TELUS Communications Inc.
Response to Public Consultation Feedback
40m Self-Support Telecommunication Facility
June 22, 2021

RE: Public Consultation for Proposed Telecommunications Facility

TELUS File:	ON1428
Legal Land Description:	NE PT OF N1\2 LT 280 CON STR GOSFIELD; PT OF N1/2 LT 280 CON STR INCLUDING BLK 90 GOSFIELD (ESSEX) PT 2, 6 ON 12R8414 AS IN R850277; EXCEPT PT 1 ON 12R7580 AND PT 1 ON 12R24158 TOG/W AN EASE AS IN R981605; SAVE AND EXCEPT PTS 1,2,3 ON 12R24759; TOWN OF KINGSVILLE
Address:	Vacant land on the east side of County Rd. 23
Coordinates:	Lat: 42.164908°, Long: -82.810802°

Thank you for sending us feedback regarding the proposed telecommunications facility for TELUS Communications Inc ("TELUS"). Please review the below responses to all questions and concerns we have received to date.

Purpose of Tower, Services and Benefits

The proposed facility is part of TELUS' Macro Wireless Program, which is intended to expand and improve wireless connectivity, including wireless home and business internet service to the Town of Kingsville and to the Town of Essex. The proposed facility would also address capacity constraints in the existing wireless network for other facilities operating in the area and must be within a very specific and small search area to enhance wireless service to the community.

Cellular wireless services include internet and voice communication for cellphones, and a variety a devices including laptops, tablets, cellphones, home or business security systems, and innovative environmental sensors. Area residents would also have an additional choice in wireless home or business internet service providers and the resulting economic competition may help lower consumer prices in the area.

Evolution to the 5th Generation (5G) Network

The proposed tower will include current 4G technologies and may be upgraded to 5G. The 5th Generation wireless network is a general upgrade of all related technologies, including better antennas, support equipment, fibre optic service connection and utilization of new, lower and higher frequency radio waves/spectrum. Per Innovation, Science and Economic Development Canada (ISEDC), 5G devices will need to meet radiofrequency exposure requirements before they can be sold in Canada. Also, the current Canadian limits already cover the frequency ranges that will be used by 5G devices and antenna installations. Compliance with radiofrequency exposure requirements will continue to be an ongoing obligation for carriers and product manufacturers. All radiocommunication sites in Canada must comply with Health Canada's Safety Code 6, which establishes safety limits for human exposure to radiofrequency electromagnetic fields for all age groups on a continuous basis (ISEDC website (https://www.ic.gc.ca/eic/site/smt-gst.nsf/eng/sf11467.html), April 9, 2020). For further information, please refer to the below section on health and safety.

Health and Safety

Radiocommunication

Service providers must ensure that their equipment is installed in accordance with Safety Code 6 (SC6). The main concern is to ensure that equipment is installed in a safe manner and in accordance with the standards

set out in SC6 for the general population and workers. To clarify, SC6 is designed to apply to all age groups on a continuous basis.

We would like to highlight the following points surrounding SC6:

1. SC6 is a standard developed by Health Canada scientists. The exposure limits in SC6 are based on a continuing review of published scientific studies, including rigorous internal and external reviews of scientific literature, as well as Health Canada's research. The Code is revised periodically to reflect evolving knowledge in scientific publications.

2. SC 6 is developed by Health Canada, but Innovation, Science and Economic Development Canada (ISEDC) is responsible for ensuring that carriers comply with these standards.

3. TELUS must comply with SC6 standards **at all times**, meaning as soon as there is a change, TELUS has an obligation to make sure that all of its sites continue to comply with the latest standards. Another important point is that ISEDC conducts regular and random audits to ensure that facilities meet standards.

4. SC6 complies with the requirements of the World Health Organization.

5. The boundaries of SC6 are comparable to other industrialized countries, which use *science-based standards* such as Australia, Japan, New Zealand, the European Union and the United States.

6. Health Canada recognizes that a few international jurisdictions (cities, provinces or countries) have applied more restrictive limits to radiofrequency field exposures from cell towers; however, there is no scientific basis to support the need for such restrictive limits. In addition, these more restrictive limits aren't applied equally to other wireless devices operating within the same jurisdictions. For more information on SC6, please refer to this link: https://www.canada.ca/en/health-canada/services/environmental-workplace-health/reports-publications/radiation/understanding-safety-code-6.html.

For the above reasons ISEDC considers health concerns not to be relevant to opposing a proposed tower as detailed in CPC-2-0-03, Section 4.2.

TELUS must ensure SC6 compliance throughout the lifetime of a telecommunications facility, including testing its equipment and reporting to ISEDC. For more information on radiofrequency energy, the role of the government of Canada and safety requirements, please refer to the following link: http://www.ic.gc.ca/eic/site/smt-gst.nsf/eng/sf11467.html.

Please also review the attached information published by ISEDC.

Access Restrictions and Other Safety Concerns

In addition, one resident requested a silent alarm and signage at the gate and construction of a fence along the entire access road (+/-290m) to keep people out of the access road. The concerns are related to the nuisances of traffic, viewing a maintenance vehicle accessing the property during the day and night (aesthetics), noise and safety concerns with respect to children, and residents mowing the lawn in proximity of the access road. With respect to safety concerns, TELUS' tower site will include a silent alarm system for both unauthorized access and environmental concerns like flooding or fire. The site will be surrounded by a fence, typically with barbed wire and a locked gate, to deter unauthorized entry to the facility. In addition, electrical equipment is stored in a locked equipment shelter. A gate at the entrance to the land would make it difficult to access with a tractor for cultivation-related activities and may conflict with vehicular traffic along Talbot Street South, possibly creating a safety concern along the street.

Engineering Practices

TELUS attests that it will respect good engineering practices, including structural adequacy for all proposed radio antenna systems. Furthermore, proposed installations will be constructed in compliance with the National Building Code and the Canadian Standard Association's standard for antennas, towers, and antenna-supporting structures (S37-13).

Aeronautical Safety

All necessary Transport Canada and NAV Canada approvals and lighting requirements will be obtained by TELUS and provided upon request. Currently, TELUS expects Transport Canada's requirements to include tower lighting (top) due to the height of the proposed facility. Where permitted to do so, TELUS uses shielded light fixtures that block or reduce the amount of light from shining on nearby property owners.

Location

The proposed tower location was chosen in response to increased demand for wireless services and to improve both coverage and capacity of the network. More telecommunications facilities are needed to ensure the delivery of fast and reliable wireless services. The proposed tower would address the growing coverage and capacity challenges that our modern society faces as people and machines become increasingly dependent upon wireless communication.

The following are some recent trends that our industry is experiencing and that impacts the ability to provide service.

- As of December 2019, there were over 33.2 million wireless subscriptions in Canada, equivalent to 89% of all Canadians. (CWTA Facts & Figures website, Dec 2019, StatsCan Q4 2019 population 37.7M)
- More Canadians have mobile phones (90.18%) than landlines (41.25%), while approximately one third of Canadian households rely exclusively on wireless services. (CRTC, CMR: Telecommunications Overview, 2018; CMR: Communications Services in Canadian Households, 2018)
- When taking both wireless networks and Wi-Fi into account, the average smartphone in North America generates 8.5 GB of traffic per month and is estimated to grow to 45 GB per month by 2025. (Ericsson Mobility Report, November 2019)
- In 2017, Canada's mobile data traffic grew 38%. It will grow 4-fold from 2017 to 2022, a compound annual growth rate of 34%. (Cisco, VNI Forecast Highlights, 2018)

The proposed facility will enhance wireless connectivity in the community and address network capacity.

<u>Search Area</u>

TELUS' radiofrequency engineering and network planning departments determined that a new facility is required to address network capacity constraints within the area and to provide improved wireless service to area residents, businesses, and the traveling public. The search area centered on County Road 23 and

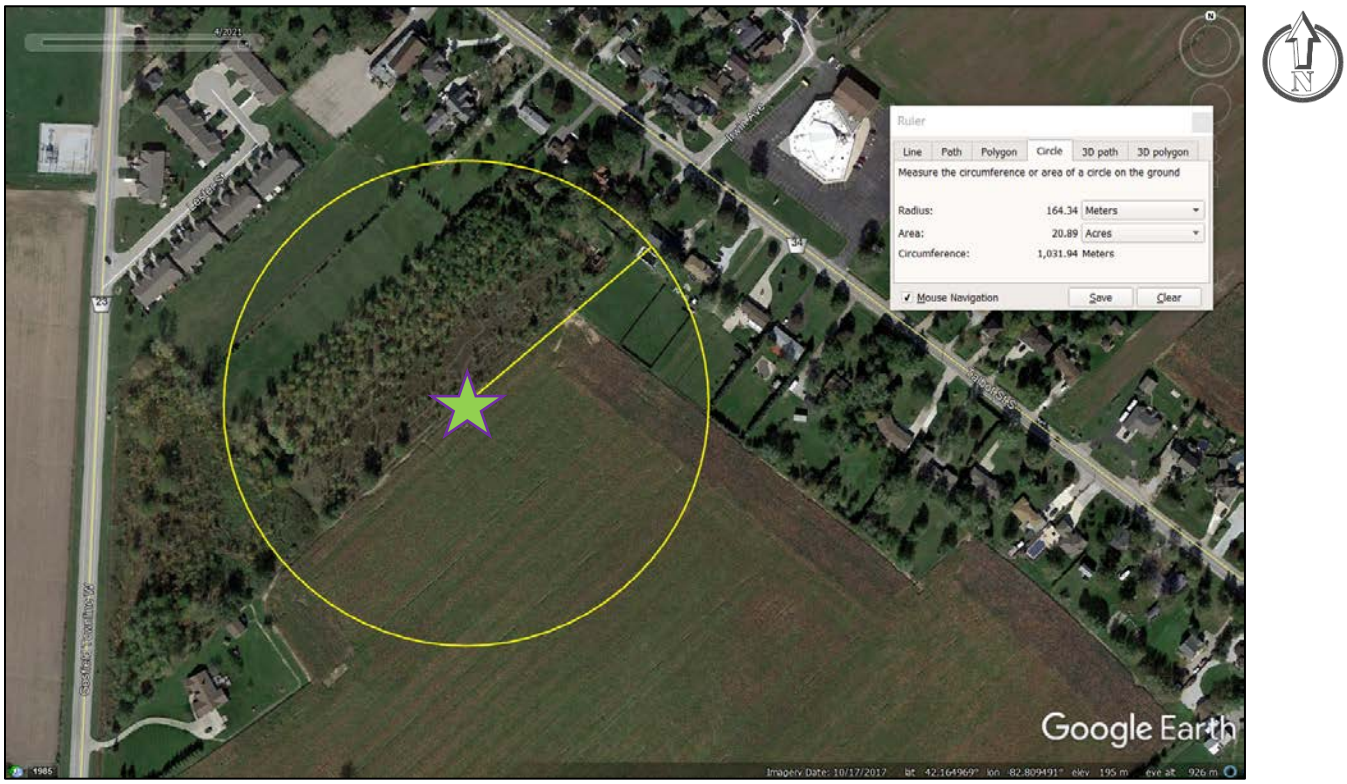
extends from the intersection with County Road 34 southwards approximately 750m. It also includes lands approximately 1km in length from Joan Flood Drive to the intersection of Irwin Avenue and Florian Drive.

Site Selection

Among the factors considered during the site selection process are expected usage patterns of wireless services, local terrain, interaction with existing radio base stations, and line of sight requirements for high quality communication. Each site that is investigated must go through an internal review by radio frequency, transmission and civil engineering groups in order to qualify.

LandSolutions' site acquisition agents found a willing landlord and a site that was technically qualified by TELUS on the subject lands. The proposed location also provides a visual buffer by nature of its location in relation to area residences. The closest dwelling is approximately 165m to the northeast, as shown in the below image. For more recent aerial imagery, please refer to the below image from the County of Essex's web map.

Google Earth Image showing 165m distance to closest dwelling:



Aerial Imagery from 2020 – County of Essex's Webmap

Following a review of the area and recognizing technical requirements for remaining central to the area requiring service enhancement, we found the proposed location to be the best option and consistent with municipal policy preferences. The proposed location not only meets technical requirements, but also land use compatibility (i.e. zoned appropriately). The tower location is setback from the nearby road and in a location that provides the greatest spatial buffer from nearby residences. Per federal legislation (CPC-2-0-03) there is no land use setback or distance limitation that affects the placement of a telecommunications facility, so long as the facility meets the general requirements described in CPC-2-0-03. TELUS attests that the proposed facility will meet all the general requirements described by CPC-2-0-03.

The following are additional factors affecting site selection:

- Wireless radiocommunication facilities have inherent limitations in their broadcasting range;
- Telecommunications facilities need to be close to existing and potential wireless users that would connect to the proposed tower;
- Sites are determined in conjunction with existing and planned network facilities to optimize coverage and capacity in each area;
- Co-location on existing towers or buildings was not feasible, because existing towers in the vicinity were too far away to improve service to this community;
- Increased development in the area provides physical obstacles (walls of the buildings, trees, etc.) that hinder the strength of radio signals emitted by cellular antennas, which this proposed location best avoids;

- There is a growing number of users that simultaneously use the wireless network, resulting in capacity challenges for existing telecommunication facilities and necessitating this among other proposed sites throughout the region;
- The public and businesses (e.g. point-of-sale transactions) increasingly demand ubiquitous, high-speed, low latency and reliable wireless service which this proposed facility will support; and
- The technology used to provide high-speed wireless internet to homes and businesses has less range than technologies used for general mobile device connectivity.

In addition, the improvements to the network for wireless coverage will ensure better access to 911 emergency services provided by the police, EMS, fire department and other first responders, to help maintain the safety of the overall community.

Alternative Locations

Several area residents voiced their preference for the facility to be located further away from their residences. The following alternative locations were considered:

1. Undeveloped and agricultural lands on the east side of County Road 23 (north of 4204 County Rd. 23)
    a. Adjacent undeveloped land covered by trees approximately 140m west of the proposed tower location – This parcel has no existing access, significant trees and tree-clearing would have a negative environmental impact. A tower site on these lands would be closer to one residence and of similar distance to residences to the north (Lester St.) as the current proposal. In addition, the planned Hanlan Street Extension proposes several possible intersection designs and locations along County Road 23. This site was not chosen mainly because of the uncertainty in access approval, unknown timeframe for completion of the extension and intersection and the likelihood that the proposed access would conflict with safety considerations due to proximity to future intersections.
    b. Agricultural lands within the subject property, east or south of the residence at 4204 County Rd. 23, between 180-400m distance from the current tower location – these locations did not have existing access and are too close to the nearest residence; in comparison the proposed location that provides a better visual buffer. In addition, there is considerable uncertainty with respect to the Hanlan Street Extension, as described above.
2. Undeveloped lands on the west side of County Road 23 – These lands are undergoing subdivision and planned residential development.
3. Undeveloped forest and grasslands beyond 400m distance to the southwest of the proposed tower location in proximity to Joan Flood Dr. – These lands are undergoing environmental assessment for planning of the Hanlan Street Extension from Fairview Ave. to Gosfield Townline Road (County Road 23) and were deemed unsuitable for tower development because of their potential environmental value and the proposed road infrastructure.
4. Other lands to the southwest – These are primarily low-density residential or future residential lands or outside of TELUS' search area.
5. Lands surrounding the Essex Centre Sports Complex – Most of these lands are outside of TELUS' search area and too close to an existing TELUS telecommunications facility. A portion of land east of the sports complex was considered and disqualified because the landowner declined to lease to TELUS, in part due to proximity to planned residential.

6. Lands to the east by the Essex Gospel Community Church – Most of these lands are residential or outside of TELUS' search area. In addition, a proposal in this area would be much closer to residences than the current proposal and would result in greater visual impacts.
7. Agricultural lands to the southeast of the proposed location – Most of these lands are outside of TELUS' search area; however, a portion of lands are within the subject property, but are too far from an existing access point and power, which would make development prohibitively expensive.

For the above reasons, we selected the proposed location, because:

- It provides the greatest visual buffer from residential possible within TELUS' technical constraints and compared to alternatives reviewed in the area;
- We found a willing landlord who will accommodate the proposed facility;
- The land has a compatible land use/zoning;
- The site is centrally located within the area requiring improved service and reduces the number of towers needed to provide service the surrounding community;
- The current proposal meets TELUS' business and technical requirements, including existing access and proximity to utilities, sufficient space, and is located within TELUS' search area where it will provide enhanced wireless service to the intended areas.

Aesthetic Concerns

Regarding the aesthetics of the proposed tower, the tower height is needed for optimum antenna placement and broadcast of radiocommunication. Moving the tower further away from the customer base would negatively impact TELUS' ability to enhance service to the area and may result in additional telecommunications facilities being needed in the area. The transparency of the lattice style tower will lessen the impact on the skyline. TELUS has devoted significant resources and effort in designing this facility.

One resident requested TELUS build a locked, decorative gate at the entrance/approach, decorative cedar fence, including barbed wire at the top and decorative element (e.g. lattice) to hide the barbed wire, located a minimum 12ft. from residential property lines along the entire length of the access road (i.e. +/-290m). The concerns are related to traffic, the nuisance of viewing a maintenance vehicle accessing the property (aesthetics), safety concerns with respect to children and residents mowing the lawn in proximity of the access road and noise at night. Regarding the aesthetic requests, this is a substantial request and would be difficult to maintain over the lifetime of the facility. A gate at the entrance to the land would make it difficult to access with a tractor for cultivation-related activities and may conflict with vehicular traffic along Talbot Street South. Infrequent maintenance visits (once a month or less) by light truck or van will not have a substantial visual impact on adjacent residents. The tower site is also located a substantial distance from nearby houses, the closest being approximately 165m distance. Supporting equipment will be stored within an equipment shelter and the distance will minimize visual impact.

Property Value

Many factors influence property values, including location (e.g. proximity to amenities), land area (lot size), age of the building, interior space, supply & demand, aesthetics, redevelopment and investment potential. We have learned from our interaction with the public that many home buyers seek out neighbourhoods that have

exceptional wireless coverage, as many people work from home and depend on a reliable wireless network (i.e. voice & internet services) to conduct business. In addition, many people rely exclusively on mobile telephones for wireless data and voice service and appreciate the security of having improved access to emergency services.

At the time of writing this letter, Innovation, Science and Economic Development Canada (ISEDC) considers property value concerns to be irrelevant per CPC-2-0-03, Section 4.2. This is because research to date has been inconclusive in showing a relationship between property value resulting from proximity to telecommunications facilities, and the importance that telecommunication facilities have in our modern society and economy.

Interference

The proposed facility would not cause interference with other radiocommunication devices, because TELUS uses licensed radio frequencies that are unavailable for use by other carriers.

Noise

All of TELUS' infrastructure will respect municipal standards regarding noise. Apart from the initial construction period, the ongoing operation of the facility would not exceed municipal noise regulations. This would include any possible noise because of wind or the operation of equipment on the site. The tower is located approximately 165m from the nearest residence and it is far more likely for residents to hear noise associated with objects closer to their homes, such as wind, trees, buildings, and machines within homes. There is no known or expected noise from radiocommunication, which is understood to be beyond human auditory perception. For further information on the subject please contact Health Canada directly.

Nuisances, traffic and maintenance

The proposed facility will have minimal impact from a nuisance perspective beyond the initial construction period (4-6 weeks with periodic construction crews). The proposed access is suitable for TELUS' requirement and infrequent day-time maintenance visits, which should not cause a nuisance to area residents. TELUS' facilities require occasional maintenance like other types of infrastructure. Typically, this occurs once every 1-3 months for routine maintenance of equipment at grade or minor changes to the orientation of antennas. Periodically throughout the lifetime of the facility technologies may be upgraded.

During the construction period, TELUS may setup temporary signs and construction crews will exercise caution when approaching the site with the understanding that there may be pedestrians in the area.

Need for the Tower

TELUS' network planning and radiofrequency engineering departments determined that the proposed tower is required to improve wireless coverage and capacity. Please note that ISEDC considers concerns relating to the need for telecommunications facilities as unreasonable and irrelevant per CPC-2-0-03, Section 4.2.

TELUS has a mandate to supply the County and its constituents with the most advanced network available to TELUS. With this in mind, TELUS is proposing to install 4G Long Term Evolution (LTE) antenna systems to serve the surrounding community.

This is a targeted site and the technologies utilized require the antennas to be within close proximity to area residents. TELUS is committed to improving service for its customers and the increased competition amongst service providers may benefit area residents economically.

Environment

TELUS is responsible to ensure that antenna systems are installed and operated in a manner that respects the local environment and that complies with other statutory requirements, including the Canadian Environmental Protection Act, 1999, the Migratory Birds Convention Act, 1994, and the Species at Risk Act, as applicable (Sec. 7.4, CPC-2-0-03). As noted in the notification package sent to area landowners within the notification radius (also attached to this response letter for reference), this proposed development does not qualify as a Designated Project under the CEAA and is excluded from environmental assessment under the CEAA. This is because the proposed development is not located on federal land, nor is it incidental to a federal project. Please note that the CEAA was recently repealed and replaced by the Impact Assessment Act (IAA), which includes transitional provisions.

The proposed facility will not negatively impact the environment. There is no Ducks Unlimited caveat registered on the land title certificate for the subject property, which means that the subject lands are not within a significant bird migratory route. The proposed location is on existing cultivated agricultural lands and does not require the removal of trees or other features that constitute significant wildlife habitat. The site is not located within an area of significant environmental value (i.e. wetlands, woodlands, etc.) The site will be secured by a chain-link fence, which will prevent wildlife from entering the site and all supporting equipment will be placed within an equipment shelter located at grade, further decreasing the chances for other types of wildlife to come into close contact with electrical equipment. While bird nesting sometimes occurs on telecommunication towers, maintenance workers are trained to identify and avoid disturbing eggs of endangered species.

The proposed tower will not pose a significant risk to migratory birds. The greatest risk to migratory birds is related to very tall telecommunication towers (e.g. 80-120m height), which often include guy-wires to support the tower mast and are topped with high intensity aeronautical safety lighting. The proposed tower does not require guy-wires. In addition, should Transport Canada require aeronautical safety lighting Standard 621 – Obstruction Marking and Lighting – Canadian Aviation Regulations offers alternative lighting configurations, in order to reduce bird fatalities, should this be a concern.

Based on the above industry knowledge and the current proposed tower design and location, we do not believe the facility will pose a significant risk to the environment or wildlife.

Should you have health concerns about radiocommunication, please refer to the Health and Safety section of this letter. There is no known negative impact to wildlife associated with the use of radiocommunication.

Conclusion

Thank you for participating in the public consultation process for this proposal. Your feedback is important to us and helps us better understand local preferences for the location and design of telecommunications facilities in your community. TELUS endeavours to locate its infrastructure in suitable locations that respect public opinion while meeting the technical requirements for providing high quality wireless service to area residents, businesses, and institutions.

All correspondence received will become part of the public consultation records shared with the Town of Kingsville and available to ISEDC. Thank you for participating in the public consultation process.

Sincerely,

LandSolutions LP, on behalf of
TELUS Communications Inc.

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Industry and Health & Safety Info

- http://strategis.ic.gc.ca/towers
- http://www.ic.gc.ca/eic/site/smt-gst.nsf/eng/sf11467.html
- http://www.ic.gc.ca/eic/site/smt-gst.nsf/eng/sf08792.html
- http://www.hc-sc.gc.ca/ewh-semt/pubs/radiation/radio_guide-lignes_direct-eng.php
- https://www.ctia.org/homepage/public-safety-channel
- https://www.cwta.ca/for-consumers/radiofrequency-safety-standards/

Radiofrequency Energy and Safety

What you need to know about radiofrequency energy and safety

What is radiofrequency (RF) energy?

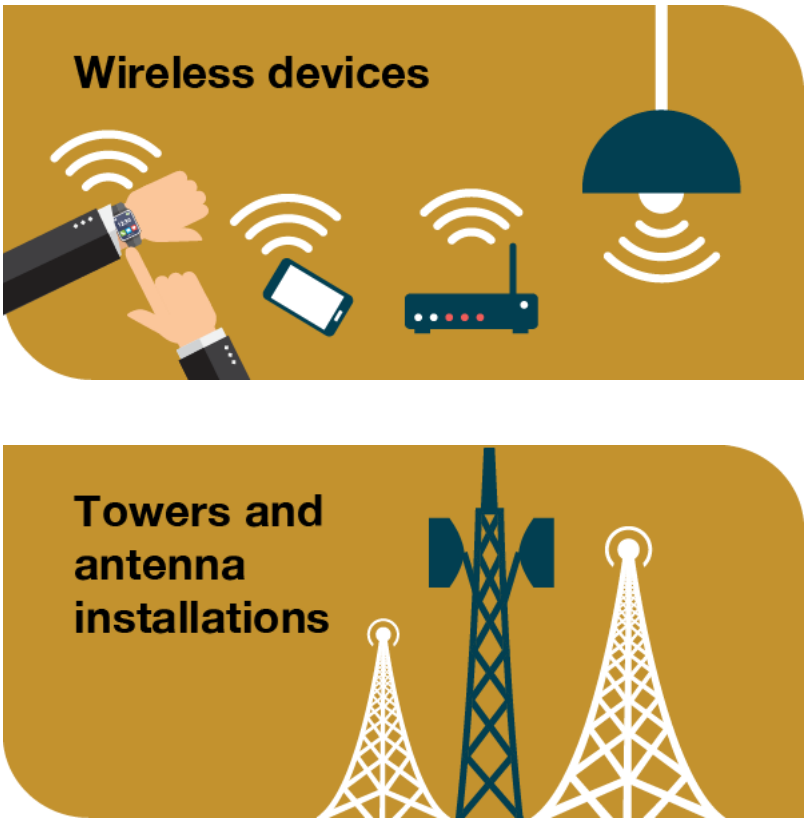
Why is RF energy important?

Can RF energy affect your health?

[How does the Government of Canada protect you?]

[What amount of RF exposure is considered safe?]

[Are the Canadian limits the same for all wireless devices and antenna installations?]



What is radiofrequency (RF) energy?

RF energy, also referred to as “RF emission,” “RF wave” or “RF field,” is one form of electromagnetic energy that is part of the electromagnetic spectrum. There are both natural and human-made sources of electromagnetic energy.

Examples of natural sources of electromagnetic energy:

Earth’s natural field (which makes a compass point to North)

Visible light

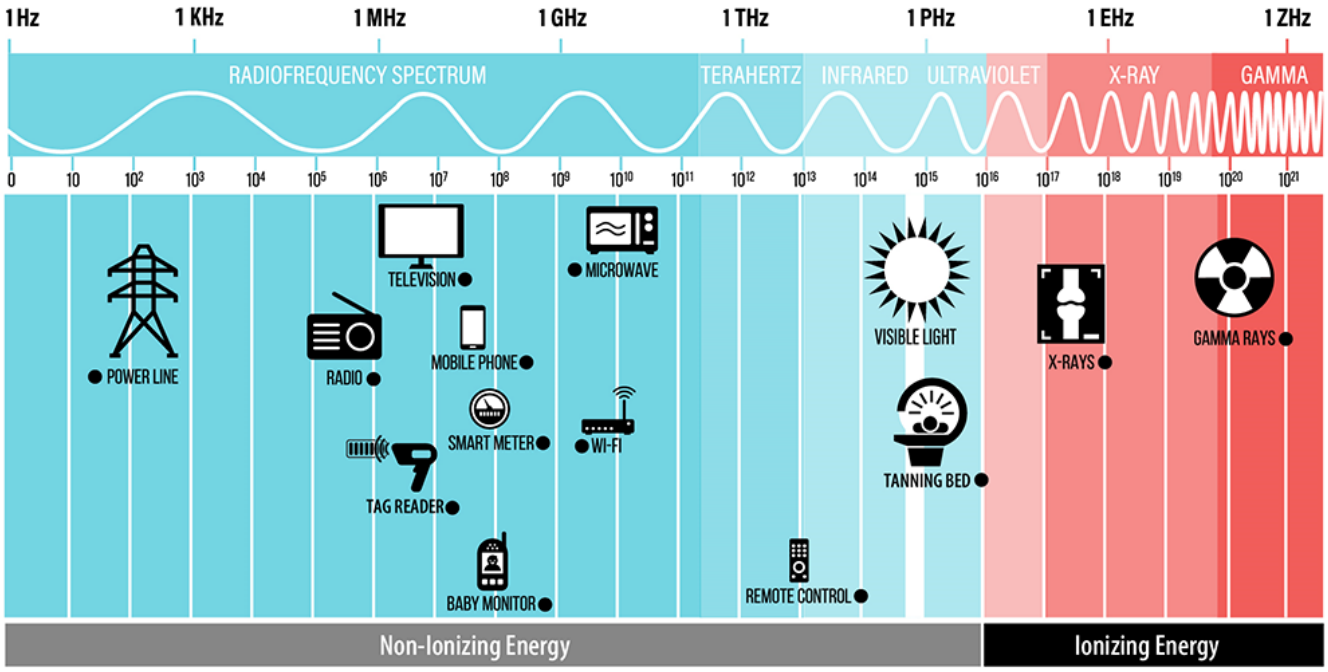
Lightning

Examples of human-made sources of electromagnetic energy:

Electric appliances such as microwaves

Wireless devices (cell phones, Wi-Fi, Bluetooth)

Commercial broadcasting (AM/FM radio and television)



▶ Description of figure

Non-ionizing and ionizing energy

Two types of energy are shown on the electromagnetic spectrum: non-ionizing and ionizing.

What is non-ionizing energy?

Non-ionizing energy is electromagnetic energy that does not break down the bonds between atoms and molecules, which means it does not break down chemical bonds within cells and tissues. Examples of non-ionizing energy include visible light and RF energy used in wireless communication.

What is ionizing energy?

Ionizing energy is electromagnetic energy that may have enough energy to break down the bonds between atoms and molecules. Examples of ionizing energy include X-rays and gamma rays, which are both used in some medical

treatments under medical supervision.

Electromagnetic spectrum

Electromagnetic spectrum is the range of frequencies produced by all sources of electromagnetic energy. The diagram illustrates where common equipment operates in a specific frequency range starting from a powerline, moving through radiofrequency spectrum to phones and ending with X-rays and gamma rays.

Why is RF energy important?

Almost every area of your day-to-day life uses RF energy. It delivers your morning news through wireless services such as broadcasting (AM and FM radio, TV); lets you place your coffee order through your cell phone; protects you by providing communication for emergency services (police,

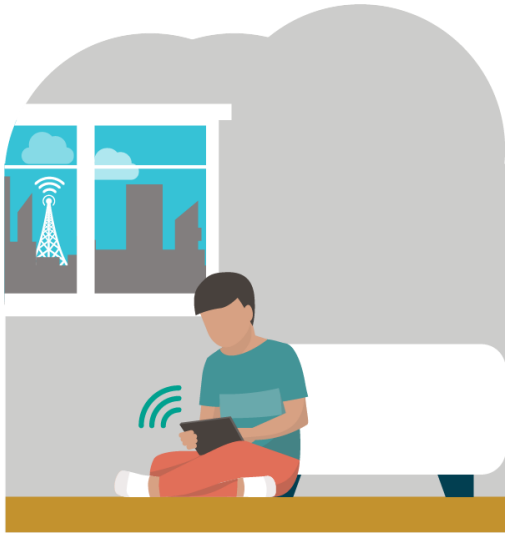
fire, ambulance); and keeps you connected through the operation of wireless consumer devices such as Wi-Fi, baby monitors and cordless phones.

Can RF energy affect your health?

Although we most often think of RF energy as coming from modern-day technologies, exposure to electromagnetic fields in everyday life is not new. Human-made sources of electromagnetic fields have increased in the past century with the development of technology and radio communications, but natural electromagnetic energy has always been around.

Scientists have been studying the health effects of RF energy for decades. Many international studies on this issue have concluded that effects associated with exposure to RF energy depend on the frequency range. For example, higher frequency ranges may result in tissue heating, while short-term exposure from lower frequency ranges may produce nerve stimulation like a tingling sensation. The Government of Canada has established RF exposure limits to prevent these effects from occurring.

How does the Government of Canada protect you?



The Government of Canada is committed to protecting the health and safety of Canadians from environmental risks, including those posed by overexposure to RF energy.

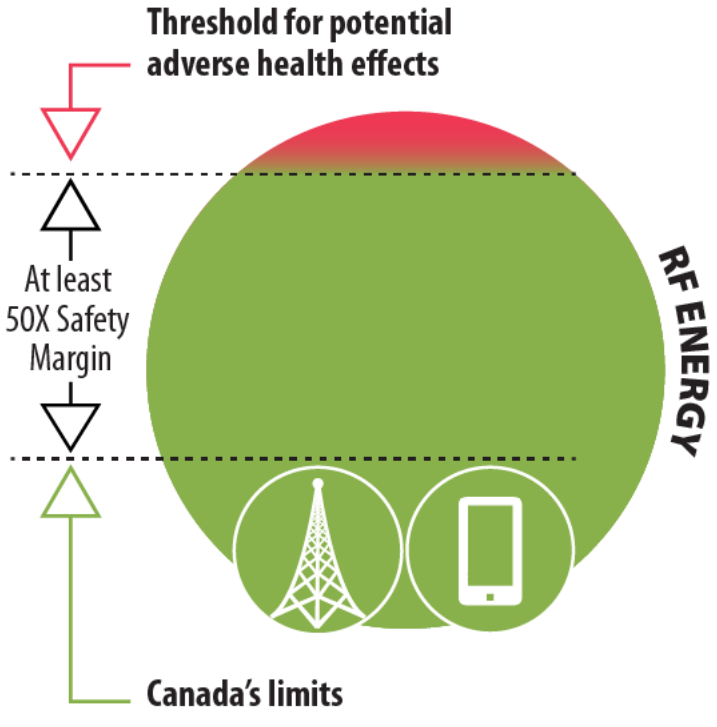
Canada's approach to RF exposure safety is among the most stringent in the world. The Government of Canada continuously monitors the research and scientific literature on the health effects of RF exposure to ensure that Canadian limits are consistent with the current scientific consensus to prevent potential adverse health effects.

▶ **Health Canada's role**

▶ **Innovation, Science and Economic Development Canada's role**

What amount of RF exposure is considered safe?

Exposure to RF energy below the Canadian limits is safe. The limits are set far below the threshold (at least 50-fold safety margin) for all known established adverse health effects. Health Canada has incorporated several tiers of precaution into the limits to ensure safety, including a conservative threshold for the occurrence of



▶ Description of figure

adverse health effects,
the use of worst-case exposure scenarios and an additional safety margin beyond the threshold.

Are the Canadian limits the same for all wireless devices and antenna installations?

The limits for wireless devices (e.g. cell phones, Wi-Fi enabled devices and other consumer portable devices) and antenna installations on towers are different.

The limits established for wireless devices are known as localized limits. Since these devices are used within a few millimetres from the body or on the body, only a localized portion of the body (head, torso, limbs) is exposed to the RF energy.

The limits established for antenna installations are known as whole body limits. Antenna installations on towers are generally found at a distance from a person’s body, which results in the entire body being exposed to RF energy. Therefore, the applicable limits are different.

Wireless devices

There are two main categories of wireless devices:

Wireless devices used close to the body

(cell phones, tablets and wearables)

Wireless devices used away from the body

(Wi-Fi routers, home monitoring systems and smart meters)

Wireless devices used close to the body

What is nerve stimulation?

Nerve stimulation is a tingling sensation resulting from exposure to RF energy levels well above the Canadian limits.

What is Specific Absorption Rate (SAR)?

Specific Absorption Rate (SAR) is the rate of RF energy absorbed in the body (in a volume of tissue) when a wireless device is in close proximity. SAR is expressed in units of watts per kilogram (W/kg). ISED requires that all wireless devices sold in Canada comply with established SAR limits.

What is power density?

Power density is the amount of electromagnetic energy in a given area, typically expressed in units of watts per square metre (W/m^2).

Wireless devices used close to the body are referred to as portables or wearables. These devices are tested against different limits depending on their operating frequency, which may include more than one type of evaluation.

- **Below 10 MHz:** devices are tested against electric and magnetic field strength limits to avoid nerve stimulation.
  Examples of devices that fall under this category are wireless charging devices, metal detectors, electronic cards, tag readers and anti-shoplifting detector panels installed at doors of stores.

- **Between 100 kHz and 6 GHz:** devices are tested against Specific Absorption Rate (SAR) limits to avoid tissue heating.
  Most portables and wearables currently available in Canada, such as cell phones, tablets and smart watches, fall under this category.
- **Above 6 GHz:** devices are tested against power density limits to avoid tissue heating.
  Very few portable and wearable devices fall under this category, but these types of devices will increase as 5G technology is deployed in Canada.

For more information about the Canadian limits, refer to RSS-102, *Radio Frequency (RF) Exposure Compliance of Radiocommunication Apparatus (All Frequency Bands)* or Safety Code 6.

Want to learn more about SAR?

Expand/collapse

- ▶ What are the SAR limits?
- ▶ Are SAR limits the same around the world?
- ▶ How are SAR measurements determined?
- ▶ Are wireless devices with lower SAR values considered safer?
- ▶ Does the SAR level of a cell phone change when in use?
- ▶ How should I be using my cell phone or other wireless devices? What does compliance distance mean?
- ▶ How can I maintain the recommended minimum compliance distance?

▶ **Am I at risk if I place my cell phone directly in my pocket and forget about the recommended compliance distance?**

▶ **Where can I find SAR values and compliance distance for my wireless devices?**

Wireless devices used away from the body

Devices such as Wi-Fi routers, baby monitors, smart meters, etc. are not evaluated for SAR, since they are intended to be used away from the body (more than 20 cm). The RF energy levels generated by these devices are determined and compared to the Canadian limits.

ISED conducted an extensive study to measure RF exposure levels from multiple Wi-Fi routers and Wi-Fi-enabled laptops in a simulated classroom setting. The study confirmed that in environments such as schools, workplaces, and public and private spaces, the RF exposure levels from these wireless devices was significantly below the Canadian limits.

Expand/collapse

▶ **Want to learn more about Canada's limits?**

▶ **Are the limits the same around the world?**

▶ **What do I need to know when using a device that is used far from the body? What is compliance distance?**

▶ **What if I forget about the minimum separation listed in the user guide? Am I at risk?**

Towers and antenna installations

Canadians want faster and more accessible service so they can reliably use their wireless devices to keep in touch with loved ones and stay informed. Businesses, emergency services and air navigation systems also depend on radiocommunication and wireless services 24 hours a day. Newer technological advancements, such as 5G, are being designed to meet current and future demands including the very large growth in data and connectivity of today's modern society, the Internet of things (IoT) with its ubiquity of connected devices, and tomorrow's innovations. All these services require towers and antenna installations located in the right places.

For more information about towers, visit Facts about towers.

How we keep you safe

ISED requires that all antenna systems meet Canadian limits on the amount of RF energy that can be present in areas to which the public has access. This means complying with the regulatory requirements and process established in the antenna siting procedures, CPC-2-0-03, *Radiocommunication and Broadcasting Antenna Systems* before an

installation is approved. Once antenna installations are built, operators need to ensure their installations comply with the Canadian limits at all times as a condition of their licence.

To monitor ongoing compliance, ISED conducts various antenna installations audit programs.

Expand/collapse

- ▶ **What are Canada's limits for antenna installations?**
- ▶ **Are the limits the same around the world?**
- ▶ **How is the safety of antenna installations evaluated?**
- ▶ **Which factors influence exposure levels?**
- ▶ **What do I need to know to ensure RF exposure safety near antenna installations?**

What are small cells?

Small cells are physically smaller radio installations that can complement larger radio installations to improve coverage, add capacity, and support new services and user experiences.

There are various types of small cell with varying power ranges. The smallest are for indoor use (sometimes referred to as femtocells) operating on power levels similar to Wi-Fi routers. The largest are for outdoor use and typically consist of a small equipment cabinet and small antennas. The largest are often located on existing facilities like street lights, power utility poles and buildings.

Small cells must comply with the same limits that apply to other antenna installations.

What is 5G?

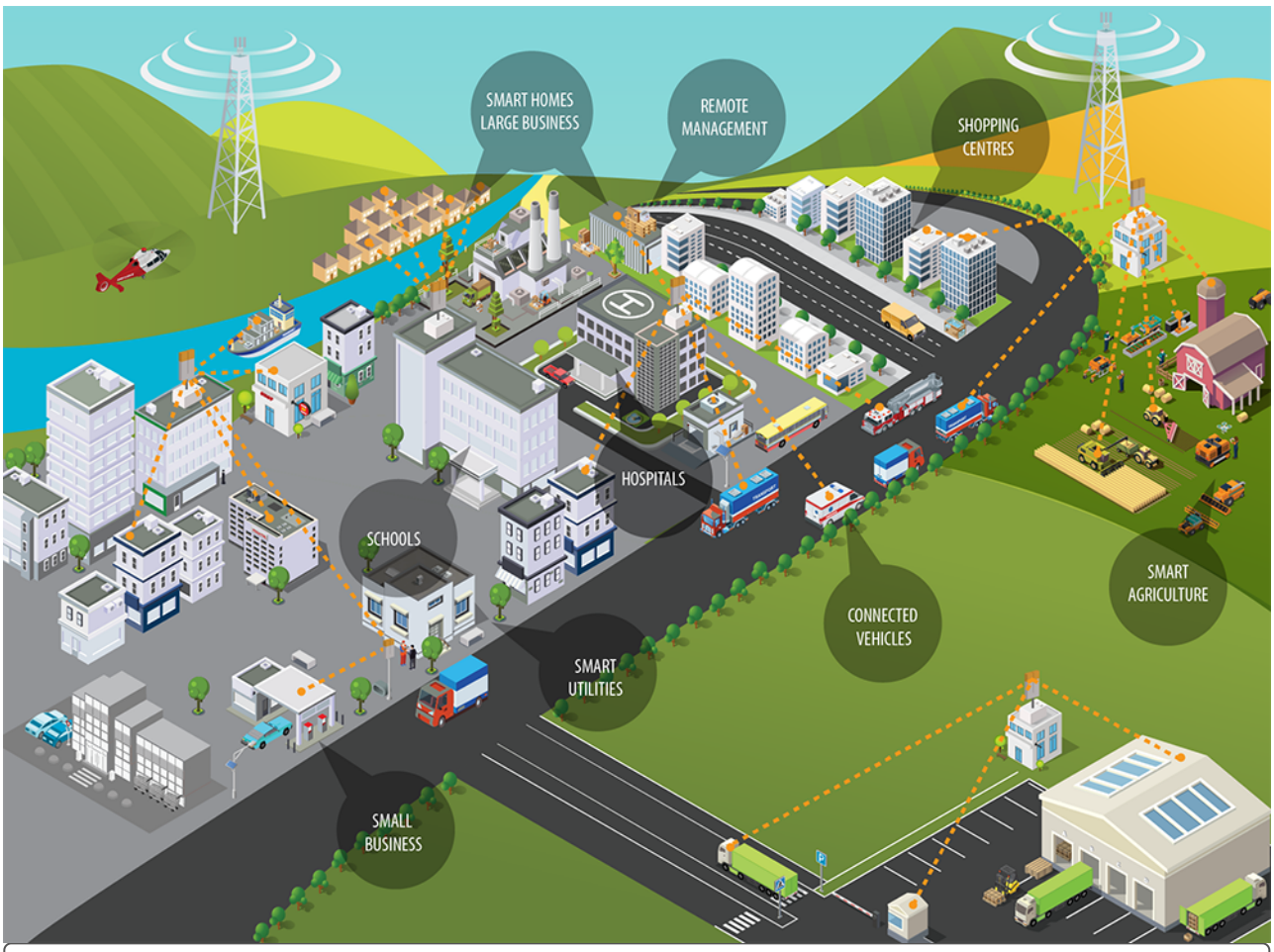
5G is the 5th generation of wireless technology, a significant evolution of today's 4G LTE wireless networks. 5G will provide the infrastructure to allow for more data and connectivity, the Internet of things with billions of connected devices, and tomorrow's innovations in various fields such as healthcare, public safety, transportation, agriculture, and smart cities. 5G will operate in both the lower frequency spectrum (below 6 GHz) as well as at higher frequencies called millimetre wave spectrum (above 6 GHz).

5G should not be confused with Wi-Fi operated in the 5 GHz frequency band as they are different wireless technologies.

RF safety requirements for 5G

The current Canadian limits already cover the frequency ranges that will be used by 5G devices and antenna installations.

Similar to current wireless devices and installations, 5G devices will need to meet RF exposure requirements before they can be sold in Canada.



▶ Description of figure

Antenna systems operators using 5G technology will continue to have the same RF exposure compliance obligations. Furthermore, compliance with RF exposure requirements will continue to be an ongoing obligation.

Misinformation and health concerns

Misinformation and opinions on the health risks from exposure to radiofrequency electromagnetic fields are increasing on social media and on the Internet. There have been claims linking the deployment of 5G networks to the novel coronavirus (COVID-19) and to increased risks of cancer. Health Canada confirms that there is no scientific basis for these claims.

Date modified:

2020-05-13

To Whom It May Concern,

LandSolutions LP, on behalf of TELUS Communications Inc. (TELUS) is pleased to submit to you this public notification package for review. The package is to share information with nearby landowners about the proposed communications facility at the location listed below:

TELUS File:	ON1428
Legal Land Description:	NE PT OF N1\2 LT 280 CON STR GOSFIELD; PT OF N1/2 LT 280 CON STR INCLUDING BLK 90 GOSFIELD (ESSEX) PT 2, 6 ON 12R8414 AS IN R850277; EXCEPT PT 1 ON 12R7580 AND PT 1 ON 12R24158 TOG/W AN EASE AS IN R981605; SAVE AND EXCEPT PTS 1,2,3 ON 12R24759; TOWN OF KINGSVILLE
Address:	Vacant land on the east side of County Rd. 23
Coordinates:	Lat: 42.164908°, Long: -82.810802°

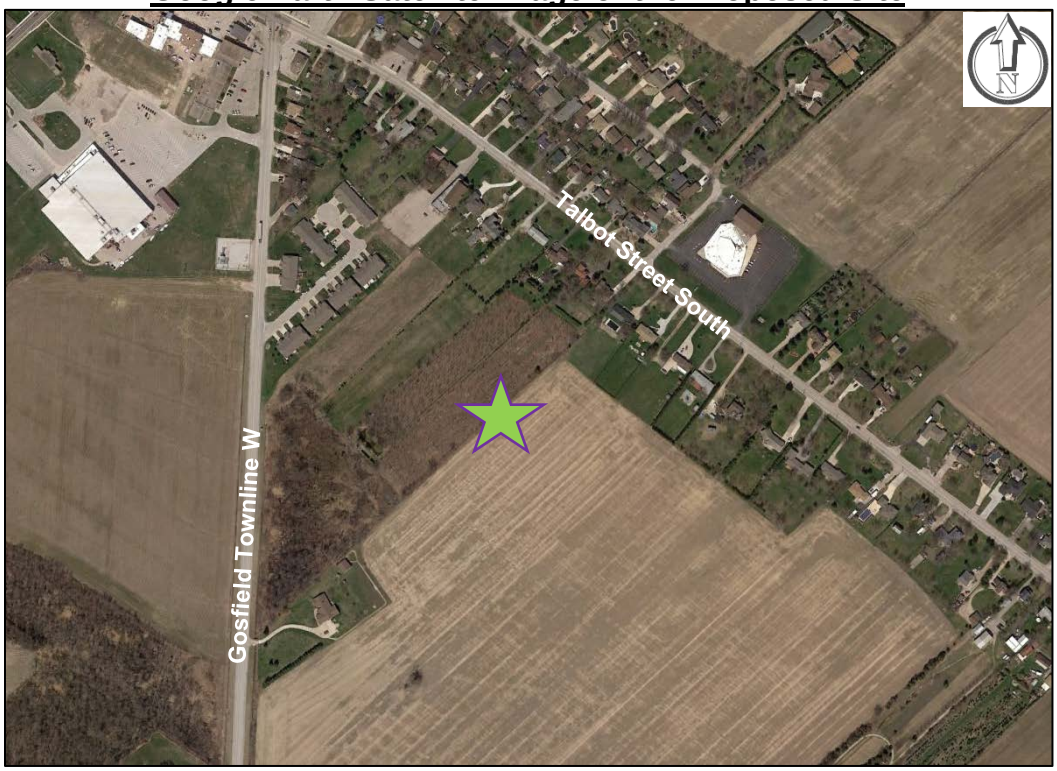
Location and Site Context

TELUS is proposing to construct a 40.0m lattice, self-support telecommunications tower and supporting equipment shelter at this location. The proposed tower will be located on the east side of Gosfield Townline W, approximately 215m southwest of Talbot Street South (vacant agricultural land on the east side of County Rd. 23).

Proposed Facility Map

Due to a variety of circumstances, including the distance between the existing towers and growing number of wireless users in the area, TELUS produced a search area for an appropriate telecommunications site. As a result, TELUS has secured a site as indicated on the map below. TELUS Radio Engineering Department selected this area as an appropriate location to maximize coverage for users in the area. The site selected is central to the area requiring additional coverage and network capacity, and will provide enhanced wireless service, including high-speed home and business internet.

Google Earth Satellite Image of the Proposed Site



Site Selection and Co-Location

Among the factors considered during the site selection process are expected usage patterns of wireless service, local terrain, interaction with existing radio base stations, and line of sight requirements for high quality communication. Each site that is investigated must go through an internal review by radio frequency, transmission and civil engineering groups in order to qualify.

Before building a new antenna-supporting structure, Innovation, Science and Economic Development Canada (ISEDC) requires that the proponent (TELUS) first explore the following options:

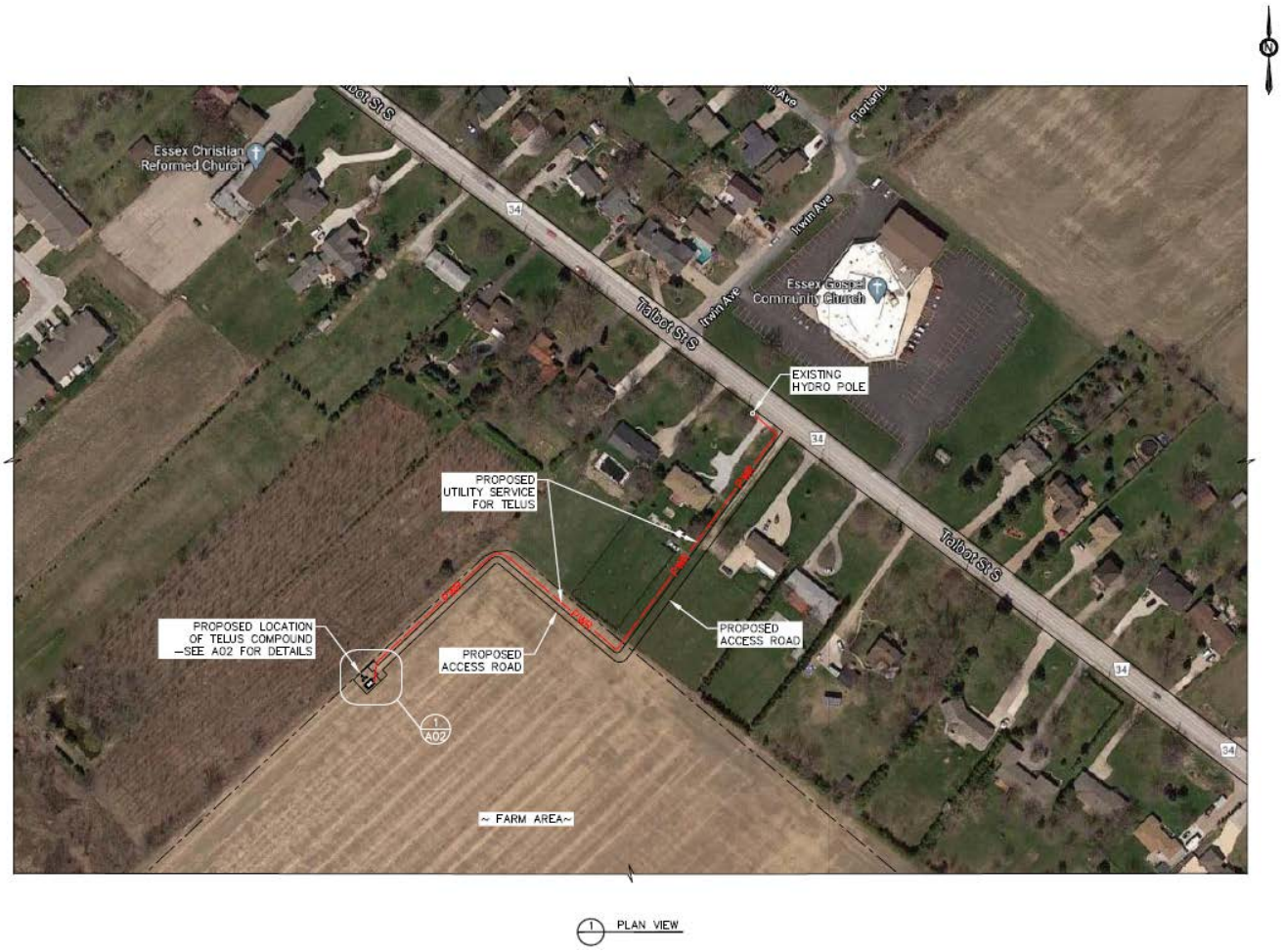
- consider sharing an existing antenna system, modifying or replacing a structure if necessary.
- locate, analyze and attempt to use any feasible existing infrastructure such as rooftops, water towers etc.

During the site selection process for this proposed facility, TELUS determined that there are no suitable co-locate opportunities within 2km of the proposed location. The closest comparable structures suitable for antenna-sharing are indicated on the table below.

Existing Structures Capable of Co-location within an 2km Radius				
Structure Owner	**Coordinates:**	**Height (m):**	**Distance (km)**	**Details:** Explain why structure may not be a viable candidate
Rogers Communications Canada Inc.	42.1561 -82.8030	35	1.17	This tower is located outside of TELUS' search area, too far away and is not central to the area requiring improvement in service. Co-location on this tower would not meet TELUS' network requirements.
Rogers Communications Canada Inc.	42.1683 -82.7925	49.3	1.20	This tower is located outside of TELUS' search area and already contains many antennas that occupy the tallest elevations of the tower. The tower is too far away and available elevations for sharing are too low to meet TELUS' network requirements and to improve service to the intended area.
Rogers Communications Canada Inc.	42.1683 -82.7925	76	1.56	This tower is located outside of TELUS' search area, too far away and is not central to the area requiring improvement in service. Co-location on this tower would not meet TELUS' network requirements.
Paging Network of Canada Inc. / City of Windsor Corp. Radio Services / RadioCo Limited	42.175 -82.8288	52	1.87	This is an existing water tower, which is too close to an existing TELUS tower located 500m northwest and is located outside of TELUS' search area. It is too far away from the area requiring improvement in service.
Paging Network of Canada Inc. / City of Windsor Corp. Radio Services / RadioCo Limited	42.175 -82.8288	9	1.88	This is a low-scale, lattice, self-support tower beside an existing building. It is too small to meet TELUS' network requirements, and the tower is too close to an existing TELUS tower located approximately 500m northwest.

In addition, TELUS will welcome future tower sharing opportunities on this proposed tower as per ISEDC's guidelines. At the time of this notification, TELUS anticipates having space available for future sharing proponents below 32m on the tower. TELUS will respond to a request to share in a timely fashion and will negotiate in good faith to facilitate sharing where feasible following standard collocation procedures.

Site Layout



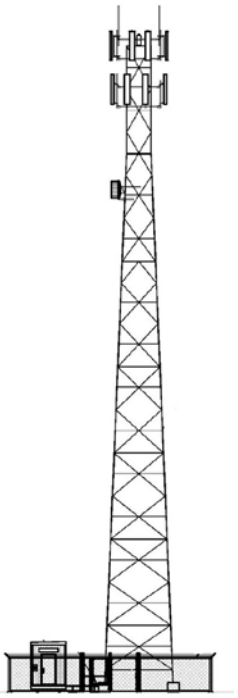
Site Access

For construction and maintenance access will be from Talbot St S.

Site Information

The design is a 40.0m lattice self-support tower within a leased premise, as shown on the above drawing. TELUS proposes to install an equipment shelter within the fenced portion of the premises. The shelter will house equipment necessary for the operation of the telecommunications facility. The shelter will be armed with a 24-hour alarm system to ensure protection from vandalism and to warn for environmental concerns such as flooding or fire. It is proposed that Panel Style Antennas will be mounted on the proposed facility, operating at 700-2600 MHz. The projecting antennas are approximately 2.6m in length and 0.6m in width and will be mounted near the top of the facility. In addition, one or two microwave antennas may be required, which may measure between 1.2-1.8m in diameter.

Typical Facility Profile and Photo Simulations



Artist's Rendering, actual results may vary – view ±237.8m northeast from Talbot St.

Construction and Maintenance

The construction period will last four to six weeks and once completed the facility will remain unoccupied. The only traffic generated at this site will be for routine monthly maintenance visits.

LandSolutions LP, on behalf of TELUS, attests that the installation will respect good engineering practices including structural adequacy.

Aeronautical Approvals

All necessary Transport Canada and NAV Canada approvals and lighting requirements will be obtained by TELUS and provided upon request. Currently, TELUS does expect Transport Canada to require tower lighting (top) due to the height and location of the proposed facility.

Environmental Health Standards / Safety Code 6 Guidelines

ISEDC requires that the installation and modification of antenna systems be done in a manner that complies with appropriate environmental legislation. This includes the Canadian Environmental Assessment Act (CEAA) and local environmental assessment requirements where required by CEAA.

LandSolutions LP, on behalf of TELUS, attests that the radio antenna system described in this notification does not qualify as a Designated Project under CEAA and is excluded from environmental assessment under CEAA.

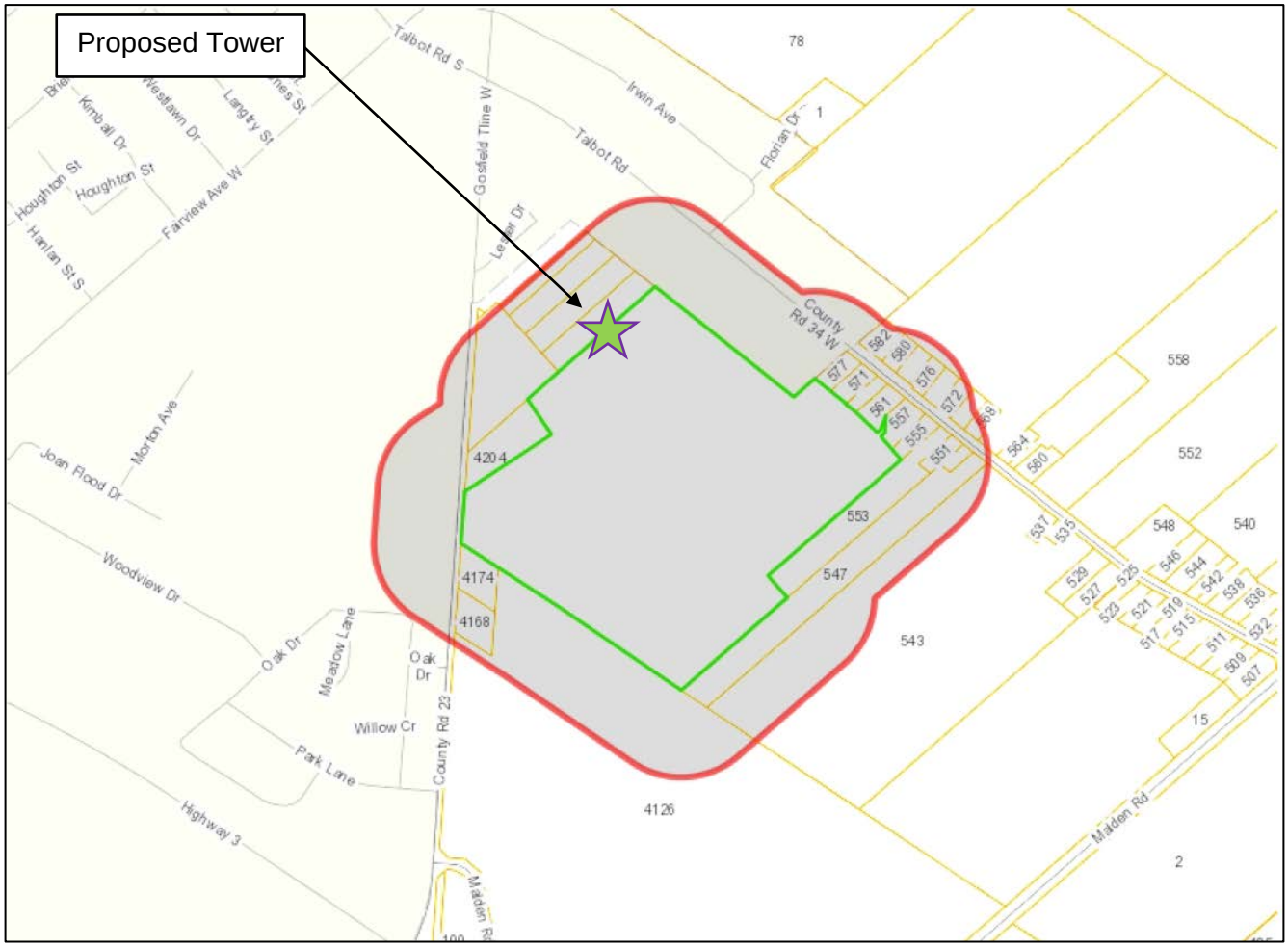
ISEDC manages the radio communications spectrum in Canada. Among other requirements, ISEDC requires telecommunications facilities to comply with guidelines established by Health Canada in order to protect people who live or work near these facilities.

These Health Canada safety guidelines are outlined in their 'Safety Code 6' document and are among the most stringent in the world. All TELUS facilities meet or exceed these standards. LandSolutions LP, on behalf of TELUS, attests that the radio installation described in this notification package will be installed and operated on an ongoing

basis to comply with Health Canada's Safety Code 6, as may be amended from time to time, for the protection of the public, including any combined effects of nearby installations within the local radio environment.

Map of Notification Area 150m Radius from Tower Site

Approximate radius shown below



Public Consultation

LandSolutions LP, on behalf of TELUS is following the Town of Kingsville Policy for the Development and/or Redevelopment of Communication and Broadcasting Facilities, which requires notification of landowners within a radius of 120m of the subject property. However, the Town of Kingsville and the Town of Essex provided addresses within an expanded 150m notification radius. Please submit written comments within 30 days of receipt of this package. Upon receiving any comments from the public, LandSolutions LP on behalf of TELUS will respond to all feedback and will deliver a formal submission to the City requesting support for this proposal.

Written comments posted on or before May 16, 2021 will be included in the formal submission package.

Please contact our office to discuss the proposed facility with representatives from LandSolutions LP at comments@landsolutions.ca or (403) 290-0008.

This site proposal information package is in accordance with the requirements of ISEDC's Radiocommunication and Broadcasting Antenna Systems.

Conclusion

Wireless communications contribute to the quality of everyday life. This proposed site will satisfy demand for better service to current and future subscribers in the area.

If you have any questions, or require further information about the proposed facility, please feel free to contact:

LandSolutions LP
Brenden Smith, Site Acquisition and Municipal Affairs Specialist
600, 322 – 11 Avenue SW
Calgary, AB T2R 0C5
T: (403) 290-0008
F: (403) 290-0050
E: comments@landsolutions.ca

Town of Kingsville
Robert Brown, H. Ba., MCIP, RPP
Manager of Planning Services
Planning Services Department
The Corporation of the Town of Kingsville
2021 Division Road North
Kingsville, Ontario N9Y 2Y9
Phone: (519) 733-2305 Ext # 250
rbrown@kingsville.ca

Innovation, Science and Economic Development Canada
Southwestern Ontario District Office
4475 North Service Road, Suite 100
Burlington, ON L7L 4X7
T: 1-855-465-6307
F: 905-639-6551
E: ic.spectrumswodo-spectrebdsoo.ic@canada.ca

Industry and Health & Safety Information
http://www.ic.gc.ca/towers
http://www.ic.gc.ca/eic/site/smt-gst.nsf/eng/sf11467.html
http://www.hc-sc.gc.ca/ewh-semt/pubs/radiation/radio_guide-lignes_direct-eng.php
https://www.canada.ca/en/health-canada/services/consumer-radiation/safety-cell-phones-cell-phone-towers.html
http://www.hc-sc.gc.ca/hl-vs/alt_formats/pacrb-dgapcr/pdf/iyh-vsv/prod/cell-eng.pdf
https://www.cwta.ca/for-consumers/radiofrequency-safety-standards/
http://www.TELUS.com

Comment Sheet – ON1428
Send by Fax to (403) 290-0050 or email at comments@landsolutions.ca
or Mail to TELUS c/o LandSolutions LP
Suite 600, 322 – 11th Avenue SW, Calgary, AB T2R0C5

Proposed TELUS Telecommunications Facility
Vacant land on the east side of County Rd. 23
(Town of Kingsville), AB

1. Are you a cellular telephone or wireless internet user?

☐ Yes ☐ No

2. Is the location of the proposed facility acceptable?

☐ Yes ☐ No

If no, why? _____

_____

3. Are you satisfied with the design of the proposed facility?

☐ Yes ☐ No

Comments: _____

_____

_____

4. Other comments (please attach pages if more space is needed):

_____

_____

_____

_____

This information will not be used for marketing purposes; however, your comments will be forwarded to the appropriate Land Use Authority for their file. Please write legibly. Thank you.

Name: _____

Address: _____

Postal Code: _____

Phone: _____

Email: _____