

Presentation to City Council  
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# Detection of Warning Signs for Potential Bid Rigging Should be Strengthened

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

Jane Ying, CPA, CMA, CIA, CGAP, MHSc  
Assistant Auditor General

Ruchir Patel, CPA, CA, MBA  
Senior Audit Manager



Auditor General's Office  
Integrity, Excellence and Innovation

# Why it Matters

1. City of Toronto awards over \$1 billion annually for construction contracts
2. Transportation Services procures over \$100 million annually for road repair and maintenance work
3. Competitive procurement helps to save costs and ensure 'a level playing field'

# Audit Objectives and Scope

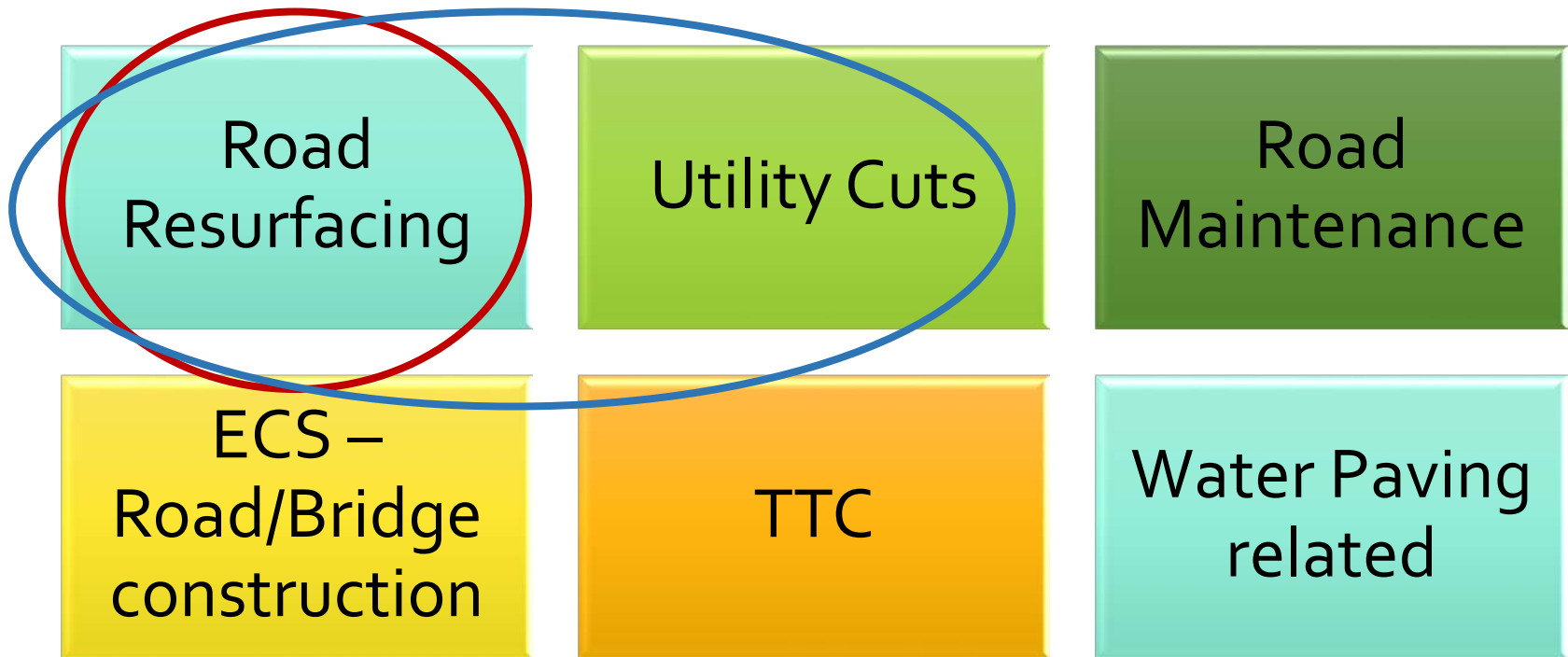
## **To assess whether:**

1. effective controls were in place to ensure fair and competitive tendering process; and
2. the City received the best value for money

# Scope

Report 1: June 2015 Report – *Improving the Tendering Process for Paving Contracts (focused on **unbalanced bidding**)*

Report 2: **This report** – *Detection of Warning Signs for **Potential Bid Rigging** Should be Strengthened*



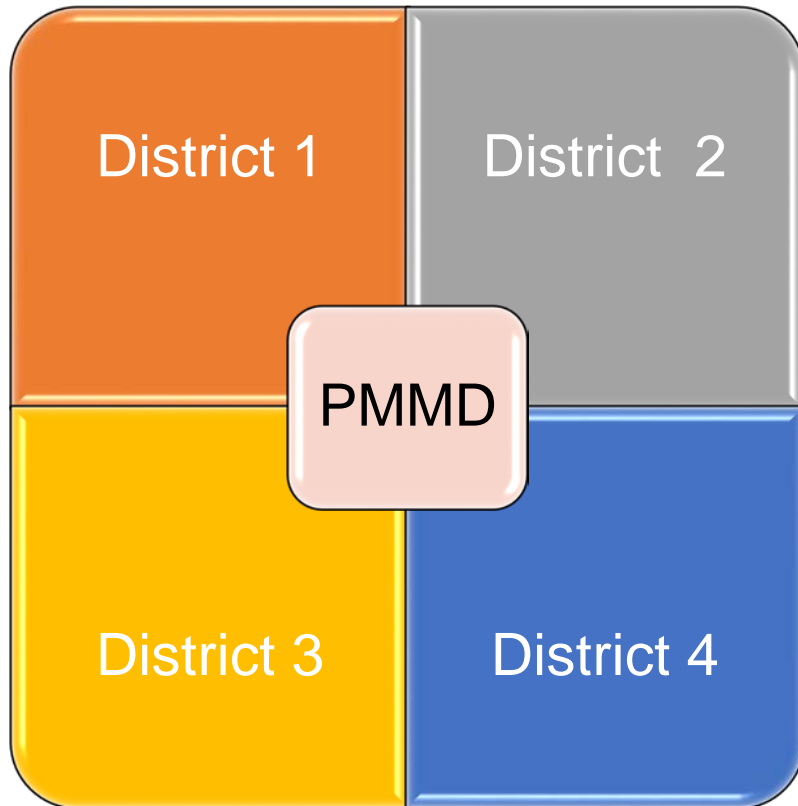


# Overview of Findings

## Four Categories

1. Bid and contractor information not being analyzed to identify overspending and potential problems
2. Poor quantity estimates (staff), and inflated prices (contractors) result in extra costs
3. Monitoring and controls for detection of bid rigging not in place
4. Potential conflicts of interest were not managed effectively

# Category 1: Analyzing Bid and Contractor Information

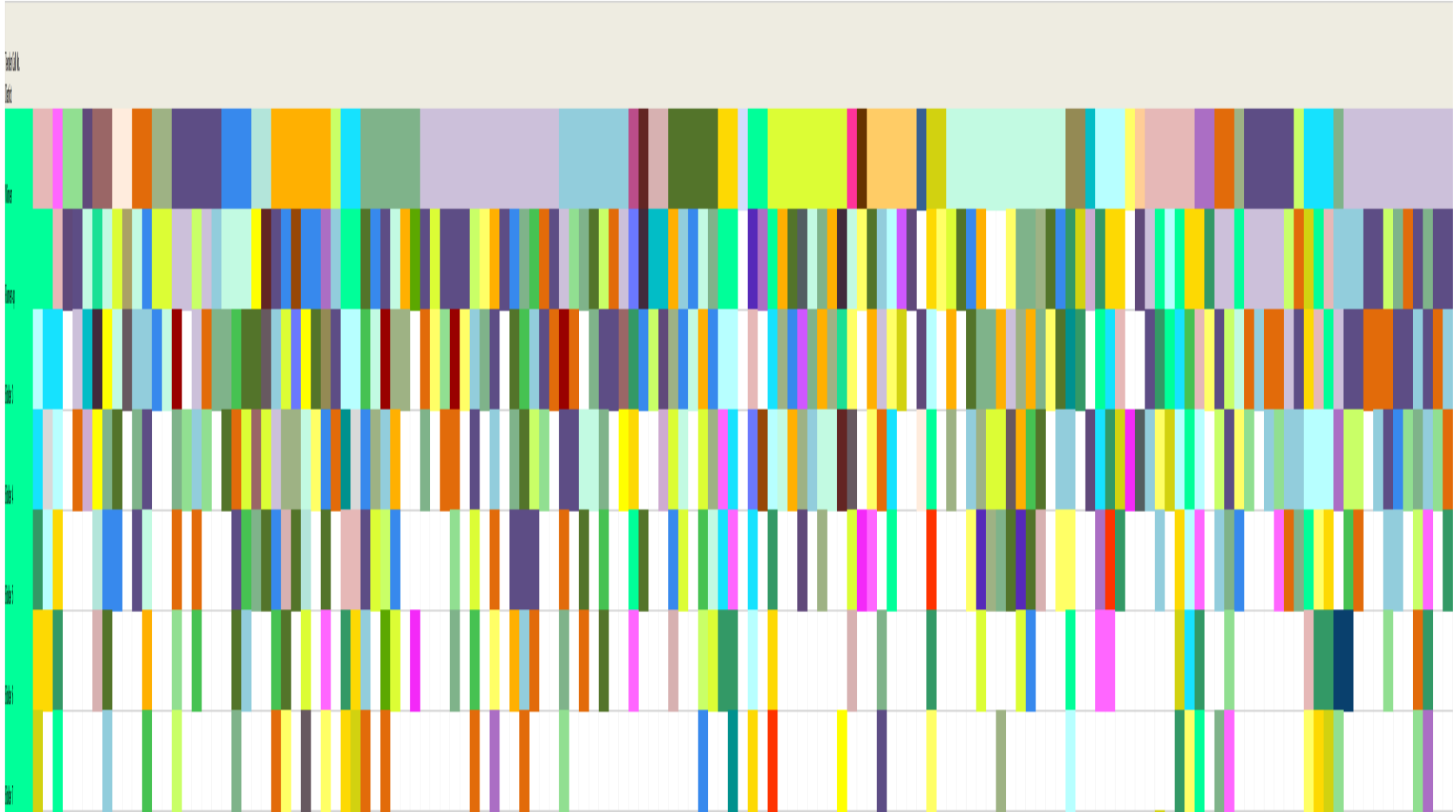


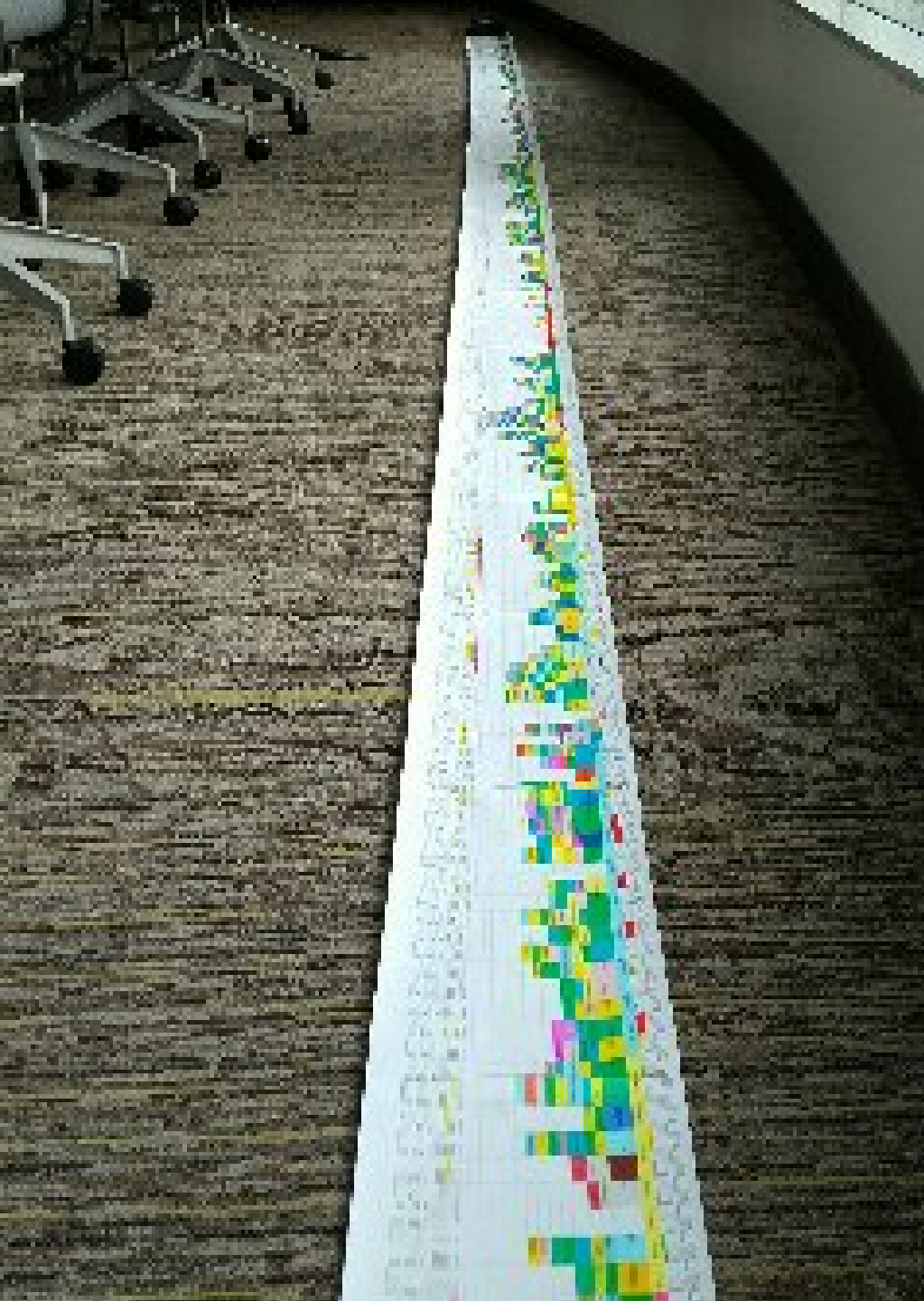
- Each District operated independently
- No standardized information for line items
- No centralized information for bids – Information stored in various Districts

What we expected	What we found	What we needed to do to commence our work
Sequential list of contracts	<b>No list of contracts</b>	Used tender numbers to ensure completeness of contracts for 5 years
Centralized bid analysis and bid documentation	Bid analysis and <b>documentation located in the districts or in PMMD</b>	Centralize bid information, scan all bid sheets for all bids in ever tender for 5 years, convert to excel
Consistent line items use across the City	Every <b>district operated differently.</b>  Line items different between districts . Line items changed within a district in different years	Harmonized the data across the City
Pricing database because engineering estimates include estimated prices	No pricing database	Entered the prices for all bids
Quantities estimated and quantities used to be in one database	Estimated and actual quantities - <b>not in the same database</b>	Quantity estimate from contract files, Actual usage from the TMMS database



# The Waterfront - Building the Data





**1/5<sup>th</sup> of the  
database  
analysis**

# All pricing information for every bid on every tender for five years

The image shows a large, multi-column spreadsheet table. The header is divided into several sections with different background colors: blue, yellow, cyan, green, and pink. The table contains numerous rows of data, with some cells highlighted in orange and others in grey. A small black box highlights a specific cell in the middle of the table. The data appears to be organized into columns representing different categories or metrics, with some cells containing numerical values and others containing text labels.

# Category 2: Inflated Prices

Example 1:

Comparison of bid prices two similar tenders (i.e. same closing date, in the same District, similar scope of work).

Line Item	Tender 1	Tender 2
Cold milling 40 mm	\$47.26 (Contractor A) ↔	\$5.00 (Contractor A)
Cold milling 75-100mm	\$51.00 (Contractor A) ↔	\$4.00 (Contractor A)
Cold milling 75-100mm (Asbestos)	\$60.00 (Contractor A) ↔	\$30.00 (Contractor A)

## Example of Cracks



## Category 2: Inflated Prices (Contd.)

Example 2: Crack Repairs – Impact of Inflated Prices from Contractor A who won the bids

	Estimated QTY	Actual QTY	Overrun	Contractor A's Winning Price (\$)	Second Lowest Bidder's price (\$)	Overpaid (\$)	Total Loss on the contract (\$)
Contract 1	1000 ↔ 13356	13356	1236%	46 ↔ 14	14	440,361	995,890
Contract 2	3500 ↔ 19756	19756	464%	56 ↔ 24	24	641,306	518,781
Contract 3	100 ↔ 7372	7372	7272%	60 ↔ 12	12	360,083	270,752
Contract 4	1000 ↔ 4403	4403	340%	75 ↔ 21	21	240,602	347,821
Contract 5	100 ↔ 5332	5332	5232%	59 ↔ 12	12	254,991	270,638
Contract 6	1000 ↔ 5662	5662	466%	58 ↔ 23	23	201,359	238,903
Contract 7	1000 ↔ 3353	3353	235%	55 ↔ 15	15	135,278	204,365
Contract 8	1000 ↔ 6379	6379	538%	43 ↔ 14	14	186,302	183,559
						<b>2,460,282</b>	<b>3,030,709</b>

# Example of grossly inaccurate quantity estimates

## – Same contract series – year over year

Year	Estimated qty	Actual qty	City's price estimate	Winning bidder's price	Price range among bidders	Per line item – savings had the second lowest bidder been selected
2012	1,000	6,379	\$25	\$42.50	\$13.80-\$42.50	\$183,080
2013	1,000	13,356	\$25	\$46.00	\$13.60-\$46.00	\$432,745
2014	1,000	5,662	\$25	\$58.00	\$23.05-\$58.00	\$197,887
2015	3,500	19,756	\$25	\$56.00	\$21.29-\$56.00	\$476,118

# The winner may not be the best value – Impact of line items from a materially unbalanced bid

## “Estimated / Tendered quantity”

	Est. qty	City's price estimate	Budgeted total cost	Bidder A's price	Bidder A's proposed cost	Bidder B's price	Bidder B's proposed cost
Item A	1,000	\$25	\$25,000	\$46	\$46,000	\$14	\$13,600
Item B	14,500	\$52	\$754,000	\$39	\$565,500	\$56	\$812,000
<b>Total</b>			<b>\$779,000</b>		<b>\$611,500</b>		<b>\$852,600</b>

**Awarded Contract**

## “Actual quantity”

	Actual qty	Qty variance	Bidder A's price	Amount city paid to bidder A	Bidder B's price	Amount city would have paid to bidder B
Item A	13,356	+1236%	\$46	\$614,376	\$14	\$181,642
Item B	7,162	-51%	\$39	\$279,318	\$56	\$401,072
<b>Total</b>				<b>\$893,694</b>		<b>\$582,714</b>

**Difference: \$310,980**

**Lowest Cost – based on actual quantities**



## Example: Overall impact on final contract prices

	Actual amount paid to the winning bidder	Amount that would have been paid to the second lowest bidder	Estimated savings had the second lowest bidder been selected
Contract 1	\$4,322,657	\$3,326,767	\$995,890
Contract 2	\$5,104,115	\$4,585,334	\$518,781
Contract 3	\$2,729,233	\$2,371,167	\$358,065

## Category 3: Controls to identify bid rigging not in place

Examples of Red Flags ...

- A. Market Domination
- B. Market Division
- C. Cover bids / Coordinated bids
- D. Subcontracting



**Not conclusive of bid rigging**

**But flags should be monitored**

# A. Market Domination

*“Same company always winning... This may be more suspicious if one or more companies continually submit unsuccessful bids.”*

*US Dept of Justice*

- **Examples of winning patterns from five contractors (2010 To June 2015)**

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



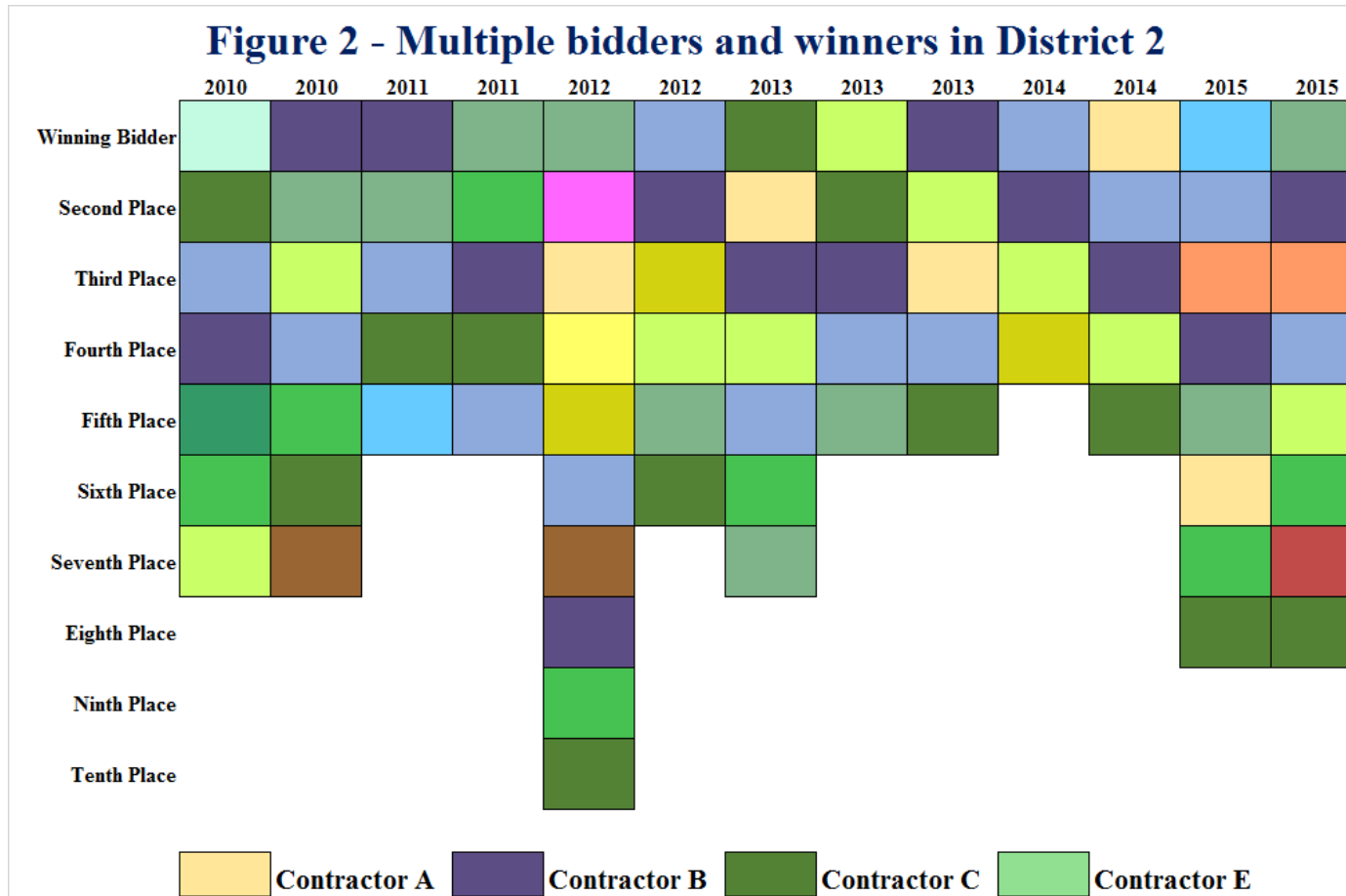
# Market Domination

## Bidding Patterns - (2010 to 2015)

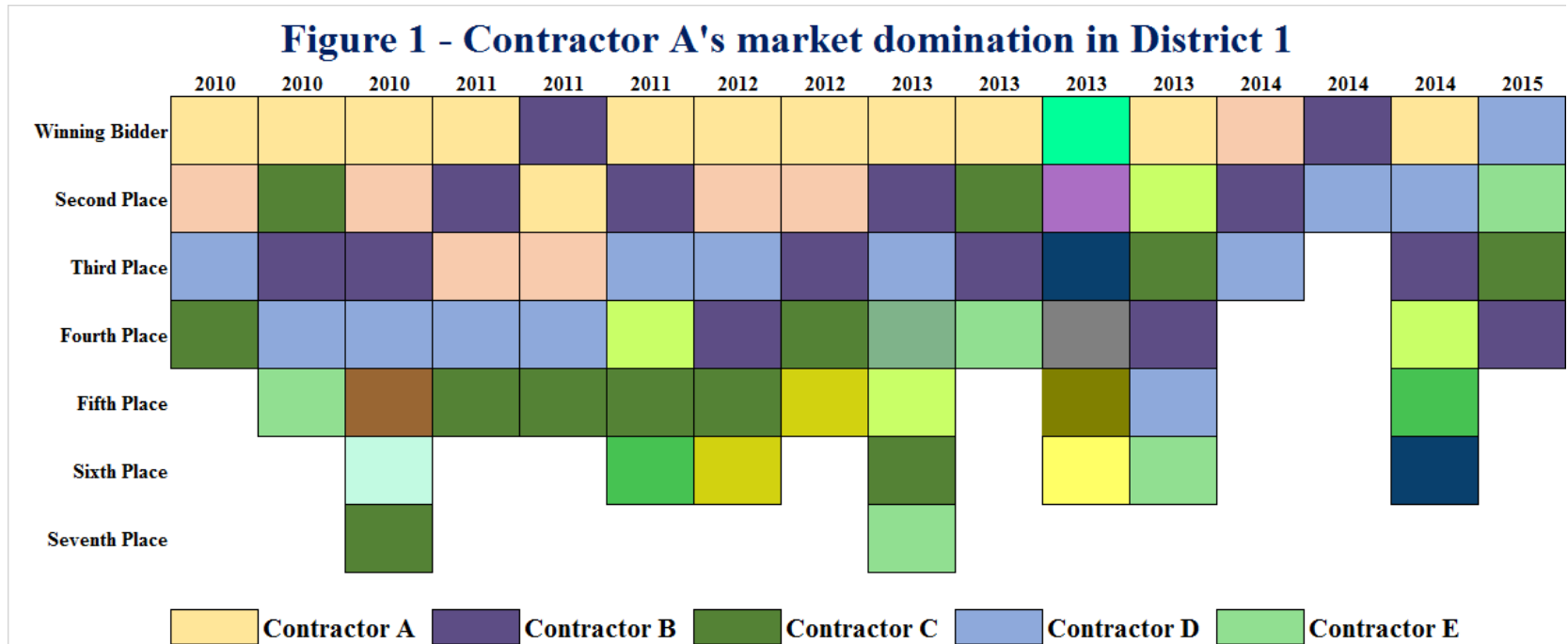
### 55 Local Road Resurfacing Contracts

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

# A. What a Competitive Market looks like...



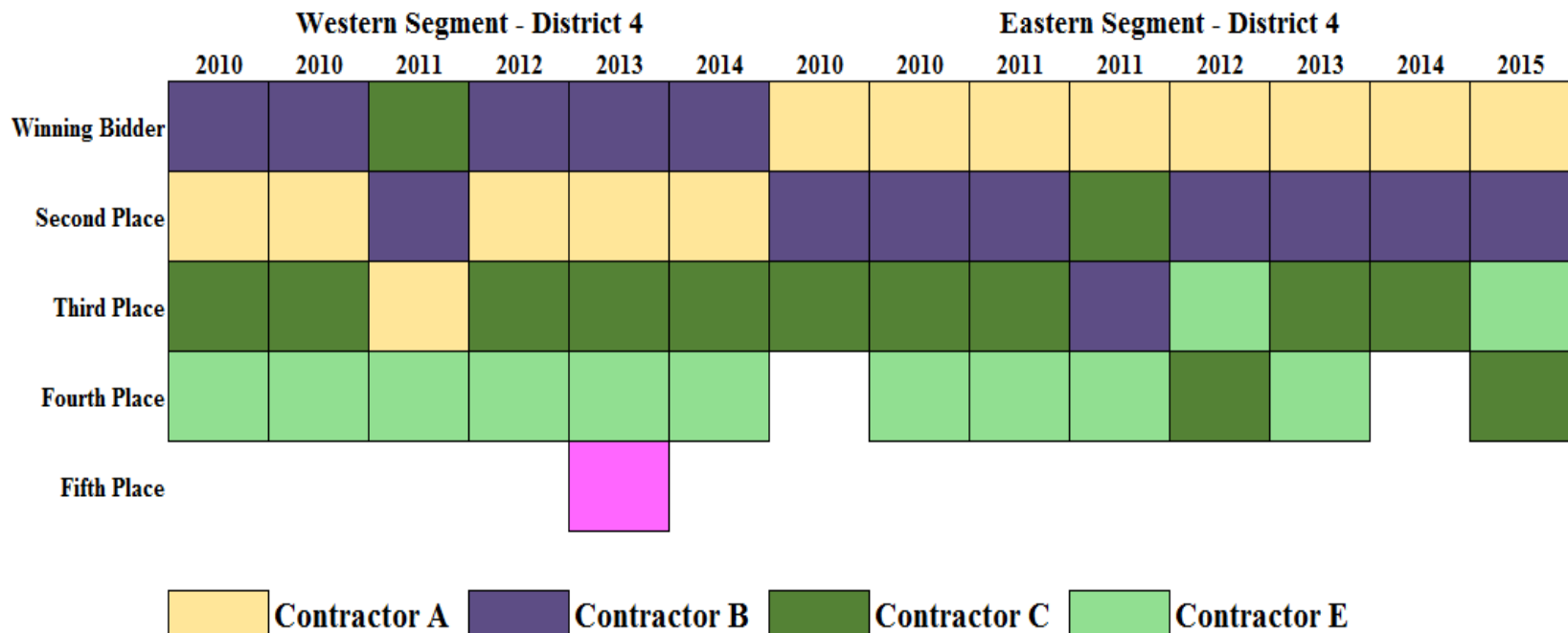
# A. Signs of Market Domination



# B. Signs of Market Division

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

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



# C. Signs of Cover Bidding / Coordinating Bids

*“Suspicious indicators of bid rigging include when we notice the same increment between the bids of each company...”*

US Department of Justice

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



## D. Subcontractors

*“...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***

OECD

- City is not monitoring the subcontracting arrangements
- Several examples where contractors lost on the bid but became subcontractors

# 4. Potential Conflicts of Interest

City is not fully monitoring relationships for emerging conflicts and proper segregation of duties

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

# Timeline

**March 2015** – AG Office began developing informal database of construction contracts and bids to analyze multi-year bidding trends

**November 2015** – High level concerns discussed with City Manager

**January 2016**

Briefed Transportation Mgt about the pervasive nature of the issue -

Provided **audit tools, information and database to inform the upcoming contract cycle**

**February 2016** – **Draft report provided to Management**

We recommended the City conduct its own investigation because the issues were broad, longstanding and deeply concerning – Mgt involved Law Enforcement.

**June 2016** – AG Report: *Improving the Tendering Process for Paving Contracts*

**December 2016** – City concluded its investigation

AG presented to about 600 staff to help educate and raise awareness of the issues to help change the culture and their responsibility to report if they suspect wrongdoing.

**March 2017** – AG Report *Detection of Warning Signs for Potential Bid Rigging Should be Strengthened*

# Overall

1. The **significant control deficiencies and lack of routine analysis** of bid submissions and bidding patterns, combined with **grossly inaccurate quantity** estimates and **inflated prices** left the City vulnerable to potential bid rigging.
2. Each District operated as essentially a separate entity and our review found several red flags, inflated pricing and domination of the market by a few contractors.
3. There are 12 recommendations from two reports. Management accepted all findings and is implementing many measures to address this situation.

***Sunlight is said to be the best of disinfectants;***

***electric light the most efficient policeman***

***Supreme Court Justice, Louis Brandeis 1901***