



The Corporation of the Town of Milton

Report To: Council

From: M. Paul Cripps, P. Eng., Commissioner, Engineering Services

Date: March 25, 2019

Report No: ENG-006-19

Subject: Appleby Line (Derry Road to Rattlesnake Point) Design Report for Phase 1 and Phase 2 Road Improvements

Recommendation: THAT Council approve the design (Preferred Alternative 3, as shown in Appendix I) for Phase 1 and Phase 2 improvements to Appleby Line (Derry Road to Rattlesnake Point).

EXECUTIVE SUMMARY

Appleby Line has been rated the highest priority for reconstruction in the 2013 and 2018 State of the Infrastructure – Roads Study due to deficient structural adequacy, drainage concerns and deficient geometry, including alignment concerns through the hairpin curve. In addition, the need for traffic signage improvements has been identified.

The project is divided into three phases:

Phase 1: Construction of high priority work related to traffic safety, including improved traffic signage and pavement markings that can be implemented relatively quickly.

Phase 2: Construction of high priority work consisting of road geometric improvements at the critical location at the hairpin curve approximately 600m north of Derry Road. For this phase, property acquisition is required in order to implement the geometric improvements.

Phase 3: Design and completion of medium priority works that includes remaining road geometric improvements beyond phase 2. Phase 3 design is scheduled for 2021 with construction in 2023.

Engineering staff are working towards a construction start date in the summer of 2019 for the construction of Phases 1 and 2 with completion in the fall 2019, pending property

acquisition and subsequent approvals from the required regulating agencies (Niagara Escarpment Commission (NEC)).

REPORT

Background

Appleby Line, between Derry Road and Rattlesnake Point Conservation Area, is a north south, two-lane undivided collector road, with a posted speed limit of 50km/hr. It has a varying pavement width (as narrow as 5.8m) and narrow shoulders in certain areas. The existing right-of-way (ROW) width varies throughout the corridor, from approximately 10.5m to 50m.

This project is being undertaken as a Schedule A+ project under the Municipal Class Environmental Assessment (EA) process and the Town has engaged Wood as the civil engineering consultant to complete the EA work and associated design work for this project.

Prior to engaging Wood as a consultant, in 2016 the Town's traffic division prepared an In-Service Road Safety Review in conjunction with CIMA. To build on this report, Wood completed a Functional Design Report for this section of Appleby Line in 2018. This study included a visual condition survey of the existing road surface within the project area, in accordance with MTO's 'Flexible Pavement Condition' rating Manual-Guidelines for Municipalities, as well as a review of the existing signage and traffic safety measures. It was identified that, generally, the existing asphaltic surface was rated in "Poor" to "Very Poor" condition; such pavement condition reflects its age, and inadequate drainage that has resulted in deterioration with time. The Functional Design Report also identifies traffic signage improvements and line painting for this section of Appleby Line to improve the traffic safety. In addition, the study included:

- Collection and review of background material, mapping and site history
- Assessments of options including high level cost estimates
- High level identification of technical issues and options for the following factors: structural (retaining walls), foundations (for retaining wall/embankment stability)
- Surveys of and consideration for terrestrial and aquatic habitat
- Pavement design
- Drainage and Stormwater management
- Identification of possible permit requirements

The completed Functional Design Report was submitted by Wood to the Town in February 2018. The report identified the following concerns with respect to this section of roadway:

- Operational and safety concerns with respect to passage of small and medium sized vehicles through the hairpin curve
- Surface drainage along the roadway, causing erosion and potential destabilization of the road base
- Groundwater flow from escarpment embankments, infiltrating and destabilizing the road base
- Variable pavement width including some very narrow sections and sub-standard geometry around the hairpin curve
- Exposed earth embankments that are eroding
- Deteriorating pavement conditions
- Difficulty, given natural environment and topography, to provide safe access to private entrances
- Pedestrian and cyclist safety, and
- Driver warning and positive guidance to safely negotiate sharp curves and steep gradients

In order to address the concerns noted above, the report recommended a phased improvement plan, as follows:

Phase 1

- Improved signage and pavement markings for the entire study area

Phase 2

- Improved road geometrics / reconstruction at the hairpin curve
- Curb and gutter and localized drainage improvements within the limits of the hairpin curve, and
- Retaining walls as needed to accommodate the geometric improvements at the hairpin curve

Phase 3

Improvements within the balance of the project limits, including:

- Pavement rehabilitation / reconstruction
- Drainage improvements
- Curb and gutter in selected areas, and
- Embankment stabilization / erosion control (including localized retaining walls)

Upon completion of the Functional Design Report, the project team proceeded to the preliminary design stage for Phases 1 and 2, completing the following tasks:

- Topographic survey and base plan preparation (summer 2018)
- Work plan and schedule for detailed design
- Environmental field investigation including detailed tree inventory to meet NEC permitting requirements (fall 2018)
- Coordination with external agencies including two meetings with NEC (May 14 and November 6, 2018)
- Preparation and evaluation of design alternatives (summer 2018)
- Geotechnical field investigations and analysis (fall 2018)
- Public Information Centre (November 21, 2018), and selection of preferred alternative, which is the subject of this report. See Appendix III for public comments received at PIC

The project is located within the NEC boundary, and pre-consultation with the NEC, CH and the Ministry of Natural Resources and Forestry (MNR) took place in the spring and fall of 2018. Permits will be required prior to construction tender for Phases 1 and 2, but cannot formally be applied for until the required property is acquired or permission is granted from the property owner.

It must be noted that the timeline for construction of this project depends on land acquisition and permits.

Discussion

General Design

During the preliminary design work for Phases 1 and 2, four improvement alternatives were considered and assessed for the hairpin curve, as follows:

- Option 1: Do nothing
- Option 2: Close road to through traffic with cul-de-sacs
- Option 3: Widening to acceptable geometric criteria while minimizing rock cut, and
- Option 4: Widening to a compromised geometric criteria with rock cut

An assessment was prepared considering a wide range of criteria including natural and social environment, property impacts, technical and transportation factors, and cost. The preferred alternative is Option 3: Widening to acceptable geometric criteria while minimizing rock cut. The preferred alternative addresses the deficiencies noted above including safety, ability of vehicles to negotiate the hairpin curve, pavement

deterioration, poor surface and groundwater drainage, and frequent emergency calls, while minimizing environmental impacts including cutting of the natural escarpment rock face. The preliminary design drawings illustrating the preferred alternative are included as Appendix I to this report.

Land

In order to implement the preferred design alternative, a widening of the existing road allowance at the location of the hairpin curve is required. The land required for the widening is approximately 225m² that currently belongs to 7145 Appleby Line. A plan identifying the property requirements is included in Appendix II to this report, and a property appraisal is currently underway. Preliminary discussions with the landowner have taken place, and although the intent of staff is to reach an amicable agreement regarding any road widening requirements, Council should be aware that it is staff's opinion that expropriation of this property will likely be required.

Permits

The study team has consulted with CH, MNRF and NEC at several points throughout the preliminary and detailed design process to-date. CH will not require a permit for Phases 1 and 2, although they wish to remain informed. At this point in time, based on information gathered to date, an MNRF permit is not required for Phases 1 and 2, although the study team continues to consult with MNRF on issues within their jurisdiction. No species at risk (SAR) requiring permitting have been identified in field reviews for Phases 1 and 2.

However, the NEC will require a Development Permit application for Phase 1 and Phase 2 work to be submitted at the completion of detailed design. Property required to be purchased for the proposed project must be owned by the Town at that time, or permission must be granted by private landowners. Once issued, an NEC permit is valid for a period of 3 years, with the potential to have this time period extended to 5 years. The public will be advised of the permitting application through a notice of commencement and the NEC will post a small orange-coloured poster on site. Once the project has been approved by the NEC, a 'notice of decision' will be provided to the landowners within 120m of the road allowance and a 14-day appeal period follows. If there is an appeal by adjacent landowners and issues cannot be resolved, the file may be referred to a hearing with the Environmental Review Tribunal. If there are no policy concerns, receipt of the NEC Director's approval can allow works to proceed.

Construction

The construction of this project depends on permit approvals and land acquisition. Construction of Phases 1 and 2 is currently scheduled for the summer of 2019 with completion in the fall 2019. However, as noted above, the NEC permit is contingent



on land acquisition, so it is possible that the signage and pavement marking improvements (Phase 1) will proceed in 2019, with the improvements at the hairpin curve (Phase 2) proceeding to construction in 2020. In order to complete the work safely, road closure for the duration of construction of Phase 2 on Appleby Line is required, access to local traffic is to be maintained at all times during construction.

Financial Impact

Funding for this design project was included in the 2017 approved budget in the total amount of \$154,212. Construction of phase 1 and 2 has been approved through the 2019 capital budget in the amount of \$426,533. Phase 3 is included in the forecast for design in 2021 and construction in 2023 with a total estimated cost of \$3,200,205. Operating impacts associated with the road improvements are expected to be minimal and will be incorporated through future budgets.

Respectfully submitted,

M. Paul Cripps, P. Eng.
Commissioner, Engineering Services

For questions, please
contact:

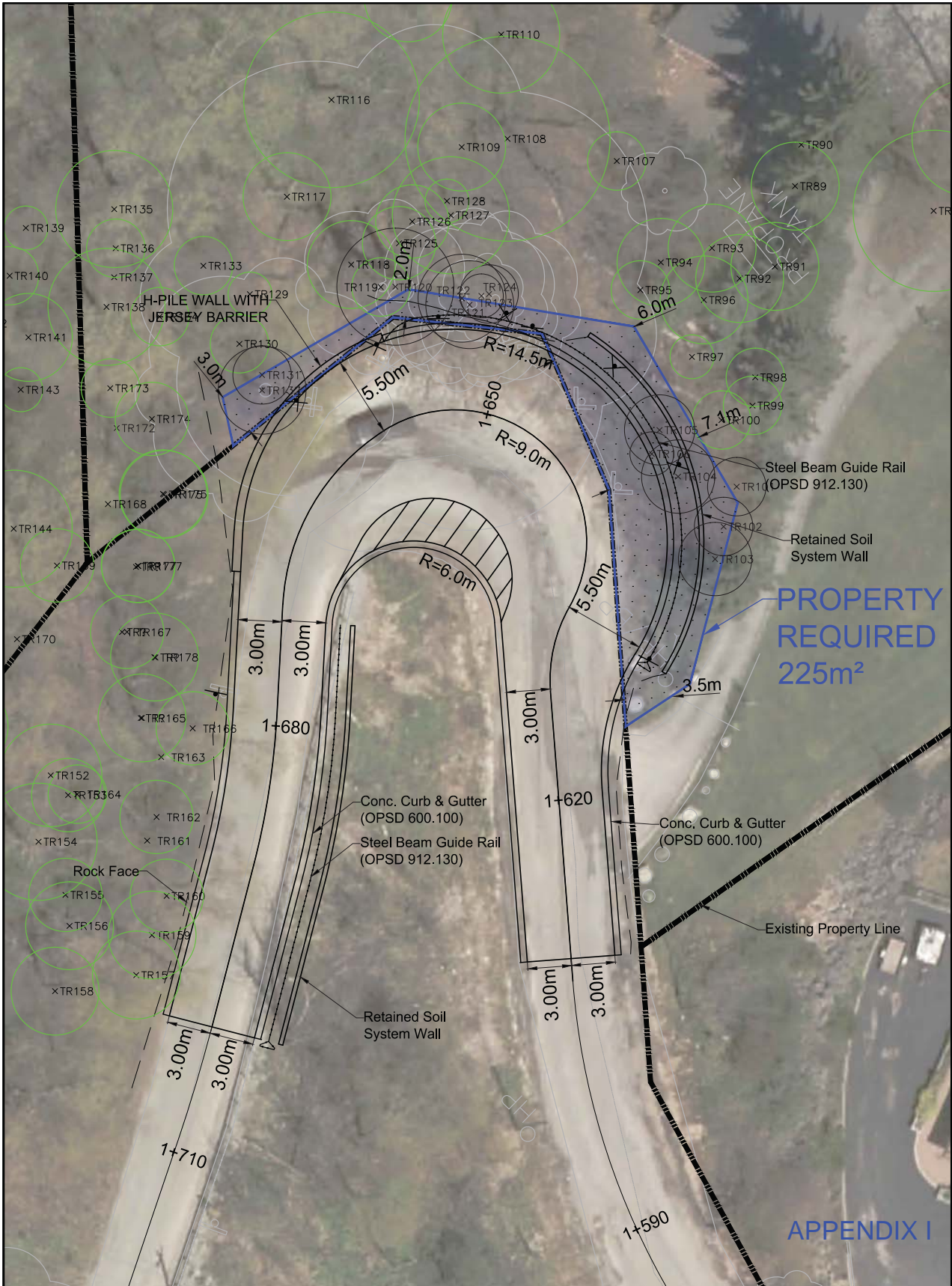
John Brophy, Director, 905-878-7252 x2516
Infrastructure

Attachments

Appendix I: Preferred Design Alternative
Appendix II: Draft R Plan for Road Widening at Hairpin Curve
Appendix III: PIC Public Comments

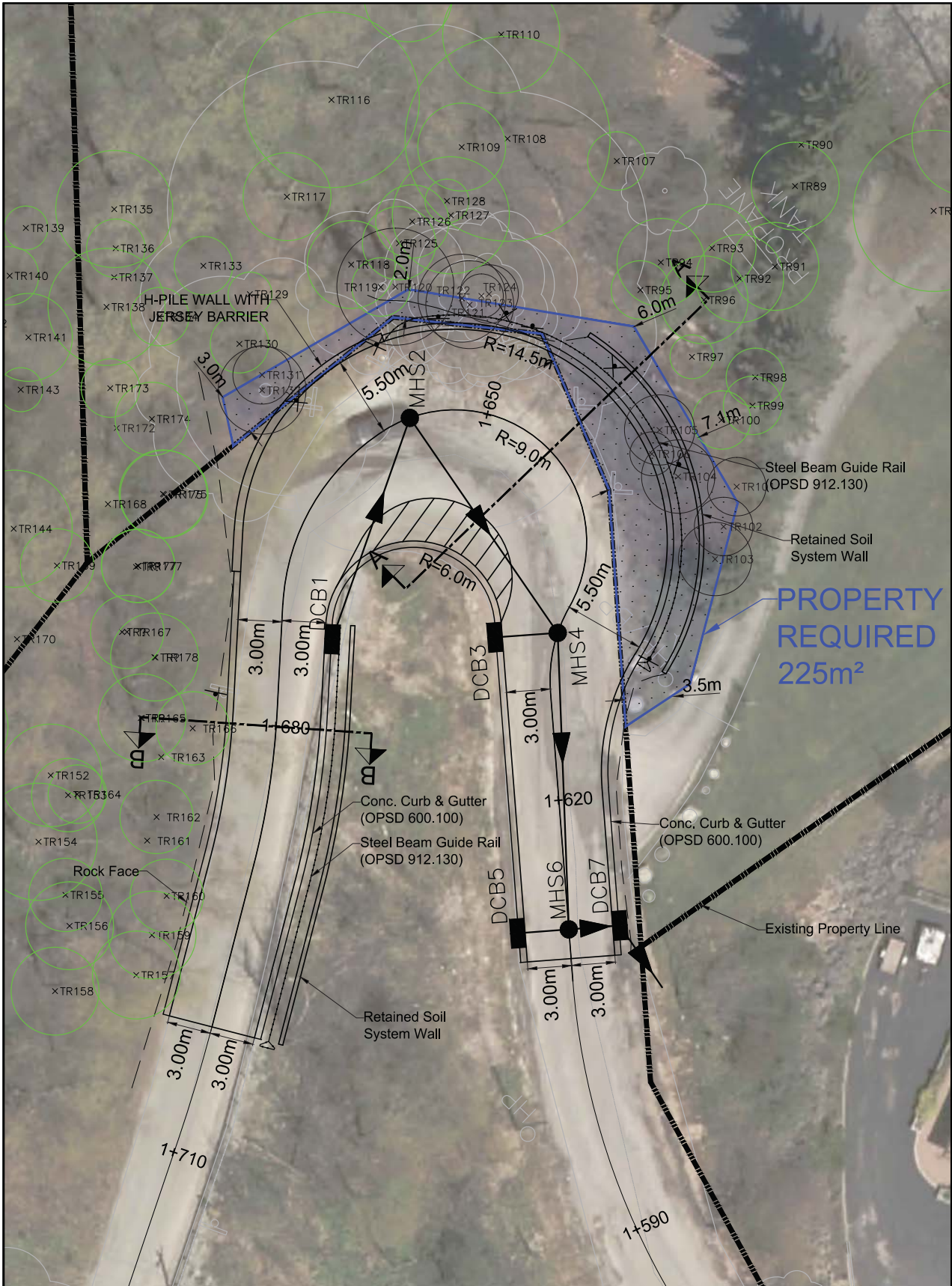
CAO Approval
William Mann, MCIP, RPP, OALA, CSLA, MCIF, RPF
Chief Administrative Officer

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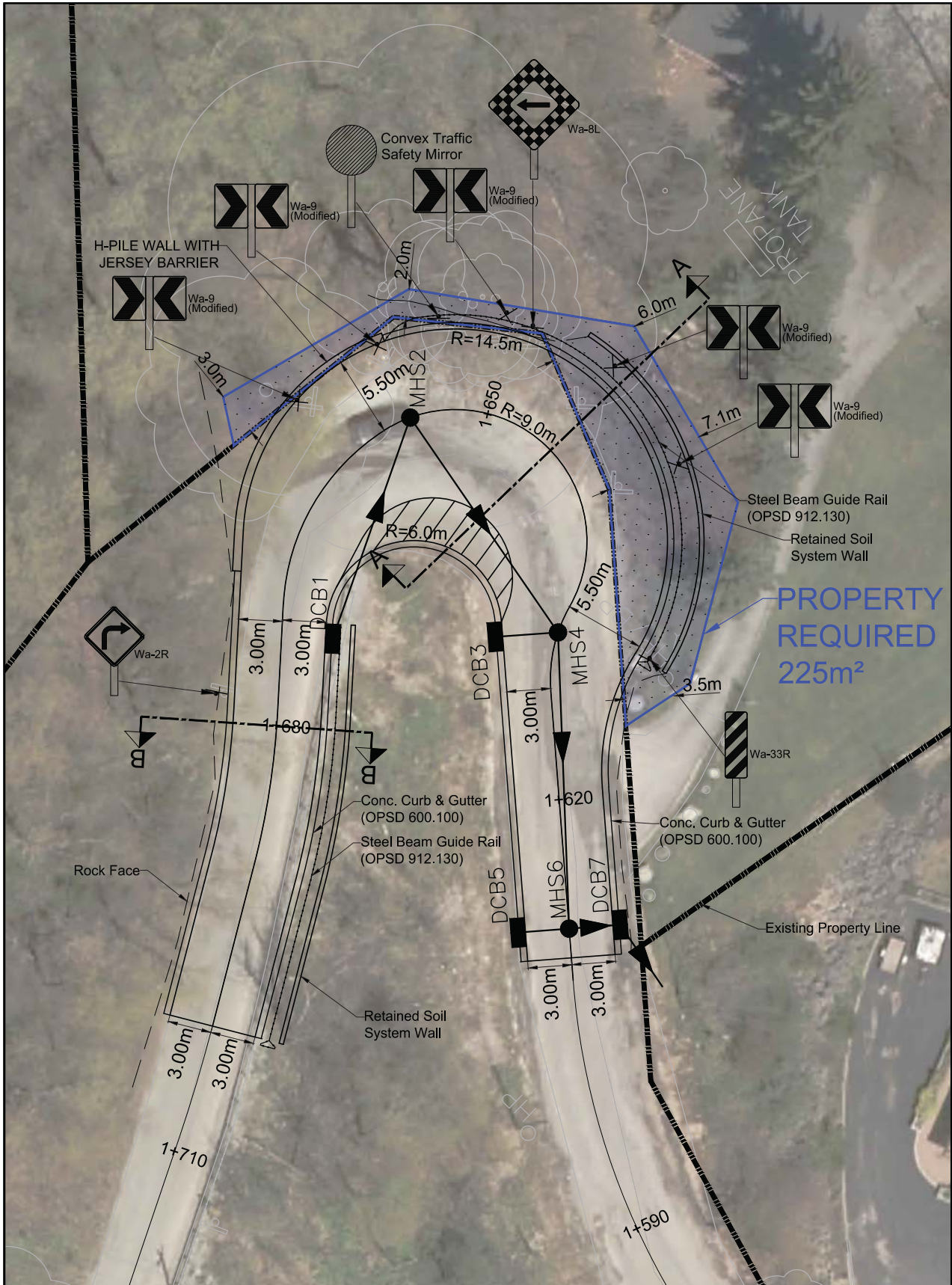
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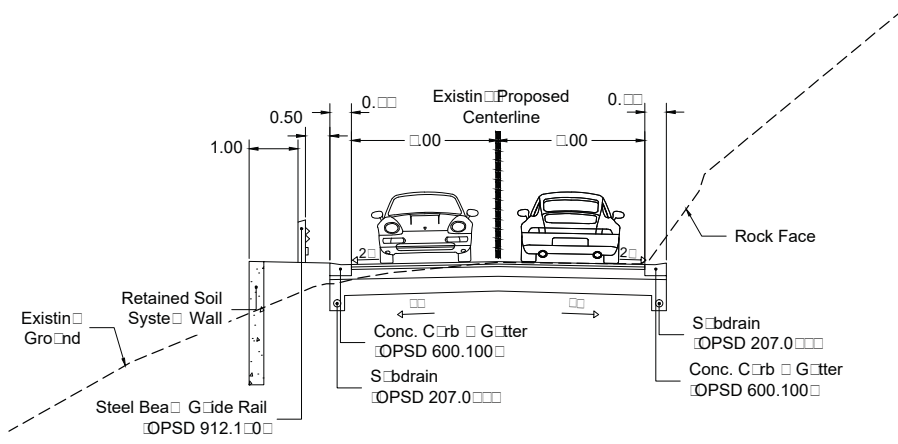
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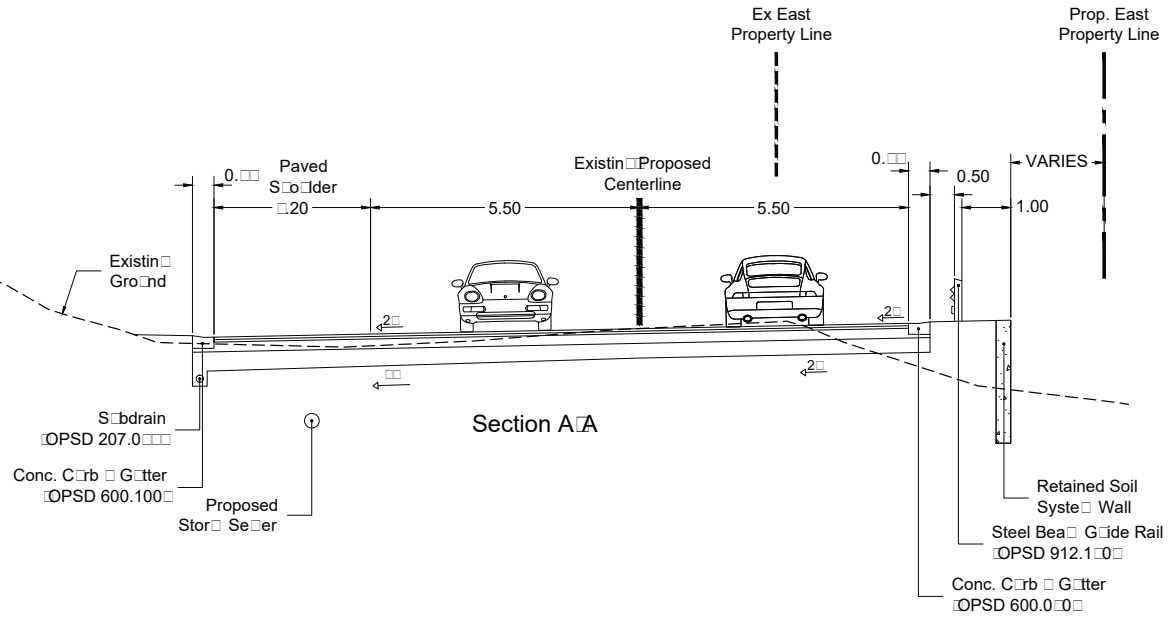


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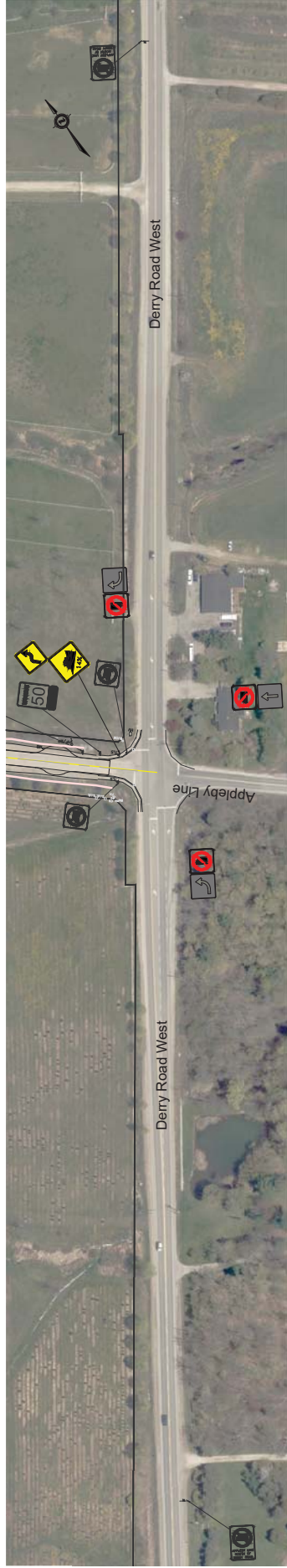
Section B-B



Section A-A

DESIGN ALTERNATIVE 3 CROSS SECTIONS	APPLEBY LINE IMPROVEMENTS FROM RATTLESNAKE POINT TO DERRY ROAD WEST TOWN OF MILTON		Project No. TP176125
			Date NOV 2018
			Scale 1"=100'
			Drawing No. 1

Appendix I



EXISTING SIGN (Shown in black and white)



PROPOSED SIGN (Shown in colour)

APPLEBY LINE RECONSTRUCTION

TOWN OF MILTON
RECOMMENDED SIGNAGE
PHASE 1

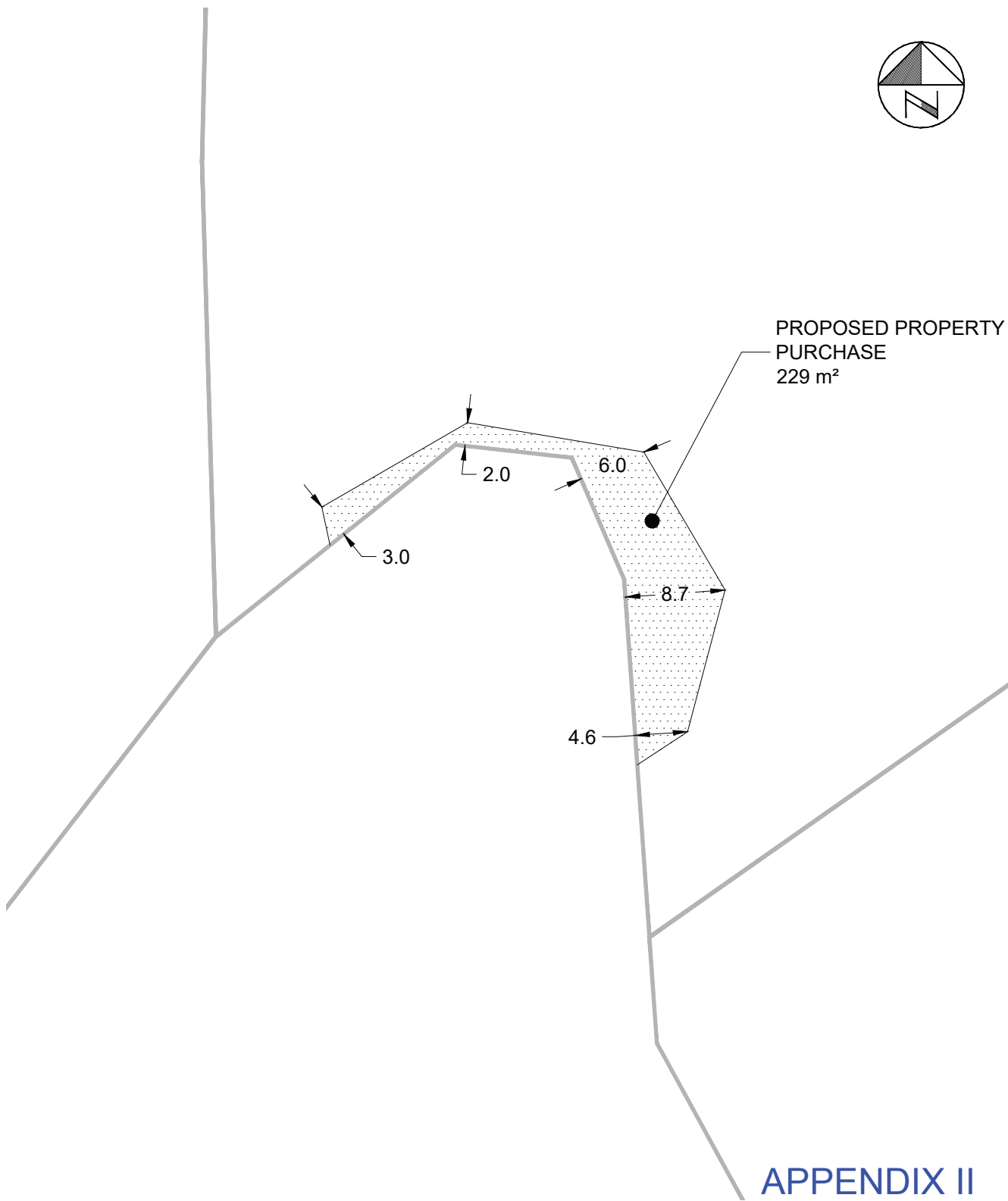
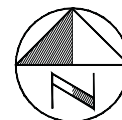


Project No. TPB176125

Date FEB 2019

Scale N.T.S.

Drawing No. 1



PROPOSED PROPERTY
PURCHASE
229 m²

APPENDIX II

APPLEBY LINE RECONSTRUCTION
TOWN OF MILTON

7145 APPLEBY LINE
MILTON, ONTARIO

wood.

Project No. TPB76125

Date NOV 2018

Scale 1:500

Drawing No. 1

Comment Number	Comments	Themes	Response
1A	<p>Disappointed in the lack of information. There were no handouts, only one set of drawings without a lot of details and no copies of the draft proposals available for public review.</p>	Other	The PIC material is available on the Town's website for public review
1B	<p>My main concerns stem from the work the town of Milton did last year. They attempted to dig ditches, widen the road, patch the pavement and trim trees to improve sight lines. All they accomplished is washing the road out in mud and causing erosion in new places, they basically just made it worse while trying to improve it.</p>	Other	The work referred to is not part of this assignment.
1C	<p>There also doesn't seem to be anything addressing issues above the corner in question. Most of the water and run off comes from the top of the hill and ends up running down the middle of Appleby line.</p>	Drainage	Improved drainage are proposed through installation of storm sewer and roadside ditches.
1D	<p>How is drainage from the upper part of the hill going to be managed?</p>	Drainage	It will be conveyed via concrete curb and gutter into a proposed storm sewer
1E	<p>Is the road going to be resurfaced at some point?</p>	Infrastructure	Yes, the road is planned to be resurfaced.
1F	<p>Water appears to be leaking from an underground source (a spring?) in the middle of the road in the upper part of the bend, how is this going to be addressed?</p>	Drainage	Groundwater will be captured and conveyed via concrete curb and gutter (where it seeps out to the surface) and via subdrain when below ground, outletting into a storm sewer or roadside ditch.
1G	<p>How is the run off going to be managed if there proves to not enough dirt to install proper storm sewers?</p>	Drainage	Storm sewers can be constructed either in native earth or rock.
1H	<p>The bedrock is only inches deep in some places on the hill. Will dynamite be used to make enough room?</p>	Construction	No, blasting will not be permitted, as will be specified in the construction contract.
1I	<p>What assurances do residents on the hill have that they won't be adversely affected by the new water courses?</p>	Drainage	Existing drainage patterns will be maintained, but may be enhanced by storm sewer or surface drainage improvements. Conservation Halton closely reviews drainage improvements to ensure that there will be no adverse impacts.
1J	<p>Have the Niagara Escarpment Commission and the Halton Conservation authority been consulted about the proposed plans?</p>	Consultation	Yes, both agencies have been consulted.
1K	<p>How will the proposed changes affect snow removal?</p>	Snow	No changes to snow removal are anticipated. It is anticipated that the improvements at the curve will improve the ability of snow removal equipment to negotiate the hill/curve.
1L	<p>The corner above the one in question (The first hair pin on the hill) routinely sees people crash into the guard rail. Will anything be done to improve the safety of this corner?</p>	Transportation	Additional signage has been proposed to advise drivers of the sharp bend and steep slope and to reduce speed ahead, prior to entering the turn.

TPB161125 - APPLEBY LINE
CLASS EA DETAILED DESIGN

Comment Number	Comments	Themes	Response
1M	What is the process for picking which plan will be implemented?	Decision Making	The Class Environmental Assessment process outlines methodologies for developing and evaluating alternatives. The design alternatives are developed and assessed based on evaluation criteria considering traffic safety, engineering standards, social impacts, natural impacts, property impacts, construction and maintenance cost, etc. to make a decision.
1N	Who will be funding the construction? The town of Milton or the Region of Halton?	Funding	The Town of Milton will fund construction.
1O	How is making the road wider at the corner that trucks get stuck on going to stop trucks from using the hill?	Transportation	The proposed road widening is based on accommodating small trucks, not larger vehicles. Additional signs will be installed to more clearly prohibit heavy vehicles using the route. Further enforcement will be considered by the Town.
1P	How is widening the road better than doing nothing?	Decision Making	Concerns with existing conditions include safety, ability of vehicles to negotiate the curve, pavement deterioration, poor surface and groundwater drainage, and frequent emergency calls. The do nothing option does not address any of these concerns. The proposed widening addresses all of these concerns to some degree.
2A	The problem with our road is not that trucks get stuck but rather that trucks are using the road at all.	Transportation	Additional warning signs have been proposed including 'No Heavy Trucks' at both the Derry Road intersection and Rattlesnake Point entrance along Appleby Line.
2B	The widening of the hairpin would only make the road more user friendly for trucks and it would allow car traffic to speed up, neither of which will improve safety	Transportation	The proposed road widening is based on accommodating small trucks, not larger vehicles. Additional signs will be installed to more clearly prohibit heavy vehicles using the route. Further enforcement will be considered by the Town. The inner edge, being very steep, and the sharp bend of the hairpin turn are considered safety concerns. Vehicle speeds will not increase appreciably with the proposed improvements.
2C	We also have cyclists using this road which need to be considered	Transportation	Appleby Line within the project limits is not identified as a designated cycle route in town or regional planning documents. The road will continue to be a shared facility for both vehicles and cyclists as under existing condition.
2D	Our concerns with the road are related to the poor surface and the drainage	Drainage	Improved drainage facilities are proposed by installation of storm sewer and roadside ditches.
2E	Poor drainage is causing sheer ice on the road in the winter and flooding for our neighbours at the bottom of the hill	Drainage	Improved drainage facilities are proposed by installation of storm sewer and roadside ditches.
2F	Contact Google and other GPS systems to identify the road as one that cannot be used by trucks	Transportation	Comment noted and will be explored.
2G	The possible expansion of the road would take a chunk of our land and result in a road next to or in very close proximity to our garage and propane tank	Property Resumption	Careful consideration has been provided while developing road widening options to minimize property and natural environment impacts. The proposed road is design based on geometric standard developed by Transport Association of Canada with retaining wall to provide adequate offset to existing garage and propane tank and guiderail to prevent vehicle encroachment.

TPB161125 - APPLEBY LINE
CLASS EA DETAILED DESIGN

Comment Number	Comments	Themes	Response
3A	Signage should include "No Stopping" and "No Pedestrians" for the area bound by the two extreme bends at the top. This has increasingly become an area for photo opportunities. The area opened up near the top on the southwest side just above that same area should be widened where possible to allow more turning area for the top 90 degree turn. A second mirror would be helpful as well	Signage	To be discussed with Town of Milton.
3C		Transportation	Additional widening at the top end is not anticipated. A mirror has been proposed at this location to better view oncoming traffic.
3D	The entrance to Rattlesnake Point PP should be relocated perhaps 100 meters or more further north. That would move the growing traffic issues at the entrance away from the crest of the hill and hopefully allow for a left turn lane entering the gatehouse is kept as far in from Appleby as possible, it will reduce lineups on the road itself.	Transportation	Out of scope/beyond limits
3E		Transportation	Out of scope/beyond limits
3F	More signage could be posted advising people of the park entrance with time to prepare for themselves or others turning. This is becoming a very major and dangerous issue particularly in the early fall months.	Signage	Out of scope/beyond limits
4A	We would like to see improvements that do not encourage an increase in traffic especially heavy truck traffic.	Transportation	Additional warning signs have been proposed including 'No Heavy Trucks' at the Derry Road intersection and Rattlesnake Point entrance along Appleby Line.
4B	There is immediate need to manage surface water in this area	Drainage	Improved drainage facilities are proposed by installation of storm sewer and roadside ditches.
4C	Our preferred solution would be to close-off this section of the road at the curve and use the money saved to improve the remaining section.	Decision Making	Closing off the section of road was assessed in a separate study prior to this study. It was concluded in the report that closing the road is not a feasible option due to traffic demand and lack of viable alternate routes.
4D	The present signage and fines are not a deterrent. More signs, flashing signs, signs indicating vehicle speed and signs indicating fines may help, if enforced. Increased fine amounts may help –if enforced. The only guaranteed deterrent even now is a uniformed officer in a marked car parked at Derry and Appleby refusing the trucks entrance on this road.	Signage	Additional warning signs have been proposed including 'No Heavy Truck' at Derry Road intersection and Rattlesnake Point entrance along Appleby Line. Potential additional enforcement to be considered by Town of Milton.
4E	With the continued increase in Milton's population, there has been a great increase in traffic on Appleby. Increasing the width of the curve will make this worse as more people become more comfortable driving this road.	Transportation	The inner edge, being very steep, and the sharp bend of the hairpin turn are considered safety concerns, therefore localized road widening at the curve is proposed. However, the road geometrics are designed only to accommodate small trucks and not larger heavy vehicles.
4F	This raises the question of access for emergency vehicles. The present hairpin curve is not a deterrent even during snow and ice conditions resulting in chaos. Making it more accessible will increase these concerns.	Transportation	Widening the turn would in fact improve traffic safety and maneuverability
4G	Some people seem to think it is great fun to race up and down this section of Appleby. I do not know of anyone being issued a speeding ticket on this road. Widening the curve will promote more people seeking this thrill.	Speeding	The town will advise Regional Police of concerns regarding speeding.

TPB161125 - APPLEBY LINE
CLASS EA DETAILED DESIGN

Comment Number	Comments	Themes	Response
4H	<p>With the lack of shoulders and narrow lanes, people on bikes need protection from the cars. Pedestrians and joggers need protection from cars and bicycles speeding down this hill. The only indication that a cyclist is racing downhill is a distinct whistle from the tires. Bikes are unable to stop at this speed for a vehicle, a person or an animal. Increase in all traffic increases the possibility of accidents and fatalities.</p> <p>In addition, there is the hydro pole and cement barrier on a section of this road. This has been there for several years. It is a hazard and needs to be removed.</p>	Transportation	<p>Appleby Line within the project limits is not identified as a designated cycle route in town or regional planning documents. Due to limited right-of-way, general widening of the road and provision of dedicated bike lanes is not feasible as it will significantly affect adjacent properties and the natural environment. The road will continue to be a shared facility for both vehicles and cyclists as under existing condition. Improved signage will be considered.</p>
4I	<p>Better traffic control is needed be it painted lanes, more signs, speed bumps and more police presence.</p>	Infrastructure	<p>Comment noted. Option to relocate Hydro pole and/or modifying road geometrics will be explored during detailed design.</p>
4J	<p>Water flowing down Appleby is a major issue. There is no water control. Water coming through the road surface creating ice is a concern. Water weeps out of the vertical rock creating more road ice. There are no culverts/drainage to collect road water.</p> <p>We agree to improvements to Appleby Line. To do nothing is not acceptable.</p>	Transportation	<p>Additional warning signs and pavement markings are part of proposed improvements planned to be implemented during the initial phase of the project.</p>
4K	<p>Our preference is to close this road to local traffic at the curve with surface and water control improvements.</p>	Drainage	<p>Improved drainage facilities are proposed by installation of storm sewer and roadside ditches.</p>
4O	<p>Yearly budgeting for maintenance of this road is required</p>	Other	<p>Comment noted.</p>
4P	<p>Road resurfacing and drainage are paramount as is control of truck traffic</p>	Transportation	<p>Closing off the section of road was assessed in a separate study prior to this study. It was concluded in the report that closing the road is not a feasible option. As mentioned above, Improved drainage facility has been proposed by installation of storm sewer and roadside ditches.</p>
4Q	<p>Water issues need to be resolved. If not please provide us with contact information as to which Town of Milton department is responsible when our septic bed floods from the road water, resulting in our sewage holding tank backing up into our finished basement.</p>	Transportation	<p>Road resurfacing, drainage and prohibition of heavy vehicles are part of the proposed improvements.</p>
4R	<p>We are of the opinion that widening the curve is not the best option. This will create more traffic, including an increase in truck traffic, increase speeding down the hill and create increased safety concerns for cyclists and pedestrians. We should all be able to walk to Derry Road for our mail in safety.</p>	Funding	<p>Significant annual maintenance will be required should the proposed improvements not be implemented. With the improvements proposed in phases over several years, annual maintenance costs will be reduced.</p>
4S	<p>We need enforcement of the speed limit. Raising fines for trucks using Appleby is a good option- if enforced. Same with additional signage- if enforced.</p>	Decision Making	<p>The proposed road widening is based on accommodating small trucks, not larger vehicles, and is not anticipated to result in an appreciable increase in speed. Additional signs will be installed to more clearly prohibit heavy vehicles from using the route. Additional enforcement measures will be considered by the Town.</p>
4T	<p>Water issues need to be resolved. If not please provide us with contact information as to which Town of Milton department is responsible when our septic bed floods from the road water, resulting in our sewage holding tank backing up into our finished basement.</p>	Enforcement	<p>Comment noted. Town of Milton will consider further enforcement options.</p>
4V	<p>Water issues need to be resolved. If not please provide us with contact information as to which Town of Milton department is responsible when our septic bed floods from the road water, resulting in our sewage holding tank backing up into our finished basement.</p>	Other	<p>Where the road is rehabilitated, road runoff will be contained within the right-of-way and directed to existing drainage outlet points, preventing runoff from the road to private lands other than designated watercourses.</p>

TPB161125 - APPLEBY LINE
CLASS EA DETAILED DESIGN

Comment Number		Comments	Themes	Response
4W	Would you please indicate what the expected cost would be for the various options regarding Appleby Line	Funding	Concerns with existing condition have been identified including safety, ability of vehicles to negotiate the curve, pavement deterioration, poor surface and groundwater drainage, and frequent emergency calls. The do nothing/maintain existing option does not address any of these concerns.	
5A	The increase in traffic has been steady over the years and the resulting damage to the road is no surprise. Both Wendy and I are firmly against any substantial alteration to the road. It would seem to me that it's time to be practical and cost conscious given our tax dollars are so precious. If the road would simply be maintained without potholes and appropriate drainage installed the local residents would be happy.	Other		
5B	To increase the size of the road will only facilitate more truck traffic which is extremely dangerous and very damaging to the road	Transportation	The inner edge, being very steep, and the sharp bend of the hairpin turn are considered safety concerns, therefore localized road widening is proposed. However, the road geometrics are designed only to accommodate small trucks at the curve, and not larger heavy vehicles.	
5C	We need far more visible signage with a very stiff fine for any truck that uses the road	Enforcement	Additional warning signs including 'No Heavy Trucks' will be installed to prohibit heavy vehicles using the route. Enforcement may be considered by the Town. [2]	
6A	Our access to Appleby Line has taken a lot of damage and washout from the current and past condition on the road	Drainage	Improved drainage by either providing concrete curb and gutter including a storm sewer or roadside ditches is part of this project. It is expected that provision of a proper drainage facility will improve the road condition and lower unnecessary recurring maintenance.	
6B	There are some culverts that are uncovered and disconnected, I believe they are from other drainage areas of the road	Drainage	Comment noted and will be explored during detailed design.	
7A	Improve road safety for this stretch of the road, for motorists and residents	Transportation	Additional signage and road widening is proposed in view of traffic safety.	
7C	Improve road drainage that is currently playing havoc with the road surface and causing a lot of grief to residents. Improve road surfacing to minimize the constant erosion and the break up of the road edges	Infrastructure	Resurfacing and improved pavement marking are part of the project	
7D	Improved signage to ensure motorists are well aware of the restrictions on the use of this stretch of road. They should be posted at all strategic points such as Derry Road and Appleby, Steeles and Appleby, 14 Sideroad and Appleby, etc. This obviously is to advise against heavy traffic going through the hairpin.	Signage	Installation of additional warning signs including 'No Heavy Trucks' is proposed. The signs will be installed at Derry Road intersection and Rattlesnake Point entrance. [2]	
7E	Line marking including double solid lines in the middle of the road to prevent speeding and overtaking	Signage	Comment noted. Pavement markings will be provided based on guidelines outlined in the Ontario Traffic Manual.	
7F	Use of speed bumps	Transportation	Comment noted, traffic calming option will be considered during detailed design.	
7G	Well signed speed limits and displayed penalties for violations. Some enforcement effort would encourage motorists to comply	Signage	Installation of additional warning signs including 'No Heavy Trucks' is proposed. The signs will be installed at Derry Road intersection and Rattlesnake Point entrance. Additional enforcement will be considered by the Town. [2]	

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7J	<p>Widening the road, in addition to the cost involved, would encourage more and heavier traffic, which goes against the desired objective. We do not feel that widening the road is a priority. Safer road does not have to be a wider road. We should strive to continue to limit traffic to passenger cars, and cyclists of course, to the exclusion of heavier traffic.</p>	Transportation	<p>The inner edge, being very steep, and the sharp bend of the hairpin turn are considered safety concerns, therefore localized road widening at the curve is proposed. However, the road geometrics at the curve are designed only to accommodate small trucks , and not larger heavy vehicles. ☐</p>
7K	<p>We have had huge problems with road drainage that has over the years resulted in tons of gravel ending up in our Pond. This continues to be a serious problem. We have lost about 75% of our pond to gravel.</p>	Drainage	<p>Improved drainage by either providing concrete curb and gutter including a storm sewer or roadside ditches is part of this project.</p>
8A	<p>The widening road at the hairpin would only make the road user-friendly for the trucks. It would allow car traffic to speed up which will not improve safety.</p>	Transportation	<p>The inner edge, being very steep, and the sharp bend at the hairpin turn are considered safety concerns, therefore localized road widening at the curve is proposed. However, the road geometrics at the curve are designed only to accommodate small trucks , and not larger heavy vehicles. Further enforcement may be considered by the Town. ☐</p>
8D	<p>I believe more signs are needed strategically placed as you go up or down the hill. I've seen various roads with signs right in the middle of the road. This would hopefully allow truck drivers to read a "NO TRUCKS ALLOWED" sign and the posted fines for trucks getting stuck</p>	Signage	<p>Additional warning signs including 'No Heavy Trucks' will be installed as part of this project.</p>
8E	<p>I am opposed to widening the hairpin turn at Appleby Line</p>	Other	<p>The inner edge, being very steep, and the sharp bend of the hairpin turn are considered safety concerns, therefore localized road widening at the curve is proposed.</p>
9A	<p>I have a question regarding the "retaining wall" planned for the hairpin turn on Appleby line. I asked this question in my one on one with Milton town staff but was confused by the answer. It sounded like the "retaining wall" was an underground support wall to support the road. Can either of you clarify?</p>	Infrastructure	<p>Several sections of retaining wall will be installed at outer edge of the hairpin turn to account for elevation difference. Some, but not all sections of wall will be supported by tie-backs (straps) under the road surface.</p>
9B	<p>Is there any plan or budgeting in the current plan for a similar "guard rail" around the hairpin corner?</p>	Infrastructure	<p>Yes, provision of guide rail on outer edge of hairpin turn is part of the road design.</p>
9C	<p>Are you aware that our 5,000L Propane tank will be very close to your new proposal. Have you measured the distance to the propane tank with this proposal? What is the current by-law on how close a propane tank can be to a dangerous road?</p>	Other	<p>The proposed road is offset from the existing tank (approx. XXm which provides adequate separation between road and the tank. A guiderail is proposed on the outer edge or the curve to prevent vehicles from leaving the roadway.</p>
9D	<p>It is very common for cars and trucks to slide off the road in winter (and summer) and encroach upon our land. This issue has been documented in numerous prior communications with the town.</p>	Infrastructure	<p>A guiderail is proposed on the outer edge or the curve to prevent vehicles from leaving the roadway.</p>
9E	<p>It is clear there will be a major elevation change on your proposal around the hairpin turn, almost putting the road into the entrance to my garage. Certainly the road will be well above the garage entrance.</p>	Infrastructure	<p>??</p>
9F	<p>What plans (either natural or structural) have you planned to reduce noise and ugly sightline issues to your proposal?</p>	Other	<p>??</p>

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9G	What protections have you identified for the large pine trees lining our driveway?	Infrastructure	??
9H	Since this project includes the recommendation to expropriate a portion of my land and time is ticking for public questions and I have no legal background. I shall attempt to ask questions before the deadline today which covers what I think might be important for subsequent legal action in defense of our rights.	Property Resumption	
9I	Were all assessments done in this project (to the best of your knowledge) which would withstand a court challenge on land expropriation in an NEC area? Ex, a full Environmental assessment?	Other	Assessments have been completed in consultation with, and in accordance with NEC requirements.
9J	What discussions took place with the NEC (formally or informally) regarding the proposed development of this road (all phases until 2024-2025). Is there any documentation or conclusions to these discussions available?	Consultation	There were formal discussion and correspondence with NEC on two occasions. Both were documented.
9K	I have learned today that this phase is just the first of possibly 4 phases for this stretch of road. The budgeted amount is ~3.6M. Has the town completed any general overview of this plan in attaining this budget? Can the town share the proposed plans for this budgeting exercise?	Funding	??
9L	Has the NEC been consulted (formally or informally) on the complete proposal for this street?	Consultation	Yes, NEC has been consulted.
9M	Has any environmental assessments been done on the complete project scope?	Environment	A Natural Heritage assessment has been completed to evaluate environmental impacts associated with the proposed improvements.
9N	Has the currently disputed portion of the 7145 land further up the hairpin turn been taken into account "in any way" in the discussions for this project or any other phase(s) currently planned?	Property Resumption	Town of Milton to investigate property ownership.
9O	Has there been any communication with the NEC on this portion of disputed land either formally or informally?	Consultation	There has been on communication with NEC with respect to the lack of clarity of ownership.
9P	I do not support the proposed plan in any way and consider that the town engineering has missed a golden opportunity to actually make a "real" difference to safety on this section of the road with a reasonable, cost effective solution. This mis-guided recommendation resolves none of the local resident requests and would surely make matters worse on the escarpment.	Other	??

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9Q	<p>Your key stakeholders are "not" the local residents and their concerns. Your primary customer is the Milton Town engineering department and ensuring your recommendations meet professional engineering standards for Ontario. You were not given the appropriate background information (Voice of the Customer town residents VOC, appropriate property lines, flexible solutions, etc..) from the Milton engineering department to meet your mandate.</p>	Consultation	??
9R	<p>An initial assessment by a principal Woods consultant "should" have made you aware of the unique and treacherous aspects of the hill as one of the most dangerous all season stretches of road in the Halton region. One would have to spend 10's of millions of dollars to make this road fulfill the province of Ontario road guidelines (if ever they could). No Town council would ever approve such expenditures with a limited road budget which I suspect was the goal of this project.</p>	Funding	??
9S	<p>You (Wood) did not seek a waiver (Removal of liability) from the town to recommend "safer" cost effective options/solutions, accepted their limitations (NEC, etc...) and stuck to your lame excuse that the recommendation was fulfilling the Ontario safety guidelines and recommended an expensive engineering construction solution which would actually increase the likelihood of trucks attempting to drive this stretch of road. Surely you are aware of the plans for an Inter-modal in Milton and it's likely approval and the future implications never mind the current unsatisfactory reality?</p>	Other	??
9T	<p>Your (Milton) leadership (Paul Cripps) has been receiving specific resident feedback and recommendations for over a decade on the issues with specific solutions identified which we would find acceptable and which were cost</p>	Other	??
9U	<p>You (Milton) personally approached this project with blinders on. You ignored my advice on our initial meeting. Refused to follow up in a timely manner on my assertions that the land was ours, was inflexible in your approach and did not consider cost effective "real" non-engineering alternatives before proceeding with the PIC meeting. I am sorely disappointed with your departments handling of this file.</p>	Other	??
9V	<p>I sincerely hope you (Councilors) vote against this proposal in the budget meetings and seek to influence other councilors to do the same. Not because we are specifically targeted for land expropriation but because this solution is a waste of</p>	Other	??
10A	<p>11 years ago, when I moved into Appleby Line, it was so quiet and clean that I was able to savour the beauty of escarpment every moment, and really enjoyed the life of nature. But now I am surprised at the sudden loud noise of high speedy motor cycles and sport cars running along bumper to bumper on the road.</p>	Other	??

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10B	In addition to this, it becomes an annual thing to see broken guard rails at the top of the hill. It is noticeable that the number of accidents is on the rise after changing in 2016 the speed limit from 60 to 70.	Speeding	The posted speed limit along Appleby Line is 50km/hr.
10C	I also pick up empty beer cans/coffee cups and even industrial garbage as well whenever I cut grass on the road.	Other	??
10D	Since a hairpin bended Appleby Line is one of popular roads with the speeding motorists, the road should be made in the way that safety is the top priority.	Transportation	In view of traffic safety, additional warning sign and geometric improvements including road widening at the hairpin turn is proposed.
10E	It used to happen many times that two cars are faced at hairpin curve because they cannot see each other due to geological conditions. Even if they do, the road should not be widened such that two trucks can go thru at the same time at the hairpin curve. Because the widen road entices the motorist to speed up. As far as transportation is concerned, Steeles and Appleby Line north meet the need of the transport trucks. Therefore, keep the rule as it is (i.e. Trucks and Buses Prohibited).	Other	This comment identifies a safety concern since due to narrower lane width and sharp bend vehicles encroach onto opposing lanes. Localized road widening is proposed for to mitigate this issue. Installation of additional warning signs including 'No Heavy Trucks' is proposed. The signs will be installed at Derry Road intersection and Rattlesnake Point entrance.
10F	On top of the existing mirror, install motion sensor detectors which send a signal to turn on a flash light in case that two cars (one from top hill and the other from bottom hill) come to the mirror simultaneously.	Signage	Comment noted, option to provide sensor may be explored during detailed design.
10G	Put solid line marking in the middle of the road.	Signage	Pavement marking will be provided based on guidelines outlined in the Ontario Traffic Manual.
10H	Several years ago, one dog was killed, and another was injured by cars. As far as I know, this 70 is the highest speed limit compared to that of other streets considering the housing density within same distance. It is strongly recommended to change back to 60 or less.	Speeding	The posted speed limit along Appleby Line is 50km/hr.
10I	If the traffic regulations allow, install a stop sign at Rattlesnake Point Park. This is the best option to prevent any more accidents.	Signage	Provision of a stop control introduces unnecessary delay to traffic movement and therefore is not proposed at the subject location.
10J	It seems that there are several ground water sources spilling all over the road throughout year. Ice on the streets makes winter driving extremely dangerous. By a geological ground survey, this problem shall be resolved as earliest as possible.	Drainage	Improved drainage facilities are proposed by installation of storm sewer and roadside ditches. Groundwater will be captured and conveyed via concrete curb and gutter (where it seeps out to the surface) and via subdrain when below ground, outletting into a storm sewer or roadside ditch.
10K	Speed limit is not directly relevant to the specific subject being tabled. However, it should matter to all of residents in the section of Appleby Line from Campbellville to Derry.	Speeding	Comment noted. Although speed limit signs are posted within the corridor, advisory signs are proposed to advise drivers to reduce speed especially on along steep slope and bends.
11A	Light up "No Trucks" signs	Signage	Additional conventional signage is proposed. LED signage will be reviewed and considered.
11B	When road straightens below last curve (going north), install safe (snow plow-resistant) speed bumps/stripes to reduce fast traffic trying to get to a green light	Speeding	Comment noted. Provision of traffic calming measure will be reviewed and considered.

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11C	Utilize inner area at hairpin turn instead of acquiring John's property/tree removal		Property Resumption	The inner edge has a significant steep slope and tight bend, therefore, road widening on the outer edge is proposed.
11D	Close off parking area south of last curve from top		Transportation	Isn't the parking area for mail-pickup?
12A	I would like to see the final pavement surface to be of the highest friction capability. Braking is paramount.		Infrastructure	Comment noted. Options for pavement with a higher coefficient of friction will be explored.
13A	Curve widening & construction of a retaining wall along main curve (& down the road) in the roadway - Will it reach the overall objective?		Transportation	The objective of the project is to address identified deficiencies including safety, ability of vehicles to negotiate the curve, pavement deterioration, poor surface and groundwater drainage, and frequent emergency calls. The proposed design at the sharp curve addresses these objectives at this location.
13B	The proposed concrete/metal wall along the front of our property (& the top of the hill) in my opinion would shave off even further the soil from the bank along our frontage and result in the removal of more trees - bringing the cars even closer & speedier to our door step - these types of walls are for major highways & are not conducive to the conservation environment (giving more confidence to the existing speeding traffic coming down the road). It does not take into consideration the deer crossings throughout the spring and summer months & other wild life (depending on how high the walls are intended to be the deer would be trapped with their young by speeding cars - I know this may be a small consideration for some along with the dissuasion of cyclist and occasional hikers walking up and down the road that makes the area special to all).		Infrastructure	We understand your concerns regarding retaining walls. The height and extent of retaining walls will be minimized to the degree possible. The team biologist will review the concerns you noted regarding wildlife passage.
13C	It is also important to note that part of the work carried out early last year along the hairline bend to help the drainage problem opposite & down the road did little to reach the actual drainage objective		Drainage	Comment noted, however, work done earlier was not intended to address drainage.
13D	It created an eyesore and erosion along the banks where the trees along the bank & soil were removed from that location & down the road by the hydro pole - another eyesore & danger zone left for over a year now.		Other	??
13E	Also, the movement of water in a downpour will always flow along the hill curve down the middle of the road then towards the opposite side of the drainage proposal (because of the natural slope & elevation of the road).		Drainage	Improved drainage along the corridor is part of the proposed design.
13F	A further widening of the roadway along the curve & down the road only increases the likelihood of truck safety and therefore encourage trucks to take the chance - there is well known saying: 'if you build it they will come' — I believes this to be true in this case & at a much higher speed. In my opinion this proposal does not address this.		Transportation	The proposed road widening is based on accommodating small trucks, not larger vehicles. Additional signs will be installed to further prohibit heavy vehicles using the route. Additional enforcement will be considered by the Town.

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13G	<p>The proposal also does not address the resurfacing of the road in phase 1 - again the increased traffic of trucks and cars and the fact that we have not had the road resurfaced for many years is another point, or the painting of solid lines at the edge & middle of the road (which has never been addressed in over 30+ years) - do we have to wait 5 years for a more elaborate & costly proposal to kick in? This is not the case with surrounding country roads in the area with hills.</p>	Transportation	Resurfacing/roadway reconstruction and improved pavement marking around the hairpin curve is part of Phase 1. Pavement improvement beyond the curve is part of subsequent phases.
13H	<p>It was also mentioned that no extensive widening of the road is part of the proposal but it is hard to know what extensive actually means in your opinion when you take into consideration the sidewalk, the drainage & wall allowance and therefore the overall impact to adjacent properties and the environment. We are quite close to the road as is & therefore would not be agreeable without understanding these direct impacts.</p>	Transportation	The impacts associated to natural environment and adjacent properties associated with road widening were illustrated on the Road design plans, which were exhibited during PIC and are available online.