contractor F quoted \$5,635.00 for an item, Contractor A quoted \$6,198.50, which is an exact 10% mark-up.

Item No.	Estimated Quantity	Estimated Price	Contractor F's Price	Contractor A's Price	Contractor A's Price compared to Contractor F's Price	Contractor G's Price
147	8	\$5,000	\$1,983	\$2,181	110%	\$16,000
148	8	\$3,500	\$5,837	\$6,421	110%	\$16,000
149	6	\$4,000	\$2,076	\$2,284	110%	\$16,000
150	6	\$3,000	\$5,537	\$6,091	110%	\$16,000
151	2	\$3,000	\$4,321	\$4,753	110%	\$16,000
152	50	\$28	\$60	\$66	110%	\$125
153	1400	\$20	\$12	\$13	110%	\$20
154	1400	\$20	\$12	\$13	110%	\$20
155	1400	\$20	\$16	\$18	110%	\$25
156	10	\$700	\$766	\$843	110%	\$2,200
157	1	\$6,000	\$6,128	\$6,741	110%	\$28,000
158	1	\$6,000	\$9,716	\$10,688	110%	\$28,000
159	1	\$5,000	\$9,716	\$10,688	110%	\$28,000
160	1	\$7,000	\$7,682	\$8,450	110%	\$28,000
161	1	\$3,000	\$7,682	\$8,450	110%	\$28,000
162	1	\$4,000	\$5,635	\$6,199	110%	\$28,000
163	1	\$5,000	\$5,635	\$6,199	110%	\$28,000
164	100	\$20	\$181	\$199	110%	\$350
165	1400	\$85	\$66	\$73	110%	\$90

In addition to the above, we noted another example where a block of many line items would show an exact difference of 0.4 per cent to 3.5 per cent between the prices from two Contractors, one of which was Contractor A.

**Other unusual pricing strategies that raised a concern**

We also noted other unusual pricing strategies. For example, in one contract whenever a contractor bid \$0.01 for a line item, the competing contractor would bid one of the following three amounts: \$1, \$10 or \$100, while the submission of other bidders did not align.

Submitting an exceedingly high price on one line item in one bid and a very low price for an identical line item in another bid could also be a red flag.

Several examples of this bidding pattern were observed in our examination of bid documents. Table 7 provides an example showing how Contractor A's bid prices were drastically different on the same items for two different tenders with similar scope of work, closed on the same date, and within the same District. Bid prices from a different Contractor are included in Table 7 for comparison purpose.

**Table 7 Comparison of bid prices between Contractor A and Contractor B for two similar tenders (i.e. same closing date, in the same District, similar scope of work) Contractor A won in Tender 1 with Exorbitant pricing.**

Line Item	Tender 1		Tender 2
Cold milling 40 mm	\$47.26 (Contractor A) \$4.70 (Contractor B)	↔	\$5.00 (Contractor A) \$2.70 (Contractor B)
Cold milling 75-100mm	\$51.00 (Contractor A) \$4.60 (Contractor B)	↔	\$4.00 (Contractor A) \$5.80 (Contractor B)
Cold milling 75-100mm (Asbestos)	\$60.00 (Contractor A) \$12.00 (Contractor B)	↔	\$30.00 (Contractor A) \$12.10 (Contractor B)

### A.3.6 Bid Rotation

Bid rotation is a process whereby a pre-arranged contractor submits the lowest bid on a systematic or rotating basis.

This red flag was not specifically tested during our audit and no observations could be made.

### A.3.7 Characteristics of Bid Documents

The U.S. Department of Justice advises organizations to carefully examine bid or price documents that contain similar handwriting or that “*contain white-outs or other physical alterations indicating last-minute price changes.*”

The Competition Bureau also advises that where two or more proposals contain similar handwriting, typos, or mathematical errors, it raises a red flag.

#### **Important to identify unusual indicators on bid documents**

Some of these red flags were noted in our review of bid documents. For instance, we noted that one particular contractor frequently used white-out to alter his bid prices before submitting his bids. This may be indicative of a last-minute change. Certain write-out changes appeared to help the contractor win the work or gain extra profits.

Bid rigging red flags also include information similarities such as common addresses, company personnel and phone numbers, in bid documents submitted by different bidders, indicating that the bids might have been prepared by the same party.

Among the bid documents we reviewed, we noted that in three tenders, the bids were submitted by two different contractors at the exact same time to the minute. The two contractors, while under different company names, shared the same company address on their web sites, and the last names of the two company presidents are the same.

We also noted what appeared to be similar handwriting in bid submissions from different contractors. This would require an expert to substantiate our concern.

### **A.3.8 Subcontracting**

#### **Subcontracting could be part of a bid rigging scheme**

The use of subcontractors is a normal part of conducting business. According to the U.S. Department of Justice, subcontracting arrangements are often part of a bid rigging scheme where a winning contractor rewards competitors that back off by letting them to have a share of the contract work through a sub-contracting arrangement. This could result in suppressed competition and a higher price for the winning contractor.

According to the Organization for Economic Cooperation and Development, when losing bidders are hired as subcontractors or suppliers, or a contractor includes subcontractors in its bid that are competing for the prime contract, these are red flags of bid rigging.

We noted several instances where the subcontracting arrangements appear to be a red flag.

#### **Subcontracting arrangements in 8 local paving contracts**

In eight local road resurfacing tenders in one District, for example, the bidders included certain bidders as subcontractors for the contract work. That meant that regardless of which contractor won, some losing bidders would get a share of the work. This can undermine competition, as bidders are less reliant on winning the tender from the City and can use subcontracting as a means to agree to split the work amongst themselves.

In another contract series, Contractor A had won the same contract three years in a row from 2010 until 2013. In 2014, Contractor A would have won, but the City declared it as non-compliant due to a conflict of interest. After having been declared non-compliant, Contractor A worked as a subcontractor for the Contractor who was awarded the work by the City.

Pursuant to our recommendations in June 2016 audit, management implemented a new policy requiring more detailed disclosures by subcontractors as part of a bid submission process.

**A centralized data base is needed for bid analysis**

However, the sub-contracting information is not kept in a centralized data base, without which PMMD does not have a means to proactively analyse and identify potentially collusive bidding schemes. It is important to capture and analyze this information to ensure fair bidding practices.

**A.4 OTHER BASIC CONTROLS TO HELP DETECT BID RIGGING**

**A.4.1 Refrain from Disclosing Names of Potential Bidders**

**Publishing the names of bidders taking bid documents should be curtailed**

The City of Toronto's website lists the names of the contractors who pick up a bidding package. This is contrary to recommendations from the Charbonneau Commission.

Publishing the number and names of those picking up bid documents creates the possibility that contractors may collude or may submit higher prices because there are few bidders.

The Charbonneau Commission recommended that to help build a competitive environment, it is important to ensure the *"confidentiality of names of selection committee members (and) the identity of request for proposal document takers who choose to remain anonymous."*

PMMD does not disclose the names of selection committee members; however, it publishes the names of prospective bidders who purchased the bid documents, which is inconsistent with the Commission's recommendation. It will be prudent for the City to follow the recommended practice.

#### A.4.2. Adequate Staff Training and Data Resources

**Adequate staff training on bid rigging prevention and identification is an important control**

To help detect bid rigging, adequate training should be provided to City staff such that they have the tools and resources to identify red flags. The Competition Bureau of Canada recommends that organizations should ensure that their staff are regularly trained on bid rigging prevention, and reviewing tender history and results periodically.

PMMD has taken advantage of the educational sessions on bid rigging provided by the Competition Bureau. PMMD needs to put into place an appropriate database to track the information in order to facilitate the review of warning signs of potential bid rigging.

In 2014, The City of Toronto's Internal Audit Division conducted a review of the adequacy of bid analysis process across the four Districts for Transportation Services. The review pointed out a number of areas where engineering estimates and bid analysis can be further enhanced, but did not conclude on the risk related to collusion.

Later in 2014, PMMD conducted its own review of 2012/2013 tender files to identify patterns that would indicate potential collusion. PMMD concluded that their review of 2013 Utility Cut Repair Work and 2013 Road Work "*did not provide any indication that collusion was evident.*"

Without a comprehensive database on tender and pricing information and proper training, it would be difficult for staff to identify the anomalies and unusual bidding patterns, especially as some of the patterns are seen clearly over a longer term horizon.

**Recommendations:**

- 1. City Council request the Director, Purchasing and Materials Management Division, to develop and maintain a database of tender, contract, and sub-contracting information for all construction contracts in order to proactively monitor and detect potential bid rigging.**
- 2. City Council request the Director, Purchasing and Materials Management Division, to provide training on bid rigging, including preventive controls and red flags, to City purchasing and divisional staff who are involved in tender preparation or contract administration.**
- 3. City Council request the Director, Purchasing and Materials Management Division, to adopt a practice of keeping the identity of prospective bidders who purchased the bid documents confidential.**

## **B. OTHER RISKS OF FRAUD IN TRANSPORTATION CONTRACTS**

**Other Common Frauds**

The following four categories are identified by the Office of the Inspector General, U.S. Department of Transportation, as some of the “Common Frauds” in transportation contracts.

- Conflict of Interest
- Quality Control Testing
- Materials Overcharging
- Bribery and Kickbacks

**Allegations of fraud regarding Transportation contracts have been reported to the Hotline**

Over the years the Auditor General’s Fraud and Waste Hotline has received numerous complaints and allegations of fraud in relation to construction contracts issued by Transportation Services. All allegations received by the Hotline are reviewed by the Auditor General’s Forensic Unit, tracked in a confidential database, and forwarded to the appropriate City management staff for investigation if warranted. The Auditor General also provides an annual report on the Hotline statistics and investigation results.



As part of this audit, we conducted a detailed review of the complaints received. The majority of these complaints fall into the categories of Conflict of Interest or Materials Overcharging. Our audit work also noted potential issues relating to Quality Control Testing.

Examples of allegations reported to the Hotline, along with findings from this audit, are discussed in the following sections. These examples are included in the report to help City staff to gain a better understanding and awareness of the potential issues that can be compounded by conflicts of interest.

## **B.1. Conflict of Interest Risks Arising from Former Employees Working for Contractors**

### **Charbonneau Commission post-employment recommendations**

Many of the issues that were discussed at the Charbonneau Commission of Inquiry related to the issues when former employees go to work with contractors. The Charbonneau recommended that the government amend pertinent legislation and rules to:

- Prohibit all employees who are involved in contract management in a public contracting authority from accepting, in the year following the end of their duties, a role or a job with a private sector entity with which they had an official, direct and significant relationship during the year preceding the cessation of duties, except with the written consent of the public contracting authority.
- Require a civil servant who is involved in contract management at a public contracting authority to inform his employer in writing of any discussions he had with a supplier regarding possible job prospects.
- Amend *the Act Respecting Contracting by Public Bodies*, the *Cities and Towns Act* and the *Municipal Code of Quebec* to include, in case of non-compliance with post-employment rules, a contract cancellation clause and a return to request for proposals.

**Retired employees involved in tendering for contractors can pose significant risks to the City**

When a former City employee seeks and accepts employment with a contractor, it poses potential risks to the City including possible breach of confidential and insider information, potential of undue influence on the bidding process, and potential of unfair advantage to the contractor over other bidders. It may also pose risks for the management of those contracts, if those employees have influence over the remaining City employees involved in managing or waiving contract performance issues.

Conflicts of interest may include situations where a government official has a financial interest in a contract, but fails to disclose the conflict to their superiors or take other appropriate action to recuse themselves from the procurement process or related contract management. This may result in an improper contract award or inflated costs in the subsequent management of the contract.

During the audit we noted that on occasions City employees work with contractors after retirement, without regard for whether that might present a potential conflict with their former duties as a City employee.

The risks arising from former employees working for contractors are reflected in the following two examples of conflict of interest.

**A retired employee involved in tender estimates was hired by a contractor immediately upon retirement**

**Example 1**

- A City employee, who was a key person who helped prepare a large tender and the supervisor for many of the prior contracts, retired just after preparing the tender.
- Approximately one month later, Contractor A hired the former employee and appointed him to be its main representative dealing with City staff and local residents, then bid on the tender.
- At the time of the hiring, there was an open tender. Contractor A ranked first in a tender call that the former employee worked on.

- PMMD rejected the bid as non-compliant on the basis that there was a conflict of interest and unfair advantage, and awarded the contract to the next lowest bidder
- The contractor then filed a complaint to PMMD arguing that the former employee did not receive a retirement package and therefore the two-year restriction should not be applicable. PMMD rejected the complaint.
- Contractor then became the subcontractor on the contract it had been disqualified from bidding on.

### **Example 2**

**A former employee used his connections to City staff to obtain confidential contract information**

- The retired employee who is now working with the City contractor, contacted his City co-workers to obtain internal City reports related to the Contractor's contract. A City co-worker provided the reports and, upon request by the former employee, a description of how to extract the report from City systems so that the contractor could request the same report from other employees in other Districts.
- The retired employee proceeded to contact other District staff to obtain similar information and succeeded in obtaining the information.
- Other contractors are not privy to the same reports.

## **B.2. Conflict of Interest Risks Arising from Family Members of City Employees Working for Contractors**

The Auditor General is often asked to investigate allegations of conflict of interest associated with employees or employee's family members working for contractors. Examples of these allegations are below. These cases provide insight into the kinds of allegations we receive related to potential conflicts of interest.

### **Example 1**

#### **An employee's father worked for a prominent Contractor**

- In 2013 the Auditor General received complaints that the father of a Senior Engineer of Transportation Services worked for a prominent contractor.
- An investigation confirmed that the employee had access to confidential tender information and was involved in tender bids by the contractor his father worked for.
- The employee was reprimanded for not disclosing the conflict and subsequently terminated his employment with the City.

While a conflict of interest was confirmed in the above case, fraud was not established.

#### **An example of the importance of ongoing monitoring of emerging conflicts of interest**

### **Example 2**

- It was recently learned that the son-in-law of a former employee (who now working for a contractor) was hired to work as a road maintenance staff in a District office within a month after the former employee's retirement.
- The son-in-law used the contractor (who employed his father-in-law) as his employment reference during the selection process with the City.
- Subsequently the son-in-law was promoted as an acting supervisor of maintenance contracts
- By virtue of this position, the son-in-law has direct access to financial information on various contracts including pricing information that may be useful for the contractor.

Although there is no evidence of wrongdoing, in our view, there appears to be a potential conflict of interest. We provided this example to highlight the need for ongoing monitoring by management to identify and address potential conflicts as they arise.

## **New Purchasing By-law addressing conflict of interest**

**City has recently updated its purchasing by-law to address the conflict of interest risks**

During our audit we continued to communicate our concerns with City staff. Staff took these concerns into consideration in the development of a new purchasing By-law, which was enacted in October 2016 and effective January 1, 2017. The changes to the Purchasing By-law included the repealing of the Restrictions on the Hiring and use of Former City of Toronto Management Employees for City Contracts Policy.

Under the new By-law, 195-13.3. Conflicts of Interest or Unfair Advantage, suppliers must declare and fully disclose any actual or potential conflict of interest or unfair advantage related to the preparation of their bid or where the supplier foresees an actual or potential conflict of interest in the performance of the contract. Such potential conflicts of interest or unfair advantages include, but are not limited to:

- a. Engaging current or former City employees or public office holders to take any part in the preparation of the bid or the performance of the contract if awarded, any time within two (2) years of such persons having left the employ or public office of the City;
- b. Engaging any family members, friends or private business associates of any public office holder which may have, or appear to have, any influence on the procurement process, or subsequent performance of the contract;
- c. Prior involvement by the supplier or affiliated persons in developing the technical specifications or other evaluation criteria for the solicitation;
- d. Prior access to confidential City information by the supplier, or affiliated persons, that is materially related to the solicitation and that was not readily accessible to other prospective suppliers; or
- e. The supplier or its affiliated persons are indebted to or engaged in ongoing or proposed litigation with the City in relation to a previous contract.

**Staff are currently expanding the conflict of interest disclosure requirement**

### **Conflict of interest disclosure during a RFP process**

In a Request for Proposal (RFP) process, PMMD policy requires each evaluation team member to complete a confidentiality and conflict of interest disclosure form. However, employees engaged in other procurement processes or involved in technical specification estimates were not required to file a conflict of interest disclosure form.

As of January 21, 2017, PMMD implemented a revised process related to the evaluation team that reflects changes to the revised Purchasing By-law. Now each type of procurement requires an evaluation team, and that evaluation team must sign a conflict of interest disclosure form, including those involved in the development of technical specifications.

Overall, City staff have recently put in place a number of additional measures to address the conflict of interest issues in contract procurement. The effectiveness of the new policies and procedures will depend on the implementation by front line and supervisory staff, making it important to ensure they are provided with up-to-date and refresher training in this area.

#### **Recommendation:**

- 4. City Council request the Director, Purchasing and Materials Management Division, and the General Manager, Transportation Services Division, to ensure staff members involved in procurement or contract management have up-to-date and clear understanding of the City's conflict of interest policy and procedure requirements, as it relates to the procurement process, and their application, as well as providing periodic refresher training.**

### **B.3. Quality Control Testing Issues**

**Independent quality testing is an important quality assurance and public safety measure**

Transportation Services inspection and supervisory staff are entrusted by the public to independently verify the quality of contractor work. Material testing is part of quality controls to help ensure the City receives value for money.

Site supervisors are responsible for hiring an independent firm to take paving or concrete samples in a controlled manner to verify the quality of work. The samples are used to test whether the material being used meet the contract specifications. Using inferior material or the material that doesn't meet the contract specifications may lead to roads being more prone to developing cracks and potholes.

**Quality-control testing fraud is one of the common frauds in transportation contracts**

The Office of the Inspector General, U.S. Department of Transportation, identified quality-control testing fraud as a common fraud in transportation contracts. According to the Inspector General, quality-control testing fraud can occur when *“a contractor misrepresents the results of quality control tests in order to limit costs or increase profits, earn contract incentives, or avoid project shutdown”*.

During our audit we noted the following:

- After testing indicated inferior paving quality in the field, a decision was made to perform an independent random test of the asphalt at the contractor's yard. A Transportation Services supervisory staff “blind copied” the contractor about the independent test three days before the random test of asphalt.

**City staff “blind copied” the contractor the random testing day and testing results**

- On another contract awarded to the same contractor, the independent test results indicated that the contractor’s asphalt samples did not meet the required specifications. The supervisory staff challenged the test results performed by the independent tester hired by the City, then “blind copied” the contractor on the email communication with the independent testing firm.

According to The Office of the Inspector General, U.S. Department of Transportation, a ‘red flag’ for quality-control testing fraud is when a “*contractor challenging results or attempting to intimidate Quality Assurance inspectors who obtain conflicting results.*” <sup>1</sup>

- In yet another contract, after the same contractor was notified of the sub-standard asphalt test results from his work, the contractor requested the same supervisory staff to meet him on site so they could select new core samples ‘together’ for retesting. It is not uncommon to retest where test results do not meet specification, but for independence, it is paramount that the selection of the core sample sites be determined by the independent tester.

We were not able to interview the supervisory staff member who had retired before our audit commenced.

#### **B.4. Material Overcharging**

Materials Overcharging occurs when a contractor misrepresents the amount of construction material used on a job in order to be paid for more material than the actual quantity.

Over the years the Fraud and Waste Hotline has received allegations of material overcharging involving contractors hired by the City.

In one particular case, a Transportation Services inspector was found to have approved cost sheets for work by two different contractors when no work was actually performed by the contractors. The inspector was also found submitting duplicate cost sheets and cost sheets with incorrect measurements. The inspector was terminated with cause. The contractors still perform work for the City.

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<sup>1</sup> [https://www.oig.dot.gov/sites/default/files/files/OIG\\_Qual-Control.pdf](https://www.oig.dot.gov/sites/default/files/files/OIG_Qual-Control.pdf)



## B.5 Bribery and Kickbacks

**Allegations of bribery and kickbacks have been reported to the Hotline although none have been substantiated**

*Bribery* is where a contractor compensates a government official in exchange for obtaining contracts or permitting overcharges. The Fraud and Waste hotline receives complaints about alleged bribery.

*Kickbacks* is where “a contractor misrepresents the cost of performing work by secretly paying a fee for being awarded the contract and, therefore, inflating the cost to the government.”

Over the years, the Auditor General’s Fraud and Waste Hotline has received several allegations of bribery and kickbacks. To date, no allegations have been substantiated.

### **Recommendations:**

- 5. City Council request that General Manager, Transportation Services Division, to review and enhance the current processes for quality control testing and progress payments for road resurfacing contracts to ensure adequate segregation of duty and independence.**
- 6. City Council request the City Manager to forward this audit report to other relevant City divisions and City Agencies and Corporations which acquire contracted construction services on a regular basis for information.**

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## CONCLUSION

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### **Warning signs of bid rigging exist**

Our audit identified significant control deficiencies and a lack of routine analysis of bid submissions and bidding patterns. This, combined with findings in our first report that highlighted a lack of accurate quantity estimates by staff in issuing road resurfacing tenders, leave the City vulnerable to inflated prices and potential bid rigging by contractors.

There were many telltale signs of bid rigging and inflated pricing and even more concerning was the fact that most District contracts were consistently dominated by a small group of contractors over the past five years.

### **Audit recommendations to help improve procurement processes**

Given the significant cost involved in the City's construction contracts, the City needs to ensure adequate measures are in place to deter and detect potential bid rigging and collusion between bidders. Implementation of the six recommendations in this report will help ensure a fair and competitive procurement process enabling the City to obtain best value and fair market prices, as well as a level playing field for contractors.

We express our appreciation for the co-operation and assistance we received from management and staff of the Purchasing and Materials Management, Transportation Services, and Engineering and Construction Services Divisions.

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## AUDIT OBJECTIVES, SCOPE AND METHODOLOGY

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### **Audit focused on tendering process**

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.

**for paving contracts**

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

**Two audit reports were issued in 2016 and 2017**

In June 2016 the Auditor General issued an audit report on unbalanced bidding. This supplementary report contains the audit findings and recommendations relating to bid rigging and conflicts of interest. The results in this supplementary report are based on an analytical review of local road resurfacing, utility cut and sidewalk repair contracts, and observations indicative of potential bid rigging or collusive behavior amongst certain City contractors. The audit also included bid analysis of a selected road construction contracts delivered by the ECS Division.

**Audit Objective**

The objective of the 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**

The 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.

The audit also included bid analysis of a select road construction contracts delivered by the ECS Division.

**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.

### **Management's Response to the Auditor General's Review of Detection of Warning Signs for Potential Bid Rigging Should be Strengthened**

The City of Toronto expresses appreciation to the Auditor General for undertaking the assessment of procurement practices for construction services, and working with the City Divisions to develop and quickly implement corrective actions. As noted in the management response table below, these actions include updated tools for consistent review and accountability, revised policies and practices for procurement, contract management, estimation and analysis – both in Transportation Services and Purchasing and Materials Management. The tools and corrective actions are also proving valuable to a wide array of other divisional work practices and program areas. In preparing this response, Transportation Services and PMMD developed a comprehensive list of actions that goes beyond the entries in the Management Response Table. The full list is attached as Appendix 2.

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**Recommendation 1:** City Council request the Director, Purchasing and Materials Management Division, to develop and maintain a database of tender, contract, and sub-contracting information for all construction contracts in order to proactively monitor and detect potential bid rigging.

**Management Response:**  Agree     Disagree

**Comments/Action Plan/Time Frame:** Purchasing and Materials Management Division (PMMD) has embarked on three large business transformations to help change and improve the procurement process for the entire organization. The three business transformations have focused on By-law and Policy changes, Technology changes and Organizational/People changes and incorporate many of the Auditor General's recommendations.

During 2016 Council enacted a new Purchasing By-law and Procurement Processes Policy. Those changes include the introduction of a Supplier Code of Conduct to help elevate the expectations of the City's suppliers to always act honestly and in good faith, and provide authority to staff to deal with Suppliers who do not abide by the Supplier Code of Conduct. Additionally, PMMD with Transportation Services developed a more robust unbalanced bidding analysis procedure based on the recommendations of the Auditor General to help detect unbalanced bidding in Transportation road related contracts. This procedure was applied to the 2016 Transportation Services contracts and is being rolled out to all types of contracts in 2017.

With respect to Technology changes, PMMD, as part of the Supply Chain Management Transformation Project, is implementing SAP Ariba to provide for a centralized e-procurement system. SAP Ariba will allow the City to receive bids and proposals electronically, will facilitate the ability to analyze bids/proposals very quickly for issues such as unbalanced bidding, and to review data trends over time to monitor and detect potential issues arising from the bidding process. SAP Ariba will also provide for a centralized contract management module to monitor contract usage, and track vendor performance management. The spend analysis module will provide much better data analytics on spending across the City, a key requirement for the City's new focus on category management, a strategic approach to managing the City's spend. This business transformation will help provide, amongst other things, the tools to help monitor and detect potential bid-rigging.

With respect to Organizational/People changes, PMMD is implementing category management and strategic sourcing which will add additional resources that have knowledge of various markets including construction and who will be integrated into PMMD's and key Divisions' organizations to help analyze the marketplace, including understanding the players in the marketplace and the market conditions. In addition, PMMD will be adding additional resource capacity to provide supporting analysis of the procurement process, with additional focus on education and training in the procurement process. This business transformational change will help provide the skills necessary to conduct the analysis to

recognize the warning signs for potential bid rigging.

Implementation of the database to track tender, contract and subcontract information, as part of the Supply Chain Management Transformation Project, is planned for Q1, 2018.

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**Recommendation 2:** City Council request the Director, Purchasing and Materials Management Division, to provide training on bid rigging, including preventive controls and red flags, to City purchasing staff who are involved in tender preparation or contract administration.

**Management Response:**  Agree     Disagree

**Comments/Action Plan/Time Frame:** PMMD will continue to invite the Competition Bureau to provide training to PMMD staff and other staff involved in contract administration annually and will determine if the training can be done more frequently. Timeframe - immediately.

As part of the implementation of PMMD's Program Review and the introduction of category management and strategic sourcing, a key task is to develop appropriate training modules or leverage existing training modules for all PMMD staff. Training as it relates to bid rigging and conflict of interest will be components that will be included. Timeframe Q2 2018.

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**Recommendation 3:** City Council request the Director, Purchasing and Materials Management Division, to adopt a practice of keeping the identity of prospective bidders who purchased the bid documents confidential.

**Management Response:**  Agree     Disagree

**Comments/Action Plan/Time Frame:** The Director of PMMD will work to deactivate the ability for vendors to see who else purchased a call document on the City's current procurement website by Q2, 2017.

The Director of PMMD will ensure that this restriction continues as part of Supply Chain Management Transformation. Timeframe for implementation is Q1, 2018.

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**Recommendation 4:** City Council request the Director, Purchasing and Materials Management Division, and the General Manager, Transportation Services Division, to ensure staff members involved in procurement or contract management have up-to-date and clear understanding of the City's conflict of interest policy and procedure requirements, as it relates to the procurement process, and their application, as well as providing periodic refresher training.

**Management Response:**  Agree     Disagree

**Comments/Action Plan/Time Frame:** As part of the introduction of the Supplier Code of Conduct through the revised Purchasing By-law, suppliers now have a clearer obligation to disclose conflicts of interest and potential conflicts of interest, including but not limited to:

- hiring any current or former City employees or public office holders that have left the City within the last 2 years;
- any family members, friends or business associates of any Public Office Holder which may have or appear to have any influence on the procurement process or contract management;
- involvement of the supplier in the development of the specifications; and
- prior access to confidential information or where they are in litigation with the City of Toronto

Procurement call documents have been modified to allow for Suppliers to make this disclosure. Further, PMMD has developed a clearer procedure for Evaluation Teams, requiring all staff involved in the preparation of call documents to sign a conflict of interest declaration. This will be rolled out to staff by end of March, 2017.

Specifically to the recommendation, PMMD, in consultation with the General Manager, Transportation Services, the City Solicitor, the Executive Director of HR and other appropriate Divisions, as required, will develop training material on conflicts of interest that may arise in the procurement process and during contract management that compliments the existing training material on the City's Public Service By-law. As part of the development of training material will be a determination of the appropriate timeline for a periodic refresher of the material with staff. Timeframe Q4, 2017.

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**Recommendation 5:** City Council request that General Manager, Transportation Services Division, to review and enhance the current processes for quality control testing and progress payments for road resurfacing contracts to ensure adequate segregation of duty and independence.

**Management Response:**  Agree     Disagree

**Comments/Action Plan/Time Frame:** Transportation Services has implemented a number of actions based on the Auditor General's findings focusing on ensuring consistent practices and centralized oversight of contract activities. Actions taken include:

- harmonizing and adding accountability measures to estimating, tendering and documentation practices;
- implementing a revised Signing Authority Sheet, which is now in-line with Engineering and Construction Services (ECS) and Toronto Water to ensure financial control
- conducting a series of staff and management trainings on estimating, contract administration and contract change management practices and expectations;
- rotating staff to new posts in other districts to improve consistent delivery and reset staff/contractor working relationships;
- transferring the full scope of the local roadway resurfacing program to Engineering and Construction Services ECS as of January 1, 2017
- utilizing the reverse bid analysis tool provided by the Auditor General and applying it to the full complement of 2016 resurfacing contracts
- embarking on a division-wide organizational review to ensure that Transportation Services Division is organized appropriately to deliver the highest quality customer service at the best value for money

Regarding quality control testing and progress payments, Transportation Services has implemented mandatory Checklists for Quantity Estimation and Validation Process, along with a senior level sign-off form. The new process required the maintenance of 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. Transportation Services reaffirmed the requirement for site supervisors to document all material testing by an independent firm to verify the quality of work. Random samples were tested to verify material standards and ensure compliance with City specifications. A decision framework for accepting or rejecting tested material was established with mandatory documentation within the contract file.

**Recommendation 6:** City Council request the City Manager to forward this audit report to other relevant City divisions and City Agencies and Corporations which acquire contracted construction services on a regular basis for information.

**Management Response:**  Agree     Disagree

**Comments/Action Plan/Time Frame:** The City Manager will forward this audit report to other relevant City Divisions. Timeframe April, 2017.



### **Additional Management's Response to the Auditor General's Review of Detection of Warning Signs for Potential Bid Rigging Should be Strengthened**

#### **Actions to Date: Transportation Services and Procurement Management**

##### **TRANSPORTATION SERVICES**

##### **Harmonize and Add Oversight and Accountability Measures to Estimating, Tendering and Documentation Practices**

- Standardized the estimation and tendering process for road resurfacing contracts by completing detailed field estimates and ensuring review/sign-off by Supervisor/Senior engineer
- Develop Engineering Estimating Methodology form
- Implemented Checklist for Quantity Estimation and Validation Process to ensure tracking & accountability
- Ensured measurements taken for estimating purposes are reviewed by management staff, and implemented Contract Sign-Off Form to be signed by Supervisor/Engineer up to Director Level
- Ensured all district file systems clearly document project files, including original handwritten notes and drawings from the field, and documented rationale for changes to estimated quantities
- Ensured that any significant differences between actual quantities and estimates are documented with appropriate explanations and sign-off, including Manager Signature
- Implemented an "Items Overruns/Under Justification Report" to ensure staff justify variances between estimated and actual quantities and provide explanations on why the variances could not have been anticipated
- Implemented third party review process (provided by ECS) for Tender Documents prior to release, to ensure quality control & proactive analysis
- Implemented revised Signing Authority Sheet, which is now in-line with ECS and Toronto Water to ensure financial control
- Working with Engineering & Construction Services staff to develop:
  - New master unit bid list (known as Schedule "A")
  - Revised estimating methodology form
  - Revised standardized contract template

##### **Staff and Management Training**

- Trained staff on standardized estimating procedures and provided newly developed Engineering Estimating Methodology form for guidance
- Coordinated two (2) mandatory training sessions delivered by the Auditor General for staff (165 union staff and 216 non-union staff participated). Delivered on Nov 25 & Dec 1, 2016
- Coordinating mandatory Contract Change Management Training for all 216 management staff (facilitator provided by ECS). Eight (8) sessions arranged for May 26, June 1, 2, 9, 15, 16, 23 & 29<sup>th</sup>, 2017

### **Staff and Program Rotations**

- Rotated District Road Operations Managers (June 2016) to manage new staff and contractors in another Transportation District
- Ensured Inspection and Supervisory staff were not overseeing the same contractors as they did in the previous year
- Transferred Local Road Resurfacing Program to ECS effective January 1, 2017. Communicated through letter from the General Manager, Transportation Services to all staff and provided additional transition sessions through the Director's Team, the Infrastructure Operating Committee (IOC) and with GM Office and ECS leads

### **Unbalanced Bidding Analysis**

- Reviewed prior year contracts (2010-2015) to identify variances for all local road resurfacing contracts (applied reverse bid analysis methodology provided by the Auditor General's Office)
- In coordination with PMMD, developed an unbalanced bidding analysis procedure, including a decision framework for accepting or rejecting materially unbalanced bids for all contracts
- PMMD applied Unbalanced Bidding criteria to all Transportation Services contracts to identify items that might be significantly unbalanced.
- Provided PMMD & City Legal with reverse bid analysis for all 2016 contracts (83 contracts with a total dollar value of \$146,364,776.77) on January 31, 2017. Of the 83 contracts analyzed, 10 warranted additional information because the reverse bid analysis revealed that based on cost alone, the second place bidder would have been awarded the contract.

The total differential in cost for all 10 contracts reviewed is \$586,283.67, approximately 0.4% of the total dollar amount of all 83 contracts.

### **Cultural Change: Transportation Services Organizational Review**

Transportation Services Division is undergoing an organizational review in 2017. The purpose of the review is to determine key priorities and strategic direction, determine if the organization is set up to achieve these goals and implement changes and system improvements to deliver excellent customer service at good value for money. A best practices analysis and organizational assessment will be conducted by a consultant:

- RFP developed and posted on March 8, 2017
- RFP outcome to include, among other things, Audit Recommendations related to:
  - Centralization review
  - Comprehensive database & system development requirements
  - Staff training requirements
  - Review of legislation, procedures and guidelines
  - Review of best practices
  - To be organizational structure proposal

## **PURCHASING AND MATERIALS MANAGEMENT DIVISION (PMMD)**

PMMD has embarked on three large business transformations and taken a number of other steps to change, strengthen and improve the procurement process for the entire organization. These changes also address the AG's recommendations around unbalanced bid analysis, conflict of interest and detection of bid-rigging. The three business transformations have focused on By-law, Policy and Process changes, Technology changes and Organizational/People changes.

### **By-law, Policy and Process Change: Strengthening Procurement Process**

#### *Unbalanced Bidding Analysis*

- PMMD, in consultation with Transportation Services and Legal Services, created the unbalanced bidding analysis procedure.
- The unbalanced bidding analysis was applied to all 2016 Transportation calls.
  - As part of the unbalanced bidding analysis, any line items flagged as being potentially materially unbalanced were reviewed by Transportation Services Directors and referenced on the recommendation memo back to PMMD as to whether the estimated quantities were accurate and the line items could be managed.
- PMMD also began applying the unbalanced bidding analysis to some Engineering and Construction Services contracts in 2016.
- PMMD initially trained 3 buyers who worked on Transportation calls to conduct the unbalanced bidding analysis on the 2016 Transportation Road Contracts (maintenance, utility cuts etc.).
- PMMD in late 2016 began training all PMMD buying staff (43 staff) on how to apply the unbalanced bidding analysis procedure.
- PMMD as part of consultation with the construction industry, advised them that the City was putting into place a more rigorous way to identify unbalanced bidding in May of 2016, and again in February 2017.
- PMMD will roll out the unbalanced bidding analysis to all types of contracts over the course of 2017, beginning with all other construction related calls by March 31, 2017 and all other calls by July 1, 2017.

#### *Revising Purchasing By-law and Procurement Processes Policy*

- Council approved a revised Purchasing By-law and Procurement Processes Policy in July, 2016.
- The revised Purchasing By-law and Procurement Processes Policy came into effect on January 1, 2017.
- Revised Purchasing By-law includes:
  - A Supplier Code of Conduct that creates a number of duties on suppliers such as:
    - Duty to declare any conflicts of interest or potential conflicts of interest including hiring any current or former City employees or public office holders that have left the City within the last 2 years; any family members, friends or business associates of any Public Office Holder which may have or appear to have any influence on the procurement process or contract management, involvement of the supplier in the development of the specifications, prior access to confidential information or where they are in litigation with the City of Toronto;

- Duty not to collude with other suppliers and to disclose any affiliations with other suppliers that might compromise the fairness of the process including subcontracting (i.e. using a competitor as a subcontractor);
  - Duty to disclose any convictions of collusion, bid rigging, charges under the Competition Act; and
  - Suppliers shall certify that they comply with the Code of Conduct and any violation may lead to disqualification from the procurement process or termination of any contract
- Chief Purchasing Official now has the authority, in consultation with the City Solicitor, to temporarily suspend suppliers for 6 months for any violations of the Code of Conduct
- An Ethics provision for City staff that indicates City staff must perform their duties in accordance with the Public Service By-law
- Procurement Processes Policy includes:
  - A specific reference to having an unbalanced bidding analysis
  - Clearer requirements that all Divisional staff involved in the development of a call document will be required to sign a conflict of interest declaration form.

*Addressing Conflict of Interest issues*

- PMMD updated the procurement call document templates to:
  - Require bidders to disclose whether they are proposing to use a competitor as a subcontractor at the time the call closed.
    - In a situation in which one bidder was using another bidder as a subcontractor, PMMD asked the bidder to sign a declaration form based on a form that the Competition Bureau recommends where the bidder certifies that its bid was arrived at independently, and to provide the City more information on the extent of the subcontracting.
    - PMMD is still gathering information on how certain markets are operating to understand the extent of the issue, whether the issue is being caused by how the City tenders the work, or whether it is driven by market conditions, in order to determine an appropriate policy.
  - Require bidders to declare any conflicts of interest or potential conflicts of interest including hiring any current or former City employees or public office holders that have left the City within the last 2 years; any family members, friends or business associates of any Public Office Holder which may have or appear to have any influence on the procurement process or contract management, involvement of the supplier in the development of the specifications, prior access to confidential information or where they are in litigation with the City of Toronto.
- PMMD created a new procedure related to the creation of Evaluation Teams for all types of procurements to ensure that there is proper oversight of how the evaluation is done by Divisions.
  - PMMD on March 20, 2017 will be introducing a revised conflict of interest declaration form for all members of the evaluation team as well as any Divisional staff involved in the preparation of the call document.

- PMMD, in consultation with the General Manager, Transportation Services and other appropriate Divisions will develop a refresher training course on conflicts of interest that may arise in the procurement process and during contract management.

### **Organizational/People Change: Implementation of PMMD's Program Review**

- City Council approved PMMD's Program Review implementation as part of the 2017 Budget Process
- Implementation of the Program Review will move PMMD from providing tactical services to one that provides value added strategic services based on better use of market and spend data.
- Implementation includes the introduction of Category Management and Strategic Sourcing to the City
  - Category Management is the process of managing key spend categories (such as road construction) strategically across the organization with the objective of lowering Total Cost of Ownership and reducing risk
    - Category Management will be overseen by Category Leads who will need to understand and be able to analyze the market for the category they oversee to develop the appropriate sourcing strategy
    - Category Leads will develop sourcing strategies collaboratively with Division partners and these sourcing strategies could include things like:
      - Aggregating demand;
      - Negotiation;
      - Timing sourcing events to respond to market conditions;
      - Better management of suppliers and contract spend; and
      - Changing terms and conditions to reflect market conditions.
- To ensure Category Management works effectively, PMMD will put more emphasis on policy development, policy compliance, data analysis and training including:
  - Working on new policies and standards around contract management, supplier relationships and supplier management;
  - Having more analytical capacity to conduct market research and trend analysis to identify warning signs and areas of improvements;
- Developing more robust training for PMMD and City staff with respect to the procurement process is a critical component to the success of the transformation and such training will include items such as bid rigging and conflicts of interest
- PMMD invited the Competition Bureau to give a presentation on Bid Rigging to PMMD and other Divisional staff on September 26, 2016. Approximately 60 staff attended.
  - PMMD has previously invited the Competition Bureau to give a similar presentation to PMMD and other Divisional staff in 2011, 2012, 2013 and 2014.
- PMMD will continue to invite the Competition Bureau to provide the presentation for PMMD and other Divisional staff.
- Program Review implementation begins in 2017 and is anticipated to conclude in 2020

## Technology Change: Supply Chain Management Transformation Project

- PMMD with I&T support is working to put in place a centralized eProcurement system through the implementation of SAP Ariba that will improve the procurement process, centralize the data to allow for better analysis capabilities and better reporting and provide better oversight of the entire procurement process from end to end.
- Key functionalities of SAP Ariba include:
  - Online Sourcing will allow bidders to submit responses to procurement opportunities online
    - Allows for easier and faster evaluation of bids and proposals without the need for manual data entry into spreadsheets
    - Allows for data such as price sheets to be exported into Excel to facilitate additional analysis such as unbalanced bidding
  - Contract Management will allow for the winning bid to be converted into a contract when the approval approvals are in place
    - Allows vendors to submit invoices to Accounting Services online
    - Provides for reporting on contract management use
  - Vendor Performance Management will provide online tools to track vendor performance based on criteria established by the City of Toronto
  - Spend Analysis tools to allow PMMD to conduct spend analysis reporting which will allow us to leverage spend data as part of strategic sourcing initiatives
  - Overall, it will centralize data with respect to bids and proposals submitted and contracts issued
    - This will allow for easier analysis of who submits bids, who wins, and whether subcontractors were used
- Implementation of the functionality of a database for all calls by Q1, 2018, all other functionality for SAP Ariba is expected by end of 2018.