



Road Closure Management Plan

**Road Closure Management Plan for Tutela Heights
Road in the City of Brantford**

4 December 2020

Road Closure Management Plan for Tutela Heights Road

Introduction

WSP E&I Canada Limited (WSP) was retained by the City of Brantford to prepare a Road Closure Management Plan for Tutela Heights Road. The Study Area, which includes the subject road section and the surrounding lands, is illustrated on Figure 1. A technical memo was developed to document existing conditions within the Study Area and develop and evaluate various Alternative Access Configurations to identify a Preferred Access Configuration in support of this Road Closure Management Plan. This memo is provided in **Appendix A**. The Preferred Access Configuration identified in this Road Closure Management Plan should be confirmed by a comprehensive future Study carried out following the Municipal Class Environmental Assessment process (Municipal Engineers Association, 2015, as amended), or the *Planning Act, 1990* process.

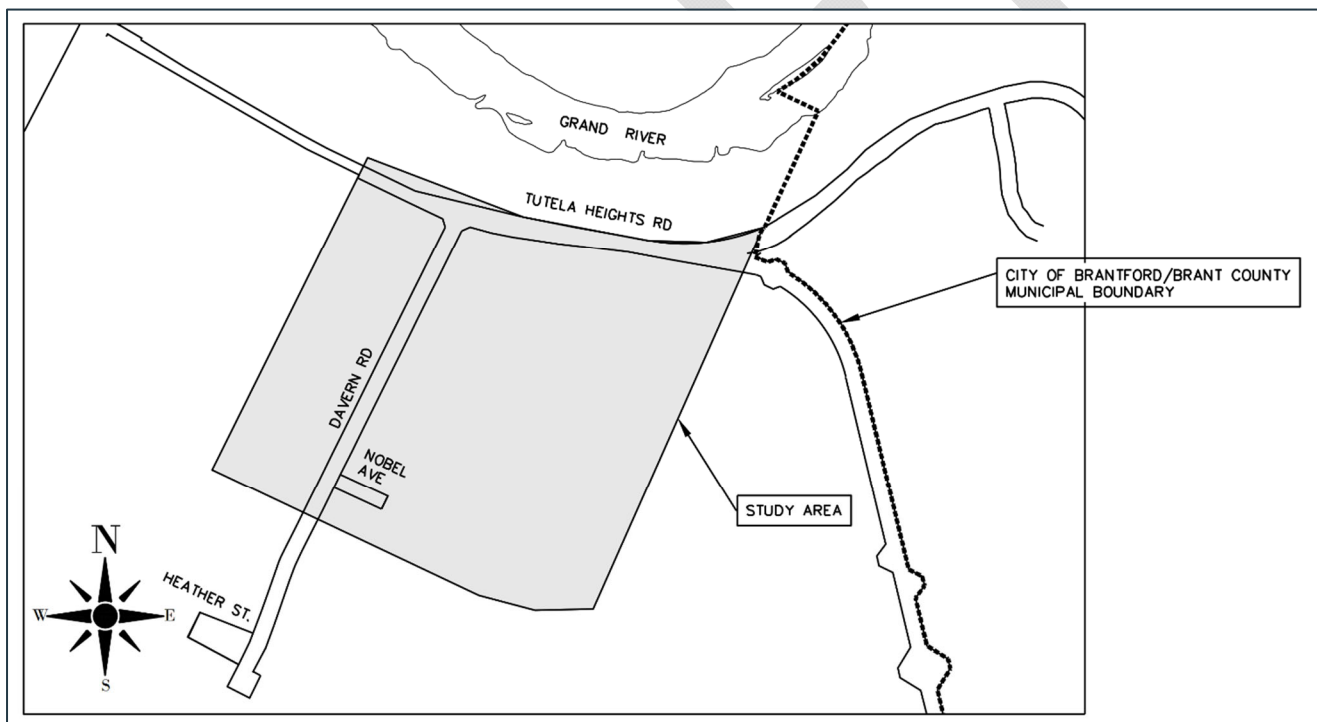


Figure 1: Study Area

Background

In June 2017, the County of Brant completed a Class Environmental Assessment and filed a Project File Report to identify and address impacts on Tutela Heights Road, from the Bell Homestead to approximately one kilometre east, due to unstable conditions of the slope area between the roadway and the Grand River. The Project File Report recommended monitoring

of the embankment failure as it progresses and eventual closure of Tutela Heights Road when warranted (Parsons Inc., 2017). Since filing of the Project File Report, a portion of Tutela Heights Road from Mount Pleasant Street to east of Davern Road has been transferred from the County of Brant to the City of Brantford. The portion of Tutela Heights Road from Erie Avenue to east of Davern Road will remain in County's ownership. It is understood that the County of Brant intends to terminate their section of the roadway in a cul-de-sac at the County limit east of Davern Road. As an interim measure, the City of Brantford will construct a similar cul-de-sac at the east limit of their portion of Tutela Heights Road, continuing to allow access to the homes on the south side of the road, east of Davern Road, until such a time as the monitoring indicates that the road must be closed.

The Ministry of the Environment, Conservation and Parks (MECP), in accepting the recommendations of the Project File Report (Parsons Inc., 2017), imposed certain requirements on the County, and subsequently on the City. These terms are outlined in their letter to the County of Brant received September 8, 2018 and include the requirements for preparation of a Road Closure Management Plan. The letter states that the Road Closure Management Plan shall include, but not be limited to:

- Expected timing for road closure;
- Activities undertaken by the City of Brantford;
- Arrangements for alternative property access;
- Drainage improvement works;
- Safety and warning measures including warning signage, fencing, pedestrian access restrictions;
- Vehicular traffic restrictions, and
- Public notification plan.

In their subsequent letter, MECP extended the deadline for preparation of this plan to December 2020.

The following sections were developed to provide information to address MECP's requirements of the Road Closure Management Plan as outlined above.

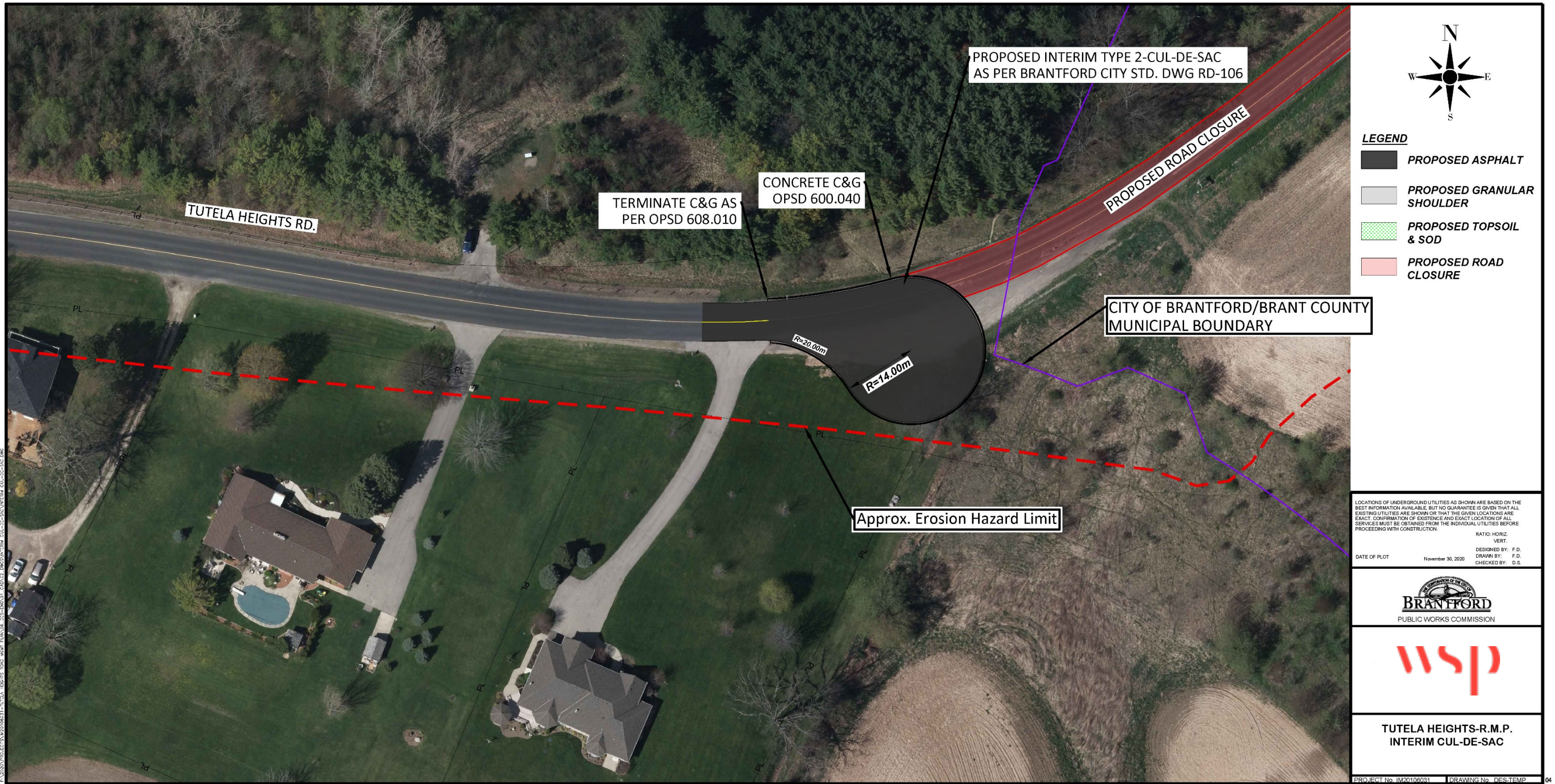
Expected Timing for Road Closure

This road closure management plan has been prepared to meet the requirements imposed on Brant County and subsequently on the City of Brantford following recommendations of permanent road closure of a portion of Tutela Heights Road as per the Project File Report (Parsons Inc., 2017). As an interim measure, both the City of Brantford and the County of Brant will construct roadway terminating cul-de-sacs on both sides of the existing roadway at the municipal boundary. The preliminary design of the interim roadway cul-de-sac for the City of

Brantford has been prepared using City of Brantford municipal design standards as well as Ontario provincial design standards. This design is illustrated on **Figure 2**. This cul-de-sac has been laid out within the existing roadway right-of-way and will allow access for residents to use the existing roadway while the embankment failure is monitored. At this time, an expected date of road closure has not been determined, but is subject to the progression of erosion as measured through monitoring.

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Figure 2: Preliminary Design of Interim Cul-De-Sac



Activities Undertaken by City of Brantford

As noted above, WSP E&I Canada Limited was retained by the City of Brantford to develop this Road Closure Management Plan. As part of the development of this plan, a technical memorandum was developed to document existing conditions within the Study Area (

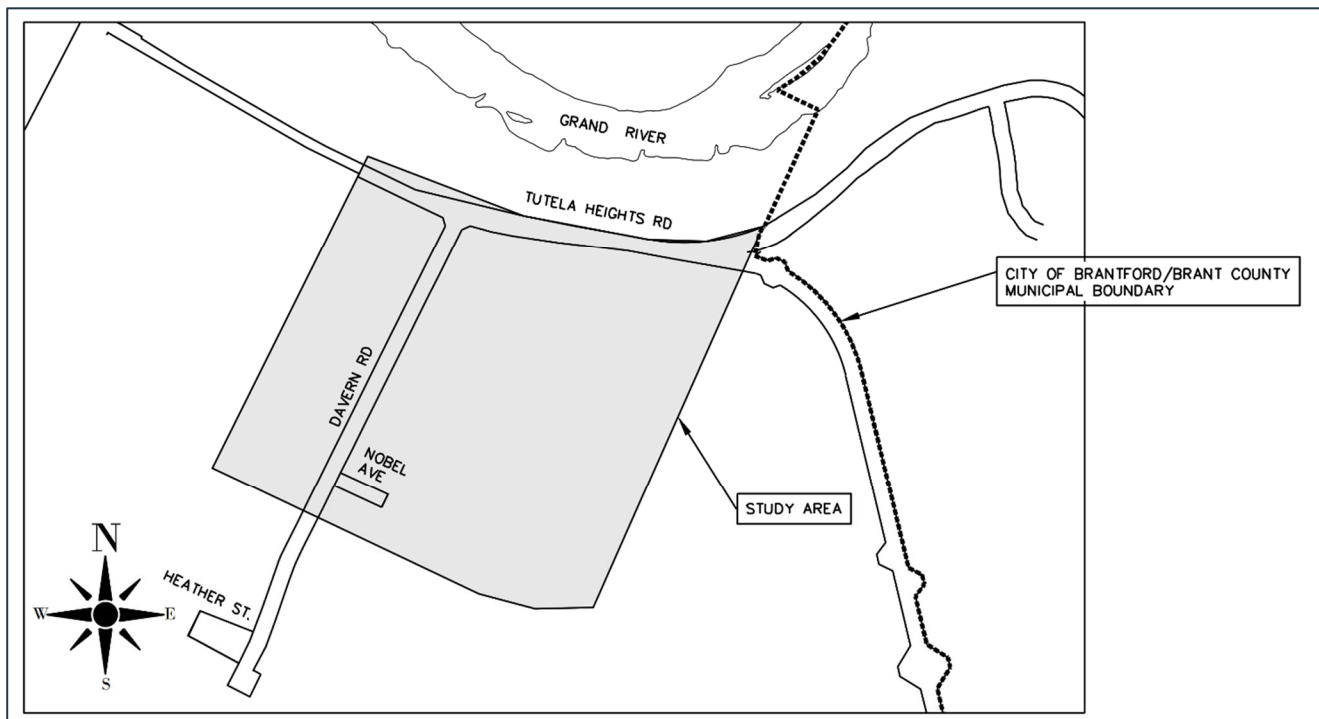


Figure 1:) and evaluate various Alternative Access Configurations to identify a Preferred Access Configuration in support of the Road Closure Management Plan. This memo is provided in **Appendix A**. The following subsections summarize activities completed to identify a Preferred Access Configuration for this Road Closure Management Plan.

Secondary Source Review for Existing Conditions

A review of various documents was conducted to develop an understanding of the existing conditions within the Study Area. No field investigations were completed to confirm existing conditions, as completion of field investigations was not in the scope of this assignment. Existing conditions within the Study Area relating to the Socio-Economic Environment, Natural Environment, and Cultural Environment were reviewed and documented.

Development of Design Criteria

Design criteria were developed for the Alternative Access Configuration for Tutela Heights Road based on the City of Brantford's Design and Construction Manual for Roads and Transportation (City of Brantford, 2020) and Geometric Design Guide for Canadian Roads (Transportation Association of Canada, 2017).

Development of Alternative Access Configurations

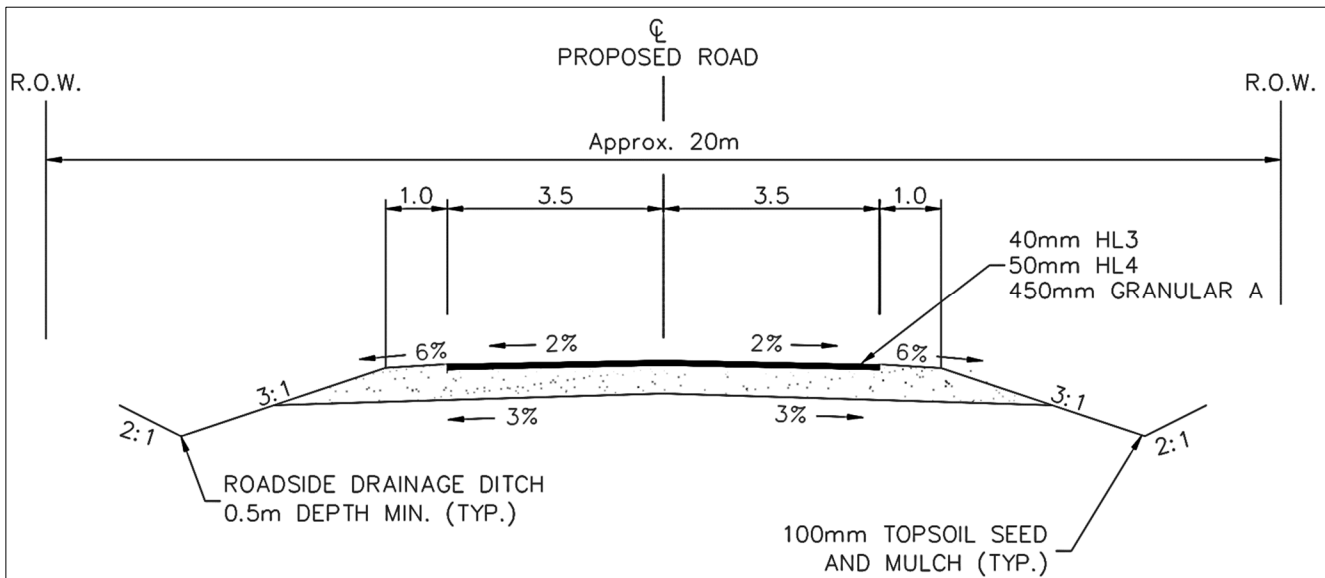
After reviewing potential access configurations, it was possible to provide access to the rear lot line of properties fronting Tutela Heights Road, east of Davern Street, via Noble Avenue off Davern Street as well as the rear lot line of properties on Tutela Heights Road, west of Davern Street. Using the Design Criteria provided, a rural road cross-section with approximately 20 m right of way limits was developed. Although the existing roadway configurations of Tutela Heights Road and Davern Road implement semi-mountable concrete curb and gutter, Ontario provincial design standards and specifications have been referenced to transition the existing roadway configuration into the proposed rural cross section. The design elements of this proposed cross-section are outlined below and illustrated on **Figure 3**:

- One traffic lane in each direction (each 3.5 m wide)
- Gravel shoulder on each side (each 1.0 m wide)
- Roadside drainage ditches on each side

Using the above Typical Cross-Section design elements, the following three Alternative Access Configurations were developed:

- **Alternative Access Configuration 1:** A new offset road alignment proposed slightly south of the existing Tutela Heights Road and south of the erosion hazard limit that terminates at a municipal standard cul-de-sac within municipal boundaries. This alternative access configuration proposes a new three-legged T-intersection at Tutela Heights Road & Davern Road.
- **Alternative Access Configuration 2:** A new road alignment extending from Nobel Avenue which would run along the back of the residences that front onto Davern Road and Tutela Heights Road. In addition, this alternative access configuration includes a new road section from Tutela Heights Road, West of Davern Road that provides access to the three residences from the rear. This alternative design proposes the closure of the existing Tutela Heights Road/Davern Road intersection and re-routes traffic to and from Davern Road onto the proposed west road section. The new road section west of Davern will provide access to three residences from the rear lot line.
- **Alternative Access Configuration 3:** A new road alignment extending from Nobel Avenue which would run eastward into the existing agricultural lands, then run northward midway through the existing agricultural lands until the rear property line of the four residences that front on to the existing Tutela Heights Road. From that point, this alternative would run in an east-west direction. In addition, this alternative access configuration includes a new road section from Tutela Heights Road, West of Davern Road that provides access to the three residences from the rear. This alternative design proposes the closure of the existing Tutela Heights Road/Davern Road intersection and re-routes traffic to and from Davern Road onto the proposed west road section. The new road section west of Davern will provide access to three residences from the rear lot line.

Figure 3: Typical Section



Development of Criteria for Evaluating the Alternative Access Configurations

In order to identify the impacts and advantages of each Alternative Access Configuration, evaluation criteria were developed within each of the categories related to Natural, Socio-Economic, and Cultural Environments and Financial Considerations. These criteria were chosen based on their ability to identify potential environmental effects of each alternative and distinguish the advantages and disadvantages between them.

Evaluation of Alternative Access Configurations

Using the evaluation criteria, each of the access configurations was evaluated to identify potential impacts associated with Natural, Socio-Economic and Cultural Environments and Technical and Financial Considerations. The Preferred Access Configuration is described in the following section.

Arrangements for Alternative Property Access

As per Section 3.5 of the attached memo (**Appendix A**), Alternative Access Configuration 3 was identified as the preferred alternative property access configuration due to its comparative advantage over other alternatives. This preferred access configuration includes a new road alignment extending from Nobel Avenue which would run eastward into the existing agricultural lands. This alternative would then run northward midway through the existing agricultural lands until the rear property line of the four residences that front on to the existing Tutela Heights Road. From that point, this alternative would run in an east-west direction. In addition, this preferred access configuration includes a new road section from Tutela Heights Road, west of Davern Road that provides access to the three residences from the rear. This alternative design proposes the closure of the existing Tutela Heights

Road/Davern Road intersection and re-routes traffic to and from Davern Road onto the proposed west road section. The Preferred Access Configuration (Alternative Access Configuration 3) is illustrated in **Figure 4**.

With this design the new private property access driveways will provide access from the new road to the back of the four residences that currently front onto the existing Tutela Heights Road. This access configuration divides existing agricultural land into two equal and developable land parcels that reflect good land use planning. This alternative access configuration will require the least amount of vegetation removal and does not impact historic homesteads in the Study Area. The proposed west roadway section will require property acquisition. This design option will provide the highest degree of functionality with the least impact to existing homes.

As noted previously, the Preferred Access Configuration should be confirmed by a comprehensive future Study carried out following the Municipal Class Environmental Assessment process (Municipal Engineers Association, 2015, as amended), or the *Planning Act, 1990* process. During an environmental assessment and detailed design phase the driveways shall be designed to meet all applicable standards and graded to minimize impacts to private lots. Though this access configuration will be more costly than the other alternatives, it has been laid out to account for future land development and minimize future costs associated with site reconfiguration.

Drainage Improvement Works

A desktop review using online mapping by Grand River Conservation Authority was completed to identify existing watercourses and drainage features within the Study Area. Due to the increase in impervious surface area by the preferred access design, drainage features were implemented that direct overland stormwater flow into existing natural watercourses. As a means to provide drainage improvement, roadside drainage ditches along both sides of proposed property access roads have been proposed. These ditches shall be designed and graded as per municipal and provincial standards. Locations for driveway culverts as well as roadway cross culverts are proposed to convey ditch drainage flow towards the natural watercourses. Further detailed design of surface water drainage and integration to existing storm sewer systems along Tutela Heights Road and Davern Road will need to be evaluated at a detailed design stage. All drainage improvement features / stormwater management are subject to further evaluation through environmental assessment / Planning Act process.

Safety and Warning Measures

During an environmental assessment phase, a comprehensive review of traffic and pedestrian safety shall be completed to ensure that adequate signage, advance warning, and access limitations are implemented along Tutela Heights Road once it is mandated for closure.

Pavement markings and standard roadway signage shall be modified as required to improve driver expectation of the road closure and to redirect vehicular traffic to the proposed alternative access roadway. All proposed signage and pavement markings shall be in accordance with applicable municipal and provincial standards and specifications.

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Figure 4: Preferred Access Configuration



Vehicular Traffic Restrictions

As an interim measure prior to the permanent road closure and as outlined in the Project File Report (Parsons Inc., 2017), Truck traffic will be prohibited on Tutela Heights Road, except for local deliveries. Local non-truck traffic on Tutela Heights will be allowed to use the existing roadway to the terminating cul-de-sac as illustrated on **Figure 2**. This will allow for vehicles to access the existing properties fronting Tutela Heights Road as well as safely loop back around and travel westbound back to Mt. Pleasant Road. During this interim period further investigation will be carried out by the city regarding the embankment failure. Once long term erosion as monitored has reached a threshold value, Tutela Heights Road east of the Bell Homestead including the interim cul-de-sac will be closed off for all vehicle and private property access. This will be done to minimize the existing roadway usage and loading and in turn minimize the rate of embankment failure. The closed roadway will only be made accessible for municipal servicing vehicles as well as vehicles required to further investigate embankment stabilization solutions. Vehicular traffic to access Davern Road will be redirected onto the proposed west access road. Residents that will be affected by this closure will need to utilize the proposed property access roadway to access their properties.

Public Notification and Consultation

As per the conditions imposed by the MECP, this road closure management plan will be posted on the City of Brantford's website to inform the public of the project and allow interested stakeholders to forward their comments to city staff. The road closure management plan shall be posted for a minimum of 60 days. Further consultation and the arrangement of a public meeting with stakeholders will be arranged as per the city's discretion. Consultation with Indigenous Communities and regulatory agencies will be carried out under the municipal class environmental assessment process at a later stage.

Next Steps

The purpose of this Road Closure Management Plan was to address to conditions placed by the MECP. This plan will be posted to the City of Brantford's website for a minimum of 60 days for public review. As discussed previously and in the technical memo (**Appendix A**), the Preferred Access Configuration should be confirmed through a comprehensive future study carried out following the Municipal Class Environmental Assessment process (Municipal Engineers Association, 2015, as amended), or the *Planning Act, 1990* process.

Sincerely,

WSP E&I Canada Limited

Prepared by:

Reviewed by:

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References

- City of Brantford. (2020). *Design and Construction Manual - Roads and Transportation - Linear Municipal Infrastructure Standards (V4 - May - 2020)*. Retrieved from <https://www.brantford.ca/en/your-government/design-construction.aspx>
- Municipal Engineers Association. (2015, as amended). *Municipal Class Environmental Assessment manual (October 2000, as amended in 2007, 2011 & 2015)*. Retrieved from <https://municipalclassea.ca/>
- Parsons Inc. (2017). *Project File Report - Tutela Heights Road Slope Stabilization Class Environmental Assessment Study*. Contract # 2-15. Prepared for: The Corporation of the County of Brant. Retrieved from <https://www.brant.ca/Modules/News/index.aspx?FeedId=538227ba-2d88-4892-86c5-0fd6aa039aa5&page=2&newsId=4193eb70-addc-42e7-a33d-9f0eee72b255#>
- Transportation Association of Canada. (2017). *Geometric Design Guide for Canadian Roads (2017 Edition)*. Retrieved from <https://www.tac-atc.ca/en/publications-and-resources/geometric-design-guide-canadian-roads>

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Road Closure Management Plan

Appendix A (Evaluation Memo)

Memo

To: Matt Welsh C.Tech., PMP (City of Brantford)
From: Mir Ahsan Talpur, M.Env.Sc., EP
cc: Faizan Dhalla, EIT, CAPM
Date: 1 December 2020
Re: **Evaluation of Alternative Access Configurations - Road Closure Management Plan for Tutela Heights Road – City of Brantford**

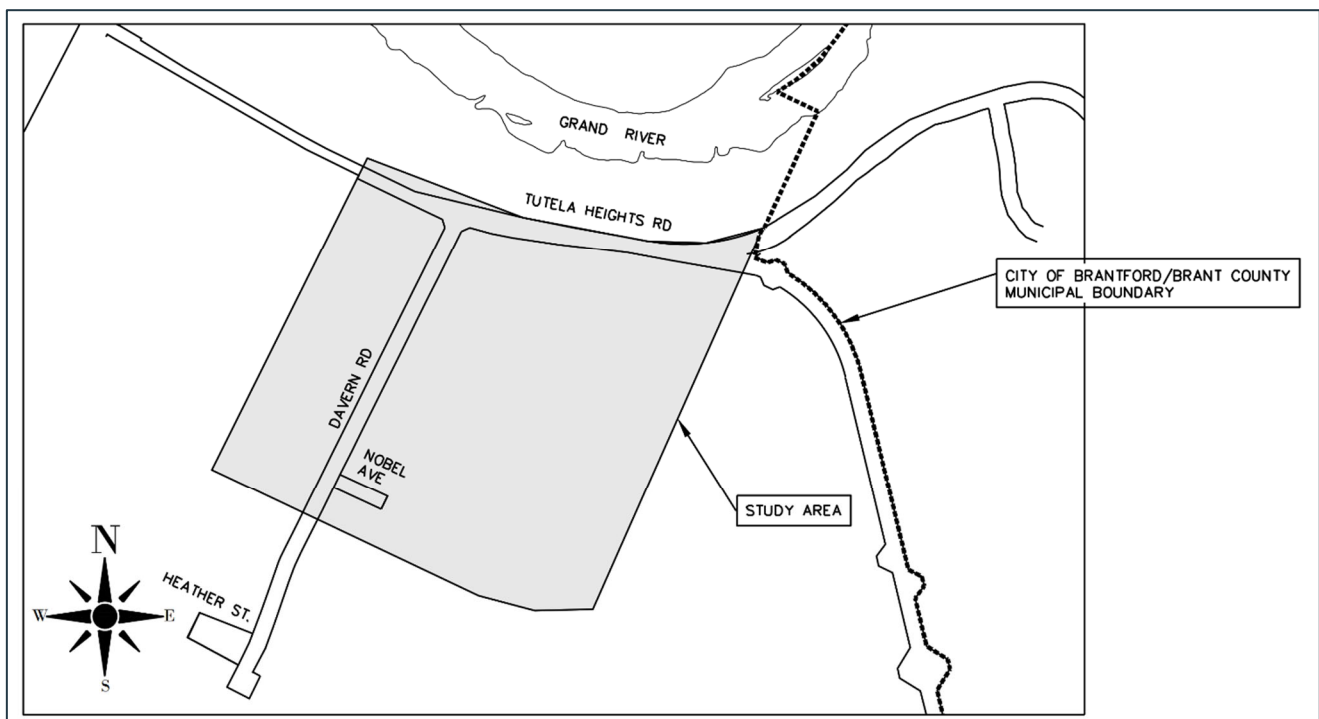
Reviewer: David Sinke B. Eng. Mgt., P.Eng.
WSP File No.: IM20106031

1.0 Introduction and Background

1.1 Introduction

WSP E&I Canada Limited (WSP) was retained by the City of Brantford to prepare a Road Closure Management Plan for Tutela Heights Road east of Davern Road. The Study Area, which includes the subject road section and the surrounding lands, is illustrated on **Figure 1-1**. The purpose of this memo was to document existing conditions within the Study Area and develop and evaluate various Alternative Access Configurations to identify a Preferred Access Configuration in support of the Road Closure Management Plan. In carrying out this exercise, secondary source information was used, and no dedicated field investigations were completed. Furthermore, no consultation was conducted with the members of the public, Indigenous Communities, any stakeholder groups, or regulatory agencies. The Preferred Access Configuration identified in this memo should be confirmed by a comprehensive future Study carried out following the Municipal Class Environmental Assessment process (Municipal Engineers Association, 2015, as amended), or the *Planning Act, 1990* process.

Figure 1-1: Study Area



1.2 Background

In June 2017, the County of Brant completed a Class Environmental Assessment and filed a Project File Report to identify and address impacts on Tutela Heights Road, from the Bell Homestead to approximately one kilometre east, due to unstable conditions of the slope area between the roadway and the Grand River. The Project File Report recommended monitoring of the embankment failure as it progresses and eventual closure of Tutela Heights Road when warranted (Parsons Inc., 2017). Since filing of the Project File Report, a portion of Tutela Heights Road from Mount Pleasant Street to east of Davern Road has been transferred from the County of Brant to the City of Brantford. The portion of Tutela Heights Road from Erie Avenue to east of Davern Road will remain in County's ownership. It is understood that the County of Brant intends to terminate their section of the roadway in a cul-de-sac at the County limit east of Davern Road. It is assumed that as an interim measure, the City of Brantford will construct a similar cul-de-sac at the east limit of their portion of Tutela Heights Road, continuing to allow access to the homes on the south side of the road, east of Davern Road, until such a time as the monitoring indicates that the road must be closed.

The Ministry of the Environment, Conservation and Parks (MECP), in accepting the recommendations of the Project File Report (Parsons Inc., 2017), imposed certain requirements on the County, and subsequently on the City. These terms are outlined in their letter to the County of Brant received September 8, 2018 and include the requirements for preparation of a Road Closure Management Plan (**Appendix A**). The letter states that the Road Closure Management Plan shall include, but not be limited to:

- Expected timing for road closure;
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- Vehicular traffic restrictions, and
- Public notification plan.

In their subsequent letter, MECP extended the deadline for preparation of this plan to December 2020 (**Appendix A**).

2.0 Existing Conditions

2.1 Secondary Source Review

A review of various documents was conducted to develop an understanding of the existing conditions within the Study Area. No field investigations were completed to confirm existing conditions, as completion of field investigations was not in the scope of this assignment. Relevant sections of the following documents were reviewed:

- City of Brantford Areas of Archaeological Potential Map, January 2017 (City of Brantford , 2017)
- Project File Report – Tutela Heights Road Slope Stabilization Class Environmental Assessment Study, June 2017 (Parsons Inc., 2017), including the following background reports prepared in support of the Project File Report:
 - Tutela Heights Road Environmental Assessment – September 30th Environmental Investigations Summary (Parsons Inc., 2015)
 - Tutela Heights Road Slope Stabilization - Tutela Heights Road - Brantford, Ontario. Geotechnical Investigation Report, January 2017 (Englobe Corp., 2017)

- Stage 1 Archaeological Assessment – Tutela Heights Road Slope Stability Municipal Class Environmental Assessment – Stewart & Ruggles Tract, Hiram Phelps Tract, Geographic Township of Brantford, Brant County (Archaeological Research Associates Ltd., 2016)
- Envisioning Brantford – Municipal Comprehensive Review – Part 3: Preferred Settlement Area Boundary Expansion and Preliminary Land Use and Transportation Plan (DRAFT – April 2019) (SGL et al, 2019)
- Staff Report 2019-184 – Official Plan Review – Preferred Settlement Area Boundary Expansion, April 9, 2019 (City of Brantford, 2019)
- City of Brantford Official Plan – Envisioning Our City: 2041 (Draft June 2020) (City of Brantford, 2020)

2.2 Socio-Economic Environment

2.2.1 Existing Roads

The existing major roads within the Study Area are Tutela Heights Road and Davern Road. These roads have a two-lane cross section. In addition, there is an approximately 38 m long extension of Nobel Avenue off Davern Road approximately 350 m south of Tutela Heights Road. This small section of Nobel Avenue has no exit, and it appears not to be in service.

2.2.2 Future Roads

The Municipal Comprehensive Review - Part 3 - (SGL et al, 2019) developed as part of the ongoing Official Plan Review has identified Preliminary Land Use and Transportation Plan for the larger Tutela Heights area. The land use plan identifies the section of Tutela Heights Road within the Study Area as Future Road Closure and Implementation of Alternative Access. It also identifies a Potential Road Corridor subject to EA south of the current Study Area. An excerpt from the Tutela Heights land use plan is provided in **Figure 2-1**.

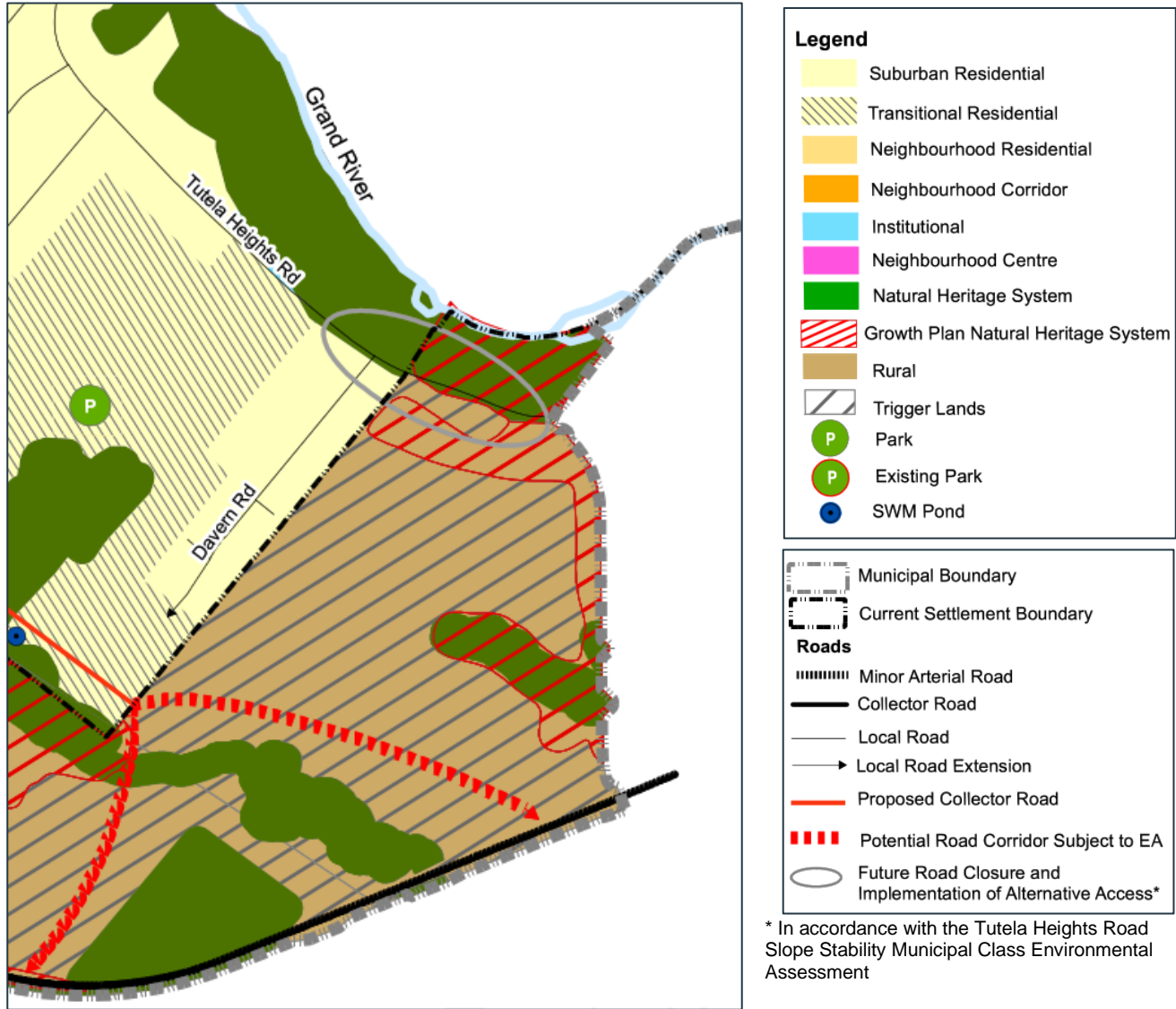
2.2.3 Land Use

The current land uses within the Study Area are primarily residential, and agricultural. Existing residential properties fronting on Tutela Heights Road and Davern Road within the Study Area include older homes. Properties along Tutela Heights road are generally comprised of larger lots. Agricultural lands are located at the rear of the residential properties fronting on Tutela Heights Road, east of Davern Road.

2.2.4 Future Land Use

As noted previously, the Municipal Comprehensive Review - Part 3 - (SGL et al, 2019) developed as part of the ongoing Official Plan Review has identified a Preliminary Land Use and Transportation Plan for the larger Tutela Heights area. The land use plan identifies lands east of Davern Road within the current Study Area designated as "Rural" and "Trigger Lands". Trigger Lands are currently not contemplated for development. The land use plan also identifies the Growth Plan Natural Heritage System within the northern most section of the Study Area, east of Davern Road. Lands west of Davern Road, within the Study Area, are designated as Suburban Residential. An excerpt from the Tutela Heights land use plan is provided in **Figure 2-1**. In addition, a new plan of residential subdivision has been proposed west of the Study Area (south of Tutela Heights Road, between Davern Road and Rue Chateau Terrace) (Parsons Inc., 2017). This subdivision plan was not available for WSP's review.

Figure 2-1: Tutela Heights Land Use Plan



Source: Excerpt from Envisioning Brantford – Municipal Comprehensive Review – Part 3: Preferred Settlement Area Boundary Expansion and Preliminary Land Use and Transportation Plan (DRAFT – April 2019) (SGL et al, 2019)

2.3 Natural Environment

As noted previously, field investigations were not completed as part of this assignment. Secondary source information was relied upon in order to develop an understanding of existing conditions within the Study Area. An Environmental Investigations Summary Memo (Parsons Inc., 2015) developed in support of the Tutela Heights Road Slope Stabilization Class Environmental Assessment Study (Parsons Inc., 2017) describes natural environmental conditions within the current Study Area. Natural environmental field investigations in support of the Tutela Heights Road Slope Stabilization Class Environmental Assessment Study (Parsons Inc., 2017) were completed in September 2015. Although the field investigations completed are more than five (5) years older, this is the best available secondary source information for the current Study Area and has been relied upon in this memo. It is recommended that natural environmental field investigations shall be completed as part of the future study to confirm and/or refine natural environmental features within the Study Area. Another document

that discusses the proposed Natural Heritage System for the current Study Area is Municipal Comprehensive Review - Part 3 - (SGL et al, 2019), which recommended the Natural Heritage System within Tutela Heights area.

2.3.1 Vegetation

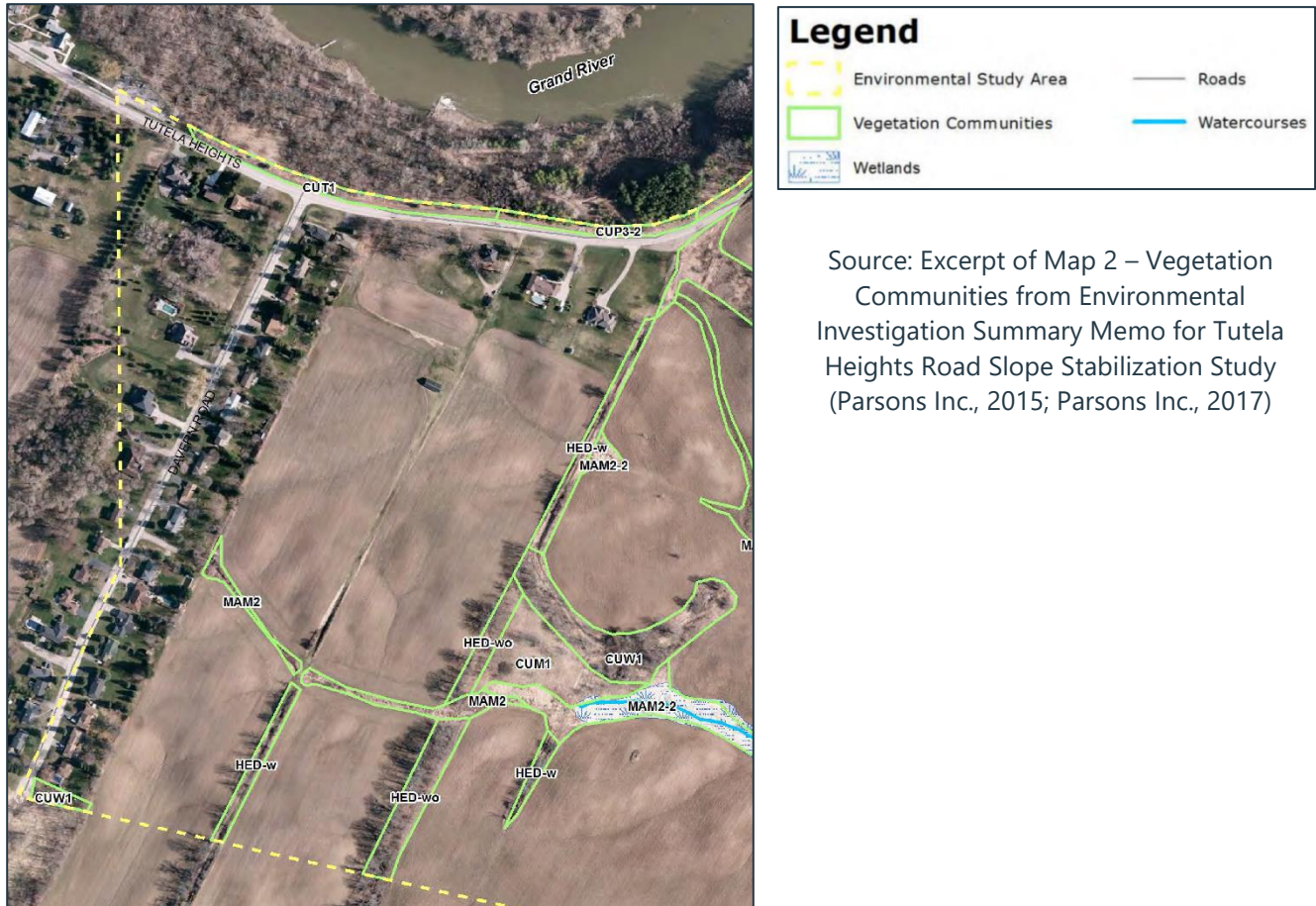
Vegetation communities were mapped in the Environmental Investigation Summary Memo for Tutela Heights Road Slope Stabilization Study (Parsons Inc., 2015; Parsons Inc., 2017). Vegetation communities were mapped based on orthoimagery and characterized in the field using the Ecological Land Classification (ELC) system for Southern Ontario. The vegetation communities for the current Study Area are described in **Table 2-1**, and illustrated in the excerpted figure (**Figure 2-2**) from the Environmental Investigation Summary Memo for Tutela Heights Road Slope Stabilization Study (Parsons Inc., 2015).

Table 2-1: ELC Vegetation Communities

ELC Community	Description
Cultural Thicket (CUT1)	<p>The Tutela Heights Road ROW is primarily a cultural meadow succeeding in places towards a cultural thicket community. Areas of cultural thicket are dominated by Staghorn Sumac, Russian Olive, Manitoba Maple, and Black Oak. The understory in these areas consists mainly of Canada Goldenrod. Other species present in thickets included Slippery Elm, Black Cherry, Eastern Redcedar, and Shagbark Hickory.</p> <p>There is also a small area of cultural thicket located to the north of Tutela Heights Road. This area of thicket is dominated by Black Locust.</p>
White Pine Coniferous Plantation (CUP3-2)	<p>There is a mature Eastern White Pine plantation located immediately to the north of Tutela Heights Road. This vegetation community is composed almost entirely of Eastern White Pine with sparse groundcover.</p>
Hedgerows (HED)	<p>There are numerous hedgerows throughout the study area, mainly located within agricultural fields and along roadsides. Hedgerows composed of Black Walnut, Oaks, Hickories, and Northern Catalpa were identified in the study area. Two provincially rare tree species were identified in hedgerows in the study area: Northern Pin Oak and Pignut Hickory. Many hedgerows contain large, old-growth trees.</p>
Mineral Meadow Marsh (MAM2)	<p>There are large areas of mineral meadow marsh throughout the study area, mainly following the intermittent watercourse and low-lying swales in agricultural fields. These areas are dominated by Reed Canary Grass and Broad-leaved Cattail with few other species present. There was no standing water present in September, 2015, but the areas are almost certainly flooded in the spring and early summer.</p>

Source: Environmental Investigation Summary Memo for Tutela Heights Road Slope Stabilization Study (Parsons Inc., 2015; Parsons Inc., 2017)

Figure 2-2: Vegetation Communities



2.3.2 Significant Wildlife Habitat

Significant Wildlife Habitat was identified and mapped in the Environmental Investigation Summary Memo for Tutela Heights Road Slope Stabilization Study (Parsons Inc., 2015; Parsons Inc., 2017). Significant Wildlife Habitat for the current Study Area is described below, and illustrated in the excerpted figure (**Figure 2-3**) from the Environmental Investigation Summary Memo for Tutela Heights Road Slope Stabilization Study (Parsons Inc., 2015).

2.3.2.1 Amphibian Breeding Habitat

Amphibian breeding habitat consists of areas that amphibian species such as frogs, toads, and salamanders use for breeding. Any wet areas are potentially amphibian breeding habitat. Based on a review of **Figure 2-3**, Amphibian Breeding Habitat extends from east of Nobel Avenue to the eastern limit of the current Study Area. This habitat further extends easterly outside of the current Study Area.

2.3.2.2 Old Growth Hedgerows

Based on a review of **Figure 2-3**, a number of very large trees are present within Old Growth Hedgerows along the eastern limit of the current Study Area. The Environmental Investigation Summary Memo for Tutela Heights Road Slope Stabilization Study (Parsons Inc., 2015; Parsons Inc., 2017) noted that some individuals with diameters around 100 cm were observed and are likely well over 100 years old. These trees are valuable as habitat for birds and other wildlife. Tree cavities, for example, can provide shelter for wildlife such as Raccoons, Bats, and cavity-nesting birds. Large trees probably also have cultural value for area residents.

2.3.2.3 Provincially Rare Trees

The Environmental Investigation Summary Memo for Tutela Heights Road Slope Stabilization Study (Parsons Inc., 2015; Parsons Inc., 2017) identified and mapped the Provincially Rare Trees. The following Provincially Rare Trees exist within the current Study Area and their location is shown in **Figure 2-3**.

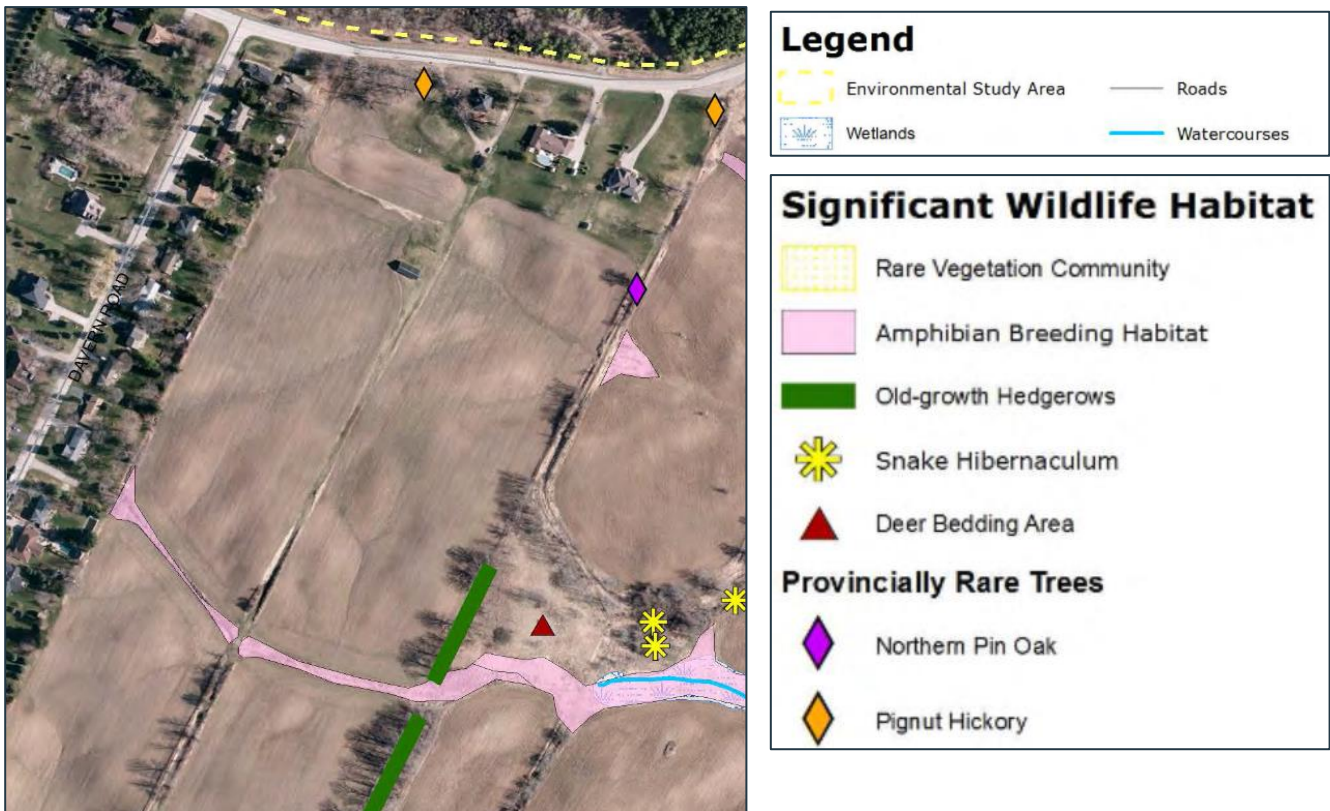
Northern Pin Oak

Northern Pin Oak is a species of tree with a provincial conservation status rank of S3. A large Northern Pin Oak was identified along a hedgerow in the northeastern section of the current Study Area. This tree should be retained due to its ecological significance and because it is located directly behind a residential property and likely has aesthetic importance for area residents (Parsons Inc., 2015; Parsons Inc., 2017).

Pignut Hickory

Pignut Hickory is a species of tree with a provincial conservation status rank of S3. Two large Pignut Hickories exist within the current Study Area. These trees are located along Tutela Heights Road. These trees should be retained due to their ecological significance and because they likely have cultural significance for area residents (Parsons Inc., 2015; Parsons Inc., 2017).

Figure 2-3: Significant Wildlife Habitat



Source: Excerpt of Map 3 – Significant Wildlife Habitat from Environmental Investigation Summary Memo for Tutela Heights Road Slope Stabilization Study (Parsons Inc., 2015; Parsons Inc., 2017)

2.3.3 Natural Heritage System

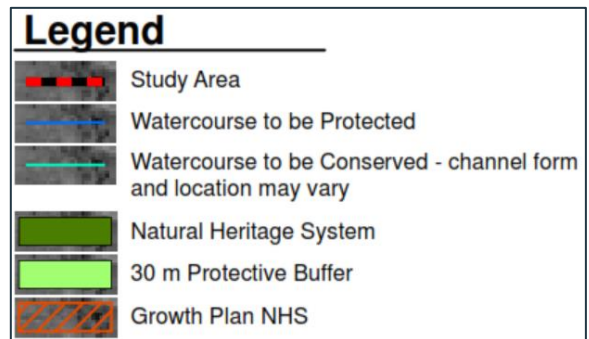
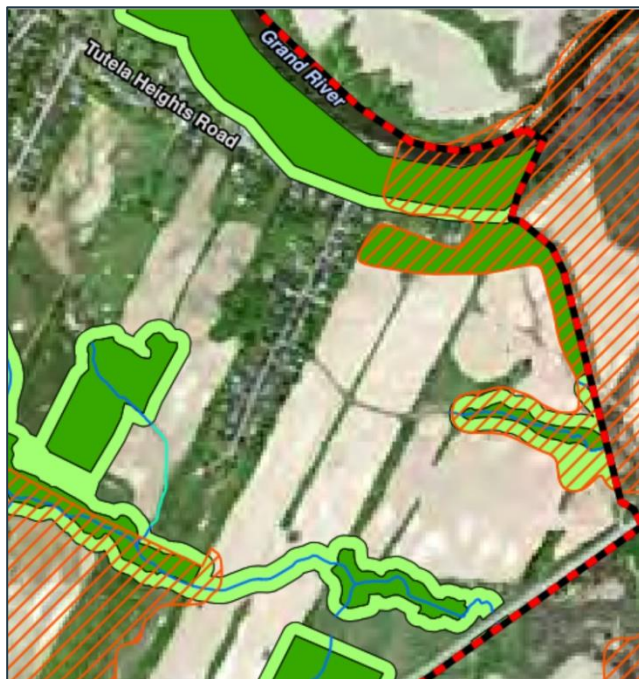
The Municipal Comprehensive Review (Part 3) recommended Natural Heritage System for the larger Tutela Heights area. The recommended Natural Heritage System for the Tutela Heights area is associated with portions of the Grand River valley, Phelps Creek, and connecting linkages between the Grand River and large blocks of forest/wetland habitat to the south and north of Phelps Road. The Growth Plan Natural Heritage System also

encompasses hedgerows, cultivated fields, and cultural habitat features as buffers and/or enhancements to key natural heritage features.

The Growth Plan Natural Heritage System within the current Study Area coincides with “trigger lands” that are not currently being contemplated for development (SGL et al, 2019). The recommended Natural Heritage System within the current Study Area is shown in excerpted figure from Municipal Comprehensive Review (Part 3) in **Figure 2-4**.

City of Brantford Official Plan (Draft – October 2020) provides policy direction with regards protection of the Natural Heritage System. According to the draft Official Plan, the municipal infrastructure may be permitted within the Natural Heritage System, however, an Environmental Impact Study will be required to assess impacts on the Natural Heritage System and identify mitigation measures (City of Brantford, 2020).

Figure 2-4: Recommended Natural Heritage System



Source: Excerpt from Envisioning Brantford – Municipal Comprehensive Review – Part 3: Preferred Settlement Area Boundary Expansion and Preliminary Land Use and Transportation Plan (DRAFT – April 2019) (SGL et al, 2019)

2.3.4 Watercourses

A review of Grand River Conservation Authority’s online mapping indicates that a watercourse/drainage feature is located within the Study Area. The watercourse extends from east of Nobel Avenue to the eastern limit of the Study Area (Grand River Conservation Authority, 2020). This drainage feature further extends easterly outside of the current Study Area. Location of this watercourse is shown in **Figure 2-5**. This feature was identified as an intermittent watercourse and found to be dry during field investigations completed in September 2015 in support of the Environmental Investigation Summary Memo for Tutela Heights Road Slope Stabilization Study (Parsons Inc., 2015; Parsons Inc., 2017). The watercourse was visible at that time with a well-defined channel. Fisheries assessments of this watercourse should be completed as part of future study to confirm presence or absence of fisheries.

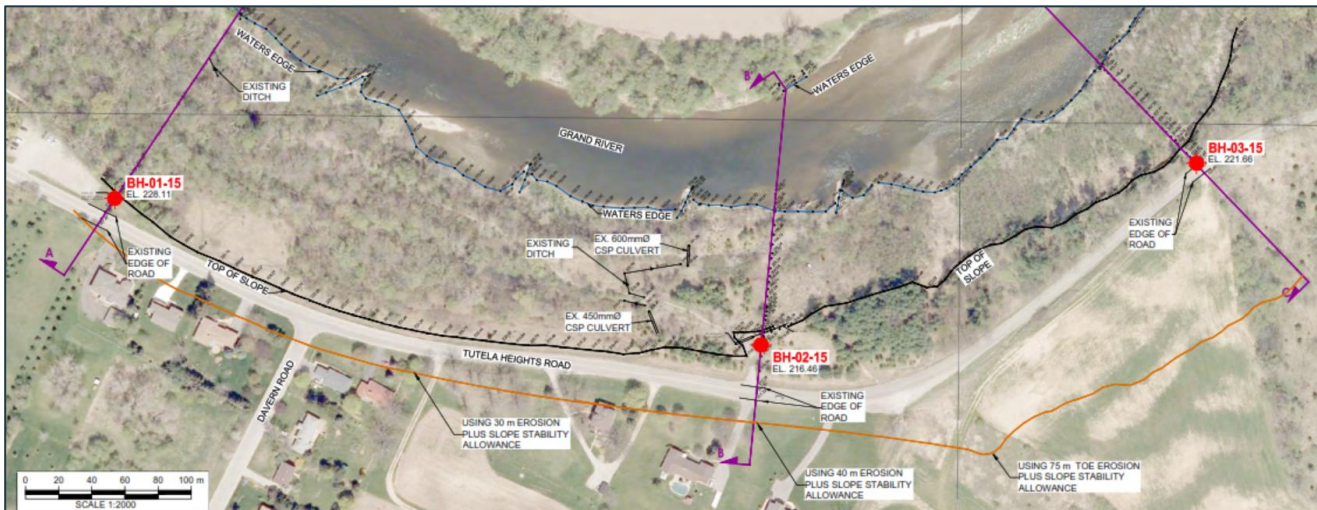
Figure 2-5: Watercourses



2.3.5 Erosion Hazard Limit

Erosion Hazard Limit is the limit (setback from the river) within which it would be unsafe to allow development, infrastructure, or site alteration activities. Erosion Hazard Limit is determined using information on the historical erosion rate of the river, an allowance for slope stability, and an allowance for future erosion. Geo-technical investigation and Geomorphic assessment were undertaken as part of the Tutela Heights Road Slope Stabilization Study to assess slope stability and toe erosion, and to determine the Erosion Hazard Limit for Grand River along Tutela Heights Road from the Bell Homestead property to 1 km to the east. The Erosion Hazard Limit is delineated in excerpted figure from Tutela Heights Road Slope Stabilization Study (**Figure 2-6**).

Figure 2-6: Erosion Hazard Limit



2.4 Cultural Environment

2.4.1 Archaeological Resources

A Stage 1 Archaeological Assessment was completed in September 2016 as part of the Tutela Heights Road Slope Stabilization Class Environmental Assessment Study. The Stage 1 Archaeological Assessment was completed in accordance with Ministry of Heritage, Sport, Tourism and Culture Industries' Standards and Guidelines for Consultant Archaeologists (2011). This study assessed an area which encompasses northern portion of the current Study Area, and determined that there are areas of archaeological potential which should be subject to a Stage 2 Archaeological Assessment in advance of any construction activities (Archaeological Research Associates Ltd., 2016). **Figure 2-7** shows the location of areas of archaeological potential which should be subject to a Stage 2 Archaeological Assessment.

The City of Brantford Areas of Archaeological Potential Map shows the Areas of Archaeological Potential and the Unassessed Lands (new lands that joined the City on January 1, 2017 that have not had an archaeological assessment) within the City. A review of this map was conducted to determine whether the southern part of the Study Area has archaeological potential. A review of this map indicated that the southern portion of the Study Area is located within Unassessed Lands (City of Brantford , 2017).

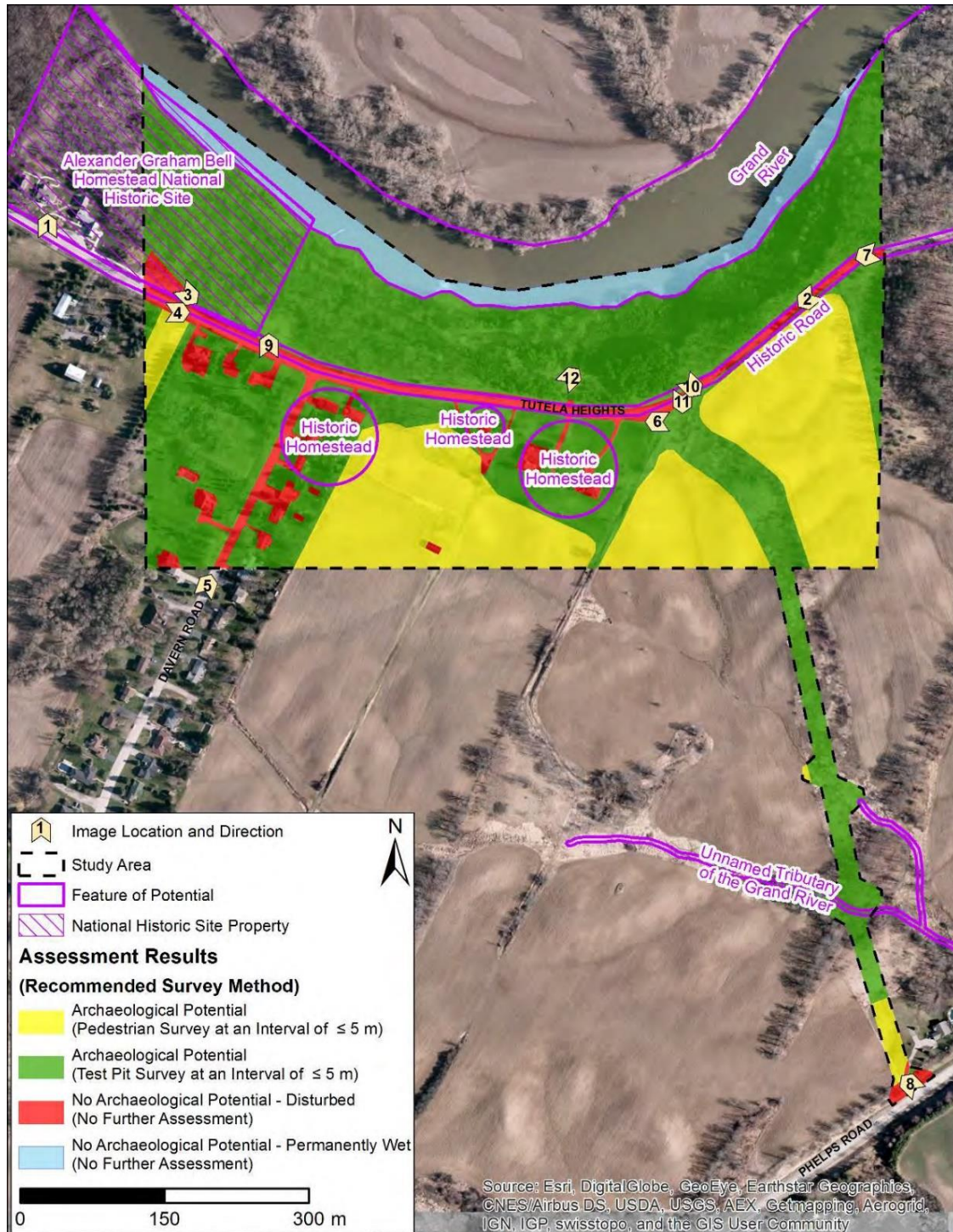
As such, for the purpose of this memo, given the similarity of land-use within the entire Study Area, it was assumed that the archaeological potential also exists in the southern portion of the Study Area. Appropriate archaeological assessments should be completed as part of the future study for the portion of the current Study Area not previously assessment for archaeological resources and where disturbance activities will occur.

2.4.2 Built Heritage Resources and Cultural Heritage Landscapes

The Stage 1 Archaeological Assessment completed as part of the Tutela Heights Road Slope Stabilization Class Environmental Assessment Study (Archaeological Research Associates Ltd., 2016; Parsons Inc., 2017) identified

Historical Homesteads on three properties. The location of these homesteads is shown in **Figure 2-7**. No formal cultural heritage assessment was completed as part of the previous study or as part of the current assignment.

Figure 2-7: Stage 1 Archaeological Assessment Results



Source: (Archaeological Research Associates Ltd., 2016)

3.0 Development and Evaluation of Alternative Access Configurations

3.1 Design Criteria

A design criteria table was developed for the Alternative Access Configuration for Tutela Heights Road (Table 3-1). The design criteria was developed based on the City of Brantford's Design and Construction Manual for Roads and Transportation (City of Brantford, 2020) and Geometric Design Guide for Canadian Roads (Transportation Association of Canada, 2017).

Table 3-1: Tutela Heights Road Design Criteria (Rural)

Design Criteria	Existing Conditions (Davern Road)	Design Standards	Proposed Standards	Reference Document
Roadway Classification	Laneway	Laneway	Laneway	City-Table 1 (Roads STD)
Number of Through Lanes	2 (No Markings)	2	2	-
Design Speed (kph)	Not Available (Assume 50)	Assume 50	Assume 50	-
Posted Speed (kph)	Not Available (Assume 40)	Assume 40	Assume 40	-
Minimum Stopping Sight Distance (m)	N/A	85m	85m	TAC-Table 3.3.2 & 3.3.4
Minimum 'K' Factor	N/A	K=7 min (Crest) K=13 (Sag)	K=7 min (Crest) K=13 min (Sag)	TAC-Table 3.3.2, 3.3.4 & 3.3.5
Grades Maximum	N/A	7% (Rural)-TAC 6%-City	6%-City	TAC-Table 3.3.1 & 3.3.4 City-Table 2 (Road STD)
Grades Minimum	N/A	Level 0% (Rural)-TAC 0.5%-City	0.5%-City	TAC-Section 3.3.2.5 City-
Minimum Radius (m)	No Curves, Tangent Roadway	100m	100m	TAC-Table 3.2.3 & 3.2.4
Lane Width (m)	No Lane Pavement markings, 4.75m to mid	3.5m	3.5m	TAC-Table 4.2.2
Shoulder (m)	Curb and Gutter	1m	1m	TAC-Table 4.4.1
Sidewalk (m)	None	1.5m MIN-City	None	TAC-Table 6.3.1, Figure 4.6.1
R.O.W. Width (m)	20m	20m	20m	City-Table 1

City: City of Brantford's Design and Construction Manual for Roads and Transportation (City of Brantford, 2020)

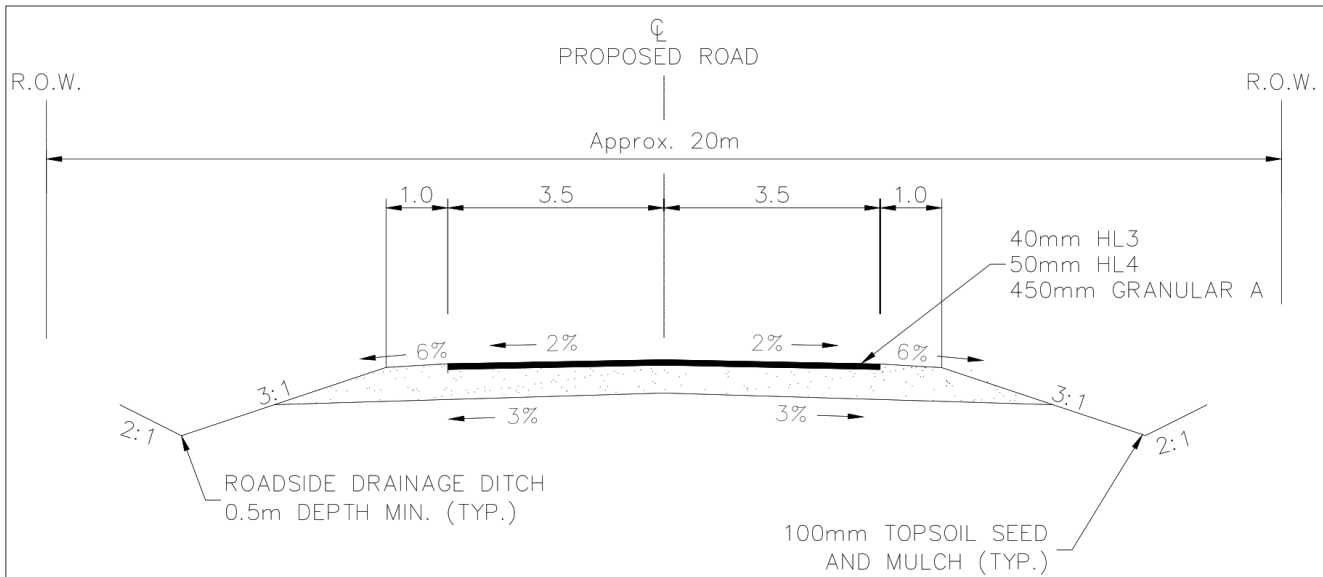
TAC: Geometric Design Guide for Canadian Roads (Transportation Association of Canada, 2017)

3.2 Development of Alternative Access Configurations

In reviewing potential access configurations, it seems possible to provide access to the rear lot line of properties fronting Tutela Heights Road, east of Davern Street, via Noble Avenue off Davern Street. Using the Design Criteria provided in **Table 3-1**, a rural road cross-section with approximately 20 m right of way limits was developed. The design elements of this cross-section are outlined below and illustrated on **Figure 3-1**:

- One traffic lane in each direction (each 3.5 m wide)
- Gravel shoulder on each side (each 1.0 m wide)
- Roadside drainage ditch on each side

Figure 3-1: Typical Section



Using the Typical Cross-Section shown in **Figure 3-1**, the following three Alternative Access Configurations were developed. Prior to proceeding with one of the three alternatives, an interim cul-de-sac will be constructed at the new City of Brantford/Brant County limit. This interim configuration of Tutela Heights Road will exist until the need to construct the alternate access is triggered by the long-term erosion.

3.2.1 Alternative Access Configuration 1

This alternative includes a new road alignment slightly south of the existing Tutela Heights Road, with a cul-de-sac at the municipal boundary, east of Davern Road. This alignment will require demolition of seven of the eight residences, and it will intersect the front area and existing driveway of one residence that fronts on to the Tutela Heights Road. This alternative would only maintain access to one property from its existing driveway. Existing Tutela Heights Road will be closed from west of Davern Road to the interim cul-de-sac at the municipal boundary, east of Davern Road. Alternative Access Configuration 1 is shown in **Figure 3-2**.

3.2.2 Alternative Access Configuration 2

This alternative includes a new road alignment east of Davern Road, extending from Nobel Avenue which would run along the back of the residences that front onto Davern Road and Tutela Heights Road. For residences east of Davern Road, new driveways will be required to provide access from the new road to the back of the four residences that currently front on existing Tutela Heights Road. This alternative also includes a new road section from Tutela Heights Road, west of Davern Road, providing access to the three residences from the rear. Tutela Heights Road will be closed from west of Davern Road to the interim cul-de-sac at the municipal boundary, east of Davern Road. Alternative Access Configuration 2 is shown in **Figure 3-3**.

3.2.3 Alternative Access Configuration 3

This alternative includes a new road alignment east of Davern Road, extending from Nobel Avenue which would run eastward into the existing agricultural lands. This alternative would then run northward midway through the existing agricultural lands until the rear property line of the four residences that front on to the existing Tutela Heights Road. From that point, this alternative would run in an east-west direction. For residences east of Davern Road, new driveways will be required to provide access from the new road to the back of the four residences that currently front on to the existing Tutela Heights Road. This alternative also includes a new road section from Tutela Heights Road, west of Davern Road, providing access to the three residences from the rear. Tutela Heights Road will be closed from west of Davern Road to the interim cul-se-sec at the municipal boundary, east of Davern Road. Alternative Access Configuration 3 is shown in **Figure 3-4**.

3.3 Criteria for Evaluating the Alternative Access Configurations

In order to identify the impacts and advantages of each Alternative Access Configuration, evaluation criteria were developed within each of the categories related to Natural, Socio-Economic, and Cultural Environments and Technical and Financial Considerations. The evaluation criteria provided in **Table 3-2** were developed based on the existing features within the study area. These criteria were chosen based on their ability to identify potential environmental effects of each alternative and distinguish the advantages and disadvantages between them.

Table 3-2: Criteria for Evaluating the Alternative Access Configurations

Component	Evaluation Criteria
Socio-Economic Environment	<ul style="list-style-type: none"> Impact on existing properties Compatibility with potential future development Need to purchase privately owned lands
Natural Environment	<ul style="list-style-type: none"> Impact on vegetation Impact on Significant Wildlife Habitat Impact on Natural Heritage System Impact on watercourse Overlap with Erosion Hazard Limit
Cultural Environment	<ul style="list-style-type: none"> Impact on potential archaeological resources Impact on Historic Homesteads
Technical Consideration	<ul style="list-style-type: none"> Degree of functionality/practicality for access to properties
Financial Consideration	<ul style="list-style-type: none"> Cost to construct Cost to maintain

3.4 Evaluation of Alternative Access Configurations

Using the evaluation criteria developed above, each of the access configurations was evaluated to identify potential impacts associated with Natural, Socio-Economic and Cultural Environments and Technical and Financial Considerations. The Evaluation of Alternative Access Configuration is provided in **Table 3-3**.

Figure 3-2: Alternative Access Configuration 1



Figure 3-3: Alternative Access Configuration 2



Figure 3-4: Alternative Access Configuration 3



Table 3-3: Evaluation of Alternative Access Configurations

Category	Criteria	Alternative 1	Alternative 2	Alternative 3
Socio-Economic Environment	Impact on existing properties	This alternative will result in demolition of five residences east of Davern Road, and three residences east of Davern Road.	This alternative will involve a new roadway east of Davern Road that would run along the rear property lines of the houses that front on Davern Road. This does not present an efficient use of land and infrastructure from a land use planning standpoint. In addition, being within two roads, the residences will be severely impacted by the vehicular noise generated by the two roads. The new roadway section west of Davern Road will subdivide one property parcel in two halves and require property acquisition from another property parcel, west of Davern Road.	This alternative will involve a new road east of Davern Road that would divide the existing agricultural lands into two equal and developable land parcels that reflect good land use planning. This alternative will also connect the future development with the services and utilities in an efficient manner. The new roadway section west of Davern Road will subdivide one property parcel in two halves and require property acquisition from another property parcel, west of Davern Road.
	Compatibility with potential future development	The Preliminary Land Use and Transportation Plan for the Tutela Heights designates the majority of lands within the Study Area as "Rural" and "Trigger Lands", east of Davern Road. Lands west of Davern Road, within the Study Area, are designated as Suburban Residential. Although the Trigger Lands are currently not contemplated for development, they will eventually be used for future development. This alternative will not provide access to the lands available for future development on the east of Davern Road.	The Preliminary Land Use and Transportation Plan for the Tutela Heights designates the majority of lands within the Study Area as "Rural" and "Trigger Lands", east of Davern Road. Lands west of Davern Road, within the Study Area, are designated as Suburban Residential. Although the Trigger Lands are currently not contemplated for development, they will eventually be used for future development. This alternative will involve a new roadway east of Davern Road that runs along the rear property lines of the houses that front on Davern Road. This road configuration will likely not be compatible with future development plans, because it will result in inefficient use of land (i.e., land loss). The new roadway section west of Davern Road could provide an indirect connection at the south end of Davern Road.	The Preliminary Land Use and Transportation Plan for the Tutela Heights designates majority of lands within the Study Area as "Rural" and "Trigger Lands". Although the Trigger Lands are currently not contemplated for development, they will eventually be used for future development. The new roadway east of Davern Road will likely be compatible with future development plans, because it divides the lands into two equal and developable land parcels. The new roadway section west of Davern Road could provide an indirect connection at the south end of Davern Road.
	Need to purchase privately owned lands	This alternative will require acquisition of at least five properties along Tutela Heights Road east of Davern Road, due to the impacts outlined above. This alternative will also result in acquisition of three properties along Tutela Heights Road, west of Davern Road.	The new road east of Davern Road will be located on lands where future development will occur. It is likely that this road will be constructed by the land development community, thus eliminating the need for land purchase for its construction. Land purchase will likely be required to provide access to the second residence east of Davern Road. The new road section west of Davern Road will require acquisition of two properties.	This alternative will be located on lands where future development will occur. It is likely that this road will be constructed by the land development community, thus eliminating the need for land purchase for its construction. Land purchase will likely be required to provide access to the second residence east of Davern Road. The new road section west of Davern Road will require acquisition of two properties.
Natural Environment	Impact on vegetation	This alternative will require removal of mature trees along Tutela Heights Road, which also result in a loss of scenic beauty of Tutela Heights Road.	The new roadway east of Davern Road will require removal of trees to construct access driveway for one of the residences east of Davern Road. In addition, there is also potential for injury and/or removal of trees along the rear property line of residences fronting on Davern Road. The construction of road section west of Davern Road will also require tree removal.	The new roadway east of Davern Road will require removal of trees to construct access driveway for one of the residences. In addition, there are minor impacts anticipated to existing vegetation. The construction of road section west of Davern Road will also require tree removal.
	Impact on Significant Wildlife Habitat	This alternative will require removal of one of the two Pignut Hickory trees. These trees are provincially rare trees.	Localized loss of Amphibian Breeding Habitat.	Localized loss of Amphibian Breeding Habitat.

Table 3-3: Evaluation of Alternative Access Configurations

Category	Criteria	Alternative 1	Alternative 2	Alternative 3
Natural Environment (Continued)	Impact on Natural Heritage System	This alternative will require municipal infrastructure works within the Natural Heritage System. An Environmental Impact Study will be required in order for those works to be permitted within the Natural Heritage System. Although an Impact Study can be completed, the impacts associated with this alternative outweigh its benefits.	This alternative will require municipal infrastructure works within the Natural Heritage System. An Environmental Impact Study will be required in order for those works to be permitted within the Natural Heritage System.	This alternative will require municipal infrastructure works within the Natural Heritage System. An Environmental Impact Study will be required in order for those works to be permitted within the Natural Heritage System.
	Impact on watercourse	This alternative will not result in impacts on watercourses.	This alternative may require slight realignment of an existing watercourse.	This alternative may require slight realignment of an existing watercourse.
	Overlap with Erosion Hazard Limit	This alternative does not involve works within Erosion Hazard Limit.	This alternative does not involve works within Erosion Hazard Limit.	This alternative does not involve works within Erosion Hazard Limit.
Cultural Environment	Impact on potential archaeological resources	This alternative will have impacts on lands with archaeological potential. A Stage 2 Archaeological Assessment will be required.	This alternative will have impacts on lands with archaeological potential. A Stage 2 Archaeological Assessment will be required.	This alternative will have impacts on lands with archaeological potential. A Stage 2 Archaeological Assessment will be required.
	Impact on Historic Homesteads	This alternative will require demolition of all three historic homesteads along Tutela Heights Road, east of Davern Road.	This alternative does not negatively impact Historic Homesteads. It provides alternate access route to those residences.	This alternative does not negatively impact Historic Homesteads. It provides alternate access route to those residences.
Technical Considerations	Degree of functionality / practicality for access to properties	This alternative only provides access to one of five residences, east of Davern Road (four residences require demolition). This alternative This alternative would not provide access to residences west of Davern Road.	This alternative provides access to all existing homes but has the lowest degree of functionality because it will provide reduced access to future homes.	This alternative has the highest degree of functionality because it will provide access to a large number of properties by providing access to future development lands in addition to existing homes.
Financial Considerations	Cost to Construct ¹	This alternative has the lowest estimated construction costs (~\$830,000.00).	This alternative has moderate estimated costs compared to the other alternatives (~\$1,259,000.00)	This alternative has the highest estimated construction costs (~\$1,378,000.00).
Recommendation		Not Preferred	Not Preferred	Preferred

Legend

Not Preferred	Moderately Preferred	Preferred
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¹ Cost estimate includes \$150,000 estimate for completing an environmental assessment study. Cost estimate is exclusive of cost estimates for property acquisition, utility relocations & existing roadway removals.

3.5 Preferred Access Configuration

The Alternative Access Configuration were comparatively and qualitatively evaluated in **Table 3-3** based on criteria developed within four main categories (Natural, Socio-economic and Cultural Environments, and Technical and Financial considerations). Alternative Access Configuration 3 was identified as the preferred access alignment due to a number of advantages compared to the other alternatives. A summary of the key impacts and benefits of Alternative 3 is provided below:

- This alternative divides the existing agricultural lands to two equal and developable land parcels that reflect good land use planning. This alternative will also connect the future development with the services and utilities in an efficient manner.
- The new roadway east of Davern Road will likely be compatible with future development plans, because it divides the lands into two equal and developable land parcels. The new roadway section west of Davern Road could provide continued connection via Davern Road for a new road for the future land development west of Davern Road.
- The construction of this alternative will require less amounts of tree and vegetation removal compared to the other alternatives.
- This alternative does not impact Historic Homesteads. It provides alternate access route to those residences.
- This alternative has the highest degree of functionality because it will provide access to a large number of properties by providing access to future development lands in addition to existing homes.
- Although this alternative will be more costly than the other alternatives, it will divide the lands in such a manner that will be more attractive to the land development community.

Based on the above rational, the Alternative Configuration 3 is identified as preferred access route for the four residences located on Tutela Heights Road, east of Davern Road. This Access Route Configuration is carried forward for the development of the Road Closure Management Plan.

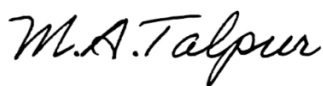
4.0 Next Steps

As noted previously, the purpose of this memo was to document existing conditions within the Study Area and develop and evaluate various Alternative Access Configurations to identify a Preferred Access Configuration in support of the Road Closure Management Plan. In carrying out this exercise, secondary source information was used, and no dedicated field investigations were completed. Furthermore, no consultation was conducted with the members of the public, Indigenous Communities, any stakeholder groups, or regulatory agencies. The Preferred Access Configuration identified in this memo should be confirmed by a comprehensive future Study carried out following the Municipal Class Environmental Assessment process (Municipal Engineers Association, 2015, as amended), or the *Planning Act, 1990* process.

Sincerely,

WSP E&I Canada Limited

Prepared by:



Mir Ahsan Talpur, M.Env.Sc., EP
Environmental Planner
Email: mir.talpur@wsp.com

Reviewed by:



David Sinke B. Eng. Mgt., P.Eng.
Principal, Transportation Engineering
Email: david.sinke@wsp.com

5.0 References

- Archaeological Research Associates Ltd. (2016). *Stage 1 Archaeological Assessment – Tutela Heights Road Slope Stability Municipal Class Environmental Assessment – Stewart & Ruggles Tract, Hiram Phelps Tract, Geographic Township of Brantford, Brant County (13/09/2016)*. Retrieved from <https://www.brant.ca/Modules/News/index.aspx?FeedId=538227ba-2d88-4892-86c5-0fd6aa039aa5&page=2&newsId=4193eb70-addc-42e7-a33d-9f0eee72b255>
- City of Brantford . (2017). *City of Brantford Areas of Archaeological Potential Map*. City of Brantford Planning Department, January 2017.
- City of Brantford. (2019). *Staff Report 2019-184 - Official Plan Review – Preferred Settlement Area Boundary Expansion, April 9, 2019*. Retrieved from <https://www.brantford.ca/en/business-and-development/official-plan-review.aspx#Previous-Reports>
- City of Brantford. (2020). *City of Brantford Official Plan – Envisioning Our City: 2051 (DRAFT October 2020)*. Retrieved from <https://www.brantford.ca/en/business-and-development/official-plan-review.aspx#Previous-Reports>
- City of Brantford. (2020). *Design and Construction Manual - Roads and Transportation - Linear Municipal Infrastructure Standards (V4 - May - 2020)*. Retrieved from <https://www.brantford.ca/en/your-government/design-construction.aspx>
- Englobe Corp. (2017). *Tutela Heights Road Slope Stabilization - Tutela Heights Road - Brantford, Ontario. Geotechnical Investigation Report (January 2017)*. Retrieved from <https://www.brant.ca/Modules/News/index.aspx?FeedId=538227ba-2d88-4892-86c5-0fd6aa039aa5&page=2&newsId=4193eb70-addc-42e7-a33d-9f0eee72b255>
- Grand River Conservation Authority. (2020). *Grand River Conservation Authority Interactive Mapping*. Retrieved from <https://maps.grandriver.ca/web-gis/public/?theme=MYP&bbox=558840,4772023,560493,4772917>
- Municipal Engineers Association. (2015, as amended). *Municipal Class Environmental Assessment manual (October 2000, as amended in 2007, 2011 & 2015)*. Retrieved from <https://municipalclassea.ca/>
- Parsons Inc. (2015). *Tutela Heights Road Environmental Assessment – September 30th Environmental Investigations Summary (October 5, 2015)*. Retrieved from <https://www.brant.ca/Modules/News/index.aspx?FeedId=538227ba-2d88-4892-86c5-0fd6aa039aa5&page=2&newsId=4193eb70-addc-42e7-a33d-9f0eee72b255>
- Parsons Inc. (2017). *Project File Report - Tutela Heights Road Slope Stabilization Class Environmental Assessment Study*. Contract # 2-15. Prepared for: The Corporation of the County of Brant. Retrieved from <https://www.brant.ca/Modules/News/index.aspx?FeedId=538227ba-2d88-4892-86c5-0fd6aa039aa5&page=2&newsId=4193eb70-addc-42e7-a33d-9f0eee72b255#>
- SGL et al. (2019). *Envisioning Brantford – Municipal Comprehensive Review - Part 3: Preferred Settlement Area Boundary Expansion and Preliminary Land Use and Transportation Plan (DRAFT – April 2019)*. Retrieved from <https://www.brantford.ca/en/business-and-development/official-plan-review.aspx#Previous-Reports>
- Transportation Association of Canada. (2017). *Geometric Design Guide for Canadian Roads (2017 Edition)*. Retrieved from <https://www.tac-atc.ca/en/publications-and-resources/geometric-design-guide-canadian-roads>

Evaluation Memo

Appendix A (MECP Letter)

Ministry of the Environment,
Conservation and Parks

Ministère de l'Environnement,
de la Protection de la nature et des
Parcs



Office of the Minister

Bureau du ministre

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ENV1283MC-2017-3340

SEP - 5 2018

Matthew D'Hondt, C.E.T
Solid Waste / Wastewater Operations Manager
Corporation of the County of Brant
Public Works Department
26 Park Avenue, PO Box 160
Burford ON N0E 1A0

Dear Mr. D'Hondt:

Between July 4 and 5, 2017, I received four Part II order requests asking that the County of Brant be required to prepare an individual environmental assessment for the proposed Tutela Heights Road Slope Stability Class Environmental Assessment.

I am taking this opportunity to inform you that I have decided that an individual environmental assessment is not required. This decision was made after giving careful consideration to the issues raised in the requests, the project documentation, the provisions of the Municipal Class Environmental Assessment, and other relevant matters required to be considered under subsection 16(4) of the Environmental Assessment Act.

The reasons for my decision may be found in the attached table. In the interest of transparency, I encourage you to make this letter available to the greater public on the County's website.

Despite my not requiring an individual environmental assessment, during the review it was noted that there are some concerns related to slope stability. To address these concerns, I am imposing the following conditions on the project:

1. The County shall prepare a Road Closure Management Plan for the project by August 2019, or such other date as agreed to in writing by the Director of the Environmental Assessment and Permissions Branch.

- a. The Road Closure Management Plan shall include, but is not limited to:
 - i. Expected timing for road closure;
 - ii. Activities undertaken by the City of Brantford;
 - iii. Arrangements for alternative property access;
 - iv. Drainage improvement works;
 - v. Safety and warning measures including warning signage, fencing, pedestrian access restrictions;
 - vi. Vehicular traffic restrictions; and
 - vii. Public notification plan.
 - b. The County shall hold one public meeting on the Road Closure Management Plan prior to finalization of the plan.
 - c. The final Road Closure Management Plan shall be posted to the County's website for a minimum of 60 days.
2. The County shall prepare a Slope Stability Monitoring Plan for the proposed Study Area.
- a. The Slope Stability Monitoring Plan should include the following, but is not limited to:
 - i. Observations of surface and in-depth movements;
 - ii. Geotechnical inspection; and
 - iii. Condition monitoring of the remaining groynes.
 - b. The Slope Stability Monitoring Plan shall be posted to the County's website for a minimum of 60 days.
 - c. The County shall provide annual updates on the slope stability of Tutela Heights Road on its website until the project is implemented.

With this decision having been made, the County can now proceed with the project, subject to the conditions I have imposed and any other permits and approvals required. The County must ensure the project is implemented in the manner it was developed and designed, as set out in the project documentation, inclusive of all mitigating measures, commitments and environmental and other provisions therein.

Lastly, I would like to ensure that the County understands that failure to comply with the act, the provisions of the Municipal Class Environmental Assessment, and failure to implement the project in the manner described in the planning documents, are contraventions of the act and may result in prosecution under section 38 of the act.

Mr. D'Hondt
Page 3.

I am confident that the County recognizes the importance and value of the act and will ensure that its requirements and those of the Municipal Class Environmental Assessment are satisfied.

Sincerely,

A handwritten signature in black ink, appearing to read "Rod Phillips", with a long horizontal flourish extending to the right.

Rod Phillips
Minister

Attachment

c: Matthew D'Hondt, Solid Waste / Wastewater Operations Manager, County of
Brant
EA File No. 17047 Tutela Heights Road Slope Stability

Ministry of the Environment,
Conservation and Parks

Ministère de l'Environnement, de
la Protection de la nature et des Parcs

Environmental Assessment and
Permissions Branch

Direction des évaluations et
des permissions environnementales

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October 4, 2019

Mr. Matthew D'Hondt
Solid Waste/Wastewater Operations Manager
County of Brant
P.O Box 160
26 Park Avenue
Burford ON N0E 1A0

Dear Mr. D'Hondt,

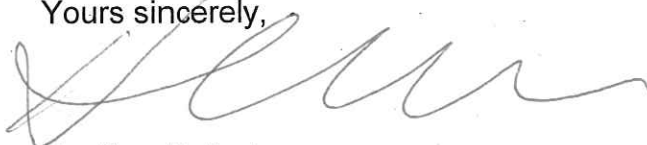
Thank you for your August 21, 2019, letter to the Ministry of the Environment, Conservation and Parks regarding the Tutela Heights Road Slope Stability Class Environmental Assessment (Project) as proposed by the County of Brant (County).

On September 5, 2018, the Minister made the decision to deny the preparation of an individual environmental assessment and impose a number of conditions. One of the conditions imposed by the Minister required the County of Brant to prepare a Road Closure Management Plan by August 2019.

In your letter you ask that I grant the County an extension for the preparation of a Road Closure Management Plan for Tutela Heights Road until December 2020. Your letter has also indicated that the reason for the extension is to allow the County to consider the findings of a number of studies that are currently underway including the Transportation Master Plan and a localized Tutela Heights Traffic Study. I have decided to grant this extension to December 2020.

If you have any questions about this letter, please contact Shannon Gauthier, Project Evaluator for this Project, directly at 416-314-0897 or at Shannon.Gauthier@ontario.ca

Yours sincerely,



Heather Malcolmson
Director
Environmental Assessment and Permissions Branch

Mr. Matthew D'Hondt
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c: Mark Eby, Director of Infrastructure Services,
EA File No. 17047- Tutela Heights Road Slope Stability