

**APPENDIX 2**

**CITY OF TORONTO  
CONGESTION MANAGEMENT PLAN 2014-2018 – CAPITAL AND OPERATING COST  
SUMMARY TABLE**

Congestion Management Plan Update (2016-2020)  
**CAPITAL AND OPERATING COSTS SUMMARY**

	2016		2017		2018		2019		2020		Total Estimated Cost	
	Operational Cost	Capital Cost	Operational Cost	Capital Cost	Operational Cost	Capital Cost	Operational Cost	Capital Cost	Operational Cost	Capital Cost	Operational Cost	Capital Cost
<b>A. Status of Congestion Management Plan (2014-2018)</b>												
Adaptive & Related Traffic Signal Control Technology	\$ -	\$ 219,000	\$ -	\$ 750,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 969,000
CCTV Expansions	\$ -	\$ 1,070,000	\$ -	\$ 710,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 1,780,000
Update & Expand Communications Network	\$ -	\$ 890,000	\$ -	\$ 350,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 1,240,000
Active Traffic Management Systems	\$ -	\$ 615,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 615,000
Illuminated Turn Restriction Signs	\$ -	\$ 210,000	\$ -	\$ 200,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 410,000
Fire Station Pre-empt	\$ -	\$ 85,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 85,000
Transit Signal Priority	\$ -	\$ -	\$ -	\$ 200,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 200,000
Bicycle Detection Technology	\$ -	\$ 50,000	\$ -	\$ 50,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 100,000
Traveller Information Strategy	\$ -	\$ 210,000	\$ -	\$ 390,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 600,000
Variable Message Signs	\$ -	\$ 390,000	\$ -	\$ 1,100,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 1,490,000
State of Good Repair & Support of Systems Maintenance	\$ -	\$ 740,000	\$ -	\$ 729,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 1,469,000
Capital Delivery Staff	\$ -	\$ 521,000	\$ -	\$ 521,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 1,042,000
<b>B.1 - Proposed New Capital Projects (CMP 2016-2020)</b>												
Traffic Monitoring Reviews	\$ -	\$ -	\$ -	\$ 150,000	\$ -	\$ 100,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 250,000
Connected / Autonomous Vehicle Preparedness	\$ -	\$ -	\$ -	\$ 100,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 100,000
Traffic Systems Support for Emergency Evacuation Routes	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 250,000	\$ -	\$ 250,000
Cycling Network Plan	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Bicycle Detection Technology	\$ -	\$ 50,000	\$ -	\$ 50,000	\$ -	\$ 50,000	\$ -	\$ 50,000	\$ -	\$ 50,000	\$ -	\$ 250,000
Backup Traffic Operations Centre (TOC)	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 100,000	\$ -	\$ 100,000	\$ -	\$ 500,000	\$ -	\$ 700,000
Upgrade Traffic Detection	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 100,000	\$ -	\$ 100,000	\$ -	\$ 100,000	\$ -	\$ 300,000
State of Good Repair & Support of Systems Maintenance	\$ -	\$ 300,000	\$ -	\$ 300,000	\$ -	\$ 300,000	\$ -	\$ 300,000	\$ -	\$ 300,000	\$ -	\$ 1,500,000
<b>B.2 - Proposed Capital Expansions to Successful (2014-2018) Projects</b>												
Advanced Traffic Management System - System Upgrades	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 200,000	\$ -	\$ 200,000	\$ -	\$ 100,000	\$ -	\$ 300,000
Adaptive (Smart) Traffic Signal Control - Network Deployments	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 1,200,000	\$ -	\$ 1,200,000	\$ -	\$ 1,200,000	\$ -	\$ 3,600,000
Arterial CCTV Camera Program Expansion	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 900,000	\$ -	\$ 900,000	\$ -	\$ 900,000	\$ -	\$ 1,800,000
Illuminated Turn Restriction Signs	\$ -	\$ 200,000	\$ -	\$ 200,000	\$ -	\$ 200,000	\$ -	\$ 200,000	\$ -	\$ 200,000	\$ -	\$ 1,000,000
Integrated Corridor Management - Network Deployments	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 750,000	\$ -	\$ 750,000	\$ -	\$ 750,000	\$ -	\$ 2,250,000
Road & Lane Closure Management System	\$ -	\$ -	\$ -	\$ 1,500,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 1,500,000
Transit Signal Priority (TSP) - Network Deployments	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 1,000,000	\$ -	\$ 200,000	\$ -	\$ 1,000,000	\$ -	\$ 2,200,000

Congestion Management Plan Update (2016-2020)  
**CAPITAL AND OPERATING COSTS SUMMARY**

	2016	2017	2018	2019	2020	Total Estimated Cost
Traveller Information Deployments	\$ -	\$ -	\$ 500,000	\$ -	\$ 500,000	\$ -
Deployment of Travel Time Information for Major Roadways	\$ -	\$ -	\$ 1,300,000	\$ -	\$ 1,200,000	\$ -
Upgrade of Traffic Signal Control Cabinets	\$ -	\$ -	\$ 330,000	\$ -	\$ 330,000	\$ -
Upgrade of Traffic Flow and Traffic Volume Detection	\$ -	\$ -	\$ 100,000	\$ -	\$ 100,000	\$ -
Upgrade of Legacy Expressway Message Signs	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Upgrades To Communications Infrastructure	\$ -	\$ -	\$ 600,000	\$ -	\$ -	\$ -
Risk Assessment for Toronto's ITS Infrastructure	\$ 150,000	\$ -	\$ -	\$ -	\$ -	\$ -
<b>B.3 -- Proposed Operational Support for the CMP Update (2016-2020)</b>						
Signal Timing Optimization Studies	\$ 1,500,000	\$ 1,500,000	\$ -	\$ 1,500,000	\$ -	\$ 7,500,000
Big Data Management and Use	\$ 450,000	\$ 450,000	\$ -	\$ 450,000	\$ -	\$ 2,250,000
Expressway Service Patrols	\$ 800,000	\$ 1,500,000	\$ -	\$ 1,500,000	\$ -	\$ 6,800,000
Public Awareness and Education Program	\$ -	\$ 200,000	\$ -	\$ 200,000	\$ -	\$ 800,000
Travel Demand Management	\$ -	\$ 100,000	\$ -	\$ 100,000	\$ -	\$ 400,000
Coordination with Capital Road Works Projects	\$ -	\$ -	\$ -	\$ -	\$ -	No Cost
Coordination with Toronto Parking Authority and Enforcement	\$ -	\$ -	\$ -	\$ -	\$ -	No Cost
<b>TOTALS</b>						
A. Status of Existing Congestion Management Plan (2014-2018)	\$ -	\$ 5,000,000	\$ -	\$ -	\$ -	\$ 10,000,000
B.1 - Proposed New Capital Projects	\$ -	\$ 350,000	\$ 600,000	\$ -	\$ 550,000	\$ 3,350,000
B.2 - Proposed Capital Expansions to Successful (2014-2018) Projects	\$ -	\$ 350,000	\$ -	\$ -	\$ 4,680,000	\$ 23,890,000
B.3 - Proposed Operational Support for the CMP Update (2016-2020)	\$ 2,750,000	\$ 3,750,000	\$ 3,750,000	\$ 3,750,000	\$ 3,750,000	\$ 17,750,000
<b>Total CMP program ( 2014-2018 + 2016+2020)</b>	<b>\$ 2,750,000</b>	<b>\$ 5,700,000</b>	<b>\$ 7,500,000</b>	<b>\$ 5,230,000</b>	<b>\$ 3,750,000</b>	<b>\$ 17,750,000</b>