



Report to: Development Services Committee

Report Date: December 6, 2011

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**SUBJECT:** Train Anti-Whistling at Rail Crossings/Uxbridge Subdivision Rail - Status Update  
**PREPARED BY:** Alan Brown, Director, Engineering ext. 7507  
Rachel Prudhomme, Manager, Special Projects, ext. 2849

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**RECOMMENDATION:**

1. **THAT** the report dated December 6, 2011, entitled "Train Anti-Whistling at Rail Crossings/Uxbridge Subdivision Rail - Status Update" be received;
2. **AND THAT** Markham Council provide direction as to further implementation of the anti-whistling program and future funding commitment;
3. **AND THAT** if Council wishes to pursue the anti-whistling program on the Uxbridge subdivision rail line;
  - a. staff be authorized to continue working with the Region of York to secure budgeting for the Region's \$1.7 million share of the project;
  - b. staff be authorized to retain a consultant to carry out the detailed design of the items identified on the mitigation list;
  - c. staff be authorized and directed to continue to do all things necessary to implement the anti-whistling program;
  - d. staff report back regarding 16 Euclid Street; and
  - e. staff report back with agreements, updated cost estimates and implementation / funding plan for Council's approval.
4. **AND THAT** if Council chooses not to pursue the anti-whistling program on the Uxbridge subdivision rail line, current funds in the Anti-Whistling accounts 640-101-5699-6501 and 640-101-5699-9288 totalling \$366,035 be returned to the original funding source;
5. **AND THAT** the Anti-Whistling at Rail Crossings/Uxbridge Subdivision Rail-Status Update Report be deferred pending future study.

**PURPOSE:**

The purpose of this report is to provide Council with an update on the status of train anti-whistling at rail crossings on the Uxbridge Subdivision rail line in Markham and, taking into consideration the costs, risks and liabilities to be incurred by the Town, seek

Council's direction as to its future implementation. The total cost of the program is estimated at \$3.96 million, with the Region having pledged, although not yet budgeted, to refund up to \$1.7 million for crossings located on Regional roads following rail authority approval and implementation of the anti-whistling order.

## **BACKGROUND:**

### **Uxbridge Line - Description**

The Uxbridge Line runs generally in a north-east direction and is owned by Metrolinx (GO Transit) and operated by CN on their behalf. The most southerly rail crossing is located on Steeles Avenue and the most northerly rail crossing is located on 19<sup>th</sup> Avenue as noted in Attachment "A". In total, there are 18 level rail crossings, of which seven are under the jurisdiction of York Region (six of which are within the urban area), one is under the jurisdiction of the City of Toronto (Steeles Avenue), one is a private crossing (Hydro One) and the remaining nine crossings are under Markham's jurisdiction. Most of the rail crossings are fitted with safety features to properly provide advanced warning and restrict road users (vehicles) from entering the rail crossing while in operation. Some of the key safety features include bells, gates, and flashing lights. Other safety features include traffic signs, pavement markings and fences.

Council requested staff in June 2008 to pursue anti-whistling for the level rail crossing through the urban area of the Town. In October 2008 the Town commissioned a Whistle Cessation Feasibility Study outlining the existing safety deficiencies and the mitigation measures recommended at the level rail crossings. The principle findings of this report prepared by Aecom were presented to the Development Services Committee on March 3, 2009 and can generally be summarized as follows:

- a. General mitigation measures required:
  - i. signs and pavement installations / relocations
  - ii. sightlines to be corrected
- b. Specific mitigation measures required:
  - i. Eureka Street – Sightline Issues (Driveway/Garage Obstruction requires relocation)
  - ii. Bur Oak Avenue –Re-grade existing approaches (to a maximum 2% grade)

## **OPTIONS/ DISCUSSION:**

### **Engineering Issues**

As part of the status update reports to Development Services Committee on March 3, 2009 and on June 1, 2010, staff was requested to proceed with the next steps identified within the reports and to update Council as required. The following is a brief list of the activities undertaken since the Spring of 2009.

- In April 2009, staff met with representatives of GO Transit and Region of York to review the next steps of the anti-whistling study.
- Following the April 2009 meeting, and through consultation with GO Transit and Transport Canada, it was confirmed that a Pedestrian Study would also be required for each of the crossing locations required.
- In May/June 2009, staff prepared a Terms of Reference and retained a consultant to complete the Pedestrian Study.
- In June 2009, staff provided notification to the required relevant organizations as required under the Railway Safety Act of Markham's intent to pass a resolution forbidding the use of train whistles along the Uxbridge Train Line in the urban areas of Markham.
- In July 2009, staff met with the homeowners of 16 Euclid Street to discuss the options for the possible relocation of the homeowner's driveway and garage which front on to Eureka Street immediately south of the rail line.
- In July/August 2009 the field work required for the Pedestrian Study was completed.
- In late September 2009, the completed Pedestrian Study report was provided to the Town.
- In the Fall of 2009, copies of the completed Whistle Cessation Study and Pedestrian Study were provided to the required stakeholders (CN, GO Transit, and the Region).
- In the Spring of 2010 Council authorized staff to retain Aecom to identify and develop the specific upgrades required at each crossing and to assist the Town with "negotiations" with major rail stakeholders, including GO Transit, Transport Canada, and Canadian National Railway.
- In November of 2010 Aecom completed the detailed Safety Crossing Assessment for 14 of the 18 level rail crossings. The other 4 crossings are not part of the Whistle Cessation Study as they are not within the Town of Markham or Region of York jurisdiction (Steeles Avenue) or are outside of the Town's urban boundary (Elgin Mills, 9<sup>th</sup> Line and 19<sup>th</sup> Avenue).
- In February of 2011, staff sent a letter to the Regional Municipality of York to update the Region on the status of implementing the anti-whistling By-Law and to request clarification on the Region's commitment to its share of the funding for this program.
- On August 17, 2011, staff met with the Region to follow up on the letter sent by staff in February.
- On September 2, 2011, the Regional Municipality of York responded with a letter addressed to the Town of Markham. The letter is in Attachment "B". In the letter, the Region reconfirmed its Anti-whistling Report dated June 19, 2008 and the Region's approved Policy. The Region's Report and Policy are in Attachment "C". The letter reaffirmed York Region's pledge in the amount of \$1.7 million to cover the costs of all mitigation measures for work required at Regional road crossings, including the installation of pedestrian gates, subject to the following:

1. That the Town rectify all deficiencies noted in the October 31, 2008 safety study conducted by AECOM at its own expense (estimated total cost (including Region's portion, all fees and 10 percent contingency) is \$3.96M.
2. That the Town co-ordinate and obtain all necessary approvals.
3. That the Town provide notice to the public and to all relevant associations and organizations regarding its intention to pass a resolution enacting a By-Law pursuant to section 23.1 of the Railway Safety Act.
4. That the Town enact the By-Law and provide a certified copy to the Regional Municipality of York.
5. That the Town submit the application to GO Transit and obtain all necessary approvals.
6. That the Region enter into the required indemnity agreement as directed by Regional Council.
7. That the Regional Municipality of York refund the design, supply and installation cost of the pedestrian gates at Regional road crossings (excluding internal engineering or other fees) to the Town of Markham following implementation of the anti-whistling order.
8. That the Town provide an estimated timeframe for implementation so that the Region can budget appropriately to ensure that the eligible expenses are refunded to the Town of Markham in a reasonable timeframe
9. Once the rail authority has approved and implemented the anti-whistling order, the Region will refund the Town of Markham for the agreed expenses.

### **Specific Mitigation Issues**

Based on the findings of the three completed studies (Whistle Cessation, Pedestrian Study and Safety Crossing Assessment), the following measures were identified:

#### Town of Markham Crossings

1. The following crossing locations require the installation of pedestrian gates along both sides of the roadway (4 separate crossing quadrants in total, that is, sidewalks on both sides of the street which require protection from both directions) as well as general brush clearing and installation or relocation of warning signs and/or pavement markings:
  - Castlemore Avenue
  - Bur Oak Avenue
  - Snider Road
  - Main Street Unionville
  - Main Street Markham (1 of 4 quadrants already protected)
  - Eureka Street (1 of 4 quadrants already protected)
  - Denison Street (1 of 4 quadrants already protected)

### Region of York Crossings

2. The following crossing locations require the installation of pedestrian gates along both sides of the roadway (4 separate crossing quadrants in total) as well as general brush clearing and installation or relocation of warning signs and/or pavement markings:

- Major Mackenzie Drive
- McCowan Road
- Highway 7
- Kennedy Road South
- 16<sup>th</sup> Avenue (2 of 4 quadrants already protected)

### City of Toronto Crossing

3. The crossing at Steeles Avenue is in the Toronto jurisdiction. Future plans involve a grade separation, but discussions will need to be held with the City of Toronto regarding anti-whistling at this crossing.

In addition to the installation of the pedestrian gates, general signage and pavement markings, the following two (2) crossing locations will likely require additional measures:

### Eureka Street

Following the completion of the three reports prepared by Aecom, it was identified that the driveway and possibly the garage of 16 Euclid Street may need to be relocated to meet the required sightlines. Staff has met with the homeowner of 16 Euclid Street and has discussed this issue with Aecom and the following was identified:

- Further discussion with the homeowner is required to explore options with the Town to address the safety concern identified within the Whistle Cessation Study, including the possible relocation of their driveway and garage currently fronting onto Eureka Street.
- Aecom has estimated the cost to relocate/reconstruct the driveway and garage to be in the order of \$50,000-60,000.

Pending the outcome of the *Stakeholders Meeting* planned for Fall 2011 (See "Schedule" below), the Town will hold further discussions with the homeowners of 16 Euclid Street and the Town's Design Consultant so that staff can report back to Council on a recommendation to deal with the driveway and garage adjacent to the rail line.

### Bur Oak Avenue

Aecom has indicated that the approach grade to the rail crossing at Bur Oak Avenue exceeds the maximum allowable by Transport Canada Guidelines (i.e. 2%) and that portions of the approach may need to be re-graded. Staff will review the need to re-grade the rail crossing in this area at the detailed design stage. It is staff's opinion that this re-grading is not necessary as the current grade % does not warrant an expenditure of \$50,000.

### Metrolinx

We anticipate Metrolinx will request compensation for the cost of their design reviews, preparation of crossing agreements with the Town and Region, and for the provision of railway flagmen during the design/construction stages. The compensation for Metrolinx is estimated by Aecom to be \$172,000, excluding HST, as noted in their November 2010 Safety Crossing Report.

### **Schedule**

The Town has completed the Whistle Cessation Study, Pedestrian Study and the Safety Crossing Assessment as required by the stakeholders. The Town has also met with some of the key stakeholders such as GO Transit, CN and the Region of York to review the crossing options available at each of the crossings and has provided notification to the CN Labour Unions. The Region of York has reconfirmed its policy to support mitigation work at crossings located on Regional roads so that anti-whistling orders may be implemented by local municipalities. As such, the Region has pledged (subject to conditions) to refund approximately \$1.7 million of the Town of Markham's \$3.96 million in total estimated costs for the anti-whistling mitigation works.

The following activities are planned for 2011 and 2012, subject to Council's direction:

- Provide an implementation schedule to Regional Council to confirm its funding schedule for 2013, 2014 and 2015.
- Retain a consultant to carry out the detailed design of the items identified on the Mitigation List (**late 2011**);
- Meet with key stakeholder groups (Transport Canada, CN, GO Transit, Region impacted residents) to review the findings from the completed reports and to agree on the items to be mitigated at each of the crossings. Review and finalize the "Mitigation List", summarizing all of the works to be completed, with all of the key stakeholders (**early 2012**);
- Report back to Council with an update and authorization of any agreements, budget updates and Regional funding commitment (**2012**);
- Prepare and issue formal public notification (**TBF**);
- Upon finalization of the Mitigation List, the Town will then work with CN and GO Transit to complete the insurance and indemnification if any of the Town's and Region's crossings. The Mitigation List will also confirm the extent (if any)

of the Bur Oak re-grading requirements as well as detail the works required on Eureka Street **(TBF)**;

- Tender the proposed works, subject to Council and funding approval **(TBF)**;
- Proceed with crossing improvements **(TBF)**;
- Transport Canada railway safety inspection of crossings **(TBF)**;
- Implementation of anti-whistling by-law and whistling cessation **(TBF)**.

The exact timing and scheduling of the activities required for the implementation of Whistle Cessation are difficult to confirm as this process requires input from several different stakeholders and there is no set process currently in place by Transport Canada or Metrolinx that defines how this type of work is to be carried out. In addition funding commitments and budget allocations from both Regional and Markham Councils are required.

#### **Level Crossing Horn System (Wayside Horn Systems)**

As an alternative to anti whistling an option which has been utilized in the United States and a pilot project in Quebec is the installation of a horn warning system at each level crossing.

Transport Canada has advised that based on their pilot project, noise levels in the broader communities are reduced but at each level crossing the noise decibel has increased and abutting residents have complained about such. The following summarizes the general conclusions of the recent pilot project in Saguenay, Quebec:

1. There are currently no guidelines for Wayside Horn Systems in Canada to provide information on warrant criteria or to provide standards for the use of Wayside Horn Systems;
2. There is concern that pedestrians/cyclists may not regard the Wayside Horn System the same way they will a train horn;
3. Although Wayside Horn Systems provide a better warning for motorists stopped at the crossing they do not give the same "level" of advance warning to approaching motorists (because sound is concentrated in one area);
4. Although the overall noise 'footprint' is decreased, Wayside Horn Systems result in a higher level of disturbance to those immediately adjacent to the crossing;
5. Train operators may still sound the train horn as an additional precaution even though Wayside Horn Systems are in place;
6. Wayside Horn Systems may not be accepted as a replacement to the use of pedestrian gates, but used in conjunction with pedestrian gates.

Staff is seeking direction from Transit Canada as to future approval and use of the Horn System.

## FINANCIAL TEMPLATE

Aecom's cost estimate to implement the anti-whistling measures for the 13 crossings based on the three reports completed is \$3.96M, including engineering and Metrolinx fees as follows:

<u>ITEM</u>	<u>Estimated Cost</u>	<u>10% Contingency</u>	<u>TOTAL</u>
Town of Markham Crossings	\$1,560,000	\$156,0000	\$1,716,000
Region of York Crossings	\$1,300,000	\$130,000	\$1,430,000
Design/Construction Fees			
Region	\$180,000	\$18,000	\$198,000
Town	\$210,000	\$21,000	\$231,000
Metrolinx Fees			
Region	\$72,000	\$7,200	\$79,200
Town	\$84,000	\$8,400	\$92,400
General Deficiencies (Signage/Marking)			
Town	<u>\$194,000</u>	<u>\$19,400</u>	<u>\$213,400</u>
<b>TOTAL</b>	<b>\$3,600,000</b>	<b>\$360,000</b>	<b>\$3,960,000</b>

Regional Council, at its June 19, 2008 meeting, received a report and adopted a policy (Attachment "C") in which it agreed to be responsible for the cost of pedestrian gates and other improvements at its level road crossings. The Region is responsible for 6 of the 13 crossings in Markham, at an estimated cost of \$1.7 million to the Region. The cost to the Town, after reimbursement from the Region, will be \$2.3 million. At this time, the Town is still uncertain as to the Region's funding commitment since it has not been approved through the Regional budgeting process. But even with Regional funding, the Town of Markham will still have to upfront the Region's share (\$1.7 million) with subsequent recovery subject to conditions. The Town's ability to implement this program will depend on how the Town proposes to fund its \$2.3 million share and to upfront the Region's \$1.7 million share in relation to other unfunded programs.

The initial cost estimate for this project was \$1.2 million in March 2009 and was based on the preliminary assessment of the crossing locations and the anticipated scope of work to be completed at each location. However, upon the completion of more detailed investigations, the requirement to install pedestrian gates and the cost of anti-whistling programs within other municipalities, the estimated cost to implement whistle cessation within the Town has increased significantly from the initial cost estimate of \$1.2 million in 2009 to \$3.96 million in 2011. As indicated previously, the Town's share to implement the anti-whistling through the urban area is approximately \$2.3 million.

The current funding for the train whistle cessation project is \$366,035 from the Train Anti-Whistling accounts 640-101-5699-6501 (\$48,135) and 640-101-5699-9288 (\$317,900), leaving a funding shortfall for this project of approximately \$1.9 million. Should Council decide not to proceed with Anti-Whistling, the funds will be returned to the original funding source.

### **Other Municipalities**

Several municipalities that had originally considered implementing train anti-whistling orders have deferred their programs due to reasons such as high costs, increased risks, logistics, municipal liability and also due to the fact that, even if an anti-whistling order has been enacted, train engineers are at complete liberty to choose to blow the train's whistle if they feel it will enhance safety at any particular crossing. Examples of such municipalities include Aurora, East Gwillimbury and the Township of Leeds and Thousand Islands. The Town of Witchurch-Stouffville has implemented anti-whistling on only half of its crossings, opting to suspend implementation on the rest of the crossings due to the requirements being imposed by the rail company.

### **Phasing**

Recognizing that the overall cost estimate to implement this work based on Aecom's cost estimate for both the Town and the Region is well in excess of the current funding available for this project, staff explored the possibility of phasing in the anti-whistling program with **our consultant** (Aecom). Our consultant in discussion with the transit **authorities** was able to confirm that although the capital work (i.e. Mitigation List) could be implemented over several years the elimination of the train whistle through Markham would have to wait until **ALL** the crossing upgrades were completed and inspected by Metrolinx and Transport Canada.

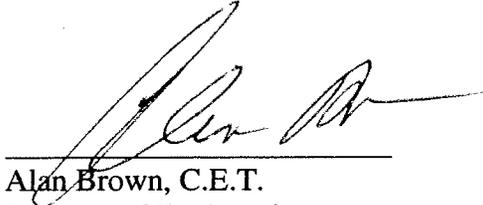
As previously mentioned in past reports the train operator has the sole discretion to blow the whistle even with an approved Anti-Whistling by-law.

### **DEPARTMENTS CONSULTED AND AFFECTED:**

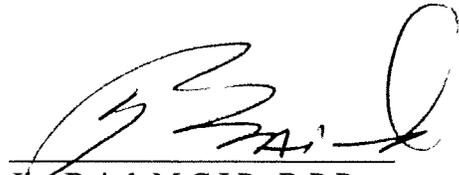
The Finance Department has reviewed this report, but as presented at the June 10, 2008 Development Services Committee meeting, from a Risk Management perspective Finance staff and the Town's insurer do not support anti-whistling. According to the Railway Association of Canada, train whistles are vital safety features that protect motorists and pedestrians from collisions at public roads and pedestrian rail crossings. Finance staff, our insurer and the Railway Association of Canada believe that train whistles save lives.

A summary of the current funds available and the cost to complete the detailed design portion of this project is attached as "C".

**RECOMMENDED BY:**



Alan Brown, C.E.T.  
Director of Engineering



Jim Baird, M.C.I.P., R.P.P.  
Commissioner, Development Services

**ATTACHMENTS:**

Attachment "A" - Map

Attachment "B" - Region of York letter to the Town of Markham, dated Sept. 2, 2011

Attachment "C" - Region of York June 19, 2008 Report and Policy