



**Memo to
Development Services Committee**

To: Development Services Committee
Copy to: Andy Taylor, CAO
Jim Baird, Commissioner, Development Services Commission
Subject: Whistle Cessation on Stouffville GO Line – Progress Update
Date: November 21, 2016
From: Brian Lee, Director of Engineering x7507

Background

At the Development Services Committee (DSC) meeting on May 24, 2016, staff provided a progress update on the implementation of whistle cessation on the Stouffville GO Line. Council directed staff to provide a further progress update in Fall 2016.

The purpose of this memo is to provide an update on the progress of the whistle cessation project since May 2016.

1) Updated Crossing Safety Upgrade Estimates

Further to the May 24 report, staff has revised the safety upgrades measures and updated the cost estimates for safety enhancement of the 13 grade crossings as shown below:

	Previous share as reported on May 24	Updated Share
Markham	\$1.26M	\$2.30M
York Region	\$2.20M	\$3.80M
Metrolinx	\$1.94M	\$0.098M
Total =	\$5.40M	\$6.198M

The revisions are based on comments from York Region and Metrolinx:

Safety Upgrades:

- Four (4) new pedestrian gates were added for Highway 7 crossing at the request of the Region,

- One (1) pedestrian gate for Eureka Street on the south side was eliminated. Previously it was added by mistake. Both AECOM/NAISH reports did not identify the need for a pedestrian gate at this crossing.

Cost Estimates and Cost Shares:

- Cost estimates are revised based on the above safety upgrade changes, i.e., three (3) additional pedestrian gates. Estimated cost for each gate = \$200,000. Therefore, the total increase (including 30% soft cost + 1.76% Tax implication) = \$0.79M,
- The costs of all pedestrian gates are now assigned to the Road Authority. Previously some of the pedestrian gates costs were incorrectly assigned to Metrolinx,
- Some minor changes to cost sharing between Metrolinx and York Region due to the existing Board Orders/ cost sharing agreements for the existing Regional crossings.

The updated crossing summary and estimated cost at each crossing is provided in Attachment A.

York Region has accepted the updated cost estimate, and the amount will be included in the Region's 2017 Capital Project Budget, see Attachment B. This budget is subject to Regional Council approval. Metrolinx has also verbally accepted the updated cost estimate. Metrolinx will not be transferring any funds to the City, but will take on additional work for the Regional and City crossings as part of its ongoing crossing improvements, to the equivalent amount of its contribution. This will reduce the scope and cost for the City's construction contract.

Council has previously approved capital funding of \$0.56M and a 2017 capital budget request has been submitted in the amount of \$1.74M (subject to Council approval) to fund the \$2.3M (\$1.74M + 0.56M) Markham share.

2) Memorandum of Understanding between City, Region and Metrolinx

City Legal Department is currently preparing a Memorandum of Understanding between City, Region and Metrolinx (the "MOU") to define the roles and responsibilities of the three parties in the whistle cessation implementation. At a meeting on February 16, 2016, Council has delegated the authority to the Mayor and Clerk to execute this MOU.

3) Consulting Services for the Detailed Design Assignment

In July 2016, the City retained WSP/MMM Group as the consultant for the detailed design and contract administration services of the safety upgrade works at a project budget of \$435,233.90 (excluding tax).

The design work is on target for completion by Q1 of 2017. The design will have to be reviewed and approved by York Region and Metrolinx.

4) Pedestrian Gates and Pedestrian Maze Barriers

As part of the detailed design assignment, a number of detailed design coordination meetings were held with the Region and Metrolinx. Metrolinx has now indicated that its previous minimum requirement for pedestrian maze barriers at every crossing will not be required for those crossings with or recommended for pedestrian gates (see Attachments C and D for a maze barrier and a pedestrian gate respectively.) Both City and Regional staff agree that this is a reasonable approach and will not compromise the pedestrian safety at the crossing. The safety consultants' reports (AECOM and NAISH reports) did not identify the need for a maze barrier when pedestrian gates already exist or are recommended. The detailed design will not include maze barriers where pedestrian gates are recommended. This will eliminate about 20 maze barriers and will result in a lower construction cost.

5) Metrolinx Indemnification Agreement

Metrolinx has provided a copy of a sample indemnification agreement which is being reviewed by the York Region and City Legal departments. Metrolinx requires the road authorities to execute the indemnification agreement before whistling cessation can be permitted.

6) Public Education/Safety Program and Trespassing

As mentioned in the May 24, 2016 report, staff contacted Operation Lifesaver with respect to safety and education program. Operation Lifesaver (<http://operationlifesaver.ca/>) is a public-private partnership educating road users about the hazards surrounding rail corridors, crossings and trains. In terms of preventing trespassing incidents, this will be done through education, engineering and enforcement. The education and public awareness program will be implemented prior to the start of whistle cessation. A meeting is being scheduled with Operation Lifesavers for January 2017.

Attachments:

Attachment A: Updated Crossing Summary and Estimated Cost at Each Crossing.

Attachment B: Letter from Region of York confirming the cost estimates of 13 grade crossing upgrades works.

Attachment C: Maze Barrier.

Attachment D: Pedestrian Gate.

Attachment A: Updated Crossing Summary and Estimated Cost at Each Crossing

Date: June 8, 2016

Summary of Preliminary Cost Estimates for 13 Crossings

No.	Crossing	Estimated Cost	Cost Sharing		
			Metrolinx	Region	Markham
1.	Major Mackenzie Dr.	\$34,700	\$4,000	\$28,700	\$2,000
2.	Castlemore Ave	\$12,700	\$850		\$11,850
3.	Bur Oak Ave	\$816,700	\$4,850		\$811,850
4.	16 th Ave	\$266,100	\$8,450	\$249,150	\$8,500
5.	Main Street Markham	\$66,400	\$1,700		\$64,700
6.	Snider Drive	\$55,950	\$3,600		\$52,350
7.	McCowan Road	\$858,200	\$7,600	\$846,600	\$4,000
8.	Kennedy Road (North)	\$68,400	\$8,000	\$50,400	\$10,000
9.	Main Street Unionville	\$81,450	\$13,775		\$67,675
10.	Eureka Street	\$54,200	\$5,350		\$48,850
11.	Highway 7	\$857,200	\$7,350	\$845,850	\$4,000
12.	Denison Street	\$672,700	\$8,850		\$663,850
13.	Kennedy Road (South)	\$854,200		\$850,200	\$4,000
	Sub-total :	\$4,698,900 ≈ (\$4.70M)	\$74,375 ≈ (\$0.08M)	\$2,870,900 ≈ (\$2.87M)	\$1,753,625 ≈ (\$1.75M)
	Include 30% soft cost + 1.76% tax impact	\$1,492,370.64	\$23,621.50	\$911,797.84	\$556,951.30
	Total =	\$6,191,270.64 ≈ \$6.19M	\$97,996.50 ≈ \$0.098M	\$3,782,697.84 ≈ \$3.78M	\$2,310,576.30 ≈ \$2.31M

Date: June 8, 2016

Crossing at: Major Mackenzie Drive

Mileage: 44.96

Road Authority: York Region

Is there evidence of trespassing: No

Warning System:

For Vehicles		For Pedestrians
FLB & G		Sidewalk in one side- No additional measures.

Findings & Recommendations:

	Recommendations/Findings	Triggered by		Estimated Cost	Proposed Cost Sharing (%)		
		AW	GCR		Metrolinx	Region	Markham
1	Pavement markings and signs should be corrected to conform to MUTCD Standards (AWS, X-markings, Stop Bar)		√	\$4,000 (X-marking: 2*\$1,000) (Stop bars: 2*\$1,000)		\$4,000 (100%)	
2	Install/relocate WA-18 signs		√	\$1,700 (2*\$850)		\$1,700	
3*	Brush around the crossing should be cut back		√	\$4,000 (2*\$2,000)	\$4,000 (100%)		
4	Install two (2) Maze "Z" Barriers (South side only)	√		\$20,000 (2*\$10,000)		\$20,000 (100%)	
5	Install "No Train Whistle at This Crossing" signs	√		\$3,000 (2* \$1,500)		\$3,000 (100%)	
6	Add two (2) AODA surface treatments on sidewalks (South side only)	√		\$2,000 (2* \$1,000)			\$2,000 (100%)
Sub-total =				\$34,700	\$4,000	\$28,700	\$2,000

§ : Cost sharing based on the existing Board Order/Crossing maintenance agreement between the Road Authority and Rail Authority.

* Metrolinx needs to confirm if whistle cessation be implemented without completion of this work. If not, then the City could upfront the cost for this work and subsequently reimbursements from Metrolinx.

Date: June 8, 2016

Crossing at: Castlemore Ave

Mileage: 45.47

Road Authority: City of Markham

Is there evidence of trespassing: No

Warning System:

For Vehicles	For Pedestrians
FLB & G	Maze gate (4)- Both sides have sidewalks

Findings & Recommendations:

	Recommendations	Triggered by		Estimated Cost	Proposed Cost Sharing (%)		
		AW	GCR		Metrolinx	Region	Markham
1	Pavement markings and signs should be corrected to conform to MUTCD Standards (AWS, X-markings, Stop Bar)		√	\$4,000 (X-Marking: 2*\$1,000) (Stop bars: 2*\$1,000)			\$4,000 (100%)
2*	Install/relocate WA-18 signs		√	\$1,700 (2*\$850)	\$850 (50%)		\$850 (50%)
3	Install "No Train Whistle at This Crossing" signs	√		\$3,000 (2* \$1,500)			\$3,000 (100%)
4	Install four (4) AODA surface treatments on sidewalks.	√		\$4,000 (4*\$1,000)			\$4,000 (100%)
Sub-total =				\$12,700	\$850		\$11,850

* Metrolinx needs to confirm if whistle cessation be implemented without completion of this work. If not, then the City could upfront the cost for this work and subsequently reimbursements from Metrolinx.

Date: June 8, 2016

Crossing at: Bur Oak Ave

Mileage: 45.74

Road Authority: City of Markham

Is there evidence of trespassing: No

Warning System:

For Vehicles	For Pedestrians
FLB & G	Maze gate (4)- both sides have sidewalks

Findings & Recommendations:

	Recommendations	Triggered by		Estimated Cost	Proposed Cost Sharing (%)		
		AW	GCR		Metrolinx	Region	Markham
1	Pavement markings and signs should be corrected to conform to MUTCD Standards (AWS, X-markings, Stop Bar)		√	\$4,000 (X-marking: 2*\$1,000) (Stop bars: 2*\$1,000)			\$4,000 (100%)
2*	Install/relocate WA-18 signs		√	\$1,700 (2*\$850)	\$850 (50%)		\$850 (50%)
3	Install four (4) pedestrian gates with active warning lights and bells.	√		\$800,000 (4* \$200,000)			\$800,000 (100%)
4*	Brush around the crossing should be cut back.		√	\$4,000 (2*\$2,000)	\$4,000 (100%)		
5	Install "No Train Whistle at This Crossing" signs.	√		\$3,000 (2* \$1,500)			\$3,000 (100%)
6	Install four (4) AODA surface treatments on sidewalks	√		\$4,000 (4*\$1,000)			\$4,000 (100%)
Sub-total =				\$816,700	\$4,850		\$811,850

* Metrolinx needs to confirm if whistle cessation be implemented without completion of this work. If not, then the City could upfront the cost for this work and subsequently reimbursements from Metrolinx.

Date: June 8, 2016

Crossing at: 16th Ave

Mileage: 46.31

Road Authority: York Region

Is there evidence of trespassing: No

Warning System:

For Vehicles	For Pedestrians
FLB & G	Arm gates cover the sidewalks- both sides have sidewalks.

Findings & Recommendations:

	Recommendations	Triggered by		Estimated Cost	Proposed Cost Sharing (%)		
		AW	GCR		Metrolinx	Region	Markham
		1 [§]	Install RB-1 "Maximum Speed Signs"			√	\$1,700 (2*\$850)
2*	Railway Crossing Sign is to be relocated		√	\$1,700 (2*\$850)	\$850 (50%)	\$850 (50%)	
3 [§] *	Pavement markings and signs should be corrected to conform to MUTCD Standards (AWS, X-markings, Stop Bar)		√	\$4,000 (x-Marking: 2*\$1,000) (Stop bars: 2*\$1,000)	\$2,000 (50%)	\$2,000 (50%)	
4 [§] *	Grading around the signal foundation is required as it is greater than 0.1 meters from ground level		√	\$1,500 (2*\$750)	\$750 (50%)	\$750 (50%)	
5*	Sightlines are impeded in the SW & NW quadrants due to brush and it should be trimmed.		√	\$4,000 (2*\$2,000)	\$4,000 (100%)		
6*	Install "Do NOT Stop on Tracks" sign		√	\$1,700 (2*\$850)	\$850 (50%)	\$850 (50%)	
7	Install four (4) Maze "Z" Barriers	√		\$40,000 (4*\$10,000)		\$40,000 (100%)	
8	Install "No Train Whistle at This Crossing" signs	√		\$3,000 (2* \$1,500)		\$3,000 (100%)	
9	Install one (1) pedestrian gate in North West quadrant (geographic)	√		\$200,000 (1*\$200,000)		\$200,000 (100%)	
10	Install four (4) AODA surface treatments beyond gates.	√		\$4,000 (4*\$1,000)			\$4,000 (100%)
11	Install sidewalk at plaza driveway	√		\$1,500			\$1,500 (100%)
12	Install fence at railway Right-of-Way to control pedestrian movement	√		\$3,000			\$3,000 (100%)
Sub-total =				\$266,100	\$8,450	\$249,150	\$8,500

Date: June 8, 2016

§ : Cost sharing based on the existing Board Order/Crossing maintenance agreement between the Road Authority and Rail Authority.

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Date: June 8, 2016

Crossing at: Main Street Markham

Mileage: 46.95

Road Authority: City of Markham

Is there evidence of trespassing: No

Warning System:

For Vehicles		For Pedestrians
FLB & G		Gate arms cover the sidewalks -Both sides have sidewalks
		Fence in one side

Findings & Recommendations:

	Recommendations	Triggered by		Estimated Cost	Proposed Cost Sharing (%)		
		AW	GCR		Metrolinx	Region	Markham
1	Sidewalk width is less than 1.5 meters (1.2 meters to the East and 1.4 meters to the West)		√	\$12,000 (4*\$3,000)			\$12,000 (100%)
2*	Railway Crossing Sign requires relocation as it is further than the allowed 0.3 meters to 2.0 meters from the face of the curb		√	\$1,700 (2*\$850)	\$850 (50%)		\$850 (50%)
3	Pavement markings and signs should be corrected to conform to MUTCD Standards (AWS, X-markings, Stop Bar)		√	\$4,000 (X-marking: 2*\$1,000) (Stop bars: 2*\$1,000)			\$4,000 (100%)
4*	Install "Do Not Stop on Tracks" sign		√	\$1,700 (2*\$850)	\$850 (50%)		\$850 (50%)
5	Install "No Train Whistle at This Crossing" signs	√		\$3,000 (2* \$1,500)			\$3,000 (100%)
6	Install four (4) AODA surface treatments on sidewalks	√		\$4,000 (4*\$1,000)			\$4,000 (100%)
7	Install four (4) Maze "Z" Barriers	√		\$40,000 (4*\$10,000)			\$40,000 (100%)
Sub-total =				\$66,400	\$1,700		\$64,700

* Metrolinx needs to confirm if whistle cessation be implemented without completion of this work. If not, then the City could upfront the cost for this work and subsequently reimbursements from Metrolinx.

Date: June 8, 2016

Crossing at: Snider Drive

Mileage: 47.17

Road Authority: City of Markham

Is there evidence of trespassing: No

Warning System:

For Vehicles		For Pedestrians
FLB & G		No specific measures- both sides have sidewalks.

Findings & Recommendations:

	Recommendations	Triggered by		Estimated Cost	Proposed Cost Sharing (%)		
		AW	GCR		Metrolinx	Region	Markham
1*	WA-18 sign is installed on the north approach, however, it is necessary to install WA-19 signs on either side of the South approach (on Bullock Road)		√	\$1,700 (2*\$850)	\$850 (50%)		\$850 (50%)
2*	Signal foundation is more than 0.1 meters from the ground level on the north approach needs to be regraded		√	\$750	\$750 (100%)		
3	Pavement markings and signs should be corrected to conform to MUTCD Standards (AWS, X- markings, Stop Bar)		√	\$3,000 (X-marking: 1*\$1,000) (Stop bars: 2*\$1,000)			\$3,000 (100%)
4*	Removal of trees in the NE quadrant.		√	\$2,000	\$2,000 (100%)		
5	Install four (4) Maze "Z" Barriers	√		\$40,000 (4*\$10,000)			\$40,000 (100%)
6	Install "No Train Whistle at This Crossing" signs	√		\$4,500 (3* \$1,500)			\$4,500 (100%)
7	Install four (4) AODA surface treatments on sidewalks	√		\$4,000 (4*\$1,000)			\$4,000 (100%)
Sub-total =				\$55,950	\$3,600		\$52,350

* Metrolinx needs to confirm if whistle cessation be implemented without completion of this work. If not, then the City could upfront the cost for this work and subsequently reimbursements from Metrolinx.

Date: June 8, 2016

Crossing at: McCowan Road

Mileage: 48.38

Road Authority: York Region

Is there evidence of trespassing: No

Warning System:

For Vehicles		For Pedestrians
FLB & G		No specific measures- Both sides have sidewalks

Findings & Recommendations:

	Recommendations	Triggered by		Estimated Cost	Proposed Cost Sharing (%)		
		AW	GCR		Metrolinx	Region	Markham
1 ^{§*}	Signal foundation is more than 0.1 meters from the ground level on the North approach and requires regrading		√	\$1,500 (2*\$750)	\$750 (50%)	\$750 (50%)	
2 ^{§*}	Pavement markings and signs should be corrected to conform to MUTCD Standards (AWS, X-markings, Stop Bar)		√	\$4,000 (X-Marking: 2*\$1,000) (Stop Bars: 2*\$1,000)	\$2,000 (50%)	\$2,000 (50%)	
3*	Install/relocate WA-18 signs		√	\$1,700 (2*\$850)	\$850 (50%)	\$850 (50%)	
4	a) Install pedestrian gate for the west sidewalk	√		\$400,000 (2*\$200,000)		\$400,000 (100%)	
	b) Install Pedestrian gate for the east sidewalk	√		\$400,000 (2*\$200,000)		\$400,000 (100%)	
5*	The removal of the brush and trees in the NE, NW, and SW quadrants are required.		√	\$4,000 (2*\$2,000)	\$4,000 (100%)		
6	Install "No Train Whistle at This Crossing"	√		\$3,000 (2* \$1,500)		\$3,000 (100%)	
7	Install four (4) AODA surface treatments on sidewalks	√		\$4,000 (4*\$1,000)			\$4,000 (100%)
8	Install four (4) Maze "Z" Barriers	√		\$40,000 (4*\$10,000)		\$40,000 (100%)	
Sub-total =				\$858,200	\$7,600	\$846,600	\$4,000

§ : Cost sharing based on the existing Board Order/Crossing maintenance agreement between the Road Authority and Rail Authority.

* Metrolinx needs to confirm if whistle cessation be implemented without completion of this work. If not, then the City could upfront the cost for this work and subsequently reimbursements from Metrolinx.

Date: June 8, 2016

Crossing at: Kennedy Road (North)

Mileage: 49.42

Road Authority: York Region

Is there evidence of trespassing: No

Warning System:

For Vehicles		For Pedestrians
FLB & G		No special measures- Both sides have sidewalks.

Findings & Recommendations:

	Recommendations	Triggered by		Estimated Cost	Proposed Cost Sharing (%)		
		AW	GCR		Metrolinx	Region	Markham
1	NW and SW sidewalk needs to be continued, and completed over the crossing		√	\$6,000 (2*\$3,000)			\$6,000 (100%)
2	Pavement markings and signs should be corrected to conform to MUTCD Standards (AWS, X-markings, Stop Bar)		√	\$4,000 (x-Marking: 2*1,000) (Stop bars: 2*\$1,000)		\$4,000 (100%)	
3 ^s	Install RB-1 "Maximum Speed Signs"		√	\$1,700 (2*\$850)		\$1,700 (100%)	
4 ^s	Install/relocate WA-18 signs		√	\$1,700 (2*\$850)		\$1,700 (100%)	
5*	Sightlines are impeded in all quadrants due to trees and houses. Trees are to be trimmed /removed.		√	\$8,000 (4*\$2,000)	\$8,000 (100%)		
6	Install four (4) Maze "Z" Barriers on sidewalks	√		\$40,000 (4*\$10,000)		\$40,000 (100%)	
7	Install "No Train Whistle at This Crossing" signs	√		\$3,000 (2* \$1,500)		\$3,000 (100%)	
8	Install four (4) AODA surface treatments on sidewalks	√		\$4,000 (4*\$1,000)			\$4,000 (100%)
Sub-total =				\$68,400	\$8,000	\$50,400	\$10,000

§ : Cost sharing based on the existing Board Order/Crossing maintenance agreement between the Road Authority and Rail Authority.

* Metrolinx needs to confirm if whistle cessation be implemented without completion of this work. If not, then the City could upfront the cost for this work and subsequently reimbursements from Metrolinx.

Date: June 8, 2016

Crossing at: Main Street Unionville

Mileage: 49.78

Road Authority: City of Markham

Is there evidence of trespassing: No

Warning System:

For Vehicles	For Pedestrians
FLB & G	No special measures- both sides have sidewalks

Findings & Recommendations:

	Recommendations	Triggered by		Estimated Cost	Proposed Cost Sharing (%)		
		AW	GCR		Metrolinx	Region	Markham
1*	Install RB-1 "Maximum Speed Signs" on the north approach		√	\$850	\$425 (50%)		\$425 (50%)
2*	Install/relocate WA-18 signs		√	\$1,700 (2*\$850)	\$850 (50%)		\$850 (50%)
3	Pavement markings and signs should be corrected to conform to MUTCD Standards (AWS, X-markings, No Passing lines, Stop Bar)		√	\$3,000 (X-marking: 2*\$1,000) (No Passing: 1*\$1,000)			\$3,000 (100%)
4*	Regrading around the signal foundation as it is greater than 0.1 meters from the ground level		√	\$1,500 (2*\$750)	\$1,500 (100%)		
5*	Sightlines are impeded in NE, NW, and SW quadrants due to hedges/brush. The removal of hedges/brush is required.		√	\$6,000 (3*\$2,000)	\$6,000 (100%)		
6	Parking sign in the NW quadrant should be removed as a parked vehicle obstructs visibility of the crossing warning system (<i>Need clarification from AECOM</i>)		√	\$1,000			\$1,000 (100%)
7	Install four (4) Maze "Z" Barriers on sidewalks	√		\$40,000 (4*\$10,000)			\$40,000 (100%)
8	Install "No Train Whistle at This Crossing" signs	√		\$3,000 (2* \$1,500)			\$3,000 (100%)
9	Install four (4) AODA surface treatments on sidewalks	√		\$4,000 (4*\$1,000)			\$4,000 (100%)
10	Install chain link fence and signage	√		\$15,400			\$15,400 (100%)
11*	Clean up area around the crossing (graffiti from signal bungalow)		√	\$5,000	\$5,000 (100%)		
Sub-total =				\$81,450	\$13,775		\$67,675

Date: June 8, 2016

* Metrolinx needs to confirm if whistle cessation be implemented without completion of this work. If not, then the City could upfront the cost for this work and subsequently reimbursements from Metrolinx.

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Date: June 8, 2016

Crossing at: Eureka Street

Mileage: 49.94

Road Authority: City of Markham

Is there evidence of trespassing: No

Warning System:

For Vehicles	For Pedestrians
FLB & G	No special measures- sidewalk in one side.

Findings & Recommendations:

	Recommendations	Triggered by		Estimated Cost	Proposed Cost Sharing (%)		
		AW	GCR		Metrolinx	Region	Markham
1*	Install RB-1 "Maximum Speed Signs"		√	\$1,700 (2*\$850)	\$850 (50%)		\$850 (50%)
2	West sidewalk width needs to be addressed as it is less than required (1.3 meters instead of 1.5 meters)		√	\$6,000 (2*\$3,000)			\$6,000 (100%)
3	Sidewalk slope in the NW and SW quadrants are greater than allowed (NW-1.1% , SW- 1.4% instead of 1%) and should be corrected		√	\$6,000 (2*\$3,000)			\$6,000 (100%)
4	Pavement markings and signs to conform to MUTCD Standards (AWS, X-markings, "No Passing" Lines, Stop Bars * note that there were no X-markings)		√	\$6,000 (X-Marking: 2*\$1,000) (No Passing: 2*\$1,000) Stop bars: 2*\$1,000)			\$6,000 (100%)
5*	Sightlines are impeded in all quadrants due to bushes, houses, and curvature of rail beyond the crossing. Brush should be removed.		√	\$4,000	\$4,000 (100%)		
6	Install "No Train Whistle at This Crossing" signs	√		\$3,000 (2* \$1,500)			\$3,000 (100%)
7	Install fencing on east side of the crossing	√		\$5,000			\$5,000 (100%)
8*	Remove graffiti from signals box		√	\$500	\$500 (100%)		
9	Install two (2) AODA surface treatments on sidewalks	√		\$2,000			\$2,000 (100%)
10	Install two (2) Maze "Z" Barriers on sidewalks	√		\$20,000 (2*\$10,000)			\$20,000 (100%)
Sub-total =				\$54,200	\$5,350		\$48,850

* Metrolinx needs to confirm if whistle cessation be implemented without completion of this work. If not, then the City could upfront the cost for this work and subsequently reimbursements from Metrolinx.

Date: June 8, 2016

Crossing at: Highway 7

Mileage: 50.13

Road Authority: York region

Is there evidence of trespassing: Yes

Warning System:

For Vehicles	For Pedestrians
FLB & G	No specific measures- both sides have sidewalks.

Findings & Recommendations:

	Recommendations	Triggered by		Estimated Cost	Proposed Cost Sharing (%)		
		AW	GCR		Metrolinx	Region	Markham
1 [§] *	Pavement markings and signs should be corrected to conform to MUTCD Standards (AWS, X-markings, Stop Bar)		√	\$4,000 (X-marking: 2*\$1,000) (Stop bars: 2*\$1,000)	\$2,000 (50%)	\$2,000 (50%)	
2 [§] *	Install/relocate WA-18 signs		√	\$1,700 (2*\$850)	\$850 (50%)	\$850 (50%)	
3*	Sightlines are impeded in all quadrants, especially the SW quadrant, due to bushes, buildings, and the curvature of the rail beyond the crossing. Bushes should be trimmed to improve sightlines		√	\$2,000	\$2,000 (100%)		
4 [§] *	'No Trespassing' signs should be installed in the Northeast and Southeast quadrants.	√	√	\$2,500 (2*\$1,250)	\$2,500 (100%)		
5	Install four (4) Maze "Z" Barriers	√		\$40,000 (4*\$10,000)		\$40,000 (100%)	
6	Install "No Train Whistle at This Crossing" signs	√		\$3,000 (2*\$1,500)		\$3,000 (100%)	
7	Install four (4) AODA surface treatments on sidewalks	√		\$4,000 (4*\$1,000)			\$4,000 (100%)
8**	Install four (4) pedestrian gates with active warning lights and bells.	√		\$800,000 (4*\$200,000)		\$800,000 (100%)	
Sub-total =				\$857,200	\$7,350	\$845,850	\$4,000

§ : Cost sharing based on the existing Board Order/Crossing maintenance agreement between the Road Authority and Rail Authority.

* Metrolinx needs to confirm if whistle cessation be implemented without completion of this work. If not, then the City could upfront the cost for this work and subsequently reimbursements from Metrolinx.

** : Region requested to install the pedestrian gates

Date: June 8, 2016

Crossing at: Denison Street

Mileage: 51.98

Road Authority: City of Markham

Is there evidence of trespassing: Yes

Warning System:

For Vehicles	For Pedestrians
FLB & G	No specific measures- both sides have sidewalks.

Findings & Recommendations:

	Recommendations	Triggered by		Estimated Cost	Proposed Cost Sharing (%)		
		AW	GCR		Metrolinx	Region	Markham
1	Pavement markings and signs should be corrected to conform to MUTCD Standards (X-markings, Stop Bar)		√	\$4,000 (X-Marking: 2*\$1,000) (Stop bars: 2*\$1,000)			\$4,000 (100%)
2*	Install/relocate WA-18 signs		√	\$1,700 (2*\$850)	\$850 (50%)		\$850 (50%)
3	Sidewalks should be designed and installed on both sides of the crossing		√	\$12,000 (4*\$3,000)			\$12,000 (100%)
4*	Sightlines are impeded in all quadrants due to curvature of rail beyond the crossing, buildings, trees, and bushes. Trees and bushes should be trimmed to improve sightlines		√	\$8,000 (4*\$2,000)	\$8,000 (100%)		
5	Install three (3) Pedestrian gates (Actual number of gates to be determined)	√		\$600,000 (3*\$200,000)			\$600,000 (100%)
6	Install "No Train Whistle at This Crossing"	√		\$3,000 (2* \$1,500)			\$3,000 (100%)
7	Install four (4) AODA surface treatments on sidewalks	√		\$4,000 (4*\$1,000)			\$4,000 (100%)
8	Install four (4) Maze "Z" Barriers	√		\$40,000 (4*\$10,000)			\$40,000 (100%)
Sub-total =				\$672,700	\$8,850		\$663,850

* Metrolinx needs to confirm if whistle cessation be implemented without completion of this work. If not, then the City could upfront the cost for this work and subsequently reimbursements from Metrolinx

Date: June 8, 2016

Crossing at: Kennedy Road (South)

Mileage: 52.40

Road Authority: York Region

Is there evidence of trespassing: No

Warning System:

For Vehicles		For Pedestrians
FLB & G		No specific measures- both sides have sidewalks.

Findings & Recommendations:

	Recommendations	Triggered by		Estimated Cost	Proposed Cost Sharing (%)		
		AW	GCR		Metrolinx	Region	Markham
1	Pavement markings and signs should be corrected to conform to MUTCD Standards (AWS, X-markings, Stop Bar)		√	\$4,000 (X-Marking: 2*\$1,000) (Stop bars: 2*\$1,000)		\$4,000 (100%)	
2 [§]	Install/relocate WA-18 signs		√	\$1,700 (2*\$850)		\$1,700 (100%)	
3 [§]	Regrading around the signal foundation as it is greater than 0.1 meters from the ground level		√	\$1,500 (2*\$750)		\$1,500 (100%)	
4	Install four (4) pedestrian gates	√		\$800,000 (4*\$200,000)		\$800,000 (100%)	
5	Install "No Train Whistle at This Crossing" signs	√		\$3,000 (2* \$1,500)		\$3,000 (100%)	
6	Install four (4) AODA surface treatments on sidewalks	√		\$4,000 (4*\$1,000)			\$4,000 (100%)
7	Install four (4) Maze "Z" Barriers	√		\$40,000 (4*\$10,000)		\$40,000 (100%)	
Sub-total =				\$854,200	\$0	\$850,200	\$4,000

§ : Cost sharing based on the existing Board Order/Crossing maintenance agreement between the Road Authority and Rail Authority.



Transportation Services

Capital Planning and Delivery
Fax: 905-836-4590

October 19, 2016

Brian Lee, P. Eng.
Director, Engineering
City of Markham
101 Town Centre Boulevard
Markham, ON L3R 9W3

**Re: Proposed Uxbridge GO Transit Line Whistling Cessation Implementation
Between Kennedy Road (South) and Major Mackenzie Drive
City of Markham
File No. 3996 T02(C)**

Dear Mr. Lee:

This letter is provided at the City of Markham's request for confirmation of York Region's funding for the City's implementation of whistling cessation along the Uxbridge GO Transit Line for the Regional road crossings between Kennedy Road (South) and Major Mackenzie Drive.

York Region agrees with the findings of the proposed safety enhancements for whistling cessation identified by the City's safety audit. The Region agrees with the estimated cost apportionment for the Regional road crossings in the amount of \$2,870,000, which can be adjusted as necessary to reflect the actual construction costs. It is acknowledged that the funding will also include a soft cost of 21%.

The Region has a Council policy that identifies the Region will fund costs related to anti-whistling implementation at Regional road crossings and as such Region staff has recommended funding be included in the 2017 and 2018 10-year Capital Construction budget for the City's whistling cessation implementation. As previously discussed, until the budget is approved by Regional Council in December the Region will not be able to confirm to the City the Region's financial contribution.

Sincerely,

A handwritten signature in blue ink, appearing to read "David Atkins".

David Atkins, P. Eng. PMP
Manager, Engineering

Copy to: Richard So, P. Eng. – Sr. Project Manager, Capital Planning & Delivery Branch, York Region
Alice Lam, P. Eng. – Manager, Infrastructure and Capital Projects, City of Markham

YORK-#7045946-v1-3996_City_of_Markham_Proposed_Uxbridge_GO_Transit_line_Whistling_Cessation_Implementation_ltr_19Oct2016

Attachment C: Maze Barrier



Attachment D: Pedestrian Gate

