W9237

August 1, 2019

Site Selection & Justification Report

Wireless Telecommunications Tower Site

397323 11th Line, Thornbury, ON

Bell Mobility – contracted to:
FONTUR International
70 East Beaver Creek Road, Suite 22
Richmond Hill, ON L4B 3B2

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Introduction

The on-going increase in the use of personal cellular telephones and other wireless devices for personal, business, and emergency purposes requires the development of new wireless telecommunications infrastructure. This infrastructure includes new antennas and their support structures which are required to meet the demands of increased capacity and broadening service areas. Without antennas in close proximity to a wireless device, wireless communication is simply not possible.

The use of wireless telecommunications is firmly entrenched into Canadian society and economy. Canadians currently use more than 30 million wireless devices on a daily basis including wireless phones, tablets, mobile radios, and broadband internet devices. Three-quarters of every Canadian household have access to a wireless phone, and more than half of all phone connections are wireless. About one-third of households now use cellphones exclusively (i.e. no landline). More importantly, each year Canadians place more than 6 million calls to 9-1-1 or other emergency numbers from their mobile phones and many major urban centres report that over half of all emergency calls are made by cell phone.

As part of its on-going commitment to provide high quality wireless services, Bell Mobility has determined that a new wireless telecommunications facility is required in the Township of Clearview.

As a general matter, Bell's site selection process is a balanced exercise that must meet Bell's network coverage objectives, having regard for land use constraints and its obligation to its customers to provide a high quality of service.

Wireless telecommunications facilities are regulated by the Federal Government under Innovation, Science and Economic Development Canada and need not follow municipal or provincial planning approvals. However, in recognition of the policy vacuum which exists as a result of that circumstance, Industry Canada requires that wireless telecommunication carriers consult with land use authorities.

Purpose - Background & Coverage Requirement

A radio antenna and a tower are the two most important parts of a radio communication system. The antenna is needed to send and receive signals for the radio station. The tower raises the antenna above obstructions such as trees and buildings so that it can send and receive these signals clearly. Each radio station and its antenna system (including the tower) provide radio coverage to a specific geographic area, often called a cell. The antenna system must be carefully located to ensure that it provides a good signal over the whole cell area, without interfering with other stations and can "carry" a call as the user moves from cell to cell.

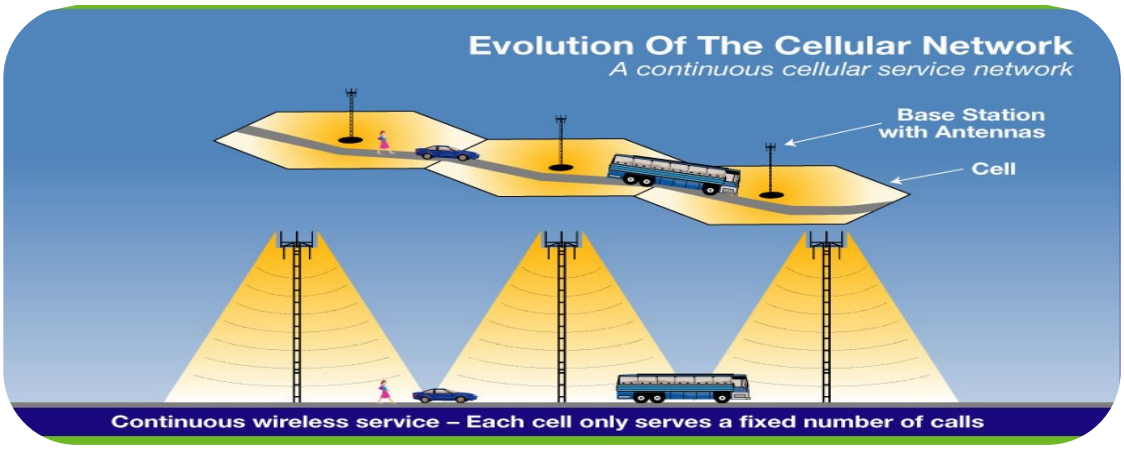


Figure 1

If the station is part of a radio telephone network, the number of stations needed also depends on how many people are using the network. If the number of stations is too small, or the number of users increases people may not be able to connect to the network, or the quality of service may decrease.

As the number of users exceeds the capacity of the radio station to receive and send calls, the coverage area for the cell shrinks and the shrinkage between cells creates coverage holes.

As demand increases for mobile phones and new telecommunication services, additional towers are required to maintain or improve the quality of service to the public and restore contiguous wireless service.

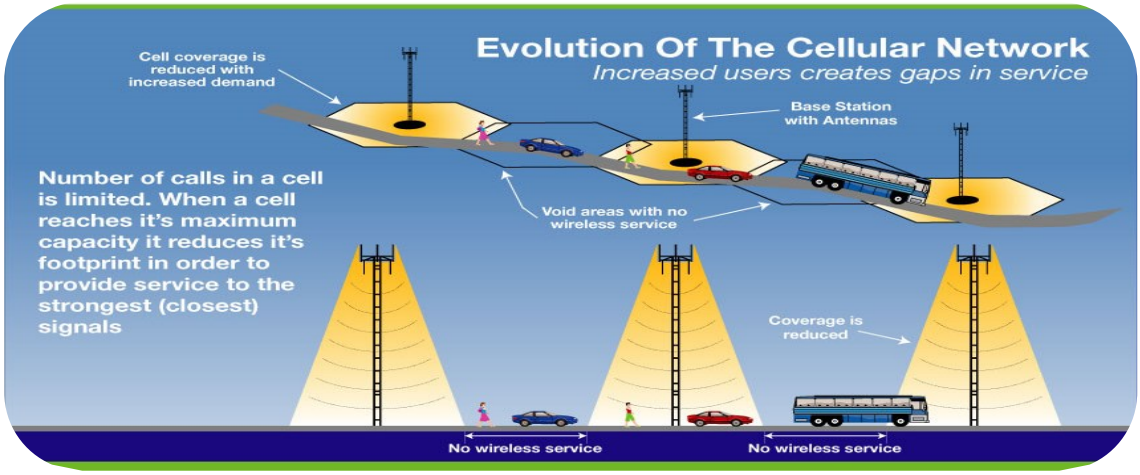


Figure 2

In this case, Bell Mobility's Radio Frequency Engineering department has determined the need for a service upgrade to adequately provide continuous coverage and service to our existing and future customer base surrounding the Thornbury area. Currently, our network is burdened by a combination of poor voice and data quality, specifically in high-use residential areas and transportation corridors. In some cases, the coverage is so poor that a handset would be unable to place a mobile call at all in the subject location and surrounding area. The result of this situation is on-going customer complaints, high

"dropped call" rates, and in extreme circumstances, the potential inability to place a mobile call that may be absolutely critical in an emergency situation.

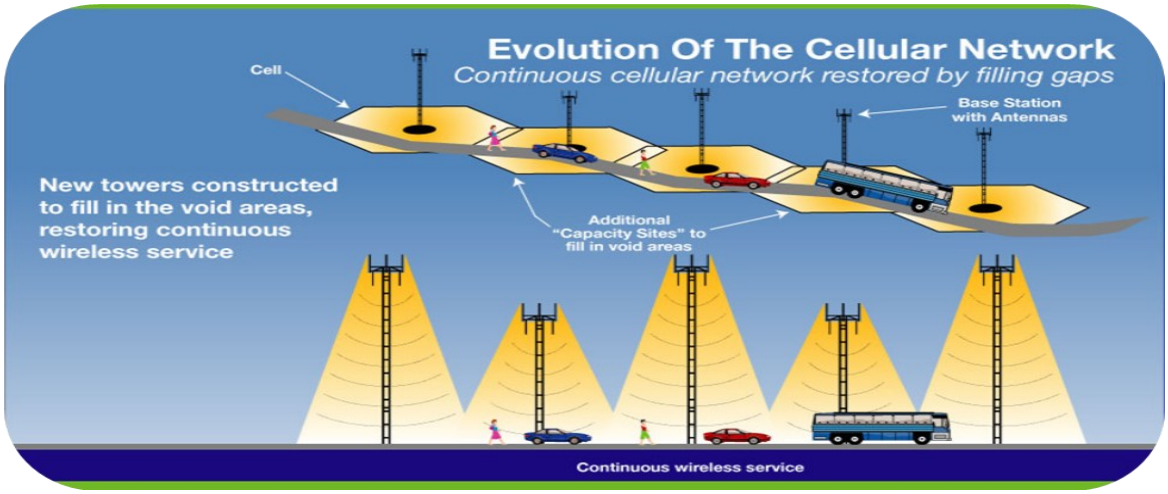


Figure 3

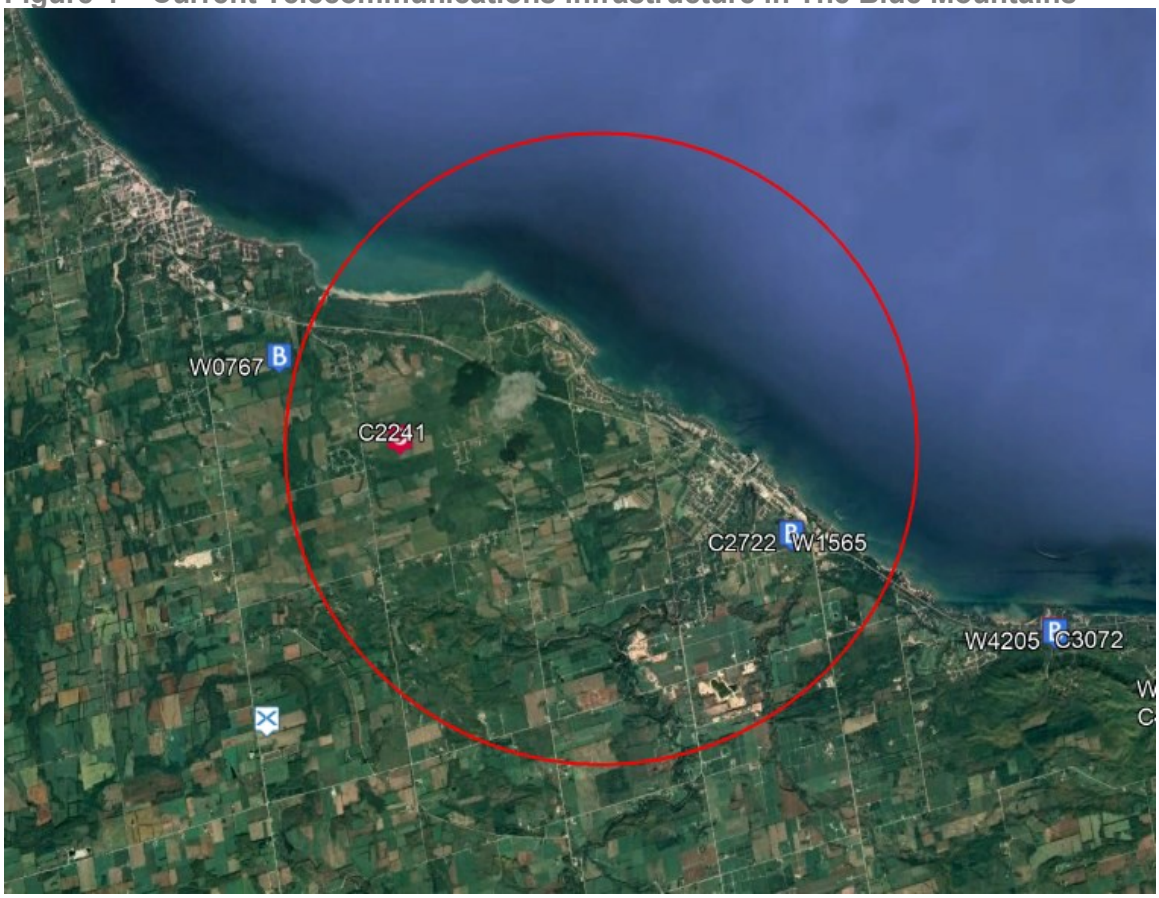
Bell Mobility is committed and mandated by its license to ensure the best coverage and service to the public and private sectors. The proposed site in Thornbury is extremely important in terms of providing coverage to an area that is under-serviced. Bell Mobility wants to provide infrastructure necessary to ensure that both residents and visitors to the area have access to service.

A drive test was conducted along area roads such as 11th Line and Highway 26, and smaller residential streets in this area, for the purpose of determining our coverage objectives. Very weak coverage areas with poor signal strength were found around and along these stretches of road, which generate significant coverage requirements as a result of the number of users and the varying topography. Bell Mobility is also anticipating significant growth in the amount of wireless broadband use in this area as a result of the general increase in wireless services use and local population increase.

Bell Mobility's existing coverage in this part of The Blue Mountains is in need of upgrading. Like all other infrastructure, it must keep up with changes in the ways people use technology, as well as general population growth of the area. As illustrated in the map below (**Figure 4**), there is a gap in wireless telecommunications infrastructure in the area of coverage need. The following sites are within 6 km of our search area, and are shown in Figure 4:

- **100m Rogers Guyed Tower** located approximately 3.8km from the tower location. The distance of the structure from the proposed tower is too great for coverage to be provided to the target area.
- **34m Bell & Rogers Tower** located at 369 Clark Street. The distance from this installation (4.3km) is too great to provide coverage to the search area. In addition, Bell has already co-located on this tower to provide coverage to the Blue Mountain Resort.

Figure 4 – Current Telecommunications Infrastructure in The Blue Mountains



New equipment is therefore required in this area, to accommodate growing demand for wireless services, to mitigate existing coverage and capacity issues, and to effectively pass on calls to other towers in the network.

Identification & Evaluation of Different Site Location Options

Based on research by Bell's Radio Frequency Engineering team, a general search area location was chosen centered on the intersection of Highway 26 and 11th Line. A site within the search area on the map below (**Figure 5**) would, from an engineering point of view, meet the coverage objectives of Bell's network. Typically, in semi-urban areas, the search area can have a radius of between 300 and 1000 metres.

A review of existing telecommunications installations within the search area, as illustrated in **Figure 4,** revealed that there are no existing towers that would meet Bell Mobility's coverage requirements (i.e. within the search area).

Figure 5 – Search area

The search area consists of predominantly residential, environmental, and other sensitive land uses, which had a significant effect on the number and quality of site candidates.

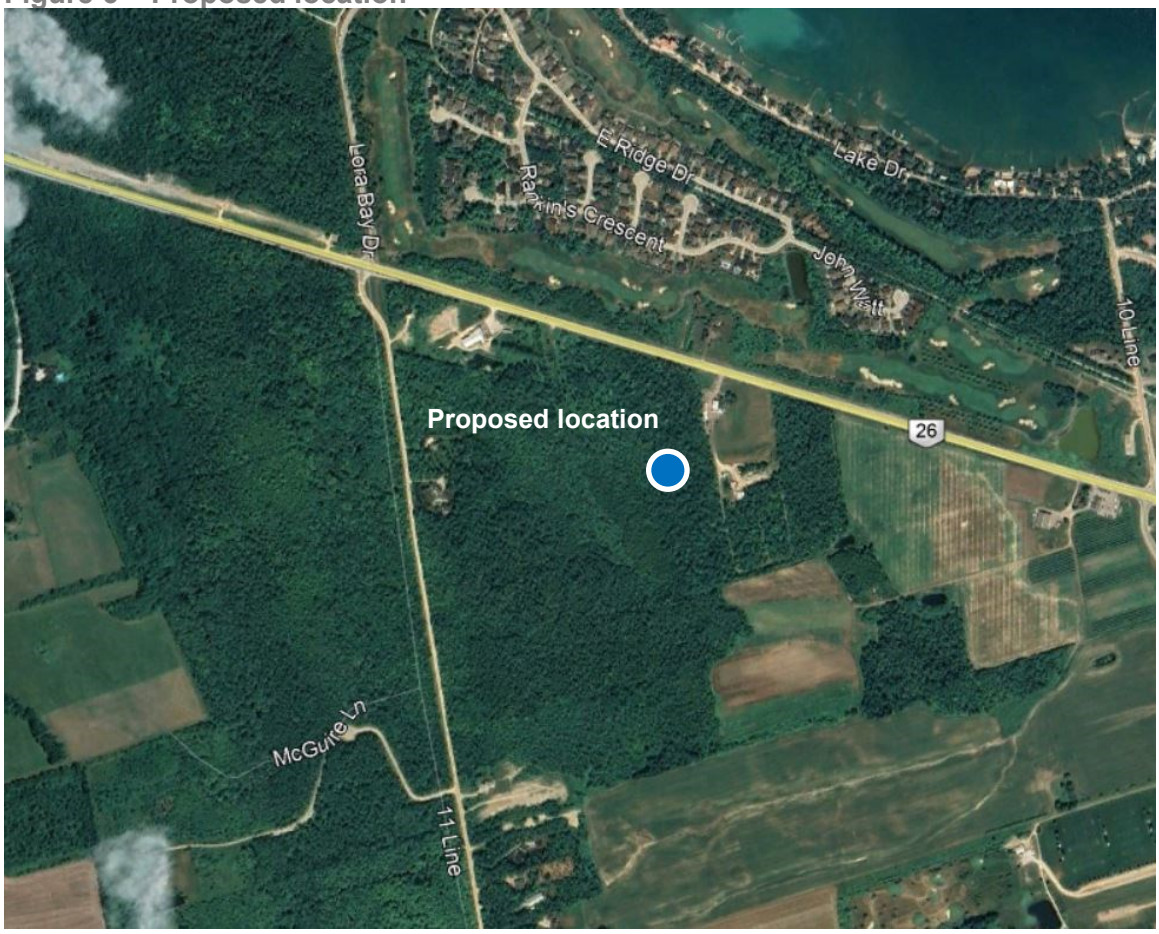
After visiting the search area and reviewing Blue Mountains' *Protocol for Establishing Telecommunications Facilities*, we identified a number of potential sites that would meet engineering requirements, as well as the standards outlined in Industry Canada's CPC 2-0-03 document. We proceeded to meet with several land owners in the area to discuss potential locations.

Proposed Site Location

The location which Bell proposes for a wireless telecommunications site in Thornbury is on the property municipally known as 397323 11th Line (**Figure 6**). The proposed site is ideal in the Town of the Blue Mountains as it meets several the preferences stated in the Town's *Protocol* and Official Plan.

The property's legal description is: PT LT 35-36 CON 11 COLLINGWOOD AS IN R245260 EXCEPT PT 1-6 16R3156; THE BLUE MOUNTAINS

Figure 6 – Proposed location



The site itself is located approximately 200 metres south of Highway 26.

The geographic coordinates for the site are as follows:
Latitude (NAD 83) N44°34'17.4
Longitude (NAD 83) W80°29'12.6"

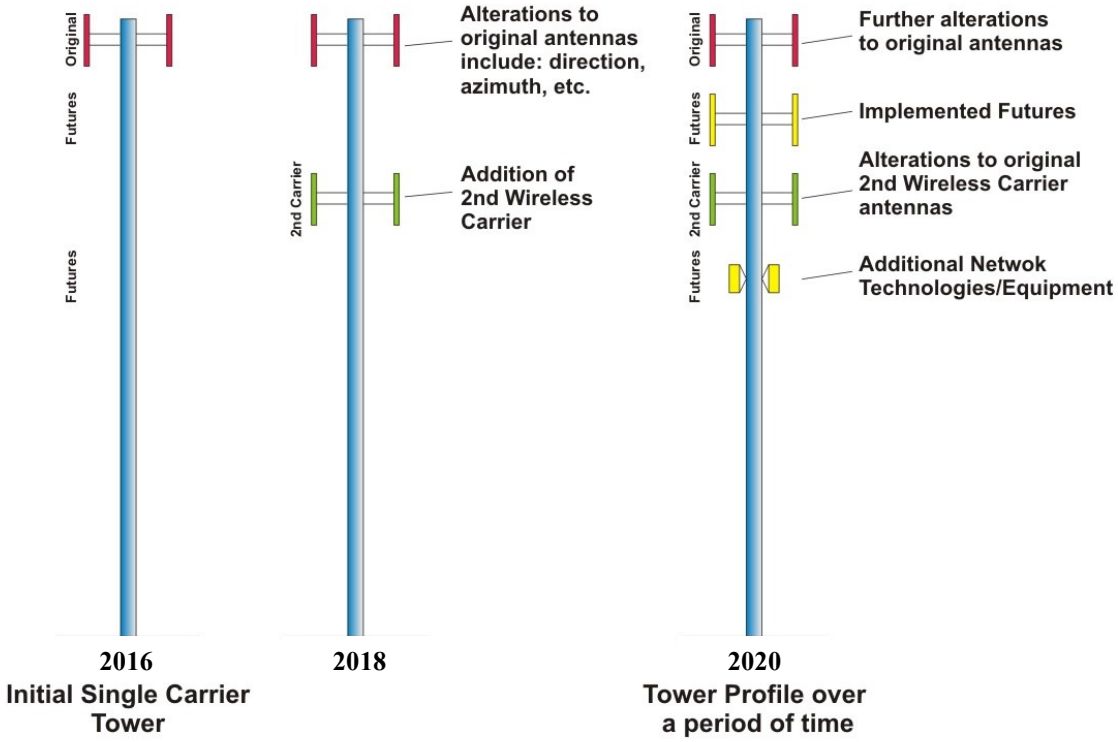
The siting of this tower put it on rural land and outside of any hazard lands as per the preference of Section B1(b) of the Official Plan as well as Section 8.9.4 5(a) of the Grey Official Plan. The property is also along Highway 26, which has been identified as a corridor of demand in the Town's *Protocol* in Section G. These coordinates also ensure that the tower is not located within 120m of the identified Woodlands to the West.

Bell Mobility's proposed tower will accommodate wireless antennas for the purpose of providing wireless communications coverage and network capacity. To the end user, this translates into Bell's suite of wireless technologies such as cellular phone or wireless internet coverage. Depending on the signal strength, and the amount of data being downloaded, the regular user should not see a difference between this and a fibre line.

Bell strongly supports co-location on existing towers and structures and designed the tower to accommodate future carriers on the tower as per Section B1(d)(iii). The use of

existing structures minimizes the number of new towers required in a given area and is generally a more cost-effective way of doing business. However, tower infrastructure is a finite resource and over time most towers reach their engineered maximum. This normally results when more than two carriers occupy the same tower as illustrated in **Figure 7**. The proposed tower is designed to support and accommodate additional carriers. Bell, additionally has already received interest from Rogers regarding colocation at this tower location.

Figure 7



Towers are limited in terms of both allowable space and engineering capacity. Each antenna array requires a separation of vertical space so they do not cause interference with each other.

Unfortunately, there are no pre-existing towers that would work for co-location and given the low average height of structures in the search area, a rooftop antenna installation is also not viable.

Description of Proposed System

The proposed system for 397323 11th Line is a steel monopole telecommunications tower that is 50 metres in height. A fenced-in compound would also be constructed, and would occupy a ground compound area of approximately 225 square metres.

The compound and majority of the lower sections of the tower will be screened from view with the fencing and surrounding foliage. These efforts help addressing the Town Official Plan Section B1(d) regarding mitigation from views and vistas.

Bell Mobility proposes to install antenna and microwave equipment. The tower would initially provide wireless voice and data services for subscribers to the Bell Mobility network.

Justification of Preferred Tower Type

Due to the dearth of existing telecommunication facilities in the area, and the demand for improved wireless services, there is a great need for new wireless signal in the search area. As a result, Bell Mobility has designed a monopole tower. This tower allows for potential co-location while simultaneously resulting in an aesthetically-pleasing design that should help address Section B1(d) of the Official Plan. This design, in addition to the proposed height of the tower (50m) should allow The Town of Blue Mountains to minimize the amount of towers required in Thornbury in the future.

Statement Indicating Need for Tower Height

The proposed tower has been designed at a height of 50 metres. Due to the large coverage hole that currently exists in Bell Mobility's network in this part of Blue Mountains, this height is required to provide optimal coverage to the area for voice and, importantly, data use, and to "pass on" calls and other uses effectively to surrounding towers in the network. The height will also allow other carriers to use the tower for their own equipment.

Health Canada's Safety Code 6 Compliance

Bell Mobility attests that the radio antenna system described in this report will comply with Health Canada's Safety Code 6 limits, as may be amended from time to time, for the protection of the general public including any combined effects of additional carrier collocations and nearby installations within the local radio environment.

Control of Public Access

The site facility would include one locked, alarmed and electronically monitored mechanical equipment shelter. Fencing would be installed around the base of the tower and equipment shelter and would include one locked gate access point.

Canadian Environmental Assessment Act and Conservation Authority

Bell Mobility attests that the radio antenna system described in this notification package is not subject to the *Canadian Environmental Assessment Act, 2012*; therefore this facility is exempt from assessment.

Bell Mobility has also made every effort to design the tower and access in compliance with the Grey Sauble Conservation Authority (GSCA) regulations. We have been informed by the GSCA that the property contains significant woodlands in accordance to the County of Grey Official plan and as a result, Bell Mobility will be completing an environmental impact study

Transport Canada's Aeronautical Obstruction Marking Requirements

Bell Mobility attests that the radio antenna system described in this notification package will comply with Transport Canada / NAV Canada aeronautical safety requirements. Bell Mobility has made all necessary applications to Transport Canada and NAV Canada.

At the time of writing, neither Transport nor NAV Canada has completed their review of the proposed structure. However, given that the structure is not in close proximity to any aerodrome, we anticipate that lighting and/or painting of the structure will not be required.

Engineering Practices

Bell Mobility attests that the radio antenna system described in this notification package will be constructed in compliance with the National Building Code of Canada and comply with good engineering practices including structural adequacy.

Distance to Residential

The nearest residential use outside of the subject property is approximately 270 metres North of the proposed site, on Highway 26 as illustrated in Figure 8.

Figure 8 – Distance to nearest residential

Public Consultation

In accordance with Industry Canada's CPC 2-0-03 guidelines and The Blue Mountains' *Protocol for Establishing Telecommunications Facilities*, Bell Mobility will conduct a public circulation at the appropriate time in the evaluation process.

Impact on Sensitive Land Uses/Features

This installation will not affect any sensitive land uses, natural heritage, significant vegetation, or agricultural uses.

Conclusion

Canadians as a whole are becoming more dependent on wireless products for personal, business, and emergency purposes. In many areas of the country, more than half of all 9-1-1 calls are now made via a mobile phone. To that end, an improvement upon the current wireless coverage in this area of the Town of Blue Mountains would be a benefit to the community.

Bell Mobility believes the proposal:

- Is in a location technically suitable to meet Bell Mobility's network requirements;
- Is a design that will accommodate additional providers in the future, if needed;

- Is a development compatible and appropriate with surrounding uses, and will have limited impact on existing land uses in the vicinity.

Bell Mobility is committed to effective public and municipal consultation. Should you have any questions or require further information regarding our proposal, please do not hesitate to contact the undersigned.

Sincerely,

Ferdinand Staab, MCIP, RPP, SR/WA
Consultant for Bell Mobility