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SIGNUM WIRELESS

January 15, 2026

Site Selection & Justification Report

Wireless Telecommunications Tower Site

1550 Morrison Rd, North Dumfries

Signum Wireless – contracted to:
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Introduction

The on-going increase in the use of personal cellular telephones, smartphones (iPhone, Android) and other wireless devices such as broadband internet hubs 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 meet the demands of increased capacity and broadening service areas. Without antennas in close proximity to the wireless device, wireless communication is simply not possible.

The use of wireless telecommunications is firmly entrenched into Canadian society and economy. There are more than 30 million Canadian mobile devices being used on a daily basis including, wireless phones, mobile radios, mobile satellite phones and broadband internet devices. Three-quarters of Canadian's have access to a smartphone which demands the use of high-speed mobile data. Most importantly, each year Canadians place more than 6 million calls to 911 or other emergency numbers from their mobile phones.

As part of its on-going commitment to providing high quality wireless services, Signum Wireless has determined that a new wireless telecommunications facility is required in the Township of North Dumfries

This report documents Signum's site selection process, the details of the proposal, its compliance with the *Township's Telecommunication Tower and Telecommunication Antenna Preferred Location Protocol* and the applicable Innovation, Science, & Economic Development (ISED) CPC-2-0-03 — Radiocommunication and Broadcasting Antenna Systems.

As a general matter, the Signum Wireless site selection process is a balanced exercise that must meet our clients' 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 ISED and need not follow municipal or provincial planning approvals. However, in recognition of the policy vacuum which exists as a result of that circumstance, ISED 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.

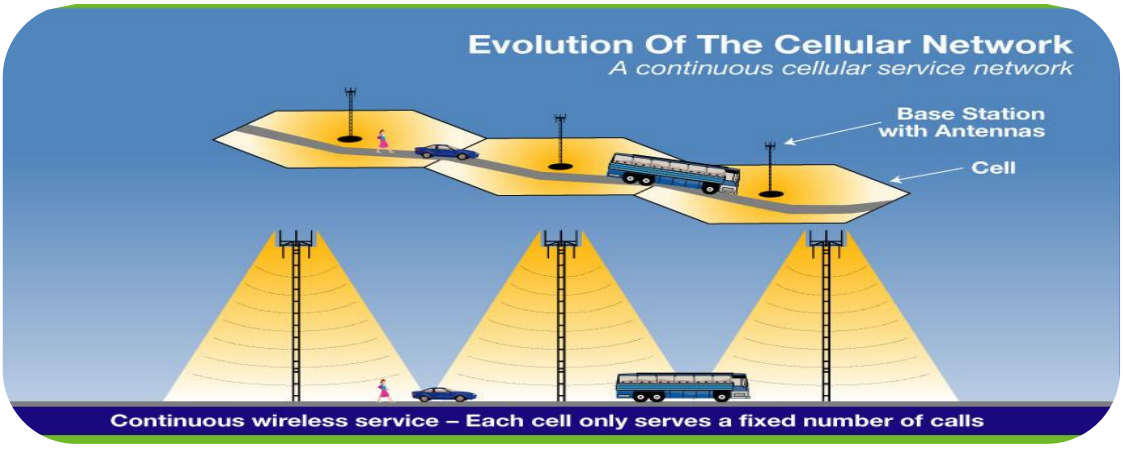


Figure 1

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.

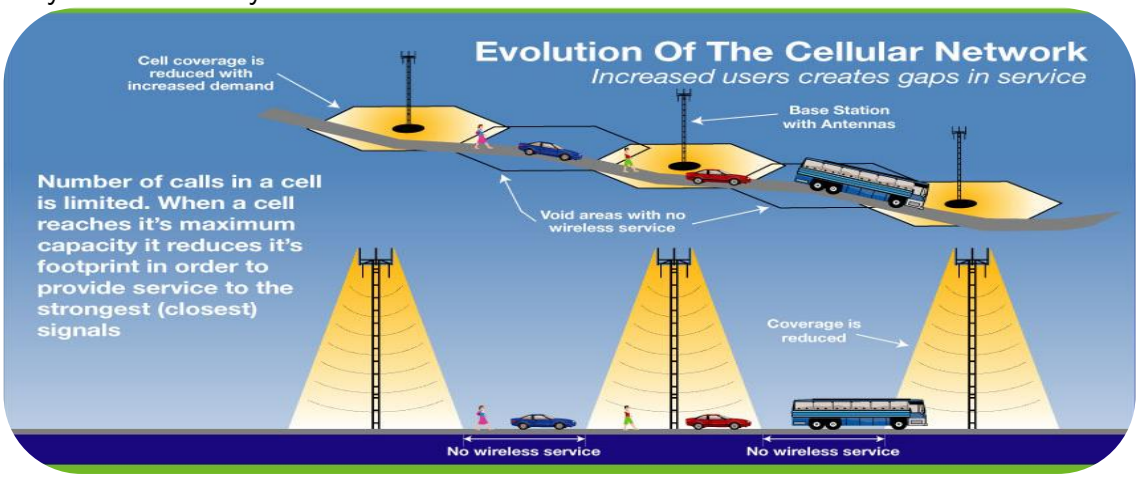


Figure 2

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.

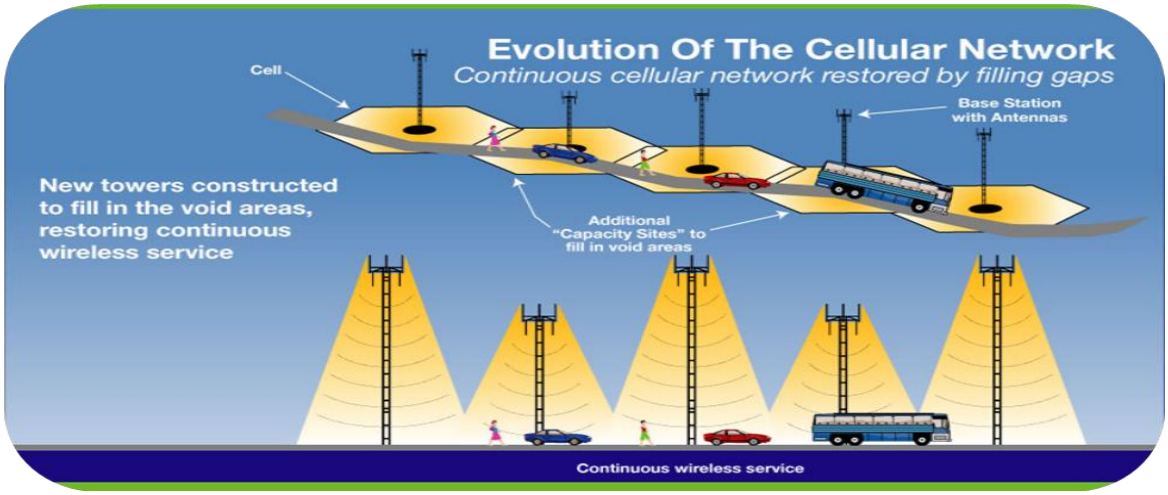


Figure 3

In this case, our clients' Radio Frequency Engineering department(s) have determined the need for a service upgrade to adequately provide continuous coverage and service to their existing and future customer base in the Township of North Dumfries. Currently, our clients' networks are burdened by a combination of poor voice and data quality, specifically in high-use residential areas, transportation corridors, and international border areas. 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.

Our clients are committed and mandated by their respective licenses to ensure the best coverage and service to the public and private sectors. The proposed site in North Dumfries is extremely important in terms of providing coverage to an under-serviced area and adding capacity to existing networks. Signum Wireless wants to provide infrastructure necessary to ensure that both residents and visitors to the area have access to the service they are accustomed to in other parts of the country.

Signum Wireless's objective for this location is to provide the infrastructure for reliable coverage and capacity in the surrounding rural and agricultural areas and the Highway 8 corridor. The objective is to have coverage throughout this area of North Dumfries, specifically in residential areas and frequently travelled corridors where demand for signal is high.

A drive test was conducted by some of our clients along area roads, such as McLean Rd and Highway 8, for the purpose of determining our coverage objectives. Very weak coverage areas with poor signal strength were found around and along these major roads and sideroads, which generate significant coverage requirements as a result of the density of users and lack of existing coverage.

Identification & Evaluation of Different Site Location Options

Our clients' existing coverage in North Dumfries 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 in **Figure 4,** there is a gap in

wireless telecommunications infrastructure in the area of coverage need. (Existing infrastructure is represented by markers on the map.) All existing infrastructure is located at least 3-kilometres away from the proposed Signum tower. Much of it is concentrated within the dense urban areas of the Township.

Based on research by each of our clients' respective Radio Frequency Engineering teams, a general search area location was chosen centered on the intersection of Morrison Rd and Dundas St S (Highway 8). **Figure 5** illustrates the existing telecommunication infrastructure within a 5-kilometre radius of the search area and includes a 1.5-kilometre radius ring centered on the proposed Signum tower location in accordance with the Township's co-location assessment requirements.

Figure 4 – Current Telecommunications Infrastructure in south-east London

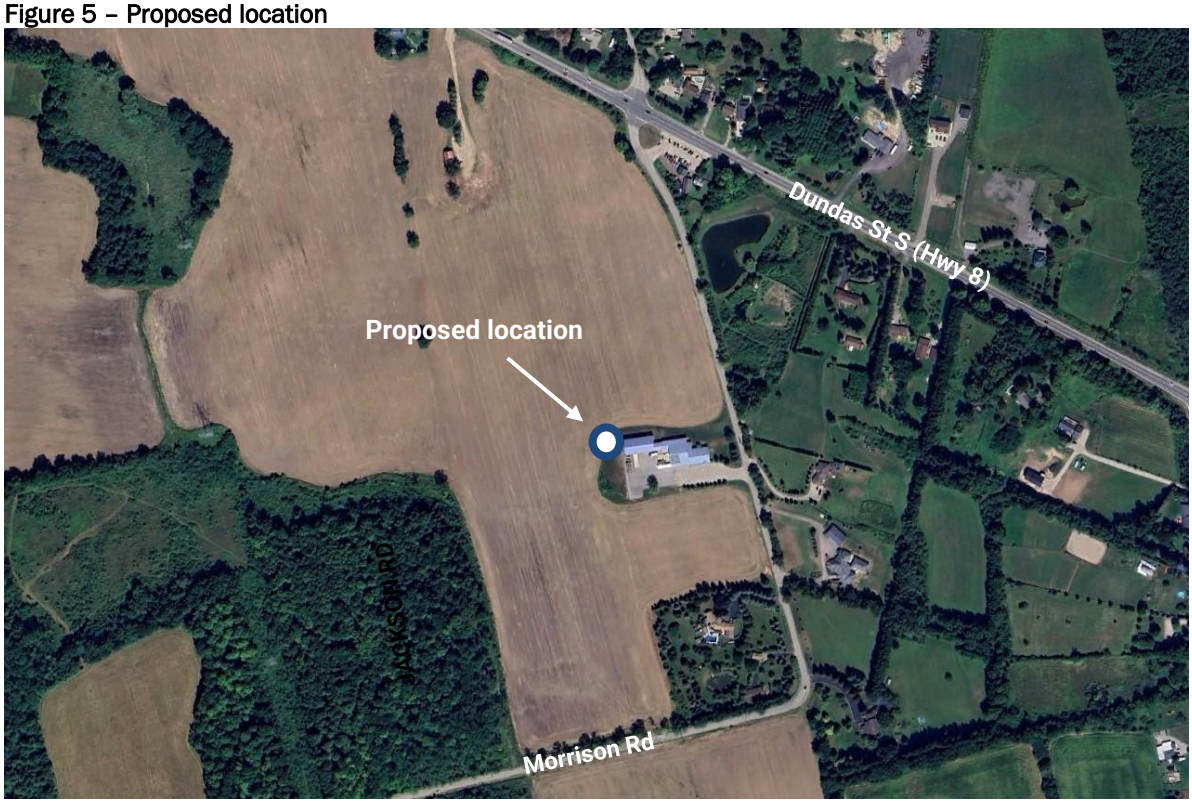
A review of existing telecommunications installations within the search area, as illustrated in **Figure 4,** revealed that there are no existing towers that would meet our clients' coverage requirements. The nearest built antenna installation is a Rogers Wireless 60-metre self-support tower, located at 1049 Cheese Factory Rd. Given the structure's distance from the center of the search area (around 3 km), the type of structure, and the low height available for equipment, it is not a viable co-location option. Generally speaking, the structures in the area are low-rise, and so a rooftop installation was also not viable.

Proposed Site Location

The location which Signum Wireless proposes for a wireless telecommunications site North Dumfries is on the property municipally known as 1550 Morrison Rd, North Dumfries, ON N1R 5S2 (**Figure 5**).

The property's legal description is: PART LOT 1 CONCESSION 9 NORTH DUMFRIES, PART 1 PLAN 58R21057 TOWNSHIP OF NORTH DUMFRIES.

Figure 5 – Proposed location



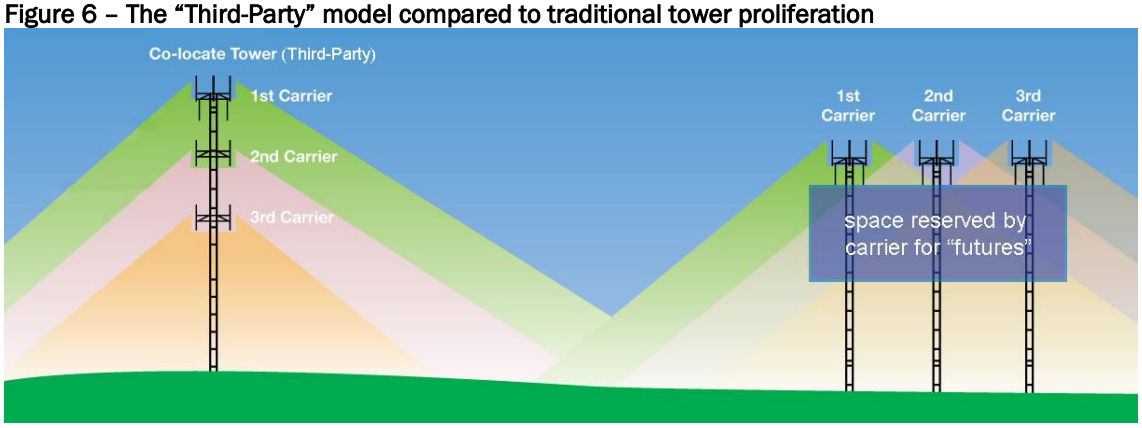
The site itself is located approximately 128-metres west of Morrison Rd and 337-metres south of Dundas St S.

The geographic coordinates for the site are as follows;
Latitude (NAD 83) N 43° 20’ 14.5”
Longitude (NAD 83) W 80° 15’ 06.1”

Signum Wireless’ proposed tower will accommodate wireless antennas for the purpose of providing wireless communications coverage and network capacity. To the end user, this translates into our clients’ suite of wireless technologies such as cellular phone coverage, Smartphone device coverage (i.e.: iPhone, Android devices) as well as wireless internet coverage utilizing USB or Hotspot internet products. 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.

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.

Figure 6 – The "Third-Party" model compared to traditional tower proliferation



Signum Wireless strongly supports co-location on existing towers and structures and designed the tower to accommodate future carriers on the tower. 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. It also allows the Township to reduce the potential for tower proliferation by multiple carriers needing space for their equipment (Figure 7). The proposed tower is designed to support and indeed encourage a number of additional carriers.

Description of Proposed System

The proposed system for 1550 Morrison Rd is a lattice tri-pole communications tower that is 60-metres in height. A fenced-in compound would also be constructed and would occupy a ground compound area of approximately 144 square metres.

Our clients propose to install antenna and microwave equipment. The tower would initially provide wireless voice and data services for subscribers to our clients' networks.

Justification of Proposed Siting

Prevalent in our search area of North Dumfries are rural and agricultural uses, as well as single-family housing. The proposed tower has been sited on an agricultural property in order to respect the local environment and to mitigate any potential impacts, as well as maximizing the distance from local residential uses.

Conformity with Township Protocol

The table below summarizes how the proposed tower aligns with the Township's preferred location design guidelines, as outlined in Section 4 of the Protocol.

Section	
Section 4. Preferred Location Guidelines	The proposed tower is situated in a rural/agricultural area approximately 160m from the nearest residential dwelling. The location avoids sensitive land-uses and

	minimizes potential land-use conflicts, in accordance with the Township's intent to guide towers away from residential and environmental areas.
Section 4A. General Location Preferences	The site is located on a privately owned agricultural parcel, which aligns with the Township's preference for rural, non-residential settings. The area is characterized by open fields and scattered development, making it a low-conflict location for new telecommunication infrastructure.
Section 4B. Co-Location	Co-location was assessed during the site selection process; however, no existing towers in the area could accommodate the required height or coverage objectives. The proposed 60m tower is designed to support future co-location, fulfilling the Protocol's intent to reduce infrastructure duplication.
Section 4C. Site Preferences	While the proposed 60m will be visible due to its height, it is situated adjacent to an existing building on the property, which will provide partial visual shielding from nearby residential viewsheds. Its rural setting and setback of approximately 160m from residential dwellings further minimize visual impact on sensitive uses.

Statement Indicating Need for Tower Height

The proposed tower has been designed at a height of 60-metres. Due to the large coverage and capacity hole currently in our clients' network in this area of North Dumfries, this height is required to provide optimal coverage to the area, and to "pass on" calls and other uses effectively to surrounding towers in the network.

A lattice self-support tower at a height of 60-metres also means that three or more carriers or other broadcasters would be able to install their equipment on the tower. For the Township this is an added benefit, as it works to reduce the number of towers required in this area in the future.

Health Canada's Safety Code 6 Compliance

Signum Wireless and our clients attest 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 a locked, alarmed and electronically monitored mechanical equipment shelter. Fencing would be installed around the base of the tower and equipment shelter(s) and would include one locked gate access point.

Local Environment

Signum Wireless attests that the radio antenna system described in this notification package is not subject to the *Impact Assessment Act*.

As the subject property is not regulated by the Grand River Conservation Authority (GRCA), we do not anticipate the development requiring a permit.

Transport & NAV Canada Assessment

Signum Wireless attests that the radio antenna system described in this notification package will comply with Transport Canada / NAV Canada aeronautical safety requirements. Signum Wireless has made all necessary applications to Transport Canada and NAV Canada. Both agencies have yet to complete their review of the proposed installation. Signum Wireless will endeavor to provide the results of each respective assessment to the City of London as soon as they become available.

Distance to Residential

The nearest residential dwelling to the proposed tower is on the east side of Morrison Rd, approximately 160-metres east of the proposed location (Figure 8).

Figure 8 – Distance to nearest residential

Engineering Practices

Signum Wireless 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.

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, Signum Wireless has designed a lattice tri-pole tower. This design, in addition to the proposed height of the tower (60m) should allow the Township to minimize the amount of towers required in this area in the future, as it maximizes co-location capability while respecting the sensitive nature and aesthetic value of the local area.

Public Consultation

Signum Wireless is committed to effective public consultation. As a result, a full public consultation process, including a circulation of information and a public open house, will be held in accordance with the Township's policy.

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 Township of North Dumfries would be a benefit to the community.

Signum Wireless believes the proposal:

- Is in a location technically suitable to meet our clients' network requirements;
- Is a design that complies with ISED's CPC 2-0-03 policy and the Township of North Dumfries' protocol guidelines; and:
- Is a development compatible and appropriate with surrounding uses, and will have limited impact on existing land uses in the vicinity.

Signum Wireless 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.

Yours truly,

Lucas Cuff, Planner
FONTUR International Inc.
Contracted to SIGNUM Wireless Towers Inc.