

## Metrolinx Radio Communication Tower Site

3818 Boundary Rd, Kawartha Lakes, On, L1C 3K6

### Site Selection and Justification of Preferred Location

#### Introduction

With the significant growth in our population, the demand for transit services has also increased significantly. To meet this demand, Metrolinx continues to enhance its train and bus routes, providing greater levels of service and options in and around the GTHA. Extending the network of trains, buses, and supporting safety and service personnel, also requires an expansion of its radio communication system.

Presently, the Metrolinx Radio System coverage in the City of Kawartha Lakes is mostly provided by the antennas located at the Peterborough tower.

In order to alleviate existing coverage gaps in the Kawartha Lakes area, we are proposing a new communication tower.

#### Background and coverage requirement

The selection of a radio communication site is a tedious and complex exercise.

In the Metrolinx case, a number of factors such as: the complex radio network, Metrolinx's service area (both train and bus), RF (radio frequency) engineering principles, local topography and land use opportunities all need to come together in the selection of new sites.

In order to achieve reliable radio and microwave communication across the network, Metrolinx Radio System must provide a seamless transmission signal to alleviate any gaps in coverage. Gaps in coverage are responsible for dropped calls, and unavailable service which can potentially create service disruptions and safety concerns to Metrolinx employees and passengers.

In the City of Kawartha Lakes, Metrolinx proposes to use the MTO Patrol Yard for its communication tower.

The proposed tower will help us achieve all the necessary radio communication coverage requirements for the area.

#### Proposed Site Location

The Subject Property proposed is the MTO Patrol Yard located at 3818 Boundary Rd.

The geographic coordinates for the site are as follows:

Latitude 44° 4'33.50"N"

Longitude 78°37'22.60"W

Figure 1 – Location Map

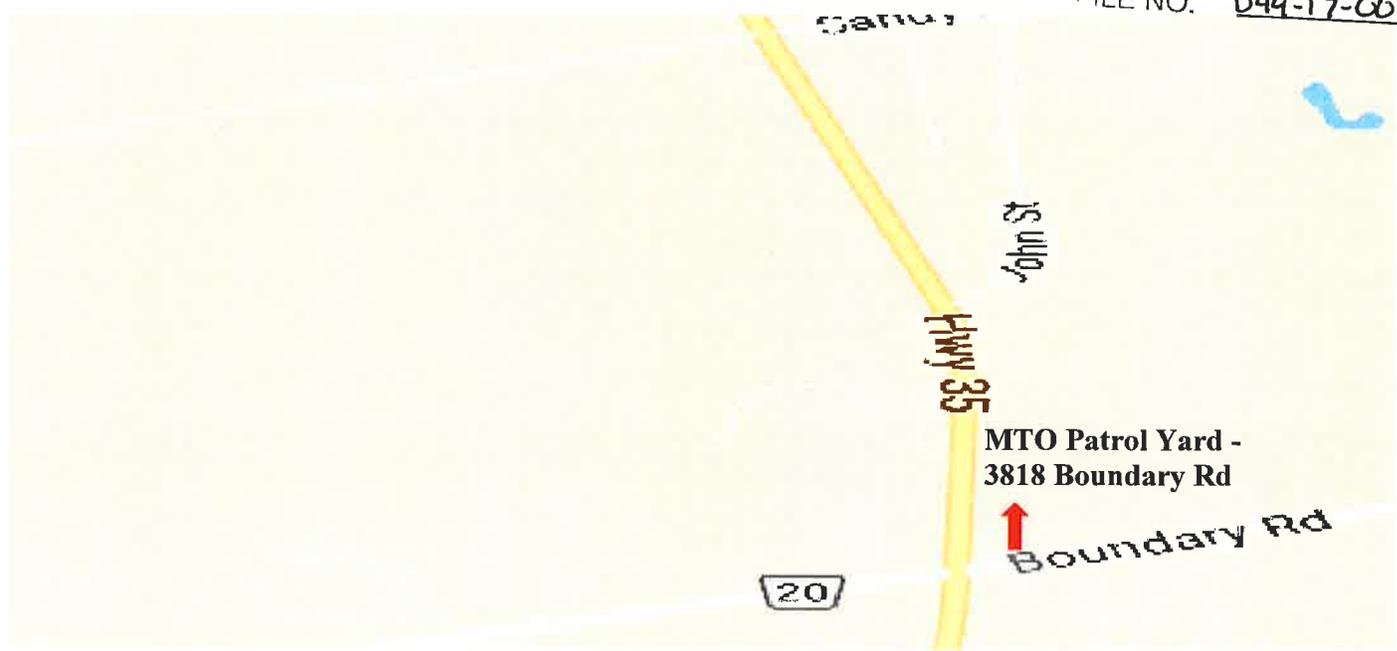
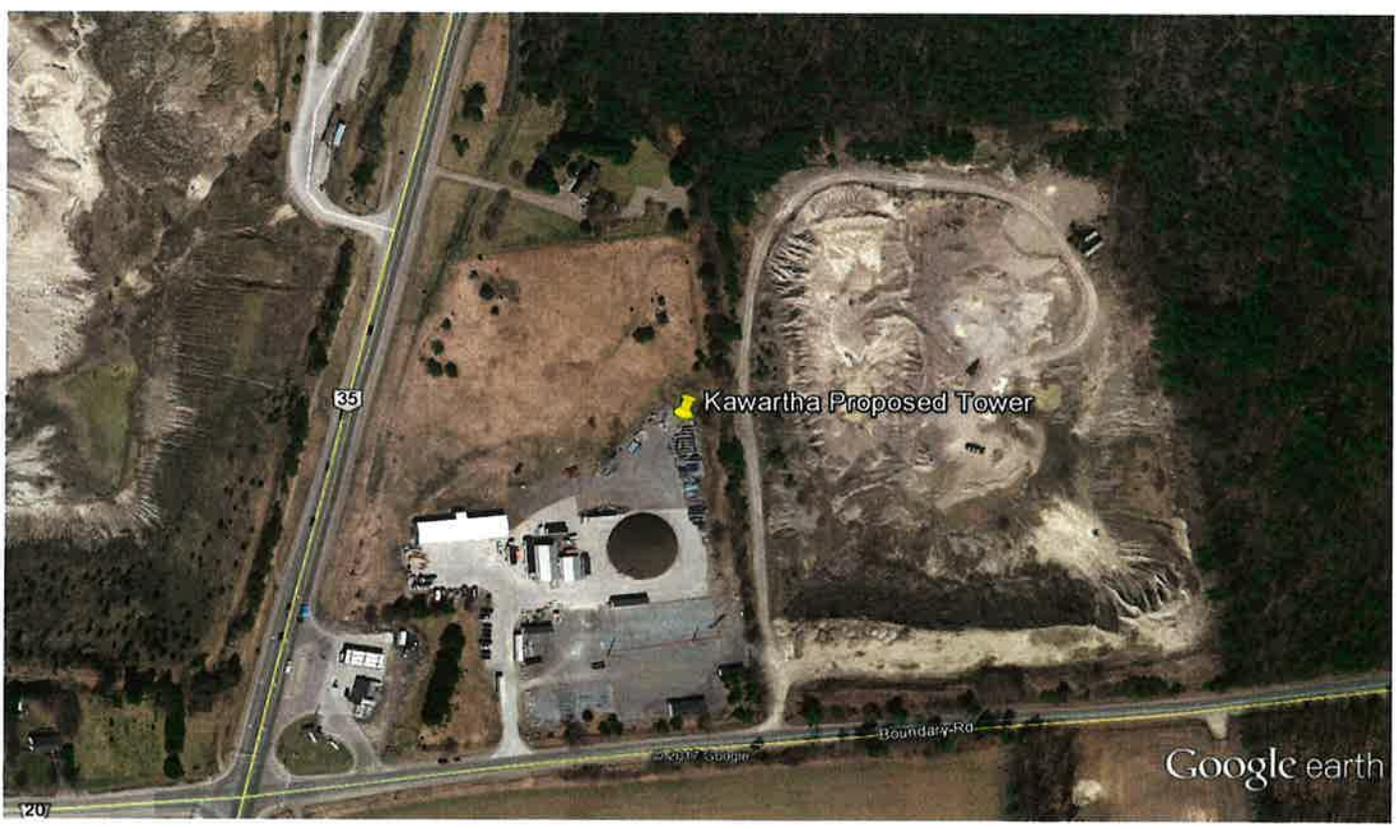


Figure 2 – Proposed tower location on the subject property



**Description of the proposed system**

As determined by the system engineers, an 80 meter high tripole structure is required to meet the coverage and network requirements. The site would occupy a secured, fenced off compound area of approximately 15m X 15m.

The compound will also contain a prefabricated equipment shelter of 4.26m X 3.65m and it will contain battery power, maintenance tools and first aid kit.

The installation will also be equipped with a silent alarm system.

The proposed tower site would provide an opportunity to accommodate future technology services as well as potential co-location with other licensed carriers helping reduce the number of future structures in the area, which is encouraged by both, the City of Kawartha Lakes and Innovation, Science and Economic Development (formerly known as Industry Canada). Sharing of its radio sites is a practice that Metrolinx has adopted and continues to encourage.

**Co-location assessment and initial tower location review**

Metrolinx makes every effort to locate tower sites where they will be the least visually obtrusive and always makes an initial effort to co-locate on existing structures.

Other potential site locations were evaluated and opportunities to co-locate onto existing structures were investigated. However, the wireless communication structures in the surrounding area are very scarce and were deemed to be inadequate in terms of providing the necessary radio coverage or microwave linking capabilities.

Since there were no suitable alternative structures readily available for co-location to accommodate the network coverage requirements, Metrolinx had to consider the construction of its own installation.

As discussed in the pre-consultation meeting held on August the 10<sup>th</sup> 2017, the tower was initially proposed to be located at the North Clarington GO Bus loop located at the intersection of Hwy 35 and Old Hwy 35 (shown in Figure 3).

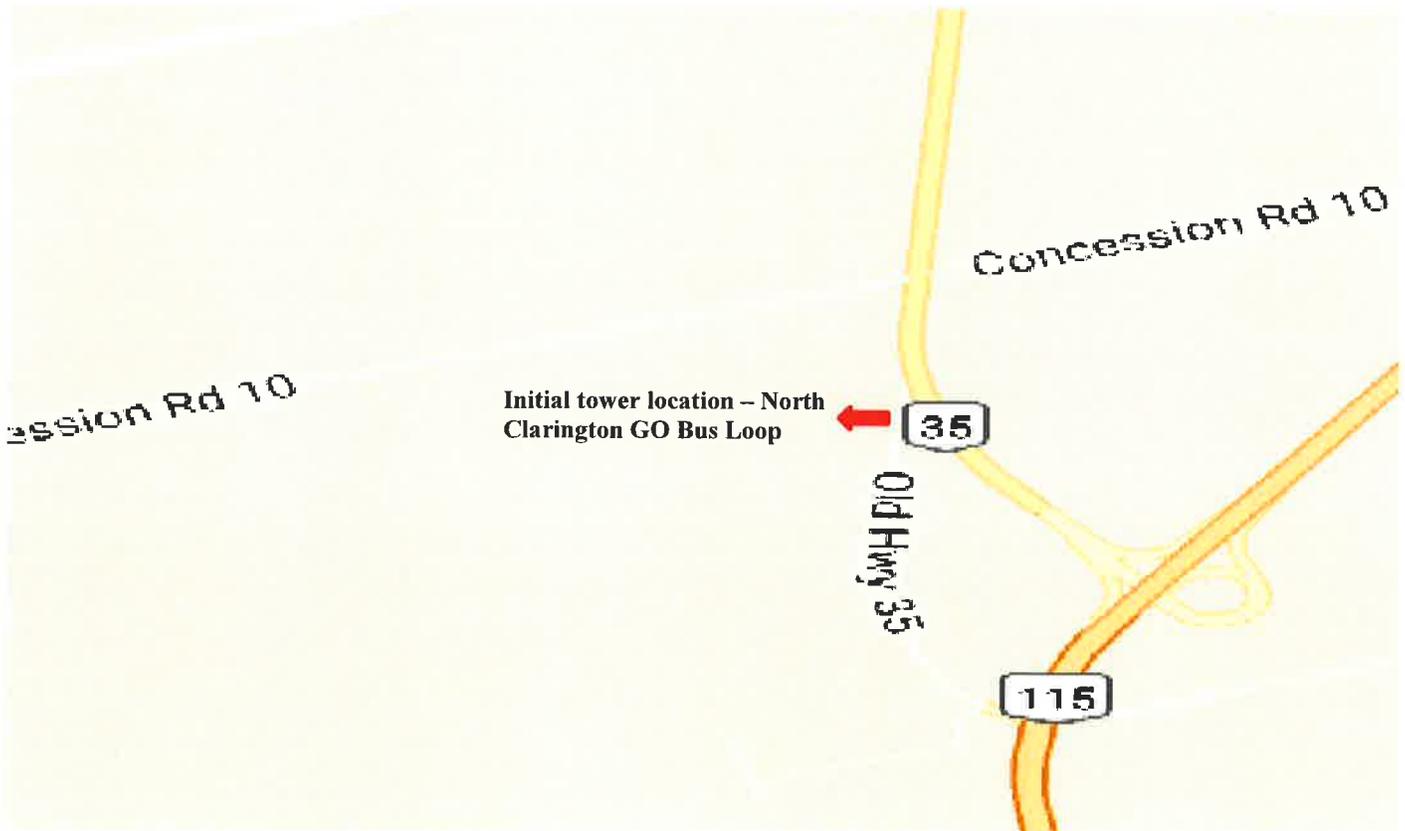
Metrolinx contacted the Municipality of Clarington and requested to start the consultation process for the proposed communication tower.

Shortly after the start of the initial dialogue with the Municipality of Clarington, the MTO requested the relocation of the tower project at the GO Bus loop at Hwy 35 and Old Hwy 35 due to the future highway rehabilitation projects in the area.

MTO proposed the relocation of the Metrolinx tower to their Highway Patrol Yard located approximately 1 KM north at 3818 Boundary Rd in the City of Kawartha Lakes.

Metrolinx then requested from the Municipality of Clarington to cancel the consultation process initiated earlier and contacted the City of Kawartha Lakes to start the consultation for the tower that is now proposed to be within the Kawartha Lakes jurisdiction.

**Figure 3 – Initially proposed tower location at the North Clarington GO Bus Loop**



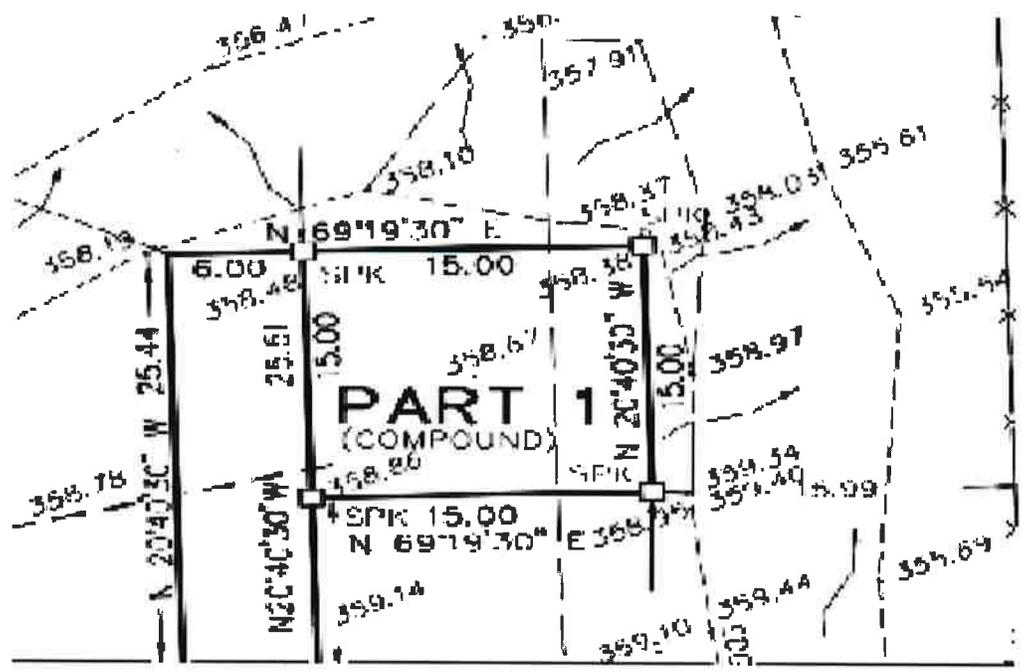
**City of Kawartha Lakes Protocol Requirements**

The City of Kawartha Lakes' Antenna Siting Protocol guidelines mandates telecommunications towers to be set back a minimum of 50 metres from Provincial Highways, 30 metres from local roads, and 15 metres from property lines. The setback shall be measured from the base of the tower or the guyed wires, whichever is greater.

The proposed tower compound will have a minimum setback of 15.99 meters from the neighboring property line, 170 meters setback from the local road (Boundary Rd) and 161 meters setback from Highway 35, thus meeting the required setbacks set out in the Protocol.

The included site plan also shows the distance between the compound fence and the neighboring property line.

**Figure 4** illustrates the distance of the proposed compound location to the neighboring property line



Please refer below for a sample of the installation for your reference (Figure 5). An additional package of photo renderings will be attached to this report.



## **Federal Requirements**

In addition to the requirements for consultation with the City of Kawartha Lakes as the Land Use Authority, Metrolinx must also fulfill other important obligations including the following:

### **Engineering Practices**

The radio antenna system as proposed for this site will be constructed in compliance with the **Canadian Standard Association (CSA)** and comply with good engineering practices including structural adequacy.

### **Transport Canada's Aeronautical Obstruction Marking Requirements**

Aeronautical safety is under the exclusive jurisdiction of **NAV Canada** and **Transport Canada**. An important obligation of Metrolinx installations is to comply with **Transport Canada and NAV Canada's** aeronautical safety requirements.

The radio antenna system described in this report will comply with **Transport Canada / NAV Canada** aeronautical safety requirements.

### **Health Canada's Safety Code 6 Compliance**

Radio communication, including the technical aspects related to broadcasting and licensing, falls under the jurisdiction of Innovation, Science and Economic Development Canada (formally Industry Canada), which is mandated to establish standards, rules, policies and procedures. ISED, under this authority, has adopted Health Canada's Safety Code 6 exposure guidelines for the protection of the general public. As such, ISED requires all proponents and operators to ensure that their installations and apparatus comply with the Safety Code 6 at all times.

The wireless communications facility described in this report package will be designed and installed to comply with Health Canada's Safety Code 6 exposure guidelines.

### **Conclusion**

Metrolinx has conducted a thorough and comprehensive investigation of the potential radio site and has determined that a new communication tower is necessary as there are no suitable alternative structures in the vicinity.

Metrolinx was able to ensure that the proposed site location is located in an industrial area and maintains a significant setback from the street, while ensuring that the quality of signal strength is maintained.

We trust you will find this selection in order, however if you have any questions or require further information, please do not hesitate to contact the undersigned.

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